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Volume 1, Part A

Earth–Mars Trajectories, 1964

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FOREWORD

This volume is one of a set of seven giving key characteristics of Earth-to-Mars ballistic trajectories during the period 1964–1977, which period is divided into seven launch intervals (one interval per volume), spaced about 25 months apart. Within each interval, trajectories are calculated for each launch date and further subdivided into flight time ranges graduated in 2-day increments.

Launch dates and approximate flight time ranges for this volume are as follows (only trajectories requiring *vis viva* geocentric energies of less than 40 km^2/sec^2 are printed out within a given range):

Launch date (1964)	Flight time range (days)
Oct 1–Oct 29	240–398
Oct 30–Nov 8	180–418
Nov 9–Nov 23	160–422
Nov 24–Dec 26	140–434

The applicability of these books may be extended by noting the 15-year cyclic recurrence of Earth–Mars trajectories. Thus trajectories in 1979 approximate 1964 trajectories; 1982 trajectories approximate 1967 trajectories, etc. Simply by updating the trajectories by 15 years, the results may be reapplied.

It is intended that these books provide trajectory and guidance analysts with data, in volume, so that they may perform preliminary design studies, conduct investigations of the properties of ballistic interplanetary trajectories, and make interplanetary guidance and orbit determination analyses. While not exact, these trajectories are sufficiently accurate to be quite useful for the above purposes.

In generating such a large amount of data, it is impossible to check the correctness of each number. Should the reader detect any errors, the authors would appreciate being advised.

Companion volumes (Ref. 1) give the characteristics of Earth–Venus trajectories during the period 1964–1970.

I. INTRODUCTION

This report presents the results of extensive machine computations of three-dimensional ballistic interplanetary trajectories. The analytic model used to represent these trajectories is based upon two-body, inverse-square, force field mechanics. A brief explanation of the model is presented in Section II.

Basically, the trajectories are calculated in two distinct parts: (1) the heliocentric transfer ellipse and (2) the launch-planet-centered escape trajectories. Following these trajectories, differential corrections or error coefficients and guidance and tracking parameters are given.

A. Heliocentric Conic Computation

The heliocentric trajectory is obtained by specifying the launch date and flight time only. Given these, the positions of the launch planet on the launch date and the target planet on the arrival date may be obtained by interrogating the ephemerides. By assuming the planets to be massless, a unique heliocentric trajectory may then be computed which passes through the centers of the launch and target planets. Though this assumption may at first seem gross, experience has proved it to be perfectly reasonable for this purpose. After the solution has been obtained by an iterative procedure, the orbital elements, heliocentric position, and velocity vectors at launch and arrival are computed. Other heliocentric quantities of engineering interest are also computed.

B. Planetocentric Conic Computation

After the heliocentric orbit is obtained, the launch and arrival hyperbolic-excess velocity vectors are computed by subtracting the velocity vectors of the launch and target planets from the heliocentric launch and arrival velocity vectors of the probe. The launch hyperbolic-excess vector is, in fact, the most important result of these computations because it yields the energy and direction of fire required to achieve interplanetary transfer.

Further computations are done to exhibit properties of the near-Earth portion of the trajectories. Given the launch hyperbolic-excess vector, a launch site (Cape Kennedy), a launch azimuth, and certain properties of a typical interplanetary boost vehicle, and assuming a 100-nm parking orbit, quantities such as launch time, injection position and velocity vectors, parking orbit coast time, and injection time are computed. In essence, then, approximate trajectories are obtained from the launch pad to the target. The terminal portions of the trajectories are assumed to impact vertically on the target planet.

C. Differential Corrections

To augment the trajectory parameters, differential corrections or error coefficients relating variations in the launch hyperbolic-excess velocity vector to variations in target miss and flight time are computed. Actually, the variables at launch in these coefficients are the square of the hyperbolic-excess speed, or *vis viva* energy C_3, and the declination and right ascension of a unit vector **S**, collinear with the outgoing asymptote of the escape hyperbola. The target variables are the components of the impact parameter **B**, defined below, and the flight time. These coefficients are obtained by a numerical differencing technique developed by William Kizner of JPL.

Based upon these error coefficients, guidance and tracking parameters are calculated as described below.

D. Mid-Course Guidance

Interplanetary guidance is currently being accomplished by determining the orbit of the probe from radio tracking data and then applying one or more impulsive velocity corrections to null the predicted target error. The guidance task closely parallels the trajectory problem, for it is convenient to define the following guidance "phases":

1. Planetocentric phase, in which, after the launch vehicle has placed the probe on its escape hyperbola, the orbital elements of this trajectory are determined and the hyperbolic-excess velocity is corrected to the desired value.
2. Heliocentric phase, in which additional velocity corrections may be made to correct any error in orbit determination and/or maneuver execution in phase 1.
3. Approach phase, in which the probe is in the sphere of influence of the planet and the final vernier corrections may be made to trim the results of phase 2.

The preflight analysis of phase-1 guidance is primarily concerned with the statistical problem of determining how much propellant to carry aboard the spacecraft in

order to correct a "three-sigma" injection guidance error. These studies are well-documented elsewhere (Ref. 2–4) and will not be discussed here. Suffice it to say that correcting the hyperbolic-excess velocity is a reasonably good approximation to nulling the miss components at the planet. Such an analysis need only be concerned with the planetocentric phase of flight.

The analysis of the heliocentric phase is more complicated, since maneuvers there depend upon errors in applying the first midcourse maneuver (phase 1). In order to understand the effect of phase 1 errors, or to specify a tolerance on them, it is convenient to ask how a unit error in hyperbolic-excess velocity maps to miss at the target. This unit velocity error can be thought of as due to uncertainties in phase-1 maneuver execution and orbit determination. Conceptually, this analysis can be accomplished by letting a unit velocity error trace out a sphere at the tip of the hyperbolic-excess velocity vector and observing the semimajor and semiminor axes of the miss ellipse at the target (only two miss components are normally of interest). Mathematically, this is done by simply forming a matrix of the differential corrections, multiplying this matrix by its own transpose, diagonalizing the resulting symmetric matrix, and observing that the two diagonal terms are the desired semimajor and semiminor axes of the unit error ellipse.[1] It is easy to show that if the coordinate system chosen to describe the target error is collinear with these axes, the rows of the resulting differential correction matrix (which are gradient vectors) are orthogonal, and their norms are the magnitudes of the error-ellipse axes.

The approach guidance phase is not conveniently treated with this kind of analysis, and is not discussed further. Here, it can be assumed that the approach maneuvers are always negligibly small.

E. Orbit Determination

A spacecraft boosted toward Mars or Venus by the current generation of launch vehicles requires the accuracy obtainable using Earth-based radio guidance in order to accomplish most planet-oriented experiments. The steps in radio guidance are:

1. Track the transponder signal from the spacecraft from several stations located at a spread of latitudes to determine the orbit of the spacecraft.
2. Calculate the velocity changes required to alter the orbit to pass through the desired region at the target. The maneuver is then applied with a small rocket motor; the pointing direction and burning time (of the velocity increment) are calculated to perfectly correct the orbit if both the estimate of the orbit and the application of the maneuver are without error.
3. Track the spacecraft after the first maneuver for a sufficient interval to form a new estimate of the perturbed orbit.

This process of tracking and maneuvering may be repeated several times to achieve high accuracies at the target. There is, however, a limit to the process imposed by our uncertainties in the actual location of the target planet as well as the unpredictable forces acting on the spacecraft.

For extremely high accuracy at the target planet, on-board measurements must be used in conjunction with the Earth-based tracking in order to further reduce the above-mentioned uncertainties. It is not the function of this report to discuss on-board measurement systems but rather to describe the capabilities of current Earth-based radio guidance techniques when applied to interplanetary trajectories.

An adequate description of the accuracy to which orbits may be determined and maneuvers executed for the case of several corrective maneuvers is beyond the scope of this report. The results presented here may be strictly interpreted as corresponding to the accuracy capabilities for a single mid-course maneuver occurring anywhere between 1 and 14 days after injection. The relative contribution to the target uncertainty caused by orbit determination errors and mid-course execution errors depends directly upon the size of the correction required on a particular flight. For this reason, then, two error sources are considered separately. While our results do correspond to the single maneuver case, they are very valuable in providing a general description of the way in which these errors vary over the selected set of trajectories. Such utilization of the results is discussed later herein.

F. Accuracy of Computations

Extensive accuracy studies were performed to verify the adequacy of these trajectories for preliminary design use. Both Mars and Venus trajectories were computed on the JPL precision-integrating trajectory program using

[1] It should be apparent to readers familiar with statistical concepts that this is equivalent to mapping a three-dimensional gaussian distribution of velocity errors, with unit standard deviation along each axis, to a two-dimensional gaussian distribution of position errors at the target.

initial conditions obtained from the approximate trajectories contained herein. Of 56 Mars cases run, 29 missed the target by less than 500,000 km; 16 missed by between 500,000 and 1,000,000 km; and 5 missed by between 1,000,000 and 1,500,000 km. The worst case missed by 3,500,000 km. For the flight time errors, 16 varied between 1 and 2 days; 14 varied between 2 and 3 days; and 9 were greater than 3 days. The worst case was 7.2 days. No systematic properties of these errors were noted except that they appear to get worse for the higher-energy trajectories.

For Venus, the accuracy was considerably better, averaging 322,000-km miss error and 0.67-day flight time errors. Based on these comparisons, the model used to generate the trajectories contained herein is considered to be adequate and the results suitable for preliminary mission design studies. These results are very useful for initializing the precision trajectory search program.

When used for the stated purposes, these trajectories provide an excellent source of data obtained at considerably less time and expense than precision cases.

II. ANALYTICAL MODEL FOR INTERPLANETARY TRAJECTORIES

The analytical model consists of three distinct phases of two-body motion: (1) an escape hyperbola near the launch planet, (2) elliptical[2] motion under the attraction of the Sun, and (3) terminal hyperbolic motion near the target planet.

A. Heliocentric Motion

Solution of the heliocentric elliptic motion is obtained first under the following assumptions:

1. The launch and target planets move in orbits about the Sun as given in the national ephemerides. Their velocity components are obtained by using two-body conic formulas, mean orbital elements, and their tabular positions as listed in the ephemerides.
2. The launch and target planets are massless. Thus the only force acting on the probe is that of the Sun.
3. The position of the probe at launch into the heliocentric orbit is the center of the massless launch planet. Its position at arrival on the heliocentric orbit is the center of the massless target planet.

[2] Hyperbolic heliocentric motion is not considered herein.

Thus for solution to the heliocentric phase of motion, the attractions of the launch and target planets are temporarily disregarded. The primary result to be obtained from the solution of the heliocentric transfer problem is the hyperbolic-excess velocity vector relative to the launch planet.

1. Determination of Planar Orientation

Since the launch and arrival positions of the probe are assumed to be the centers of the launch and target planets, they can immediately be determined, given the launch and arrival[3] times, by consulting the ephemeris. Further, the orientation of the heliocentric transfer plane can immediately be found. Let $\mathbf{R}_L$ be the Sun–launch planet position vector at launch time T_L, and let $\mathbf{R}_p$ be the Sun–target planet position vector at arrival time T_p (Fig. 1). Then, planar orientation is found from the unit normal $\mathbf{W}$ to the plane as follows:

$$\mathbf{W} = \frac{\mathbf{R}_L \times \mathbf{R}_p}{R_L R_p \sin \Psi} \tag{1}$$

[3] Or, for convenience, the launch date and flight time can be specified.

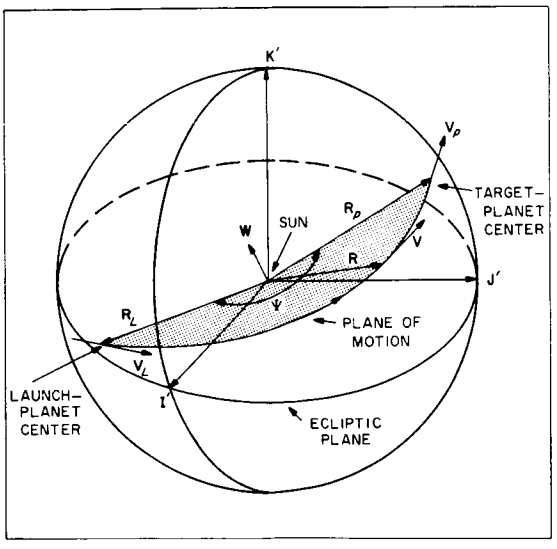

Fig. 1. Heliocentric transfer geometry

where the angle Ψ is defined below. The inclination[4] i to the ecliptic plane can be found by

$$\cos i = \mathbf{W} \cdot \mathbf{K}' \tag{2}$$

where $\mathbf{K}'$ is a unit vector pointing in the direction of the ecliptic north pole.

2. In-Plane Relations

The heliocentric central angle Ψ (Fig. 1) is also readily determined by utilizing the positions of the launch and target planets. This angle may be obtained from

$$\cos \Psi = \frac{\mathbf{R}_L \cdot \mathbf{R}_p}{|\mathbf{R}_L|\,|\mathbf{R}_p|} \tag{3}$$

$$\sin \Psi = \operatorname{sgn}\left[(\mathbf{R}_L \times \mathbf{R}_p) \cdot \mathbf{K}'\right] (1 - \cos^2 \Psi)^{1/2} \tag{4}$$

The velocity vector $\mathbf{V}$ of the spacecraft anywhere along its path may be obtained from

$$\mathbf{V} = \frac{V}{R}\left[(\mathbf{W} \times \mathbf{R}) \cos \Gamma + \mathbf{R} \sin \Gamma\right] \tag{5}$$

Here, $\mathbf{R}$ is the heliocentric position vector, $R = |\mathbf{R}|$, and V is the heliocentric speed obtained from

$$V = \sqrt{(GM_S)\left(\frac{2}{R} - \frac{1}{a}\right)} \tag{6}$$

[4] In this report, we are interested only in transfers which have the same rotational motion about the Sun as the planets; thus, $0 \leq i \leq \pi/2$.

and the path angle Γ is found from

$$\sin \Gamma = \left[\sqrt{\frac{R}{(1 - e^2)(2a - R)}}\right] e \sin v \tag{7}$$

In Eq. (6) and (7), GM_S is the universal gravitational constant times the mass of the Sun ($= 2.959122083 \times 10^{-4}$ au^3/day^2), a and e are the semimajor axis and eccentricity of the transfer ellipse, respectively, and v is the true anomaly of the probe given by

$$\cos v = \frac{a(1 - e^2) - R}{eR} \tag{8}$$

3. Lambert's Theorem

Now there are two unknowns in Eq. (5)–(8) which prevent their immediate evaluation. These two unknowns are the semimajor axis a and the eccentricity e. The determination of these quantities is the main problem. Battin (Ref. 5) has shown that the eccentricity is actually a function of the semimajor axis. Thus it is first necessary to determine a. The semimajor axis is related to the time of flight T_F by Lambert's Theorem, which states: *The transfer time between any two points on an ellipse is a function of the sum of the distances of each point from the focus, the distance between the points, and the semimajor axis of the ellipse.* Functionally, the theorem is stated as

$$T_F = T_F(R_L + R_p, C, a) \tag{9}$$

where the distance C between the launch planet at launch time and the target planet at arrival time is shown in Fig. 2 and is obtained from

$$C = |\mathbf{R}_p - \mathbf{R}_L| \tag{10}$$

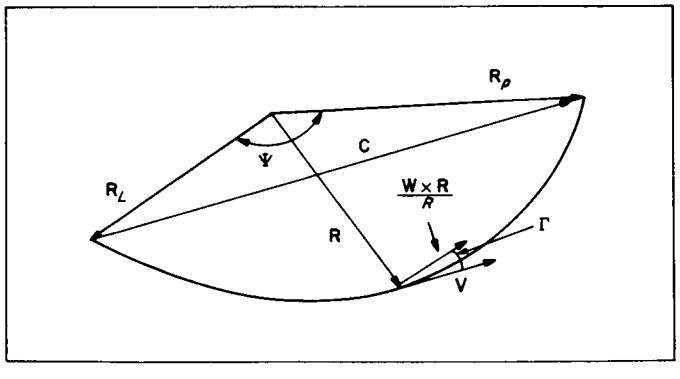

Fig. 2. In-plane transfer geometry

Since the time of flight T_F and the launch and arrival positions R_L and R_p are knowns, only the semimajor axis

remains to be found by iterative solution of Eq. (9). After the semimajor axis a is obtained, the heliocentric velocities of the probe at launch and arrival time $\mathbf{V}_L$ and $\mathbf{V}_p$ may be evaluated from Eq. (5) under the conditions $R = R_L$ and $R = R_p$. The path angles Γ_L, Γ_p and true anomalies[5] v_L, v_p at launch and arrival times may also be evaluated from Eq. (8) and (7) under the same conditions.

Finally, the desired end result, the hyperbolic-excess velocity $\mathbf{V}_{hL}$ relative to the launch planet may be found (Fig. 3) by

$$\mathbf{V}_{hL} = \mathbf{V}_L - \mathbf{V}_1 \tag{11}$$

where $\mathbf{V}_1$ is the velocity of the launch planet at launch time.

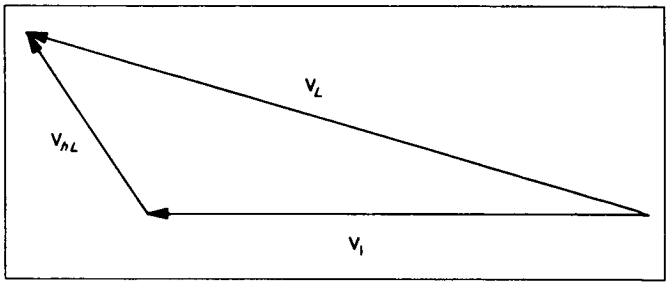

Fig. 3. Determination of the hyperbolic-excess velocity vector $\mathbf{V}_{hL}$

B. Launch Planet Escape Hyperbola

The key result from the solution of heliocentric transfer is the hyperbolic-excess velocity vector $\mathbf{V}_{hL}$ at launch. The reason for the importance of this vector is that it tells the direction in which the probe must be traveling relative to the launch planet when just leaving its gravitational influence. There are an infinite number of escape trajectories (all hyperbolas) which can have the same hyperbolic-excess velocity vector. However, only a portion of these are practical for use when related to existing launch sites and boost vehicle constraints. For example, it would be ridiculously costly in payload—and impractical—to shoot a vehicle straight up. Criteria for selection of a family of feasible escape trajectories are given below.

1. Assumptions

The solution of the escape phase of motion is obtained under the following assumptions: (1) The probe is acted on only by the gravitational force of the launch planet, and (2) the oblateness effects of the launch planet are neglected.

[5]The details of quadrant choice for these angles are found in Ref. 5.

The direction of the asymptote of the escape hyperbola is found by normalizing the hyperbolic-excess vector $\mathbf{V}_{hL}$. The injection energy[6] C_3 of the escape hyperbola is found by squaring the hyperbolic-excess speed, or

$$C_3 = V_{hL}^2 \tag{12}$$

Thus, in contrast to the heliocentric problem, the launch planet is now "massy," while the influence of the Sun is neglected. However, the hyperbolic-excess velocity vectors found by solving the heliocentric problem are used as a starting point to solve the escape problem.

2. Size and Shape of the Escape Hyperbola

As previously stated, only some of the infinite number of escape trajectories are practical. Two of the practical aspects of a set of trajectories are the sizes and shapes of the hyperbolas.

Size is basically determined by the energy C_3, which in turn is a function of boost vehicle capability. For boost vehicles in use (or shortly to be available) at this writing, values of energy less than or equal to 25 km²/sec² are considered reasonable. The larger the value of energy that the booster is required to deliver, the smaller the payload and launch period over which the vehicle may be fired.

The shape of the hyperbola is determined by its eccentricity, which is a function of both the energy and perifocal distance according to

$$e = 1 + \frac{R_p C_3}{GM} \tag{13}$$

where R_p is the perifocal distance and GM is the universal gravitational constant times the mass of the launch planet. From Eq. (13) it can be seen that for a fixed perifocal distance the eccentricity increases linearly with the energy. The value of perifocal distance is not arbitrary, but depends strongly on the boost vehicle trajectory. It has been shown (Ref. 6) that in the great majority of cases it is necessary and desirable to use a circular parking orbit as part of the preinjection phase of the escape trajectory. It is further an interesting fact that the altitude of the parking orbit determines the perifocal distance. If h is the parking orbit altitude and R_0 is the launch planet's radius, then, to an extremely close degree of approximation,

$$R_p = R_0 + h \tag{14}$$

[6]C_3 is actually twice the total energy per unit mass, i.e., the *vis viva* integral.

or the perifocal distance is equal to the launch-planet-centered radius of the parking orbit. In Ref. 6 it also has been shown that the lowest possible parking orbit (80–100 nm) allows greatest payload capability. Thus, using 100 nm for the parking orbit altitude, a practical value of perifocal distance is 6560 km. The perifocal distance will vary only slightly about this value for other parking orbit altitudes, or even for direct-ascent-type preinjection trajectories. Therefore, *both* the size and shape are essentially determined by the energy alone, which is found from Eq. (12).

Given the size and shape of the escape hyperbola, its planar orientation must be determined, and this can be done by considering two vectors: (1) the direction of the hyperbolic-excess vector, denoted by a unit vector **S**, and (2) a unit vector $\mathbf{R}_L^1$ directed from the center of the launch planet to the launch site. The vehicle's flight plane will essentially be determined by these two vectors, as shown in Fig. 4. A unit normal **W** to the launch-planet-centered flight plane is determined by

$$\mathbf{W} = \frac{\mathbf{R}_L^1 \times \mathbf{S}}{|\mathbf{R}_L^1 \times \mathbf{S}|} \tag{15}$$

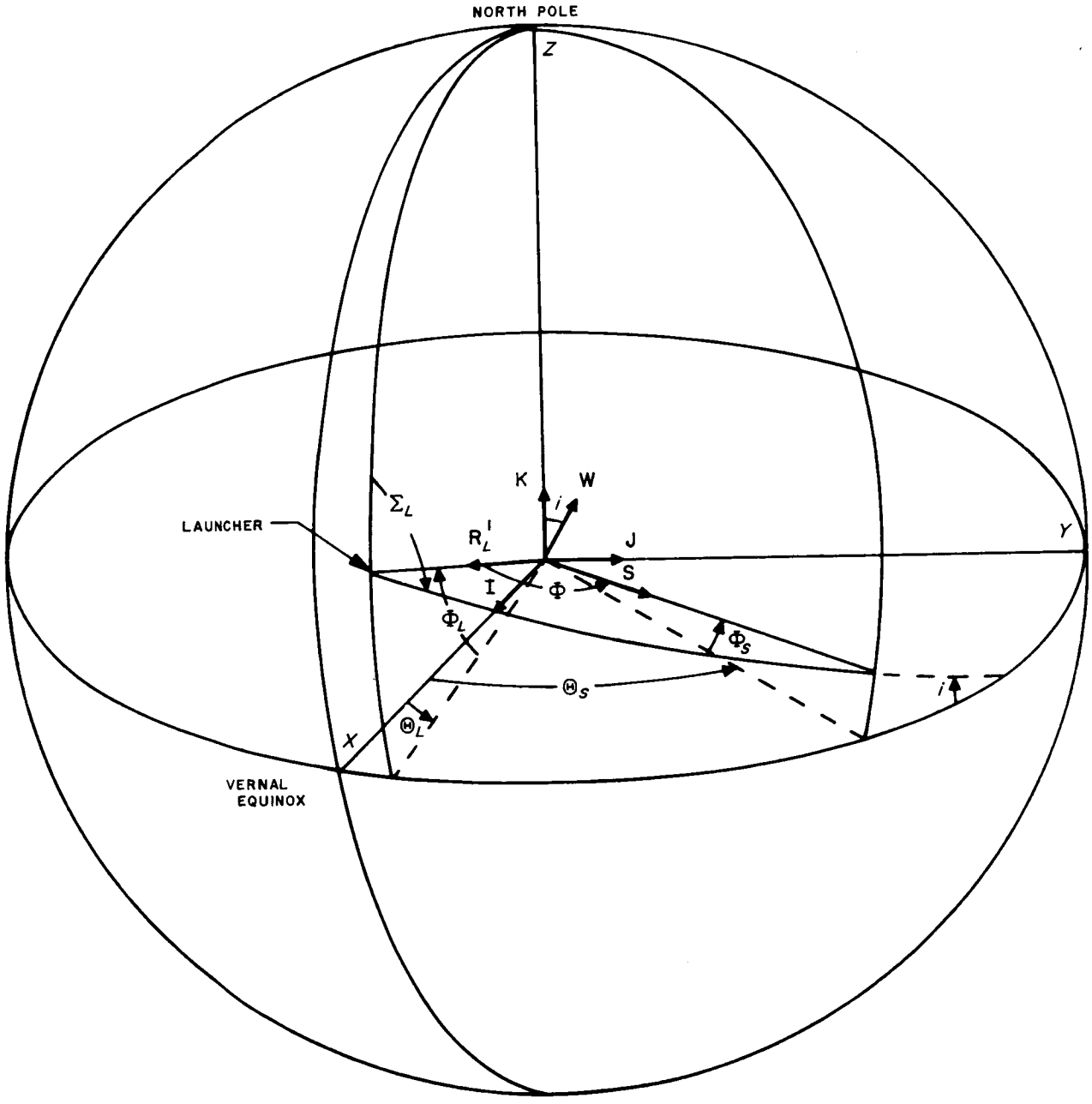

Fig. 4. Vehicle flight plane

with the constraint that the Z component of **W** is always positive.

Since $\mathbf{R}_L^1$ is a function of time, according to the rotation rate of the launch planet, the planar orientation must continually change. In effect, this says that the launch azimuth is a continuous function of launch time.

A detailed description of the geometrical aspects of the launch planet ascent trajectory is not given here but may be found in Ref. 6.

C. Differential Corrections

The calculation of differential corrections for interplanetary trajectories may be accomplished in several ways and depends on choice of independent and dependent variables. In this report, a numerical differencing scheme is used. Basically, the independent variables—the injection energy C_3, declination Φ_S, and right ascension Θ_S of the outgoing asymptote **S** of the escape hyperbola—are varied, one at a time, to produce variations in the dependent variables—the components of the impact parameter **B** and the time-of-flight T_F.

The impact parameter **B** is defined as a vector originating at the center of the target planet and directed perpendicular to the incoming asymptote of the target-centered approach hyperbola (Fig. 5). The impact parameter **B** is resolved into two components which lie in a plane normal to the incoming asymptote **S**. The orientations of the reference axes in this plane are arbitrary, but one is usually selected to lie in a fixed plane. Thus, define a unit vector **T**, lying in the *ecliptic* plane according to

$$\mathbf{T} = \frac{\mathbf{S} \times \mathbf{K}'}{|\mathbf{S} \times \mathbf{K}'|} \tag{16}$$

where **K′** is a unit normal vector to the ecliptic plane. The remaining axis is then given by a unit vector **R**, defined by

$$\mathbf{R} = \mathbf{S} \times \mathbf{T} \tag{17}$$

Figure 6 illustrates the orientation of the **R**, **S**, **T** target coordinates.

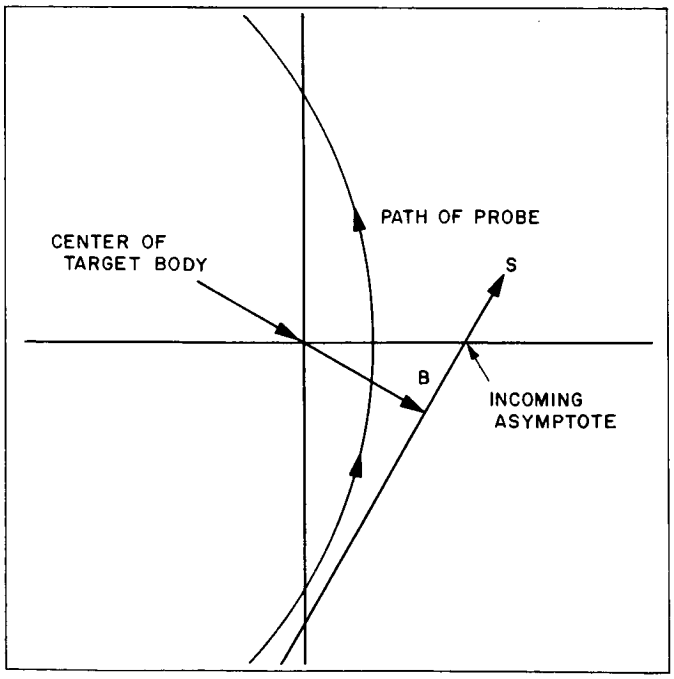

Fig. 5. Impact parameter B

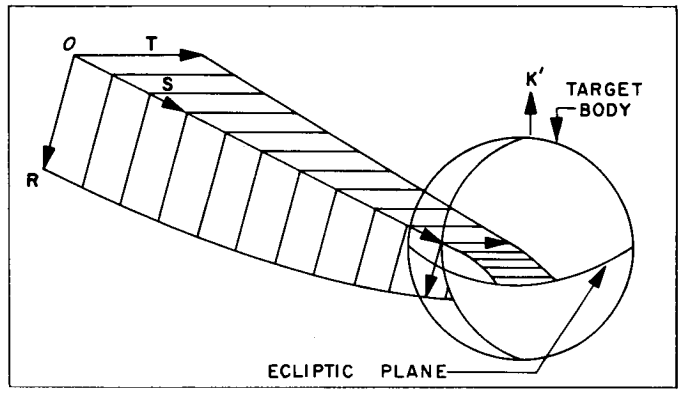

Fig. 6. The R, S, T target coordinate system

The impact parameter **B** lies in the **R**–**T** plane and has miss components $\mathbf{B}\cdot\mathbf{T}$ and $\mathbf{B}\cdot\mathbf{R}$. $\mathbf{B}\cdot\mathbf{T} = \mathbf{B}\cdot\mathbf{R} = 0$ denotes vertical impact on the target. Thus, $\mathbf{B}\cdot\mathbf{T}$, $\mathbf{B}\cdot\mathbf{R}$, and T_F are the three target-dependent variables. If Q_i represents a set of generalized independent variables, such as injection position and velocity or other convenient variables, then the partial derivatives $\partial\mathbf{B}\cdot\mathbf{T}/\partial Q_i$, $\partial\mathbf{B}\cdot\mathbf{R}/\partial Q_i$, $\partial T_F/\partial Q_i$ are first-order differential corrections or error coefficients relating miss at the target and flight time errors to the independent variables.

A convenient set of independent variables for interplanetary trajectories is the *vis viva* injection energy C_3, the declination Φ_S, and the right ascension Θ_S of the asymptote of the escape hyperbola. These variables essentially describe the launch hyperbolic-excess velocity vector since

$$\mathbf{V}_{hL} = (C_3)^{1/2}(\cos\Phi_S\cos\Theta_S,\ \cos\Phi_S\sin\Theta_S,\ \sin\Phi_S) \tag{18}$$

As stated above, the differential corrections are calculated by a numerical differencing method which uses

quantities obtained from the conic trajectory. The basic idea is to compute a varied or perturbed trajectory and then difference it with the reference case. Let primed quantities denote variables on the perturbed trajectory. A small variation $\Delta \mathbf{V}_{hL}$ in the hyperbolic-excess velocity vector is equivalent to a small variation $\Delta \mathbf{V}_L$ in the launch heliocentric velocity vector. The launch heliocentric velocity on the perturbed trajectory is, then,

$$\mathbf{V}'_L = \mathbf{V}_L + \Delta \mathbf{V}_{hL} \tag{19}$$

where

$$\Delta \mathbf{V}_{hL} = (C_3)^{1/2}\, \Delta\Phi_S\, [-\sin\Phi_S \cos\Theta_S, -\sin\Phi_S \sin\Theta_S, \cos\Phi_S]\ ,$$
$$(C_3)^{1/2}\, \Delta\Theta_S\, [-\cos\Phi_S \sin\Theta_S, \cos\Phi_S \cos\Theta_S, 0],$$
$$\frac{\Delta C_3}{2\,(C_3)^{1/2}}\, [\cos\Phi_S \cos\Theta_S, \cos\Phi_S \sin\Theta_S, \sin\Phi_S]$$

where $\Delta\Phi_S$, $\Delta\Theta_S$ are small angular variations (0.2 deg), and the energy variation is $\Delta C_3 = 0.005\, C_3$.

The semimajor axis a' is obtained from

$$a' = \frac{R_L}{2 - \dfrac{V'^2_L R_L}{GM_S}} \tag{20}$$

The radial rate $\dot{R}_L'$ is

$$\dot{R}'_L = \frac{\mathbf{V}'_L \cdot \mathbf{R}_L}{R_L} \tag{21}$$

The semilatus rectum p' and eccentricity e' are

$$p' = \frac{R_L^2 (V'^2_L - \dot{R}'^2_L)}{GM_S} \tag{22}$$

$$e' = \left(1 - \frac{p'}{a'}\right)^{1/2} \tag{23}$$

The eccentric anomaly at launch E'_L is

$$\sin E'_L = \frac{R_L \dot{R}'_L}{e'\,(a'GM_S)^{1/2}}$$
$$\cos E'_L = \frac{1}{e'}\left(1 - \frac{R_L}{a'}\right) \tag{24}$$

The mean anomaly at launch M'_L is obtained from

$$M'_L = E'_L - e' \sin E'_L \tag{25}$$

The mean orbital rate n' is

$$n' = \frac{(GM_S)^{1/2}}{a'^{3/2}} \tag{26}$$

The mean anomaly at the target M'_p is

$$M'_p = n'\, T_F + M'_L \tag{27}$$

The eccentric anomaly at the target E'_p is obtained from the expansion

$$E'_p = E_p + \left(\frac{1}{1 - e' \cos E_p}\right) \Delta M - \frac{1}{2}\left[\frac{e' \sin E_p}{(1 - e' \cos E_p)^3}\right] \Delta M^2$$
$$+ \frac{1}{6}\left[\frac{3(e' \sin E_p)^2 - (1 - e' \cos E_p)(e' \cos E_p)}{(1 - e' \cos E_p)^5}\right] \Delta M^3 \tag{28}$$

if

$$\cos E_p \geqq 0$$

or

$$E'_p = E_p + \frac{e \cos E_p - 1 + \sqrt{(e \cos E_p - 1)^2 + (2e \sin E_p)\, \Delta M}}{e \sin E_p} \tag{29}$$

if

$$\cos E_p < 0$$

where

$$\Delta M = M'_p - (E_p - e' \sin E_p)$$

The true anomalies at launch and the target v'_L and v'_p are found from

$$\cos v'_L = \frac{p' - R_L}{e'\, R_L} \tag{30}$$

$$0 < v'_L < \pi \quad \text{if } \dot{R}'_L \text{ is positive}$$

$$\pi < v'_L < 2\pi \quad \text{if } \dot{R}'_L \text{ is negative}$$

$$\cos v'_p = \frac{\cos E'_p - e'}{1 - e' \cos E'_p}$$
$$\sin v'_p = \frac{(1 - e'^2)^{1/2} \sin E'_p}{1 - e' \cos E'_p} \tag{31}$$

The heliocentric central angle Ψ' is

$$\Psi' = v'_p - v'_L \tag{32}$$

The angular momentum $\mathbf{h}'$ is

$$\mathbf{h}' = \mathbf{R}_L \times \mathbf{V}'_L \tag{33}$$

The heliocentric position vector at the target is

$$\mathbf{R}'_p = R'_p\left(\frac{\mathbf{R}_L}{R_L}\cos\Psi' + \frac{\mathbf{h}'\times\mathbf{R}_L}{h'R_L}\sin\Psi'\right) \tag{34}$$

where

$$R'_p = a'(1 - e'\cos E'_p) \tag{35}$$

A vector in the direction of perihelion with magnitude e' is

$$\boldsymbol{\varepsilon}' = \frac{\mathbf{V}'_L\times\mathbf{h}'}{GM_S} - \frac{\mathbf{R}_L}{R_L} \tag{36}$$

The heliocentric velocity at the target is

$$\mathbf{V}'_p = \frac{\mathbf{h}'}{p'}\times\left(\frac{\mathbf{R}'_p}{R_p} + \boldsymbol{\varepsilon}'\right) \tag{37}$$

The hyperbolic-excess velocity at the target is

$$\mathbf{V}'_{hp} = \mathbf{V}'_p - \mathbf{V}_2 \tag{38}$$

The difference between the heliocentric position vectors on the perturbed and reference trajectories is

$$\Delta\mathbf{R}'_p = \mathbf{R}'_p - \mathbf{R}_p \tag{39}$$

The impact parameter **B** is

$$\mathbf{B} = -\frac{(\Delta\mathbf{R}'_p\cdot\mathbf{V}'_{hp})\,\mathbf{V}'_{hp}}{V'^2_{hp}} + \Delta\mathbf{R}'_p$$

The flight time error is

$$\Delta T_F = -\frac{\Delta\mathbf{R}'_p\cdot\mathbf{V}'_{hp}}{V'^2_{hp}} \tag{40}$$

The partial derivatives are formed by dividing $\Delta\Theta_S$, $\Delta\Phi_S$, and ΔC_3 into the miss components $\mathbf{B}\cdot\mathbf{T}$, $\mathbf{B}\cdot\mathbf{R}$, and flight time error ΔT_F. In addition to the component partials, the quantity $\partial B/\partial Q_i$ is defined by

$$\frac{\partial B}{\partial Q_i} = \left[\left(\frac{\partial\mathbf{B}\cdot\mathbf{T}}{\partial Q_i}\right)^2 + \left(\frac{\partial\mathbf{B}\cdot\mathbf{R}}{\partial Q_i}\right)^2\right]^{1/2} \tag{41}$$

The three partials, $\partial B/\partial\Theta_S$, $\partial B/\partial\Phi_S$, $\partial B/\partial C_3$, are important measures of the error sensitivity of a trajectory.

The effect of uncertainty in the knowledge of the astronomical unit-to-kilometer conversion factor on target miss and flight time may be determined by the following formulae,

$$\begin{aligned}\frac{\partial\mathbf{B}\cdot\mathbf{T}}{\partial au} &= \frac{-2C_3}{au}\,\frac{\partial\mathbf{B}\cdot\mathbf{T}}{\partial C_3}\\ \frac{\partial\mathbf{B}\cdot\mathbf{R}}{\partial au} &= \frac{-2C_3}{au}\,\frac{\partial\mathbf{B}\cdot\mathbf{R}}{\partial C_3}\end{aligned} \tag{42}$$

from whence

$$\frac{\partial B}{\partial au} = \frac{2C_3}{au}\,\frac{\partial B}{\partial C_3} \tag{43}$$

and

$$\frac{\partial T_F}{\partial au} = \frac{-2C_3}{au}\,\frac{\partial T_F}{\partial C_3} \tag{44}$$

where au is the astronomical unit-to-kilometer conversion factor.

The effect of solar radiation pressure acting on the probe may also be evaluated as follows: In Eq. (19) let $\Delta\mathbf{V}_{hL} = 0$, but in Eq. (20), (22), (24), (26), (36), vary GM_S by adding an increment ΔGM_S. This procedure gives rise to a varied trajectory from which the impact parameter **B** and flight time error ΔT_F may be obtained. The partials $\partial B/\partial GM_S$ and $\partial T_F/\partial GM_S$ may then be calculated. Since the acceleration caused by solar radiation pressure acts opposite to the gravitational attraction of the Sun, radiation pressure has the effect of decreasing the Sun's gravitational attraction, or decreasing GM_S. A decrease, $\Delta GM_S = -2.4\times10^6$ km³/sec² corresponds to the solar radiation pressure acting on a 300-kg spacecraft having a perfectly reflecting area of 3.6 square meters. Thus the miss, always being a positive number, is obtained by $\Delta B_{sp} = 2.4\times10^6\,\partial B/\partial GM_S$, and the corresponding flight time error is $\Delta T_{F_{sp}} = -2.4\times10^6\,\partial T_F/\partial GM_S$, which is sign sensitive.

D. Mid-Course Execution Accuracy

The effect of mid-course execution errors on target accuracy can be rather simply described if it is assumed that the guidance maneuver is made on the asymptote of the escape hyperbola and that the velocity errors are spherically distributed (that is, the three-dimensional statistical distribution of velocity errors is composed of three orthogonal, independent velocity errors, each with the same variance). The mapping of these errors to the target (Fig. 7) results in a three-dimensional ellipsoid of position errors, which is the "one-sigma ellipsoid." The semiaxes are the respective standard deviations of the position errors. As pointed out above, this ellipsoid can be thought of as the locus of target errors that results from a unit velocity error at the mid-course point tracing out a sphere.

Let the differential corrections discussed above be expressed in matrix form as

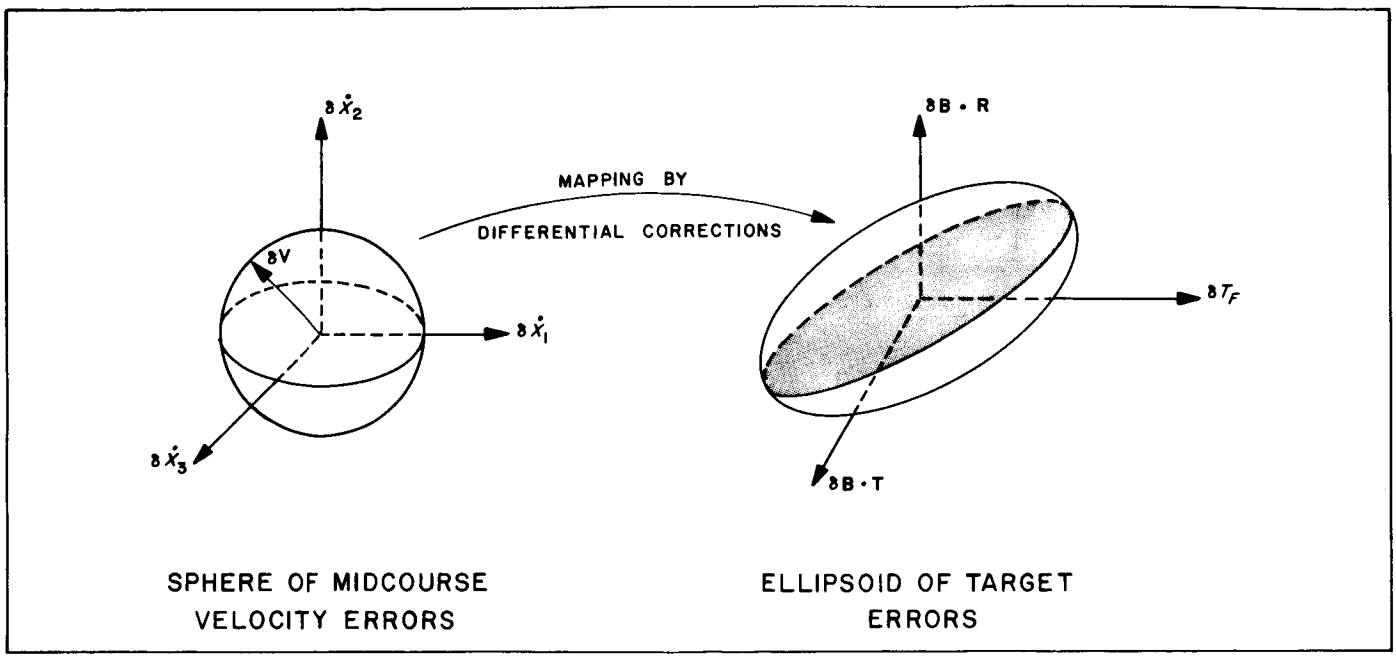

Fig. 7. The mapping of mid-course execution error

$$K = \begin{bmatrix} \dfrac{\partial \mathbf{B}\cdot\mathbf{T}}{\partial \Phi_S} & \dfrac{\partial \mathbf{B}\cdot\mathbf{T}}{\partial \Theta_S} & \dfrac{\partial \mathbf{B}\cdot\mathbf{T}}{\partial C_3} \\ \dfrac{\partial \mathbf{B}\cdot\mathbf{R}}{\partial \Phi_S} & \dfrac{\partial \mathbf{B}\cdot\mathbf{R}}{\partial \Theta_S} & \dfrac{\partial \mathbf{B}\cdot\mathbf{R}}{\partial C_3} \\ \dfrac{\partial T_F}{\partial \Phi_S} & \dfrac{\partial T_F}{\partial \Theta_S} & \dfrac{\partial T_F}{\partial C_3} \end{bmatrix} \tag{45}$$

Now define a Cartesian coordinate system X_1, X_2, X_3 such that

$$\left.\begin{aligned} \delta\dot{X}_1 &= V_{hL}\delta\Phi_S \\ \delta\dot{X}_2 &= -\,(V_{hL}\cos\Phi_S)\,\delta\Theta_S \\ \delta\dot{X}_3 &= \delta V_{hL} = \frac{\delta C_3}{2V_{hL}} \end{aligned}\right\} \tag{46}$$

Then a new matrix F can be formed,

$$F = \begin{bmatrix} \dfrac{\partial \mathbf{B}\cdot\mathbf{T}}{\partial \dot{X}_1} & \dfrac{\partial \mathbf{B}\cdot\mathbf{T}}{\partial \dot{X}_2} & \dfrac{\partial \mathbf{B}\cdot\mathbf{T}}{\partial \dot{X}_3} \\ \dfrac{\partial \mathbf{B}\cdot\mathbf{R}}{\partial \dot{X}_1} & \dfrac{\partial \mathbf{B}\cdot\mathbf{R}}{\partial \dot{X}_2} & \dfrac{\partial \mathbf{B}\cdot\mathbf{R}}{\partial \dot{X}_3} \\ \dfrac{\partial T_F}{\partial \dot{X}_1} & \dfrac{\partial T_F}{\partial \dot{X}_2} & \dfrac{\partial T_F}{\partial \dot{X}_3} \end{bmatrix} \tag{47}$$

where

$$\left.\begin{aligned} \frac{\partial \mathbf{B}\cdot\mathbf{T}}{\partial \dot{X}_1} &= \frac{1}{V_{hL}}\frac{\partial \mathbf{B}\cdot\mathbf{T}}{\partial \Phi_S} \\ \frac{\partial \mathbf{B}\cdot\mathbf{T}}{\partial \dot{X}_2} &= \frac{-1}{V_{hL}\cos\Phi_S}\frac{\partial \mathbf{B}\cdot\mathbf{T}}{\partial \Theta_S} \\ \frac{\partial \mathbf{B}\cdot\mathbf{T}}{\partial \dot{X}_3} &= 2V_{hL}\frac{\partial \mathbf{B}\cdot\mathbf{T}}{\partial C_3} \\ \frac{\partial \mathbf{B}\cdot\mathbf{R}}{\partial \dot{X}_1} &= \frac{1}{V_{hL}}\frac{\partial \mathbf{B}\cdot\mathbf{R}}{\partial \Phi_S} \\ \frac{\partial \mathbf{B}\cdot\mathbf{R}}{\partial \dot{X}_2} &= \frac{-1}{V_{hL}\cos\Phi_S}\frac{\partial \mathbf{B}\cdot\mathbf{R}}{\partial \Theta_S} \\ \frac{\partial \mathbf{B}\cdot\mathbf{R}}{\partial \dot{X}_3} &= 2V_{hL}\frac{\partial \mathbf{B}\cdot\mathbf{R}}{\partial C_3} \\ \frac{\partial T_F}{\partial \dot{X}_1} &= \frac{1}{V_{hL}}\frac{\partial T_F}{\partial \Phi_S} \\ \frac{\partial T_F}{\partial \dot{X}_2} &= \frac{-1}{V_{hL}\cos\Phi_S}\frac{\partial T_F}{\partial \Theta_S} \\ \frac{\partial T_F}{\partial \dot{X}_3} &= 2V_{hL}\frac{\partial T_F}{\partial C_3} \end{aligned}\right\} \tag{48}$$

Let the spherical distribution of midcourse velocity errors be described in the X_1, X_2, X_3 system as

$$\text{statistical expectation } \left[\delta \dot{X}_1^2 + \delta \dot{X}_2^2 + \delta \dot{X}_3^2\right] = 3\sigma_v^2 \tag{49}$$

where σ_v will be taken equal to 0.1 meters/sec. The resultant one-sigma ellipsoid of target errors is described by the quadratic form,

$$\delta \mathbf{M}\, \Lambda^{-1}\, \delta \mathbf{M}^T = 1 \tag{50}$$

where

$$\Lambda = \sigma_v^2 F F^T = \begin{bmatrix} \lambda_{11} & \lambda_{12} & \lambda_{13} \\ & \lambda_{22} & \lambda_{23} \\ \text{symmetric} & & \lambda_{33} \end{bmatrix} \tag{51}$$

and

$$\delta \mathbf{M} = (\delta \mathbf{B} \cdot \mathbf{T}, \delta \mathbf{B} \cdot \mathbf{R}, \delta T_F)$$

The elements of the Λ matrix are:

$$\left.\begin{aligned}
\lambda_{11} &= \sigma_v^2\left[\frac{1}{C_3}\left(\frac{\partial \mathbf{B}\cdot\mathbf{T}}{\partial \Phi_S}\right)^2 + \frac{1}{C_3\cos^2\Phi_S}\left(\frac{\partial \mathbf{B}\cdot\mathbf{T}}{\partial \Theta_S}\right)^2 + 4C_3\left(\frac{\partial \mathbf{B}\cdot\mathbf{T}}{\partial C_3}\right)^2\right] \\
\lambda_{12} &= \sigma_v^2\left[\frac{1}{C_3}\left(\frac{\partial \mathbf{B}\cdot\mathbf{T}}{\partial \Phi_S}\right)\left(\frac{\partial \mathbf{B}\cdot\mathbf{R}}{\partial \Phi_S}\right) + \frac{1}{C_3\cos^2\Phi_S}\left(\frac{\partial \mathbf{B}\cdot\mathbf{T}}{\partial \Theta_S}\right)\times\left(\frac{\partial \mathbf{B}\cdot\mathbf{R}}{\partial \Theta_S}\right) + 4C_3\left(\frac{\partial \mathbf{B}\cdot\mathbf{T}}{\partial C_3}\right)\left(\frac{\partial \mathbf{B}\cdot\mathbf{R}}{\partial C_3}\right)\right] \\
\lambda_{13} &= \sigma_v^2\left[\frac{1}{C_3}\left(\frac{\partial \mathbf{B}\cdot\mathbf{T}}{\partial \Phi_S}\right)\left(\frac{\partial T_F}{\partial \Phi_S}\right) + \frac{1}{C_3\cos^2\Phi_S}\left(\frac{\partial \mathbf{B}\cdot\mathbf{T}}{\partial \Theta_S}\right)\left(\frac{\partial T_F}{\partial \Theta_S}\right) + 4C_3\left(\frac{\partial \mathbf{B}\cdot\mathbf{T}}{\partial C_3}\right)\left(\frac{\partial T_F}{\partial C_3}\right)\right] \\
\lambda_{22} &= \sigma_v^2\left[\frac{1}{C_3}\left(\frac{\partial \mathbf{B}\cdot\mathbf{R}}{\partial \Phi_S}\right)^2 + \frac{1}{C_3\cos^2\Phi_S}\left(\frac{\partial \mathbf{B}\cdot\mathbf{R}}{\partial \Theta_S}\right)^2 + 4C_3\left(\frac{\partial \mathbf{B}\cdot\mathbf{R}}{\partial C_3}\right)^2\right] \\
\lambda_{23} &= \sigma_v^2\left[\frac{1}{C_3}\left(\frac{\partial \mathbf{B}\cdot\mathbf{R}}{\partial \Phi_S}\right)\left(\frac{\partial T_F}{\partial \Phi_S}\right) + \frac{1}{C_3\cos^2\Phi_S}\left(\frac{\partial \mathbf{B}\cdot\mathbf{R}}{\partial \Theta_S}\right)\left(\frac{\partial T_F}{\partial \Theta_S}\right) + 4C_3\left(\frac{\partial \mathbf{B}\cdot\mathbf{R}}{\partial C_3}\right)\left(\frac{\partial T_F}{\partial C_3}\right)\right] \\
\lambda_{33} &= \sigma_v^2\left[\frac{1}{C_3}\left(\frac{\partial T_F}{\partial \Phi_S}\right)^2 + \frac{1}{C_3\cos^2\Phi_S}\left(\frac{\partial T_F}{\partial \Theta_S}\right)^2 + 4C_3\left(\frac{\partial T_F}{\partial C_3}\right)^2\right]
\end{aligned}\right\} \tag{52}$$

The quantities in the Λ matrix can be interpreted as standard deviations (sigmas) and correlation coefficients (rhos) according to

$$\left.\begin{aligned}
\sigma_T &= (\lambda_{11})^{1/2} \\
\sigma_R &= (\lambda_{22})^{1/2} \\
\sigma_F &= (\lambda_{33})^{1/2} \\
\rho_{RT} &= \frac{\lambda_{12}}{(\lambda_{11}\lambda_{22})^{1/2}} \\
\rho_{TF} &= \frac{\lambda_{13}}{(\lambda_{11}\lambda_{33})^{1/2}} \\
\rho_{RF} &= \frac{\lambda_{23}}{(\lambda_{22}\lambda_{33})^{1/2}}
\end{aligned}\right\} \tag{53}$$

Then the Λ matrix becomes

$$\Lambda = \begin{bmatrix} \sigma_T^2 & \rho_{RT}\sigma_R\sigma_T & \rho_{TF}\sigma_F\sigma_T \\ & \sigma_R^2 & \rho_{RF}\sigma_R\sigma_F \\ \text{symmetric} & & \sigma_F^2 \end{bmatrix} \tag{54}$$

It is often of interest when describing only miss components to consider

$$\sigma_B = (\sigma_R^2 + \sigma_T^2)^{1/2} \tag{55}$$

and to diagonalize the upper 2×2 portion of the Λ (the miss component elements) to get

$$\Lambda^* = L\Lambda L^T = \begin{bmatrix} \sigma_1^2 & 0 & \rho_{13}\sigma_1\sigma_3 \\ & \sigma_2^2 & \rho_{23}\sigma_2\sigma_3 \\ \text{symmetric} & & \sigma_3^2 \end{bmatrix} \tag{56}$$

where the matrix L is given by

$$L = \begin{bmatrix} \cos\theta & \sin\theta & 0 \\ -\sin\theta & \cos\theta & 0 \\ 0 & 0 & 1 \end{bmatrix} \tag{57}$$

The angle θ is positive when turned counterclockwise from the **T** axis, and has been chosen such that $\sigma_1 \geqq \sigma_2$. This is accomplished by

$$\theta = \frac{1}{2}\tan^{-1}\left[\frac{2\rho_{RT}}{\left(\frac{\sigma_T}{\sigma_R}\right) - \left(\frac{\sigma_R}{\sigma_T}\right)}\right] \tag{58}$$

where θ is in first quadrant if ρ_{RT} is positive and θ is in second quadrant if ρ_{RT} is negative. Notice that $\sigma_3 = \sigma_F$. The two-dimensional error ellipse described by σ_1, σ_2, and θ is the projection of all points of the three-dimensional ellipsoid of position errors (discussed in Section IIE) onto the **T–R** plane, as shown in Fig. 8.

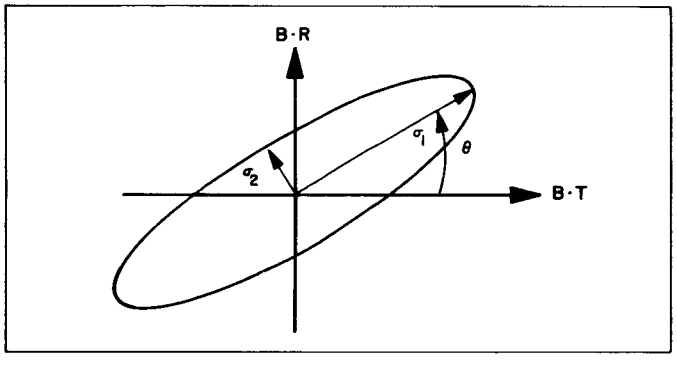

Fig. 8. Projection of three-dimensional error ellipsoid on the T-R plane

E. Orbit Determination Accuracy

In this section the analytic model used for describing orbit determination accuracy (tracking error) for interplanetary trajectories is discussed, and the factors upon which the tracking error depends are reviewed. The dominant error sources are defined for the easterly launchings from Cape Kennedy using tracking coverage supplied by NASA's Deep Space Instrumentation Facility (DSIF). Probable generalization to other situations is suggested. Finally, the method of describing target errors is presented along with all formulae relating the tracking errors to the target error parameters chosen.

1. Method of Describing Orbit Determination Accuracy

As discussed in Section IID, the uncertainties in our knowledge of an interplanetary trajectory are well described in terms of the direction and magnitude of the geocentric hyperbolic-excess velocity vector, $\mathbf{V}_{hL}$. Figure 9 defines the right-handed Cartesian coordinate system we have adopted for describing uncertainties in $\mathbf{V}_{hL}$. The X_3 axis is along $\mathbf{V}_{hL}$; the X_1 axis is in the direction of a positive differential change in asymptote declination Φ_S; and the X_2 axis completes the system.

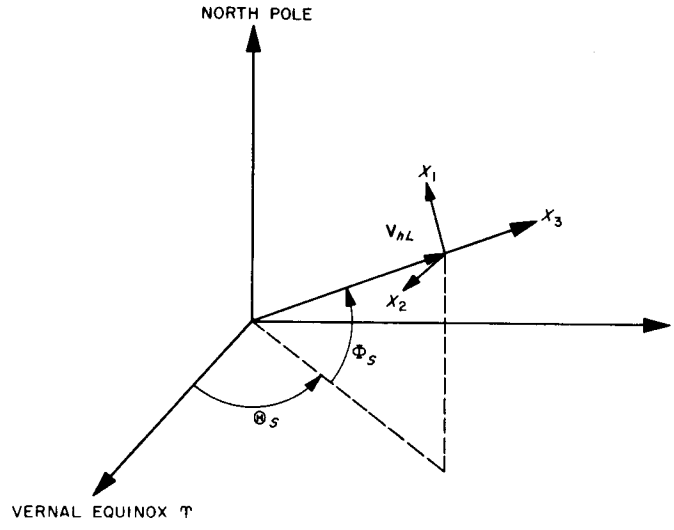

Fig. 9. Orientation of the X_i Cartesian coordinate system to describe uncertainties in the hyperbolic-excess velocity vector $\mathbf{V}_{hL}$

Let $\dot{\mathbf{X}}$ represent the vector of velocity *errors* in the X_i system just described; $\dot{\mathbf{X}} = (\delta\dot{X}_1, \delta\dot{X}_2, \delta\dot{X}_3)^T$, where T indicates the transpose. The average of any function of $\dot{\mathbf{X}}$, $f(\dot{\mathbf{X}})$, over an *ensemble* of randomly generated tracking runs may assist in describing our statistical knowledge of $\dot{\mathbf{X}}$ based on tracking noise, station location, and physical constant uncertainties. The ensemble average is usually written $Ef(\dot{\mathbf{X}})$ or as $\widetilde{f(\dot{\mathbf{X}})}$. When $\dot{\mathbf{X}}$ has a Gaussian (normal) probability density function, the distribution can be described completely by specifying $E\dot{\mathbf{X}}$ and $E[(\dot{\mathbf{X}} - \widetilde{\dot{\mathbf{X}}})(\dot{\mathbf{X}} - \widetilde{\dot{\mathbf{X}}})^T]$, the mean and covariance of $\dot{\mathbf{X}}$, respectively.

When all parameters influencing our knowledge of $\dot{\mathbf{X}}$ have been considered, $E\dot{\mathbf{X}}$ should be zero and then the description of our uncertainties in $\dot{\mathbf{X}}$ can be adequately given by Covar $\dot{\mathbf{X}}$, defined above. For convenience, the symbol $\Lambda_{\dot{\mathbf{X}}}$, for Covar $\dot{\mathbf{X}}$, is introduced.

$$\Lambda_{\dot{\mathbf{X}}} = \text{Covar}\,\dot{\mathbf{X}} = E\left[(\dot{\mathbf{X}} - \widetilde{\dot{\mathbf{X}}})(\dot{\mathbf{X}} - \widetilde{\dot{\mathbf{X}}})^T\right] \tag{59}$$

Note that

$$\Lambda_{\dot{X}} = \begin{pmatrix} \overline{\delta\dot{X}_1\delta\dot{X}_1} & \overline{\delta\dot{X}_1\delta\dot{X}_2} & \overline{\delta\dot{X}_1\delta\dot{X}_3} \\ \overline{\delta\dot{X}_2\delta\dot{X}_1} & \overline{\delta\dot{X}_2\delta\dot{X}_2} & \overline{\delta\dot{X}_2\delta\dot{X}_3} \\ \overline{\delta\dot{X}_3\delta\dot{X}_1} & \overline{\delta\dot{X}_3\delta\dot{X}_2} & \overline{\delta\dot{X}_3\delta\dot{X}_3} \end{pmatrix} \tag{60}$$

is a 3×3 real symmetric matrix. The diagonal terms are the variances of the three components, and the off-diagonal terms measure the correlation between the three components.

Before describing how $\Lambda_{\dot{X}}$ has been "mapped" into target error uncertainties, a discussion is given of the dependence of $\Lambda_{\dot{X}}$ upon the relevant factors describing near-Earth tracking as well as the typical errors assumed in preparing the estimates given in this report.

2. Accuracy of Near-Earth Tracking

By expressing the accuracy of near-Earth tracking in terms of $\dot{\mathbf{X}}$ and its associated covariance $\Lambda_{\dot{X}}$, the dependence upon almost all trajectory parameters has been eliminated. The remaining relevant trajectory parameters are listed in Table 1.

Table 1. Trajectory parameters influencing tracking accuracy

1. Launch site	
2. Launch azimuth Σ_L	Depends on launch time.
3. Injection region	Depends on time in parking orbit; short or long coast less than 1 revolution is current practice.
4. Declination of $\mathbf{V}_{hL}$, Φ_S	Depends on target position at arrival date and injection energy, C_3.
5. Magnitude of $\mathbf{V}_{hL} = V_{hL} = (C_3)^{1/2}$	

Note the limited number of trajectory parameters on which $\Lambda_{\dot{X}}$ depends. Table 2 summarizes the key tracking station parameters which influence accuracy in the geocentric tracking phase.

The first three factors listed in Table 2 define the tracking configuration, whereas the last three are station performance factors. Usually, tracking accuracy studies are carried out with the tracking configuration relatively fixed, and the influence of the station performance factors are determined.

The final source of tracking error is uncertainty in physical constants. The influence of GM–Earth errors is somewhat smaller than the above-mentioned errors and should be reduced to negligible contribution in the next two years. Sections IIC and IIIC describe how the uncertainty in the astronomical unit affects the target error; this error

Table 2. Tracking station parameters influencing tracking accuracy

1. Station locations	A spread of latitudes is very desirable.
2. Total tracking time	
3. Tracking data types	Range R, range rate $\dot{R}$, and angles are most commonly taken.
4. Delay in acquiring first data	Delay is measured from the injection region as well as station acquisition delays.
5. Tracking data accuracies	Expressed in terms of equivalent uncorrelated noise at a given sampling rate.
6. Uncertainty in tracking station locations	Important when high data accuracies are available. Longitude errors usually are most important.

can be important for very long flights, but should also be reduced to a negligible contribution in the next two years. Errors in the target's mass cause minor variations in flight time T_F and negligible effect on **B**. The last important target error source currently recognized is the uncertainty in the effect of the standard solar radiation pressure on spacecraft trajectory. The source of uncertainty is that effective reflecting area (largely solar panels) is not perfectly known. Techniques for the accurate measurement of this quantity are currently under development. Our studies show that unless this error is held below 5% it will be the dominant error source on many of our flights. Sections IIC and IIIC describe the calculation of the standard solar radiation pressure on a typical spacecraft deriving electrical power from the Sun.

The tracking accuracies reported here are representative of those available from tracking with the DSIF stations in South Africa, Australia, and the United States. Launch azimuths between 90 and 114 deg east of north were considered. Data accuracies of 0.02 m/sec in $\dot{R}$ and 0.05 deg in angle sampled every 10 minutes were assumed; no range measurements were assumed. Station location errors were assumed to be uncorrelated with standard deviations of 0.001 deg in latitude, 0.0005 deg in longitude, and 30 meters in radius. Each station was allowed 10 minutes to acquire the spacecraft transponder, and tracking was simulated in the first 24 hours so that at least one pass was available to each station. The transfer of transmitting assignment from one station to another (simultaneous transmission was not allowed) followed a pattern which has been found to be near-optimum.

The $\Lambda_{\dot{X}}$ matrix used in these calculations was assumed to be independent of the trajectory parameters listed in Table 1. This approximation is good for the range of energies and asymptotic declinations considered to be

most feasible. In the future these approximations will be refined as necessary. The $\Lambda_{\dot{X}}$ used for orbit determination accuracy in this report is given in Section IIIE. The target accuracies calculated here are typical for any reasonable multistation tracking configuration, with the data types and accuracies corresponding to this conservative representation of DSIF capabilities.

3. Calculation of Target Errors

The representation of tracking accuracy in the geocentric phase in terms of $\Lambda_{\dot{X}}$, the covariance of the $\mathbf{V}_{hL}$ in a particular rectangular coordinate system, was developed earlier in this section. In order to express the effect of these uncertainties in $\mathbf{V}_{hL}$ in terms of target error, two steps must be performed. First, a set of coordinates $\mathbf{M}_1$ at the target planet for expressing the errors ($\mathbf{M}_1$ cannot exceed 3 dimensions) must be chosen. (A convenient set with desirable linearity properties is the **T–R–S** system defined previously.) The matrix U_1, which maps $\dot{\mathbf{X}}$ to the desired $\mathbf{M}_1$, is then determined.

$$\mathbf{M}_1 = U_1\dot{\mathbf{X}} = \begin{pmatrix} \delta\mathbf{B}\cdot\mathbf{T} \\ \delta\mathbf{B}\cdot\mathbf{R} \\ \delta S \end{pmatrix} \tag{61}$$

The covariance of $\mathbf{M}_1$ is given by

$$\text{Covar}\,[\mathbf{M}_1] = \overline{\mathbf{M}_1\mathbf{M}_1^T} = U_1\Lambda_{\dot{X}}U_1^T = \Lambda_{\mathbf{M}_1} \tag{62}$$

The determination of U_1 for the coordinates chosen follows the lines of Section IID. It is presumed that the K-matrix is given, where

$$K = \begin{bmatrix} \dfrac{\partial\mathbf{B}\cdot\mathbf{T}}{\partial\Phi_S} & \dfrac{\partial\mathbf{B}\cdot\mathbf{T}}{\partial\Theta_S} & \dfrac{\partial\mathbf{B}\cdot\mathbf{T}}{\partial C_3} \\ \dfrac{\partial\mathbf{B}\cdot\mathbf{R}}{\partial\Phi_S} & \dfrac{\partial\mathbf{B}\cdot\mathbf{R}}{\partial\Theta_S} & \dfrac{\partial\mathbf{B}\cdot\mathbf{R}}{\partial C_3} \\ \dfrac{\partial T_F}{\partial\Phi_S} & \dfrac{\partial T_F}{\partial\Theta_S} & \dfrac{\partial T_F}{\partial C_3} \end{bmatrix} \tag{45}$$

By postmultiplying K by

$$A = \begin{bmatrix} \dfrac{1}{V_{hL}} & 0 & 0 \\ 0 & \dfrac{-1}{V_{hL}\cos\Phi_S} & 0 \\ 0 & 0 & 2V_{hL} \end{bmatrix} \tag{63}$$

the F matrix is obtained.

$$F = KA \tag{47}$$

The F matrix must now be adjusted to transform into the **T–R–S** coordinates used for $\mathbf{M}_1$. This transformation B is simply

$$B = \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & -V_{hp} \end{bmatrix} \tag{64}$$

since $\delta S = -V_{hp}\delta T_L$. Thus our U_1 matrix is given by

$$U_1 = B\,(KA) = BF \tag{65}$$

Now the mapping given in Eq. (62) to obtain $\Lambda_{\mathbf{M}_1}$ is applied. Since all of the coordinates of $\mathbf{M}_1$ have the same dimensions (length squared), the one-sigma ellipsoid described by the quadratic form

$$\delta\mathbf{M}_1\,\Lambda_{\mathbf{M}_1}^{-1}\,\delta\mathbf{M}_1^T = 1 \tag{66}$$

has physical significance. The three principal axes of this ellipsoid are the square roots of the 3-eigenvalues of the $\Lambda_{\mathbf{M}_1}$ matrix. The formulas used are standard and are not reproduced here. The projection of the three-dimensional ellipsoid on to the **T–R** plane is an ellipse. Its major and minor semiaxes and orientation of the major axis are calculated by the same procedure used in Section IID. It is often convenient to write $\Lambda_{\mathbf{M}_1}$ in an alternate form:

$$\Lambda_{\mathbf{M}_1} = \begin{bmatrix} \sigma_T^2 & \rho_{RT}\sigma_T\sigma_R & \rho_{TS}\sigma_T\sigma_S \\ \rho_{RT}\sigma_R\sigma_T & \sigma_R^2 & \rho_{RS}\sigma_R\sigma_S \\ \rho_{TS}\sigma_S\sigma_T & \rho_{RS}\sigma_S\sigma_R & \sigma_S^2 \end{bmatrix} \tag{67}$$

It can be seen that $\Lambda_{\mathbf{M}_1}$ is completely described by σ_T, σ_R, σ_S, ρ_{TS}, ρ_{RS}, ρ_{TR}, because of its symmetry.

III. EXPLANATION OF TRAJECTORY TABLES

Tabular listings of pertinent quantities of the heliocentric and planetocentric trajectories, differential corrections, guidance, and orbit determination parameters are given at 1-day launch date intervals and 2-day flight time intervals over the selected launch period. The launch period is selected to encompass the minimum energy transfer dates obtained from Ref. 7 and 8. A summary of the characteristics of these trajectories is given in Ref. 7.

Each trajectory begins with a header giving launch date, flight time (in days), and arrival date. All the heliocentric transfer trajectories are calculated assuming launch into the heliocentric orbit at 0 hours of the launch date and arrival at 0 hours of the arrival date. Later, however, when the launch-planet ascent trajectories are computed, the actual launch times during the launch day for each launch azimuth are given.

Each page lists four trajectories, each of which is divided into five basic print groups: HELIOCENTRIC CONIC, PLANETOCENTRIC CONIC, DIFFERENTIAL CORRECTIONS, MID-COURSE EXECUTION ACCURACY, and ORBIT DETERMINATION ACCURACY. Each quantity is assigned an identifying alphabetic symbol of no more than three letters. The definitions of the symbols and quantities they represent are given below. All pertinent quantities are referenced to the mean equinox and equator, or ecliptic, of *launch* date.

A. Heliocentric Conic Group

The HELIOCENTRIC CONIC group gives the characteristics of the heliocentric transfer ellipse, such as the position and velocity vectors at launch and arrival, some orbital elements, and other quantities of engineering interest. The printout array is as follows:

HELIOCENTRIC CONIC DISTANCE

RL LAL LOL VL GAL AZL HCA SMA ECC INC V1

RP LAP LOP VP GAP AZP TAL TAP RCA APO V2

RC GL GP ZAL ZAP ETS ZAE ETE ZAC ETC CLP

After the words HELIOCENTRIC CONIC, the heliocentric arc DISTANCE traveled by the spacecraft from launch to arrival is printed. The quantities are defined as follows (all angles are in deg; distances are in millions of km; speeds are in km/sec):

Line 1

RL, $R_L = |\mathbf{R}_L|$ — the heliocentric radius of the launch planet at 0 hours of the launch date.

LAL, β_L — the celestial latitude of the launch planet at 0 hours of the launch date.

LOL, λ_L — the celestial longitude of the launch planet at 0 hours of the launch date.

VL, $V_L = |\mathbf{V}_L|$ — the heliocentric speed of the probe at 0 hours of the launch date.

GAL, Γ_L — the path angle of the probe at 0 hours of the launch date, i.e., the complement of the angle between the position and velocity vectors, $\mathbf{R}_L$ and $\mathbf{V}_L$, defined by

$$\sin \Gamma_L = \frac{\mathbf{R}_L \cdot \mathbf{V}_L}{R_L V_L} \qquad -\frac{\pi}{2} \leq \Gamma_L \leq \frac{\pi}{2}$$

AZL, Σ_L — the azimuth angle of the probe at 0 hours of the launch date, i.e., the angle, measured in a plane perpendicular to the radius vector $\mathbf{R}_L$, between the projection of the ecliptic north and the projection of the velocity vector $\mathbf{V}_L$ on the plane perpendicular to $\mathbf{R}_L$, defined by

$$\cos \Sigma_L = \frac{\mathbf{V}_L \cdot \mathbf{\Psi}^1}{V_L \cos \Gamma_L} \qquad 0 \leq \Sigma_L \leq 2\pi$$

$$\sin \Sigma_L = \frac{(\mathbf{R}_L \times \mathbf{V}_L) \cdot \mathbf{\Psi}^1}{|\mathbf{R}_L \times \mathbf{V}_L|}$$

where $\mathbf{\Psi}^1 = (\mathbf{K}' - \mathbf{R}_L^1 \sin \beta_L) \sec \beta_L$, where the superscript 1 denotes a unit vector.

HCA, Ψ — the heliocentric central angle, or angle between the position vector $\mathbf{R}_L$, of the launch planet at 0 hours of the launch date and the position vector $\mathbf{R}_p$, of the target planet at 0 hours of the arrival date. This angle is defined by Eq. (3) and (4) and illustrated in Fig. 1.

SMA, a — the semimajor axis of the heliocentric transfer ellipse.

ECC, e — the eccentricity of the heliocentric transfer ellipse.

INC, i — the inclination of the heliocentric transfer ellipse.

V1, $V_1 = |\mathbf{V}_1|$ — the heliocentric speed of the launch planet at 0 hours of the launch date.

Line 2

RP, $R_p = |\mathbf{R}_p|$ — the heliocentric radius of the target planet at 0 hours of the arrival date.

LAP, β_p — the celestial latitude of the target planet at 0 hours of the arrival date.

LOP, λ_p — the celestial longitude of the target planet at 0 hours of the arrival date.

VP, $V_p = |\mathbf{V}_p|$ — the heliocentric speed of the probe at 0 hours of the arrival date.

GAP, Γ_p — the path angle of the probe at 0 hours of the arrival date, defined the same as Γ_L except that $\mathbf{R}_p$ and $\mathbf{V}_p$ are substituted for $\mathbf{R}_L$ and $\mathbf{V}_L$.

AZP, Σ_p — the azimuth angle of the probe at 0 hours of the arrival date, defined the same as Σ_L except that $\mathbf{R}_p$ and $\mathbf{V}_p$ are substituted for $\mathbf{R}_L$ and $\mathbf{V}_L$.

TAL, v_L — the true anomaly of the probe in the heliocentric transfer ellipse at 0 hours of the launch date.

TAP, v_p — the true anomaly of the probe in the heliocentric transfer ellipse at 0 hours of the arrival date.

RCA, R_{CA} — the perihelion distance of the heliocentric transfer ellipse. This distance is printed even though the probe may not transit perihelion.

APO, R_A — the aphelion distance of the heliocentric transfer ellipse. This distance is printed even though the probe may not transit aphelion.

V2, $V_2 = |\mathbf{V}_2|$ — the heliocentric speed of the target planet at 0 hours of the arrival date.

Line 3

RC, R_C — the communication distance, or distance between the launch and target planets at 0 hours of *the arrival date.*

GL, γ_L — the angle between the launch hyperbolic-excess velocity vector $\mathbf{V}_{hL}$ and its projection on the orbital plane of the launch planet, defined by

$$\sin \gamma_L = \frac{\mathbf{W}_1 \cdot \mathbf{V}_{hL}}{V_{hL}} \qquad -\frac{\pi}{2} \leq \gamma_L \leq \frac{\pi}{2}$$

where $\mathbf{W}_1$ is a unit normal to the launch planet's orbital plane. This angle is useful in describing the direction in which the probe leaves the launch planet.

GP, γ_p — the angle between the incoming arrival hyperbolic-excess velocity vector $\mathbf{V}_{hp}$, and its projection on the target planet's orbital plane, defined by

$$\sin \gamma_p = \frac{\mathbf{W}_2 \cdot \mathbf{V}_{hp}}{V_{hp}} \qquad -\frac{\pi}{2} \leq \gamma_p \leq \frac{\pi}{2}$$

where $\mathbf{W}_2$ is a unit normal to the target planet's orbital plane. This angle is useful in determining whether the probe is approaching from above or below the target planet. If γ_p is positive, the probe approaches from below —if negative, from above.

ZAL, ζ_L — the angle between the outgoing launch asymptote (or hyperbolic-excess velocity vector) and the launch *heliocentric* radius vector $\mathbf{R}_L$ at launch time. This is the Sun–launch-planet–probe angle and is a good approximation to the launch-planet–probe–Sun angle as the probe leaves the launch planet. It is an important quantity in the design of attitude control systems which use the Sun and launch planet as optical references. The quantity ζ_L is defined as follows:

$$\cos \zeta_L = \frac{\mathbf{V}_{hL} \cdot \mathbf{R}_L^1}{V_{hL}} \qquad 0 \leq \zeta_L \leq \pi$$

The next six quantities, all angles, have the same general definition. They are important in the design of the near-target trajectory and are used in determining the aiming point for interplanetary flyby trajectories. Consider the target-centered geometry of Fig. 10.

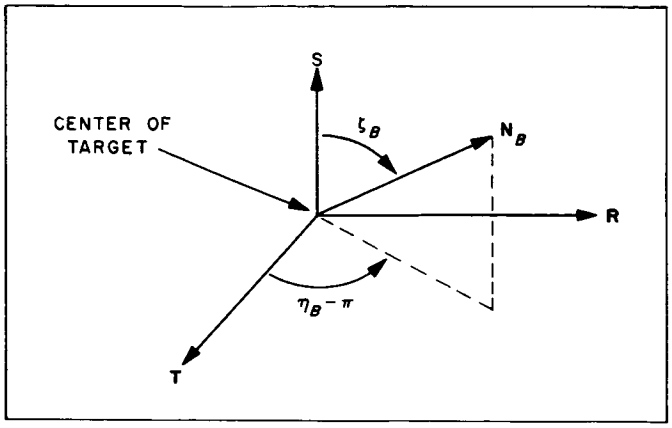

Fig. 10. Generalized geometry for aiming point angles

In this diagram, the reference coordinate system is the same target **R**, **S**, **T** system defined in Section IIC. A unit vector $\mathbf{N}_B$ (subscript B for body) is directed from the target center to another celestial body. The angular quantity ζ_B is the angle subtended at the target center between the incoming asymptote **S** and the target–celestial body line $\mathbf{N}_B$. Thus

$$\cos \zeta_B = \mathbf{S} \cdot \mathbf{N}_B = \frac{\mathbf{V}_{hp} \cdot \mathbf{N}_B}{V_{hp}} \qquad 0 \leq \zeta_B \leq \pi$$

since

$$\mathbf{S} = \frac{\mathbf{V}_{hp}}{V_{hp}}$$

The angle η_B is the supplement of the angle between the **T** direction and the projection of $\mathbf{N}_B$ on the **R** − **T** plane, defined by

$$\sin \eta_B = \frac{-\mathbf{R} \cdot \mathbf{N}_B}{\sin \zeta_B} \qquad 0 \leq \eta_B \leq 2\pi$$

$$\cos \eta_B = \frac{-\mathbf{T} \cdot \mathbf{N}_B}{\sin \zeta_B}$$

These quantities are computed for three celestial bodies: the Sun (ζ_S and η_S), the Earth (ζ_E and η_E), and the star Canopus (ζ_C and η_C). Thus,

ZAP, ζ_S (or ζ_p) — the Sun–target–probe angle. Actually, this angle should be symbolized ZAS, but, for historical reasons, is not. This angle is useful in that it indicates the direction of the probe's approach to the target. If $\zeta_S < \pi/2$, the probe approaches from the target planet's dark side. If $\zeta_S > \pi/2$, it approaches from the light side.

ETS, η_S — defined as above.

ZAE, ζ_E — the Earth–target–probe angle. This angle is useful in locating the Earth as the probe approaches the target.

ETE, η_E — defined as above.

ZAC, ζ_C — the Canopus–target–probe angle.

ETC, η_C — defined as above.

CLP, σ_p — the angle between the projection of the incoming asymptote **S** on the target planet's orbital plane and the target–Sun line at arrival time, defined by

$$\cos \sigma_p = -\mathbf{R}_p^1 \cdot \mathbf{S}_{pr} \qquad -\pi \leq \sigma_p \leq \pi$$

$$\sin \sigma_p = -\mathbf{S}_{pr} \cdot (\mathbf{W}_2 \times \mathbf{R}_p^1)$$

where $\mathbf{S}_{pr}$ is the projection of **S** on the target's orbital plane given by

$$\mathbf{S}_{pr} = \frac{\mathbf{S} - \mathbf{W}_2 (\mathbf{S} \cdot \mathbf{W}_2)}{|\mathbf{S} - \mathbf{W}_2 (\mathbf{S} \cdot \mathbf{W}_2)|}$$

Recall that $\mathbf{W}_2$ is the unit normal vector to the target's orbital plane. This angle is illustrated in Fig. 11.

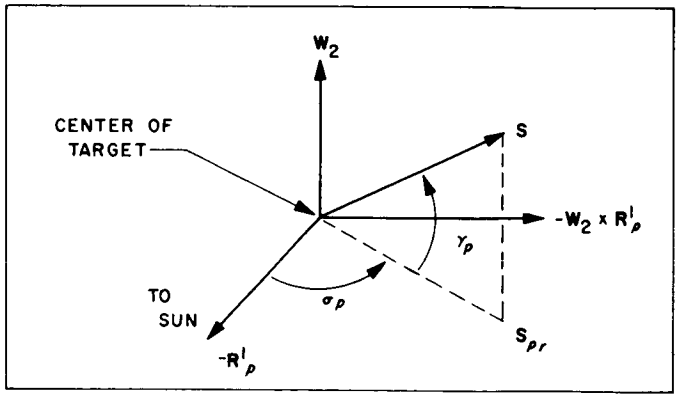

Fig. 11. Definition of σ_p and γ_p

B. Planetocentric Conic Group

The second group, PLANETOCENTRIC CONIC, gives the characteristics of primarily the launch-planet ascent trajectories, but also includes the hyperbolic-excess vector at the target. Injection conditions are given for three launch azimuths, assuming both short and long parking orbits. As explained in Ref. 6, there may be two launch times per day for each launch azimuth, resulting in a short and long parking orbit. The injection conditions for each set are given in geocentric space-fixed spherical coordinates and, by assuming a 100-nm parking orbit altitude and typical boost vehicle trajectory characteristics, the longitude of injection is calculated, along with the latitude and longitude of ignition of final burn out of the parking orbit.

A special case may arise when the declination of the outgoing asymptote of the escape hyperbola is greater than the launch site latitude (Cape Kennedy). In this case, owing to geometrical restrictions, it may not be possible to fire in a symmetrical band of azimuths about due east, as explained in Ref. 6. This band of restricted azimuths may eliminate part or all of the selected launch azimuths, 90, 100, and 110 deg. When this happens, only those trajectories with permissible azimuths are printed, in addition to the limiting azimuths, or the most northerly and southerly azimuths, that are possible.

The ascent trajectory profile is as shown in Fig. 12. Its characteristics are defined as follows:

Φ_1 the arc subtended at Earth's center during ascent from launch into parking orbit.

t_1 the time from launch to parking-orbit injection.

Φ_2 the arc subtended at Earth's center during final burn out of the parking orbit, to injection.

t_2 the time of final burn.

$k_{\dot{\Phi}}$ the inverse parking orbital rate, equal to $1/\dot{\Phi}_c$.

v_1 the true anomaly in the hyperbolic orbit at injection.

R_p the perifocal distance of the escape hyperbola, taken equal to the Earth-centered radius of the parking orbit.

ϕ_L the longitude of the launch site.

θ_L the latitude of the launch site.

The values of these quantities for all trajectories contained herein are:

$\Phi_1 =$ 17 deg

$t_1 =$ 500 sec

$\Phi_2 =$ 8 deg

$t_2 =$ 100 sec

$k_{\dot{\Phi}} =$ 14.689 sec/deg

$v_1 =$ 3.7 deg

$R_p =$ 6560 km

$\phi_L =$ 28.317 deg

$\theta_L =$ 279.457 deg

An inherent assumption here is that these quantities are relatively invariant with injection energy. This is a reasonable assumption and will affect the injection coordinates only slightly.

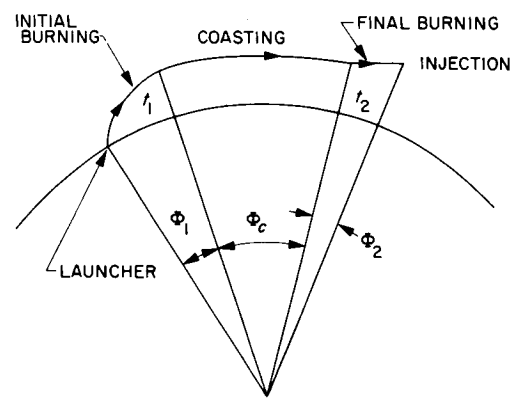

Fig. 12. Ascent trajectory profile

The print array for the PLANETOCENTRIC CONIC group is:

C3	VHL	DLA	RAL	RAD	VEL	PTH	VHP	DPA	RAP	ECC
LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG

The quantities are defined as follows (all angles are in deg; distances are in km; speeds are in km/sec, launch-injection (L-I)time and parking orbit coast time (PO CST TIM) are in sec; launch time and injection time are in hr, min, and sec, GMT):

Line 1

C3, C_3	the *vis viva* integral (Moulton), or twice the total energy per unit mass, expressed in km²/sec² and defined by $C_3 = V^2_{hL}$.
VHL, V_{hL}	the launch hyperbolic-excess speed.
DLA, Φ_S	the declination of the outgoing asymptote of the escape hyperbola defined in Eq. (18).
RAL, Θ_S	the right ascension of the outgoing asymptote of the escape hyperbola defined in Eq. (18).
RAD, $R = \|\mathbf{R}\|$	the launch-planet-centered injection radius.
VEL, $V = \|\mathbf{V}\|$	the inertial injection speed.
PTH, Γ	the injection path angle defined by $\sin\Gamma = \frac{\mathbf{V}\cdot\mathbf{R}}{VR} \qquad -\frac{\pi}{2} \leq \Gamma \leq \frac{\pi}{2}$
VHP, V_{hp}	the hyperbolic-excess speed at the target.
DPA, Φ_{Sp}	the declination of the incoming asymptote at the target. The reference coordinate system here is vernal equinox, Earth equatorial, mean of *launch* date
RAP, Θ_{Sp}	the right ascension of the incoming asymptote at the target. Same reference coordinates as for Φ_{Sp}.
ECC, e	the eccentricity of the escape hyperbola.

Line 2

LNCH AZMTH, Σ_L	the launch azimuth measured in a plane tangent to the surface of the launch planet at the launch site, positive east of true north.
LNCH TIME, T_L	the launch time. For the range of launch azimuths given herein, launch time may cross 0 hours, or midnight. In this case, the launch date may be advanced to the following day for times after midnight, or it may be retarded to the previous day for times before midnight, whichever the reader wishes.
L-I TIME, t_{LI}	the launch-to-injection time.
INJ LAT, ϕ	the injection latitude (or declination Φ).
INJ LONG, θ	the injection longitude, measured positive east of Greenwich, $0 \leq \theta \leq 2\pi$.
INJ RT ASC, Θ	the injection right ascension.
INJ AZMTH, Σ	the injection azimuth, or angle between the projection of the velocity vector **V**, on the local horizontal plane and the projection of true north on this plane, measured positive east of true north.
INJ TIME, T_I	the injection time. The same comment applies to this quantity regarding launch date as applied to the launch time. However, both times must be consistent. For example, if launch time is on the previous day, injection time may fall on the launch date shown, or it may be on the following day.
PO CST TIM, t_c	the coast time in the parking orbit, in sec.
INJ 2 LAT, ϕ_2	the latitude of the start of final burn out of the parking orbit.
INJ 2 LONG, θ_2	the longitude of the start of final burn out of the parking orbit, $0 \leq \theta_2 \leq 2\pi$.

The quantities T_I, R, Φ, Θ, V, Γ, Σ form a consistent set of injection conditions; i.e., they are the time and the space-fixed spherical coordinates which can be used to initialize an integrating trajectory program.

C. Differential Corrections Group

The DIFFERENTIAL CORRECTIONS group is comprised of sixteen error coefficients relating variations in

injection energy C_3, declination Φ_S, and right ascension Θ_S, of the outgoing asymptote of the escape hyperbola, the astronomical unit, and solar radiation pressure to variations in the miss components $\mathbf{B}\cdot\mathbf{T}$, $\mathbf{B}\cdot\mathbf{R}$, and the flight time. These coefficients are very useful in gaging the error sensitivity of an interplanetary trajectory. The printout array for this group is as follows:

DIFFERENTIAL CORRECTIONS

TDE	TRA	TC3	BAU
RDE	RRA	RC3	FAU
FDE	FRA	FC3	BSP
BDE	BRA	BC3	FSP

The symbols are defined as follows:

Line 1

TDE, $\frac{\partial \mathbf{B}\cdot\mathbf{T}}{\partial \Phi_S}$ the partial derivative of the **T** component of the impact parameter **B**, with respect to the declination of the launch escape asymptote Φ_S, in megakilometers/deg.

TRA, $\frac{\partial \mathbf{B}\cdot\mathbf{T}}{\partial \Theta_S}$ the partial derivative of the **T** component of the impact parameter **B**, with respect to the right ascension of the launch escape asymptote Θ_S, in megakilometers/deg.

TC3, $\frac{\partial \mathbf{B}\cdot\mathbf{T}}{\partial C_3}$ the partial derivative of the **T** component of the impact parameter **B**, with respect to the injection energy C_3, in megakilometers/km²/sec².

BAU, $\frac{\partial \mathrm{B}}{\partial au}$ the partial derivative of the magnitude of the impact parameter **B**, with respect to the astronomical unit-to-kilometer conversion factor. This derivative is dimensionless and indicates the target miss caused by an uncertainty in the value of the astronomical unit.

Line 2

RDE, $\frac{\partial \mathbf{B}\cdot\mathbf{R}}{\partial \Phi_S}$ the partial derivative of the **R** component of the impact parameter **B**, with respect to the declination of the launch escape asymptote Φ_S, in megakilometers/deg.

RRA, $\frac{\partial \mathbf{B}\cdot\mathbf{R}}{\partial \Theta_S}$ the partial derivative of the **R** component of the impact parameter **B**, with respect to the right ascension of the launch escape asymptote Θ_S, in megakilometers/deg.

RC3, $\frac{\partial \mathbf{B}\cdot\mathbf{R}}{\partial C_3}$ the partial derivative of the **R** component of the impact parameter **B**, with respect to the injection energy C_3, in megakilometers/km²/sec².

FAU, $\frac{\partial T_F}{\partial au}$ the partial derivative of the flight time T_F, with respect to the astronomical unit-to-kilometer conversion factor. This derivative has dimensions of sec/km and indicates the error in flight time caused by an uncertainty in the value of the astronomical unit.

Line 3

FDE, $\frac{\partial T_F}{\partial \Phi_S}$ the partial derivative of flight time T_F, with respect to the declination of the launch escape asymptote Φ_S, in days/deg.

FRA, $\frac{\partial T_F}{\partial \Theta_S}$ the partial derivative of flight time T_F, with respect to the right ascension of the launch escape asymptote Θ_S, in days/deg.

FC3, $\frac{\partial T_F}{\partial C_3}$ the partial derivative of flight time T_F, with respect to the injection energy C_3, in days/km²/sec².

BSP, ΔB_{sp} the target miss (in km) caused by solar radiation pressure acting on a 300-kg spacecraft having an effective perfectly reflecting area of 3.6 square meters.

Line 4

BDE, $\frac{\partial \mathrm{B}}{\partial \Phi_S}$ the partial derivative of the magnitude of the impact parameter **B**, with respect to the declination of the launch escape asymptote Φ_S, in megakilometers/deg.

BRA, $\frac{\partial \mathrm{B}}{\partial \Theta_S}$ the partial derivative of the magnitude of the impact parameter **B**, with respect to the right ascension of the launch escape asymptote Θ_S, in megakilometers/deg.

BC3, $\frac{\partial \mathrm{B}}{\partial C_3}$ the partial derivative of the magnitude of the impact parameter **B**, with respect to the injection energy C_3, in megakilometers/km²/sec².

FSP, $\Delta T_{F_{sp}}$ the flight time error (in sec) caused by solar radiation pressure acting on a 300-kg spacecraft having an effective perfectly reflecting area of 3.6 square meters.

D. Mid-Course Execution Accuracy Group

The MID-COURSE EXECUTION ACCURACY group gives the parameters of the "one-sigma" three-dimensional ellipsoid of target errors, resulting from a spherically distributed mid-course guidance execution error with σ_v equal to 0.1 m/sec (see Eq. 49). It is assumed here that a single mid-course guidance maneuver is applied during the time the spacecraft is essentially traveling radially outward from the launch planet. This time is approximately from several hours to several days after launch and is a practical period in which to perform a mid-course maneuver. These quantities are quoted in the useful **R**, **S**, **T** coordinate system discussed above.

The print array for this group is:

MID-COURSE EXECUTION ACCURACY

SGT	SGR	SG3
RRT	RRF	RTF
SGB	R23	R13
SG1	SG2	THA

The quantities are defined as follows:

Line 1

SGT, σ_T the standard deviation of position errors along the **T** axis, in km.

SGR, σ_R the standard deviation of position errors along the **R** axis, in km.

SG3, σ_3 the standard deviation of flight time errors, in sec.

Line 2

RRT, ρ_{RT} the linear correlation coefficient relating position errors in the **R** and **T** directions (dimensionless).

RRF, ρ_{RF} the linear correlation coefficient relating position errors in the **R** direction and flight-time errors (dimensionless).

RTF, ρ_{TF} the linear correlation coefficient relating position errors in the **T** direction and flight-time errors (dimensionless).

Line 3

SGB, σ_B the square root of the sum of the squares of σ_R and σ_T.

R23, ρ_{23} the linear correlation coefficient of σ_2 and σ_3 ($= \sigma_F$). The same remarks apply to this number as to ρ_{13}, except that the σ_2 direction replaces the σ_1 direction.

R13, ρ_{13} the linear correlation coefficient relating σ_1 and σ_3 ($= \sigma_F$). This number statistically relates position errors in the σ_1 direction to flight time errors. If $\rho_{13} = 1$, then a position error in the σ_1 direction will always be accompanied by a flight-time error which is linearly related to that position error; ρ_{13} is dimensionless.

Line 4

SG1, σ_1 the semimajor axis of the error ellipse formed by projecting the three-dimensional error ellipsoid onto the **T-R** plane (Fig. 8), in km.

SG2, σ_2 the semiminor axis of this error ellipse (Fig. 8), in km.

THA, θ the angle between the **T** axis and the direction of the σ_1 axis, measured in the **T-R** plane as shown in Fig. 8, in deg.

E. Orbit Determination Accuracy Group

The ORBIT DETERMINATION ACCURACY group is comprised of 12 numbers which describe the uncertainty in target coordinates due to tracking errors described in Section IIE. The printout array for this group is as follows:

ORBIT DETERMINATION ACCURACY

ST	SR	SS
CRT	CRS	CST
LSA	MSA	SSA
EL1	EL2	ALF

The first two lines describe the covariance of $\mathbf{M}_1$ by the method described in Section IIE (Eq. 67):

Line 1

ST, σ_T the standard deviation of errors in the coordinate $\mathbf{B} \cdot \mathbf{T}$, in km.

SR, σ_R the standard deviation of errors in the coordinate $\mathbf{B} \cdot \mathbf{R}$, in km.

SS, σ_S the standard deviation of errors in S, in km.

Line 2

CRT, ρ_{RT} the linear correlation coefficient relating errors in $\mathbf{B} \cdot \mathbf{R}$ to errors in $\mathbf{B} \cdot \mathbf{T}$, dimensionless.

CRS, ρ_{RS} the linear correlation coefficient relating errors in $\mathbf{B} \cdot \mathbf{R}$ to errors in S, dimensionless.

CST, ρ_{TS} the linear correlation coefficient relating errors in $\mathbf{B} \cdot \mathbf{T}$ to errors in S, dimensionless.

The third line contains the three semiaxes of the one-sigma position ellipsoid described by $\mathbf{M}_1 \Lambda^{-1} \mathbf{M}^T = 1$.

Line 3

LSA, $\sqrt{\varepsilon_{max}}$ the largest semiaxis of the position ellipsoid, in km. (ε_{max} is the largest eigenvalue of $\Lambda_{\mathbf{M}_1}$, in km^2.)

MSA, $\sqrt{\varepsilon_{mid}}$ the middle semiaxis of the position ellipsoid, in km. (ε_{mid} is the second-largest, or middle, eigenvalue of $\Lambda_{\mathbf{M}_1}$, in km^2.)

SSA, $\sqrt{\varepsilon_{min}}$ the smallest semiaxis of the position ellipsoid, in km. (ε_{min} is the smallest eigenvalue of $\Lambda_{\mathbf{M}_1}$, in km^2.)

The fourth line describes the projection of the above position ellipsoid on the **T-R** plane. This projection is an ellipse with major and minor semiaxes and orientation as described below:

Line 4

EL1 the major semiaxis of the target error ellipsoid projected onto the **T-R** plane, in km.

EL2 the minor semiaxis of the target error ellipsoid projected onto the **T-R** plane, in km.

ALF, α the angle measured counterclockwise from the **T**-axis to the major semiaxis direction, in deg ($0 \geqq \alpha \geqq 180$ deg).

The $\Lambda_{\dot{\mathbf{X}}}$ matrix used in generating the results for this report is

$$\Lambda_{\dot{\mathbf{X}}} = \begin{pmatrix} 100 \times 10^{-10} & 0 & 0 \\ 0 & 9 \times 10^{-10} & 0 \\ 0 & 0 & .09 \times 10^{-10} \end{pmatrix} \left(\frac{\text{km}}{\text{sec}}\right)^2$$

In all cases LSA >> SSA, so that the information contained in lines 3 and 4 of the printout is very useful in visualizing the error ellipsoid. The general shape of the ellipsoid is a thin elliptical "pancake." When MSA << LSA, the "pancake" degenerates to approach a pencil shape. By inspecting the "shadow" of the pancake or pencil shape on the **T-R** plane, its orientation may be visualized.

If it is desired to estimate the flight time T_F, this can easily be done by the relation

$$\sigma_F = \frac{1}{V_{hp}} \sigma_S$$

The correlation coefficients between T_F and $\mathbf{B} \cdot \mathbf{T}$ are those given by CST; those between T_F and $\mathbf{B} \cdot \mathbf{R}$ are given by CRS.

IV. CONSTANTS

Constants used in trajectory calculations at the Jet Propulsion Laboratory are given in Ref. 9. For purposes of ready reference those constants used in the calculations contained herein are given below.

Gravitational Constants

1. Sun

$$GM_S = 2.959122083 \times 10^{-4} \text{ au}^3/\text{day}^2$$

2. Earth

$$GM_E = 3.986032 \times 10^5 \text{ km}^3/\text{sec}^2$$

Astronomical Unit-to-Kilometer Conversion Factor

$$1 \text{ au} = 149.599 \times 10^6 \text{ km}$$

Earth's Rotation Rate

$$\omega_E = 4.1780742 \times 10^{-3} \text{ deg/sec}$$

REFERENCES

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Earth-Mars Trajectories, 1964

Launch date interval: October 1 to November 8, 1964

This data presentation has been photographically reproduced (enlarged 10½ times) from microfilm generated by computer magnetic tape.

LAUNCH DATE OCT 1 1964 FLIGHT TIME 240.00 ARRIVAL DATE MAY 29 1965

HELIOCENTRIC CONIC DISTANCE 593.234 EARTH TO MARS

RL	149.75	LAL	-.00	LOL	7.85	VL	33.092	GAL	-9.68	AZL	92.57	HCA	197.19	SMA	195.93	ECC	.28684	INC	2.5736
RP	240.49	LAP	.76	LOP	205.02	VP	20.648	GAP	10.34	AZP	87.54	TAL	314.41	TAP	151.60	RCA	139.73	APO	252.13
RC	164.213	GL	-14.15	GP	13.79	ZAL	147.80	ZAP	151.82	ETS	151.48	ZAE	160.28	ETE	44.22	ZAC	101.20	ETC	256.03

V1	29.754	V2	22.836	CLP	155.18														

PLANETOCENTRIC CONIC

C3	35.907	VHL	5.992	DLA	-4.79	RAL	154.97	RAD	6568.4	VEL	12.541	PTH	2.27	VHP	6.160	DPA	13.70	RAP	186.62
ECC	1.5909																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 35 17	2210.03	-19.46	41.19	24.89	110.99	22 12 7	1610.0	-16.43	33.83
90.00	8 25 48	5152.18	25.44	229.92	28.00	77.13	9 51 40	4552.2	25.42	221.83
100.00	22 54 22	1954.91	-20.67	21.92	24.38	112.09	23 26 57	1354.9	-17.50	14.57
100.00	9 49 24	4882.54	26.71	209.75	27.66	76.06	11 10 46	4282.5	24.53	201.63
110.00	0 1 22	1757.44	-23.92	5.40	22.84	115.18	0 30 40	1157.4	-20.33	358.10
110.00	11 2 49	4652.78	30.13	191.23	26.59	73.04	12 20 21	4052.8	27.51	183.02

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.9355	TRA	-4.6507	TC3	.9354	BAU	.5194	SGT	4959.3	SGR	1582.6	SG3	791.2	ST	2284.4	SR	874.1	SS	2168.5
RDE	.8325	RRA	-1.2533	RC3	.5439	FAU	.15221	RRT	.9645	RRF	-.9890	RTF	-.9619	CRT	.9799	CRS	.9904	CST	.9979
FDE	-3.5992	FRA	7.5643	FC3	-3.6698	BSP	17879	SGB	5205.7	R23	-.2090	R13	-.9672	LSA	3264.0	MSA	174.4	SSA	23.1
BDE	2.1069	BRA	4.8166	BC3	1.0820	FSP	2465	SG1	5190.4	SG2	399.2	THA	17.21	EL1	2440.4	EL2	163.2	ALF	20.65

LAUNCH DATE OCT 1 1964 FLIGHT TIME 242.00 ARRIVAL DATE MAY 31 1965

HELIOCENTRIC CONIC DISTANCE 596.711 EARTH TO MARS

RL	149.75	LAL	-.00	LOL	7.85	VL	33.061	GAL	-9.57	AZL	92.36	HCA	198.13	SMA	195.34	ECC	.28392	INC	2.3554
RP	240.19	LAP	.73	LOP	205.96	VP	20.632	GAP	9.88	AZP	87.76	TAL	314.57	TAP	152.70	RCA	139.88	APO	250.80
RC	166.536	GL	-13.13	GP	13.40	ZAL	148.00	ZAP	151.41	ETS	152.82	ZAE	160.84	ETE	44.57	ZAC	100.88	ETC	256.03

V1	29.754	V2	22.866	CLP	154.51														

PLANETOCENTRIC CONIC

C3	34.782	VHL	5.898	DLA	-3.77	RAL	155.16	RAD	6568.4	VEL	12.496	PTH	2.26	VHP	6.021	DPA	13.24	RAP	186.69
ECC	1.5724																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 28 22	2233.87	-20.03	42.71	24.77	110.44	22 5 36	1633.9	-17.07	35.28
90.00	8 34 13	5112.26	24.81	227.17	27.19	75.89	9 59 26	4512.3	22.62	219.18
100.00	22 47 57	1977.17	-21.24	23.34	24.28	111.55	23 20 54	1377.2	-18.12	15.93
100.00	9 57 20	4844.20	26.05	207.09	26.83	74.80	11 18 4	4244.2	23.71	199.07
110.00	23 52 8	1776.21	-24.46	6.59	22.79	114.66	24 21 44	1176.2	-20.93	359.23
110.00	11 9 38	4617.92	29.41	188.77	25.69	71.74	12 26 36	4017.9	26.64	180.69

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.9079	TRA	-4.5871	TC3	.9729	BAU	.5199	SGT	4969.8	SGR	1561.7	SG3	831.4	ST	2287.3	SR	866.7	SS	2206.0
RDE	.8141	RRA	-1.2114	RC3	.5509	FAU	.15790	RRT	.9637	RRF	-.9878	RTF	-.9631	CRT	.9790	CRS	.9886	CST	.9984
FDE	-3.6688	FRA	7.8496	FC3	-3.9502	BSP	17882	SGB	5209.4	R23	-.2010	R13	-.9681	LSA	3289.2	MSA	172.7	SSA	24.6
BDE	2.0743	BRA	4.7444	BC3	1.1181	FSP	2594	SG1	5194.1	SG2	399.2	THA	16.95	EL1	2440.4	EL2	165.6	ALF	20.45

LAUNCH DATE OCT 1 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUN 2 1965

HELIOCENTRIC CONIC DISTANCE 600.207 EARTH TO MARS

RL	149.75	LAL	-.00	LOL	7.85	VL	33.031	GAL	-9.47	AZL	92.16	HCA	199.07	SMA	194.77	ECC	.28110	INC	2.1576
RP	239.88	LAP	.70	LOP	206.90	VP	20.618	GAP	9.42	AZP	87.96	TAL	314.73	TAP	153.80	RCA	140.02	APO	249.52
RC	168.857	GL	-12.19	GP	13.06	ZAL	148.16	ZAP	150.94	ETS	154.07	ZAE	161.40	ETE	45.12	ZAC	100.60	ETC	256.03

V1	29.754	V2	22.897	CLP	153.80														

PLANETOCENTRIC CONIC

C3	33.748	VHL	5.809	DLA	-2.83	RAL	155.32	RAD	6568.3	VEL	12.455	PTH	2.25	VHP	5.888	DPA	12.83	RAP	186.75
ECC	1.5554																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 21 58	2255.75	-20.55	44.11	24.66	109.93	21 59 33	1655.7	-17.65	36.63
90.00	8 41 58	5075.16	24.17	224.64	26.45	74.77	10 6 33	4475.2	21.84	216.73
100.00	22 41 59	1997.60	-21.74	24.64	24.18	111.04	23 15 17	1397.6	-18.69	17.18
100.00	10 4 37	4808.53	25.39	204.65	26.07	73.68	11 24 46	4208.5	22.91	196.73
110.00	23 47 12	1793.44	-24.95	7.70	22.73	114.16	24 17 6	1193.4	-21.47	.27
110.00	11 15 54	4585.46	28.70	186.51	24.87	70.58	12 32 19	3985.5	25.78	178.55

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.8790	TRA	-4.5242	TC3	1.0074	BAU	.5197	SGT	4976.2	SGR	1545.4	SG3	873.0	ST	2287.3	SR	861.4	SS	2243.7
RDE	.7987	RRA	-1.1752	RC3	.5585	FAU	.16368	RRT	.9627	RRF	-.9866	RTF	-.9641	CRT	.9780	CRS	.9867	CST	.9987
FDE	-3.7409	FRA	8.1443	FC3	-4.1988	BSP	17909	SGB	5210.7	R23	-.1933	R13	-.9689	LSA	3313.3	MSA	172.5	SSA	26.0
BDE	2.0417	BRA	4.6743	BC3	1.1519	FSP	2732	SG1	5195.3	SG2	400.3	THA	16.75	EL1	2438.3	EL2	168.5	ALF	20.32

LAUNCH DATE OCT 1 1964 FLIGHT TIME 246.00 ARRIVAL DATE JUN 4 1965

HELIOCENTRIC CONIC DISTANCE 603.723 EARTH TO MARS

RL	149.75	LAL	-.00	LOL	7.85	VL	33.002	GAL	-9.36	AZL	91.98	HCA	200.01	SMA	194.23	ECC	.27839	INC	1.9772
RP	239.58	LAP	.68	LOP	207.84	VP	20.607	GAP	8.97	AZP	88.14	TAL	314.89	TAP	154.90	RCA	140.16	APO	248.30
RC	171.174	GL	-11.32	GP	12.75	ZAL	148.28	ZAP	150.42	ETS	155.24	ZAE	161.96	ETE	45.88	ZAC	100.35	ETC	256.02

V1	29.754	V2	22.928	CLP	153.08														

PLANETOCENTRIC CONIC

C3	32.793	VHL	5.727	DLA	-1.94	RAL	155.47	RAD	6568.3	VEL	12.416	PTH	2.24	VHP	5.758	DPA	12.47	RAP	186.81
ECC	1.5397																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 15 59	2275.94	-21.01	45.41	24.54	109.43	21 53 55	1675.9	-18.17	37.88
90.00	8 49 7	5040.49	23.53	222.30	25.76	73.77	10 13 8	4440.5	21.08	214.48
100.00	22 36 25	2016.47	-22.20	25.86	24.08	110.55	23 10 1	1416.5	-19.20	18.35
100.00	10 11 22	4775.19	24.74	202.39	25.36	72.66	11 30 57	4175.2	22.13	194.56
110.00	23 42 35	1809.34	-25.39	8.72	22.66	113.70	24 12 44	1209.3	-21.96	1.24
110.00	11 21 41	4555.09	27.99	184.43	24.11	69.53	12 37 36	3955.1	24.95	176.58

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.8515	TRA	-4.4588	TC3	1.0421	BAU	.5202	SGT	4978.1	SGR	1533.6	SG3	916.2	ST	2286.1	SR	858.7	SS	2283.3
RDE	.7864	RRA	-1.1433	RC3	.5676	FAU	.16981	RRT	.9618	RRF	-.9852	RTF	-.9651	CRT	.9771	CRS	.9848	CST	.9990
FDE	-3.8202	FRA	8.4445	FC3	-4.4829	BSP	17893	SGB	5208.9	R23	-.1859	R13	-.9697	LSA	3338.6	MSA	173.3	SSA	27.2
BDE	2.0116	BRA	4.6031	BC3	1.1866	FSP	2871	SG1	5193.4	SG2	402.4	THA	16.61	EL1	2436.0	EL2	171.5	ALF	20.26

LAUNCH DATE OCT 1 1964 FLIGHT TIME 248.00 ARRIVAL DATE JUN 6 1965

HELIOCENTRIC CONIC DISTANCE 607.258 EARTH TO MARS

RL 149.75 LAL -.00 LOL 7.85 VL 32.975 GAL -9.26 AZL 91.81 HCA 200.95 SMA 193.72 ECC .27578 INC 1.8122 V1 29.754
RP 239.26 LAP .65 LOP 208.79 VP 20.598 GAP 8.53 AZP 88.31 TAL 315.05 TAP 156.00 RCA 140.29 APO 247.14 V2 22.959
RC 173.485 GL -10.50 GP 12.48 ZAL 148.35 ZAP 149.85 ETS 156.34 ZAE 162.52 ETE 46.87 ZAC 100.12 ETC 256.02 CLP 152.33

PLANETOCENTRIC CONIC

C3 31.906 VHL 5.649 DLA -1.12 RAL 155.60 RAD 6568.3 VEL 12.381 PTH 2.23 VHP 5.632 DPA 12.14 RAP 186.87 ECC 1.5251

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 10 21	2294.70	-21.43	46.62	24.43	108.97	21 48 36	1694.7	-18.64	39.05
90.00	8 55 46	5007.92	22.89	220.12	25.12	72.86	10 19 14	4407.9	20.33	212.39
100.00	22 31 11	2033.98	-22.61	27.00	23.97	110.09	23 5 5	1434.0	-19.67	19.44
100.00	10 17 38	4743.87	24.09	200.29	24.70	71.74	11 36 42	4143.9	21.36	192.55
110.00	23 38 14	1824.09	-25.79	9.68	22.59	113.26	24 8 38	1224.1	-22.41	2.15
110.00	11 27 4	4526.53	27.30	182.50	23.41	68.58	12 42 31	3926.5	24.14	174.76

DIFFERENTIAL CORRECTIONS

TDE 1.8351 TRA-4.3805 TC3 1.0899 BAU .5265
RDE .7774 RRA-1.1144 RC3 .5790 FAU .17641
FDE-3.9087 FRA 8.7468 FC3-4.7865 BSP 17595
BDE 1.9929 BRA 4.5200 BC3 1.2342 FSP 3004

MID-COURSE EXECUTION ACCURACY

SGT 4973.1 SGR 1525.8 SG3 961.0
RRT .9618 RRF -.9839 RTF -.9668
SGB 5201.9 R23 -.1751 R13 -.9711
SG1 5186.4 SG2 400.5 THA 16.54

ORBIT DETERMINATION ACCURACY

ST 2289.9 SR 858.6 SS 2325.1
CRT .9769 CRS .9829 CST .9994
LSA 3369.9 MSA 172.5 SSA 28.3
EL1 2439.5 EL2 172.3 ALF 20.22

LAUNCH DATE OCT 1 1964 FLIGHT TIME 250.00 ARRIVAL DATE JUN 8 1965

HELIOCENTRIC CONIC DISTANCE 610.808 EARTH TO MARS

RL 149.75 LAL -.00 LOL 7.85 VL 32.948 GAL -9.16 AZL 91.66 HCA 201.90 SMA 193.22 ECC .27327 INC 1.6602 V1 29.754
RP 238.95 LAP .62 LOP 209.74 VP 20.591 GAP 8.09 AZP 88.46 TAL 315.21 TAP 157.10 RCA 140.42 APO 246.03 V2 22.991
RC 175.790 GL -9.73 GP 12.24 ZAL 148.41 ZAP 149.24 ETS 157.36 ZAE 163.09 ETE 48.09 ZAC 99.92 ETC 256.02 CLP 151.55

PLANETOCENTRIC CONIC

C3 31.083 VHL 5.575 DLA -.34 RAL 155.72 RAD 6568.2 VEL 12.347 PTH 2.23 VHP 5.510 DPA 11.85 RAP 186.92 ECC 1.5115

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 5 3	2312.22	-21.81	47.76	24.31	108.52	21 43 35	1712.2	-19.08	40.15
90.00	9 2 0	4977.25	22.26	218.09	24.52	72.03	10 24 57	4377.2	19.60	210.43
100.00	22 26 14	2050.35	-22.99	28.06	23.87	109.65	23 0 25	1450.3	-20.10	20.46
100.00	10 23 30	4714.36	23.44	198.33	24.09	70.90	11 42 4	4114.4	20.62	190.67
110.00	23 34 7	1837.86	-26.15	10.58	22.52	112.84	24 4 45	1237.9	-22.83	3.00
110.00	11 32 6	4499.61	26.62	180.71	22.77	67.71	12 47 6	3899.6	23.36	173.06

DIFFERENTIAL CORRECTIONS

TDE 1.8002 TRA-4.3193 TC3 1.1133 BAU .5234
RDE .7686 RRA-1.0914 RC3 .5892 FAU .18279
FDE-3.9920 FRA 9.0713 FC3-5.0912 BSP 17714
BDE 1.9574 BRA 4.4550 BC3 1.2596 FSP 3165

MID-COURSE EXECUTION ACCURACY

SGT 4966.7 SGR 1521.0 SG3 1007.5
RRT .9604 RRF -.9825 RTF -.9673
SGB 5194.4 R23 -.1697 R13 -.9715
SG1 5178.5 SG2 406.2 THA 16.49

ORBIT DETERMINATION ACCURACY

ST 2279.8 SR 858.8 SS 2365.0
CRT .9756 CRS .9809 CST .9995
LSA 3390.6 MSA 176.8 SSA 29.0
EL1 2429.7 EL2 176.8 ALF 20.29

LAUNCH DATE OCT 1 1964 FLIGHT TIME 252.00 ARRIVAL DATE JUN 10 1965

HELIOCENTRIC CONIC DISTANCE 614.375 EARTH TO MARS

RL 149.75 LAL -.00 LOL 7.85 VL 32.923 GAL -9.07 AZL 91.52 HCA 202.85 SMA 192.76 ECC .27085 INC 1.5201 V1 29.754
RP 238.63 LAP .59 LOP 210.69 VP 20.586 GAP 7.65 AZP 88.60 TAL 315.36 TAP 158.21 RCA 140.55 APO 244.96 V2 23.024
RC 178.086 GL -9.01 GP 12.02 ZAL 148.43 ZAP 148.58 ETS 158.32 ZAE 163.65 ETE 49.56 ZAC 99.74 ETC 256.02 CLP 150.75

PLANETOCENTRIC CONIC

C3 30.314 VHL 5.506 DLA .40 RAL 155.82 RAD 6568.2 VEL 12.316 PTH 2.22 VHP 5.391 DPA 11.59 RAP 186.96 ECC 1.4989

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 0 2	2328.67	-22.16	48.84	24.20	108.09	21 38 50	1728.7	-19.49	41.19
90.00	9 7 51	4948.23	21.64	216.19	23.96	71.28	10 30 19	4348.2	18.88	208.60
100.00	22 21 33	2065.70	-23.34	29.07	23.77	109.23	22 55 59	1465.7	-20.50	21.43
100.00	10 29 0	4686.43	22.81	196.50	23.52	70.14	11 47 7	4086.4	19.89	188.92
110.00	23 30 13	1850.77	-26.49	11.43	22.45	112.44	24 1 4	1250.8	-23.22	3.81
110.00	11 36 50	4474.13	25.95	179.03	22.16	66.92	12 51 24	3874.1	22.60	171.47

DIFFERENTIAL CORRECTIONS

TDE 1.7672 TRA-4.2544 TC3 1.1370 BAU .5211
RDE .7618 RRA-1.0715 RC3 .6004 FAU .18945
FDE-4.0805 FRA 9.4054 FC3-5.4105 BSP 17775
BDE 1.9244 BRA 4.3872 BC3 1.2858 FSP 3332

MID-COURSE EXECUTION ACCURACY

SGT 4954.9 SGR 1519.5 SG3 1055.8
RRT .9593 RRF -.9812 RTF -.9679
SGB 5182.7 R23 -.1639 R13 -.9720
SG1 5166.3 SG2 411.7 THA 16.50

ORBIT DETERMINATION ACCURACY

ST 2268.8 SR 860.7 SS 2406.0
CRT .9745 CRS .9789 CST .9996
LSA 3412.2 MSA 181.4 SSA 29.7
EL1 2419.8 EL2 181.0 ALF 20.41

LAUNCH DATE OCT 1 1964 FLIGHT TIME 254.00 ARRIVAL DATE JUN 12 1965

HELIOCENTRIC CONIC DISTANCE 617.958 EARTH TO MARS

RL 149.75 LAL -.00 LOL 7.85 VL 32.899 GAL -8.97 AZL 91.39 HCA 203.80 SMA 192.31 ECC .26853 INC 1.3899 V1 29.754
RP 238.31 LAP .56 LOP 211.64 VP 20.584 GAP 7.22 AZP 88.73 TAL 315.51 TAP 159.31 RCA 140.67 APO 243.95 V2 23.056
RC 180.373 GL -8.33 GP 11.83 ZAL 148.43 ZAP 147.89 ETS 159.23 ZAE 164.22 ETE 51.30 ZAC 99.58 ETC 256.02 CLP 149.93

PLANETOCENTRIC CONIC

C3 29.596 VHL 5.440 DLA 1.09 RAL 155.91 RAD 6568.2 VEL 12.287 PTH 2.21 VHP 5.275 DPA 11.36 RAP 187.00 ECC 1.4871

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 55 15	2344.19	-22.49	49.06	24.09	107.68	21 34 19	1744.2	-19.86	42.18
90.00	9 13 21	4920.68	21.03	214.41	23.44	70.58	10 35 22	4320.7	18.19	206.88
100.00	22 17 6	2080.18	-23.66	30.03	23.67	108.82	22 51 46	1480.2	-20.87	22.34
100.00	10 34 12	4659.93	22.18	194.78	22.99	69.43	11 51 51	4059.9	19.19	187.26
110.00	23 26 30	1862.93	-26.81	12.24	22.37	112.05	23 57 33	1262.9	-23.57	4.57
110.00	11 41 16	4449.94	25.29	177.45	21.60	66.20	12 55 26	3849.9	21.86	169.99

DIFFERENTIAL CORRECTIONS

TDE 1.7345 TRA-4.1865 TC3 1.1594 BAU .5189
RDE .7567 RRA-1.0543 RC3 .6131 FAU .19649
FDE-4.1750 FRA 9.7481 FC3-5.7476 BSP 17796
BDE 1.8924 BRA 4.3172 BC3 1.3115 FSP 3501

MID-COURSE EXECUTION ACCURACY

SGT 4937.2 SGR 1521.0 SG3 1106.1
RRT .9581 RRF -.9799 RTF -.9684
SGB 5166.2 R23 -.1585 R13 -.9725
SG1 5149.3 SG2 417.8 THA 16.56

ORBIT DETERMINATION ACCURACY

ST 2255.8 SR 864.1 SS 2448.4
CRT .9735 CRS .9769 CST .9997
LSA 3434.2 MSA 186.5 SSA 30.1
EL1 2408.5 EL2 185.2 ALF 20.58

LAUNCH DATE OCT 1 1964 FLIGHT TIME 256.00 ARRIVAL DATE JUN 14 1965

HELIOCENTRIC CONIC DISTANCE 621.557 EARTH TO MARS

RL 149.75 LAL -.00 LOL 7.85 VL 32.875 GAL -8.89 AZL 91.27 HCA 204.75 SMA 191.88 ECC .26629 INC 1.2692 V1 29.754
RP 237.98 LAP .53 LOP 212.60 VP 20.584 GAP 6.80 AZP 88.85 TAL 315.66 TAP 160.41 RCA 140.78 APO 242.98 V2 23.089
RC 182.651 GL -7.69 GP 11.65 ZAL 148.42 ZAP 147.16 ETS 160.09 ZAE 164.77 ETE 53.34 ZAC 99.44 ETC 256.02 CLP 149.08

PLANETOCENTRIC CONIC

C3 28.923 VHL 5.378 DLA 1.75 RAL 155.99 RAD 6568.2 VEL 12.260 PTH 2.21 VHP 5.162 DPA 11.16 RAP 187.02 ECC 1.4760

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 50 41	2358.89	-22.79	50.84	23.98	107.28	21 30 0	1758.9	-20.21	43.11
90.00	9 18 35	4894.47	20.42	212.72	22.96	69.95	10 40 9	4294.5	17.51	205.26
100.00	22 12 50	2093.89	-23.96	30.94	23.57	108.43	22 47 44	1493.9	-21.22	23.21
100.00	10 39 6	4634.71	21.57	193.15	22.49	68.79	11 56 21	4034.7	18.50	185.71
110.00	23 22 57	1874.44	-27.10	13.01	22.30	111.68	23 54 11	1274.4	-23.91	5.29
110.00	11 45 29	4426.92	24.65	175.97	21.08	65.53	12 59 16	3826.9	21.14	168.58

DIFFERENTIAL CORRECTIONS
TDE 1.7021 TRA-4.1157 TC3 1.1802 BAU .5167
RDE .7529 RRA-1.0401 RC3 .6264 FAU .20370
FDE-4.2720 FRA10.1042 FC3-6.0972 BSP 17777
BDE 1.8612 BRA 4.2451 BC3 1.3361 FSP 3681

MID-COURSE EXECUTION ACCURACY
SGT 4913.7 SGR 1525.2 SG3 1158.2
RRT .9571 RRF -.9786 RTF -.9689
SGB 5144.9 R23 -.1528 R13 -.9730
SG1 5127.5 SG2 423.5 THA 16.66

ORBIT DETERMINATION ACCURACY
ST 2240.9 SR 868.6 SS 2491.0
CRT .9726 CRS .9749 CST .9998
LSA 3455.9 MSA 191.9 SSA 30.5
EL1 2395.9 EL2 189.0 ALF 20.79

LAUNCH DATE OCT 1 1964 FLIGHT TIME 258.00 ARRIVAL DATE JUN 16 1965

HELIOCENTRIC CONIC DISTANCE 625.172 EARTH TO MARS

RL 149.75 LAL -.00 LOL 7.85 VL 32.853 GAL -8.80 AZL 91.16 HCA 205.71 SMA 191.47 ECC .26414 INC 1.1562 V1 29.754
RP 237.65 LAP .50 LOP 213.56 VP 20.586 GAP 6.38 AZP 88.96 TAL 315.80 TAP 161.51 RCA 140.90 APO 242.05 V2 23.123
RC 184.919 GL -7.08 GP 11.50 ZAL 148.39 ZAP 146.39 ETS 160.89 ZAE 165.32 ETE 55.70 ZAC 99.30 ETC 256.02 CLP 148.20

PLANETOCENTRIC CONIC

C3 28.292 VHL 5.319 DLA 2.38 RAL 156.07 RAD 6568.1 VEL 12.234 PTH 2.20 VHP 5.053 DPA 10.99 RAP 187.02 ECC 1.4656

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 46 18	2372.87	-23.07	51.77	23.87	106.89	21 25 51	1772.9	-20.54	44.01
90.00	9 23 32	4869.47	19.83	211.12	22.50	69.36	10 44 42	4269.5	16.85	203.72
100.00	22 8 45	2106.23	-24.24	31.81	23.47	108.06	22 43 52	1506.9	-21.54	24.05
100.00	10 43 47	4610.65	20.97	191.62	22.03	68.20	12 0 37	4010.6	17.83	184.24
110.00	23 19 33	1885.37	-27.37	13.74	22.22	111.33	23 50 58	1285.4	-24.22	5.99
110.00	11 49 29	4404.97	24.03	174.57	20.59	64.92	13 2 54	3805.0	20.44	167.26

DIFFERENTIAL CORRECTIONS
TDE 1.6714 TRA-4.0411 TC3 1.2013 BAU .5151
RDE .7508 RRA-1.0279 RC3 .6414 FAU .21141
FDE-4.3782 FRA10.4684 FC3-6.4693 BSP 17689
BDE 1.8323 BRA 4.1697 BC3 1.3618 FSP 3859

MID-COURSE EXECUTION ACCURACY
SGT 4884.2 SGR 1532.3 SG3 1212.6
RRT .9562 RRF -.9773 RTF -.9695
SGB 5118.9 R23 -.1472 R13 -.9735
SG1 5100.9 SG2 429.4 THA 16.82

ORBIT DETERMINATION ACCURACY
ST 2225.2 SR 874.7 SS 2536.1
CRT .9718 CRS .9730 CST .9998
LSA 3479.7 MSA 197.6 SSA 30.7
EL1 2383.1 EL2 192.5 ALF 21.05

LAUNCH DATE OCT 1 1964 FLIGHT TIME 260.00 ARRIVAL DATE JUN 18 1965

HELIOCENTRIC CONIC DISTANCE 628.803 EARTH TO MARS

RL 149.75 LAL -.00 LOL 7.85 VL 32.831 GAL -8.72 AZL 91.05 HCA 206.67 SMA 191.08 ECC .26208 INC 1.0510 V1 29.754
RP 237.31 LAP .47 LOP 214.52 VP 20.590 GAP 5.96 AZP 89.06 TAL 315.94 TAP 162.62 RCA 141.01 APO 241.16 V2 23.157
RC 187.176 GL -6.49 GP 11.37 ZAL 148.35 ZAP 145.58 ETS 161.66 ZAE 165.85 ETE 58.42 ZAC 99.18 ETC 256.02 CLP 147.29

PLANETOCENTRIC CONIC

C3 27.698 VHL 5.263 DLA 2.98 RAL 156.13 RAD 6568.1 VEL 12.210 PTH 2.19 VHP 4.946 DPA 10.84 RAP 187.01 ECC 1.4558

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 42 6	2386.22	-23.33	52.66	23.76	106.52	21 21 53	1786.2	-20.84	44.87
90.00	9 28 16	4845.54	19.25	209.61	22.07	68.82	10 49 2	4245.5	16.20	202.26
100.00	22 4 50	2119.37	-24.50	32.64	23.37	107.69	22 40 10	1519.4	-21.84	24.84
100.00	10 48 13	4587.63	20.38	190.16	21.59	67.65	12 4 41	3987.6	17.17	182.84
110.00	23 16 16	1895.79	-27.63	14.44	22.15	110.98	23 47 52	1295.8	-24.52	6.65
110.00	11 53 17	4383.97	23.41	173.25	20.14	64.35	13 6 21	3784.0	19.77	166.01

DIFFERENTIAL CORRECTIONS
TDE 1.6569 TRA-3.9469 TC3 1.2447 BAU .5217
RDE .7516 RRA-1.0160 RC3 .6603 FAU .22021
FDE-4.5044 FRA10.8261 FC3-6.8830 BSP 17177
BDE 1.8194 BRA 4.0755 BC3 1.4090 FSP 4009

MID-COURSE EXECUTION ACCURACY
SGT 4845.9 SGR 1542.5 SG3 1269.3
RRT .9568 RRF -.9761 RTF -.9709
SGB 5085.5 R23 -.1370 R13 -.9748
SG1 5067.4 SG2 428.8 THA 17.06

ORBIT DETERMINATION ACCURACY
ST 2218.4 SR 883.4 SS 2586.2
CRT .9724 CRS .9714 CST .9998
LSA 3514.0 MSA 201.9 SSA 30.5
EL1 2380.1 EL2 192.0 ALF 21.31

LAUNCH DATE OCT 1 1964 FLIGHT TIME 262.00 ARRIVAL DATE JUN 20 1965

HELIOCENTRIC CONIC DISTANCE 632.442 EARTH TO MARS

RL 149.75 LAL -.00 LOL 7.85 VL 32.811 GAL -8.64 AZL 90.95 HCA 207.64 SMA 190.71 ECC .26010 INC .9520 V1 29.754
RP 236.98 LAP .44 LOP 215.48 VP 20.596 GAP 5.55 AZP 89.16 TAL 316.08 TAP 163.71 RCA 141.11 APO 240.32 V2 23.191
RC 189.421 GL -5.94 GP 11.24 ZAL 148.30 ZAP 144.74 ETS 162.39 ZAE 166.35 ETE 61.51 ZAC 99.07 ETC 256.02 CLP 146.36

PLANETOCENTRIC CONIC

C3 27.143 VHL 5.210 DLA 3.55 RAL 156.20 RAD 6568.1 VEL 12.187 PTH 2.19 VHP 4.842 DPA 10.72 RAP 186.99 ECC 1.4467

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 38 5	2399.01	-23.57	53.51	23.67	106.16	21 18 4	1799.0	-21.13	45.69
90.00	9 32 48	4822.68	18.68	208.17	21.67	68.33	10 53 10	4222.7	15.57	200.87
100.00	22 1 5	2131.29	-24.74	33.44	23.28	107.34	22 36 36	1531.3	-22.13	25.61
100.00	10 52 29	4565.63	19.81	188.78	21.19	67.14	12 8 34	3965.6	16.54	181.51
110.00	23 13 8	1905.78	-27.87	15.12	22.08	110.65	23 44 54	1305.8	-24.80	7.29
110.00	11 56 55	4363.91	22.82	172.00	19.71	63.83	13 9 39	3763.9	19.11	164.82

DIFFERENTIAL CORRECTIONS
TDE 1.6039 TRA-3.8881 TC3 1.2286 BAU .5084
RDE .7490 RRA-1.0115 RC3 .6732 FAU .22743
FDE-4.5966 FRA11.2433 FC3-7.2538 BSP 17548
BDE 1.7702 BRA 4.0175 BC3 1.4010 FSP 4253

MID-COURSE EXECUTION ACCURACY
SGT 4806.7 SGR 1553.3 SG3 1327.7
RRT .9544 RRF -.9750 RTF -.9702
SGB 5051.4 R23 -.1375 R13 -.9744
SG1 5031.9 SG2 443.0 THA 17.28

ORBIT DETERMINATION ACCURACY
ST 2182.8 SR 889.2 SS 2626.4
CRT .9704 CRS .9693 CST .9998
LSA 3522.6 MSA 210.6 SSA 31.0
EL1 2348.5 EL2 199.8 ALF 21.73

LAUNCH DATE OCT 1 1964 FLIGHT TIME 264.00 ARRIVAL DATE JUN 22 1965

HELIOCENTRIC CONIC DISTANCE 636.098 EARTH TO MARS

RL 149.75 LAL -.00 LOL 7.85 VL 32.791 GAL -8.56 AZL 90.86 HCA 208.60 SMA 190.36 ECC .25821 INC .8590 V1 29.754
RP 236.64 LAP .41 LOP 216.45 VP 20.604 GAP 5.15 AZP 89.25 TAL 316.21 TAP 164.81 RCA 141.21 APO 239.51 V2 23.226
RC 191.655 GL -5.41 GP 11.14 ZAL 148.24 ZAP 143.86 ETS 163.08 ZAE 166.82 ETE 65.03 ZAC 98.97 ETC 256.03 CLP 145.39

PLANETOCENTRIC CONIC

C3 26.620 VHL 5.159 DLA 4.10 RAL 156.25 RAD 6568.1 VEL 12.165 PTH 2.18 VHP 4.741 DPA 10.62 RAP 186.95 ECC 1.4381

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 34 12	2411.31	-23.81	54.34	23.57	105.80	21 14 23	1811.3	-21.41	46.49
90.00	9 37 8	4800.72	18.12	206.80	21.30	67.86	10 57 9	4200.7	14.96	199.55
100.00	21 57 28	2142.74	-24.97	34.21	23.19	106.99	22 33 10	1542.7	-22.41	26.35
100.00	10 56 34	4544.52	19.24	187.47	20.80	66.67	12 12 18	3944.5	15.92	180.25
110.00	23 10 7	1915.36	-28.10	15.77	22.01	110.32	23 42 2	1315.4	-25.07	7.91
110.00	12 0 24	4344.67	22.23	170.81	19.31	63.34	13 12 49	3744.7	18.48	163.69

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.5686 TRA-3.8078 TC3 1.2364 BAU .5040 SGT 4757.6 SGR 1567.2 SG3 1388.7 ST 2157.2 SR 897.8 SS 2672.7
RDE .7494 RRA-1.0065 RC3 .6905 FAU .23590 RRT .9535 RRF -.9739 RTF -.9705 CRT .9697 CRS .9675 CST .9998
FDE-4.7120 FRA11.6515 FC3-7.6718 BSP 17456 SGB 5009.1 R23 -.1334 R13 -.9747 LSA 3543.2 MSA 217.6 SSA 31.0
BDE 1.7384 BRA 3.9386 BC3 1.4162 FSP 4463 SG1 4988.8 SG2 450.4 THA 17.58 EL1 2327.7 EL2 203.3 ALF 22.16

LAUNCH DATE OCT 1 1964 FLIGHT TIME 266.00 ARRIVAL DATE JUN 24 1965

HELIOCENTRIC CONIC DISTANCE 639.768 EARTH TO MARS

RL 149.75 LAL -.00 LOL 7.85 VL 32.772 GAL -8.49 AZL 90.77 HCA 209.57 SMA 190.02 ECC .25639 INC .7714 V1 29.754
RP 236.29 LAP .38 LOP 217.42 VP 20.613 GAP 4.75 AZP 89.33 TAL 316.34 TAP 165.91 RCA 141.30 APO 238.74 V2 23.261
RC 193.877 GL -4.90 GP 11.04 ZAL 148.17 ZAP 142.94 ETS 163.74 ZAE 167.24 ETE 68.98 ZAC 98.87 ETC 256.03 CLP 144.40

PLANETOCENTRIC CONIC

C3 26.128 VHL 5.112 DLA 4.63 RAL 156.31 RAD 6568.1 VEL 12.145 PTH 2.18 VHP 4.642 DPA 10.55 RAP 186.88 ECC 1.4300

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 30 27	2423.16	-24.02	55.14	23.48	105.46	21 10 50	1823.2	-21.67	47.26
90.00	9 41 19	4779.63	17.58	205.50	20.95	67.44	11 0 58	4179.6	14.37	198.29
100.00	21 53 58	2153.78	-25.19	34.96	23.11	106.65	22 29 52	1553.8	-22.66	27.07
100.00	11 0 29	4524.24	18.69	186.21	20.45	66.24	12 15 53	3924.2	15.32	179.04
110.00	23 7 12	1924.60	-28.31	16.40	21.95	110.01	23 39 16	1324.6	-25.32	8.50
110.00	12 3 45	4326.19	21.66	169.68	18.94	62.89	13 15 51	3726.2	17.86	162.62

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.5365 TRA-3.7206 TC3 1.2459 BAU .5008 SGT 4700.5 SGR 1583.3 SG3 1451.9 ST 2131.5 SR 907.7 SS 2721.2
RDE .7512 RRA-1.0027 RC3 .7095 FAU .24492 RRT .9530 RRF -.9729 RTF -.9708 CRT .9695 CRS .9658 CST .9997
FDE-4.8375 FRA12.0673 FC3-8.1151 BSP 17246 SGB 4960.0 R23 -.1285 R13 -.9751 LSA 3566.6 MSA 224.6 SSA 30.9
BDE 1.7103 BRA 3.8534 BC3 1.4337 FSP 4669 SG1 4938.9 SG2 456.6 THA 17.95 EL1 2307.6 EL2 205.7 ALF 22.62

LAUNCH DATE OCT 1 1964 FLIGHT TIME 268.00 ARRIVAL DATE JUN 26 1965

HELIOCENTRIC CONIC DISTANCE 643.449 EARTH TO MARS

RL 149.75 LAL -.00 LOL 7.85 VL 32.754 GAL -8.42 AZL 90.69 HCA 210.54 SMA 189.70 ECC .25465 INC .6885 V1 29.754
RP 235.94 LAP .35 LOP 218.39 VP 20.625 GAP 4.36 AZP 89.41 TAL 316.46 TAP 167.00 RCA 141.39 APO 238.01 V2 23.297
RC 196.086 GL -4.41 GP 10.96 ZAL 148.10 ZAP 141.99 ETS 164.37 ZAE 167.59 ETE 73.39 ZAC 98.78 ETC 256.04 CLP 143.37

PLANETOCENTRIC CONIC

C3 25.666 VHL 5.066 DLA 5.13 RAL 156.36 RAD 6568.0 VEL 12.126 PTH 2.17 VHP 4.546 DPA 10.50 RAP 186.80 ECC 1.4224

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 26 50	2434.61	-24.23	55.92	23.40	105.12	21 7 25	1834.6	-21.92	48.01
90.00	9 45 20	4759.36	17.04	204.25	20.63	67.04	11 4 39	4159.4	13.79	197.08
100.00	21 50 36	2164.44	-25.39	35.69	23.04	106.33	22 26 40	1564.4	-22.91	27.77
100.00	11 4 16	4504.76	18.15	185.02	20.12	65.83	12 19 20	3904.8	14.74	177.89
110.00	23 4 23	1933.51	-28.52	17.02	21.90	109.70	23 36 36	1333.5	-25.57	9.08
110.00	12 6 58	4308.45	21.11	168.60	18.60	62.47	13 18 46	3708.4	17.26	161.59

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.5006 TRA-3.6333 TC3 1.2467 BAU .4955 SGT 4636.4 SGR 1601.3 SG3 1517.5 ST 2100.8 SR 918.1 SS 2769.5
RDE .7534 RRA-1.0013 RC3 .7288 FAU .25412 RRT .9522 RRF -.9720 RTF -.9709 CRT .9691 CRS .9642 CST .9996
FDE-4.9639 FRA12.5021 FC3-8.5715 BSP 17080 SGB 4905.1 R23 -.1247 R13 -.9754 LSA 3587.7 MSA 232.0 SSA 30.8
BDE 1.6791 BRA 3.7687 BC3 1.4441 FSP 4891 SG1 4883.1 SG2 464.2 THA 18.38 EL1 2283.2 EL2 208.4 ALF 23.16

LAUNCH DATE OCT 1 1964 FLIGHT TIME 270.00 ARRIVAL DATE JUN 28 1965

HELIOCENTRIC CONIC DISTANCE 647.143 EARTH TO MARS

RL 149.75 LAL -.00 LOL 7.85 VL 32.737 GAL -8.36 AZL 90.61 HCA 211.52 SMA 189.40 ECC .25299 INC .6101 V1 29.754
RP 235.59 LAP .32 LOP 219.36 VP 20.638 GAP 3.97 AZP 89.48 TAL 316.58 TAP 168.10 RCA 141.48 APO 237.31 V2 23.333
RC 198.280 GL -3.94 GP 10.89 ZAL 148.02 ZAP 141.00 ETS 164.98 ZAE 167.88 ETE 78.24 ZAC 98.70 ETC 256.05 CLP 142.32

PLANETOCENTRIC CONIC

C3 25.232 VHL 5.023 DLA 5.62 RAL 156.41 RAD 6568.0 VEL 12.108 PTH 2.17 VHP 4.453 DPA 10.47 RAP 186.69 ECC 1.4153

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 23 20	2445.70	-24.42	56.67	23.32	104.79	21 4 6	1845.7	-22.15	48.74
90.00	9 49 13	4739.84	16.52	203.05	20.33	66.67	11 8 13	4139.8	13.22	195.93
100.00	21 47 20	2174.77	-25.59	36.39	22.97	106.00	22 23 35	1574.8	-23.15	28.44
100.00	11 7 55	4486.00	17.63	183.87	19.81	65.46	12 22 41	3886.0	14.17	176.79
110.00	23 1 40	1942.15	-28.72	17.61	21.85	109.40	23 34 2	1342.2	-25.80	9.64
110.00	12 10 4	4291.39	20.57	167.57	18.28	62.08	13 21 36	3691.4	16.67	160.61

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.4645 TRA-3.5415 TC3 1.2440 BAU .4899 SGT 4563.7 SGR 1621.2 SG3 1585.4 ST 2067.5 SR 929.2 SS 2818.8
RDE .7564 RRA-1.0014 RC3 .7492 FAU .26370 RRT .9516 RRF -.9712 RTF -.9710 CRT .9689 CRS .9627 CST .9995
FDE-5.0962 FRA12.9495 FC3-9.0477 BSP 16869 SGB 4843.1 R23 -.1211 R13 -.9756 LSA 3609.0 MSA 239.6 SSA 30.6
BDE 1.6483 BRA 3.6803 BC3 1.4522 FSP 5119 SG1 4820.1 SG2 471.7 THA 18.86 EL1 2256.9 EL2 210.7 ALF 23.75

LAUNCH DATE OCT 1 1964 FLIGHT TIME 272.00 ARRIVAL DATE JUN 30 1965

HELIOCENTRIC CONIC DISTANCE 650.849 EARTH TO MARS

RL 149.75 LAL -.00 LOL 7.85 VL 32.720 GAL -8.29 AZL 90.54 HCA 212.49 SMA 189.10 ECC .25140 INC .5353 V1 29.754
RP 235.24 LAP .29 LOP 220.34 VP 20.652 GAP 3.58 AZP 89.55 TAL 316.70 TAP 169.19 RCA 141.56 APO 236.64 V2 23.369
RC 200.460 GL -3.48 GP 10.83 ZAL 147.94 ZAP 139.97 ETS 165.56 ZAE 168.07 ETE 83.50 ZAC 98.61 ETC 256.06 CLP 141.23

PLANETOCENTRIC CONIC

C3 24.825 VHL 4.982 DLA 6.09 RAL 156.46 RAD 6568.0 VEL 12.091 PTH 2.16 VHP 4.362 DPA 10.46 RAP 186.57 ECC 1.4086

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 19 58	2456.47	-24.61	57.41	23.26	104.47	21 0 54	1856.5	-22.38	49.44
90.00	9 52 59	4721.04	16.01	201.91	20.05	66.33	11 11 40	4121.0	12.67	194.82
100.00	21 44 11	2184.80	-25.78	37.08	22.91	105.69	22 20 36	1584.8	-23.37	29.10
100.00	11 11 26	4467.95	17.11	182.78	19.53	65.11	12 25 54	3868.0	13.62	175.73
110.00	22 59 3	1950.53	-28.90	18.19	21.80	109.10	23 31 33	1350.5	-26.03	10.19
110.00	12 13 5	4274.98	20.04	166.59	17.98	61.71	13 24 20	3675.0	16.11	159.68

DIFFERENTIAL CORRECTIONS
TDE 1.4274 TRA-3.4460 TC3 1.2366 BAU .4836
RDE .7600 RRA-1.0030 RC3 .7706 FAU .27368
FDE-5.2339 FRA13.4100 FC3-9.5443 BSP 16636
BDE 1.6171 BRA 3.5890 BC3 1.4571 FSP 5353

MID-COURSE EXECUTION ACCURACY
SGT 4482.7 SGR 1642.9 SG3 1655.6
RRT .9510 RRF -.9705 RTF -.9710
SGB 4774.3 R23 -.1178 R13 -.9758
SG1 4750.1 SG2 479.4 THA 19.42

ORBIT DETERMINATION ACCURACY
ST 2031.0 SR 941.0 SS 2869.0
CRT .9688 CRS .9612 CST .9994
LSA 3630.3 MSA 247.4 SSA 30.4
EL1 2228.3 EL2 212.7 ALF 24.41

LAUNCH DATE OCT 1 1964 FLIGHT TIME 274.00 ARRIVAL DATE JUL 2 1965

HELIOCENTRIC CONIC DISTANCE 654.566 EARTH TO MARS

RL 149.75 LAL -.00 LOL 7.85 VL 32.705 GAL -8.23 AZL 90.46 HCA 213.47 SMA 188.83 ECC .24988 INC .4649 V1 29.754
RP 234.89 LAP .26 LOP 221.32 VP 20.669 GAP 3.20 AZP 89.61 TAL 316.80 TAP 170.28 RCA 141.64 APO 236.01 V2 23.405
RC 202.623 GL -3.05 GP 10.78 ZAL 147.86 ZAP 138.91 ETS 166.12 ZAE 168.15 ETE 89.11 ZAC 98.53 ETC 256.07 CLP 140.10

PLANETOCENTRIC CONIC

C3 24.442 VHL 4.944 DLA 6.54 RAL 156.50 RAD 6568.0 VEL 12.076 PTH 2.16 VHP 4.274 DPA 10.47 RAP 186.41 ECC 1.4023

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 16 41	2466.95	-24.78	58.12	23.20	104.15	20 57 48	1867.0	-22.60	50.14
90.00	9 56 38	4702.93	15.51	200.81	19.79	66.01	11 15 1	4102.9	12.14	193.76
100.00	21 41 9	2194.55	-25.95	37.75	22.86	105.38	22 17 43	1594.6	-23.59	29.75
100.00	11 14 52	4450.56	16.61	181.73	19.27	64.79	12 29 2	3850.6	13.08	174.72
110.00	22 56 31	1958.69	-29.08	18.76	21.77	108.81	23 29 9	1358.7	-26.24	10.73
110.00	12 15 59	4259.20	19.53	165.65	17.71	61.37	13 26 59	3659.2	15.56	158.78

DIFFERENTIAL CORRECTIONS
TDE 1.3881 TRA-3.3479 TC3 1.2210 BAU .4756
RDE .7640 RRA-1.0065 RC3 .7921 FAU .28377
FDE-5.3730 FRA13.8901 FC-10.0511 BSP 16400
BDE 1.5844 BRA 3.4959 BC3 1.4554 FSP 5603

MID-COURSE EXECUTION ACCURACY
SGT 4392.8 SGR 1666.1 SG3 1728.2
RRT .9503 RRF -.9699 RTF -.9707
SGB 4698.2 R23 -.1151 R13 -.9758
SG1 4672.8 SG2 487.6 THA 20.05

ORBIT DETERMINATION ACCURACY
ST 1990.4 SR 953.2 SS 2919.0
CRT .9687 CRS .9598 CST .9993
LSA 3650.3 MSA 255.4 SSA 30.2
EL1 2196.4 EL2 214.4 ALF 25.14

LAUNCH DATE OCT 1 1964 FLIGHT TIME 276.00 ARRIVAL DATE JUL 4 1965

HELIOCENTRIC CONIC DISTANCE 658.295 EARTH TO MARS

RL 149.75 LAL -.00 LOL 7.85 VL 32.690 GAL -8.18 AZL 90.40 HCA 214.46 SMA 188.56 ECC .24843 INC .3973 V1 29.754
RP 234.53 LAP .22 LOP 222.30 VP 20.687 GAP 2.83 AZP 89.67 TAL 316.91 TAP 171.37 RCA 141.72 APO 235.41 V2 23.442
RC 204.770 GL -2.62 GP 10.74 ZAL 147.78 ZAP 137.80 ETS 166.67 ZAE 168.11 ETE 94.96 ZAC 98.45 ETC 256.08 CLP 138.94

PLANETOCENTRIC CONIC

C3 24.083 VHL 4.907 DLA 6.97 RAL 156.55 RAD 6568.0 VEL 12.061 PTH 2.16 VHP 4.188 DPA 10.51 RAP 186.23 ECC 1.3964

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 13 32	2477.16	-24.95	58.82	23.15	103.84	20 54 49	1877.2	-22.80	50.81
90.00	10 0 11	4685.47	15.03	199.76	19.55	65.71	11 18 16	4085.5	11.62	192.74
100.00	21 38 12	2204.05	-26.12	38.40	22.81	105.07	22 14 56	1604.1	-23.80	30.38
100.00	11 18 11	4433.81	16.12	180.73	19.02	64.48	12 32 5	3833.8	12.56	173.75
110.00	22 54 4	1966.64	-29.26	19.31	21.74	108.52	23 26 51	1366.6	-26.45	11.25
110.00	12 18 49	4243.99	19.03	164.75	17.45	61.06	13 29 33	3644.0	15.03	157.93

DIFFERENTIAL CORRECTIONS
TDE 1.3478 TRA-3.2452 TC3 1.2007 BAU .4672
RDE .7687 RRA-1.0112 RC3 .8148 FAU .29433
FDE-5.5183 FRA14.3815 FC-10.5804 BSP 16130
BDE 1.5516 BRA 3.3991 BC3 1.4510 FSP 5856

MID-COURSE EXECUTION ACCURACY
SGT 4293.6 SGR 1691.0 SG3 1803.0
RRT .9496 RRF -.9693 RTF -.9704
SGB 4614.6 R23 -.1128 R13 -.9758
SG1 4587.8 SG2 496.1 THA 20.76

ORBIT DETERMINATION ACCURACY
ST 1946.4 SR 966.1 SS 2969.8
CRT .9687 CRS .9586 CST .9991
LSA 3670.4 MSA 263.4 SSA 30.0
EL1 2162.2 EL2 215.7 ALF 25.96

LAUNCH DATE OCT 1 1964 FLIGHT TIME 278.00 ARRIVAL DATE JUL 6 1965

HELIOCENTRIC CONIC DISTANCE 662.034 EARTH TO MARS

RL 149.75 LAL -.00 LOL 7.85 VL 32.675 GAL -8.12 AZL 90.33 HCA 215.44 SMA 188.31 ECC .24706 INC .3335 V1 29.754
RP 234.17 LAP .19 LOP 223.29 VP 20.706 GAP 2.46 AZP 89.73 TAL 317.00 TAP 172.45 RCA 141.79 APO 234.83 V2 23.479
RC 206.900 GL -2.21 GP 10.70 ZAL 147.70 ZAP 136.66 ETS 167.19 ZAE 167.93 ETE 100.92 ZAC 98.37 ETC 256.10 CLP 137.74

PLANETOCENTRIC CONIC

C3 23.748 VHL 4.873 DLA 7.39 RAL 156.60 RAD 6568.0 VEL 12.047 PTH 2.15 VHP 4.105 DPA 10.56 RAP 186.03 ECC 1.3908

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 10 28	2487.13	-25.11	59.51	23.11	103.53	20 51 55	1887.1	-23.00	51.48
90.00	10 3 38	4668.63	14.55	198.75	19.34	65.44	11 21 26	4068.6	11.12	191.76
100.00	21 35 21	2213.33	-26.29	39.05	22.78	104.77	22 12 15	1613.3	-24.00	30.99
100.00	11 21 26	4417.66	15.65	179.77	18.81	64.20	12 35 3	3817.7	12.05	172.82
110.00	22 51 42	1974.39	-29.42	19.85	21.73	108.24	23 24 37	1374.4	-26.65	11.77
110.00	12 21 34	4229.36	18.55	163.89	17.22	60.76	13 32 3	3629.4	14.51	157.11

DIFFERENTIAL CORRECTIONS
TDE 1.3054 TRA-3.1388 TC3 1.1724 BAU .4575
RDE .7736 RRA-1.0175 RC3 .8377 FAU .30505
FDE-5.6645 FRA14.8908 FC-11.1208 BSP 15848
BDE 1.5173 BRA 3.2996 BC3 1.4409 FSP 6125

MID-COURSE EXECUTION ACCURACY
SGT 4184.5 SGR 1717.3 SG3 1880.1
RRT .9488 RRF -.9688 RTF -.9698
SGB 4523.2 R23 -.1110 R13 -.9757
SG1 4494.9 SG2 504.9 THA 21.56

ORBIT DETERMINATION ACCURACY
ST 1898.2 SR 979.2 SS 3020.4
CRT .9689 CRS .9573 CST .9989
LSA 3689.1 MSA 271.7 SSA 29.7
EL1 2124.8 EL2 216.6 ALF 26.86

LAUNCH DATE OCT 1 1964 FLIGHT TIME 280.00 ARRIVAL DATE JUL 8 1965

HELIOCENTRIC CONIC DISTANCE 665.784 EARTH TO MARS

RL 149.75 LAL -.00 LOL 7.85 VL 32.661 GAL -8.07 AZL 90.27 HCA 216.43 SMA 188.07 ECC .24575 INC .2714 V1 29.754
RP 233.80 LAP .16 LOP 224.28 VP 20.727 GAP 2.10 AZP 89.78 TAL 317.10 TAP 173.53 RCA 141.85 APO 234.29 V2 23.517
RC 209.011 GL -1.82 GP 10.67 ZAL 147.62 ZAP 135.47 ETS 167.71 ZAE 167.61 ETE 106.86 ZAC 98.29 ETC 256.12 CLP 136.51

PLANETOCENTRIC CONIC

C3 23.434 VHL 4.841 DLA 7.80 RAL 156.65 RAD 6568.0 VEL 12.034 PTH 2.15 VHP 4.025 DPA 10.63 RAP 185.80 ECC 1.3857

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 7 30	2496.86	-25.27	60.18	23.08	103.23	20 49 7	1896.9	-23.20	52.12
90.00	10 7 0	4652.38	14.09	197.78	19.14	65.18	11 24 32	4052.4	10.63	190.82
100.00	21 32 36	2222.39	-26.44	39.67	22.76	104.48	22 9 39	1622.4	-24.19	31.60
100.00	11 24 35	4402.09	15.18	178.84	18.61	63.94	12 37 57	3802.1	11.56	171.93
110.00	22 49 26	1981.98	-29.58	20.38	21.72	107.96	23 22 28	1382.0	-26.84	12.27
110.00	12 24 15	4215.27	18.08	163.07	17.01	60.48	13 34 30	3615.3	14.01	156.32

DIFFERENTIAL CORRECTIONS
TDE 1.2623 TRA-3.0272 TC3 1.1384 BAU .4473
RDE .7791 RRA-1.0248 RC3 .8617 FAU .31621
FDE-5.8179 FRA15.4107 FC-11.6820 BSP 15520
BDE 1.4834 BRA 3.1960 BC3 1.4277 FSP 6394

MID-COURSE EXECUTION ACCURACY
SGT 4065.2 SGR 1745.1 SG3 1959.3
RRT .9480 RRF -.9684 RTF -.9690
SGB 4423.9 R23 -.1095 R13 -.9755
SG1 4393.9 SG2 514.0 THA 22.47

ORBIT DETERMINATION ACCURACY
ST 1846.7 SR 993.0 SS 3072.0
CRT .9691 CRS .9562 CST .9986
LSA 3708.6 MSA 279.9 SSA 29.5
EL1 2085.5 EL2 216.8 ALF 27.85

LAUNCH DATE OCT 1 1964 FLIGHT TIME 282.00 ARRIVAL DATE JUL 10 1965

HELIOCENTRIC CONIC DISTANCE 669.545 EARTH TO MARS

RL 149.75 LAL -.00 LOL 7.85 VL 32.648 GAL -8.02 AZL 90.21 HCA 217.43 SMA 187.84 ECC .24451 INC .2127 V1 29.754
RP 233.44 LAP .13 LOP 225.27 VP 20.749 GAP 1.74 AZP 89.83 TAL 317.18 TAP 174.61 RCA 141.91 APO 233.77 V2 23.555
RC 211.104 GL -1.43 GP 10.64 ZAL 147.54 ZAP 134.25 ETS 168.20 ZAE 167.15 ETE 112.63 ZAC 98.20 ETC 256.14 CLP 135.24

PLANETOCENTRIC CONIC

C3 23.141 VHL 4.811 DLA 8.19 RAL 156.70 RAD 6567.9 VEL 12.022 PTH 2.15 VHP 3.947 DPA 10.73 RAP 185.53 ECC 1.3808

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 4 39	2506.39	-25.41	60.84	23.06	102.93	20 46 25	1906.4	-23.38	52.76
90.00	10 10 16	4636.72	13.64	196.85	18.97	64.94	11 27 33	4036.7	10.15	189.91
100.00	21 29 57	2231.26	-26.59	40.29	22.74	104.18	22 7 8	1631.3	-24.38	32.19
100.00	11 27 39	4387.09	14.73	177.96	18.43	63.69	12 40 46	3787.1	11.08	171.07
110.00	22 47 14	1989.40	-29.74	20.91	21.72	107.69	23 20 23	1389.4	-27.03	12.76
110.00	12 26 51	4201.71	17.62	162.29	16.83	60.22	13 36 53	3601.7	13.53	155.57

DIFFERENTIAL CORRECTIONS
TDE 1.2181 TRA-2.9109 TC3 1.0974 BAU .4364
RDE .7851 RRA-1.0333 RC3 .8860 FAU .32762
FDE-5.9748 FRA15.9447 FC-12.2565 BSP 15175
BDE 1.4492 BRA 3.0889 BC3 1.4104 FSP 6678

MID-COURSE EXECUTION ACCURACY
SGT 3935.6 SGR 1774.0 SG3 2040.6
RRT .9470 RRF -.9681 RTF -.9680
SGB 4317.0 R23 -.1084 R13 -.9752
SG1 4285.1 SG2 523.2 THA 23.49

ORBIT DETERMINATION ACCURACY
ST 1791.6 SR 1007.1 SS 3123.8
CRT .9696 CRS .9551 CST .9984
LSA 3728.1 MSA 288.1 SSA 29.2
EL1 2043.9 EL2 216.2 ALF 28.94

LAUNCH DATE OCT 1 1964 FLIGHT TIME 284.00 ARRIVAL DATE JUL 12 1965

HELIOCENTRIC CONIC DISTANCE 673.316 EARTH TO MARS

RL 149.75 LAL -.00 LOL 7.85 VL 32.636 GAL -7.98 AZL 90.16 HCA 218.42 SMA 187.63 ECC .24333 INC .1559 V1 29.754
RP 233.07 LAP .10 LOP 226.27 VP 20.773 GAP 1.39 AZP 89.88 TAL 317.26 TAP 175.68 RCA 141.97 APO 233.28 V2 23.593
RC 213.179 GL -1.06 GP 10.62 ZAL 147.47 ZAP 132.99 ETS 168.69 ZAE 166.55 ETE 118.14 ZAC 98.12 ETC 256.16 CLP 133.92

PLANETOCENTRIC CONIC

C3 22.868 VHL 4.782 DLA 8.57 RAL 156.76 RAD 6567.9 VEL 12.010 PTH 2.14 VHP 3.872 DPA 10.84 RAP 185.24 ECC 1.3764

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 1 53	2515.72	-25.55	61.49	23.05	102.63	20 43 48	1915.7	-23.56	53.39
90.00	10 13 28	4621.62	13.20	195.96	18.82	64.72	11 30 30	4021.6	9.69	189.04
100.00	21 27 23	2239.94	-26.73	40.90	22.74	103.90	22 4 43	1639.9	-24.56	32.77
100.00	11 30 39	4372.63	14.29	177.11	18.27	63.46	12 43 32	3772.6	10.62	170.25
110.00	22 45 7	1996.68	-29.89	21.42	21.74	107.42	23 18 24	1396.7	-27.22	13.25
110.00	12 29 24	4188.66	17.18	161.53	16.66	59.98	13 39 13	3588.7	13.06	154.85

DIFFERENTIAL CORRECTIONS
TDE 1.1718 TRA-2.7892 TC3 1.0486 BAU .4246
RDE .7914 RRA-1.0428 RC3 .9108 FAU .33927
FDE-6.1346 FRA16.4906 FC-12.8437 BSP 14790
BDE 1.4140 BRA 2.9777 BC3 1.3889 FSP 6963

MID-COURSE EXECUTION ACCURACY
SGT 3794.5 SGR 1804.1 SG3 2123.7
RRT .9459 RRF -.9679 RTF -.9667
SGB 4201.5 R23 -.1077 R13 -.9747
SG1 4167.6 SG2 532.9 THA 24.64

ORBIT DETERMINATION ACCURACY
ST 1732.0 SR 1021.5 SS 3175.5
CRT .9701 CRS .9542 CST .9980
LSA 3746.8 MSA 296.4 SSA 29.0
EL1 1999.3 EL2 214.9 ALF 30.16

LAUNCH DATE OCT 1 1964 FLIGHT TIME 286.00 ARRIVAL DATE JUL 14 1965

HELIOCENTRIC CONIC DISTANCE 677.096 EARTH TO MARS

RL 149.75 LAL -.00 LOL 7.85 VL 32.624 GAL -7.93 AZL 90.10 HCA 219.42 SMA 187.42 ECC .24222 INC .1014 V1 29.754
RP 232.70 LAP .07 LOP 227.27 VP 20.798 GAP 1.04 AZP 89.92 TAL 317.33 TAP 176.75 RCA 142.02 APO 232.82 V2 23.631
RC 215.236 GL -.70 GP 10.61 ZAL 147.39 ZAP 131.68 ETS 169.17 ZAE 165.80 ETE 123.30 ZAC 98.03 ETC 256.19 CLP 132.57

PLANETOCENTRIC CONIC

C3 22.615 VHL 4.756 DLA 8.94 RAL 156.81 RAD 6567.9 VEL 12.000 PTH 2.14 VHP 3.800 DPA 10.98 RAP 184.91 ECC 1.3722

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 59 12	2524.86	-25.69	62.12	23.06	102.34	20 41 17	1924.9	-23.73	54.00
90.00	10 16 36	4607.06	12.78	195.10	18.68	64.51	11 33 23	4007.1	9.24	188.21
100.00	21 24 54	2248.45	-26.87	41.49	22.75	103.61	22 2 23	1648.5	-24.73	33.34
100.00	11 33 35	4358.70	13.87	176.29	18.13	63.25	12 46 14	3758.7	10.17	169.45
110.00	22 43 5	2003.81	-30.03	21.93	21.76	107.15	23 16 29	1403.8	-27.39	13.73
110.00	12 31 54	4176.11	16.75	160.81	16.51	59.76	13 41 30	3576.1	12.61	154.15

DIFFERENTIAL CORRECTIONS
TDE 1.1246 TRA-2.6615 TC3 .9930 BAU .4126
RDE .7982 RRA-1.0531 RC3 .9363 FAU .35126
FDE-6.2990 FRA17.0459 FC-13.4466 BSP 14368
BDE 1.3791 BRA 2.8623 BC3 1.3648 FSP 7255

MID-COURSE EXECUTION ACCURACY
SGT 3642.1 SGR 1835.1 SG3 2208.5
RRT .9446 RRF -.9677 RTF -.9651
SGB 4078.3 R23 -.1074 R13 -.9742
SG1 4042.0 SG2 542.7 THA 25.95

ORBIT DETERMINATION ACCURACY
ST 1668.9 SR 1036.3 SS 3227.4
CRT .9708 CRS .9533 CST .9977
LSA 3765.9 MSA 304.7 SSA 28.7
EL1 1953.0 EL2 212.4 ALF 31.50

LAUNCH DATE OCT 1 1964 FLIGHT TIME 288.00 ARRIVAL DATE JUL 16 1965

HELIOCENTRIC CONIC DISTANCE 680.886 EARTH TO MARS

RL 149.75 LAL -.00 LOL 7.85 VL 32.613 GAL -7.89 AZL 90.05 HCA 220.42 SMA 187.23 ECC .24117 INC .0485 V1 29.754
RP 232.32 LAP .03 LOP 228.27 VP 20.824 GAP .69 AZP 89.96 TAL 317.39 TAP 177.82 RCA 142.07 APO 232.38 V2 23.670
RC 217.275 GL -.34 GP 10.60 ZAL 147.33 ZAP 130.33 ETS 169.64 ZAE 164.92 ETE 128.06 ZAC 97.93 ETC 256.22 CLP 131.18

PLANETOCENTRIC CONIC

C3 22.381 VHL 4.731 DLA 9.29 RAL 156.88 RAD 6567.9 VEL 11.990 PTH 2.14 VHP 3.730 DPA 11.13 RAP 184.56 ECC 1.3683

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 56 38	2533.83	-25.82	62.75	23.07	102.05	20 38 52	1933.8	-23.90	54.61
90.00	10 19 40	4593.04	12.37	194.28	18.57	64.32	11 36 13	3993.0	8.81	187.40
100.00	21 22 31	2256.80	-27.00	42.08	22.77	103.33	22 0 8	1656.8	-24.90	33.91
100.00	11 36 27	4345.30	13.46	175.51	18.01	63.05	12 48 53	3745.3	9.74	168.69
110.00	22 41 8	2010.82	-30.17	22.43	21.80	106.89	23 14 39	1410.8	-27.57	14.20
110.00	12 34 20	4164.04	16.33	160.12	16.38	59.55	13 43 44	3564.0	12.17	153.49

DIFFERENTIAL CORRECTIONS
TDE 1.0755 TRA-2.5285 TC3 .9283 BAU .3999
RDE .8052 RRA-1.0643 RC3 .9617 FAU .36337
FDE-6.4652 FRA17.6121 FC-14.0560 BSP 13925
BDE 1.3435 BRA 2.7434 BC3 1.3366 FSP 7555

MID-COURSE EXECUTION ACCURACY
SGT 3478.1 SGR 1866.8 SG3 2294.6
RRT .9429 RRF -.9675 RTF -.9629
SGB 3947.4 R23 -.1077 R13 -.9735
SG1 3908.5 SG2 553.1 THA 27.44

ORBIT DETERMINATION ACCURACY
ST 1601.2 SR 1051.3 SS 3279.0
CRT .9717 CRS .9524 CST .9972
LSA 3784.4 MSA 313.0 SSA 28.4
EL1 1904.0 EL2 208.9 ALF 32.98

LAUNCH DATE OCT 1 1964 FLIGHT TIME 290.00 ARRIVAL DATE JUL 18 1965

HELIOCENTRIC CONIC DISTANCE 684.686 EARTH TO MARS

RL 149.75 LAL -.00 LOL 7.85 VL 32.602 GAL -7.86 AZL 90.00 HCA 221.43 SMA 187.04 ECC .24018 INC .0000 V1 29.754
RP 231.95 LAP .00 LOP 229.28 VP 20.852 GAP .35 AZP 90.00 TAL 317.45 TAP 178.88 RCA 142.12 APO 231.96 V2 23.709
RC 219.295 GL -.00 GP 10.59 ZAL 147.26 ZAP 128.94 ETS 170.10 ZAE 163.93 ETE 132.41 ZAC 97.83 ETC 256.25 CLP 129.75

PLANETOCENTRIC CONIC

C3 22.165 VHL 4.708 DLA 9.64 RAL 156.94 RAD 6567.9 VEL 11.981 PTH 2.14 VHP 3.663 DPA 11.30 RAP 184.17 ECC 1.3648

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 54 9	2542.63	-25.94	63.36	23.10	101.77	20 36 32	1942.6	-24.06	55.20
90.00	10 22 40	4579.53	11.97	193.49	18.47	64.14	11 38 59	3979.5	8.39	186.63
100.00	21 20 14	2264.99	-27.13	42.65	22.81	103.05	21 57 59	1665.0	-25.06	34.46
100.00	11 39 16	4332.40	13.06	174.76	17.91	62.87	12 51 28	3732.4	9.32	167.97
110.00	22 39 15	2017.70	-30.31	22.92	21.85	106.62	23 12 53	1417.7	-27.73	14.67
110.00	12 36 44	4152.46	15.93	159.47	16.28	59.35	13 45 56	3552.5	11.75	152.86

DIFFERENTIAL CORRECTIONS
TDE 1.0243 TRA-2.3895 TC3 .8552 BAU .3871
RDE .8124 RRA-1.0762 RC3 .9874 FAU .37569
FDE-6.6337 FRA18.1860 FC-14.6740 BSP 13453
BDE 1.3074 BRA 2.6207 BC3 1.3062 FSP 7860

MID-COURSE EXECUTION ACCURACY
SGT 3302.0 SGR 1899.2 SG3 2382.0
RRT .9408 RRF -.9674 RTF -.9602
SGB 3809.2 R23 -.1085 R13 -.9726
SG1 3767.2 SG2 564.2 THA 29.13

ORBIT DETERMINATION ACCURACY
ST 1529.0 SR 1066.4 SS 3330.1
CRT .9727 CRS .9517 CST .9967
LSA 3802.7 MSA 321.3 SSA 28.1
EL1 1852.9 EL2 204.3 ALF 34.63

LAUNCH DATE OCT 1 1964 FLIGHT TIME 292.00 ARRIVAL DATE JUL 20 1965

HELIOCENTRIC CONIC DISTANCE 688.498 EARTH TO MARS

RL 149.75 LAL -.00 LOL 7.85 VL 32.592 GAL -7.82 AZL 89.95 HCA 222.44 SMA 186.87 ECC .23925 INC .0474 V1 29.754
RP 231.57 LAP -.03 LOP 230.29 VP 20.880 GAP .02 AZP 90.04 TAL 317.50 TAP 179.94 RCA 142.16 APO 231.57 V2 23.748
RC 221.297 GL .33 GP 10.58 ZAL 147.20 ZAP 127.51 ETS 170.56 ZAE 162.81 ETE 136.37 ZAC 97.73 ETC 256.29 CLP 128.27

PLANETOCENTRIC CONIC

C3 21.966 VHL 4.687 DLA 9.97 RAL 157.01 RAD 6567.9 VEL 11.973 PTH 2.13 VHP 3.599 DPA 11.49 RAP 183.74 ECC 1.3615

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 51 46	2551.27	-26.06	63.97	23.14	101.49	20 34 17	1951.3	-24.21	55.79
90.00	10 25 36	4566.54	11.58	192.73	18.40	63.98	11 41 43	3966.5	7.99	185.89
100.00	21 18 2	2273.04	-27.25	43.22	22.86	102.78	21 55 55	1673.0	-25.22	35.01
100.00	11 42 1	4320.00	12.67	174.04	17.84	62.70	12 54 1	3720.0	8.91	167.27
110.00	22 37 28	2024.47	-30.44	23.40	21.91	106.37	23 11 12	1424.5	-27.90	15.13
110.00	12 39 4	4141.34	15.55	158.84	16.19	59.17	13 48 6	3541.3	11.34	152.25

DIFFERENTIAL CORRECTIONS
TDE .9721 TRA-2.2440 TC3 .7738 BAU .3744
RDE .8200 RRA-1.0885 RC3 1.0132 FAU .38817
FDE-6.8056 FRA18.7642 FC-15.2986 BSP 12952
BDE 1.2717 BRA 2.4941 BC3 1.2749 FSP 8169

MID-COURSE EXECUTION ACCURACY
SGT 3113.9 SGR 1931.9 SG3 2470.1
RRT .9381 RRF -.9673 RTF -.9566
SGB 3664.5 R23 -.1097 R13 -.9715
SG1 3618.9 SG2 575.8 THA 31.07

ORBIT DETERMINATION ACCURACY
ST 1452.9 SR 1081.6 SS 3381.1
CRT .9739 CRS .9510 CST .9960
LSA 3821.5 MSA 329.6 SSA 27.8
EL1 1800.5 EL2 198.0 ALF 36.46

LAUNCH DATE OCT 1 1964 FLIGHT TIME 294.00 ARRIVAL DATE JUL 22 1965

HELIOCENTRIC CONIC DISTANCE 692.313 EARTH TO MARS

RL 149.75 LAL -.00 LOL 7.85 VL 32.582 GAL -7.79 AZL 89.91 HCA 223.45 SMA 186.70 ECC .23838 INC .0941 V1 29.754
RP 231.20 LAP -.06 LOP 231.30 VP 20.910 GAP -.31 AZP 90.07 TAL 317.54 TAP 180.99 RCA 142.20 APO 231.21 V2 23.788
RC 223.281 GL .65 GP 10.58 ZAL 147.15 ZAP 126.03 ETS 171.01 ZAE 161.59 ETE 139.94 ZAC 97.62 ETC 256.33 CLP 126.76

PLANETOCENTRIC CONIC

C3 21.785 VHL 4.667 DLA 10.29 RAL 157.08 RAD 6567.9 VEL 11.965 PTH 2.13 VHP 3.538 DPA 11.69 RAP 183.28 ECC 1.3585

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 49 28	2559.75	-26.17	64.56	23.20	101.21	20 32 8	1959.7	-24.36	56.36
90.00	10 28 29	4554.06	11.21	192.00	18.34	63.82	11 44 23	3954.1	7.60	185.18
100.00	21 15 55	2280.94	-27.37	43.78	22.92	102.51	21 53 56	1680.9	-25.37	35.55
100.00	11 44 43	4308.10	12.30	173.35	17.77	62.54	12 56 31	3708.1	8.52	166.60
110.00	22 35 45	2031.12	-30.56	23.88	21.99	106.11	23 9 36	1431.1	-28.05	15.58
110.00	12 41 22	4130.68	15.17	158.24	16.12	59.00	13 50 13	3530.7	10.95	151.67

DIFFERENTIAL CORRECTIONS
TDE .9178 TRA-2.0916 TC3 .6836 BAU .3622
RDE .8278 RRA-1.1011 RC3 1.0388 FAU .40073
FDE-6.9790 FRA19.3436 FC-15.9250 BSP 12418
BDE 1.2359 BRA 2.3637 BC3 1.2436 FSP 8479

MID-COURSE EXECUTION ACCURACY
SGT 2913.1 SGR 1964.7 SG3 2558.4
RRT .9345 RRF -.9673 RTF -.9520
SGB 3513.7 R23 -.1114 R13 -.9703
SG1 3464.1 SG2 588.2 THA 33.31

ORBIT DETERMINATION ACCURACY
ST 1372.0 SR 1096.9 SS 3431.3
CRT .9754 CRS .9503 CST .9952
LSA 3839.9 MSA 337.7 SSA 27.5
EL1 1746.3 EL2 190.0 ALF 38.49

LAUNCH DATE OCT 1 1964 FLIGHT TIME 296.00 ARRIVAL DATE JUL 24 1965

HELIOCENTRIC CONIC DISTANCE 696.141 EARTH TO MARS

RL 149.75 LAL -.00 LOL 7.85 VL 32.573 GAL -7.76 AZL 89.86 HCA 224.47 SMA 186.54 ECC .23757 INC .1388 V1 29.754
RP 230.82 LAP -.10 LOP 232.31 VP 20.941 GAP -.64 AZP 90.10 TAL 317.58 TAP 182.04 RCA 142.23 APO 230.86 V2 23.827
RC 225.247 GL .97 GP 10.58 ZAL 147.10 ZAP 124.51 ETS 171.45 ZAE 160.28 ETE 143.16 ZAC 97.50 ETC 256.37 CLP 125.20

PLANETOCENTRIC CONIC

C3 21.620 VHL 4.650 DLA 10.60 RAL 157.16 RAD 6567.9 VEL 11.958 PTH 2.13 VHP 3.479 DPA 11.92 RAP 182.79 ECC 1.3558

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 47 16	2568.07	-26.28	65.15	23.27	100.94	20 30 4	1968.1	-24.51	56.93
90.00	10 31 18	4542.07	10.84	191.31	18.30	63.68	11 47 0	3942.1	7.22	184.50
100.00	21 13 54	2288.70	-27.48	44.33	22.99	102.24	21 52 2	1688.7	-25.52	36.07
100.00	11 47 22	4296.68	11.94	172.70	17.73	62.39	12 58 59	3696.7	8.15	165.96
110.00	22 34 7	2037.66	-30.69	24.35	22.08	105.86	23 8 5	1437.7	-28.21	16.03
110.00	12 43 38	4120.48	14.82	157.66	16.07	58.84	13 52 18	3520.5	10.58	151.12

DIFFERENTIAL CORRECTIONS
TDE .8650 TRA-1.9300 TC3 .5900 BAU .3521
RDE .8367 RRA-1.1129 RC3 1.0659 FAU .41399
FDE-7.1689 FRA19.9095 FC-16.5773 BSP 11785
BDE 1.2034 BRA 2.2279 BC3 1.2183 FSP 8756

MID-COURSE EXECUTION ACCURACY
SGT 2700.1 SGR 1998.0 SG3 2647.0
RRT .9302 RRF -.9673 RTF -.9460
SGB 3358.9 R23 -.1127 R13 -.9689
SG1 3305.1 SG2 599.1 THA 35.90

ORBIT DETERMINATION ACCURACY
ST 1289.6 SR 1113.1 SS 3484.0
CRT .9775 CRS .9500 CST .9941
LSA 3862.7 MSA 345.8 SSA 27.1
EL1 1694.1 EL2 178.8 ALF 40.70

LAUNCH DATE OCT 1 1964 FLIGHT TIME 298.00 ARRIVAL DATE JUL 26 1965

HELIOCENTRIC CONIC DISTANCE 699.976 EARTH TO MARS

RL 149.75 LAL -.00 LOL 7.85 VL 32.564 GAL -7.74 AZL 89.82 HCA 225.48 SMA 186.40 ECC .23681 INC .1825 V1 29.754
RP 230.43 LAP -.13 LOP 233.33 VP 20.973 GAP -.96 AZP 90.13 TAL 317.60 TAP 183.09 RCA 142.26 APO 230.54 V2 23.867
RC 227.193 GL 1.28 GP 10.57 ZAL 147.06 ZAP 122.95 ETS 171.89 ZAE 158.87 ETE 146.06 ZAC 97.37 ETC 256.42 CLP 123.60

PLANETOCENTRIC CONIC

C3 21.472 VHL 4.634 DLA 10.89 RAL 157.25 RAD 6567.9 VEL 11.952 PTH 2.13 VHP 3.424 DPA 12.16 RAP 182.26 ECC 1.3534

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 45 10	2576.25	-26.39	65.73	23.35	100.67	20 28 7	1976.2	-24.65	57.49
90.00	10 34 5	4530.58	10.50	190.64	18.28	63.55	11 49 35	3930.6	6.86	183.85
100.00	21 11 58	2290.32	-27.59	44.87	23.08	101.98	21 50 14	1696.3	-25.66	36.60
100.00	11 49 58	4285.74	11.59	172.07	17.71	62.25	13 1 24	3685.7	7.79	165.34
110.00	22 32 34	2044.10	-30.81	24.81	22.18	105.61	23 6 38	1444.1	-28.36	16.47
110.00	12 45 51	4110.73	14.47	157.12	16.04	58.69	13 54 22	3510.7	10.22	150.59

DIFFERENTIAL CORRECTIONS
TDE .8056 TRA-1.7651 TC3 .4792 BAU .3419
RDE .8444 RRA-1.1260 RC3 1.0903 FAU .42638
FDE-7.3384 FRA20.4904 FC-17.1911 BSP 11240
BDE 1.1670 BRA 2.0937 BC3 1.1909 FSP 9078

MID-COURSE EXECUTION ACCURACY
SGT 2475.7 SGR 2030.1 SG3 2734.7
RRT .9232 RRF -.9673 RTF -.9374
SGB 3201.6 R23 -.1156 R13 -.9673
SG1 3142.0 SG2 614.8 THA 38.90

ORBIT DETERMINATION ACCURACY
ST 1198.7 SR 1127.8 SS 3531.1
CRT .9793 CRS .9494 CST .9928
LSA 3879.6 MSA 353.8 SSA 26.8
EL1 1637.4 EL2 166.9 ALF 43.22

LAUNCH DATE OCT 1 1964 FLIGHT TIME 300.00 ARRIVAL DATE JUL 28 1965

HELIOCENTRIC CONIC DISTANCE 703.820 EARTH TO MARS

RL 149.75 LAL -.00 LOL 7.85 VL 32.556 GAL -7.72 AZL 89.77 HCA 226.51 SMA 186.26 ECC .23611 INC .2252 V1 29.754
RP 230.05 LAP -.16 LOP 234.35 VP 21.006 GAP -1.27 AZP 90.16 TAL 317.62 TAP 184.13 RCA 142.28 APO 230.23 V2 23.907
RC 229.120 GL 1.57 GP 10.57 ZAL 147.02 ZAP 121.35 ETS 172.33 ZAE 157.38 ETE 148.68 ZAC 97.24 ETC 256.47 CLP 121.96

PLANETOCENTRIC CONIC

C3 21.340 VHL 4.620 DLA 11.18 RAL 157.33 RAD 6567.9 VEL 11.947 PTH 2.13 VHP 3.372 DPA 12.41 RAP 181.69 ECC 1.3512

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 43 10	2584.28	-26.49	66.29	23.45	100.40	20 26 14	1984.3	-24.78	58.04
90.00	10 36 48	4519.58	10.16	190.01	18.28	63.43	11 52 7	3919.6	6.51	183.23
100.00	21 10 8	2303.81	-27.70	45.40	23.18	101.72	21 48 32	1703.8	-25.80	37.11
100.00	11 52 31	4275.28	11.26	171.47	17.71	62.13	13 3 46	3675.3	7.44	164.76
110.00	22 31 6	2050.43	-30.92	25.27	22.30	105.36	23 5 17	1450.4	-28.50	16.90
110.00	12 48 2	4101.42	14.14	156.60	16.03	58.55	13 56 23	3501.4	9.88	150.09

DIFFERENTIAL CORRECTIONS
TDE .7463 TRA-1.5915 TC3 .3628 BAU .3345
RDE .8528 RRA-1.1384 RC3 1.1151 FAU .43908
FDE-7.5170 FRA21.0564 FC-17.8125 BSP 10632
BDE 1.1333 BRA 1.9568 BC3 1.1726 FSP 9374

MID-COURSE EXECUTION ACCURACY
SGT 2240.1 SGR 2061.9 SG3 2821.5
RRT .9137 RRF -.9673 RTF -.9256
SGB 3044.6 R23 -.1180 R13 -.9655
SG1 2978.7 SG2 630.1 THA 42.41

ORBIT DETERMINATION ACCURACY
ST 1105.1 SR 1142.9 SS 3579.0
CRT .9818 CRS .9490 CST .9910
LSA 3899.4 MSA 361.8 SSA 26.4
EL1 1582.6 EL2 151.6 ALF 45.98

LAUNCH DATE OCT 1 1964 FLIGHT TIME 302.00 ARRIVAL DATE JUL 30 1965

HELIOCENTRIC CONIC DISTANCE 707.672 EARTH TO MARS

RL 149.75 LAL -.00 LOL 7.85 VL 32.548 GAL -7.70 AZL 89.73 HCA 227.53 SMA 186.13 ECC .23547 INC .2661 V1 29.754
RP 229.67 LAP -.20 LOP 235.38 VP 21.040 GAP -1.58 AZP 90.18 TAL 317.63 TAP 185.16 RCA 142.30 APO 229.95 V2 23.948
RC 231.027 GL 1.87 GP 10.56 ZAL 147.00 ZAP 119.71 ETS 172.77 ZAE 155.81 ETE 151.06 ZAC 97.09 ETC 256.53 CLP 120.27

PLANETOCENTRIC CONIC

C3 21.224 VHL 4.607 DLA 11.45 RAL 157.43 RAD 6567.9 VEL 11.942 PTH 2.13 VHP 3.322 DPA 12.68 RAP 181.09 ECC 1.3493

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 41 16	2592.16	-26.58	66.85	23.56	100.14	20 24 28	1992.2	-24.91	58.58
90.00	10 39 28	4509.07	9.84	189.40	18.30	63.31	11 54 37	3909.1	6.18	182.63
100.00	21 8 23	2311.16	-27.80	45.92	23.30	101.46	21 46 55	1711.2	-25.94	37.61
100.00	11 55 1	4265.30	10.94	170.90	17.72	62.01	13 6 7	3665.3	7.11	164.20
110.00	22 29 43	2056.66	-31.03	25.72	22.43	105.11	23 4 0	1456.7	-28.65	17.33
110.00	12 50 11	4092.56	13.83	156.10	16.03	58.42	13 58 23	3492.6	9.55	149.62

DIFFERENTIAL CORRECTIONS
TDE .6844 TRA-1.4115 TC3 .2357 BAU .3299
RDE .8611 RRA-1.1507 RC3 1.1386 FAU .45141
FDE-7.6914 FRA21.6155 FC-18.4133 BSP 10036
BDE 1.0999 BRA 1.8211 BC3 1.1627 FSP 9671

MID-COURSE EXECUTION ACCURACY
SGT 1994.9 SGR 2092.7 SG3 2906.6
RRT .8994 RRF -.9672 RTF -.9083
SGB 2891.2 R23 -.1202 R13 -.9637
SG1 2817.7 SG2 647.8 THA 46.52

ORBIT DETERMINATION ACCURACY
ST 1006.6 SR 1157.5 SS 3624.8
CRT .9845 CRS .9485 CST .9886
LSA 3918.6 MSA 369.6 SSA 26.1
EL1 1528.1 EL2 133.5 ALF 49.05

LAUNCH DATE OCT 1 1964 FLIGHT TIME 304.00 ARRIVAL DATE AUG 1 1965

HELIOCENTRIC CONIC DISTANCE 711.532 EARTH TO MARS

RL	149.75	LAL	-.00	LOL	7.85	VL	32.541	GAL	-7.68	AZL	89.69	HCA	228.56	SMA	186.00	ECC	.23488	INC	.3059	V1	29.754
RP	229.28	LAP	-.23	LOP	236.41	VP	21.075	GAP	-1.89	AZP	90.20	TAL	317.63	TAP	186.19	RCA	142.31	APO	229.69	V2	23.988
RC	232.913	GL	2.15	GP	10.56	ZAL	146.98	ZAP	118.02	ETS	173.20	ZAE	154.18	ETE	153.21	ZAC	96.94	ETC	256.60	CLP	118.55

PLANETOCENTRIC CONIC

C3	21.123	VHL	4.596	DLA	11.72	RAL	157.53	RAD	6567.9	VEL	11.937	PTH	2.12	VHP	3.276	DPA	12.97	RAP	180.45	ECC	1.3476		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 39 28	2599.89	-26.67	67.40	23.69	99.88	20 22 47	1999.9	-25.04	59.11
90.00	10 42 5	4499.04	9.54	188.82	18.34	63.21	11 57 4	3899.0	5.86	182.07
100.00	21 6 45	2318.38	-27.90	46.44	23.43	101.20	21 45 23	1718.4	-26.07	38.11
100.00	11 57 29	4255.80	10.64	170.36	17.76	61.90	13 8 25	3655.8	6.80	163.67
110.00	22 28 26	2062.78	-31.14	26.16	22.57	104.87	23 2 48	1462.8	-28.79	17.75
110.00	12 52 17	4084.14	13.53	155.64	16.06	58.30	14 0 21	3484.1	9.24	149.16

DIFFERENTIAL CORRECTIONS

TDE	.6199	TRA	-1.2244	TC3	.0985	BAU	.3290	SGT	1742.2	SGR	2122.1	SG3	2989.3	ST	903.3	SR	1171.4	SS	3668.1
RDE	.8691	RRA	-1.1624	RC3	1.1609	FAU	.46346	RRT	.8766	RRF	-.9672	RTF	-.8815	CRT	.9877	CRS	.9481	CST	.9852
FDE	-7.8605	FRA	22.1614	FC	-18.9952	BSP	9463	SGB	2745.6	R23	-.1214	R13	-.9621	LSA	3937.0	MSA	377.3	SSA	25.8
BDE	1.0676	BRA	1.6883	BC3	1.1651	FSP	9971	SG1	2663.2	SG2	668.0	THA	51.38	EL1	1475.0	EL2	112.3	ALF	52.45

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

LAUNCH DATE OCT 1 1964 FLIGHT TIME 306.00 ARRIVAL DATE AUG 3 1965

HELIOCENTRIC CONIC DISTANCE 715.401 EARTH TO MARS

RL	149.75	LAL	-.00	LOL	7.85	VL	32.534	GAL	-7.67	AZL	89.66	HCA	229.59	SMA	185.89	ECC	.23435	INC	.3444	V1	29.754
RP	228.89	LAP	-.26	LOP	237.44	VP	21.111	GAP	-2.20	AZP	90.22	TAL	317.62	TAP	187.21	RCA	142.32	APO	229.45	V2	24.029
RC	234.778	GL	2.42	GP	10.55	ZAL	146.96	ZAP	116.30	ETS	173.64	ZAE	152.47	ETE	155.17	ZAC	96.78	ETC	256.67	CLP	116.79

PLANETOCENTRIC CONIC

C3	21.037	VHL	4.587	DLA	11.97	RAL	157.64	RAD	6567.9	VEL	11.934	PTH	2.12	VHP	3.233	DPA	13.26	RAP	179.78	ECC	1.3462		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 37 45	2607.48	-26.76	67.93	23.83	99.62	20 21 13	2007.5	-25.16	59.63
90.00	10 44 39	4489.50	9.24	188.28	18.40	63.11	11 59 29	3889.5	5.56	181.53
100.00	21 5 12	2325.47	-27.99	46.94	23.58	100.95	21 43 57	1725.5	-26.19	38.60
100.00	11 59 54	4246.73	10.35	169.84	17.81	61.80	13 10 41	3646.7	6.50	163.17
110.00	22 27 13	2068.81	-31.24	26.60	22.73	104.63	23 1 42	1468.8	-28.92	18.17
110.00	12 54 22	4076.16	13.24	155.20	16.11	58.19	14 2 18	3476.2	8.94	148.74

DIFFERENTIAL CORRECTIONS

TDE	.5537	TRA	-1.0297	TC3	-.0467	BAU	.3328	SGT	1486.4	SGR	2149.8	SG3	3068.8	ST	796.2	SR	1184.9	SS	3709.7
RDE	.8773	RRA	-1.1731	RC3	1.1824	FAU	.47530	RRT	.8391	RRF	-.9671	RTF	-.8383	CRT	.9913	CRS	.9477	CST	.9800
FDE	-8.0285	FRA	22.6832	FC	-19.5603	BSP	8898	SGB	2613.6	R23	-.1200	R13	-.9609	LSA	3956.1	MSA	384.9	SSA	25.4
BDE	1.0374	BRA	1.5609	BC3	1.1833	FSP	10250	SG1	2521.0	SG2	689.4	THA	57.11	EL1	1424.9	EL2	87.4	ALF	56.19

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

LAUNCH DATE OCT 1 1964 FLIGHT TIME 308.00 ARRIVAL DATE AUG 5 1965

HELIOCENTRIC CONIC DISTANCE 719.275 EARTH TO MARS

RL	149.75	LAL	-.00	LOL	7.85	VL	32.528	GAL	-7.66	AZL	89.62	HCA	230.63	SMA	185.78	ECC	.23386	INC	.3821	V1	29.754
RP	228.51	LAP	-.30	LOP	238.48	VP	21.147	GAP	-2.49	AZP	90.24	TAL	317.60	TAP	188.23	RCA	142.33	APO	229.22	V2	24.070
RC	236.623	GL	2.69	GP	10.54	ZAL	146.96	ZAP	114.54	ETS	174.07	ZAE	150.70	ETE	156.97	ZAC	96.61	ETC	256.74	CLP	114.99

PLANETOCENTRIC CONIC

C3	20.966	VHL	4.579	DLA	12.22	RAL	157.76	RAD	6567.9	VEL	11.931	PTH	2.12	VHP	3.193	DPA	13.57	RAP	179.08	ECC	1.3451		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 36 9	2614.91	-26.84	68.46	23.99	99.37	20 19 44	2014.9	-25.27	60.15
90.00	10 47 11	4480.45	8.96	187.76	18.47	63.03	12 1 51	3880.5	5.27	181.02
100.00	21 3 45	2332.42	-28.08	47.44	23.75	100.70	21 42 37	1732.4	-26.31	39.08
100.00	12 2 16	4238.17	10.07	169.36	17.89	61.71	13 12 54	3638.2	6.21	162.69
110.00	22 26 6	2074.73	-31.35	27.03	22.91	104.39	23 0 41	1474.7	-29.05	18.58
110.00	12 56 24	4068.63	12.97	154.78	16.17	58.09	14 4 13	3468.6	8.86	148.33

DIFFERENTIAL CORRECTIONS

TDE	.4803	TRA	-.8317	TC3	-.2109	BAU	.3409	SGT	1237.9	SGR	2174.4	SG3	3144.5	ST	680.6	SR	1195.6	SS	3741.7
RDE	.8830	RRA	-1.1856	RC3	1.1977	FAU	.48480	RRT	.7685	RRF	-.9669	RTF	-.7604	CRT	.9946	CRS	.9468	CST	.9725
FDE	-8.1517	FRA	23.2284	FC	-20.0179	BSP	8495	SGB	2502.1	R23	-.1141	R13	-.9606	LSA	3967.2	MSA	392.4	SSA	25.3
BDE	1.0052	BRA	1.4482	BC3	1.2161	FSP	10612	SG1	2396.7	SG2	718.6	THA	63.84	EL1	1374.4	EL2	61.5	ALF	60.41

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

LAUNCH DATE OCT 1 1964 FLIGHT TIME 310.00 ARRIVAL DATE AUG 7 1965

HELIOCENTRIC CONIC DISTANCE 723.160 EARTH TO MARS

RL	149.75	LAL	-.00	LOL	7.85	VL	32.522	GAL	-7.65	AZL	89.58	HCA	231.67	SMA	185.68	ECC	.23344	INC	.4188	V1	29.754
RP	228.12	LAP	-.33	LOP	239.52	VP	21.185	GAP	-2.79	AZP	90.26	TAL	317.57	TAP	189.24	RCA	142.33	APO	229.02	V2	24.111
RC	238.446	GL	2.95	GP	10.52	ZAL	146.97	ZAP	112.74	ETS	174.50	ZAE	148.87	ETE	158.61	ZAC	96.43	ETC	256.82	CLP	113.15

PLANETOCENTRIC CONIC

C3	20.910	VHL	4.573	DLA	12.45	RAL	157.88	RAD	6567.8	VEL	11.929	PTH	2.12	VHP	3.157	DPA	13.88	RAP	178.34	ECC	1.3441		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 34 39	2622.20	-26.92	68.98	24.17	99.12	20 18 22	2022.2	-25.39	60.65
90.00	10 49 39	4471.87	8.70	187.27	18.57	62.95	12 4 11	3871.9	5.00	180.54
100.00	21 2 24	2339.24	-28.16	47.93	23.92	100.46	21 41 23	1739.2	-26.43	39.55
100.00	12 4 36	4230.07	9.81	168.90	17.98	61.62	13 15 6	3630.1	5.94	162.24
110.00	22 25 4	2080.55	-31.44	27.46	23.10	104.16	22 59 44	1480.5	-29.18	18.99
110.00	12 58 25	4061.52	12.71	154.39	16.25	58.00	14 6 6	3461.5	8.39	147.95

DIFFERENTIAL CORRECTIONS

TDE	.4125	TRA	-.6207	TC3	-.3687	BAU	.3558	SGT	1007.8	SGR	2198.4	SG3	3215.9	ST	569.5	SR	1208.8	SS	3781.9
RDE	.8920	RRA	-1.1929	RC3	1.2180	FAU	.49652	RRT	.6416	RRF	-.9668	RTF	-.6200	CRT	.9980	CRS	.9466	CST	.9580
FDE	-8.3289	FRA	23.6768	FC	-20.5573	BSP	7990	SGB	2418.3	R23	-.1024	R13	-.9614	LSA	3991.0	MSA	399.6	SSA	24.9
BDE	.9828	BRA	1.3447	BC3	1.2726	FSP	10821	SG1	2303.0	SG2	737.7	THA	71.67	EL1	1335.9	EL2	32.3	ALF	64.80

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

LAUNCH DATE OCT 1 1964 FLIGHT TIME 312.00 ARRIVAL DATE AUG 9 1965

HELIOCENTRIC CONIC DISTANCE 727.051 EARTH TO MARS

RL 149.75 LAL -.00 LOL 7.85 VL 32.516 GAL -7.65 AZL 89.55 HCA 232.71 SMA 185.58 ECC .23308 INC .4546 V1 29.754
RP 227.73 LAP -.36 LOP 240.56 VP 21.223 GAP -3.08 AZP 90.28 TAL 317.53 TAP 190.25 RCA 142.33 APO 228.83 V2 24.152
RC 240.248 GL 3.21 GP 10.50 ZAL 146.98 ZAP 110.91 ETS 174.92 ZAE 146.99 ETE 160.12 ZAC 96.24 ETC 256.91 CLP 111.28

PLANETOCENTRIC CONIC

C3 20.869 VHL 4.568 DLA 12.68 RAL 158.01 RAD 6567.8 VEL 11.927 PTH 2.12 VHP 3.123 DPA 14.21 RAP 177.57 ECC 1.3434

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 33 16	2629.34	-27.00	69.49	24.35	98.88	20 17 5	2029.3	-25.50	61.15
90.00	10 52 5	4463.78	8.45	186.80	18.68	62.87	12 6 29	3863.8	4.74	180.08
100.00	21 1 8	2345.92	-28.24	48.41	24.12	100.22	21 40 14	1745.9	-26.54	40.02
100.00	12 6 53	4222.43	9.56	168.47	18.09	61.54	13 17 16	3622.4	5.69	161.82
110.00	22 24 7	2086.27	-31.54	27.88	23.31	103.93	22 58 54	1486.3	-29.30	19.39
110.00	13 0 24	4054.84	12.47	154.02	16.36	57.91	14 7 58	3454.8	8.14	147.60

DIFFERENTIAL CORRECTIONS
TDE .3409 TRA -.4041 TC3 -.5379 BAU .3758
RDE .9000 RRA-1.1997 RC3 1.2350 FAU .50704
FDE-8.4852 FRA24.1080 FC-21.0343 BSP 7633
BDE .9624 BRA 1.2659 BC3 1.3471 FSP 11048

MID-COURSE EXECUTION ACCURACY
SGT 833.3 SGR 2219.4 SG3 3282.2
RRT .3944 RRF -.9666 RTF -.3540
SGB 2370.7 R23 -.0839 R13 -.9634
SG1 2246.8 SG2 756.4 THA 80.49

ORBIT DETERMINATION ACCURACY
ST 455.4 SR 1220.4 SS 3816.7
CRT .9974 CRS .9463 CST .9303
LSA 4012.2 MSA 406.9 SSA 24.5
EL1 1302.2 EL2 30.7 ALF 69.57

LAUNCH DATE OCT 1 1964 FLIGHT TIME 314.00 ARRIVAL DATE AUG 11 1965

HELIOCENTRIC CONIC DISTANCE 730.950 EARTH TO MARS

RL 149.75 LAL -.00 LOL 7.85 VL 32.511 GAL -7.65 AZL 89.51 HCA 233.76 SMA 185.49 ECC .23273 INC .4894 V1 29.754
RP 227.34 LAP -.39 LOP 241.61 VP 21.262 GAP -3.37 AZP 90.29 TAL 317.49 TAP 191.25 RCA 142.32 APO 228.66 V2 24.193
RC 242.030 GL 3.46 GP 10.47 ZAL 147.00 ZAP 109.04 ETS 175.35 ZAE 145.07 ETE 161.52 ZAC 96.03 ETC 257.00 CLP 109.38

PLANETOCENTRIC CONIC

C3 20.842 VHL 4.565 DLA 12.89 RAL 158.15 RAD 6567.8 VEL 11.926 PTH 2.12 VHP 3.094 DPA 14.54 RAP 176.77 ECC 1.3430

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 31 58	2636.33	-27.07	69.99	24.56	98.64	20 15 55	2036.3	-25.60	61.63
90.00	10 54 28	4456.17	8.21	186.37	18.81	62.80	12 8 44	3856.2	4.50	179.66
100.00	20 59 59	2352.47	-28.32	48.88	24.33	99.98	21 39 12	1752.5	-26.65	40.48
100.00	12 9 8	4215.27	9.33	168.06	18.21	61.47	13 19 23	3615.3	5.45	161.42
110.00	22 23 16	2091.89	-31.63	28.29	23.53	103.70	22 58 8	1491.9	-29.42	19.78
110.00	13 2 20	4048.61	12.25	153.68	16.48	57.83	14 9 49	3448.6	7.91	147.27

DIFFERENTIAL CORRECTIONS
TDE .2665 TRA -.1818 TC3 -.7160 BAU .4012
RDE .9074 RRA-1.2051 RC3 1.2494 FAU .51663
FDE-8.6290 FRA24.5051 FC-21.4599 BSP 7423
BDE .9457 BRA 1.2187 BC3 1.4400 FSP 11260

MID-COURSE EXECUTION ACCURACY
SGT 770.7 SGR 2237.3 SG3 3342.5
RRT -.0010 RRF -.9663 RTF .0605
SGB 2366.3 R23 -.0594 R13 -.9663
SG1 2237.3 SG2 770.7 THA 90.02

ORBIT DETERMINATION ACCURACY
ST 342.3 SR 1230.8 SS 3847.6
CRT .9801 CRS .9459 CST .8676
LSA 4032.9 MSA 413.8 SSA 24.1
EL1 1275.8 EL2 65.6 ALF 74.71

LAUNCH DATE OCT 1 1964 FLIGHT TIME 316.00 ARRIVAL DATE AUG 13 1965

HELIOCENTRIC CONIC DISTANCE 734.855 EARTH TO MARS

RL 149.75 LAL -.00 LOL 7.85 VL 32.506 GAL -7.65 AZL 89.48 HCA 234.81 SMA 185.41 ECC .23246 INC .5236 V1 29.754
RP 226.95 LAP -.43 LOP 242.66 VP 21.302 GAP -3.65 AZP 90.30 TAL 317.43 TAP 192.24 RCA 142.31 APO 228.51 V2 24.235
RC 243.792 GL 3.70 GP 10.44 ZAL 147.04 ZAP 107.15 ETS 175.77 ZAE 143.09 ETE 162.81 ZAC 95.82 ETC 257.10 CLP 107.45

PLANETOCENTRIC CONIC

C3 20.830 VHL 4.564 DLA 13.09 RAL 158.29 RAD 6567.8 VEL 11.925 PTH 2.12 VHP 3.067 DPA 14.87 RAP 175.95 ECC 1.3428

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 30 48	2643.16	-27.14	70.48	24.78	98.40	20 14 51	2043.2	-25.70	62.11
90.00	10 56 48	4449.06	7.99	185.97	18.96	62.74	12 10 57	3849.1	4.27	179.26
100.00	20 58 57	2358.88	-28.40	49.34	24.55	99.75	21 38 16	1758.9	-26.76	40.92
100.00	12 11 20	4208.57	9.11	167.68	18.36	61.41	13 21 28	3608.6	5.22	161.05
110.00	22 22 30	2097.41	-31.72	28.70	23.77	103.47	22 57 28	1497.4	-29.54	20.17
110.00	13 4 16	4042.81	12.04	153.36	16.61	57.76	14 11 38	3442.8	7.69	146.96

DIFFERENTIAL CORRECTIONS
TDE .1896 TRA .0470 TC3 -.9017 BAU .4317
RDE .9143 RRA-1.2090 RC3 1.2609 FAU .52516
FDE-8.7592 FRA24.8642 FC-21.8271 BSP 7391
BDE .9337 BRA 1.2099 BC3 1.5501 FSP 11463

MID-COURSE EXECUTION ACCURACY
SGT 858.9 SGR 2251.7 SG3 3396.0
RRT -.3973 RRF -.9659 RTF .4656
SGB 2410.0 R23 -.0325 R13 -.9695
SG1 2280.9 SG2 778.2 THA 99.76

ORBIT DETERMINATION ACCURACY
ST 240.1 SR 1239.8 SS 3874.3
CRT .8868 CRS .9455 CST .6921
LSA 4053.0 MSA 420.7 SSA 23.7
EL1 1258.1 EL2 109.3 ALF 80.18

LAUNCH DATE OCT 1 1964 FLIGHT TIME 318.00 ARRIVAL DATE AUG 15 1965

HELIOCENTRIC CONIC DISTANCE 738.768 EARTH TO MARS

RL 149.75 LAL -.00 LOL 7.85 VL 32.502 GAL -7.65 AZL 89.44 HCA 235.87 SMA 185.33 ECC .23223 INC .5568 V1 29.754
RP 226.56 LAP -.46 LOP 243.71 VP 21.342 GAP -3.93 AZP 90.31 TAL 317.36 TAP 193.23 RCA 142.29 APO 228.38 V2 24.277
RC 245.534 GL 3.93 GP 10.40 ZAL 147.08 ZAP 105.23 ETS 176.19 ZAE 141.08 ETE 164.02 ZAC 95.60 ETC 257.20 CLP 105.49

PLANETOCENTRIC CONIC

C3 20.832 VHL 4.564 DLA 13.29 RAL 158.44 RAD 6567.8 VEL 11.925 PTH 2.12 VHP 3.045 DPA 15.21 RAP 175.10 ECC 1.3428

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 29 44	2649.84	-27.21	70.96	25.02	98.17	20 13 54	2049.8	-25.80	62.57
90.00	10 59 5	4442.43	7.78	185.59	19.13	62.59	12 13 7	3842.4	4.06	178.88
100.00	20 58 0	2365.14	-28.47	49.79	24.80	99.52	21 37 25	1765.1	-26.86	41.36
100.00	12 13 29	4202.35	8.91	167.33	18.53	61.35	13 23 32	3602.4	5.02	160.71
110.00	22 21 50	2102.82	-31.80	29.10	24.02	103.25	22 56 53	1502.8	-29.65	20.55
110.00	13 6 9	4037.45	11.84	153.07	16.77	57.70	14 13 26	3437.4	7.49	146.67

DIFFERENTIAL CORRECTIONS
TDE .1107 TRA .2815 TC3-1.0939 BAU .4667
RDE .9206 RRA-1.2109 RC3 1.2697 FAU .53269
FDE-8.8757 FRA25.1763 FC-22.1379 BSP 7547
BDE .9272 BRA 1.2432 BC3 1.6759 FSP 11644

MID-COURSE EXECUTION ACCURACY
SGT 1071.6 SGR 2262.4 SG3 3442.0
RRT -.6451 RRF -.9655 RTF .7126
SGB 2503.3 R23 -.0080 R13 -.9726
SG1 2379.2 SG2 778.6 THA 109.12

ORBIT DETERMINATION ACCURACY
ST 179.1 SR 1247.5 SS 3896.5
CRT .4856 CRS .9450 CST .1767
LSA 4072.9 MSA 427.4 SSA 23.3
EL1 1250.6 EL2 156.2 ALF 85.95

LAUNCH DATE OCT 1 1964 FLIGHT TIME 320.00 ARRIVAL DATE AUG 17 1965

HELIOCENTRIC CONIC DISTANCE 742.688 EARTH TO MARS

RL	149.75	LAL	-.00	LOL	7.85	VL	32.497	GAL	-7.66	AZL	89.41	HCA	236.92	SMA	185.26	ECC	.23206	INC	.5894	V1	29.754
RP	226.17	LAP	-.49	LOP	244.77	VP	21.383	GAP	-4.20	AZP	90.32	TAL	317.28	TAP	194.21	RCA	142.27	APO	228.26	V2	24.318
RC	247.256	GL	4.16	GP	10.35	ZAL	147.13	ZAP	103.29	ETS	176.61	ZAE	139.04	ETE	165.14	ZAC	95.37	ETC	257.31	CLP	103.52

PLANETOCENTRIC CONIC

C3	20.848	VHL	4.566	DLA	13.47	RAL	158.60	RAD	6567.8	VEL	11.926	PTH	2.12	VHP	3.025	DPA	15.55	RAP	174.23	ECC	1.3431

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 28 46	2656.36	-27.27	71.42	25.27	97.94	20 13 3	2056.4	-25.89	63.03
90.00	11 1 19	4436.29	7.59	185.24	19.32	62.64	12 15 16	3836.3	3.86	178.54
100.00	20 57 10	2371.27	-28.54	50.24	25.06	99.30	21 36 41	1771.3	-26.96	41.79
100.00	12 15 37	4196.61	8.72	167.01	18.71	61.29	13 25 33	3596.6	4.82	160.39
110.00	22 21 16	2108.13	-31.88	29.49	24.29	103.03	22 56 24	1508.1	-29.76	20.92
110.00	13 8 0	4032.52	11.66	152.80	16.95	57.64	14 15 13	3432.5	7.31	146.41

DIFFERENTIAL CORRECTIONS

TDE	.0301	TRA	.5216	TC3	-1.2914	BAU	.5060
RDE	.9267	RRA	-1.2108	RC3	1.2761	FAU	.53932
FDE	-8.9842	FRA	25.4390	FC	-22.3954	BSP	7891
BDE	.9272	BRA	1.3184	BC3	1.8155	FSP	11793

MID-COURSE EXECUTION ACCURACY

SGT	1358.4	SGR	2269.6	SG3	3480.6
RRT	-.7726	RRF	-.9650	RTF	.8367
SGB	2645.0	R23	.0107	R13	-.9755
SG1	2529.3	SG2	773.8	THA	117.62

ORBIT DETERMINATION ACCURACY

ST	208.4	SR	1254.3	SS	3916.0
CRT	-.1989	CRS	.9444	CST	-.5075
LSA	4094.3	MSA	434.0	SSA	22.9
EL1	1255.0	EL2	204.2	ALF	91.95

LAUNCH DATE OCT 1 1964 FLIGHT TIME 322.00 ARRIVAL DATE AUG 19 1965

HELIOCENTRIC CONIC DISTANCE 746.614 EARTH TO MARS

RL	149.75	LAL	-.00	LOL	7.85	VL	32.494	GAL	-7.67	AZL	89.38	HCA	237.98	SMA	185.20	ECC	.23193	INC	.6213	V1	29.754
RP	225.78	LAP	-.53	LOP	245.83	VP	21.425	GAP	-4.47	AZP	90.33	TAL	317.20	TAP	195.18	RCA	142.25	APO	228.15	V2	24.360
RC	248.959	GL	4.38	GP	10.30	ZAL	147.19	ZAP	101.33	ETS	177.02	ZAE	136.96	ETE	166.19	ZAC	95.13	ETC	257.42	CLP	101.52

PLANETOCENTRIC CONIC

C3	20.879	VHL	4.569	DLA	13.64	RAL	158.77	RAD	6567.8	VEL	11.927	PTH	2.12	VHP	3.010	DPA	15.89	RAP	173.34	ECC	1.3436

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 27 56	2662.71	-27.33	71.88	25.54	97.72	20 12 18	2062.7	-25.98	63.47
90.00	11 3 31	4430.65	7.41	184.92	19.52	62.59	12 17 21	3830.7	3.68	178.22
100.00	20 56 27	2377.25	-28.60	50.67	25.33	99.08	21 36 4	1777.3	-27.05	42.21
100.00	12 17 41	4191.34	8.55	166.71	18.91	61.25	13 27 32	3591.3	4.65	160.10
110.00	22 20 47	2113.33	-31.96	29.87	24.58	102.82	22 56 1	1513.3	-29.87	21.29
110.00	13 9 50	4028.03	11.50	152.56	17.14	57.58	14 16 58	3428.0	7.14	146.17

DIFFERENTIAL CORRECTIONS

TDE	-.0530	TRA	.7665	TC3	-1.4940	BAU	.5490
RDE	.9320	RRA	-1.2086	RC3	1.2791	FAU	.54458
FDE	-9.0733	FRA	25.6509	FC	-22.5802	BSP	8418
BDE	.9335	BRA	1.4312	BC3	1.9668	FSP	11927

MID-COURSE EXECUTION ACCURACY

SGT	1687.2	SGR	2272.5	SG3	3510.4
RRT	-.8388	RRF	-.9643	RTF	.8996
SGB	2830.4	R23	.0234	R13	-.9783
SG1	2724.7	SG2	766.2	THA	125.09

ORBIT DETERMINATION ACCURACY

ST	306.8	SR	1259.3	SS	3930.1
CRT	-.5640	CRS	.9438	CST	-.8039
LSA	4114.7	MSA	440.3	SSA	22.6
EL1	1271.6	EL2	250.9	ALF	98.14

LAUNCH DATE OCT 1 1964 FLIGHT TIME 324.00 ARRIVAL DATE AUG 21 1965

HELIOCENTRIC CONIC DISTANCE 750.547 EARTH TO MARS

RL	149.75	LAL	-.00	LOL	7.85	VL	32.490	GAL	-7.68	AZL	89.35	HCA	239.05	SMA	185.14	ECC	.23186	INC	.6526	V1	29.754
RP	225.38	LAP	-.56	LOP	246.90	VP	21.467	GAP	-4.74	AZP	90.34	TAL	317.10	TAP	196.15	RCA	142.21	APO	228.07	V2	24.402
RC	250.643	GL	4.60	GP	10.24	ZAL	147.26	ZAP	99.36	ETS	177.43	ZAE	134.86	ETE	167.17	ZAC	94.89	ETC	257.54	CLP	99.51

PLANETOCENTRIC CONIC

C3	20.925	VHL	4.574	DLA	13.81	RAL	158.95	RAD	6567.9	VEL	11.929	PTH	2.12	VHP	2.998	DPA	16.22	RAP	172.44	ECC	1.3444

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 27 12	2668.91	-27.38	72.32	25.83	97.51	20 11 41	2068.9	-26.06	63.90
90.00	11 5 39	4425.50	7.25	184.63	19.75	62.55	12 19 25	3825.5	3.52	177.94
100.00	20 55 49	2383.09	-28.66	51.09	25.62	98.87	21 35 32	1783.1	-27.14	42.62
100.00	12 19 43	4186.55	8.39	166.44	19.13	61.20	13 29 30	3586.6	4.49	159.84
110.00	22 20 24	2118.43	-32.04	30.25	24.88	102.60	22 55 43	1518.4	-29.97	21.65
110.00	13 11 37	4023.98	11.35	152.34	17.35	57.54	14 18 41	3424.0	6.99	145.96

DIFFERENTIAL CORRECTIONS

TDE	-.1372	TRA	1.0162	TC3	-1.6994	BAU	.5951
RDE	.9370	RRA	-1.2040	RC3	1.2797	FAU	.54888
FDE	-9.1525	FRA	25.8028	FC	-22.7089	BSP	9102
BDE	.9470	BRA	1.5755	BC3	2.1274	FSP	12016

MID-COURSE EXECUTION ACCURACY

SGT	2040.8	SGR	2271.5	SG3	3531.5
RRT	-.8753	RRF	-.9636	RTF	.9338
SGB	3053.6	R23	.0307	R13	-.9811
SG1	2958.0	SG2	757.9	THA	131.51

ORBIT DETERMINATION ACCURACY

ST	431.7	SR	1263.2	SS	3940.7
CRT	-.7088	CRS	.9432	CST	-.9021
LSA	4136.6	MSA	446.6	SSA	22.1
EL1	1301.8	EL2	295.5	ALF	104.37

LAUNCH DATE OCT 1 1964 FLIGHT TIME 326.00 ARRIVAL DATE AUG 23 1965

HELIOCENTRIC CONIC DISTANCE 754.486 EARTH TO MARS

RL	149.75	LAL	-.00	LOL	7.85	VL	32.487	GAL	-7.70	AZL	89.32	HCA	240.12	SMA	185.09	ECC	.23183	INC	.6835	V1	29.754
RP	224.99	LAP	-.59	LOP	247.96	VP	21.510	GAP	-5.01	AZP	90.34	TAL	316.99	TAP	197.10	RCA	142.18	APO	228.00	V2	24.444
RC	252.307	GL	4.81	GP	10.17	ZAL	147.35	ZAP	97.37	ETS	177.84	ZAE	132.73	ETE	168.09	ZAC	94.63	ETC	257.66	CLP	97.49

PLANETOCENTRIC CONIC

C3	20.985	VHL	4.581	DLA	13.96	RAL	159.14	RAD	6567.9	VEL	11.932	PTH	2.12	VHP	2.989	DPA	16.55	RAP	171.52	ECC	1.3454

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 26 35	2674.94	-27.44	72.76	26.14	97.29	20 11 10	2074.9	-26.14	64.33
90.00	11 7 45	4420.86	7.11	184.36	19.99	62.52	12 21 26	3820.9	3.37	177.68
100.00	20 55 19	2388.78	-28.72	51.50	25.93	98.66	21 35 8	1788.8	-27.23	43.02
100.00	12 21 42	4182.24	8.25	166.20	19.37	61.17	13 31 25	3582.2	4.34	159.60
110.00	22 20 7	2123.42	-32.11	30.62	25.20	102.40	22 55 31	1523.4	-30.07	22.00
110.00	13 13 23	4020.37	11.22	152.14	17.59	57.50	14 20 24	3420.4	6.85	145.77

DIFFERENTIAL CORRECTIONS

TDE	-.2233	TRA	1.2701	TC3	-1.9076	BAU	.6440
RDE	.9413	RRA	-1.1974	RC3	1.2768	FAU	.55169
FDE	-9.2130	FRA	25.9040	FC	-22.7596	BSP	9925
BDE	.9674	BRA	1.7455	BC3	2.2954	FSP	12089

MID-COURSE EXECUTION ACCURACY

SGT	2410.8	SGR	2266.2	SG3	3543.6
RRT	-.8967	RRF	-.9627	RTF	.9538
SGB	3308.7	R23	.0345	R13	-.9836
SG1	3222.5	SG2	750.3	THA	136.97

ORBIT DETERMINATION ACCURACY

ST	567.3	SR	1265.5	SS	3946.6
CRT	-.7771	CRS	.9425	CST	-.9423
LSA	4158.6	MSA	452.8	SSA	21.7
EL1	1345.6	EL2	335.8	ALF	110.54

LAUNCH DATE OCT 1 1964 FLIGHT TIME 328.00 ARRIVAL DATE AUG 25 1965

HELIOCENTRIC CONIC DISTANCE 758.431 EARTH TO MARS

RL	149.75	LAL	-.00	LOL	7.85	VL	32.484	GAL	-7.72	AZL	89.29	HCA	241.19	SMA	185.04	ECC	.23186	INC	.7135
RP	224.60	LAP	-.63	LOP	249.04	VP	21.553	GAP	-5.27	AZP	90.34	TAL	316.86	TAP	198.06	RCA	142.14	APO	227.94
RC	253.951	GL	5.01	GP	10.10	ZAL	147.44	ZAP	95.38	ETS	178.23	ZAE	130.60	ETE	168.96	ZAC	94.37	ETC	257.78

V1 29.754 V2 24.486 CLP 95.47

PLANETOCENTRIC CONIC

C3	21.060	VHL	4.589	DLA	14.10	RAL	159.33	RAD	6567.9	VEL	11.935	PTH	2.12	VHP	2.985	DPA	16.87	RAP	170.60

ECC 1.3466

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 26 5	2680.80	-27.49	73.18	26.46	97.09	20 10 46	2080.8	-26.22	64.74
90.00	11 9 48	4416.71	6.98	184.13	20.25	62.49	12 23 25	3816.7	3.24	177.44
100.00	20 54 55	2394.33	-28.78	51.91	26.26	98.45	21 34 49	1794.3	-27.31	43.41
100.00	12 23 39	4178.41	8.12	165.99	19.65	61.13	13 33 18	3578.4	4.21	159.39
110.00	22 19 56	2128.30	-32.18	30.99	25.54	102.19	22 55 24	1528.3	-30.17	22.35
110.00	13 15 7	4017.21	11.10	151.97	17.84	57.46	14 22 5	3417.2	6.73	145.60

DIFFERENTIAL CORRECTIONS

TDE	-.3108	TRA	1.5269	TC3	-2.1173	BAU	.6953
RDE	.9450	RRA	-1.1882	RC3	1.2712	FAU	.55340
FDE	-9.2585	FRA	25.9396	FC	-22.7485	BSP	10850
BDE	.9948	BRA	1.9348	BC3	2.4696	FSP	12118

MID-COURSE EXECUTION ACCURACY

SGT	2791.2	SGR	2256.7	SG3	3546.2		
RRT	-.9100	RRF	-.9617	RTF	.9663		
SGB	3589.4	R23	.0360	R13	-.9858		
SG1	3511.4	SG2	743.9	THA	141.62		

ORBIT DETERMINATION ACCURACY

ST	708.4	SR	1266.4	SS	3947.8		
CRT	-.8144	CRS	.9417	CST	-.9618		
LSA	4180.9	MSA	458.8	SSA	21.3		
EL1	1402.8	EL2	371.1	ALF	116.49		

LAUNCH DATE OCT 1 1964 FLIGHT TIME 330.00 ARRIVAL DATE AUG 27 1965

HELIOCENTRIC CONIC DISTANCE 762.382 EARTH TO MARS

RL	149.75	LAL	-.00	LOL	7.85	VL	32.481	GAL	-7.74	AZL	89.26	HCA	242.27	SMA	185.00	ECC	.23193	INC	.7433
RP	224.21	LAP	-.66	LOP	250.11	VP	21.597	GAP	-5.52	AZP	90.35	TAL	316.73	TAP	190.00	RCA	142.09	APO	227.90
RC	255.576	GL	5.21	GP	10.01	ZAL	147.54	ZAP	93.39	ETS	178.62	ZAE	128.44	ETE	169.77	ZAC	94.11	ETC	257.91

V1 29.754 V2 24.527 CLP 93.44

PLANETOCENTRIC CONIC

C3	21.150	VHL	4.599	DLA	14.24	RAL	159.53	RAD	6567.9	VEL	11.939	PTH	2.12	VHP	2.984	DPA	17.18	RAP	169.67

ECC 1.3481

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 25 43	2686.49	-27.53	73.59	26.80	96.89	20 10 29	2086.5	-26.29	65.14
90.00	11 11 48	4413.07	6.86	183.92	20.53	62.46	12 25 21	3813.1	3.12	177.24
100.00	20 54 38	2399.72	-28.83	52.30	26.60	98.25	21 34 38	1799.7	-27.39	43.79
100.00	12 25 35	4175.07	8.02	165.80	19.90	61.11	13 35 8	3575.1	4.10	159.20
110.00	22 19 51	2133.08	-32.25	31.34	25.89	101.99	22 55 24	1533.1	-30.27	22.69
110.00	13 16 50	4014.48	11.00	151.82	18.10	57.43	14 23 44	3414.5	6.63	145.46

DIFFERENTIAL CORRECTIONS

TDE	-.3990	TRA	1.7867	TC3	-2.3872	BAU	.7486
RDE	.9481	RRA	-1.1768	RC3	1.2624	FAU	.55365
FDE	-9.2868	FRA	25.9192	FC	-22.6619	BSP	11866
BDE	1.0290	BRA	2.1394	BC3	2.6475	FSP	12127

MID-COURSE EXECUTION ACCURACY

SGT	3178.6	SGR	2243.1	SG3	3539.4		
RRT	-.9183	RRF	-.9605	RTF	.9744		
SGB	3890.4	R23	.0364	R13	-.9878		
SG1	3819.6	SG2	739.0	THA	145.59		

ORBIT DETERMINATION ACCURACY

ST	852.6	SR	1265.8	SS	3944.6		
CRT	-.8369	CRS	.9408	CST	-.9726		
LSA	4203.9	MSA	464.6	SSA	20.8		
EL1	1472.5	EL2	401.1	ALF	122.07		

LAUNCH DATE OCT 1 1964 FLIGHT TIME 332.00 ARRIVAL DATE AUG 29 1965

HELIOCENTRIC CONIC DISTANCE 766.336 EARTH TO MARS

RL	149.75	LAL	-.00	LOL	7.85	VL	32.479	GAL	-7.77	AZL	89.23	HCA	243.35	SMA	184.96	ECC	.23205	INC	.7724
RP	223.82	LAP	-.69	LOP	251.19	VP	21.641	GAP	-5.78	AZP	90.35	TAL	316.59	TAP	199.93	RCA	142.04	APO	227.88
RC	257.180	GL	5.40	GP	9.92	ZAL	147.66	ZAP	91.39	ETS	179.01	ZAE	126.29	ETE	170.54	ZAC	93.84	ETC	258.04

V1 29.754 V2 24.569 CLP 91.42

PLANETOCENTRIC CONIC

C3	21.256	VHL	4.610	DLA	14.36	RAL	159.75	RAD	6567.9	VEL	11.943	PTH	2.13	VHP	2.986	DPA	17.48	RAP	168.74

ECC 1.3498

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 25 28	2692.00	-27.58	73.98	27.15	96.69	20 10 28	2092.0	-26.36	65.53
90.00	11 13 44	4409.96	6.76	183.75	20.83	62.44	12 27 14	3810.0	3.02	177.07
100.00	20 54 28	2404.95	-28.88	52.68	26.96	98.06	21 34 33	1805.0	-27.47	44.16
100.00	12 27 25	4172.24	7.92	165.64	20.20	61.08	13 36 57	3572.2	4.00	159.05
110.00	22 19 52	2137.73	-32.32	31.69	26.26	101.80	22 55 30	1537.7	-30.36	23.02
110.00	13 18 30	4012.22	10.92	151.70	18.39	57.40	14 25 22	3412.2	6.54	145.34

DIFFERENTIAL CORRECTIONS

TDE	-.4892	TRA	2.0532	TC3	-2.5350	BAU	.8022
RDE	.9459	RRA	-1.1681	RC3	1.2416	FAU	.54827
FDE	-9.2055	FRA	25.9326	FC	-22.3303	BSP	13055
BDE	1.0649	BRA	2.3622	BC3	2.8228	FSP	12288

MID-COURSE EXECUTION ACCURACY

SGT	3573.7	SGR	2222.1	SG3	3521.8		
RRT	-.9240	RRF	-.9591	RTF	.9797		
SGB	4208.2	R23	.0367	R13	-.9891		
SG1	4143.9	SG2	732.8	THA	149.05		

ORBIT DETERMINATION ACCURACY

ST	999.5	SR	1259.0	SS	3920.5		
CRT	-.8522	CRS	.9386	CST	-.9802		
LSA	4210.9	MSA	470.6	SSA	20.7		
EL1	1550.4	EL2	424.7	ALF	127.36		

LAUNCH DATE OCT 1 1964 FLIGHT TIME 334.00 ARRIVAL DATE AUG 31 1965

HELIOCENTRIC CONIC DISTANCE 770.301 EARTH TO MARS

RL	149.75	LAL	-.00	LOL	7.85	VL	32.477	GAL	-7.80	AZL	89.20	HCA	244.43	SMA	184.92	ECC	.23222	INC	.8011
RP	223.44	LAP	-.72	LOP	252.28	VP	21.686	GAP	-6.03	AZP	90.35	TAL	316.43	TAP	200.86	RCA	141.98	APO	227.87
RC	258.763	GL	5.58	GP	9.83	ZAL	147.78	ZAP	89.40	ETS	179.38	ZAE	124.13	ETE	171.27	ZAC	93.56	ETC	258.17

V1 29.754 V2 24.611 CLP 89.40

PLANETOCENTRIC CONIC

C3	21.377	VHL	4.623	DLA	14.47	RAL	159.97	RAD	6567.9	VEL	11.948	PTH	2.13	VHP	2.993	DPA	17.77	RAP	167.82

ECC 1.3518

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 25 19	2697.35	-27.62	74.37	27.53	96.50	20 10 16	2097.4	-26.43	65.91
90.00	11 15 38	4407.32	6.68	183.60	21.14	62.42	12 29 5	3807.3	2.93	176.92
100.00	20 54 24	2410.05	-28.93	53.05	27.34	97.87	21 34 34	1810.0	-27.54	44.52
100.00	12 29 14	4169.86	7.84	165.51	20.51	61.06	13 38 43	3569.9	3.92	158.91
110.00	22 19 59	2142.29	-32.38	32.03	26.65	101.60	22 55 41	1542.3	-30.44	23.35
110.00	13 20 9	4010.38	10.85	151.60	18.70	57.38	14 26 59	3410.4	6.47	145.24

DIFFERENTIAL CORRECTIONS

TDE	-.5804	TRA	2.3155	TC3	-2.7419	BAU	.8590
RDE	.9501	RRA	-1.1502	RC3	1.2312	FAU	.54782
FDE	-9.2433	FRA	25.7532	FC	-22.1865	BSP	14140
BDE	1.1133	BRA	2.5854	BC3	3.0057	FSP	12140

MID-COURSE EXECUTION ACCURACY

SGT	3965.9	SGR	2202.1	SG3	3497.3		
RRT	-.9270	RRF	-.9576	RTF	.9838		
SGB	4536.2	R23	.0359	R13	-.9907		
SG1	4476.8	SG2	731.6	THA	151.95		

ORBIT DETERMINATION ACCURACY

ST	1146.1	SR	1257.9	SS	3916.1		
CRT	-.8615	CRS	.9382	CST	-.9838		
LSA	4243.2	MSA	476.0	SSA	20.1		
EL1	1642.3	EL2	445.7	ALF	131.91		

LAUNCH DATE OCT 1 1964 FLIGHT TIME 336.00 ARRIVAL DATE SEP 2 1965

HELIOCENTRIC CONIC DISTANCE 774.270 EARTH TO MARS

RL	149.75	LAL	-.00	LOL	7.85	VL	32.475	GAL	-7.83	AZL	89.17	HCA	245.52	SMA	184.89	ECC	.23244	INC	.8294	V1	29.754
RP	223.05	LAP	-.75	LOP	253.36	VP	21.731	GAP	-6.28	AZP	90.34	TAL	316.26	TAP	201.78	RCA	141.92	APO	227.87	V2	24.653
RC	260.326	GL	5.76	GP	9.72	ZAL	147.92	ZAP	87.42	ETS	179.75	ZAE	121.97	ETE	171.96	ZAC	93.29	ETC	258.31	CLP	87.39

PLANETOCENTRIC CONIC

C3	21.513	VHL	4.638	DLA	14.58	RAL	160.19	RAD	6567.9	VEL	11.954	PTH	2.13	VHP	3.003	DPA	18.04	RAP	166.90	ECC	1.3540

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 25 18	2702.53	-27.66	74.74	27.92	96.32	20 10 20	2102.5	-26.50	66.27
90.00	11 17 28	4405.20	6.61	183.48	21.47	62.40	12 30 54	3805.2	2.87	176.80
100.00	20 54 27	2414.99	-28.98	53.41	27.73	97.69	21 34 42	1815.0	-27.61	44.87
100.00	12 31 0	4167.98	7.78	165.40	20.84	61.05	13 40 28	3568.0	3.86	158.81
110.00	22 20 11	2146.74	-32.44	32.36	27.06	101.42	22 55 58	1546.7	-30.53	23.67
110.00	13 21 45	4008.98	10.80	151.52	19.02	57.37	14 28 34	3409.0	6.42	145.16

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.8731	TRA	2.5791	TC3	-2.9467	BAU	.9169	SGT	4358.9	SGR	2177.9	SG3	3463.7	ST	1293.6	SR	1254.6	SS	3904.1
RDE	.9528	RRA	-1.1312	RC3	1.2164	FAU	.54529	RRT	-.9287	RRF	-.9560	RTF	.9868	CRT	-.8683	CRS	.9375	CST	-.9865
FDE	-9.2466	FRA	25.5352	FC	-21.9444	BSP	15270	SGB	4872.7	R23	.0354	R13	-.9919	LSA	4272.9	MSA	481.3	SSA	19.5
BDE	1.1665	BRA	2.8163	BC3	3.1879	FSP	11996	SG1	4817.6	SG2	730.9	THA	154.48	EL1	1741.8	EL2	462.3	ALF	136.01

LAUNCH DATE OCT 1 1964 FLIGHT TIME 338.00 ARRIVAL DATE SEP 4 1965

HELIOCENTRIC CONIC DISTANCE 778.245 EARTH TO MARS

RL	149.75	LAL	-.00	LOL	7.85	VL	32.474	GAL	-7.87	AZL	89.14	HCA	246.61	SMA	184.87	ECC	.23271	INC	.8574	V1	29.754
RP	222.66	LAP	-.79	LOP	254.46	VP	21.776	GAP	-6.52	AZP	90.34	TAL	316.08	TAP	202.70	RCA	141.85	APO	227.89	V2	24.695
RC	261.869	GL	5.94	GP	9.61	ZAL	148.06	ZAP	85.46	ETS	180.11	ZAE	119.83	ETE	172.60	ZAC	93.01	ETC	258.44	CLP	85.39

PLANETOCENTRIC CONIC

C3	21.665	VHL	4.655	DLA	14.67	RAL	160.43	RAD	6567.9	VEL	11.960	PTH	2.13	VHP	3.016	DPA	18.30	RAP	166.00	ECC	1.3565

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 25 24	2707.53	-27.70	75.11	28.33	96.14	20 10 31	2107.5	-26.56	66.62
90.00	11 19 16	4403.60	6.56	183.39	21.82	62.39	12 32 39	3803.6	2.81	176.71
100.00	20 54 38	2419.27	-29.02	53.76	28.15	97.51	21 34 57	1819.8	-27.68	45.21
100.00	12 32 43	4166.59	7.74	165.33	21.19	61.04	13 42 10	3566.6	3.81	158.73
110.00	22 20 30	2151.09	-32.50	32.69	27.48	101.23	22 56 21	1551.1	-30.61	23.98
110.00	13 23 20	4008.04	10.77	151.47	19.36	57.36	14 30 8	3408.0	6.39	145.11

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.7665	TRA	2.8442	TC3	-3.1469	BAU	.9753	SGT	4750.8	SGR	2149.9	SG3	3421.5	ST	1441.1	SR	1249.4	SS	3886.1
RDE	.9544	RRA	-1.1110	RC3	1.1978	FAU	.54089	RRT	-.9293	RRF	-.9542	RTF	.9890	CRT	-.8730	CRS	.9366	CST	-.9885
FDE	-9.2222	FRA	25.2767	FC	-21.6143	BSP	16438	SGB	5214.6	R23	.0350	R13	-.9929	LSA	4301.5	MSA	486.6	SSA	19.0
BDE	1.2241	BRA	3.0535	BC3	3.3672	FSP	11846	SG1	5163.2	SG2	730.7	THA	156.70	EL1	1847.1	EL2	475.5	ALF	139.66

LAUNCH DATE OCT 1 1964 FLIGHT TIME 340.00 ARRIVAL DATE SEP 6 1965

HELIOCENTRIC CONIC DISTANCE 782.224 EARTH TO MARS

RL	149.75	LAL	-.00	LOL	7.85	VL	32.473	GAL	-7.91	AZL	89.12	HCA	247.71	SMA	184.85	ECC	.23303	INC	.8850	V1	29.754
RP	222.28	LAP	-.82	LOP	255.55	VP	21.822	GAP	-6.76	AZP	90.34	TAL	315.89	TAP	203.60	RCA	141.77	APO	227.92	V2	24.737
RC	263.392	GL	6.10	GP	9.49	ZAL	148.22	ZAP	83.51	ETS	180.45	ZAE	117.69	ETE	173.22	ZAC	92.73	ETC	258.57	CLP	83.42

PLANETOCENTRIC CONIC

C3	21.833	VHL	4.673	DLA	14.75	RAL	160.68	RAD	6567.9	VEL	11.967	PTH	2.13	VHP	3.034	DPA	18.54	RAP	165.12	ECC	1.3593

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 25 37	2712.36	-27.73	75.45	28.75	95.97	20 10 50	2112.4	-26.61	66.97
90.00	11 21 0	4402.51	6.53	183.32	22.19	62.38	12 34 22	3802.5	2.78	176.65
100.00	20 54 55	2424.40	-29.06	54.10	28.57	97.33	21 35 19	1824.4	-27.74	45.54
100.00	12 34 24	4165.70	7.71	165.28	21.56	61.03	13 43 49	3565.7	3.78	158.69
110.00	22 20 55	2155.32	-32.56	33.01	27.92	101.05	22 56 50	1555.3	-30.69	24.28
110.00	13 24 53	4007.55	10.75	151.44	19.72	57.35	14 31 41	3407.5	6.37	145.09

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.8610	TRA	3.1093	TC3	-3.3425	BAU	1.0343	SGT	5139.7	SGR	2118.5	SG3	3371.2	ST	1588.2	SR	1242.7	SS	3862.8
RDE	.9551	RRA	-1.0895	RC3	1.1762	FAU	.53495	RRT	-.9291	RRF	-.9522	RTF	.9906	CRT	-.8764	CRS	.9355	CST	-.9900
FDE	-9.1750	FRA	24.9753	FC	-21.2122	BSP	17627	SGB	5559.2	R23	.0348	R13	-.9937	LSA	4329.7	MSA	491.5	SSA	18.5
BDE	1.2859	BRA	3.2947	BC3	3.5434	FSP	11684	SG1	5510.9	SG2	730.8	THA	158.65	EL1	1957.3	EL2	485.7	ALF	142.89

LAUNCH DATE OCT 1 1964 FLIGHT TIME 342.00 ARRIVAL DATE SEP 8 1965

HELIOCENTRIC CONIC DISTANCE 786.208 EARTH TO MARS

RL	149.75	LAL	-.00	LOL	7.85	VL	32.472	GAL	-7.95	AZL	89.09	HCA	248.80	SMA	184.83	ECC	.23339	INC	.9122	V1	29.754
RP	221.89	LAP	-.85	LOP	256.65	VP	21.867	GAP	-7.00	AZP	90.33	TAL	315.69	TAP	204.49	RCA	141.69	APO	227.97	V2	24.779
RC	264.895	GL	6.26	GP	9.37	ZAL	148.39	ZAP	81.58	ETS	180.79	ZAE	115.57	ETE	173.79	ZAC	92.45	ETC	258.70	CLP	81.47

PLANETOCENTRIC CONIC

C3	22.018	VHL	4.692	DLA	14.83	RAL	160.93	RAD	6567.9	VEL	11.975	PTH	2.13	VHP	3.055	DPA	18.76	RAP	164.25	ECC	1.3624

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 25 58	2717.00	-27.76	75.79	29.19	95.81	20 11 15	2117.0	-26.67	67.29
90.00	11 22 41	4401.95	6.51	183.29	22.58	62.38	12 36 3	3801.9	2.76	176.62
100.00	20 55 19	2428.87	-29.10	54.42	29.02	97.16	21 35 48	1828.9	-27.80	45.86
100.00	12 36 1	4165.31	7.69	165.25	21.94	61.03	13 45 27	3565.3	3.77	158.66
110.00	22 21 26	2158.44	-32.61	33.31	28.37	100.87	22 57 25	1559.4	-30.77	24.58
110.00	13 26 24	4007.51	10.75	151.44	20.10	57.35	14 33 12	3407.5	6.37	145.09

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.9556	TRA	3.3752	TC3	-3.5315	BAU	1.0934	SGT	5524.5	SGR	2084.4	SG3	3313.6	ST	1734.1	SR	1234.7	SS	3834.8
RDE	.9551	RRA	-1.0668	RC3	1.1520	FAU	.52763	RRT	-.9282	RRF	-.9500	RTF	.9919	CRT	-.8785	CRS	.9342	CST	-.9911
FDE	-9.1075	FRA	24.6334	FC	-20.7459	BSP	18833	SGB	5904.7	R23	.0348	R13	-.9944	LSA	4357.8	MSA	496.4	SSA	18.0
BDE	1.3511	BRA	3.5398	BC3	3.7146	FSP	11507	SG1	5859.2	SG2	731.2	THA	160.38	EL1	2070.7	EL2	494.0	ALF	145.76

LAUNCH DATE OCT 1 1964 FLIGHT TIME 344.00 ARRIVAL DATE SEP 10 1965

HELIOCENTRIC CONIC DISTANCE 790.197 EARTH TO MARS

RL 149.75 LAL -.00 LOL 7.85 VL 32.471 GAL -8.00 AZL 89.06 HCA 249.91 SMA 184.82 ECC .23381 INC .9390 V1 29.754
RP 221.51 LAP -.88 LOP 257.75 VP 21.914 GAP -7.24 AZP 90.32 TAL 315.47 TAP 205.38 RCA 141.61 APO 228.03 V2 24.820
RC 266.379 GL 6.42 GP 9.24 ZAL 148.57 ZAP 79.68 ETS 181.11 ZAE 113.47 ETE 174.34 ZAC 92.18 ETC 258.83 CLP 79.54

PLANETOCENTRIC CONIC

C3 22.220 VHL 4.714 DLA 14.89 RAL 161.19 RAD 6567.9 VEL 11.983 PTH 2.14 VHP 3.079 DPA 18.97 RAP 163.41 ECC 1.3657

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 26 27	2721.47	-27.79	76.11	29.65	95.65	20 11 48	2121.5	-26.72	67.61
90.00	11 24 19	4401.90	6.51	183.29	22.99	62.38	12 37 40	3801.9	2.76	176.62
100.00	20 55 50	2433.20	-29.13	54.74	29.49	97.00	21 36 23	1833.2	-27.86	46.17
100.00	12 37 36	4165.41	7.70	165.26	22.34	61.03	13 47 2	3565.4	3.77	158.67
110.00	22 22 3	2163.46	-32.66	33.62	28.85	100.70	22 58 6	1563.5	-30.84	24.87
110.00	13 27 53	4007.92	10.76	151.46	20.49	57.36	14 34 41	3407.9	6.38	145.11

DIFFERENTIAL CORRECTIONS
TDE-1.0512 TRA 3.6399 TC3-3.7139 BAU 1.1529
RDE .9547 RRA-1.0427 RC3 1.1259 FAU .51922
FDE-9.0266 FRA24.2475 FC-20.2295 BSP 20030
BDE 1.4201 BRA 3.7864 BC3 3.8809 FSP 11302

MID-COURSE EXECUTION ACCURACY
SGT 5903.4 SGR 2047.8 SG3 3249.1
RRT -.9267 RRF -.9476 RTF .9928
SGB 6248.5 R23 .0349 R13 -.9949
SG1 6205.5 SG2 731.9 THA 161.92

ORBIT DETERMINATION ACCURACY
ST 1878.8 SR 1225.8 SS 3803.2
CRT -.8799 CRS .9330 CST -.9919
LSA 4387.0 MSA 500.9 SSA 17.6
EL1 2186.8 EL2 500.3 ALF 148.29

LAUNCH DATE OCT 1 1964 FLIGHT TIME 346.00 ARRIVAL DATE SEP 12 1965

HELIOCENTRIC CONIC DISTANCE 794.190 EARTH TO MARS

RL 149.75 LAL -.00 LOL 7.85 VL 32.470 GAL -8.05 AZL 89.03 HCA 251.01 SMA 184.81 ECC .23428 INC .9657 V1 29.754
RP 221.13 LAP -.91 LOP 258.86 VP 21.960 GAP -7.48 AZP 90.31 TAL 315.24 TAP 206.26 RCA 141.51 APO 228.11 V2 24.862
RC 267.844 GL 6.57 GP 9.11 ZAL 148.76 ZAP 77.81 ETS 181.43 ZAE 111.39 ETE 174.86 ZAC 91.91 ETC 258.95 CLP 77.65

PLANETOCENTRIC CONIC

C3 22.440 VHL 4.737 DLA 14.94 RAL 161.47 RAD 6567.9 VEL 11.992 PTH 2.14 VHP 3.107 DPA 19.16 RAP 162.60 ECC 1.3693

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 27 3	2725.77	-27.82	76.43	30.13	95.49	20 12 28	2125.8	-26.77	67.92
90.00	11 25 53	4402.38	6.52	183.32	23.41	62.38	12 39 15	3802.4	2.78	176.64
100.00	20 56 28	2437.37	-29.17	55.05	29.97	96.84	21 37 6	1837.4	-27.91	46.47
100.00	12 39 8	4166.02	7.72	165.29	22.76	61.03	13 48 34	3566.0	3.79	158.70
110.00	22 22 46	2167.36	-32.71	33.91	29.34	100.53	22 58 53	1567.4	-30.91	25.15
110.00	13 29 20	4008.78	10.79	151.51	20.91	57.37	14 36 9	3408.8	6.41	145.15

DIFFERENTIAL CORRECTIONS
TDE-1.1472 TRA 3.9044 TC3-3.8880 BAU 1.2120
RDE .9539 RRA-1.0177 RC3 1.0978 FAU .50965
FDE-8.9303 FRA23.8261 FC-19.6622 BSP 21234
BDE 1.4920 BRA 4.0349 BC3 4.0401 FSP 11082

MID-COURSE EXECUTION ACCURACY
SGT 6275.7 SGR 2009.1 SG3 3178.4
RRT -.9248 RRF -.9449 RTF .9936
SGB 6589.4 R23 .0352 R13 -.9954
SG1 6548.6 SG2 732.7 THA 163.29

ORBIT DETERMINATION ACCURACY
ST 2021.8 SR 1215.9 SS 3767.9
CRT -.8807 CRS .9316 CST -.9926
LSA 4416.7 MSA 505.4 SSA 17.1
EL1 2304.5 EL2 505.3 ALF 150.54

LAUNCH DATE OCT 1 1964 FLIGHT TIME 348.00 ARRIVAL DATE SEP 14 1965

HELIOCENTRIC CONIC DISTANCE 798.185 EARTH TO MARS

RL 149.75 LAL -.00 LOL 7.85 VL 32.470 GAL -8.10 AZL 89.01 HCA 252.12 SMA 184.81 ECC .23480 INC .9920 V1 29.754
RP 220.75 LAP -.94 LOP 259.97 VP 22.006 GAP -7.71 AZP 90.30 TAL 315.00 TAP 207.13 RCA 141.41 APO 228.20 V2 24.903
RC 269.292 GL 6.71 GP 8.98 ZAL 148.96 ZAP 75.96 ETS 181.73 ZAE 109.34 ETE 175.34 ZAC 91.64 ETC 259.07 CLP 75.79

PLANETOCENTRIC CONIC

C3 22.678 VHL 4.762 DLA 14.99 RAL 161.75 RAD 6567.9 VEL 12.002 PTH 2.14 VHP 3.138 DPA 19.33 RAP 161.82 ECC 1.3732

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 27 46	2729.88	-27.85	76.72	30.63	95.35	20 13 16	2129.9	-26.82	68.21
90.00	11 27 24	4403.40	6.56	183.37	23.85	62.39	12 40 47	3803.4	2.81	176.70
100.00	20 57 14	2441.38	-29.20	55.34	30.47	96.69	21 37 55	1841.4	-27.97	46.75
100.00	12 40 38	4167.13	7.75	165.36	23.20	61.04	13 50 5	3567.1	3.83	158.76
110.00	22 23 35	2171.16	-32.76	34.20	29.85	100.37	22 59 47	1571.2	-30.98	25.43
110.00	13 30 45	4010.11	10.84	151.58	21.34	57.38	14 37 35	3410.1	6.46	145.22

DIFFERENTIAL CORRECTIONS
TDE-1.2388 TRA 4.1753 TC3-4.0452 BAU 1.2682
RDE .9503 RRA -.9944 RC3 1.0639 FAU .49681
FDE-8.7708 FRA23.4201 FC-18.9657 BSP 22570
BDE 1.5613 BRA 4.2920 BC3 4.1827 FSP 10943

MID-COURSE EXECUTION ACCURACY
SGT 6641.4 SGR 1966.7 SG3 3101.4
RRT -.9224 RRF -.9419 RTF .9942
SGB 6926.5 R23 .0351 R13 -.9956
SG1 6887.7 SG2 732.2 THA 164.54

ORBIT DETERMINATION ACCURACY
ST 2160.7 SR 1202.6 SS 3719.7
CRT -.8802 CRS .9293 CST -.9932
LSA 4437.5 MSA 509.8 SSA 16.9
EL1 2419.8 EL2 509.6 ALF 152.58

LAUNCH DATE OCT 1 1964 FLIGHT TIME 350.00 ARRIVAL DATE SEP 16 1965

HELIOCENTRIC CONIC DISTANCE 802.189 EARTH TO MARS

RL 149.75 LAL -.00 LOL 7.85 VL 32.470 GAL -8.16 AZL 88.98 HCA 253.24 SMA 184.81 ECC .23537 INC 1.0182 V1 29.754
RP 220.37 LAP -.97 LOP 261.08 VP 22.053 GAP -7.94 AZP 90.29 TAL 314.75 TAP 207.99 RCA 141.31 APO 228.31 V2 24.945
RC 270.721 GL 6.85 GP 8.84 ZAL 149.18 ZAP 74.15 ETS 182.02 ZAE 107.31 ETE 175.80 ZAC 91.37 ETC 259.19 CLP 73.95

PLANETOCENTRIC CONIC

C3 22.935 VHL 4.789 DLA 15.02 RAL 162.04 RAD 6567.9 VEL 12.013 PTH 2.14 VHP 3.173 DPA 19.48 RAP 161.07 ECC 1.3774

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 28 36	2733.84	-27.87	77.01	31.14	95.20	20 14 10	2133.8	-26.86	68.49
90.00	11 28 52	4404.91	6.60	183.46	24.31	62.40	12 42 17	3804.9	2.86	176.78
100.00	20 58 6	2445.25	-29.23	55.62	30.98	96.55	21 38 51	1845.2	-28.02	47.03
100.00	12 42 4	4168.73	7.81	165.45	23.66	61.05	13 51 33	3568.7	3.89	158.85
110.00	22 24 30	2174.87	-32.80	34.48	30.37	100.21	23 0 45	1574.9	-31.04	25.70
110.00	13 32 8	4011.87	10.91	151.68	21.79	57.40	14 39 0	3411.9	6.53	145.32

DIFFERENTIAL CORRECTIONS
TDE-1.3408 TRA 4.4304 TC3-4.2104 BAU 1.3296
RDE .9515 RRA -.9655 RC3 1.0379 FAU .48790
FDE-8.7013 FRA22.8895 FC-18.4172 BSP 23594
BDE 1.6441 BRA 4.5344 BC3 4.3365 FSP 10584

MID-COURSE EXECUTION ACCURACY
SGT 6996.8 SGR 1927.3 SG3 3022.1
RRT -.9194 RRF -.9389 RTF .9947
SGB 7257.4 R23 .0360 R13 -.9960
SG1 7220.2 SG2 734.4 THA 165.64

ORBIT DETERMINATION ACCURACY
ST 2301.9 SR 1193.9 SS 3688.0
CRT -.8807 CRS .9287 CST -.9935
LSA 4479.0 MSA 513.3 SSA 16.3
EL1 2542.0 EL2 512.1 ALF 154.33

LAUNCH DATE OCT 1 1964 FLIGHT TIME 352.00 ARRIVAL DATE SEP 18 1965

HELIOCENTRIC CONIC DISTANCE 806.194 EARTH TO MARS

RL 149.75 LAL -.00 LOL 7.85 VL 32.470 GAL -8.22 AZL 88.96 HCA 254.36 SMA 184.81 ECC .23600 INC 1.0441 V1 29.754
RP 220.00 LAP -1.01 LOP 262.20 VP 22.100 GAP -8.17 AZP 90.28 TAL 314.48 TAP 208.84 RCA 141.20 APO 228.42 V2 24.986
RC 272.134 GL 6.98 GP 8.69 ZAL 149.40 ZAP 72.37 ETS 182.30 ZAE 105.32 ETE 176.24 ZAC 91.12 ETC 259.30 CLP 72.16

PLANETOCENTRIC CONIC

C3 23.210 VHL 4.818 DLA 15.04 RAL 162.33 RAD 6567.9 VEL 12.025 PTH 2.15 VHP 3.211 DPA 19.61 RAP 160.36 ECC 1.3820

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 29 34	2737.61	-27.90	77.28	31.68	95.07	20 15 12	2137.6	-26.90	68.76
90.00	11 30 16	4406.96	6.67	183.58	24.79	62.42	12 43 43	3807.0	2.92	176.90
100.00	20 59 5	2448.97	-29.26	55.90	31.52	96.41	21 39 54	1849.0	-28.06	47.30
100.00	12 43 27	4170.84	7.88	165.56	24.14	61.07	13 52 58	3570.8	3.96	158.97
110.00	22 25 32	2178.47	-32.84	34.75	30.92	100.06	23 1 50	1578.5	-31.11	25.96
110.00	13 33 30	4014.10	10.99	151.80	22.26	57.43	14 40 24	3414.1	6.61	145.44

DIFFERENTIAL CORRECTIONS

TDE-1.4386 TRA 4.6917 TC3-4.3585 BAU 1.3881
RDE .9501 RRA -.9385 RC3 1.0067 FAU .47604
FDE-8.5738 FRA22.3818 FC-17.7560 BSP 24734
BDE 1.7240 BRA 4.7846 BC3 4.4733 FSP 10307

MID-COURSE EXECUTION ACCURACY

SGT 7344.8 SGR 1885.0 SG3 2938.1
RRT -.9162 RRF -.9356 RTF .9951
SGB 7582.8 R23 .0366 R13 -.9962
SG1 7547.1 SG2 735.3 THA 166.64

ORBIT DETERMINATION ACCURACY

ST 2438.7 SR 1182.2 SS 3644.6
CRT -.8802 CRS .9273 CST -.9938
LSA 4512.3 MSA 516.9 SSA 15.9
EL1 2660.9 EL2 514.2 ALF 155.94

LAUNCH DATE OCT 1 1964 FLIGHT TIME 354.00 ARRIVAL DATE SEP 20 1965

HELIOCENTRIC CONIC DISTANCE 810.203 EARTH TO MARS

RL 149.75 LAL -.00 LOL 7.85 VL 32.471 GAL -8.29 AZL 88.93 HCA 255.48 SMA 184.82 ECC .23667 INC 1.0698 V1 29.754
RP 219.62 LAP -1.04 LOP 263.32 VP 22.147 GAP -8.39 AZP 90.27 TAL 314.20 TAP 209.68 RCA 141.07 APO 228.56 V2 25.027
RC 273.529 GL 7.11 GP 8.55 ZAL 149.64 ZAP 70.63 ETS 182.56 ZAE 103.36 ETE 176.65 ZAC 90.86 ETC 259.40 CLP 70.40

PLANETOCENTRIC CONIC

C3 23.506 VHL 4.848 DLA 15.06 RAL 162.64 RAD 6568.0 VEL 12.037 PTH 2.15 VHP 3.252 DPA 19.72 RAP 159.69 ECC 1.3869

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 30 40	2741.22	-27.92	77.55	32.23	94.94	20 16 21	2141.2	-26.94	69.02
90.00	11 31 38	4409.54	6.75	183.72	25.29	62.43	12 45 7	3809.5	3.01	177.04
100.00	21 0 11	2452.54	-29.29	56.16	32.07	96.27	21 41 3	1852.5	-28.11	47.55
100.00	12 44 48	4173.45	7.96	165.71	24.63	61.09	13 54 21	3573.4	4.04	159.11
110.00	22 26 39	2181.97	-32.89	35.01	31.48	99.90	23 3 1	1582.0	-31.17	26.21
110.00	13 34 49	4016.78	11.09	151.94	22.75	57.46	14 41 46	3416.8	6.72	145.58

DIFFERENTIAL CORRECTIONS

TDE-1.5366 TRA 4.9522 TC3-4.4960 BAU 1.4457
RDE .9484 RRA -.9114 RC3 .9745 FAU .46340
FDE-8.4344 FRA21.8546 FC-17.0670 BSP 25868
BDE 1.8057 BRA 5.0353 BC3 4.6004 FSP 10024

MID-COURSE EXECUTION ACCURACY

SGT 7683.3 SGR 1842.0 SG3 2850.6
RRT -.9125 RRF -.9320 RTF .9954
SGB 7901.0 R23 .0372 R13 -.9964
SG1 7866.6 SG2 736.0 THA 167.55

ORBIT DETERMINATION ACCURACY

ST 2573.0 SR 1170.0 SS 3598.0
CRT -.8794 CRS .9258 CST -.9941
LSA 4545.8 MSA 520.2 SSA 15.5
EL1 2779.1 EL2 515.7 ALF 157.38

LAUNCH DATE OCT 1 1964 FLIGHT TIME 356.00 ARRIVAL DATE SEP 22 1965

HELIOCENTRIC CONIC DISTANCE 814.215 EARTH TO MARS

RL 149.75 LAL -.00 LOL 7.85 VL 32.471 GAL -8.36 AZL 88.90 HCA 256.60 SMA 184.82 ECC .23740 INC 1.0953 V1 29.754
RP 219.25 LAP -1.07 LOP 264.45 VP 22.193 GAP -8.62 AZP 90.25 TAL 313.90 TAP 210.51 RCA 140.95 APO 228.70 V2 25.067
RC 274.906 GL 7.23 GP 8.41 ZAL 149.88 ZAP 68.93 ETS 182.81 ZAE 101.43 ETE 177.03 ZAC 90.62 ETC 259.50 CLP 68.69

PLANETOCENTRIC CONIC

C3 23.823 VHL 4.881 DLA 15.06 RAL 162.96 RAD 6568.0 VEL 12.050 PTH 2.15 VHP 3.297 DPA 19.81 RAP 159.05 ECC 1.3921

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 31 53	2744.66	-27.94	77.80	32.79	94.82	20 17 37	2144.7	-26.98	69.26
90.00	11 32 55	4412.64	6.85	183.90	25.80	62.46	12 46 28	3812.6	3.11	177.22
100.00	21 1 24	2455.97	-29.31	56.41	32.64	96.14	21 42 20	1856.0	-28.15	47.80
100.00	12 46 6	4176.56	8.06	165.88	25.14	61.12	13 55 42	3576.6	4.15	159.28
110.00	22 27 52	2185.38	-32.92	35.27	32.05	99.76	23 4 18	1585.4	-31.23	26.46
110.00	13 36 6	4019.92	11.20	152.11	23.25	57.49	14 43 6	3419.9	6.83	145.74

DIFFERENTIAL CORRECTIONS

TDE-1.6357 TRA 5.2111 TC3-4.6238 BAU 1.5029
RDE .9468 RRA -.8840 RC3 .9422 FAU .45036
FDE-8.2905 FRA21.3095 FC-16.3664 BSP 26959
BDE 1.8900 BRA 5.2856 BC3 4.7188 FSP 9725

MID-COURSE EXECUTION ACCURACY

SGT 8011.9 SGR 1798.9 SG3 2760.8
RRT -.9085 RRF -.9281 RTF .9957
SGB 8211.4 R23 .0380 R13 -.9966
SG1 8178.3 SG2 736.6 THA 168.38

ORBIT DETERMINATION ACCURACY

ST 2705.0 SR 1157.5 SS 3550.0
CRT -.8784 CRS .9243 CST -.9943
LSA 4581.0 MSA 523.2 SSA 15.2
EL1 2896.6 EL2 516.6 ALF 158.69

LAUNCH DATE OCT 1 1964 FLIGHT TIME 358.00 ARRIVAL DATE SEP 24 1965

HELIOCENTRIC CONIC DISTANCE 818.230 EARTH TO MARS

RL 149.75 LAL -.00 LOL 7.85 VL 32.472 GAL -8.43 AZL 88.88 HCA 257.73 SMA 184.84 ECC .23819 INC 1.1207 V1 29.754
RP 218.89 LAP -1.10 LOP 265.58 VP 22.240 GAP -8.84 AZP 90.24 TAL 313.59 TAP 211.33 RCA 140.81 APO 228.86 V2 25.108
RC 276.266 GL 7.34 GP 8.26 ZAL 150.14 ZAP 67.26 ETS 183.06 ZAE 99.54 ETE 177.40 ZAC 90.38 ETC 259.60 CLP 67.01

PLANETOCENTRIC CONIC

C3 24.161 VHL 4.915 DLA 15.06 RAL 163.28 RAD 6568.0 VEL 12.064 PTH 2.16 VHP 3.344 DPA 19.88 RAP 158.46 ECC 1.3976

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 33 12	2747.93	-27.96	78.03	33.38	94.70	20 19 0	2147.9	-27.01	69.49
90.00	11 34 10	4416.27	6.96	184.10	26.33	62.48	12 47 46	3816.3	3.22	177.42
100.00	21 2 43	2459.25	-29.34	56.65	33.23	96.02	21 43 43	1859.3	-28.19	48.03
100.00	12 47 20	4180.18	8.18	166.09	25.67	61.15	13 57 0	3580.2	4.27	159.48
110.00	22 29 12	2188.69	-32.96	35.52	32.65	99.61	23 5 40	1588.7	-31.29	26.70
110.00	13 37 21	4023.51	11.33	152.31	23.78	57.53	14 44 25	3423.5	6.97	145.93

DIFFERENTIAL CORRECTIONS

TDE-1.7343 TRA 5.4703 TC3-4.7398 BAU 1.5589
RDE .9448 RRA -.8570 RC3 .9093 FAU .43671
FDE-8.1340 FRA20.7562 FC-15.6482 BSP 28062
BDE 1.9749 BRA 5.5370 BC3 4.8262 FSP 9431

MID-COURSE EXECUTION ACCURACY

SGT 8330.6 SGR 1755.6 SG3 2669.0
RRT -.9041 RRF -.9240 RTF .9959
SGB 8513.6 R23 .0387 R13 -.9967
SG1 8481.7 SG2 737.0 THA 169.13

ORBIT DETERMINATION ACCURACY

ST 2833.8 SR 1144.6 SS 3498.7
CRT -.8771 CRS .9227 CST -.9944
LSA 4615.7 MSA 525.9 SSA 14.9
EL1 3012.1 EL2 517.1 ALF 159.87

LAUNCH DATE OCT 1 1964 FLIGHT TIME 360.00 ARRIVAL DATE SEP 26 1965

HELIOCENTRIC CONIC DISTANCE 822.247 EARTH TO MARS

RL 149.75 LAL -.00 LOL 7.85 VL 32.473 GAL -8.51 AZL 88.85 HCA 258.87 SMA 184.85 ECC .23903 INC 1.1460 V1 29.754
RP 218.52 LAP -1.12 LOP 266.71 VP 22.287 GAP -9.06 AZP 90.22 TAL 313.27 TAP 212.14 RCA 140.67 APO 229.04 V2 25.148
RC 277.609 GL 7.45 GP 8.11 ZAL 150.41 ZAP 65.64 ETS 183.29 ZAE 97.69 ETE 177.74 ZAC 90.15 ETC 259.68 CLP 65.38

PLANETOCENTRIC CONIC

C3 24.521 VHL 4.952 DLA 15.04 RAL 163.61 RAD 6568.0 VEL 12.079 PTH 2.16 VHP 3.395 DPA 19.94 RAP 157.92 ECC 1.4036

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 34 40	2751.05	-27.97	78.26	33.98	94.59	20 20 31	2151.0	-27.04	69.72
90.00	11 35 21	4420.43	7.09	184.34	26.88	62.51	12 49 2	3820.4	3.36	177.65
100.00	21 4 10	2462.40	-29.36	56.88	33.84	95.90	21 45 12	1862.4	-28.23	48.26
100.00	12 48 32	4184.30	8.32	166.32	26.22	61.18	13 58 16	3584.3	4.41	159.71
110.00	22 30 37	2191.91	-33.00	35.77	33.26	99.47	23 7 9	1591.9	-31.34	26.94
110.00	13 38 34	4027.56	11.48	152.53	24.32	57.58	14 45 42	3427.6	7.12	146.15

DIFFERENTIAL CORRECTIONS
TDE-1.8343 TRA 5.7276 TC3-4.8456 BAU 1.6143
RDE .9432 RRA -.8300 RC3 .8765 FAU .42278
FDE-7.9760 FRA20.1907 FC-14.9264 BSP 29117
BDE 2.0626 BRA 5.7874 BC3 4.9243 FSP 9124

MID-COURSE EXECUTION ACCURACY
SGT 8638.6 SGR 1712.7 SG3 2575.9
RRT -.8993 RRF -.9196 RTF .9960
SGB 8806.8 R23 .0396 R13 -.9967
SG1 8775.9 SG2 737.2 THA 169.82

ORBIT DETERMINATION ACCURACY
ST 2960.3 SR 1131.6 SS 3446.5
CRT -.8758 CRS .9212 CST -.9946
LSA 4652.2 MSA 528.2 SSA 14.6
EL1 3126.7 EL2 517.1 ALF 160.95

LAUNCH DATE OCT 1 1964 FLIGHT TIME 362.00 ARRIVAL DATE SEP 28 1965

HELIOCENTRIC CONIC DISTANCE 826.267 EARTH TO MARS

RL 149.75 LAL -.00 LOL 7.85 VL 32.474 GAL -8.59 AZL 88.83 HCA 260.00 SMA 184.87 ECC .23993 INC 1.1711 V1 29.754
RP 218.16 LAP -1.15 LOP 267.85 VP 22.334 GAP -9.28 AZP 90.20 TAL 312.94 TAP 212.94 RCA 140.52 APO 229.23 V2 25.188
RC 278.933 GL 7.56 GP 7.97 ZAL 150.69 ZAP 64.06 ETS 183.50 ZAE 95.87 ETE 178.06 ZAC 89.93 ETC 259.76 CLP 63.78

PLANETOCENTRIC CONIC

C3 24.905 VHL 4.991 DLA 15.02 RAL 163.95 RAD 6568.0 VEL 12.095 PTH 2.16 VHP 3.449 DPA 19.97 RAP 157.42 ECC 1.4099

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 36 14	2754.01	-27.99	78.47	34.60	94.48	20 22 8	2154.0	-27.07	69.93
90.00	11 36 29	4425.10	7.24	184.60	27.45	62.55	12 50 14	3825.1	3.51	177.91
100.00	21 5 43	2465.42	-29.38	57.11	34.46	95.78	21 46 48	1865.4	-28.27	48.48
100.00	12 49 41	4188.92	8.47	166.58	26.79	61.23	13 59 30	3588.9	4.57	159.97
110.00	22 32 8	2195.05	-33.03	36.01	33.89	99.34	23 8 43	1595.0	-31.39	27.17
110.00	13 39 46	4032.06	11.64	152.78	24.88	57.63	14 46 58	3432.1	7.29	146.39

DIFFERENTIAL CORRECTIONS
TDE-1.9347 TRA 5.9848 TC3-4.9412 BAU 1.6690
RDE .9415 RRA -.8034 RC3 .8440 FAU .40869
FDE-7.8121 FRA19.6203 FC-14.2067 BSP 30140
BDE 2.1516 BRA 6.0385 BC3 5.0128 FSP 8813

MID-COURSE EXECUTION ACCURACY
SGT 8936.9 SGR 1670.4 SG3 2482.3
RRT -.8943 RRF -.9150 RTF .9962
SGB 9091.7 R23 .0404 R13 -.9968
SG1 9061.7 SG2 737.2 THA 170.45

ORBIT DETERMINATION ACCURACY
ST 3083.9 SR 1118.5 SS 3392.5
CRT -.8744 CRS .9197 CST -.9947
LSA 4689.3 MSA 530.3 SSA 14.3
EL1 3239.6 EL2 516.7 ALF 161.93

LAUNCH DATE OCT 1 1964 FLIGHT TIME 364.00 ARRIVAL DATE SEP 30 1965

HELIOCENTRIC CONIC DISTANCE 830.288 EARTH TO MARS

RL 149.75 LAL -.00 LOL 7.85 VL 32.475 GAL -8.67 AZL 88.80 HCA 261.15 SMA 184.89 ECC .24089 INC 1.1962 V1 29.754
RP 217.80 LAP -1.18 LOP 268.99 VP 22.381 GAP -9.50 AZP 90.18 TAL 312.58 TAP 213.73 RCA 140.36 APO 229.43 V2 25.228
RC 280.240 GL 7.66 GP 7.82 ZAL 150.97 ZAP 62.51 ETS 183.71 ZAE 94.09 ETE 178.37 ZAC 89.72 ETC 259.83 CLP 62.23

PLANETOCENTRIC CONIC

C3 25.313 VHL 5.031 DLA 14.99 RAL 164.29 RAD 6568.0 VEL 12.112 PTH 2.17 VHP 3.506 DPA 19.99 RAP 156.96 ECC 1.4166

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 37 55	2756.82	-28.00	78.68	35.24	94.38	20 23 52	2156.8	-27.10	70.13
90.00	11 37 34	4430.31	7.40	184.90	28.04	62.59	12 51 24	3830.3	3.67	178.21
100.00	21 7 23	2468.31	-29.40	57.32	35.10	95.67	21 48 31	1868.3	-28.30	48.69
100.00	12 50 47	4194.05	8.64	166.87	27.37	61.27	14 0 41	3594.0	4.74	160.25
110.00	22 33 45	2198.10	-33.07	36.24	34.54	99.20	23 10 23	1598.1	-31.44	27.39
110.00	13 40 55	4037.02	11.83	153.05	25.46	57.69	14 48 12	3437.0	7.48	146.65

DIFFERENTIAL CORRECTIONS
TDE-2.0354 TRA 6.2426 TC3-5.0254 BAU 1.7227
RDE .9398 RRA -.7775 RC3 .8117 FAU .39432
FDE-7.6425 FRA19.0504 FC-13.4860 BSP 31157
BDE 2.2419 BRA 6.2909 BC3 5.0905 FSP 8507

MID-COURSE EXECUTION ACCURACY
SGT 9225.3 SGR 1628.7 SG3 2388.6
RRT -.8889 RRF -.9102 RTF .9962
SGB 9368.0 R23 .0413 R13 -.9968
SG1 9338.9 SG2 736.9 THA 171.02

ORBIT DETERMINATION ACCURACY
ST 3204.8 SR 1105.3 SS 3336.7
CRT -.8728 CRS .9182 CST -.9947
LSA 4726.8 MSA 532.0 SSA 14.1
EL1 3350.5 EL2 516.0 ALF 162.83

LAUNCH DATE OCT 1 1964 FLIGHT TIME 366.00 ARRIVAL DATE OCT 2 1965

HELIOCENTRIC CONIC DISTANCE 834.311 EARTH TO MARS

RL 149.75 LAL -.00 LOL 7.85 VL 32.477 GAL -8.76 AZL 88.78 HCA 262.29 SMA 184.92 ECC .24190 INC 1.2212 V1 29.754
RP 217.44 LAP -1.21 LOP 270.14 VP 22.428 GAP -9.71 AZP 90.16 TAL 312.22 TAP 214.51 RCA 140.19 APO 229.65 V2 25.268
RC 281.529 GL 7.75 GP 7.68 ZAL 151.27 ZAP 61.01 ETS 183.91 ZAE 92.35 ETE 178.66 ZAC 89.52 ETC 259.89 CLP 60.72

PLANETOCENTRIC CONIC

C3 25.747 VHL 5.074 DLA 14.94 RAL 164.65 RAD 6568.0 VEL 12.129 PTH 2.17 VHP 3.566 DPA 20.00 RAP 156.54 ECC 1.4237

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 39 44	2759.48	-28.02	78.87	35.90	94.28	20 25 43	2159.5	-27.13	70.32
90.00	11 38 35	4436.03	7.58	185.22	28.64	62.64	12 52 31	3836.0	3.86	178.53
100.00	21 9 9	2471.07	-29.42	57.52	35.76	95.56	21 50 20	1871.1	-28.34	48.88
100.00	12 51 50	4199.67	8.82	167.18	27.98	61.32	14 1 50	3599.7	4.93	160.56
110.00	22 35 27	2201.07	-33.10	36.46	35.21	99.07	23 12 8	1601.1	-31.49	27.61
110.00	13 42 2	4042.44	12.02	153.34	26.06	57.76	14 49 24	3442.4	7.68	146.94

DIFFERENTIAL CORRECTIONS
TDE-2.1369 TRA 6.5004 TC3-5.0983 BAU 1.7753
RDE .9384 RRA -.7521 RC3 .7797 FAU .37983
FDE-7.4707 FRA18.4790 FC-12.7720 BSP 32138
BDE 2.3338 BRA 6.5438 BC3 5.1576 FSP 8198

MID-COURSE EXECUTION ACCURACY
SGT 9503.0 SGR 1587.9 SG3 2295.0
RRT -.8833 RRF -.9051 RTF .9963
SGB 9634.7 R23 .0423 R13 -.9968
SG1 9606.5 SG2 736.5 THA 171.55

ORBIT DETERMINATION ACCURACY
ST 3322.8 SR 1092.2 SS 3279.8
CRT -.8711 CRS .9167 CST -.9948
LSA 4765.0 MSA 533.4 SSA 13.8
EL1 3459.5 EL2 515.1 ALF 163.65

LAUNCH DATE OCT 1 1964 FLIGHT TIME 368.00 ARRIVAL DATE OCT 4 1965

HELIOCENTRIC CONIC DISTANCE 838.335 EARTH TO MARS

RL	149.75	LAL	-.00	LOL	7.85	VL	32.478	GAL	-8.85	AZL	88.75	HCA	263.44	SMA	184.95	ECC	.24298	INC	1.2461
RP	217.09	LAP	-1.24	LOP	271.28	VP	22.474	GAP	-9.93	AZP	90.14	TAL	311.84	TAP	215.28	RCA	140.01	APO	229.88
RC	282.801	GL	7.84	GP	7.54	ZAL	151.58	ZAP	59.55	ETS	184.09	ZAE	90.65	ETE	178.93	ZAC	89.32	ETC	259.95

V1	29.754	V2	25.307	CLP	59.26														

PLANETOCENTRIC CONIC

C3	26.207	VHL	5.119	DLA	14.89	RAL	165.01	RAD	6568.1	VEL	12.148	PTH	2.18	VHP	3.629	DPA	19.98	RAP	156.18

ECC	1.4313	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	19 41 39	2761.99	-28.03	79.06	36.58	94.19	20 27 41	2162.0	-27.15	70.50							
		90.00	11 39 33	4442.27	7.78	185.58	29.27	62.69	12 53 35	3842.3	4.06	178.88							
		100.00	21 11 2	2473.71	-29.43	57.72	36.44	95.46	21 52 16	1873.7	-28.37	49.07							
		100.00	12 52 51	4205.79	9.02	167.53	28.60	61.38	14 2 56	3605.8	5.13	160.90							
		110.00	22 37 15	2203.96	-33.13	36.68	35.89	98.94	23 13 59	1604.0	-31.54	27.82							
		110.00	13 43 7	4048.30	12.23	153.66	26.68	57.83	14 50 35	3448.3	7.90	147.25							

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-2.2397	TRA	6.7582	TC3	-5.1614	BAU	1.8272	SGT	9770.8	SGR	1548.2	SG3	2202.1	ST	3438.4	SR	1079.1
RDE	.9371	RRA	-.7273	RC3	.7485	FAU	.36540	RRT	-.8773	RRF	-.8998	RTF	.9963	CRT	-.8695	CRS	.9152
FDE	-7.2974	FRA	17.9089	FC	-12.0711	BSP	33099	SGB	9892.6	R23	.0432	R13	-.9968	LSA	4804.3	MSA	534.4
BDE	2.4279	BRA	6.7972	BC3	5.2154	FSP	7893	SG1	9865.2	SG2	735.8	THA	172.04	EL1	3566.9	EL2	513.8

SS	3221.8	CST	-.9948	SSA	13.6	ALF	164.40												

LAUNCH DATE OCT 1 1964 FLIGHT TIME 370.00 ARRIVAL DATE OCT 6 1965

HELIOCENTRIC CONIC DISTANCE 842.360 EARTH TO MARS

RL	149.75	LAL	-.00	LOL	7.85	VL	32.480	GAL	-8.95	AZL	88.73	HCA	264.59	SMA	184.98	ECC	.24412	INC	1.2709
RP	216.74	LAP	-1.27	LOP	272.44	VP	22.521	GAP	-10.15	AZP	90.12	TAL	311.45	TAP	216.04	RCA	139.82	APO	230.13
RC	284.057	GL	7.92	GP	7.40	ZAL	151.90	ZAP	58.13	ETS	184.27	ZAE	88.98	ETE	179.19	ZAC	89.14	ETC	260.00

V1	29.754	V2	25.346	CLP	57.83														

PLANETOCENTRIC CONIC

C3	26.694	VHL	5.167	DLA	14.83	RAL	165.38	RAD	6568.1	VEL	12.168	PTH	2.18	VHP	3.695	DPA	19.95	RAP	155.86

ECC	1.4393	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	19 43 41	2764.38	-28.04	79.23	37.27	94.10	20 29 45	2164.4	-27.18	70.67							
		90.00	11 40 28	4449.03	7.99	185.96	29.91	62.74	12 54 37	3849.0	4.27	179.26							
		100.00	21 13 2	2476.24	-29.45	57.90	37.14	95.37	21 54 18	1876.2	-28.40	49.26							
		100.00	12 53 48	4212.40	9.24	167.90	29.24	61.44	14 4 0	3612.4	5.35	161.26							
		110.00	22 39 8	2206.79	-33.16	36.90	36.60	98.82	23 15 55	1606.8	-31.59	28.03							
		110.00	13 44 10	4054.62	12.46	154.01	27.32	57.91	14 51 45	3454.6	8.14	147.59							

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-2.3435	TRA	7.0169	TC3	-5.2136	BAU	1.8782	SGT	10028.6	SGR	1509.6	SG3	2110.3	ST	3551.3	SR	1066.2
RDE	.9361	RRA	-.7033	RC3	.7180	FAU	.35098	RRT	-.8712	RRF	-.8944	RTF	.9963	CRT	-.8678	CRS	.9138
FDE	-7.1227	FRA	17.3436	FC	-11.3827	BSP	34039	SGB	10141.5	R23	.0442	R13	-.9968	LSA	4844.2	MSA	535.1
BDE	2.5235	BRA	7.0520	BC3	5.2628	FSP	7591	SG1	10114.9	SG2	734.9	THA	172.49	EL1	3672.3	EL2	512.3

SS	3163.0	CST	-.9948	SSA	13.5	ALF	165.10												

LAUNCH DATE OCT 1 1964 FLIGHT TIME 372.00 ARRIVAL DATE OCT 8 1965

HELIOCENTRIC CONIC DISTANCE 846.385 EARTH TO MARS

RL	149.75	LAL	-.00	LOL	7.85	VL	32.482	GAL	-9.06	AZL	88.70	HCA	265.75	SMA	185.01	ECC	.24533	INC	1.2958
RP	216.39	LAP	-1.29	LOP	273.59	VP	22.567	GAP	-10.36	AZP	90.10	TAL	311.04	TAP	216.78	RCA	139.62	APO	230.40
RC	285.296	GL	7.99	GP	7.26	ZAL	152.23	ZAP	56.76	ETS	184.44	ZAE	87.36	ETE	179.43	ZAC	88.97	ETC	260.03

V1	29.754	V2	25.385	CLP	56.45														

PLANETOCENTRIC CONIC

C3	27.211	VHL	5.216	DLA	14.76	RAL	165.76	RAD	6568.1	VEL	12.190	PTH	2.19	VHP	3.764	DPA	19.91	RAP	155.58

ECC	1.4478	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	19 45 50	2766.63	-28.05	79.39	37.98	94.02	20 31 56	2166.6	-27.20	70.83							
		90.00	11 41 19	4456.31	8.21	186.38	30.57	62.81	12 55 36	3856.3	4.50	179.66							
		100.00	21 15 7	2478.66	-29.47	58.08	37.85	95.27	21 56 26	1878.7	-28.42	49.43							
		100.00	12 54 43	4219.51	9.47	168.30	29.90	61.51	14 5 2	3619.5	5.59	161.66							
		110.00	22 41 8	2209.54	-33.19	37.11	37.31	98.70	23 17 57	1609.5	-31.63	28.23							
		110.00	13 45 12	4061.39	12.71	154.38	27.97	58.00	14 52 53	3461.4	8.39	147.95							

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-2.4481	TRA	7.2768	TC3	-5.2561	BAU	1.9285	SGT	10277.0	SGR	1472.3	SG3	2019.9	ST	3661.4	SR	1053.3
RDE	.9353	RRA	-.6801	RC3	.6882	FAU	.33668	RRT	-.8648	RRF	-.8887	RTF	.9963	CRT	-.8662	CRS	.9125
FDE	-6.9462	FRA	16.7841	FC	-10.7114	BSP	34959	SGB	10381.9	R23	.0452	R13	-.9967	LSA	4884.5	MSA	535.4
BDE	2.6207	BRA	7.3085	BC3	5.3010	FSP	7293	SG1	10356.0	SG2	733.7	THA	172.90	EL1	3775.6	EL2	510.5

SS	3103.1	CST	-.9948	SSA	13.3	ALF	165.74												

LAUNCH DATE OCT 1 1964 FLIGHT TIME 374.00 ARRIVAL DATE OCT 10 1965

HELIOCENTRIC CONIC DISTANCE 850.410 EARTH TO MARS

RL	149.75	LAL	-.00	LOL	7.85	VL	32.484	GAL	-9.16	AZL	88.68	HCA	266.91	SMA	185.05	ECC	.24660	INC	1.3207
RP	216.05	LAP	-1.32	LOP	274.75	VP	22.613	GAP	-10.57	AZP	90.07	TAL	310.61	TAP	217.52	RCA	139.41	APO	230.68
RC	286.520	GL	8.07	GP	7.12	ZAL	152.57	ZAP	55.42	ETS	184.60	ZAE	85.77	ETE	179.66	ZAC	88.80	ETC	260.07

V1	29.754	V2	25.423	CLP	55.11														

PLANETOCENTRIC CONIC

C3	27.759	VHL	5.269	DLA	14.68	RAL	166.14	RAD	6568.1	VEL	12.212	PTH	2.19	VHP	3.836	DPA	19.85	RAP	155.35

ECC	1.4568	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	19 48 5	2768.76	-28.06	79.55	38.71	93.95	20 34 14	2168.8	-27.22	70.98							
		90.00	11 42 8	4464.10	8.46	186.82	31.25	62.87	12 56 32	3864.1	4.75	180.10							
		100.00	21 17 19	2480.97	-29.48	58.25	38.58	95.19	21 58 40	1881.0	-28.45	49.60							
		100.00	12 55 35	4227.11	9.71	168.73	30.58	61.59	14 6 2	3627.1	5.84	162.08							
		110.00	22 43 12	2212.24	-33.22	37.31	38.05	98.58	23 20 5	1612.2	-31.67	28.43							
		110.00	13 46 11	4068.61	12.97	154.78	28.65	58.09	14 53 59	3468.6	8.66	148.33							

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-2.5543	TRA	7.5384	TC3	-5.2884	BAU	1.9778	SGT	10516.0	SGR	1436.3	SG3	1931.0	ST	3769.3	SR	1040.8
RDE	.9348	RRA	-.6578	RC3	.6594	FAU	.32251	RRT	-.8582	RRF	-.8829	RTF	.9963	CRT	-.8645	CRS	.9112
FDE	-6.7709	FRA	16.2313	FC	-10.0585	BSP	35851	SGB	10613.7	R23	.0463	R13	-.9967	LSA	4925.7	MSA	535.5
BDE	2.7200	BRA	7.5670	BC3	5.3294	FSP	6998	SG1	10588.4	SG2	732.3	THA	173.28	EL1	3877.1	EL2	508.6

SS	3042.8	CST	-.9948	SSA	13.2	ALF	166.33												

LAUNCH DATE OCT 1 1964 FLIGHT TIME 376.00 ARRIVAL DATE OCT 12 1965

HELIOCENTRIC CONIC DISTANCE 854.433 EARTH TO MARS
RL 149.75 LAL -.00 LOL 7.85 VL 32.487 GAL -9.28 AZL 88.65 HCA 268.07 SMA 185.08 ECC .24793 INC 1.3456 V1 29.754
RP 215.71 LAP -1.34 LOP 275.92 VP 22.659 GAP -10.79 AZP 90.05 TAL 310.17 TAP 218.24 RCA 139.19 APO 230.97 V2 25.461
RC 287.729 GL 8.13 GP 6.99 ZAL 152.92 ZAP 54.12 ETS 184.75 ZAE 84.22 ETE 179.87 ZAC 88.65 ETC 260.09 CLP 53.81
PLANETOCENTRIC CONIC
C3 28.338 VHL 5.323 DLA 14.59 RAL 166.53 RAD 6568.1 VEL 12.236 PTH 2.20 VHP 3.911 DPA 19.78 RAP 155.16 ECC 1.4664

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 50 27	2770.77	-28.07	79.69	39.46	93.87	20 36 37	2170.8	-27.24	71.13
90.00	11 42 53	4472.39	8.71	187.30	31.95	62.95	12 57 26	3872.4	5.02	180.57
100.00	21 19 37	2483.19	-29.49	58.41	39.33	95.10	22 1 0	1883.2	-28.47	49.76
100.00	12 56 24	4235.20	9.98	169.19	31.27	61.68	14 6 59	3635.2	6.11	162.53
110.00	22 45 22	2214.88	-33.24	37.52	38.81	98.46	23 22 17	1614.9	-31.72	28.62
110.00	13 47 8	4076.28	13.24	155.20	29.34	58.20	14 55 4	3476.3	8.94	148.74

DIFFERENTIAL CORRECTIONS
TDE-2.6620 TRA 7.8021 TC3-5.3111 BAU 2.0263
RDE .9347 RRA -.6364 RC3 .6313 FAU .30852
FDE-6.5957 FRA15.6879 FC3-9.4251 BSP 36709
BDE 2.8213 BRA 7.8280 BC3 5.3485 FSP 6708

MID-COURSE EXECUTION ACCURACY
SGT10746.1 SGR 1401.7 SG3 1844.0
RRT -.8514 RRF -.8770 RTF .9962
SGB10837.2 R23 .0474 R13 -.9966
SG110812.5 SG2 730.7 THA 173.63

ORBIT DETERMINATION ACCURACY
ST 3874.8 SR 1028.4 SS 2981.9
CRT -.8629 CRS .9100 CST -.9947
LSA 4967.6 MSA 535.1 SSA 13.1
EL1 3976.8 EL2 506.4 ALF 166.88

LAUNCH DATE OCT 1 1964 FLIGHT TIME 378.00 ARRIVAL DATE OCT 14 1965

HELIOCENTRIC CONIC DISTANCE 858.456 EARTH TO MARS
RL 149.75 LAL -.00 LOL 7.85 VL 32.489 GAL -9.39 AZL 88.63 HCA 269.24 SMA 185.12 ECC .24934 INC 1.3706 V1 29.754
RP 215.38 LAP -1.37 LOP 277.08 VP 22.705 GAP -11.00 AZP 90.02 TAL 309.72 TAP 218.95 RCA 138.96 APO 231.28 V2 25.498
RC 288.924 GL 8.19 GP 6.86 ZAL 153.28 ZAP 52.86 ETS 184.89 ZAE 82.70 ETE 180.08 ZAC 88.50 ETC 260.11 CLP 52.55
PLANETOCENTRIC CONIC
C3 28.952 VHL 5.381 DLA 14.49 RAL 166.93 RAD 6568.2 VEL 12.261 PTH 2.21 VHP 3.988 DPA 19.69 RAP 155.01 ECC 1.4765

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 52 55	2772.67	-28.08	79.83	40.22	93.80	20 39 7	2172.7	-27.26	71.26
90.00	11 43 36	4481.19	8.99	187.80	32.66	63.03	12 58 17	3881.2	5.30	181.06
100.00	21 22 1	2485.31	-29.51	58.57	40.09	95.02	22 3 26	1885.3	-28.50	49.91
100.00	12 57 11	4243.77	10.25	169.67	31.99	61.77	14 7 54	3643.8	6.40	163.00
110.00	22 47 37	2217.47	-33.27	37.71	39.58	98.35	23 24 34	1617.5	-31.76	28.81
110.00	13 48 4	4084.39	13.53	155.65	30.06	58.31	14 56 8	3484.4	9.25	149.18

DIFFERENTIAL CORRECTIONS
TDE-2.7711 TRA 8.0676 TC3-5.3252 BAU 2.0744
RDE .9349 RRA -.6159 RC3 .6044 FAU .29485
FDE-6.4215 FRA15.1512 FC3-8.8168 BSP 37552
BDE 2.9245 BRA 8.0910 BC3 5.3594 FSP 6424

MID-COURSE EXECUTION ACCURACY
SGT10967.1 SGR 1368.6 SG3 1759.0
RRT -.8445 RRF -.8710 RTF .9961
SGB11052.2 R23 .0485 R13 -.9965
SG111028.1 SG2 728.9 THA 173.96

ORBIT DETERMINATION ACCURACY
ST 3977.7 SR 1016.2 SS 2920.4
CRT -.8613 CRS .9090 CST -.9947
LSA 5009.8 MSA 534.6 SSA 12.9
EL1 4074.4 EL2 504.0 ALF 167.39

LAUNCH DATE OCT 1 1964 FLIGHT TIME 380.00 ARRIVAL DATE OCT 16 1965

HELIOCENTRIC CONIC DISTANCE 862.476 EARTH TO MARS
RL 149.75 LAL -.00 LOL 7.85 VL 32.492 GAL -9.52 AZL 88.60 HCA 270.41 SMA 185.17 ECC .25082 INC 1.3955 V1 29.754
RP 215.05 LAP -1.40 LOP 278.25 VP 22.750 GAP -11.22 AZP 89.99 TAL 309.25 TAP 219.65 RCA 138.72 APO 231.61 V2 25.535
RC 290.105 GL 8.25 GP 6.73 ZAL 153.65 ZAP 51.64 ETS 185.02 ZAE 81.23 ETE 180.27 ZAC 88.37 ETC 260.12 CLP 51.32
PLANETOCENTRIC CONIC
C3 29.601 VHL 5.441 DLA 14.39 RAL 167.33 RAD 6568.2 VEL 12.287 PTH 2.21 VHP 4.069 DPA 19.59 RAP 154.91 ECC 1.4872

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 55 29	2774.46	-28.09	79.96	41.00	93.74	20 41 43	2174.5	-27.27	71.39
90.00	11 44 15	4490.49	9.27	188.33	33.40	63.12	12 59 6	3890.5	5.59	181.59
100.00	21 24 30	2487.35	-29.52	58.72	40.88	94.94	22 5 58	1887.4	-28.52	50.06
100.00	12 57 54	4252.73	10.54	170.19	32.73	61.87	14 8 47	3652.7	6.70	163.51
110.00	22 49 57	2220.01	-33.29	37.91	40.37	98.24	23 26 57	1620.0	-31.80	29.00
110.00	13 48 57	4092.94	13.84	156.13	30.79	58.43	14 57 10	3492.9	9.56	149.64

DIFFERENTIAL CORRECTIONS
TDE-2.8827 TRA 8.3359 TC3-5.3303 BAU 2.1218
RDE .9355 RRA -.5964 RC3 .5785 FAU .28142
FDE-6.2501 FRA14.6248 FC3-8.2308 BSP 38372
BDE 3.0307 BRA 8.3572 BC3 5.3616 FSP 6146

MID-COURSE EXECUTION ACCURACY
SGT11179.9 SGR 1336.9 SG3 1676.1
RRT -.8375 RRF -.8649 RTF .9960
SGB11259.6 R23 .0497 R13 -.9964
SG111236.1 SG2 726.8 THA 174.26

ORBIT DETERMINATION ACCURACY
ST 4079.0 SR 1004.4 SS 2859.1
CRT -.8599 CRS .9080 CST -.9946
LSA 5053.4 MSA 533.6 SSA 12.8
EL1 4170.8 EL2 501.4 ALF 167.87

LAUNCH DATE OCT 1 1964 FLIGHT TIME 382.00 ARRIVAL DATE OCT 18 1965

HELIOCENTRIC CONIC DISTANCE 866.494 EARTH TO MARS
RL 149.75 LAL -.00 LOL 7.85 VL 32.494 GAL -9.65 AZL 88.58 HCA 271.58 SMA 185.21 ECC .25238 INC 1.4207 V1 29.754
RP 214.72 LAP -1.42 LOP 279.43 VP 22.795 GAP -11.44 AZP 89.96 TAL 308.76 TAP 220.34 RCA 138.47 APO 231.96 V2 25.572
RC 291.272 GL 8.30 GP 6.60 ZAL 154.03 ZAP 50.45 ETS 185.15 ZAE 79.78 ETE 180.45 ZAC 88.24 ETC 260.12 CLP 50.14
PLANETOCENTRIC CONIC
C3 30.287 VHL 5.503 DLA 14.27 RAL 167.74 RAD 6568.2 VEL 12.315 PTH 2.22 VHP 4.152 DPA 19.48 RAP 154.85 ECC 1.4985

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 58 9	2776.16	-28.10	80.09	41.80	93.68	20 44 25	2176.2	-27.29	71.51
90.00	11 44 52	4500.29	9.57	188.90	34.15	63.22	12 59 52	3900.3	5.90	182.14
100.00	21 27 6	2489.31	-29.53	58.87	41.68	94.87	22 8 35	1889.3	-28.54	50.20
100.00	12 58 36	4262.37	10.85	170.73	33.48	61.97	14 9 38	3662.4	7.02	164.04
110.00	22 52 22	2222.51	-33.32	38.10	41.18	98.13	23 29 25	1622.5	-31.84	29.18
110.00	13 49 49	4101.94	14.16	156.63	31.55	58.56	14 58 11	3501.9	9.90	150.12

DIFFERENTIAL CORRECTIONS
TDE-2.9956 TRA 8.6066 TC3-5.3273 BAU 2.1687
RDE .9365 RRA -.5778 RC3 .5536 FAU .26831
FDE-6.0791 FRA14.1073 FC3-7.6694 BSP 39159
BDE 3.1385 BRA 8.6260 BC3 5.3560 FSP 5873

MID-COURSE EXECUTION ACCURACY
SGT11383.8 SGR 1306.6 SG3 1595.4
RRT -.8305 RRF -.8589 RTF .9959
SGB11458.6 R23 .0509 R13 -.9962
SG111435.6 SG2 724.5 THA 174.53

ORBIT DETERMINATION ACCURACY
ST 4177.4 SR 992.7 SS 2797.0
CRT -.8585 CRS .9072 CST -.9946
LSA 5096.6 MSA 532.5 SSA 12.7
EL1 4264.7 EL2 498.7 ALF 168.31

LAUNCH DATE OCT 1 1964 FLIGHT TIME 384.00 ARRIVAL DATE OCT 20 1965

HELIOCENTRIC CONIC DISTANCE 870.509 EARTH TO MARS

RL 149.75 LAL -.00 LOL 7.85 VL 32.497 GAL -9.78 AZL 88.55 HCA 272.76 SMA 185.26 ECC .25401 INC 1.4459 V1 29.754
RP 214.40 LAP -1.44 LOP 280.61 VP 22.839 GAP -11.65 AZP 89.93 TAL 308.26 TAP 221.01 RCA 138.20 APO 232.32 V2 25.608
RC 292.426 GL 8.34 GP 6.48 ZAL 154.42 ZAP 49.31 ETS 185.27 ZAE 78.37 ETE 180.63 ZAC 88.13 ETC 260.11 CLP 48.99

PLANETOCENTRIC CONIC

C3 31.013 VHL 5.569 DLA 14.15 RAL 168.16 RAD 6568.2 VEL 12.344 PTH 2.23 VHP 4.238 DPA 19.35 RAP 154.83 ECC 1.5104

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 0 55	2777.77	-28.10	80.20	42.62	93.62	20 47 13	2177.8	-27.31	71.63
90.00	11 45 25	4510.57	9.89	189.49	34.93	63.33	13 0 36	3910.6	6.23	182.72
100.00	21 29 47	2491.20	-29.54	59.00	42.50	94.79	22 11 18	1891.2	-28.56	50.34
100.00	12 59 15	4272.38	11.17	171.30	34.26	62.09	14 10 27	3672.4	7.35	164.60
110.00	22 54 52	2224.97	-33.34	38.29	42.00	98.02	23 31 57	1625.0	-31.87	29.37
110.00	13 50 39	4111.37	14.49	157.15	32.32	58.70	14 59 10	3511.4	10.24	150.63

DIFFERENTIAL CORRECTIONS

TDE-3.1119 TRA 8.8813 TC3-5.3170 BAU 2.2155
RDE .9379 RRA -.5603 RC3 .5298 FAU .25556
FDE-5.9119 FRA13.6005 FC3-7.1338 BSP 39924
BDE 3.2502 BRA 8.8990 BC3 5.3434 FSP 5606

MID-COURSE EXECUTION ACCURACY

SGT11581.0 SGR 1277.8 SG3 1517.2
RRT -.8235 RRF -.8528 RTF .9958
SGB11651.3 R23 .0522 R13 -.9961
SG111628.9 SG2 722.0 THA 174.79

ORBIT DETERMINATION ACCURACY

ST 4274.8 SR 981.5 SS 2735.2
CRT -.8573 CRS .9065 CST -.9945
LSA 5141.6 MSA 530.9 SSA 12.7
EL1 4357.9 EL2 495.7 ALF 168.72

LAUNCH DATE OCT 1 1964 FLIGHT TIME 386.00 ARRIVAL DATE OCT 22 1965

HELIOCENTRIC CONIC DISTANCE 874.520 EARTH TO MARS

RL 149.75 LAL -.00 LOL 7.85 VL 32.500 GAL -9.92 AZL 88.53 HCA 273.94 SMA 185.31 ECC .25572 INC 1.4712 V1 29.754
RP 214.08 LAP -1.47 LOP 281.79 VP 22.884 GAP -11.87 AZP 89.90 TAL 307.74 TAP 221.67 RCA 137.92 APO 232.70 V2 25.644
RC 293.566 GL 8.38 GP 6.36 ZAL 154.81 ZAP 48.19 ETS 185.39 ZAE 77.00 ETE 180.79 ZAC 88.02 ETC 260.10 CLP 47.88

PLANETOCENTRIC CONIC

C3 31.782 VHL 5.638 DLA 14.02 RAL 168.59 RAD 6568.3 VEL 12.376 PTH 2.23 VHP 4.327 DPA 19.22 RAP 154.85 ECC 1.5230

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 3 47	2779.30	-28.11	80.32	43.46	93.56	20 50 6	2179.3	-27.32	71.74
90.00	11 45 56	4521.35	10.22	190.11	35.73	63.45	13 1 17	3921.3	6.57	183.33
100.00	21 32 33	2493.02	-29.55	59.14	43.34	94.72	22 14 6	1893.0	-28.58	50.47
100.00	12 59 51	4282.86	11.50	171.90	35.05	62.22	14 11 14	3682.9	7.69	165.18
110.00	22 57 27	2227.40	-33.36	38.47	42.84	97.91	23 34 34	1627.4	-31.91	29.55
110.00	13 51 27	4121.24	14.84	157.71	35.12	58.85	15 0 8	3521.2	10.61	151.16

DIFFERENTIAL CORRECTIONS

TDE-3.2292 TRA 9.1598 TC3-5.2977 BAU 2.2612
RDE .9397 RRA -.5438 RC3 .5068 FAU .24302
FDE-5.7444 FRA13.1045 FC3-6.6200 BSP 40678
BDE 3.3631 BRA 9.1760 BC3 5.3219 FSP 5348

MID-COURSE EXECUTION ACCURACY

SGT11769.3 SGR 1250.2 SG3 1441.2
RRT -.8164 RRF -.8468 RTF .9956
SGB11835.5 R23 .0536 R13 -.9959
SG111813.6 SG2 719.2 THA 175.02

ORBIT DETERMINATION ACCURACY

ST 4369.1 SR 970.3 SS 2672.5
CRT -.8561 CRS .9059 CST -.9944
LSA 5185.8 MSA 529.2 SSA 12.6
EL1 4448.4 EL2 492.6 ALF 169.10

LAUNCH DATE OCT 1 1964 FLIGHT TIME 388.00 ARRIVAL DATE OCT 24 1965

HELIOCENTRIC CONIC DISTANCE 878.526 EARTH TO MARS

RL 149.75 LAL -.00 LOL 7.85 VL 32.503 GAL -10.06 AZL 88.50 HCA 275.12 SMA 185.36 ECC .25751 INC 1.4967 V1 29.754
RP 213.77 LAP -1.49 LOP 282.97 VP 22.928 GAP -12.09 AZP 89.87 TAL 307.20 TAP 222.32 RCA 137.63 APO 233.10 V2 25.679
RC 294.693 GL 8.42 GP 6.25 ZAL 155.22 ZAP 47.12 ETS 185.50 ZAE 75.66 ETE 180.95 ZAC 87.92 ETC 260.08 CLP 46.80

PLANETOCENTRIC CONIC

C3 32.594 VHL 5.709 DLA 13.88 RAL 169.02 RAD 6568.3 VEL 12.408 PTH 2.24 VHP 4.419 DPA 19.07 RAP 154.91 ECC 1.5364

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 6 45	2780.75	-28.12	80.42	44.31	93.51	20 53 5	2180.8	-27.33	71.84
90.00	11 46 24	4532.61	10.56	190.76	36.54	63.57	13 1 57	3932.6	6.92	183.96
100.00	21 35 25	2494.79	-29.56	59.27	44.19	94.66	22 17 0	1894.8	-28.60	50.60
100.00	13 0 25	4293.80	11.85	172.53	35.87	62.35	14 11 59	3693.8	8.06	165.80
110.00	23 0 6	2229.81	-33.39	38.66	43.70	97.80	23 37 16	1629.8	-31.95	29.72
110.00	13 52 13	4131.54	15.20	158.28	33.93	59.01	15 1 5	3531.5	10.99	151.72

DIFFERENTIAL CORRECTIONS

TDE-3.3510 TRA 9.4413 TC3-5.2734 BAU 2.3076
RDE .9420 RRA -.5282 RC3 .4851 FAU .23099
FDE-5.5825 FRA12.6170 FC3-6.1353 BSP 41377
BDE 3.4809 BRA 9.4561 BC3 5.2956 FSP 5093

MID-COURSE EXECUTION ACCURACY

SGT11950.8 SGR 1224.2 SG3 1367.7
RRT -.8095 RRF -.8410 RTF .9955
SGB12013.4 R23 .0550 R13 -.9958
SG111992.0 SG2 716.3 THA 175.24

ORBIT DETERMINATION ACCURACY

ST 4462.7 SR 959.6 SS 2610.5
CRT -.8551 CRS .9055 CST -.9943
LSA 5232.0 MSA 527.1 SSA 12.5
EL1 4538.4 EL2 489.2 ALF 169.46

LAUNCH DATE OCT 1 1964 FLIGHT TIME 390.00 ARRIVAL DATE OCT 26 1965

HELIOCENTRIC CONIC DISTANCE 882.527 EARTH TO MARS

RL 149.75 LAL -.00 LOL 7.85 VL 32.506 GAL -10.22 AZL 88.48 HCA 276.31 SMA 185.42 ECC .25939 INC 1.5223 V1 29.754
RP 213.46 LAP -1.51 LOP 284.16 VP 22.971 GAP -12.31 AZP 89.83 TAL 306.65 TAP 222.96 RCA 137.32 APO 233.51 V2 25.714
RC 295.805 GL 8.45 GP 6.14 ZAL 155.63 ZAP 46.07 ETS 185.60 ZAE 74.34 ETE 181.10 ZAC 87.84 ETC 260.05 CLP 45.75

PLANETOCENTRIC CONIC

C3 33.453 VHL 5.784 DLA 13.73 RAL 169.45 RAD 6568.3 VEL 12.443 PTH 2.25 VHP 4.514 DPA 18.91 RAP 155.01 ECC 1.5506

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 9 48	2782.14	-28.12	80.52	45.18	93.46	20 56 10	2182.1	-27.35	71.94
90.00	11 46 50	4544.34	10.91	191.44	37.38	63.71	13 2 34	3944.3	7.29	184.63
100.00	21 38 22	2496.50	-29.57	59.40	45.07	94.59	22 19 58	1896.5	-28.62	50.72
100.00	13 0 57	4305.21	12.21	173.19	36.71	62.50	14 12 42	3705.2	8.43	166.44
110.00	23 2 50	2232.20	-33.41	38.84	44.58	97.70	23 40 2	1632.2	-31.98	29.90
110.00	13 52 58	4142.27	15.58	158.86	34.77	59.18	15 2 0	3542.3	11.38	152.30

DIFFERENTIAL CORRECTIONS

TDE-3.4765 TRA 9.7273 TC3-5.2430 BAU 2.3541
RDE .9449 RRA -.5136 RC3 .4644 FAU .21932
FDE-5.4236 FRA12.1398 FC3-5.6759 BSP 42045
BDE 3.6026 BRA 9.7409 BC3 5.2635 FSP 4843

MID-COURSE EXECUTION ACCURACY

SGT12125.9 SGR 1199.6 SG3 1296.6
RRT -.8027 RRF -.8354 RTF .9953
SGB12185.1 R23 .0565 R13 -.9955
SG112164.2 SG2 713.1 THA 175.44

ORBIT DETERMINATION ACCURACY

ST 4555.0 SR 949.3 SS 2548.6
CRT -.8543 CRS .9054 CST -.9942
LSA 5279.2 MSA 524.7 SSA 12.4
EL1 4627.5 EL2 485.6 ALF 169.79

LAUNCH DATE OCT 1 1964 FLIGHT TIME 392.00 ARRIVAL DATE OCT 28 1965

HELIOCENTRIC CONIC DISTANCE 886.522 EARTH TO MARS

RL 149.75 LAL -.00 LOL 7.85 VL 32.510 GAL -10.37 AZL 88.45 HCA 277.50 SMA 185.47 ECC .26136 INC 1.5481 V1 29.754
RP 213.16 LAP -1.53 LOP 285.35 VP 23.014 GAP -12.53 AZP 89.80 TAL 306.08 TAP 223.58 RCA 137.00 APO 233.95 V2 25.748
RC 296.904 GL 8.48 GP 6.03 ZAL 156.05 ZAP 45.06 ETS 185.70 ZAE 73.06 ETE 181.24 ZAC 87.76 ETC 260.02 CLP 44.74

PLANETOCENTRIC CONIC

C3 34.362 VHL 5.862 DLA 13.57 RAL 169.89 RAD 6568.4 VEL 12.479 PTH 2.26 VHP 4.612 DPA 18.75 RAP 155.14 ECC 1.5655

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 12 56	2783.46	-28.13	80.62	46.07	93.41	20 59 19	2183.5	-27.36	72.04
90.00	11 47 13	4556.55	11.28	192.15	38.23	63.85	13 3 9	3956.5	7.68	185.32
100.00	21 41 24	2498.16	-29.58	59.52	45.96	94.53	22 23 2	1898.2	-28.64	50.84
100.00	13 1 26	4317.08	12.58	173.87	37.56	62.66	14 13 23	3717.1	8.82	167.10
110.00	23 5 38	2234.57	-33.43	39.02	45.48	97.59	23 42 53	1634.6	-32.02	30.08
110.00	13 53 41	4153.43	15.97	159.52	35.63	59.37	15 2 54	3553.4	11.78	152.91

DIFFERENTIAL CORRECTIONS
TDE-3.6038 TRA10.0188 TC3-5.2059 BAU 2.4002
RDE .9481 RRA -.5001 RC3 .4446 FAU .20798
FDE-5.2654 FRA11.6738 FC3-5.2400 BSP 42697
BDE 3.7264 BRA10.0312 BC3 5.2248 FSP 4602

MID-COURSE EXECUTION ACCURACY
SGT12293.8 SGR 1176.2 SG3 1228.0
RRT -.7961 RRF -.8300 RTF .9951
SGB12350.0 R23 .0581 R13 -.9953
SG112329.5 SG2 709.7 THA 175.63

ORBIT DETERMINATION ACCURACY
ST 4644.8 SR 939.0 SS 2486.2
CRT -.8536 CRS .9053 CST -.9940
LSA 5325.8 HSA 522.1 SSA 12.4
EL1 4714.2 EL2 482.0 ALF 170.10

LAUNCH DATE OCT 1 1964 FLIGHT TIME 394.00 ARRIVAL DATE OCT 30 1965

HELIOCENTRIC CONIC DISTANCE 890.509 EARTH TO MARS

RL 149.75 LAL -.00 LOL 7.85 VL 32.513 GAL -10.54 AZL 88.43 HCA 278.70 SMA 185.53 ECC .26342 INC 1.5742 V1 29.754
RP 212.87 LAP -1.56 LOP 286.55 VP 23.057 GAP -12.75 AZP 89.76 TAL 305.49 TAP 224.19 RCA 136.66 APO 234.41 V2 25.782
RC 297.989 GL 8.50 GP 5.92 ZAL 156.48 ZAP 44.08 ETS 185.79 ZAE 71.81 ETE 181.38 ZAC 87.69 ETC 259.98 CLP 43.76

PLANETOCENTRIC CONIC

C3 35.324 VHL 5.943 DLA 13.41 RAL 170.34 RAD 6568.4 VEL 12.518 PTH 2.27 VHP 4.714 DPA 18.57 RAP 155.31 ECC 1.5813

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 16 9	2784.73	-28.15	80.71	46.98	93.37	21 2 34	2184.7	-27.37	72.13
90.00	11 47 33	4569.22	11.66	192.88	39.11	64.01	13 3 43	3969.2	8.07	186.04
100.00	21 44 31	2499.79	-29.59	59.64	46.86	94.46	22 26 10	1899.8	-28.66	50.96
100.00	13 1 53	4329.30	12.96	174.58	38.44	62.83	14 14 3	3729.4	9.22	167.80
110.00	23 8 31	2236.94	-33.45	39.20	46.39	97.49	23 45 48	1636.9	-32.06	30.25
110.00	13 54 22	4165.01	16.37	160.18	36.51	59.56	15 3 47	3565.0	12.21	153.55

DIFFERENTIAL CORRECTIONS
TDE-3.7359 TRA10.3130 TC3-5.1642 BAU 2.4471
RDE .9519 RRA -.4875 RC3 .4259 FAU .19708
FDE-5.1113 FRA11.2159 FC3-4.8301 BSP 43302
BDE 3.8553 BRA10.3254 BC3 5.1817 FSP 4365

MID-COURSE EXECUTION ACCURACY
SGT12455.0 SGR 1154.1 SG3 1161.7
RRT -.7887 RRF -.8248 RTF .9948
SGB12508.4 R23 .0597 R13 -.9951
SG112468.4 SG2 706.1 THA 175.80

ORBIT DETERMINATION ACCURACY
ST 4733.6 SR 929.2 SS 2424.0
CRT -.8531 CRS .9055 CST -.9939
LSA 5373.7 HSA 519.2 SSA 12.3
EL1 4800.2 EL2 478.1 ALF 170.40

LAUNCH DATE OCT 1 1964 FLIGHT TIME 396.00 ARRIVAL DATE NOV 1 1965

HELIOCENTRIC CONIC DISTANCE 894.488 EARTH TO MARS

RL 149.75 LAL -.00 LOL 7.85 VL 32.517 GAL -10.71 AZL 88.40 HCA 279.89 SMA 185.59 ECC .26558 INC 1.6004 V1 29.754
RP 212.57 LAP -1.58 LOP 287.75 VP 23.099 GAP -12.98 AZP 89.73 TAL 304.89 TAP 224.78 RCA 136.30 APO 234.88 V2 25.815
RC 299.061 GL 8.51 GP 5.82 ZAL 156.92 ZAP 43.13 ETS 185.88 ZAE 70.59 ETE 181.51 ZAC 87.63 ETC 259.94 CLP 42.81

PLANETOCENTRIC CONIC

C3 36.342 VHL 6.028 DLA 13.23 RAL 170.79 RAD 6568.4 VEL 12.558 PTH 2.28 VHP 4.818 DPA 18.38 RAP 155.51 ECC 1.5981

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 19 28	2785.95	-28.14	80.80	47.90	93.32	21 5 54	2186.0	-27.38	72.22
90.00	11 47 52	4582.35	12.05	193.65	40.01	64.18	13 4 14	3982.3	8.48	186.79
100.00	21 47 42	2501.38	-29.60	59.76	47.79	94.40	22 29 24	1901.4	-28.67	51.07
100.00	13 2 18	4342.16	13.36	175.33	39.34	63.01	14 14 40	3742.2	9.63	168.52
110.00	23 11 28	2239.30	-33.47	39.39	47.32	97.38	23 48 47	1639.3	-32.09	30.43
110.00	13 55 2	4177.00	16.78	160.86	37.41	59.77	15 4 39	3577.0	12.64	154.20

DIFFERENTIAL CORRECTIONS
TDE-3.8718 TRA10.6153 TC3-5.1172 BAU 2.4941
RDE .9562 RRA -.4760 RC3 .4081 FAU .18652
FDE-4.9595 FRA10.7684 FC3-4.4433 BSP 43868
BDE 3.9881 BRA10.6260 BC3 5.1334 FSP 4135

MID-COURSE EXECUTION ACCURACY
SGT12610.4 SGR 1133.2 SG3 1097.8
RRT -.7836 RRF -.8200 RTF .9946
SGB12661.3 R23 .0615 R13 -.9948
SG112641.8 SG2 702.3 THA 175.96

ORBIT DETERMINATION ACCURACY
ST 4821.1 SR 919.6 SS 2361.8
CRT -.8528 CRS .9058 CST -.9937
LSA 5422.2 HSA 516.1 SSA 12.2
EL1 4885.1 EL2 474.0 ALF 170.67

LAUNCH DATE OCT 1 1964 FLIGHT TIME 398.00 ARRIVAL DATE NOV 3 1965

HELIOCENTRIC CONIC DISTANCE 898.457 EARTH TO MARS

RL 149.75 LAL -.00 LOL 7.85 VL 32.521 GAL -10.89 AZL 88.37 HCA 281.09 SMA 185.66 ECC .26784 INC 1.6270 V1 29.754
RP 212.29 LAP -1.60 LOP 288.95 VP 23.140 GAP -13.21 AZP 89.69 TAL 304.26 TAP 225.36 RCA 135.93 APO 235.38 V2 25.847
RC 300.120 GL 8.52 GP 5.72 ZAL 157.37 ZAP 42.21 ETS 185.96 ZAE 69.40 ETE 181.63 ZAC 87.58 ETC 259.89 CLP 41.90

PLANETOCENTRIC CONIC

C3 37.420 VHL 6.117 DLA 13.05 RAL 171.25 RAD 6568.5 VEL 12.601 PTH 2.29 VHP 4.925 DPA 18.18 RAP 155.75 ECC 1.6158

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 22 51	2787.14	-28.14	80.89	48.84	93.28	21 9 19	2187.1	-27.39	72.30
90.00	11 48 7	4585.93	12.45	194.45	40.92	64.36	13 4 43	3995.9	8.90	187.57
100.00	21 50 59	2502.94	-29.60	59.87	48.73	94.34	22 32 42	1902.9	-28.69	51.19
100.00	13 2 41	4355.36	13.77	176.10	40.26	63.20	14 15 17	3755.4	10.06	169.26
110.00	23 14 29	2241.65	-33.49	39.57	48.27	97.27	23 51 51	1641.7	-32.12	30.60
110.00	13 55 40	4189.41	17.20	161.58	38.33	60.00	15 5 30	3589.4	13.09	154.89

DIFFERENTIAL CORRECTIONS
TDE-4.0128 TRA10.9217 TC3-5.0659 BAU 2.5410
RDE .9611 RRA -.4655 RC3 .3912 FAU .17634
FDE-4.8113 FRA10.3295 FC3-4.0798 BSP 44400
BDE 4.1263 BRA10.9316 BC3 5.0810 FSP 3910

MID-COURSE EXECUTION ACCURACY
SGT12759.7 SGR 1113.4 SG3 1036.3
RRT -.7779 RRF -.8155 RTF .9943
SGB12808.2 R23 .0634 R13 -.9945
SG112789.2 SG2 698.3 THA 176.11

ORBIT DETERMINATION ACCURACY
ST 4907.7 SR 910.3 SS 2299.8
CRT -.8527 CRS .9064 CST -.9935
LSA 5471.8 HSA 512.6 SSA 12.2
EL1 4969.3 EL2 469.7 ALF 170.93

LAUNCH DATE OCT 2 1964 FLIGHT TIME 240.00 ARRIVAL DATE MAY 30 1965

HELIOCENTRIC CONIC DISTANCE 592.491 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 33.097 GAL -9.51 AZL 92.60 HCA 196.68 SMA 195.89 ECC .28526 INC 2.6023 V1 29.762
RP 240.34 LAP .75 LOP 205.49 VP 20.661 GAP 10.22 AZP 87.51 TAL 315.07 TAP 151.75 RCA 140.01 APO 251.77 V2 22.851
RC 165.375 GL -14.50 GP 13.99 ZAL 147.14 ZAP 151.67 ETS 151.20 ZAE 160.09 ETE 44.56 ZAC 101.49 ETC 255.99 CLP 155.11

PLANETOCENTRIC CONIC

C3 35.058 VHL 5.921 DLA -5.26 RAL 155.20 RAD 6568.4 VEL 12.507 PTH 2.26 VHP 6.137 DPA 13.72 RAP 187.08 ECC 1.5770

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 35 49	2189.28	-18.95	39.89	24.62	111.45	22 12 18	1589.3	-15.87	32.56
90.00	8 19 16	5160.84	25.57	230.52	27.98	77.40	9 45 16	4560.8	23.58	222.41
100.00	22 54 41	1934.89	-20.16	20.66	24.10	112.55	23 26 56	1334.9	-16.92	13.36
100.00	9 43 5	4890.47	26.84	210.30	27.65	76.32	11 4 36	4290.5	24.69	202.16
110.00	0 1 10	1739.04	-23.39	4.24	22.55	115.67	0 30 9	1139.0	-19.74	357.00
110.00	10 57 1	4659.08	30.26	191.68	26.60	73.27	12 14 40	4059.1	27.67	183.44

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.9236 TRA-4.5629 TC3 .9700 BAU .5268 SGT 4944.3 SGR 1605.3 SG3 794.9 ST 2288.1 SR 883.7 SS 2182.9
RDE .8316 RRA-1.2509 RC3 .5676 FAU .15284 RRT .9651 RRF -.9899 RTF -.9619 CRT .9810 CRS .9914 CST .9978
FDE-3.6111 FRA 7.4525 FC3-3.7743 BSP 17832 SGB 5198.3 R23 -.2118 R13 -.9673 LSA 3278.9 MSA 173.1 SSA 22.4
BDE 2.0956 BRA 4.7313 BC3 1.1239 FSP 2474 SG1 5182.9 SG2 401.0 THA 17.51 EL1 2447.6 EL2 160.2 ALF 20.84

LAUNCH DATE OCT 2 1964 FLIGHT TIME 242.00 ARRIVAL DATE JUN 1 1965

HELIOCENTRIC CONIC DISTANCE 595.972 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 33.066 GAL -9.40 AZL 92.38 HCA 197.61 SMA 195.30 ECC .28236 INC 2.3755 V1 29.762
RP 240.04 LAP .72 LOP 206.43 VP 20.646 GAP 9.76 AZP 87.74 TAL 315.24 TAP 152.85 RCA 140.15 APO 250.44 V2 22.881
RC 167.697 GL -13.42 GP 13.58 ZAL 147.36 ZAP 151.27 ETS 152.59 ZAE 160.67 ETE 44.89 ZAC 101.14 ETC 255.99 CLP 154.44

PLANETOCENTRIC CONIC

C3 33.935 VHL 5.825 DLA -4.19 RAL 155.41 RAD 6568.3 VEL 12.462 PTH 2.25 VHP 5.998 DPA 13.24 RAP 187.13 ECC 1.5585

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 28 32	2214.74	-19.57	41.49	24.51	110.88	22 5 27	1614.7	-16.56	34.11
90.00	8 28 11	5118.95	24.92	227.62	27.15	76.09	9 53 30	4518.9	22.76	219.62
100.00	22 47 55	1958.67	-20.77	22.16	24.00	112.00	23 20 33	1358.7	-17.60	14.80
100.00	9 51 29	4850.24	26.16	207.51	26.80	75.00	11 12 20	4250.2	23.85	199.47
110.00	23 51 30	1759.12	-23.97	5.51	22.49	115.13	24 20 58	1159.1	-20.39	358.20
110.00	11 4 14	4622.56	29.51	189.10	25.67	71.91	12 21 17	4022.6	26.76	180.99

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.8938 TRA-4.5000 TC3 1.0068 BAU .5266 SGT 4954.4 SGR 1581.5 SG3 835.5 ST 2289.8 SR 874.2 SS 2219.0
RDE .8110 RRA-1.2072 RC3 .5742 FAU .15858 RRT .9643 RRF -.9888 RTF -.9630 CRT .9801 CRS .9897 CST .9983
FDE-3.6762 FRA 7.7377 FC3-4.0457 BSP 17837 SGB 5200.7 R23 -.2040 R13 -.9682 LSA 3301.7 MSA 170.7 SSA 24.1
BDE 2.0601 BRA 4.6591 BC3 1.1608 FSP 2606 SG1 5185.2 SG2 400.3 THA 17.22 EL1 2445.6 EL2 162.4 ALF 20.61

LAUNCH DATE OCT 2 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUN 3 1965

HELIOCENTRIC CONIC DISTANCE 599.473 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 33.037 GAL -9.30 AZL 92.17 HCA 198.55 SMA 194.74 ECC .27956 INC 2.1706 V1 29.762
RP 239.73 LAP .69 LOP 207.37 VP 20.632 GAP 9.31 AZP 87.94 TAL 315.40 TAP 153.96 RCA 140.29 APO 249.18 V2 22.912
RC 170.016 GL -12.43 GP 13.21 ZAL 147.53 ZAP 150.81 ETS 153.88 ZAE 161.26 ETE 45.43 ZAC 100.83 ETC 255.99 CLP 153.73

PLANETOCENTRIC CONIC

C3 32.906 VHL 5.736 DLA -3.19 RAL 155.59 RAD 6568.3 VEL 12.421 PTH 2.24 VHP 5.864 DPA 12.81 RAP 187.18 ECC 1.5416

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 21 48	2238.02	-20.13	42.97	24.39	110.35	21 59 6	1638.0	-17.18	35.54
90.00	8 36 21	5080.14	24.25	224.97	26.39	74.92	10 1 2	4480.1	21.95	217.06
100.00	22 41 39	1980.43	-21.32	23.54	23.91	111.47	23 14 40	1380.4	-18.21	16.13
100.00	9 59 11	4812.96	25.48	204.95	26.01	73.81	11 19 24	4213.0	23.01	197.02
110.00	23 46 29	1777.50	-24.50	6.67	22.44	114.62	24 16 6	1177.5	-20.97	359.30
110.00	11 10 51	4588.66	28.77	186.74	24.83	70.69	12 27 20	3988.7	25.87	178.76

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.8634 TRA-4.4378 TC3 1.0450 BAU .5261 SGT 4960.8 SGR 1562.9 SG3 877.7 ST 2288.9 SR 867.3 SS 2255.7
RDE .7938 RRA-1.1696 RC3 .5816 FAU .16444 RRT .9634 RRF -.9875 RTF -.9641 CRT .9792 CRS .9879 CST .9987
FDE-3.7449 FRA 8.0322 FC3-4.3263 BSP 17860 SGB 5201.2 R23 -.1962 R13 -.9690 LSA 3324.1 MSA 169.9 SSA 25.6
BDE 2.0254 BRA 4.5893 BC3 1.1960 FSP 2747 SG1 5185.8 SG2 400.7 THA 16.99 EL1 2442.1 EL2 165.0 ALF 20.45

LAUNCH DATE OCT 2 1964 FLIGHT TIME 246.00 ARRIVAL DATE JUN 5 1965

HELIOCENTRIC CONIC DISTANCE 602.992 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 33.008 GAL -9.19 AZL 91.98 HCA 199.50 SMA 194.20 ECC .27687 INC 1.9843 V1 29.762
RP 239.42 LAP .66 LOP 208.32 VP 20.621 GAP 8.86 AZP 88.13 TAL 315.57 TAP 155.06 RCA 140.43 APO 247.97 V2 22.943
RC 172.331 GL -11.51 GP 12.89 ZAL 147.65 ZAP 150.30 ETS 155.08 ZAE 161.84 ETE 46.18 ZAC 100.56 ETC 255.99 CLP 153.00

PLANETOCENTRIC CONIC

C3 31.959 VHL 5.653 DLA -2.27 RAL 155.75 RAD 6568.3 VEL 12.383 PTH 2.24 VHP 5.734 DPA 12.42 RAP 187.23 ECC 1.5260

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 15 32	2259.46	-20.63	44.34	24.29	109.84	21 53 11	1659.5	-17.74	36.86
90.00	8 43 53	5044.00	23.59	222.53	25.68	73.87	10 7 57	4444.0	21.16	214.71
100.00	22 35 50	2000.47	-21.81	24.83	23.82	110.96	23 9 10	1400.5	-18.77	17.36
100.00	10 6 17	4778.22	24.80	202.59	25.29	72.75	11 25 55	4178.2	22.20	194.75
110.00	23 41 39	1794.42	-24.97	7.76	22.38	114.14	24 11 33	1194.4	-21.50	.33
110.00	11 16 57	4557.04	28.04	184.57	24.05	69.60	12 32 54	3957.0	25.00	176.71

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.8332 TRA-4.3742 TC3 1.0800 BAU .5258 SGT 4962.6 SGR 1548.8 SG3 921.3 ST 2285.8 SR 862.8 SS 2293.5
RDE .7797 RRA-1.1365 RC3 .5902 FAU .17057 RRT .9625 RRF -.9863 RTF -.9651 CRT .9782 CRS .9860 CST .9990
FDE-3.8189 FRA 8.3329 FC3-4.6206 BSP 17872 SGB 5198.7 R23 -.1888 R13 -.9698 LSA 3346.6 MSA 170.4 SSA 26.9
BDE 1.9921 BRA 4.5194 BC3 1.2307 FSP 2891 SG1 5183.1 SG2 402.3 THA 16.82 EL1 2437.5 EL2 168.0 ALF 20.37

LAUNCH DATE OCT 2 1964 FLIGHT TIME 248.00 ARRIVAL DATE JUN 7 1965

HELIOCENTRIC CONIC DISTANCE 606.532 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 32.981 GAL -9.09 AZL 91.81 HCA 200.44 SMA 193.69 ECC .27428 INC 1.8140 V1 29.762
RP 239.11 LAP .63 LOP 209.26 VP 20.613 GAP 8.41 AZP 88.30 TAL 315.73 TAP 156.17 RCA 140.56 APO 246.81 V2 22.975
RC 174.639 GL -10.66 GP 12.60 ZAL 147.74 ZAP 149.73 ETS 156.21 ZAE 162.43 ETE 47.17 ZAC 100.32 ETC 255.99 CLP 152.25

PLANETOCENTRIC CONIC

C3 31.082 VHL 5.575 DLA -1.40 RAL 155.88 RAD 6568.2 VEL 12.347 PTH 2.23 VHP 5.608 DPA 12.08 RAP 187.28 ECC 1.5115

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 9 40	2279.32	-21.09	45.62	24.18	109.35	21 47 39	1679.3	-18.25	38.09
90.00	8 50 52	5010.14	22.93	220.27	25.03	72.92	10 14 22	4410.1	20.38	212.53
100.00	22 30 21	2019.03	-22.26	26.03	23.72	110.48	23 4 0	1419.0	-19.27	18.51
100.00	10 12 52	4745.67	24.12	200.41	24.62	71.79	11 31 57	4145.7	21.41	192.66
110.00	23 37 6	1810.08	-25.41	8.77	22.32	113.68	24 7 16	1210.1	-21.99	1.29
110.00	11 22 36	4527.38	27.32	182.56	23.34	68.61	12 38 3	3927.4	24.17	174.81

DIFFERENTIAL CORRECTIONS
TDE 1.8169 TRA-4.2952 TC3 1.1312 BAU .5325
RDE .7697 RRA-1.1060 RC3 .6021 FAU .17739
FDE-3.9069 FRA 8.6309 FC3-4.9407 BSP 17538
BDE 1.9733 BRA 4.4354 BC3 1.2815 FSP 3021

MID-COURSE EXECUTION ACCURACY
SGT 4957.3 SGR 1539.2 SG3 966.7
RRT .9625 RRF -.9849 RTF -.9668
SGB 5190.7 R23 -.1780 R13 -.9712
SG1 5175.3 SG2 399.9 THA 16.74

ORBIT DETERMINATION ACCURACY
ST 2289.7 SR 861.7 SS 2335.3
CRT .9780 CRS .9841 CST .9993
LSA 3377.8 MSA 168.9 SSA 28.1
EL1 2440.7 EL2 168.5 ALF 20.31

LAUNCH DATE OCT 2 1964 FLIGHT TIME 250.00 ARRIVAL DATE JUN 9 1965

HELIOCENTRIC CONIC DISTANCE 610.086 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 32.954 GAL -8.99 AZL 91.66 HCA 201.39 SMA 193.20 ECC .27178 INC 1.6578 V1 29.762
RP 238.79 LAP .60 LOP 210.21 VP 20.607 GAP 7.98 AZP 88.46 TAL 315.89 TAP 157.28 RCA 140.69 APO 245.71 V2 23.002
RC 176.939 GL -9.86 GP 12.34 ZAL 147.79 ZAP 149.12 ETS 157.26 ZAE 163.01 ETE 48.39 ZAC 100.10 ETC 255.99 CLP 151.47

PLANETOCENTRIC CONIC

C3 30.270 VHL 5.502 DLA -.59 RAL 156.01 RAD 6568.2 VEL 12.314 PTH 2.22 VHP 5.485 DPA 11.77 RAP 187.32 ECC 1.4982

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 4 8	2297.84	-21.50	46.82	24.07	108.89	21 42 26	1697.8	-18.72	39.25
90.00	8 57 23	4978.33	22.28	218.16	24.42	72.06	10 20 21	4378.3	19.62	210.50
100.00	22 25 12	2036.33	-22.67	27.15	23.62	110.03	22 59 9	1436.3	-19.73	19.58
100.00	10 19 0	4715.07	23.46	198.38	24.00	70.92	11 37 35	4115.1	20.64	190.72
110.00	23 32 49	1824.67	-25.80	9.72	22.26	113.24	24 3 14	1224.7	-22.43	2.19
110.00	11 27 52	4499.49	26.61	180.70	22.68	67.71	12 42 52	3899.5	23.35	173.05

DIFFERENTIAL CORRECTIONS
TDE 1.7816 TRA-4.2345 TC3 1.1557 BAU .5293
RDE .7600 RRA-1.0818 RC3 .6122 FAU .18388
FDE-3.9885 FRA 8.9523 FC3-5.2592 BSP 17647
BDE 1.9370 BRA 4.3705 BC3 1.3078 FSP 3182

MID-COURSE EXECUTION ACCURACY
SGT 4950.5 SGR 1532.8 SG3 1013.7
RRT .9612 RRF -.9836 RTF -.9672
SGB 5182.4 R23 -.1726 R13 -.9716
SG1 5166.5 SG2 405.3 THA 16.68

ORBIT DETERMINATION ACCURACY
ST 2279.1 SR 860.9 SS 2374.6
CRT .9768 CRS .9821 CST .9995
LSA 3397.5 MSA 173.0 SSA 28.9
EL1 2430.1 EL2 173.0 ALF 20.36

LAUNCH DATE OCT 2 1964 FLIGHT TIME 252.00 ARRIVAL DATE JUN 11 1965

HELIOCENTRIC CONIC DISTANCE 613.658 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 32.929 GAL -8.90 AZL 91.51 HCA 202.34 SMA 192.73 ECC .26939 INC 1.5142 V1 29.762
RP 238.47 LAP .58 LOP 211.16 VP 20.603 GAP 7.54 AZP 88.60 TAL 316.04 TAP 158.38 RCA 140.81 APO 244.65 V2 23.040
RC 179.231 GL -9.11 GP 12.11 ZAL 147.81 ZAP 148.47 ETS 158.25 ZAE 163.59 ETE 49.87 ZAC 99.91 ETC 255.99 CLP 150.67

PLANETOCENTRIC CONIC

C3 29.514 VHL 5.433 DLA .18 RAL 156.12 RAD 6568.2 VEL 12.284 PTH 2.21 VHP 5.366 DPA 11.50 RAP 187.35 ECC 1.4857

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 58 55	2315.18	-21.88	47.96	23.96	108.44	21 37 30	1715.2	-19.15	40.34
90.00	9 3 29	4948.30	21.64	216.20	23.86	71.28	10 25 57	4348.3	18.88	208.61
100.00	22 20 20	2052.53	-23.04	28.21	23.53	109.59	22 54 33	1452.5	-20.16	20.60
100.00	10 24 45	4686.18	22.80	196.48	23.42	70.13	11 42 51	4086.2	19.89	188.90
110.00	23 28 46	1838.33	-26.17	10.61	22.20	112.82	23 59 24	1238.3	-22.84	3.03
110.00	11 32 48	4473.15	25.92	178.96	22.07	66.89	12 47 21	3873.1	22.57	171.41

DIFFERENTIAL CORRECTIONS
TDE 1.7461 TRA-4.1713 TC3 1.1779 BAU .5258
RDE .7519 RRA-1.0611 RC3 .6230 FAU .19052
FDE-4.0712 FRA 9.2860 FC3-5.5887 BSP 17743
BDE 1.9011 BRA 4.3042 BC3 1.3325 FSP 3355

MID-COURSE EXECUTION ACCURACY
SGT 4938.0 SGR 1529.5 SG3 1062.5
RRT .9599 RRF -.9823 RTF -.9677
SGB 5169.4 R23 -.1671 R13 -.9720
SG1 5153.1 SG2 410.8 THA 16.67

ORBIT DETERMINATION ACCURACY
ST 2266.0 SR 861.4 SS 2413.7
CRT .9756 CRS .9801 CST .9996
LSA 3416.2 MSA 177.5 SSA 29.6
EL1 2417.7 EL2 177.3 ALF 20.46

LAUNCH DATE OCT 2 1964 FLIGHT TIME 254.00 ARRIVAL DATE JUN 13 1965

HELIOCENTRIC CONIC DISTANCE 617.245 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 32.905 GAL -8.81 AZL 91.38 HCA 203.29 SMA 192.29 ECC .26708 INC 1.3810 V1 29.762
RP 238.14 LAP .55 LOP 212.12 VP 20.601 GAP 7.11 AZP 88.73 TAL 316.20 TAP 159.49 RCA 140.93 APO 243.64 V2 23.073
RC 181.513 GL -8.40 GP 11.90 ZAL 147.82 ZAP 147.78 ETS 159.18 ZAE 164.17 ETE 51.63 ZAC 99.74 ETC 255.99 CLP 149.84

PLANETOCENTRIC CONIC

C3 28.808 VHL 5.367 DLA .90 RAL 156.22 RAD 6568.2 VEL 12.255 PTH 2.20 VHP 5.251 DPA 11.26 RAP 187.38 ECC 1.4741

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 53 57	2331.51	-22.22	49.03	23.86	108.01	21 32 48	1731.5	-19.55	41.37
90.00	9 9 13	4919.85	21.01	214.35	23.33	70.56	10 31 13	4319.9	18.16	206.83
100.00	22 15 42	2067.78	-23.38	29.21	23.44	109.17	22 50 10	1467.8	-20.55	21.56
100.00	10 30 9	4658.81	22.16	194.71	22.88	69.40	11 47 48	4058.8	19.16	187.20
110.00	23 24 55	1851.17	-26.50	11.46	22.13	112.42	23 55 46	1251.2	-23.23	3.83
110.00	11 37 28	4448.19	25.24	177.34	21.51	66.15	12 51 34	3848.2	21.80	169.88

DIFFERENTIAL CORRECTIONS
TDE 1.7129 TRA-4.1038 TC3 1.2024 BAU .5238
RDE .7460 RRA-1.0430 RC3 .6357 FAU .19768
FDE-4.1628 FRA 9.6258 FC3-5.9406 BSP 17744
BDE 1.8683 BRA 4.2343 BC3 1.3601 FSP 3526

MID-COURSE EXECUTION ACCURACY
SGT 4919.9 SGR 1529.7 SG3 1113.3
RRT .9588 RRF -.9809 RTF -.9683
SGB 5152.2 R23 -.1614 R13 -.9725
SG1 5135.4 SG2 416.3 THA 16.71

ORBIT DETERMINATION ACCURACY
ST 2252.2 SR 863.8 SS 2455.2
CRT .9745 CRS .9781 CST .9997
LSA 3436.9 MSA 182.4 SSA 30.1
EL1 2405.4 EL2 181.3 ALF 20.62

LAUNCH DATE OCT 2 1964 FLIGHT TIME 256.00 ARRIVAL DATE JUN 15 1965

HELIOCENTRIC CONIC DISTANCE 620.848 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 32.882 GAL -8.72 AZL 91.26 HCA 204.25 SMA 191.86 ECC .26486 INC 1.2576 V1 29.762
RP 237.81 LAP .52 LOP 213.08 VP 20.601 GAP 6.69 AZP 88.85 TAL 316.35 TAP 160.60 RCA 141.05 APO 242.68 V2 23.106
RC 183.786 GL -7.73 GP 11.72 ZAL 147.80 ZAP 147.05 ETS 160.05 ZAE 164.74 ETE 53.68 ZAC 99.58 ETC 255.99 CLP 148.98

PLANETOCENTRIC CONIC

C3 28.147 VHL 5.305 DLA 1.58 RAL 156.30 RAD 6568.1 VEL 12.228 PTH 2.20 VHP 5.138 DPA 11.06 RAP 187.39 ECC 1.4632

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 49 13	2346.95	-22.55	50.05	23.76	107.60	21 28 20	1747.0	-19.93	42.35
90.00	9 14 39	4892.83	20.38	212.61	22.84	69.91	10 36 12	4292.8	17.46	205.16
100.00	22 11 18	2082.20	-23.70	30.16	23.34	108.77	22 46 0	1482.2	-20.92	22.47
100.00	10 35 15	4632.82	21.52	193.03	22.38	68.74	11 52 28	4032.8	18.45	185.59
110.00	23 21 14	1863.30	-26.81	12.27	22.06	112.04	23 52 17	1263.3	-23.58	4.59
110.00	11 41 49	4424.48	24.58	175.82	20.98	65.46	12 55 33	3824.5	21.06	168.44

DIFFERENTIAL CORRECTIONS
TDE 1.6812 TRA-4.0326 TC3 1.2258 BAU .5220
RDE .7417 RRA-1.0278 RC3 .6495 FAU .20507
FDE-4.2591 FRA 9.9778 FC3-6.3075 BSP 17696
BDE 1.8376 BRA 4.1615 BC3 1.3872 FSP 3704

MID-COURSE EXECUTION ACCURACY
SGT 4895.8 SGR 1532.8 SG3 1166.1
RRT .9579 RRF -.9797 RTF -.9689
SGB 5130.1 R23 -.1554 R13 -.9731
SG1 5112.8 SG2 421.4 THA 16.81

ORBIT DETERMINATION ACCURACY
ST 2237.5 SR 867.7 SS 2497.7
CRT .9737 CRS .9761 CST .9998
LSA 3458.6 MSA 187.4 SSA 30.5
EL1 2392.7 EL2 184.9 ALF 20.82

LAUNCH DATE OCT 2 1964 FLIGHT TIME 258.00 ARRIVAL DATE JUN 17 1965

HELIOCENTRIC CONIC DISTANCE 624.466 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 32.860 GAL -8.64 AZL 91.14 HCA 205.21 SMA 191.46 ECC .26273 INC 1.1425 V1 29.762
RP 237.48 LAP .49 LOP 214.04 VP 20.604 GAP 6.27 AZP 88.97 TAL 316.49 TAP 161.70 RCA 141.16 APO 241.76 V2 23.140
RC 186.049 GL -7.09 GP 11.55 ZAL 147.77 ZAP 146.28 ETS 160.88 ZAE 165.30 ETE 56.07 ZAC 99.44 ETC 255.99 CLP 148.10

PLANETOCENTRIC CONIC

C3 27.529 VHL 5.247 DLA 2.23 RAL 156.38 RAD 6568.1 VEL 12.203 PTH 2.19 VHP 5.029 DPA 10.88 RAP 187.39 ECC 1.4531

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 44 42	2361.61	-22.84	51.02	23.66	107.20	21 24 3	1761.6	-20.27	43.29
90.00	9 19 48	4867.10	19.77	210.97	22.39	69.31	10 40 55	4267.1	16.78	203.58
100.00	22 7 5	2085.88	-24.00	31.07	23.25	108.38	22 42 1	1495.9	-21.27	23.34
100.00	10 40 6	4608.06	20.91	191.45	21.92	68.13	11 56 54	4008.1	17.75	184.08
110.00	23 17 43	1874.81	-27.11	13.03	22.00	111.67	23 48 57	1274.8	-23.92	5.32
110.00	11 45 57	4401.90	23.94	174.38	20.49	64.84	12 59 19	3801.9	20.35	167.08

DIFFERENTIAL CORRECTIONS
TDE 1.6479 TRA-3.9603 TC3 1.2445 BAU .5191
RDE .7386 RRA-1.0151 RC3 .6641 FAU .21274
FDE-4.3597 FRA10.3412 FC3-6.6904 BSP 17648
BDE 1.8058 BRA 4.0884 BC3 1.4106 FSP 3889

MID-COURSE EXECUTION ACCURACY
SGT 4865.7 SGR 1538.5 SG3 1220.9
RRT .9569 RRF -.9784 RTF -.9693
SGB 5103.2 R23 -.1502 R13 -.9735
SG1 5085.2 SG2 427.7 THA 16.96

ORBIT DETERMINATION ACCURACY
ST 2219.4 SR 872.8 SS 2541.0
CRT .9728 CRS .9742 CST .9998
LSA 3479.3 MSA 193.3 SSA 30.8
EL1 2377.3 EL2 188.7 ALF 21.07

LAUNCH DATE OCT 2 1964 FLIGHT TIME 260.00 ARRIVAL DATE JUN 19 1965

HELIOCENTRIC CONIC DISTANCE 628.102 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 32.838 GAL -8.56 AZL 91.04 HCA 206.17 SMA 191.07 ECC .26069 INC 1.0351 V1 29.762
RP 237.15 LAP .46 LOP 215.00 VP 20.608 GAP 5.86 AZP 89.07 TAL 316.64 TAP 162.81 RCA 141.26 APO 240.88 V2 23.174
RC 188.300 GL -6.49 GP 11.41 ZAL 147.72 ZAP 145.47 ETS 161.66 ZAE 165.84 ETE 58.82 ZAC 99.31 ETC 256.00 CLP 147.19

PLANETOCENTRIC CONIC

C3 26.948 VHL 5.191 DLA 2.86 RAL 156.45 RAD 6568.1 VEL 12.179 PTH 2.19 VHP 4.922 DPA 10.72 RAP 187.37 ECC 1.4435

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 40 21	2375.59	-23.12	51.95	23.56	106.82	21 19 57	1775.6	-20.60	44.18
90.00	9 24 42	4842.51	19.17	209.42	21.96	68.76	10 45 24	4242.5	16.12	202.08
100.00	22 3 2	2108.92	-24.28	31.94	23.16	108.00	22 38 11	1508.9	-21.59	24.17
100.00	10 44 42	4584.41	20.30	189.96	21.48	67.57	12 1 7	3984.4	17.08	182.64
110.00	23 14 20	1885.76	-27.38	13.77	21.93	111.31	23 45 46	1285.8	-24.24	6.01
110.00	11 49 54	4380.34	23.31	173.02	20.03	64.26	13 2 54	3780.3	19.65	165.79

DIFFERENTIAL CORRECTIONS
TDE 1.6339 TRA-3.8661 TC3 1.2902 BAU .5260
RDE .7391 RRA-1.0022 RC3 .6836 FAU .22176
FDE-4.4864 FRA10.6926 FC3-7.1242 BSP 17110
BDE 1.7933 BRA 3.9939 BC3 1.4601 FSP 4035

MID-COURSE EXECUTION ACCURACY
SGT 4827.0 SGR 1547.8 SG3 1278.2
RRT .9575 RRF -.9772 RTF -.9708
SGB 5069.1 R23 -.1399 R13 -.9748
SG1 5051.1 SG2 426.8 THA 17.19

ORBIT DETERMINATION ACCURACY
ST 2212.8 SR 881.1 SS 2591.4
CRT .9734 CRS .9726 CST .9998
LSA 3514.0 MSA 197.4 SSA 30.6
EL1 2374.4 EL2 188.1 ALF 21.33

LAUNCH DATE OCT 2 1964 FLIGHT TIME 262.00 ARRIVAL DATE JUN 21 1965

HELIOCENTRIC CONIC DISTANCE 631.746 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 32.818 GAL -8.48 AZL 90.94 HCA 207.13 SMA 190.70 ECC .25873 INC .9347 V1 29.762
RP 236.81 LAP .43 LOP 215.96 VP 20.614 GAP 5.45 AZP 89.17 TAL 316.78 TAP 163.91 RCA 141.36 APO 240.04 V2 23.209
RC 190.540 GL -5.92 GP 11.28 ZAL 147.67 ZAP 144.62 ETS 162.40 ZAE 166.35 ETE 61.96 ZAC 99.19 ETC 256.00 CLP 146.25

PLANETOCENTRIC CONIC

C3 26.405 VHL 5.139 DLA 3.45 RAL 156.52 RAD 6568.1 VEL 12.157 PTH 2.18 VHP 4.818 DPA 10.60 RAP 187.34 ECC 1.4346

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 36 12	2388.96	-23.38	52.84	23.46	106.44	21 16 1	1789.0	-20.91	45.04
90.00	9 29 23	4819.04	18.59	207.95	21.56	68.25	10 49 42	4219.0	15.47	200.66
100.00	21 59 9	2121.39	-24.54	32.78	23.08	107.63	22 34 31	1521.4	-21.89	24.98
100.00	10 49 7	4561.84	19.71	188.55	21.07	67.06	12 5 8	3961.8	16.43	181.29
110.00	23 11 6	1896.23	-27.64	14.47	21.87	110.97	23 42 42	1296.2	-24.53	6.68
110.00	11 53 40	4359.77	22.69	171.74	19.61	63.72	13 6 19	3759.8	18.98	164.58

DIFFERENTIAL CORRECTIONS
TDE 1.5840 TRA-3.8042 TC3 1.2797 BAU .5144
RDE .7362 RRA -.9965 RC3 .6972 FAU .22924
FDE-4.5779 FRA11.1022 FC3-7.5159 BSP 17392
BDE 1.7467 BRA 3.9326 BC3 1.4573 FSP 4275

MID-COURSE EXECUTION ACCURACY
SGT 4786.1 SGR 1557.7 SG3 1337.2
RRT .9554 RRF -.9760 RTF -.9703
SGB 5033.2 R23 -.1392 R13 -.9745
SG1 5014.0 SG2 439.3 THA 17.41

ORBIT DETERMINATION ACCURACY
ST 2178.5 SR 886.5 SS 2631.2
CRT .9716 CRS .9705 CST .9998
LSA 3523.0 MSA 205.8 SSA 31.0
EL1 2343.9 EL2 195.0 ALF 21.73

LAUNCH DATE OCT 2 1964 FLIGHT TIME 264.00 ARRIVAL DATE JUN 23 1965

HELIOCENTRIC CONIC DISTANCE 635.405 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 32.798 GAL -8.40 AZL 90.84 HCA 208.10 SMA 190.35 ECC .25685 INC .8405 V1 29.762
RP 236.46 LAP .40 LOP 216.93 VP 20.623 GAP 5.05 AZP 89.26 TAL 316.91 TAP 165.01 RCA 141.46 APO 239.24 V2 23.244
RC 192.768 GL -5.37 GP 11.17 ZAL 147.61 ZAP 143.74 ETS 163.10 ZAE 166.82 ETE 65.52 ZAC 99.07 ETC 256.00 CLP 145.28

PLANETOCENTRIC CONIC

C3 25.894 VHL 5.089 DLA 4.01 RAL 156.58 RAD 6568.0 VEL 12.136 PTH 2.18 VHP 4.717 DPA 10.49 RAP 187.29 ECC 1.4262

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 32 12	2401.79	-23.63	53.70	23.38	106.08	21 12 14	1801.8	-21.20	45.87
90.00	9 33 52	4796.54	18.02	206.54	21.19	67.78	10 53 48	4196.5	14.85	199.30
100.00	21 55 26	2133.36	-24.78	33.58	23.00	107.27	22 30 59	1533.4	-22.18	25.75
100.00	10 53 19	4540.21	19.13	187.20	20.69	66.58	12 9 0	3940.2	15.80	179.99
110.00	23 7 59	1906.27	-27.88	15.15	21.81	110.63	23 39 45	1306.3	-24.82	7.32
110.00	11 57 15	4340.06	22.09	170.53	19.21	63.23	13 9 35	3740.1	18.32	163.42

DIFFERENTIAL CORRECTIONS
TDE 1.5474 TRA-3.7257 TC3 1.2858 BAU .5092
RDE .7360 RRA -.9910 RC3 .7144 FAU .23774
FDE-4.6895 FRA11.5077 FC3-7.9484 BSP 17317
BDE 1.7136 BRA 3.8552 BC3 1.4710 FSP 4490

MID-COURSE EXECUTION ACCURACY
SGT 4736.3 SGR 1570.5 SG3 1398.6
RRT .9544 RRF -.9750 RTF -.9705
SGB 4989.9 R23 -.1352 R13 -.9748
SG1 4969.8 SG2 446.9 THA 17.71

ORBIT DETERMINATION ACCURACY
ST 2151.5 SR 894.4 SS 2676.3
CRT .9709 CRS .9686 CST .9998
LSA 3541.9 MSA 213.0 SSA 31.0
EL1 2321.5 EL2 198.6 ALF 22.15

LAUNCH DATE OCT 2 1964 FLIGHT TIME 266.00 ARRIVAL DATE JUN 25 1965

HELIOCENTRIC CONIC DISTANCE 639.078 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 32.780 GAL -8.33 AZL 90.75 HCA 209.07 SMA 190.02 ECC .25505 INC .7514 V1 29.762
RP 236.12 LAP .37 LOP 217.90 VP 20.633 GAP 4.65 AZP 89.34 TAL 317.04 TAP 166.11 RCA 141.55 APO 238.48 V2 23.279
RC 194.983 GL -4.84 GP 11.06 ZAL 147.53 ZAP 142.82 ETS 163.77 ZAE 167.25 ETE 69.54 ZAC 98.97 ETC 256.01 CLP 144.28

PLANETOCENTRIC CONIC

C3 25.415 VHL 5.041 DLA 4.56 RAL 156.63 RAD 6568.0 VEL 12.116 PTH 2.17 VHP 4.619 DPA 10.42 RAP 187.22 ECC 1.4183

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 28 21	2414.14	-23.86	54.53	23.29	105.72	21 8 35	1814.1	-21.47	46.67
90.00	9 38 10	4774.96	17.45	205.21	20.84	67.34	10 57 45	4175.0	14.23	198.01
100.00	21 51 50	2144.87	-25.01	34.36	22.92	106.93	22 27 35	1544.9	-22.46	26.49
100.00	10 57 22	4519.46	18.56	185.92	20.34	66.14	12 12 41	3919.5	15.18	178.76
110.00	23 4 59	1915.93	-28.11	15.81	21.75	110.30	23 36 55	1315.9	-25.09	7.94
110.00	12 0 42	4321.17	21.51	169.37	18.84	62.77	13 12 43	3721.2	17.69	162.33

DIFFERENTIAL CORRECTIONS
TDE 1.5123 TRA-3.6418 TC3 1.2915 BAU .5046
RDE .7371 RRA -.9869 RC3 .7333 FAU .24677
FDE-4.8092 FRA11.9225 FC3-8.4061 BSP 17162
BDE 1.6823 BRA 3.7732 BC3 1.4852 FSP 4703

MID-COURSE EXECUTION ACCURACY
SGT 4678.7 SGR 1585.7 SG3 1462.4
RRT .9536 RRF -.9739 RTF -.9707
SGB 4940.1 R23 -.1311 R13 -.9751
SG1 4919.2 SG2 454.2 THA 18.07

ORBIT DETERMINATION ACCURACY
ST 2123.0 SR 903.4 SS 2723.2
CRT .9704 CRS .9669 CST .9997
LSA 3562.3 MSA 220.2 SSA 31.0
EL1 2298.4 EL2 201.7 ALF 22.62

LAUNCH DATE OCT 2 1964 FLIGHT TIME 268.00 ARRIVAL DATE JUN 27 1965

HELIOCENTRIC CONIC DISTANCE 642.763 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 32.762 GAL -8.26 AZL 90.67 HCA 210.04 SMA 189.70 ECC .25333 INC .6675 V1 29.762
RP 235.77 LAP .33 LOP 218.87 VP 20.644 GAP 4.26 AZP 89.42 TAL 317.17 TAP 167.21 RCA 141.64 APO 237.75 V2 23.315
RC 197.185 GL -4.34 GP 10.98 ZAL 147.46 ZAP 141.86 ETS 164.41 ZAE 167.60 ETE 74.01 ZAC 98.87 ETC 256.02 CLP 143.24

PLANETOCENTRIC CONIC

C3 24.965 VHL 4.996 DLA 5.08 RAL 156.69 RAD 6568.0 VEL 12.097 PTH 2.17 VHP 4.523 DPA 10.36 RAP 187.13 ECC 1.4109

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 24 38	2426.06	-24.08	55.34	23.22	105.37	21 5 4	1826.1	-21.73	47.45
90.00	9 42 19	4754.22	16.91	203.93	20.52	66.94	11 1 33	4154.2	13.64	196.78
100.00	21 48 22	2155.98	-25.23	35.11	22.85	106.59	22 24 18	1556.0	-22.72	27.22
100.00	11 1 16	4499.53	18.01	184.70	20.01	65.73	12 16 15	3899.5	14.58	177.58
110.00	23 2 5	1925.24	-28.33	16.45	21.71	109.98	23 34 11	1325.2	-25.34	8.54
110.00	12 4 1	4303.04	20.94	168.27	18.50	62.34	13 15 44	3703.0	17.07	161.28

DIFFERENTIAL CORRECTIONS
TDE 1.4766 TRA-3.5547 TC3 1.2927 BAU .4993
RDE .7388 RRA -.9847 RC3 .7530 FAU .25611
FDE-4.9333 FRA12.3516 FC3-8.8817 BSP 16980
BDE 1.6511 BRA 3.6886 BC3 1.4960 FSP 4925

MID-COURSE EXECUTION ACCURACY
SGT 4613.4 SGR 1602.8 SG3 1528.5
RRT .9528 RRF -.9730 RTF -.9708
SGB 4883.9 R23 -.1271 R13 -.9754
SG1 4862.0 SG2 461.5 THA 18.49

ORBIT DETERMINATION ACCURACY
ST 2091.8 SR 913.2 SS 2770.8
CRT .9700 CRS .9652 CST .9996
LSA 3582.5 MSA 227.7 SSA 30.9
EL1 2273.3 EL2 204.4 ALF 23.15

LAUNCH DATE OCT 2 1964 FLIGHT TIME 270.00 ARRIVAL DATE JUN 29 1965

HELIOCENTRIC CONIC DISTANCE 646.461 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 32.745 GAL -8.20 AZL 90.59 HCA 211.02 SMA 189.39 ECC .25168 INC .5883 V1 29.762
RP 235.42 LAP .30 LOP 219.85 VP 20.658 GAP 3.87 AZP 89.50 TAL 317.29 TAP 168.31 RCA 141.73 APO 237.06 V2 23.351
RC 199.372 GL -3.85 GP 10.90 ZAL 147.38 ZAP 140.87 ETS 165.03 ZAE 167.88 ETE 78.93 ZAC 98.78 ETC 256.03 CLP 142.18

PLANETOCENTRIC CONIC

C3 24.542 VHL 4.954 DLA 5.58 RAL 156.74 RAD 6568.0 VEL 12.080 PTH 2.16 VHP 4.430 DPA 10.33 RAP 187.02 ECC 1.4039

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 21 2	2437.60	-24.28	56.12	23.15	105.03	21 1 40	1837.6	-21.98	48.20
90.00	9 46 18	4734.29	16.37	202.71	20.22	66.57	11 5 13	4134.3	13.06	195.60
100.00	21 45 1	2166.73	-25.44	35.84	22.79	106.25	22 21 8	1566.7	-22.96	27.92
100.00	11 5 1	4480.39	17.47	183.53	19.71	65.35	12 19 41	3880.4	14.00	176.46
110.00	22 59 18	1934.25	-28.54	17.07	21.66	109.67	23 31 32	1334.2	-25.59	9.13
110.00	12 7 13	4285.63	20.39	167.22	18.18	61.95	13 18 39	3685.6	16.48	160.28

DIFFERENTIAL CORRECTIONS
TDE 1.4388 TRA-3.4656 TC3 1.2870 BAU .4926
RDE .7412 RRA -.9845 RC3 .7732 FAU .26568
FDE-5.0598 FRA12.7977 FC3-9.3722 BSP 16803
BDE 1.6185 BRA 3.6027 BC3 1.5014 FSP 5161

MID-COURSE EXECUTION ACCURACY
SGT 4540.2 SGR 1621.8 SG3 1597.0
RRT .9520 RRF -.9722 RTF -.9708
SGB 4821.2 R23 -.1239 R13 -.9755
SG1 4798.3 SG2 469.5 THA 18.97

ORBIT DETERMINATION ACCURACY
ST 2056.8 SR 923.6 SS 2818.6
CRT .9696 CRS .9636 CST .9995
LSA 3601.6 MSA 235.5 SSA 30.7
EL1 2245.1 EL2 207.0 ALF 23.74

LAUNCH DATE OCT 2 1964 FLIGHT TIME 272.00 ARRIVAL DATE JUL 1 1965

HELIOCENTRIC CONIC DISTANCE 650.171 EARTH TO MARS

RL	149.71	LAL	-.00	LOL	8.83	VL	32.728	GAL	-8.14	AZL	90.51	HCA	212.00	SMA	189.11	ECC	.25011	INC	.5134	V1	29.762
RP	235.06	LAP	.27	LOP	220.83	VP	20.673	GAP	3.49	AZP	89.56	TAL	317.40	TAP	169.40	RCA	141.81	APO	236.40	V2	23.387
RC	201.544	GL	-3.39	GP	10.83	ZAL	147.29	ZAP	139.83	ETS	165.62	ZAE	168.07	ETE	84.26	ZAC	98.69	ETC	256.04	CLP	141.08

PLANETOCENTRIC CONIC

C3	24.145	VHL	4.914	DLA	6.06	RAL	156.79	RAD	6568.0	VEL	12.063	PTH	2.16	VHP	4.340	DPA	10.31	RAP	186.88	ECC	1.3974

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 17 34	2448.78	-24.48	56.88	23.08	104.70	20 58 23	1848.8	-22.22	48.94
90.00	9 50 10	4715.10	15.85	201.55	19.94	66.22	11 8 46	4115.1	12.50	194.47
100.00	21 41 47	2177.15	-25.63	36.56	22.74	105.93	22 18 4	1577.1	-23.20	28.60
100.00	11 8 39	4461.97	16.94	182.42	19.43	65.00	12 23 1	3862.0	13.43	175.39
110.00	22 56 37	1942.98	-28.73	17.67	21.63	109.37	23 29 0	1343.0	-25.82	9.70
110.00	12 10 19	4268.90	19.85	166.23	17.88	61.58	13 21 27	3668.9	15.90	159.33

DIFFERENTIAL CORRECTIONS

TDE	1.4009	TRA	-3.3716	TC3	1.2774	BAU	.4856
RDE	.7442	RRA	-.9857	RC3	.7944	FAU	.27563
FDE	-5.1921	FRA	13.2567	FC3	-9.8829	BSP	16570
BDE	1.5863	BRA	3.5127	BC3	1.5043	FSP	5401

MID-COURSE EXECUTION ACCURACY

SGT	4458.0	SGR	1642.7	SG3	1667.8		
RRT	.9514	RRF	-.9714	RTF	-.9707		
SGB	4751.0	R23	-.1206	R13	-.9757		
SG1	4727.0	SG2	477.3	THA	19.53		

ORBIT DETERMINATION ACCURACY

ST	2019.0	SR	934.8	SS	2867.4
CRT	.9694	CRS	.9620	CST	.9994
LSA	3621.0	MSA	243.4	SSA	30.5
EL1	2215.1	EL2	209.1	ALF	24.40

LAUNCH DATE OCT 2 1964 FLIGHT TIME 274.00 ARRIVAL DATE JUL 3 1965

HELIOCENTRIC CONIC DISTANCE 653.892 EARTH TO MARS

RL	149.71	LAL	-.00	LOL	8.83	VL	32.712	GAL	-8.08	AZL	90.44	HCA	212.98	SMA	188.83	ECC	.24861	INC	.4417	V1	29.762
RP	234.71	LAP	.24	LOP	221.81	VP	20.690	GAP	3.11	AZP	89.63	TAL	317.51	TAP	170.49	RCA	141.89	APO	235.77	V2	23.424
RC	203.699	GL	-2.94	GP	10.77	ZAL	147.21	ZAP	138.76	ETS	166.18	ZAE	168.14	ETE	89.94	ZAC	98.60	ETC	256.05	CLP	139.95

PLANETOCENTRIC CONIC

C3	23.773	VHL	4.876	DLA	6.52	RAL	156.84	RAD	6568.0	VEL	12.048	PTH	2.15	VHP	4.252	DPA	10.33	RAP	186.72	ECC	1.3912

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 14 13	2459.64	-24.66	57.62	23.03	104.37	20 55 13	1859.6	-22.45	49.65
90.00	9 53 55	4696.63	15.34	200.43	19.69	65.90	11 12 12	4096.6	11.95	193.39
100.00	21 38 40	2187.27	-25.82	37.25	22.69	105.61	22 15 7	1587.3	-23.43	29.27
100.00	11 12 9	4444.24	16.43	181.35	19.17	64.67	12 26 14	3844.2	12.88	174.36
110.00	22 54 1	1951.46	-28.92	18.25	21.60	109.07	23 26 32	1351.5	-26.05	10.25
110.00	12 13 18	4252.76	19.32	165.27	17.61	61.24	13 24 11	3652.8	15.34	158.42

DIFFERENTIAL CORRECTIONS

TDE	1.3621	TRA	-3.2740	TC3	1.2622	BAU	.4778
RDE	.7480	RRA	-.9883	RC3	.8167	FAU	.28599
FDE	-5.3306	FRA	13.7284	FC	-10.4148	BSP	16314
BDE	1.5540	BRA	3.4199	BC3	1.5033	FSP	5647

MID-COURSE EXECUTION ACCURACY

SGT	4367.1	SGR	1665.3	SG3	1741.0		
RRT	.9506	RRF	-.9707	RTF	-.9705		
SGB	4673.9	R23	-.1179	R13	-.9757		
SG1	4648.6	SG2	485.5	THA	20.16		

ORBIT DETERMINATION ACCURACY

ST	1978.1	SR	946.7	SS	2917.2
CRT	.9693	CRS	.9606	CST	.9993
LSA	3640.7	MSA	251.4	SSA	30.3
EL1	2182.8	EL2	210.8	ALF	25.14

LAUNCH DATE OCT 2 1964 FLIGHT TIME 276.00 ARRIVAL DATE JUL 5 1965

HELIOCENTRIC CONIC DISTANCE 657.624 EARTH TO MARS

RL	149.71	LAL	-.00	LOL	8.83	VL	32.698	GAL	-8.02	AZL	90.37	HCA	213.97	SMA	188.57	ECC	.24718	INC	.3736	V1	29.762
RP	234.35	LAP	.21	LOP	222.80	VP	20.708	GAP	2.74	AZP	89.69	TAL	317.62	TAP	171.58	RCA	141.96	APO	235.18	V2	23.461
RC	205.837	GL	-2.50	GP	10.72	ZAL	147.12	ZAP	137.65	ETS	166.73	ZAE	168.09	ETE	95.83	ZAC	98.51	ETC	256.06	CLP	138.78

PLANETOCENTRIC CONIC

C3	23.425	VHL	4.840	DLA	6.97	RAL	156.89	RAD	6568.0	VEL	12.033	PTH	2.15	VHP	4.167	DPA	10.36	RAP	186.53	ECC	1.3855

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 10 59	2470.22	-24.84	58.35	22.99	104.05	20 52 9	1870.2	-22.66	50.35
90.00	9 57 33	4678.84	14.84	199.36	19.46	65.60	11 15 32	4078.8	11.42	192.35
100.00	21 35 39	2197.11	-26.00	37.93	22.65	105.30	22 12 16	1597.1	-23.65	29.92
100.00	11 15 34	4427.18	15.93	180.33	18.93	64.37	12 29 21	3827.2	12.35	173.37
110.00	22 51 31	1959.71	-29.11	18.83	21.58	108.77	23 24 10	1359.7	-26.27	10.80
110.00	12 16 12	4237.34	18.81	164.36	17.36	60.92	13 26 49	3637.3	14.79	157.55

DIFFERENTIAL CORRECTIONS

TDE	1.3214	TRA	-3.1727	TC3	1.2400	BAU	.4690
RDE	.7522	RRA	-.9924	RC3	.8397	FAU	.29665
FDE	-5.4714	FRA	14.2156	FC	-10.9636	BSP	16045
BDE	1.5205	BRA	3.3243	BC3	1.4976	FSP	5905

MID-COURSE EXECUTION ACCURACY

SGT	4266.7	SGR	1689.5	SG3	1816.5		
RRT	.9498	RRF	-.9701	RTF	-.9701		
SGB	4589.1	R23	-.1156	R13	-.9757		
SG1	4562.4	SG2	494.2	THA	20.87		

ORBIT DETERMINATION ACCURACY

ST	1933.1	SR	959.0	SS	2966.9
CRT	.9693	CRS	.9593	CST	.9991
LSA	3659.4	MSA	259.6	SSA	30.1
EL1	2147.4	EL2	212.2	ALF	25.95

LAUNCH DATE OCT 2 1964 FLIGHT TIME 278.00 ARRIVAL DATE JUL 7 1965

HELIOCENTRIC CONIC DISTANCE 661.367 EARTH TO MARS

RL	149.71	LAL	-.00	LOL	8.83	VL	32.683	GAL	-7.97	AZL	90.31	HCA	214.95	SMA	188.32	ECC	.24582	INC	.3091	V1	29.762
RP	233.98	LAP	-.18	LOP	223.79	VP	20.728	GAP	2.38	AZP	89.75	TAL	317.71	TAP	172.67	RCA	142.03	APO	234.61	V2	23.498
RC	207.958	GL	-2.09	GP	10.68	ZAL	147.04	ZAP	136.50	ETS	167.27	ZAE	167.90	ETE	101.83	ZAC	98.42	ETC	256.08	CLP	137.58

PLANETOCENTRIC CONIC

C3	23.099	VHL	4.806	DLA	7.40	RAL	156.94	RAD	6567.9	VEL	12.020	PTH	2.15	VHP	4.084	DPA	10.41	RAP	186.32	ECC	1.3801

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 7 51	2480.52	-25.01	59.06	22.95	103.74	20 49 11	1880.5	-22.87	51.04
90.00	10 1 5	4661.70	14.36	198.34	19.24	65.33	11 18 47	4061.7	10.91	191.36
100.00	21 32 44	2206.71	-26.17	38.59	22.62	104.99	22 9 31	1606.7	-23.86	30.55
100.00	11 18 53	4410.74	15.44	179.35	18.71	64.08	12 32 24	3810.7	11.63	172.42
110.00	22 49 6	1967.76	-29.28	19.39	21.57	108.48	23 21 53	1367.8	-26.48	11.33
110.00	12 19 1	4222.46	18.32	163.49	17.14	60.62	13 29 23	3622.5	14.27	156.72

DIFFERENTIAL CORRECTIONS

TDE	1.2797	TRA	-3.0670	TC3	1.2109	BAU	.4592
RDE	.7569	RRA	-.9979	RC3	.8631	FAU	.30754
FDE	-5.6160	FRA	14.7181	FC	-11.5265	BSP	15750
BDE	1.4868	BRA	3.2253	BC3	1.4870	FSP	6174

MID-COURSE EXECUTION ACCURACY

SGT	4156.5	SGR	1715.1	SG3	1894.2		
RRT	.9490	RRF	-.9696	RTF	-.9695		
SGB	4496.5	R23	-.1137	R13	-.9756		
SG1	4468.2	SG2	502.9	THA	21.67		

ORBIT DETERMINATION ACCURACY

ST	1884.7	SR	971.8	SS	3017.1
CRT	.9694	CRS	.9580	CST	.9989
LSA	3677.9	MSA	267.9	SSA	29.9
EL1	2109.8	EL2	213.0	ALF	26.85

LAUNCH DATE OCT 2 1964 FLIGHT TIME 280.00 ARRIVAL DATE JUL 9 1965

HELIOCENTRIC CONIC DISTANCE 665.121 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 32.670 GAL -7.92 AZL 90.25 HCA 215.95 SMA 188.08 ECC .24452 INC .2474 V1 29.762
RP 233.62 LAP .15 LOP 224.78 VP 20.749 GAP 2.01 AZP 89.80 TAL 317.81 TAP 173.75 RCA 142.09 APO 234.07 V2 23.536
RC 210.060 GL -1.68 GP 10.65 ZAL 146.95 ZAP 135.31 ETS 167.78 ZAE 167.56 ETE 107.78 ZAC 98.34 ETC 256.10 CLP 136.33

PLANETOCENTRIC CONIC

C3 22.794 VHL 4.774 DLA 7.82 RAL 156.99 RAD 6567.9 VEL 12.007 PTH 2.14 VHP 4.004 DPA 10.48 RAP 186.08 ECC 1.3751

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 4 49	2490.58	-25.17	59.75	22.93	103.42	20 46 20	1890.6	-23.07	51.71
90.00	10 4 32	4645.18	13.88	197.35	19.05	65.07	11 21 57	4045.2	10.41	190.40
100.00	21 29 56	2216.08	-26.33	39.24	22.61	104.68	22 6 52	1616.1	-24.06	31.18
100.00	11 22 6	4394.92	14.97	178.42	18.52	63.82	12 35 21	3794.9	11.33	171.52
110.00	22 46 46	1975.62	-29.45	19.94	21.57	108.20	23 19 42	1375.6	-26.68	11.85
110.00	12 21 45	4208.14	17.84	162.66	16.93	60.35	13 31 54	3608.1	13.76	155.92

DIFFERENTIAL CORRECTIONS
TDE 1.2363 TRA-2.9567 TC3 1.1745 BAU .4486
RDE .7620 RRA-1.0046 RC3 .8872 FAU .31876
FDE-5.7637 FRA15.2330 FC-12.1065 BSP 15429
BDE 1.4523 BRA 3.1227 BC3 1.4719 FSP 6451

MID-COURSE EXECUTION ACCURACY
SGT 4035.6 SGR 1742.1 SG3 1973.9
RRT .9481 RRF -.9692 RTF -.9687
SGB 4395.6 R23 -.1122 R13 -.9753
SG1 4365.7 SG2 512.2 THA 22.58

ORBIT DETERMINATION ACCURACY
ST 1832.2 SR 985.0 SS 3067.2
CRT .9697 CRS .9567 CST .9986
LSA 3695.6 MSA 276.2 SSA 29.6
EL1 2069.2 EL2 213.2 ALF 27.85

LAUNCH DATE OCT 2 1964 FLIGHT TIME 282.00 ARRIVAL DATE JUL 11 1965

HELIOCENTRIC CONIC DISTANCE 668.885 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 32.657 GAL -7.87 AZL 90.19 HCA 216.94 SMA 187.85 ECC .24329 INC .1882 V1 29.762
RP 233.25 LAP .11 LOP 225.77 VP 20.772 GAP 1.66 AZP 89.85 TAL 317.89 TAP 174.83 RCA 142.15 APO 233.56 V2 23.574
RC 212.144 GL -1.29 GP 10.62 ZAL 146.87 ZAP 134.08 ETS 168.29 ZAE 167.08 ETE 113.56 ZAC 98.25 ETC 256.12 CLP 135.05

PLANETOCENTRIC CONIC

C3 22.511 VHL 4.745 DLA 8.22 RAL 157.04 RAD 6567.9 VEL 11.995 PTH 2.14 VHP 3.927 DPA 10.57 RAP 185.81 ECC 1.3705

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 1 54	2500.41	-25.32	60.43	22.92	103.12	20 43 34	1900.4	-23.27	52.36
90.00	10 7 53	4629.27	13.43	196.41	18.88	64.83	11 25 2	4029.3	9.92	189.48
100.00	21 27 13	2225.23	-26.49	39.87	22.60	104.38	22 4 18	1625.2	-24.25	31.79
100.00	11 25 15	4379.67	14.51	177.52	18.34	63.57	12 38 15	3779.7	10.84	170.65
110.00	22 44 31	1983.30	-29.61	20.48	21.57	107.91	23 17 35	1383.3	-26.88	12.36
110.00	12 24 26	4194.38	17.37	161.86	16.75	60.09	13 34 20	3594.4	13.26	155.16

DIFFERENTIAL CORRECTIONS
TDE 1.1924 TRA-2.8413 TC3 1.1321 BAU .4375
RDE .7677 RRA-1.0124 RC3 .9119 FAU .33031
FDE-5.9177 FRA15.7609 FC-12.7033 BSP 15063
BDE 1.4181 BRA 3.0163 BC3 1.4537 FSP 6732

MID-COURSE EXECUTION ACCURACY
SGT 3904.6 SGR 1770.4 SG3 2055.9
RRT .9471 RRF -.9688 RTF -.9677
SGB 4287.2 R23 -.1110 R13 -.9750
SG1 4255.4 SG2 521.3 THA 23.62

ORBIT DETERMINATION ACCURACY
ST 1776.5 SR 998.7 SS 3118.4
CRT .9701 CRS .9556 CST .9983
LSA 3714.3 MSA 284.6 SSA 29.3
EL1 2026.9 EL2 212.6 ALF 28.95

LAUNCH DATE OCT 2 1964 FLIGHT TIME 284.00 ARRIVAL DATE JUL 13 1965

HELIOCENTRIC CONIC DISTANCE 672.660 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 32.644 GAL -7.82 AZL 90.13 HCA 217.94 SMA 187.64 ECC .24213 INC .1312 V1 29.762
RP 232.88 LAP .08 LOP 226.77 VP 20.796 GAP 1.31 AZP 89.90 TAL 317.97 TAP 175.91 RCA 142.21 APO 233.07 V2 23.612
RC 214.210 GL -.91 GP 10.59 ZAL 146.79 ZAP 132.81 ETS 168.78 ZAE 166.45 ETE 119.05 ZAC 98.15 ETC 256.14 CLP 133.73

PLANETOCENTRIC CONIC

C3 22.247 VHL 4.717 DLA 8.60 RAL 157.10 RAD 6567.9 VEL 11.984 PTH 2.14 VHP 3.852 DPA 10.69 RAP 185.51 ECC 1.3661

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 59 4	2510.02	-25.47	61.09	22.91	102.81	20 40 54	1910.0	-23.45	53.00
90.00	10 11 9	4613.93	12.98	195.51	18.73	64.61	11 28 3	4013.9	9.45	188.60
100.00	21 24 36	2234.19	-26.64	40.49	22.60	104.09	22 1 50	1634.2	-24.44	32.39
100.00	11 28 19	4365.00	14.06	176.66	18.19	63.35	12 41 4	3765.0	10.37	169.81
110.00	22 42 22	1990.81	-29.77	21.01	21.59	107.64	23 15 33	1390.8	-27.07	12.86
110.00	12 27 2	4181.14	16.92	161.10	16.59	59.85	13 36 43	3581.1	12.79	154.43

DIFFERENTIAL CORRECTIONS
TDE 1.1463 TRA-2.7211 TC3 1.0808 BAU .4254
RDE .7737 RRA-1.0212 RC3 .9371 FAU .34209
FDE-6.0737 FRA16.3003 FC-13.3124 BSP 14678
BDE 1.3829 BRA 2.9064 BC3 1.4305 FSP 7021

MID-COURSE EXECUTION ACCURACY
SGT 3762.2 SGR 1799.7 SG3 2139.5
RRT .9459 RRF -.9685 RTF -.9663
SGB 4170.5 R23 -.1104 R13 -.9746
SG1 4136.5 SG2 531.2 THA 24.78

ORBIT DETERMINATION ACCURACY
ST 1716.3 SR 1012.7 SS 3169.2
CRT .9705 CRS .9546 CST .9980
LSA 3732.1 MSA 293.0 SSA 29.1
EL1 1981.6 EL2 211.3 ALF 30.18

LAUNCH DATE OCT 2 1964 FLIGHT TIME 286.00 ARRIVAL DATE JUL 15 1965

HELIOCENTRIC CONIC DISTANCE 676.444 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 32.633 GAL -7.78 AZL 90.08 HCA 218.94 SMA 187.44 ECC .24103 INC .0753 V1 29.762
RP 232.51 LAP .05 LOP 227.77 VP 20.821 GAP .96 AZP 89.94 TAL 318.04 TAP 176.98 RCA 142.26 APO 232.61 V2 23.650
RC 216.258 GL -.54 GP 10.58 ZAL 146.72 ZAP 131.49 ETS 169.26 ZAE 165.69 ETE 124.18 ZAC 98.06 ETC 256.17 CLP 132.37

PLANETOCENTRIC CONIC

C3 22.002 VHL 4.691 DLA 8.98 RAL 157.16 RAD 6567.9 VEL 11.974 PTH 2.13 VHP 3.780 DPA 10.82 RAP 185.17 ECC 1.3621

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 56 21	2519.43	-25.61	61.75	22.92	102.52	20 38 20	1919.4	-23.63	53.64
90.00	10 14 21	4599.16	12.55	194.64	18.60	64.41	11 31 0	3999.2	9.00	187.75
100.00	21 22 4	2242.95	-26.78	41.11	22.62	103.80	21 59 27	1643.0	-24.62	32.97
100.00	11 31 19	4350.87	13.63	175.83	18.06	63.14	12 43 49	3750.9	9.92	169.01
110.00	22 40 17	1998.17	-29.92	21.53	21.63	107.36	23 13 36	1398.2	-27.25	13.35
110.00	12 29 35	4168.42	16.49	160.37	16.44	59.62	13 39 3	3568.4	12.33	153.73

DIFFERENTIAL CORRECTIONS
TDE 1.0993 TRA-2.5951 TC3 1.0220 BAU .4130
RDE .7801 RRA-1.0308 RC3 .9628 FAU .35419
FDE-6.2348 FRA16.8483 FC-13.9369 BSP 14251
BDE 1.3480 BRA 2.7923 BC3 1.4041 FSP 7314

MID-COURSE EXECUTION ACCURACY
SGT 3608.5 SGR 1830.0 SG3 2224.8
RRT .9444 RRF -.9683 RTF -.9646
SGB 4046.0 R23 -.1102 R13 -.9740
SG1 4009.6 SG2 541.4 THA 26.10

ORBIT DETERMINATION ACCURACY
ST 1652.5 SR 1027.1 SS 3220.4
CRT .9712 CRS .9536 CST .9976
LSA 3750.4 MSA 301.4 SSA 28.8
EL1 1934.5 EL2 209.0 ALF 31.53

LAUNCH DATE OCT 2 1964 FLIGHT TIME 288.00 ARRIVAL DATE JUL 17 1965

HELIOCENTRIC CONIC DISTANCE 680.238 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 32.621 GAL -7.74 AZL 90.03 HCA 219.94 SMA 187.24 ECC .23999 INC .0210 V1 29.762
RP 232.14 LAP .02 LOP 228.77 VP 20.848 GAP .62 AZP 89.98 TAL 318.11 TAP 178.05 RCA 142.31 APO 232.18 V2 23.689
RC 218.287 GL -.18 GP 10.56 ZAL 146.64 ZAP 130.14 ETS 169.73 ZAE 164.79 ETE 128.90 ZAC 97.96 ETC 256.20 CLP 130.97

PLANETOCENTRIC CONIC

C3 21.775 VHL 4.666 DLA 9.34 RAL 157.22 RAD 6567.9 VEL 11.965 PTH 2.13 VHP 3.711 DPA 10.97 RAP 184.81 ECC 1.3584

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 53 43	2528.65	-25.74	62.39	22.95	102.22	20 35 52	1928.6	-23.80	54.26
90.00	10 17 28	4584.95	12.13	193.80	18.49	64.21	11 33 53	3984.9	8.56	186.94
100.00	21 19 38	2251.54	-26.92	41.71	22.65	103.51	21 57 10	1651.5	-24.79	33.55
100.00	11 34 14	4337.29	13.21	175.04	17.94	62.94	12 46 31	3737.3	9.48	168.24
110.00	22 38 18	2005.39	-30.06	22.04	21.67	107.09	23 11 43	1405.4	-27.43	13.84
110.00	12 32 4	4156.20	16.06	159.68	16.32	59.41	13 41 20	3556.2	11.89	153.06

DIFFERENTIAL CORRECTIONS
TDE 1.0502 TRA-2.4637 TC3 .9536 BAU .3998
RDE .7867 RRA-1.0415 RC3 .9883 FAU .36633
FDE-6.3954 FRA17.4101 FC-14.5642 BSP 13811
BDE 1.3121 BRA 2.6748 BC3 1.3734 FSP 7620

MID-COURSE EXECUTION ACCURACY
SGT 3442.8 SGR 1860.9 SG3 2311.5
RRT .9426 RRF -.9681 RTF -.9623
SGB 3913.6 R23 -.1106 R13 -.9732
SG1 3874.4 SG2 552.2 THA 27.61

ORBIT DETERMINATION ACCURACY
ST 1584.0 SR 1041.6 SS 3270.8
CRT .9720 CRS .9527 CST .9972
LSA 3767.7 MSA 309.9 SSA 28.5
EL1 1884.6 EL2 205.6 ALF 33.03

LAUNCH DATE OCT 2 1964 FLIGHT TIME 290.00 ARRIVAL DATE JUL 19 1965

HELIOCENTRIC CONIC DISTANCE 684.041 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 32.611 GAL -7.71 AZL 89.98 HCA 220.95 SMA 187.06 ECC .23902 INC .0198 V1 29.762
RP 231.76 LAP -.02 LOP 229.78 VP 20.876 GAP .28 AZP 90.02 TAL 318.16 TAP 179.11 RCA 142.35 APO 231.77 V2 23.728
RC 220.299 GL .17 GP 10.55 ZAL 146.58 ZAP 128.74 ETS 170.19 ZAE 163.77 ETE 133.21 ZAC 97.85 ETC 256.23 CLP 129.53

PLANETOCENTRIC CONIC

C3 21.567 VHL 4.644 DLA 9.69 RAL 157.29 RAD 6567.9 VEL 11.956 PTH 2.13 VHP 3.645 DPA 11.14 RAP 184.41 ECC 1.3549

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 51 12	2537.68	-25.87	63.02	22.98	101.93	20 33 29	1937.7	-23.97	54.87
90.00	10 20 32	4571.27	11.72	193.00	18.40	64.04	11 36 43	3971.3	8.14	186.16
100.00	21 17 18	2259.96	-27.05	42.30	22.69	103.23	21 54 58	1660.0	-24.96	34.12
100.00	11 37 6	4324.23	12.80	174.28	17.85	62.76	12 49 10	3724.2	9.05	167.50
110.00	22 36 24	2012.47	-30.20	22.54	21.72	106.82	23 9 56	1412.5	-27.61	14.31
110.00	12 34 30	4144.48	15.66	159.01	16.22	59.22	13 43 35	3544.5	11.46	152.42

DIFFERENTIAL CORRECTIONS
TDE .9998 TRA-2.3261 TC3 .8774 BAU .3867
RDE .7937 RRA-1.0525 RC3 1.0144 FAU .37878
FDE-6.5612 FRA17.9749 FC-15.2050 BSP 13329
BDE 1.2765 BRA 2.5531 BC3 1.3412 FSP 7925

MID-COURSE EXECUTION ACCURACY
SGT 3265.2 SGR 1892.5 SG3 2399.2
RRT .9403 RRF -.9679 RTF -.9594
SGB 3774.0 R23 -.1114 R13 -.9723
SG1 3731.7 SG2 563.5 THA 29.33

ORBIT DETERMINATION ACCURACY
ST 1511.6 SR 1056.3 SS 3321.4
CRT .9730 CRS .9519 CST .9966
LSA 3785.5 MSA 318.2 SSA 28.2
EL1 1833.1 EL2 200.9 ALF 34.69

LAUNCH DATE OCT 2 1964 FLIGHT TIME 292.00 ARRIVAL DATE JUL 21 1965

HELIOCENTRIC CONIC DISTANCE 687.853 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 32.601 GAL -7.67 AZL 89.93 HCA 221.96 SMA 186.89 ECC .23810 INC .0730 V1 29.762
RP 231.38 LAP -.05 LOP 230.79 VP 20.905 GAP -.05 AZP 90.05 TAL 318.21 TAP 180.17 RCA 142.39 APO 231.38 V2 23.768
RC 222.292 GL .51 GP 10.54 ZAL 146.52 ZAP 127.30 ETS 170.65 ZAE 162.64 ETE 137.11 ZAC 97.74 ETC 256.27 CLP 128.05

PLANETOCENTRIC CONIC

C3 21.376 VHL 4.623 DLA 10.02 RAL 157.36 RAD 6567.9 VEL 11.948 PTH 2.13 VHP 3.581 DPA 11.33 RAP 183.98 ECC 1.3518

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 48 46	2546.54	-26.00	63.64	23.03	101.64	20 31 13	1946.5	-24.13	55.47
90.00	10 23 31	4558.12	11.33	192.24	18.33	63.87	11 39 29	3958.1	7.72	185.41
100.00	21 15 4	2268.21	-27.18	42.88	22.74	102.94	21 52 52	1668.2	-25.13	34.68
100.00	11 39 54	4311.68	12.41	173.56	17.78	62.59	12 51 46	3711.7	8.64	166.80
110.00	22 34 34	2019.42	-30.34	23.04	21.79	106.56	23 8 14	1419.4	-27.77	14.78
110.00	12 36 53	4133.23	15.26	158.38	16.13	59.04	13 45 47	3533.2	11.05	151.81

DIFFERENTIAL CORRECTIONS
TDE .9474 TRA-2.1824 TC3 .7924 BAU .3737
RDE .8007 RRA-1.0642 RC3 1.0402 FAU .39131
FDE-6.7262 FRA18.5478 FC-15.8484 BSP 12819
BDE 1.2405 BRA 2.4280 BC3 1.3076 FSP 8238

MID-COURSE EXECUTION ACCURACY
SGT 3075.4 SGR 1924.4 SG3 2487.8
RRT .9374 RRF -.9678 RTF -.9557
SGB 3627.9 R23 -.1127 R13 -.9713
SG1 3582.0 SG2 575.4 THA 31.29

ORBIT DETERMINATION ACCURACY
ST 1434.5 SR 1070.9 SS 3370.9
CRT .9742 CRS .9511 CST .9959
LSA 3802.6 MSA 326.7 SSA 27.9
EL1 1779.6 EL2 194.7 ALF 36.54

LAUNCH DATE OCT 2 1964 FLIGHT TIME 294.00 ARRIVAL DATE JUL 23 1965

HELIOCENTRIC CONIC DISTANCE 691.676 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 32.591 GAL -7.64 AZL 89.88 HCA 222.97 SMA 186.72 ECC .23724 INC .1189 V1 29.762
RP 231.01 LAP -.08 LOP 231.81 VP 20.935 GAP -.38 AZP 90.09 TAL 318.25 TAP 181.23 RCA 142.42 APO 231.02 V2 23.807
RC 224.266 GL .84 GP 10.53 ZAL 146.46 ZAP 125.81 ETS 171.10 ZAE 161.40 ETE 140.63 ZAC 97.62 ETC 256.31 CLP 126.52

PLANETOCENTRIC CONIC

C3 21.201 VHL 4.604 DLA 10.35 RAL 157.43 RAD 6567.9 VEL 11.941 PTH 2.12 VHP 3.520 DPA 11.53 RAP 183.51 ECC 1.3489

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 46 26	2555.22	-26.11	64.25	23.09	101.36	20 29 2	1955.2	-24.28	56.06
90.00	10 26 27	4545.49	10.95	191.50	18.28	63.72	11 42 12	3945.5	7.33	184.69
100.00	21 12 55	2276.30	-27.30	43.45	22.81	102.67	21 50 52	1676.3	-25.28	35.23
100.00	11 42 39	4299.64	12.03	172.87	17.72	62.43	12 54 19	3699.6	8.25	166.12
110.00	22 32 50	2026.24	-30.47	23.53	21.87	106.30	23 6 36	1426.2	-27.94	15.25
110.00	12 39 14	4122.47	14.89	157.77	16.07	58.87	13 47 56	3522.5	10.65	151.23

DIFFERENTIAL CORRECTIONS
TDE .8940 TRA-2.0317 TC3 .6983 BAU .3612
RDE .8083 RRA-1.0759 RC3 1.0662 FAU .40400
FDE-6.8972 FRA19.1187 FC-16.4970 BSP 12277
BDE 1.2052 BRA 2.2990 BC3 1.2745 FSP 8547

MID-COURSE EXECUTION ACCURACY
SGT 2873.2 SGR 1956.5 SG3 2576.6
RRT .9335 RRF -.9677 RTF -.9508
SGB 3476.1 R23 -.1145 R13 -.9700
SG1 3425.9 SG2 588.2 THA 33.56

ORBIT DETERMINATION ACCURACY
ST 1353.6 SR 1085.9 SS 3420.7
CRT .9757 CRS .9504 CST .9951
LSA 3820.9 MSA 334.9 SSA 27.6
EL1 1725.3 EL2 186.6 ALF 38.59

LAUNCH DATE OCT 2 1964 FLIGHT TIME 296.00 ARRIVAL DATE JUL 25 1965

HELIOCENTRIC CONIC DISTANCE 695.507 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 32.582 GAL -7.62 AZL 89.84 HCA 223.99 SMA 186.57 ECC .23644 INC .1639 V1 29.762
RP 230.62 LAP -.11 LOP 232.82 VP 20.966 GAP -.71 AZP 90.12 TAL 318.29 TAP 182.28 RCA 142.45 APO 230.68 V2 23.847
RC 226.222 GL 1.16 GP 10.52 ZAL 146.41 ZAP 124.28 ETS 171.55 ZAE 160.06 ETE 143.81 ZAC 97.50 ETC 256.35 CLP 124.96

PLANETOCENTRIC CONIC

C3 21.043 VHL 4.587 DLA 10.66 RAL 157.51 RAD 6567.9 VEL 11.934 PTH 2.12 VHP 3.462 DPA 11.76 RAP 183.00 ECC 1.3463

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 44 12	2563.74	-26.23	64.84	23.16	101.08	20 26 56	1963.7	-24.43	56.63
90.00	10 29 19	4533.37	10.58	190.80	18.25	63.58	11 44 53	3933.4	6.95	184.01
100.00	21 10 52	2284.24	-27.42	44.01	22.89	102.40	21 48 56	1684.2	-25.44	35.77
100.00	11 45 21	4288.10	11.67	172.20	17.68	62.28	12 56 49	3688.1	7.87	165.48
110.00	22 31 11	2032.94	-30.60	24.01	21.97	106.04	23 5 4	1432.9	-28.10	15.70
110.00	12 41 32	4112.17	14.52	157.20	16.03	58.71	13 50 4	3512.2	10.27	150.67

DIFFERENTIAL CORRECTIONS
TDE .8415 TRA-1.8718 TC3 .6008 BAU .3510
RDE .8167 RRA-1.0870 RC3 1.0934 FAU .41736
FDE-7.0808 FRA19.6751 FC-17.1705 BSP 11641
BDE 1.1727 BRA 2.1645 BC3 1.2476 FSP 8827

MID-COURSE EXECUTION ACCURACY
SGT 2658.5 SGR 1988.9 SG3 2665.4
RRT .9289 RRF -.9677 RTF -.9445
SGB 3320.1 R23 -.1157 R13 -.9686
SG1 3265.6 SG2 599.5 THA 36.21

ORBIT DETERMINATION ACCURACY
ST 1270.5 SR 1101.5 SS 3471.9
CRT .9778 CRS .9500 CST .9939
LSA 3842.3 MSA 343.1 SSA 27.1
EL1 1672.4 EL2 175.3 ALF 40.83

LAUNCH DATE OCT 2 1964 FLIGHT TIME 298.00 ARRIVAL DATE JUL 27 1965

HELIOCENTRIC CONIC DISTANCE 699.346 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 32.573 GAL -7.59 AZL 89.79 HCA 225.01 SMA 186.42 ECC .23570 INC .2070 V1 29.762
RP 230.24 LAP -.15 LOP 233.84 VP 20.998 GAP -1.02 AZP 90.15 TAL 318.31 TAP 183.33 RCA 142.48 APO 230.36 V2 23.887
RC 228.159 GL 1.47 GP 10.51 ZAL 146.37 ZAP 122.72 ETS 171.99 ZAE 158.64 ETE 146.67 ZAC 97.37 ETC 256.40 CLP 123.35

PLANETOCENTRIC CONIC

C3 20.901 VHL 4.572 DLA 10.96 RAL 157.60 RAD 6567.8 VEL 11.928 PTH 2.12 VHP 3.407 DPA 12.00 RAP 182.47 ECC 1.3440

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 42 5	2572.09	-26.33	65.43	23.25	100.80	20 24 57	1972.1	-24.58	57.20
90.00	10 32 8	4521.78	10.23	190.13	18.24	63.45	11 47 30	3921.8	6.58	183.35
100.00	21 8 55	2292.03	-27.53	44.56	22.98	102.13	21 47 7	1692.0	-25.58	36.30
100.00	11 47 59	4277.07	11.32	171.57	17.67	62.15	12 59 16	3677.1	7.50	164.86
110.00	22 29 37	2039.53	-30.72	24.48	22.07	105.78	23 3 36	1439.5	-28.25	16.15
110.00	12 43 47	4102.34	14.17	156.65	16.00	58.56	13 52 9	3502.3	9.91	150.14

DIFFERENTIAL CORRECTIONS
TDE .7830 TRA-1.7089 TC3 .4854 BAU .3406
RDE .8243 RRA-1.0993 RC3 1.1181 FAU .42986
FDE-7.2483 FRA20.2474 FC-17.8051 BSP 11085
BDE 1.1369 BRA 2.0319 BC3 1.2189 FSP 9145

MID-COURSE EXECUTION ACCURACY
SGT 2432.8 SGR 2020.3 SG3 2753.5
RRT .9214 RRF -.9676 RTF -.9354
SGB 3162.3 R23 -.1187 R13 -.9669
SG1 3101.8 SG2 615.8 THA 39.27

ORBIT DETERMINATION ACCURACY
ST 1179.6 SR 1116.0 SS 3518.8
CRT .9797 CRS .9493 CST .9926
LSA 3859.4 MSA 351.2 SSA 26.9
EL1 1615.6 EL2 163.3 ALF 43.38

LAUNCH DATE OCT 2 1964 FLIGHT TIME 300.00 ARRIVAL DATE JUL 29 1965

HELIOCENTRIC CONIC DISTANCE 703.194 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 32.565 GAL -7.57 AZL 89.75 HCA 226.04 SMA 186.28 ECC .23501 INC .2495 V1 29.762
RP 229.86 LAP -.18 LOP 234.87 VP 21.031 GAP -1.34 AZP 90.17 TAL 318.33 TAP 184.37 RCA 142.50 APO 230.06 V2 23.927
RC 230.076 GL 1.77 GP 10.51 ZAL 146.33 ZAP 121.10 ETS 172.43 ZAE 157.13 ETE 149.26 ZAC 97.23 ETC 256.45 CLP 121.70

PLANETOCENTRIC CONIC

C3 20.775 VHL 4.558 DLA 11.25 RAL 157.69 RAD 6567.8 VEL 11.923 PTH 2.12 VHP 3.355 DPA 12.25 RAP 181.89 ECC 1.3419

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 40 3	2580.28	-26.44	66.01	23.36	100.53	20 23 3	1980.3	-24.71	57.76
90.00	10 34 54	4510.68	9.89	189.49	18.24	63.33	11 50 4	3910.7	6.23	182.72
100.00	21 7 3	2299.67	-27.64	45.10	23.09	101.86	21 45 23	1699.7	-25.73	36.83
100.00	11 50 35	4266.52	10.98	170.97	17.67	62.02	13 1 41	3666.5	7.15	164.27
110.00	22 28 8	2045.99	-30.84	24.95	22.20	105.53	23 2 14	1446.0	-28.40	16.60
110.00	12 46 0	4092.96	13.84	156.13	16.00	58.43	13 54 13	3493.0	9.56	149.64

DIFFERENTIAL CORRECTIONS
TDE .7245 TRA-1.5374 TC3 .3642 BAU .3332
RDE .8324 RRA-1.1108 RC3 1.1431 FAU .44265
FDE-7.4224 FRA20.8034 FC-18.4463 BSP 10474
BDE 1.1035 BRA 1.8967 BC3 1.1997 FSP 9441

MID-COURSE EXECUTION ACCURACY
SGT 2195.9 SGR 2051.2 SG3 2840.4
RRT .9111 RRF -.9675 RTF -.9228
SGB 3004.9 R23 -.1210 R13 -.9651
SG1 2937.8 SG2 631.8 THA 42.86

ORBIT DETERMINATION ACCURACY
ST 1085.8 SR 1130.6 SS 3565.8
CRT .9822 CRS .9488 CST .9907
LSA 3878.4 MSA 359.3 SSA 26.5
EL1 1560.6 EL2 147.8 ALF 46.18

LAUNCH DATE OCT 2 1964 FLIGHT TIME 302.00 ARRIVAL DATE JUL 31 1965

HELIOCENTRIC CONIC DISTANCE 707.050 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 32.558 GAL -7.55 AZL 89.71 HCA 227.06 SMA 186.15 ECC .23438 INC .2907 V1 29.762
RP 229.47 LAP -.21 LOP 235.89 VP 21.066 GAP -1.65 AZP 90.20 TAL 318.34 TAP 185.40 RCA 142.52 APO 229.79 V2 23.968
RC 231.973 GL 2.07 GP 10.50 ZAL 146.30 ZAP 119.45 ETS 172.87 ZAE 155.55 ETE 151.59 ZAC 97.08 ETC 256.51 CLP 120.00

PLANETOCENTRIC CONIC

C3 20.664 VHL 4.546 DLA 11.53 RAL 157.79 RAD 6567.8 VEL 11.918 PTH 2.12 VHP 3.306 DPA 12.52 RAP 181.28 ECC 1.3401

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 38 8	2588.31	-26.54	66.58	23.47	100.27	20 21 16	1988.3	-24.85	58.31
90.00	10 37 36	4500.08	9.57	188.88	18.27	63.22	11 52 36	3900.1	5.90	182.13
100.00	21 5 18	2307.16	-27.74	45.64	23.21	101.60	21 43 45	1707.2	-25.86	37.34
100.00	11 53 7	4256.47	10.06	170.40	17.69	61.91	13 4 3	3656.5	6.82	163.71
110.00	22 26 44	2052.34	-30.96	25.41	22.33	105.28	23 0 56	1452.3	-28.55	17.03
110.00	12 48 10	4084.04	13.52	155.63	16.01	58.30	13 56 14	3484.0	9.23	149.16

DIFFERENTIAL CORRECTIONS
TDE .6630 TRA-1.3597 TC3 .2315 BAU .3285
RDE .8402 RRA-1.1223 RC3 1.1665 FAU .45501
FDE-7.5902 FRA21.3546 FC-19.0630 BSP 9884
BDE 1.0703 BRA 1.7631 BC3 1.1892 FSP 9744

MID-COURSE EXECUTION ACCURACY
SGT 1949.9 SGR 2081.0 SG3 2925.5
RRT .8955 RRF -.9675 RTF -.9041
SGB 2851.8 R23 -.1231 R13 -.9634
SG1 2776.6 SG2 650.6 THA 47.08

ORBIT DETERMINATION ACCURACY
ST 986.8 SR 1144.6 SS 3610.3
CRT .9849 CRS .9483 CST .9881
LSA 3896.5 MSA 367.2 SSA 26.2
EL1 1505.7 EL2 129.7 ALF 49.30

LAUNCH DATE OCT 2 1964 FLIGHT TIME 304.00 ARRIVAL DATE AUG 2 1965

HELIOCENTRIC CONIC DISTANCE 710.914 EARTH TO MARS

RL	149.71	LAL	-.00	LOL	8.83	VL	32.551	GAL	-7.54	AZL	89.67	HCA	228.09	SMA	186.03	ECC	.23380	INC	.3301	V1	29.762
RP	229.09	LAP	-.25	LOP	236.93	VP	21.101	GAP	-1.95	AZP	90.22	TAL	318.34	TAP	186.43	RCA	142.54	APO	229.53	V2	24.009
RC	233.848	GL	2.35	GP	10.49	ZAL	146.28	ZAP	117.76	ETS	173.30	ZAE	153.89	ETE	153.71	ZAC	96.92	ETC	256.58	CLP	118.27

PLANETOCENTRIC CONIC

C3	20.568	VHL	4.535	DLA	11.80	RAL	157.89	RAD	6567.8	VEL	11.914	PTH	2.12	VHP	3.261	DPA	12.80	RAP	180.64	ECC	1.3385

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 36 18	2596.17	-26.63	67.13	23.61	100.00	20 19 34	1996.2	-24.98	58.85
90.00	10 40 16	4489.99	9.26	188.30	18.31	63.12	11 55 5	3890.0	5.58	181.56
100.00	21 3 38	2314.51	-27.84	46.16	23.35	101.34	21 42 13	1714.5	-26.00	37.84
100.00	11 55 37	4246.88	10.35	169.85	17.73	61.80	13 6 23	3646.9	6.50	163.18
110.00	22 25 26	2058.58	-31.07	25.86	22.48	105.04	22 59 44	1458.6	-28.69	17.46
110.00	12 50 19	4075.58	13.22	155.16	16.04	58.19	13 58 14	3475.6	8.92	148.71

DIFFERENTIAL CORRECTIONS

TDE	.5995	TRA	-1.1747	TC3	.0895	BAU	.3278	SGT	1696.7	SGR	2109.4	SG3	3008.1	ST	883.4	SR	1158.2	SS	3652.8
RDE	.8480	RRA	-1.1332	RC3	1.1889	FAU	.46714	RRT	.8707	RRF	-.9674	RTF	-.8752	CRT	.9881	CRS	.9478	CST	.9845
FDE	-7.7553	FRA	21.8888	FC	-19.6626	BSP	9302	SGB	2707.1	R23	-.1236	R13	-.9618	LSA	3914.5	MSA	375.0	SSA	25.9
BDE	1.0385	BRA	1.6322	BC3	1.1923	FSP	10037	SG1	2622.6	SG2	671.2	THA	52.07	EL1	1452.6	EL2	108.2	ALF	52.75

MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

LAUNCH DATE OCT 2 1964 FLIGHT TIME 306.00 ARRIVAL DATE AUG 4 1965

HELIOCENTRIC CONIC DISTANCE 714.786 EARTH TO MARS

RL	149.71	LAL	-.00	LOL	8.83	VL	32.544	GAL	-7.52	AZL	89.63	HCA	229.13	SMA	185.92	ECC	.23328	INC	.3688	V1	29.762
RP	228.70	LAP	-.28	LOP	237.96	VP	21.137	GAP	-2.26	AZP	90.24	TAL	318.33	TAP	187.46	RCA	142.55	APO	229.29	V2	24.049
RC	235.703	GL	2.63	GP	10.47	ZAL	146.27	ZAP	116.03	ETS	173.73	ZAE	152.17	ETE	155.64	ZAC	96.75	ETC	256.65	CLP	116.50

PLANETOCENTRIC CONIC

C3	20.487	VHL	4.526	DLA	12.06	RAL	158.01	RAD	6567.8	VEL	11.911	PTH	2.12	VHP	3.218	DPA	13.10	RAP	179.96	ECC	1.3372

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 34 35	2603.88	-26.72	67.68	23.75	99.74	20 17 59	2003.9	-25.10	59.39
90.00	10 42 52	4480.39	8.96	187.75	18.37	63.03	11 57 32	3880.4	5.27	181.02
100.00	21 2 5	2321.71	-27.94	46.67	23.50	101.08	21 40 46	1721.7	-26.13	38.34
100.00	11 58 3	4237.79	10.06	169.33	17.79	61.70	13 8 41	3637.8	6.20	162.67
110.00	22 24 13	2064.71	-31.17	26.30	22.65	104.79	22 58 37	1464.7	-28.83	17.89
110.00	12 52 25	4067.56	12.93	154.72	16.09	58.08	14 0 12	3467.6	8.62	148.28

DIFFERENTIAL CORRECTIONS

TDE	.5340	TRA	-.9827	TC3	-.0622	BAU	.3318	SGT	1441.5	SGR	2136.2	SG3	3087.6	ST	776.3	SR	1171.2	SS	3693.3
RDE	.8557	RRA	-1.1434	RC3	1.2098	FAU	.47882	RRT	.8291	RRF	-.9673	RTF	-.8276	CRT	.9918	CRS	.9473	CST	.9789
FDE	-7.9167	FRA	22.4057	FC	-20.2342	BSP	8750	SGB	2577.1	R23	-.1214	R13	-.9607	LSA	3932.9	MSA	382.7	SSA	25.5
BDE	1.0087	BRA	1.5076	BC3	1.2114	FSP	10325	SG1	2481.9	SG2	693.7	THA	57.98	EL1	1402.6	EL2	83.1	ALF	56.55

MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

LAUNCH DATE OCT 2 1964 FLIGHT TIME 308.00 ARRIVAL DATE AUG 6 1965

HELIOCENTRIC CONIC DISTANCE 718.664 EARTH TO MARS

RL	149.71	LAL	-.00	LOL	8.83	VL	32.537	GAL	-7.51	AZL	89.59	HCA	230.17	SMA	185.81	ECC	.23281	INC	.4063	V1	29.762
RP	228.31	LAP	-.31	LOP	239.00	VP	21.174	GAP	-2.55	AZP	90.26	TAL	318.31	TAP	188.47	RCA	142.55	APO	229.07	V2	24.090
RC	237.537	GL	2.90	GP	10.46	ZAL	146.27	ZAP	114.26	ETS	174.16	ZAE	150.39	ETE	157.41	ZAC	96.58	ETC	256.72	CLP	114.69

PLANETOCENTRIC CONIC

C3	20.421	VHL	4.519	DLA	12.30	RAL	158.12	RAD	6567.8	VEL	11.908	PTH	2.12	VHP	3.179	DPA	13.40	RAP	179.25	ECC	1.3361

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 32 59	2611.42	-26.81	68.21	23.92	99.49	20 16 30	2011.4	-25.22	59.91
90.00	10 45 25	4471.31	8.68	187.23	18.46	62.94	11 59 56	3871.3	4.98	180.51
100.00	21 0 37	2328.76	-28.03	47.18	23.67	100.83	21 39 26	1728.8	-26.25	38.83
100.00	12 0 27	4229.20	9.78	168.85	17.87	61.61	13 10 57	3629.2	5.91	162.20
110.00	22 23 5	2070.72	-31.28	26.74	22.83	104.55	22 57 36	1470.7	-28.96	18.30
110.00	12 54 29	4060.01	12.66	154.31	16.16	57.98	14 2 9	3460.0	8.34	147.87

DIFFERENTIAL CORRECTIONS

TDE	.4614	TRA	-.7874	TC3	-.2324	BAU	.3404	SGT	1196.1	SGR	2159.6	SG3	3162.8	ST	660.5	SR	1181.2	SS	3723.8
RDE	.8611	RRA	-1.1549	RC3	1.2250	FAU	.48832	RRT	.7502	RRF	-.9671	RTF	-.7411	CRT	.9951	CRS	.9463	CST	.9707
FDE	-8.0332	FRA	22.9396	FC	-20.7023	BSP	8349	SGB	2468.7	R23	-.1139	R13	-.9606	LSA	3942.7	MSA	390.3	SSA	25.5
BDE	.9769	BRA	1.3978	BC3	1.2468	FSP	10682	SG1	2360.2	SG2	723.7	THA	64.92	EL1	1352.1	EL2	57.3	ALF	60.85

MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

LAUNCH DATE OCT 2 1964 FLIGHT TIME 310.00 ARRIVAL DATE AUG 8 1965

HELIOCENTRIC CONIC DISTANCE 722.553 EARTH TO MARS

RL	149.71	LAL	-.00	LOL	8.83	VL	32.531	GAL	-7.51	AZL	89.56	HCA	231.21	SMA	185.71	ECC	.23239	INC	.4427	V1	29.762
RP	227.92	LAP	-.35	LOP	240.04	VP	21.211	GAP	-2.84	AZP	90.28	TAL	318.28	TAP	189.49	RCA	142.55	APO	228.87	V2	24.132
RC	239.350	GL	3.17	GP	10.44	ZAL	146.27	ZAP	112.45	ETS	174.59	ZAE	148.55	ETE	159.02	ZAC	96.39	ETC	256.80	CLP	112.85

PLANETOCENTRIC CONIC

C3	20.369	VHL	4.513	DLA	12.54	RAL	158.25	RAD	6567.8	VEL	11.906	PTH	2.12	VHP	3.143	DPA	13.72	RAP	178.51	ECC	1.3352

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 31 28	2618.81	-26.89	68.74	24.10	99.24	20 15 7	2018.8	-25.34	60.42
90.00	10 47 55	4462.70	8.41	186.74	18.56	62.86	12 2 18	3862.7	4.71	180.02
100.00	20 59 16	2335.67	-28.12	47.67	23.86	100.59	21 38 12	1735.7	-26.37	39.31
100.00	12 2 49	4221.07	9.52	168.39	17.97	61.53	13 13 10	3621.1	5.64	161.74
110.00	22 22 3	2076.62	-31.38	27.17	23.03	104.32	22 56 40	1476.6	-29.09	18.71
110.00	12 56 31	4052.88	12.40	153.91	16.25	57.89	14 4 4	3452.9	8.07	147.49

DIFFERENTIAL CORRECTIONS

TDE	.3952	TRA	-.5790	TC3	-.3955	BAU	.3558	SGT	972.7	SGR	2182.7	SG3	3234.0	ST	550.3	SR	1194.1	SS	3763.7
RDE	.8699	RRA	-1.1614	RC3	1.2453	FAU	.50013	RRT	.6076	RRF	-.9669	RTF	-.5842	CRT	.9983	CRS	.9461	CST	.9547
FDE	-8.2077	FRA	23.3771	FC	-21.2575	BSP	7856	SGB	2389.6	R23	-.1004	R13	-.9617	LSA	3966.8	MSA	397.7	SSA	25.0
BDE	.9554	BRA	1.2977	BC3	1.3066	FSP	10891	SG1	2271.4	SG2	742.4	THA	72.98	EL1	1314.5	EL2	29.2	ALF	65.28

MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

30A

LAUNCH DATE OCT 2 1964 FLIGHT TIME 312.00 ARRIVAL DATE AUG 10 1965

HELIOCENTRIC CONIC DISTANCE 726.448 EARTH TO MARS

RL	149.71	LAL	-.00	LOL	8.83	VL	32.526	GAL	-7.50	AZL	89.52	HCA	232.25	SMA	185.62	ECC	.23202	INC	.4782	V1	29.762
RP	227.53	LAP	-.38	LOP	241.08	VP	21.250	GAP	-3.13	AZP	90.29	TAL	318.24	TAP	190.49	RCA	142.55	APO	228.68	V2	24.173
RC	241.142	GL	3.42	GP	10.41	ZAL	146.29	ZAP	110.61	ETS	175.01	ZAE	146.66	ETE	160.51	ZAC	96.19	ETC	256.89	CLP	110.97

PLANETOCENTRIC CONIC

C3	20.331	VHL	4.509	DLA	12.76	RAL	158.38	RAD	6567.8	VEL	11.904	PTH	2.12	VHP	3.110	DPA	14.04	RAP	177.73	ECC	1.3346

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 30 5	2626.03	-26.97	69.25	24.29	98.99	20 13 51	2026.0	-25.45	60.92
90.00	10 50 22	4454.59	8.16	186.28	18.68	62.79	12 4 37	3854.6	4.45	179.57
100.00	20 58 1	2342.43	-28.20	48.16	24.05	100.35	21 37 3	1742.4	-26.48	39.78
100.00	12 5 7	4213.42	9.27	167.96	18.08	61.45	13 15 21	3613.4	5.39	161.32
110.00	22 21 7	2082.41	-31.47	27.60	23.24	104.08	22 55 49	1482.4	-29.22	19.12
110.00	12 58 31	4046.21	12.16	153.55	16.36	57.80	14 5 57	3446.2	7.82	147.14

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3244	TRA	-.3655	TC3	-.5710	BAU	.3765	SGT	813.6	SGR	2202.6	SG3	3299.7	ST	436.6	SR	1205.3	SS	3797.5
RDE	.8775	RRA	-1.1674	RC3	1.2619	FAU	.51057	RRT	.3337	RRF	-.9666	RTF	-.2911	CRT	.9965	CRS	.9458	CST	.9237
FDE	-8.3589	FRA	23.7968	FC	-21.7415	BSP	7519	SGB	2348.1	R23	-.0795	R13	-.9639	LSA	3987.4	MSA	404.9	SSA	24.6
BDE	.9355	BRA	1.2232	BC3	1.3851	FSP	11113	SG1	2221.5	SG2	760.4	THA	82.04	EL1	1281.4	EL2	34.5	ALF	70.14

LAUNCH DATE OCT 2 1964 FLIGHT TIME 314.00 ARRIVAL DATE AUG 12 1965

HELIOCENTRIC CONIC DISTANCE 730.351 EARTH TO MARS

RL	149.71	LAL	-.00	LOL	8.83	VL	32.521	GAL	-7.50	AZL	89.49	HCA	233.30	SMA	185.53	ECC	.23170	INC	.5129	V1	29.762
RP	227.14	LAP	-.41	LOP	242.13	VP	21.289	GAP	-3.42	AZP	90.31	TAL	318.19	TAP	191.49	RCA	142.54	APO	228.52	V2	24.214
RC	242.914	GL	3.67	GP	10.38	ZAL	146.31	ZAP	108.74	ETS	175.44	ZAE	144.72	ETE	161.88	ZAC	95.99	ETC	256.98	CLP	109.06

PLANETOCENTRIC CONIC

C3	20.307	VHL	4.506	DLA	12.98	RAL	158.52	RAD	6567.8	VEL	11.903	PTH	2.11	VHP	3.081	DPA	14.37	RAP	176.93	ECC	1.3342

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 28 48	2633.09	-27.04	69.76	24.50	98.75	20 12 41	2033.1	-25.55	61.41
90.00	10 52 47	4446.99	7.92	185.85	18.81	62.73	12 6 54	3847.0	4.21	179.14
100.00	20 56 52	2349.04	-28.28	48.63	24.27	100.11	21 36 1	1749.0	-26.60	40.24
100.00	12 7 23	4206.26	9.04	167.55	18.22	61.39	13 17 30	3606.3	5.15	160.92
110.00	22 20 16	2088.09	-31.57	28.01	23.47	103.85	22 55 4	1488.1	-29.34	19.51
110.00	13 0 29	4039.98	11.93	153.21	16.49	57.73	14 7 49	3440.0	7.59	146.81

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2513	TRA	-.1459	TC3	-.7551	BAU	.4025	SGT	775.6	SGR	2219.5	SG3	3359.4	ST	325.3	SR	1215.2	SS	3827.5
RDE	.8846	RRA	-1.1721	RC3	1.2757	FAU	.52006	RRT	-.0766	RRF	-.9663	RTF	.1373	CRT	.9738	CRS	.9453	CST	.8513
FDE	-8.4979	FRA	24.1848	FC	-22.1710	BSP	7338	SGB	2351.1	R23	-.0531	R13	-.9669	LSA	4007.8	MSA	412.0	SSA	24.2
BDE	.9197	BRA	1.1812	BC3	1.4825	FSP	11326	SG1	2220.4	SG2	773.0	THA	91.75	EL1	1256.0	EL2	71.5	ALF	75.34

LAUNCH DATE OCT 2 1964 FLIGHT TIME 316.00 ARRIVAL DATE AUG 14 1965

HELIOCENTRIC CONIC DISTANCE 734.261 EARTH TO MARS

RL	149.71	LAL	-.00	LOL	8.83	VL	32.516	GAL	-7.51	AZL	89.45	HCA	234.35	SMA	185.45	ECC	.23144	INC	.5468	V1	29.762
RP	226.75	LAP	-.44	LOP	243.18	VP	21.329	GAP	-3.70	AZP	90.32	TAL	318.13	TAP	192.49	RCA	142.53	APO	228.37	V2	24.256
RC	244.666	GL	3.92	GP	10.34	ZAL	146.35	ZAP	106.84	ETS	175.86	ZAE	142.73	ETE	163.16	ZAC	95.77	ETC	257.08	CLP	107.13

PLANETOCENTRIC CONIC

C3	20.298	VHL	4.505	DLA	13.18	RAL	158.67	RAD	6567.8	VEL	11.903	PTH	2.11	VHP	3.055	DPA	14.70	RAP	176.10	ECC	1.3341

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 27 37	2639.97	-27.11	70.25	24.73	98.51	20 11 37	2040.0	-25.65	61.88
90.00	10 55 8	4439.88	7.70	185.44	18.97	62.67	12 9 8	3839.9	3.98	178.74
100.00	20 55 50	2355.50	-28.36	49.10	24.50	99.87	21 35 5	1755.5	-26.70	40.69
100.00	12 9 37	4199.58	8.82	167.18	18.37	61.32	13 19 36	3599.6	4.92	160.56
110.00	22 19 31	2093.65	-31.66	28.42	23.71	103.63	22 54 25	1493.7	-29.46	19.90
110.00	13 2 25	4034.20	11.72	152.89	16.63	57.66	14 9 39	3434.2	7.37	146.50

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1757	TRA	.0795	TC3	-.9473	BAU	.4336	SGT	888.5	SGR	2232.9	SG3	3412.2	ST	227.1	SR	1223.9	SS	3853.3
RDE	.8912	RRA	-1.1753	RC3	1.2869	FAU	.52859	RRT	-.4516	RRF	-.9659	RTF	.5192	CRT	.8565	CRS	.9448	CST	.6444
FDE	-8.6233	FRA	24.5331	FC	-22.5448	BSP	7335	SGB	2403.2	R23	-.0252	R13	-.9700	LSA	4027.6	MSA	418.9	SSA	23.8
BDE	.9084	BRA	1.1780	BC3	1.5980	FSP	11521	SG1	2273.6	SG2	778.5	THA	101.56	EL1	1239.4	EL2	115.7	ALF	80.89

LAUNCH DATE OCT 2 1964 FLIGHT TIME 318.00 ARRIVAL DATE AUG 16 1965

HELIOCENTRIC CONIC DISTANCE 738.177 EARTH TO MARS

RL	149.71	LAL	-.00	LOL	8.83	VL	32.512	GAL	-7.51	AZL	89.42	HCA	235.41	SMA	185.37	ECC	.23122	INC	.5799	V1	29.762
RP	226.36	LAP	-.48	LOP	244.24	VP	21.370	GAP	-3.98	AZP	90.33	TAL	318.06	TAP	193.47	RCA	142.51	APO	228.24	V2	24.297
RC	246.398	GL	4.15	GP	10.30	ZAL	146.39	ZAP	104.92	ETS	176.28	ZAE	140.71	ETE	164.34	ZAC	95.55	ETC	257.18	CLP	105.17

PLANETOCENTRIC CONIC

C3	20.303	VHL	4.506	DLA	13.37	RAL	158.83	RAD	6567.8	VEL	11.903	PTH	2.11	VHP	3.033	DPA	15.04	RAP	175.24	ECC	1.3341

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 26 34	2646.69	-27.18	70.73	24.97	98.28	20 10 41	2046.7	-25.75	62.35
90.00	10 57 26	4433.28	7.50	185.07	19.15	62.61	12 11 19	3833.3	3.77	178.37
100.00	20 54 54	2361.81	-28.43	49.55	24.75	99.65	21 34 16	1761.8	-26.80	41.13
100.00	12 11 47	4193.39	8.62	166.83	18.54	61.27	13 21 41	3593.4	4.72	160.21
110.00	22 18 52	2099.10	-31.74	28.82	23.97	103.40	22 53 51	1499.1	-29.58	20.28
110.00	13 4 19	4028.87	11.53	152.60	16.80	57.59	14 11 28	3428.9	7.17	146.22

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0981	TRA	.3108	TC3	-1.1458	BAU	.4694	SGT	1116.6	SGR	2242.6	SG3	3457.6	ST	177.1	SR	1231.2	SS	3874.8
RDE	.8972	RRA	-1.1767	RC3	1.2951	FAU	.53599	RRT	-.6739	RRF	-.9654	RTF	.7400	CRT	.3899	CRS	.9442	CST	.0687
FDE	-8.7345	FRA	24.8385	FC	-22.8550	BSP	7528	SGB	2505.2	R23	-.0010	R13	-.9730	LSA	4047.1	MSA	425.8	SSA	23.4
BDE	.9026	BRA	1.2171	BC3	1.7292	FSP	11700	SG1	2381.8	SG2	776.8	THA	110.87	EL1	1233.1	EL2	162.8	ALF	86.73

LAUNCH DATE OCT 2 1964 FLIGHT TIME 320.00 ARRIVAL DATE AUG 18 1965

HELIOCENTRIC CONIC DISTANCE 742.101 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 32.507 GAL -7.52 AZL 89.39 HCA 236.47 SMA 185.30 ECC .23105 INC .6123 V1 29.762
RP 225.97 LAP -.51 LOP 245.30 VP 21.411 GAP -4.25 AZP 90.34 TAL 317.98 TAP 194.45 RCA 142.49 APO 228.12 V2 24.339
RC 248.110 GL 4.38 GP 10.25 ZAL 146.44 ZAP 102.97 ETS 176.69 ZAE 138.65 ETE 165.45 ZAC 95.31 ETC 257.29 CLP 103.19

PLANETOCENTRIC CONIC

C3 20.322 VHL 4.508 DLA 13.56 RAL 158.99 RAD 6567.8 VEL 11.904 PTH 2.12 VHP 3.015 DPA 15.37 RAP 174.37 ECC 1.3345

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 25 37	2653.24	-27.24	71.20	25.23	98.05	20 9 51	2053.2	-25.84	62.81
90.00	10 59 41	4427.18	7.30	184.72	19.34	62.57	12 13 29	3827.2	3.57	178.03
100.00	20 54 5	2367.97	-28.50	50.00	25.01	99.42	21 33 33	1768.0	-26.90	41.56
100.00	12 13 55	4187.68	8.43	166.51	18.73	61.21	13 23 43	3587.7	4.52	159.90
110.00	22 18 18	2104.44	-31.83	29.22	24.25	103.18	22 53 23	1504.4	-29.69	20.66
110.00	13 6 11	4023.98	11.35	152.33	16.98	57.54	14 13 15	3424.0	6.99	145.96

DIFFERENTIAL CORRECTIONS
TDE .0189 TRA .5473 TC3-1.3496 BAU .5092
RDE .9030 RRA-1.1760 RC3 1.3006 FAU .54237
FDE-8.8359 FRA25.0924 FC-23.1051 BSP 7911
BDE .9032 BRA 1.2972 BC3 1.8743 FSP 11850

MID-COURSE EXECUTION ACCURACY
SGT 1411.8 SGR 2248.6 SG3 3495.0
RRT -.7873 RRF -.9648 RTF .8502
SGB 2655.1 R23 .0167 R13 -.9758
SG1 2540.9 SG2 770.3 THA 119.25

ORBIT DETERMINATION ACCURACY
ST 219.1 SR 1237.4 SS 3892.9
CRT -.2681 CRS .9436 CST -.5697
LSA 4067.7 MSA 432.5 SSA 23.0
EL1 1238.8 EL2 210.8 ALF 92.80

LAUNCH DATE OCT 2 1964 FLIGHT TIME 322.00 ARRIVAL DATE AUG 20 1965

HELIOCENTRIC CONIC DISTANCE 746.031 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 32.504 GAL -7.53 AZL 89.36 HCA 237.53 SMA 185.24 ECC .23093 INC .6440 V1 29.762
RP 225.58 LAP -.54 LOP 246.36 VP 21.453 GAP -4.52 AZP 90.35 TAL 317.89 TAP 195.43 RCA 142.46 APO 228.02 V2 24.381
RC 249.803 GL 4.61 GP 10.19 ZAL 146.51 ZAP 101.01 ETS 177.10 ZAE 136.57 ETE 166.48 ZAC 95.07 ETC 257.40 CLP 101.19

PLANETOCENTRIC CONIC

C3 20.355 VHL 4.512 DLA 13.73 RAL 159.16 RAD 6567.8 VEL 11.905 PTH 2.12 VHP 3.000 DPA 15.71 RAP 173.48 ECC 1.3350

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 24 48	2659.62	-27.30	71.66	25.51	97.83	20 9 7	2059.6	-25.93	63.25
90.00	11 1 54	4421.59	7.13	184.40	19.55	62.52	12 15 35	3821.6	3.39	177.72
100.00	20 53 22	2373.97	-28.57	50.43	25.30	99.20	21 32 56	1774.0	-27.00	41.98
100.00	12 16 0	4182.46	8.26	166.22	18.94	61.17	13 25 43	3582.5	4.35	159.61
110.00	22 17 50	2109.66	-31.91	29.60	24.54	102.97	22 53 0	1509.7	-29.80	21.03
110.00	13 8 1	4019.54	11.19	152.09	17.18	57.49	14 15 1	3419.5	6.82	145.72

DIFFERENTIAL CORRECTIONS
TDE -.0623 TRA .7890 TC3-1.5582 BAU .5527
RDE .9080 RRA-1.1733 RC3 1.3030 FAU .54751
FDE-8.9204 FRA25.2949 FC-23.2860 BSP 8476
BDE .9102 BRA 1.4139 BC3 2.0312 FSP 11977

MID-COURSE EXECUTION ACCURACY
SGT 1745.5 SGR 2250.5 SG3 3523.7
RRT -.8467 RRF -.9641 RTF .9067
SGB 2848.1 R23 .0280 R13 -.9785
SG1 2744.4 SG2 761.5 THA 126.56

ORBIT DETERMINATION ACCURACY
ST 322.1 SR 1242.1 SS 3906.1
CRT -.5875 CRS .9429 CST -.8223
LSA 4087.9 MSA 439.0 SSA 22.6
EL1 1257.0 EL2 257.6 ALF 99.05

LAUNCH DATE OCT 2 1964 FLIGHT TIME 324.00 ARRIVAL DATE AUG 22 1965

HELIOCENTRIC CONIC DISTANCE 749.968 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 32.500 GAL -7.55 AZL 89.32 HCA 238.60 SMA 185.18 ECC .23087 INC .6750 V1 29.762
RP 225.19 LAP -.58 LOP 247.43 VP 21.495 GAP -4.78 AZP 90.35 TAL 317.79 TAP 196.39 RCA 142.43 APO 227.94 V2 24.423
RC 251.477 GL 4.82 GP 10.13 ZAL 146.58 ZAP 99.03 ETS 177.51 ZAE 134.46 ETE 167.44 ZAC 94.82 ETC 257.51 CLP 99.17

PLANETOCENTRIC CONIC

C3 20.403 VHL 4.517 DLA 13.89 RAL 159.35 RAD 6567.8 VEL 11.907 PTH 2.12 VHP 2.988 DPA 16.04 RAP 172.57 ECC 1.3358

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 24 5	2665.82	-27.36	72.10	25.80	97.61	20 8 31	2065.8	-26.02	63.69
90.00	11 4 3	4416.50	6.97	184.12	19.78	62.48	12 17 39	3816.5	3.23	177.43
100.00	20 52 46	2379.81	-28.63	50.85	25.59	98.99	21 32 26	1779.8	-27.09	42.39
100.00	12 18 3	4177.73	8.10	165.95	19.17	61.13	13 27 41	3577.7	4.19	159.35
110.00	22 17 29	2114.76	-31.99	29.98	24.85	102.76	22 52 44	1514.8	-29.90	21.39
110.00	13 9 50	4015.55	11.04	151.88	17.40	57.44	14 16 45	3415.6	6.67	145.51

DIFFERENTIAL CORRECTIONS
TDE -.1452 TRA 1.0347 TC3-1.7701 BAU .5995
RDE .9127 RRA-1.1684 RC3 1.3025 FAU .55152
FDE-8.9927 FRA25.4415 FC-23.4020 BSP 9193
BDE .9241 BRA 1.5607 BC3 2.1977 FSP 12069

MID-COURSE EXECUTION ACCURACY
SGT 2102.1 SGR 2248.5 SG3 3543.7
RRT -.8799 RRF -.9633 RTF .9378
SGB 3078.1 R23 .0343 R13 -.9812
SG1 2984.7 SG2 752.5 THA 132.81

ORBIT DETERMINATION ACCURACY
ST 448.0 SR 1245.5 SS 3915.5
CRT -.7180 CRS .9422 CST -.9090
LSA 4109.0 MSA 445.3 SSA 22.2
EL1 1288.9 EL2 301.4 ALF 105.34

LAUNCH DATE OCT 2 1964 FLIGHT TIME 326.00 ARRIVAL DATE AUG 24 1965

HELIOCENTRIC CONIC DISTANCE 753.912 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 32.497 GAL -7.56 AZL 89.29 HCA 239.67 SMA 185.13 ECC .23085 INC .7053 V1 29.762
RP 224.80 LAP -.61 LOP 248.50 VP 21.538 GAP -5.05 AZP 90.36 TAL 317.68 TAP 197.35 RCA 142.39 APO 227.87 V2 24.465
RC 253.132 GL 5.03 GP 10.06 ZAL 146.67 ZAP 97.04 ETS 177.91 ZAE 132.33 ETE 168.35 ZAC 94.56 ETC 257.64 CLP 97.15

PLANETOCENTRIC CONIC

C3 20.465 VHL 4.524 DLA 14.04 RAL 159.54 RAD 6567.8 VEL 11.910 PTH 2.12 VHP 2.981 DPA 16.36 RAP 171.65 ECC 1.3368

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 23 30	2671.84	-27.41	72.53	26.11	97.40	20 8 2	2071.8	-26.10	64.11
90.00	11 6 9	4411.92	6.83	183.86	20.03	62.45	12 19 41	3811.9	3.08	177.18
100.00	20 52 17	2385.50	-28.69	51.27	25.91	98.78	21 32 3	1785.5	-27.18	42.79
100.00	12 20 3	4173.50	7.96	165.71	19.41	61.09	13 29 36	3573.5	4.05	159.11
110.00	22 17 13	2119.75	-32.06	30.35	25.17	102.55	22 52 33	1519.7	-30.00	21.74
110.00	13 11 36	4012.01	10.91	151.68	17.64	57.40	14 18 28	3412.0	6.54	145.32

DIFFERENTIAL CORRECTIONS
TDE -.2297 TRA 1.2844 TC3-1.9842 BAU .6489
RDE .9170 RRA-1.1611 RC3 1.2992 FAU .55436
FDE-9.0532 FRA25.5299 FC-23.4514 BSP 10032
BDE .9453 BRA 1.7314 BC3 2.3717 FSP 12125

MID-COURSE EXECUTION ACCURACY
SGT 2473.7 SGR 2242.4 SG3 3554.6
RRT -.8996 RRF -.9624 RTF .9562
SGB 3338.9 R23 .0370 R13 -.9837
SG1 3254.8 SG2 744.4 THA 138.12

ORBIT DETERMINATION ACCURACY
ST 583.6 SR 1247.7 SS 3921.3
CRT -.7808 CRS .9414 CST -.9453
LSA 4131.5 MSA 451.4 SSA 21.8
EL1 1334.6 EL2 340.9 ALF 111.54

LAUNCH DATE OCT 2 1964 FLIGHT TIME 328.00 ARRIVAL DATE AUG 26 1965

HELIOCENTRIC CONIC DISTANCE 757.861 EARTH TO MARS

RL	149.71	LAL	-.00	LOL	8.83	VL	32.494	GAL	-7.58	AZL	89.26	HCA	240.75	SMA	185.08	ECC	.23087	INC	.7353
RP	224.41	LAP	-.64	LOP	249.57	VP	21.581	GAP	-5.30	AZP	90.36	TAL	317.56	TAP	198.30	RCA	142.35	APO	227.82
RC	254.766	GL	5.23	GP	9.98	ZAL	146.77	ZAP	95.05	ETS	178.30	ZAE	130.18	ETE	169.20	ZAC	94.30	ETC	257.76

V1 29.762 V2 24.506 CLP 95.12

PLANETOCENTRIC CONIC

C3 20.541 VHL 4.532 DLA 14.19 RAL 159.73 RAD 6567.8 VEL 11.913 PTH 2.12 VHP 2.976 DPA 16.68 RAP 170.73 ECC 1.3381

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 23 2	2677.68	-27.46	72.95	26.44	97.20	20 7 40	2077.7	-26.18	64.52
90.00	11 8 12	4407.86	6.70	183.63	20.30	62.42	12 21 40	3807.9	2.95	176.95
100.00	20 51 55	2391.02	-28.75	51.67	26.24	98.58	21 31 46	1791.0	-27.26	43.18
100.00	12 22 0	4169.75	7.84	165.50	19.68	61.06	13 31 30	3569.7	3.92	158.91
110.00	22 17 4	2124.62	-32.13	30.71	25.51	102.35	22 52 28	1524.6	-30.10	22.09
110.00	13 13 21	4006.92	10.80	151.52	17.89	57.37	14 20 10	3408.9	6.42	145.16

DIFFERENTIAL CORRECTIONS

TDE	-.3155	TRA	1.5377	TC3	-2.1996	BAU	.7006
RDE	.9204	RRA	-1.1518	RC3	1.2927	FAU	.55582
FDE	-9.0932	FRA	25.5625	FC	-23.4256	BSP	10983
BDE	.9730	BRA	1.9212	BC3	2.5513	FSP	12155

MID-COURSE EXECUTION ACCURACY

SGT	2855.6	SGR	2232.2	SG3	3556.1		
RRT	-.9117	RRF	-.9613	RTF	.9678		
SGB	3624.5	R23	.0379	R13	-.9860		
SG1	3548.6	SG2	737.9	THA	142.63		

ORBIT DETERMINATION ACCURACY

ST	724.2	SR	1248.3	SS	3921.6
CRT	-.8155	CRS	.9406	CST	-.9632
LSA	4153.6	MSA	457.6	SSA	21.3
EL1	1393.4	EL2	375.5	ALF	117.48

LAUNCH DATE OCT 2 1964 FLIGHT TIME 330.00 ARRIVAL DATE AUG 28 1965

HELIOCENTRIC CONIC DISTANCE 761.817 EARTH TO MARS

RL	149.71	LAL	-.00	LOL	8.83	VL	32.492	GAL	-7.61	AZL	89.24	HCA	241.82	SMA	185.04	ECC	.23095	INC	.7646
RP	224.02	LAP	-.67	LOP	250.65	VP	21.625	GAP	-5.56	AZP	90.36	TAL	317.42	TAP	199.24	RCA	142.31	APO	227.78
RC	256.380	GL	5.43	GP	9.90	ZAL	146.87	ZAP	93.05	ETS	178.69	ZAE	128.03	ETE	170.01	ZAC	94.03	ETC	257.89

V1 29.762 V2 24.548 CLP 93.09

PLANETOCENTRIC CONIC

C3 20.632 VHL 4.542 DLA 14.32 RAL 159.94 RAD 6567.8 VEL 11.917 PTH 2.12 VHP 2.976 DPA 16.99 RAP 169.80 ECC 1.3396

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 22 41	2683.34	-27.51	73.36	26.79	97.00	20 7 25	2083.3	-26.25	64.92
90.00	11 10 12	4404.32	6.59	183.43	20.58	62.40	12 23 36	3804.3	2.84	176.75
100.00	20 51 40	2396.39	-28.80	52.06	26.59	98.38	21 31 36	1796.4	-27.34	43.56
100.00	12 23 54	4166.50	7.73	165.32	19.96	61.04	13 33 21	3566.5	3.81	158.73
110.00	22 17 0	2129.37	-32.20	31.06	25.87	102.15	22 52 30	1529.4	-30.19	22.43
110.00	13 15 3	4006.28	10.70	151.37	18.17	57.34	14 21 50	3406.3	6.32	145.02

DIFFERENTIAL CORRECTIONS

TDE	-.4027	TRA	1.7935	TC3	-2.4153	BAU	.7544
RDE	.9234	RRA	-1.1402	RC3	1.2829	FAU	.55584
FDE	-9.1181	FRA	25.5365	FC	-23.3235	BSP	12014
BDE	1.0074	BRA	2.1252	BC3	2.7349	FSP	12155

MID-COURSE EXECUTION ACCURACY

SGT	3244.1	SGR	2217.7	SG3	3548.1		
RRT	-.9194	RRF	-.9601	RTF	.9755		
SGB	3929.7	R23	.0378	R13	-.9879		
SG1	3860.7	SG2	733.0	THA	146.48		

ORBIT DETERMINATION ACCURACY

ST	867.7	SR	1247.5	SS	3917.8
CRT	-.8368	CRS	.9396	CST	-.9734
LSA	4176.5	MSA	463.5	SSA	20.9
EL1	1464.8	EL2	404.6	ALF	123.04

LAUNCH DATE OCT 2 1964 FLIGHT TIME 332.00 ARRIVAL DATE AUG 30 1965

HELIOCENTRIC CONIC DISTANCE 765.775 EARTH TO MARS

RL	149.71	LAL	-.00	LOL	8.83	VL	32.490	GAL	-7.63	AZL	89.21	HCA	242.91	SMA	185.00	ECC	.23108	INC	.7936
RP	223.63	LAP	-.71	LOP	251.73	VP	21.669	GAP	-5.81	AZP	90.36	TAL	317.27	TAP	200.18	RCA	142.25	APO	227.75
RC	257.974	GL	5.62	GP	9.80	ZAL	146.99	ZAP	91.06	ETS	179.06	ZAE	125.87	ETE	170.76	ZAC	93.76	ETC	258.02

V1 29.762 V2 24.590 CLP 91.07

PLANETOCENTRIC CONIC

C3 20.739 VHL 4.554 DLA 14.44 RAL 160.16 RAD 6567.8 VEL 11.921 PTH 2.12 VHP 2.979 DPA 17.29 RAP 168.88 ECC 1.3413

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 22 29	2688.81	-27.55	73.75	27.15	96.81	20 7 17	2088.8	-26.32	65.30
90.00	11 12 9	4401.31	6.49	183.26	20.89	62.38	12 25 30	3801.3	2.74	176.58
100.00	20 51 32	2401.58	-28.85	52.43	26.95	98.18	21 31 34	1801.6	-27.42	43.92
100.00	12 25 46	4163.77	7.64	165.17	20.26	61.01	13 35 10	3563.8	3.72	158.58
110.00	22 17 3	2134.00	-32.27	31.41	26.25	101.95	22 52 37	1534.0	-30.28	22.76
110.00	13 16 44	4004.12	10.62	151.26	18.46	57.32	14 23 28	3404.1	6.24	144.91

DIFFERENTIAL CORRECTIONS

TDE	-.4898	TRA	2.0562	TC3	-2.6280	BAU	.8081
RDE	.9209	RRA	-1.1315	RC3	1.2606	FAU	.55007
FDE	-9.0282	FRA	25.5503	FC	-22.9627	BSP	13232
BDE	1.0431	BRA	2.3470	BC3	2.9147	FSP	12324

MID-COURSE EXECUTION ACCURACY

SGT	3639.4	SGR	2195.8	SG3	3529.0		
RRT	-.9246	RRF	-.9585	RTF	.9804		
SGB	4250.5	R23	.0376	R13	-.9892		
SG1	4187.9	SG2	726.7	THA	149.84		

ORBIT DETERMINATION ACCURACY

ST	1013.5	SR	1240.2	SS	3891.9
CRT	-.8512	CRS	.9373	CST	-.9806
LSA	4182.2	MSA	469.6	SSA	20.8
EL1	1543.6	EL2	427.4	ALF	128.29

LAUNCH DATE OCT 2 1964 FLIGHT TIME 334.00 ARRIVAL DATE SEP 1 1965

HELIOCENTRIC CONIC DISTANCE 769.744 EARTH TO MARS

RL	149.71	LAL	-.00	LOL	8.83	VL	32.488	GAL	-7.66	AZL	89.18	HCA	243.99	SMA	184.97	ECC	.23125	INC	.8220
RP	223.24	LAP	-.74	LOP	252.82	VP	21.714	GAP	-6.06	AZP	90.36	TAL	317.12	TAP	201.11	RCA	142.20	APO	227.75
RC	259.547	GL	5.81	GP	9.70	ZAL	147.12	ZAP	89.07	ETS	179.43	ZAE	123.71	ETE	171.48	ZAC	93.48	ETC	258.15

V1 29.762 V2 24.632 CLP 89.05

PLANETOCENTRIC CONIC

C3 20.859 VHL 4.567 DLA 14.55 RAL 160.38 RAD 6567.8 VEL 11.926 PTH 2.12 VHP 2.986 DPA 17.57 RAP 167.95 ECC 1.3433

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 22 22	2694.11	-27.59	74.14	27.53	96.62	20 7 16	2094.1	-26.39	65.68
90.00	11 14 2	4398.79	6.41	183.11	21.21	62.36	12 27 21	3798.8	2.66	176.44
100.00	20 51 31	2406.63	-28.90	52.80	27.34	98.00	21 31 37	1806.6	-27.49	44.28
100.00	12 27 35	4161.50	7.57	165.04	20.58	61.00	13 36 56	3561.5	3.64	158.45
110.00	22 17 12	2138.52	-32.33	31.75	26.64	101.76	22 52 50	1538.5	-30.37	23.08
110.00	13 18 23	4002.37	10.56	151.16	18.77	57.30	14 25 5	3402.4	6.17	144.82

DIFFERENTIAL CORRECTIONS

TDE	-.5794	TRA	2.3140	TC3	-2.8401	BAU	.8653
RDE	.9252	RRA	-1.1134	RC3	1.2497	FAU	.54962
FDE	-9.0686	FRA	25.3632	FC	-22.8112	BSP	14320
BDE	1.0917	BRA	2.5679	BC3	3.1029	FSP	12161

MID-COURSE EXECUTION ACCURACY

SGT	4031.5	SGR	2175.5	SG3	3503.4		
RRT	-.9273	RRF	-.9571	RTF	.9843		
SGB	4581.0	R23	.0365	R13	-.9908		
SG1	4523.1	SG2	725.8	THA	152.65		

ORBIT DETERMINATION ACCURACY

ST	1159.3	SR	1239.3	SS	3887.9
CRT	-.8602	CRS	.9369	CST	-.9841
LSA	4215.4	MSA	475.0	SSA	20.2
EL1	1636.9	EL2	447.5	ALF	132.78

LAUNCH DATE OCT 2 1964 FLIGHT TIME 336.00 ARRIVAL DATE SEP 3 1965

HELIOCENTRIC CONIC DISTANCE 773.718 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 32.486 GAL -7.70 AZL 89.15 HCA 245.08 SMA 184.94 ECC .23147 INC .8500 V1 29.762
RP 222.85 LAP -.77 LOP 253.91 VP 21.759 GAP -6.31 AZP 90.36 TAL 316.95 TAP 202.03 RCA 142.13 APO 227.75 V2 24.674
RC 261.100 GL 5.98 GP 9.59 ZAL 147.26 ZAP 87.09 ETS 179.80 ZAE 121.55 ETE 172.15 ZAC 93.20 ETC 258.28 CLP 87.05

PLANETOCENTRIC CONIC

C3 20.995 VHL 4.582 DLA 14.65 RAL 160.62 RAD 6567.9 VEL 11.932 PTH 2.12 VHP 2.997 DPA 17.84 RAP 167.04 ECC 1.3455

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 22 24	2699.22	-27.63	74.51	27.92	96.44	20 7 23	2099.2	-26.45	66.04
90.00	11 15 52	4396.80	6.35	183.00	21.55	62.35	12 29 9	3796.8	2.60	176.33
100.00	20 51 37	2411.51	-28.94	53.16	27.74	97.82	21 31 48	1811.5	-27.56	44.63
100.00	12 29 21	4159.74	7.51	164.94	20.92	60.98	13 38 40	3559.7	3.58	158.36
110.00	22 17 27	2142.93	-32.39	32.08	27.05	101.58	22 53 10	1542.9	-30.46	23.39
110.00	13 20 0	4001.09	10.51	151.09	19.10	57.28	14 26 41	3401.1	6.12	144.75

DIFFERENTIAL CORRECTIONS

TDE -.6702 TRA 2.5735 TC3-3.0494 BAU .9234
RDE .9280 RRA-1.0944 RC3 1.2340 FAU .54688
FDE-9.0724 FRA25.1426 FC-22.5505 BSP 15459
BDE 1.1447 BRA 2.7966 BC3 3.2896 FSP 12011

MID-COURSE EXECUTION ACCURACY

SGT 4424.3 SGR 2150.9 SG3 3468.6
RRT -.9287 RRF -.9554 RTF .9872
SGB 4919.4 R23 .0359 R13 -.9920
SG1 4865.7 SG2 725.3 THA 155.11

ORBIT DETERMINATION ACCURACY

ST 1305.7 SR 1236.0 SS 3876.2
CRT -.8666 CRS .9361 CST -.9866
LSA 4245.8 MSA 480.4 SSA 19.6
EL1 1737.2 EL2 463.5 ALF 136.81

LAUNCH DATE OCT 2 1964 FLIGHT TIME 338.00 ARRIVAL DATE SEP 5 1965

HELIOCENTRIC CONIC DISTANCE 777.697 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 32.485 GAL -7.73 AZL 89.12 HCA 246.17 SMA 184.92 ECC .23175 INC .8776 V1 29.762
RP 222.47 LAP -.80 LOP 255.00 VP 21.804 GAP -6.55 AZP 90.35 TAL 316.76 TAP 202.94 RCA 142.07 APO 227.77 V2 24.716
RC 262.633 GL 6.16 GP 9.48 ZAL 147.41 ZAP 85.12 ETS 180.15 ZAE 119.40 ETE 172.79 ZAC 92.92 ETC 258.41 CLP 85.06

PLANETOCENTRIC CONIC

C3 21.147 VHL 4.599 DLA 14.74 RAL 160.86 RAD 6567.9 VEL 11.938 PTH 2.12 VHP 3.011 DPA 18.10 RAP 166.14 ECC 1.3480

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 22 33	2704.14	-27.67	74.86	28.34	96.26	20 7 37	2104.1	-26.52	66.38
90.00	11 17 39	4395.33	6.30	182.92	21.91	62.34	12 30 55	3795.3	2.55	176.25
100.00	20 51 49	2416.22	-28.99	53.50	28.15	97.64	21 32 6	1816.2	-27.63	44.96
100.00	12 31 4	4158.49	7.47	164.87	21.27	60.97	13 40 22	3558.5	3.54	158.29
110.00	22 17 48	2147.21	-32.45	32.40	27.48	101.40	22 53 35	1547.2	-30.54	23.70
110.00	13 21 34	4000.26	10.48	151.05	19.45	57.28	14 28 15	3400.3	6.09	144.70

DIFFERENTIAL CORRECTIONS

TDE -.7619 TRA 2.8341 TC3-3.2545 BAU .9821
RDE .9295 RRA-1.0744 RC3 1.2145 FAU .54229
FDE-9.0453 FRA24.8831 FC-22.2009 BSP 16630
BDE 1.2019 BRA 3.0309 BC3 3.4738 FSP 11856

MID-COURSE EXECUTION ACCURACY

SGT 4815.8 SGR 2122.5 SG3 3425.2
RRT -.9291 RRF -.9535 RTF .9893
SGB 5262.8 R23 .0353 R13 -.9930
SG1 5212.6 SG2 725.2 THA 157.27

ORBIT DETERMINATION ACCURACY

ST 1452.3 SR 1230.8 SS 3857.6
CRT -.8712 CRS .9351 CST -.9885
LSA 4274.2 MSA 485.6 SSA 19.1
EL1 1843.2 EL2 476.0 ALF 140.40

LAUNCH DATE OCT 2 1964 FLIGHT TIME 340.00 ARRIVAL DATE SEP 7 1965

HELIOCENTRIC CONIC DISTANCE 781.681 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 32.483 GAL -7.77 AZL 89.10 HCA 247.27 SMA 184.90 ECC .23207 INC .9048 V1 29.762
RP 222.08 LAP -.83 LOP 256.10 VP 21.850 GAP -6.79 AZP 90.35 TAL 316.57 TAP 203.84 RCA 141.99 APO 227.81 V2 24.758
RC 264.145 GL 6.32 GP 9.36 ZAL 147.58 ZAP 83.18 ETS 180.49 ZAE 117.27 ETE 173.39 ZAC 92.64 ETC 258.54 CLP 83.09

PLANETOCENTRIC CONIC

C3 21.315 VHL 4.617 DLA 14.82 RAL 161.11 RAD 6567.9 VEL 11.945 PTH 2.13 VHP 3.029 DPA 18.34 RAP 165.26 ECC 1.3508

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 22 49	2708.88	-27.71	75.20	28.77	96.10	20 7 58	2108.9	-26.57	66.72
90.00	11 19 23	4394.40	6.27	182.87	22.28	62.33	12 32 37	3794.4	2.52	176.20
100.00	20 52 10	2420.77	-29.03	53.83	28.59	97.47	21 32 30	1820.8	-27.69	45.29
100.00	12 32 44	4157.74	7.44	164.83	21.65	60.97	13 42 1	3557.7	3.52	158.25
110.00	22 18 15	2151.38	-32.50	32.71	27.92	101.22	22 54 7	1551.4	-30.62	24.00
110.00	13 23 7	3999.90	10.47	151.03	19.82	57.27	14 29 47	3399.9	6.08	144.69

DIFFERENTIAL CORRECTIONS

TDE -.8543 TRA 3.0953 TC3-3.4539 BAU 1.0412
RDE .9303 RRA-1.0532 RC3 1.1918 FAU .53608
FDE-8.9981 FRA24.5834 FC-21.7740 BSP 17821
BDE 1.2631 BRA 3.2696 BC3 3.6538 FSP 11688

MID-COURSE EXECUTION ACCURACY

SGT 5204.2 SGR 2090.9 SG3 3373.9
RRT -.9287 RRF -.9515 RTF .9908
SGB 5608.6 R23 .0351 R13 -.9938
SG1 5561.4 SG2 725.5 THA 159.17

ORBIT DETERMINATION ACCURACY

ST 1598.2 SR 1224.2 SS 3834.4
CRT -.8744 CRS .9340 CST -.9900
LSA 4302.8 MSA 490.7 SSA 18.6
EL1 1953.6 EL2 485.9 ALF 143.57

LAUNCH DATE OCT 2 1964 FLIGHT TIME 342.00 ARRIVAL DATE SEP 9 1965

HELIOCENTRIC CONIC DISTANCE 785.669 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 32.483 GAL -7.82 AZL 89.07 HCA 248.37 SMA 184.89 ECC .23244 INC .9318 V1 29.762
RP 221.70 LAP -.87 LOP 257.20 VP 21.896 GAP -7.03 AZP 90.34 TAL 316.36 TAP 204.73 RCA 141.91 APO 227.86 V2 24.799
RC 265.639 GL 6.48 GP 9.24 ZAL 147.75 ZAP 81.25 ETS 180.82 ZAE 115.15 ETE 173.95 ZAC 92.36 ETC 258.67 CLP 81.14

PLANETOCENTRIC CONIC

C3 21.499 VHL 4.637 DLA 14.89 RAL 161.37 RAD 6567.9 VEL 11.953 PTH 2.13 VHP 3.050 DPA 18.56 RAP 164.41 ECC 1.3538

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 23 13	2713.43	-27.74	75.53	29.22	95.93	20 8 27	2113.4	-26.63	67.04
90.00	11 21 3	4393.99	6.26	182.84	22.68	62.33	12 34 17	3794.0	2.51	176.17
100.00	20 52 37	2425.16	-29.07	54.15	29.04	97.30	21 33 2	1825.2	-27.75	45.60
100.00	12 34 21	4157.50	7.44	164.82	22.04	60.96	13 43 38	3557.5	3.51	158.23
110.00	22 18 49	2155.43	-32.56	33.01	28.39	101.05	22 54 45	1555.4	-30.69	24.29
110.00	13 24 38	3999.99	10.47	151.03	20.20	57.27	14 31 18	3400.0	6.08	144.69

DIFFERENTIAL CORRECTIONS

TDE -.9473 TRA 3.3565 TC3-3.6471 BAU 1.1006
RDE .9304 RRA-1.0307 RC3 1.1669 FAU .52866
FDE-8.9314 FRA24.2411 FC-21.2887 BSP 19027
BDE 1.3278 BRA 3.5112 BC3 3.8292 FSP 11504

MID-COURSE EXECUTION ACCURACY

SGT 5588.2 SGR 2056.7 SG3 3315.2
RRT -.9277 RRF -.9492 RTF .9920
SGB 5954.6 R23 .0349 R13 -.9944
SG1 5910.2 SG2 726.0 THA 160.85

ORBIT DETERMINATION ACCURACY

ST 1743.1 SR 1216.3 SS 3806.3
CRT -.8765 CRS .9327 CST -.9911
LSA 4331.3 MSA 495.5 SSA 18.1
EL1 2067.3 EL2 493.7 ALF 146.38

LAUNCH DATE OCT 2 1964 FLIGHT TIME 344.00 ARRIVAL DATE SEP 11 1965

HELIOCENTRIC CONIC DISTANCE 789.663 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 32.482 GAL -7.87 AZL 89.04 HCA 249.48 SMA 184.87 ECC .23286 INC .9584 V1 29.762
RP 221.32 LAP -.90 LOP 258.31 VP 21.942 GAP -7.26 AZP 90.34 TAL 316.14 TAP 205.62 RCA 141.82 APO 227.92 V2 24.841
RC 267.114 GL 6.63 GP 9.11 ZAL 147.94 ZAP 79.36 ETS 181.14 ZAE 113.05 ETE 174.49 ZAC 92.09 ETC 258.79 CLP 79.22

PLANETOCENTRIC CONIC

C3 21.700 VHL 4.658 DLA 14.95 RAL 161.64 RAD 6567.9 VEL 11.962 PTH 2.13 VHP 3.075 DPA 18.76 RAP 163.57 ECC 1.3571

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 23 45	2717.80	-27.77	75.85	29.68	95.78	20 9 3	2117.8	-26.68	67.35
90.00	11 22 40	4394.12	6.26	182.85	23.09	62.33	12 35 54	3794.1	2.51	176.18
100.00	20 53 11	2429.38	-29.10	54.46	29.51	97.15	21 33 41	1829.4	-27.81	45.90
100.00	12 35 55	4157.76	7.44	164.83	22.45	60.97	13 45 13	3557.8	3.52	158.25
110.00	22 19 29	2159.36	-32.61	33.31	28.86	100.88	22 55 28	1559.4	-30.76	24.57
110.00	13 26 7	4000.55	10.49	151.06	20.60	57.28	14 32 47	3400.5	6.10	144.72

DIFFERENTIAL CORRECTIONS
TDE-1.0406 TRA 3.6179 TC3-3.8318 BAU 1.1597
RDE .9300 RRA-1.0073 RC3 1.1394 FAU .51980
FDE-8.8474 FRA23.8630 FC-20.7382 BSP 20241
BDE 1.3956 BRA 3.7555 BC3 3.9976 FSP 11304

MID-COURSE EXECUTION ACCURACY
SGT 5966.2 SGR 2019.9 SG3 3249.6
RRT -.9261 RRF -.9466 RTF .9930
SGB 6298.8 R23 .0350 R13 -.9950
SG1 6256.7 SG2 726.8 THA 162.35

ORBIT DETERMINATION ACCURACY
ST 1886.5 SR 1207.3 SS 3774.2
CRT -.8777 CRS .9313 CST -.9919
LSA 4360.1 MSA 500.2 SSA 17.6
EL1 2183.2 EL2 499.8 ALF 148.86

LAUNCH DATE OCT 2 1964 FLIGHT TIME 346.00 ARRIVAL DATE SEP 13 1965

HELIOCENTRIC CONIC DISTANCE 793.661 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 32.481 GAL -7.92 AZL 89.02 HCA 250.59 SMA 184.87 ECC .23333 INC .9846 V1 29.762
RP 220.94 LAP -.93 LOP 259.41 VP 21.988 GAP -7.50 AZP 90.33 TAL 315.91 TAP 206.50 RCA 141.73 APO 228.00 V2 24.883
RC 268.570 GL 6.78 GP 8.98 ZAL 148.13 ZAP 77.48 ETS 181.44 ZAE 110.97 ETE 175.00 ZAC 91.82 ETC 258.92 CLP 77.33

PLANETOCENTRIC CONIC

C3 21.918 VHL 4.682 DLA 15.00 RAL 161.91 RAD 6567.9 VEL 11.971 PTH 2.13 VHP 3.103 DPA 18.94 RAP 162.77 ECC 1.3607

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 24 25	2721.97	-27.80	76.15	30.17	95.63	20 9 47	2122.0	-26.73	67.65
90.00	11 24 14	4394.77	6.28	182.89	23.52	62.33	12 37 28	3794.8	2.53	176.22
100.00	20 53 53	2433.44	-29.14	54.76	30.00	96.99	21 34 26	1833.4	-27.86	46.19
100.00	12 37 27	4158.53	7.47	164.88	22.88	60.97	13 46 45	3558.5	3.54	158.29
110.00	22 20 15	2163.18	-32.66	33.60	29.36	100.71	22 56 18	1563.2	-30.83	24.85
110.00	13 27 33	4001.56	10.53	151.12	21.03	57.29	14 34 15	3401.6	6.14	144.77

DIFFERENTIAL CORRECTIONS
TDE-1.1348 TRA 3.8781 TC3-4.0093 BAU 1.2191
RDE .9294 RRA -.9828 RC3 1.1106 FAU .51012
FDE-8.7527 FRA23.4455 FC-20.1490 BSP 21436
BDE 1.4668 BRA 4.0007 BC3 4.1603 FSP 11076

MID-COURSE EXECUTION ACCURACY
SGT 6337.5 SGR 1981.3 SG3 3178.1
RRT -.9239 RRF -.9439 RTF .9937
SGB 6640.0 R23 .0352 R13 -.9954
SG1 6600.0 SG2 727.7 THA 163.68

ORBIT DETERMINATION ACCURACY
ST 2028.4 SR 1197.6 SS 3739.1
CRT -.8784 CRS .9299 CST -.9926
LSA 4390.3 MSA 504.6 SSA 17.2
EL1 2300.9 EL2 504.6 ALF 151.06

LAUNCH DATE OCT 2 1964 FLIGHT TIME 348.00 ARRIVAL DATE SEP 15 1965

HELIOCENTRIC CONIC DISTANCE 797.660 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 32.481 GAL -7.97 AZL 88.99 HCA 251.70 SMA 184.86 ECC .23385 INC 1.0107 V1 29.762
RP 220.56 LAP -.96 LOP 260.53 VP 22.035 GAP -7.73 AZP 90.32 TAL 315.66 TAP 207.36 RCA 141.63 APO 228.09 V2 24.924
RC 270.009 GL 6.92 GP 8.84 ZAL 148.34 ZAP 75.65 ETS 181.74 ZAE 108.92 ETE 175.47 ZAC 91.55 ETC 259.03 CLP 75.47

PLANETOCENTRIC CONIC

C3 22.154 VHL 4.707 DLA 15.04 RAL 162.20 RAD 6567.9 VEL 11.981 PTH 2.14 VHP 3.135 DPA 19.11 RAP 161.99 ECC 1.3646

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 25 12	2725.96	-27.82	76.44	30.67	95.49	20 10 38	2126.0	-26.77	67.93
90.00	11 25 44	4395.98	6.32	182.96	23.97	62.34	12 39 0	3796.0	2.57	176.29
100.00	20 54 42	2437.34	-29.17	55.04	30.51	96.85	21 35 19	1837.3	-27.91	46.47
100.00	12 38 55	4159.83	7.51	164.95	23.32	60.98	13 48 15	3559.8	3.59	158.36
110.00	22 21 8	2166.89	-32.70	33.88	29.88	100.56	22 57 15	1566.9	-30.90	25.12
110.00	13 28 58	4003.05	10.58	151.20	21.47	57.31	14 35 41	3403.0	6.20	144.85

DIFFERENTIAL CORRECTIONS
TDE-1.2223 TRA 4.1470 TC3-4.1658 BAU 1.2742
RDE .9251 RRA -.9606 RC3 1.0742 FAU .49629
FDE-8.5760 FRA23.0593 FC-19.3936 BSP 22830
BDE 1.5329 BRA 4.2568 BC3 4.3021 FSP 10972

MID-COURSE EXECUTION ACCURACY
SGT 6701.8 SGR 1938.2 SG3 3099.6
RRT -.9215 RRF -.9407 RTF .9943
SGB 6976.5 R23 .0349 R13 -.9956
SG1 6938.5 SG2 727.0 THA 164.91

ORBIT DETERMINATION ACCURACY
ST 2164.9 SR 1183.6 SS 3687.2
CRT -.8776 CRS .9272 CST -.9932
LSA 4407.2 MSA 509.2 SSA 17.0
EL1 2414.3 EL2 508.8 ALF 153.08

LAUNCH DATE OCT 2 1964 FLIGHT TIME 350.00 ARRIVAL DATE SEP 17 1965

HELIOCENTRIC CONIC DISTANCE 801.669 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 32.481 GAL -8.03 AZL 88.96 HCA 252.81 SMA 184.86 ECC .23442 INC 1.0364 V1 29.762
RP 220.18 LAP -.99 LOP 261.64 VP 22.081 GAP -7.95 AZP 90.31 TAL 315.41 TAP 208.22 RCA 141.53 APO 228.20 V2 24.965
RC 271.430 GL 7.06 GP 8.70 ZAL 148.56 ZAP 73.84 ETS 182.02 ZAE 106.90 ETE 175.92 ZAC 91.28 ETC 259.15 CLP 73.64

PLANETOCENTRIC CONIC

C3 22.408 VHL 4.734 DLA 15.07 RAL 162.50 RAD 6567.9 VEL 11.991 PTH 2.14 VHP 3.170 DPA 19.26 RAP 161.25 ECC 1.3688

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 26 6	2729.78	-27.85	76.72	31.19	95.35	20 11 36	2129.8	-26.82	68.20
90.00	11 27 10	4397.68	6.38	183.05	24.43	62.35	12 40 28	3797.7	2.62	176.38
100.00	20 55 37	2441.09	-29.20	55.32	31.03	96.70	21 36 18	1841.1	-27.96	46.73
100.00	12 40 20	4161.61	7.57	165.05	23.79	61.00	13 49 42	3561.6	3.65	158.46
110.00	22 22 6	2170.49	-32.75	34.15	30.41	100.40	22 58 17	1570.5	-30.97	25.38
110.00	13 30 21	4004.97	10.65	151.30	21.92	57.33	14 37 6	3405.0	6.27	144.95

DIFFERENTIAL CORRECTIONS
TDE-1.3245 TRA 4.3959 TC3-4.3373 BAU 1.3368
RDE .9274 RRA -.9316 RC3 1.0493 FAU .48817
FDE-8.5287 FRA22.5192 FC-18.8603 BSP 23789
BDE 1.6169 BRA 4.4936 BC3 4.4624 FSP 10568

MID-COURSE EXECUTION ACCURACY
SGT 7056.4 SGR 1900.1 SG3 3020.5
RRT -.9183 RRF -.9377 RTF .9948
SGB 7307.8 R23 .0360 R13 -.9960
SG1 7271.2 SG2 729.8 THA 165.97

ORBIT DETERMINATION ACCURACY
ST 2306.1 SR 1176.3 SS 3659.9
CRT -.8783 CRS .9270 CST -.9935
LSA 4453.5 MSA 512.7 SSA 16.4
EL1 2537.8 EL2 511.1 ALF 154.77

LAUNCH DATE OCT 2 1964 FLIGHT TIME 352.00 ARRIVAL DATE SEP 19 1965

HELIOCENTRIC CONIC DISTANCE 805.679 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 32.481 GAL -8.09 AZL 88.94 HCA 253.93 SMA 184.87 ECC .23504 INC 1.0620 V1 29.762
RP 219.81 LAP -1.02 LOP 262.76 VP 22.128 GAP -8.18 AZP 90.29 TAL 315.14 TAP 209.07 RCA 141.41 APO 228.32 V2 25.006
RC 272.833 GL 7.19 GP 8.56 ZAL 148.79 ZAP 72.07 ETS 182.29 ZAE 104.91 ETE 176.35 ZAC 91.03 ETC 259.26 CLP 71.86

PLANETOCENTRIC CONIC

C3 22.682 VHL 4.763 DLA 15.08 RAL 162.80 RAD 6567.9 VEL 12.003 PTH 2.14 VHP 3.209 DPA 19.38 RAP 160.55 ECC 1.3733

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 27 8	2733.41	-27.87	76.98	31.73	95.22	20 12 42	2133.4	-26.86	68.46
90.00	11 28 34	4399.94	6.45	183.18	24.92	62.37	12 41 54	3799.9	2.70	176.51
100.00	20 56 40	2444.68	-29.23	55.58	31.57	96.57	21 37 25	1844.7	-28.01	46.99
100.00	12 41 43	4163.91	7.65	165.18	24.27	61.01	13 51 7	3563.9	3.72	158.59
110.00	22 23 11	2173.99	-32.79	34.41	30.95	100.25	22 59 25	1574.0	-31.03	25.63
110.00	13 31 41	4007.36	10.74	151.43	22.40	57.35	14 38 29	3407.4	6.36	145.08

DIFFERENTIAL CORRECTIONS
TDE-1.4204 TRA 4.6538 TC3-4.4863 BAU 1.3949
RDE .9261 RRA -.9054 RC3 1.0170 FAU .47601
FDE-8.4012 FRA22.0203 FC-18.1690 BSP 24940
BDE 1.6956 BRA 4.7410 BC3 4.6001 FSP 10293

MID-COURSE EXECUTION ACCURACY
SGT 7402.9 SGR 1858.0 SG3 2935.6
RRT -.9149 RRF -.9342 RTF .9952
SGB 7632.6 R23 .0365 R13 -.9962
SG1 7597.5 SG2 730.8 THA 166.94

ORBIT DETERMINATION ACCURACY
ST 2441.8 SR 1164.8 SS 3616.3
CRT -.8777 CRS .9254 CST -.9938
LSA 4486.7 MSA 516.3 SSA 16.0
EL1 2656.3 EL2 513.1 ALF 156.35

LAUNCH DATE OCT 2 1964 FLIGHT TIME 354.00 ARRIVAL DATE SEP 21 1965

HELIOCENTRIC CONIC DISTANCE 809.693 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 32.482 GAL -8.15 AZL 88.91 HCA 255.06 SMA 184.87 ECC .23572 INC 1.0874 V1 29.762
RP 219.44 LAP -1.05 LOP 263.89 VP 22.175 GAP -8.40 AZP 90.28 TAL 314.85 TAP 209.91 RCA 141.29 APO 228.45 V2 25.047
RC 274.220 GL 7.31 GP 8.41 ZAL 149.04 ZAP 70.33 ETS 182.55 ZAE 102.96 ETE 176.75 ZAC 90.78 ETC 259.36 CLP 70.11

PLANETOCENTRIC CONIC

C3 22.975 VHL 4.793 DLA 15.09 RAL 163.11 RAD 6567.9 VEL 12.015 PTH 2.14 VHP 3.250 DPA 19.49 RAP 159.89 ECC 1.3781

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 28 18	2736.87	-27.89	77.23	32.28	95.10	20 13 55	2136.9	-26.89	68.71
90.00	11 29 53	4402.72	6.54	183.34	25.42	62.39	12 43 16	3802.7	2.79	176.66
100.00	20 57 50	2448.11	-29.25	55.83	32.13	96.44	21 38 38	1848.1	-28.05	47.24
100.00	12 43 2	4166.72	7.74	165.33	24.77	61.04	13 52 29	3566.7	3.82	158.74
110.00	22 24 22	2177.37	-32.83	34.67	31.52	100.10	23 0 39	1577.4	-31.09	25.88
110.00	13 33 0	4010.22	10.85	151.59	22.89	57.38	14 39 50	3410.2	6.47	145.23

DIFFERENTIAL CORRECTIONS
TDE-1.5167 TRA 4.9104 TC3-4.6251 BAU 1.4524
RDE .9247 RRA -.8789 RC3 .9842 FAU .46324
FDE-8.2659 FRA21.5012 FC-17.4560 BSP 26064
BDE 1.7763 BRA 4.9884 BC3 4.7286 FSP 10008

MID-COURSE EXECUTION ACCURACY
SGT 7739.8 SGR 1815.5 SG3 2847.6
RRT -.9111 RRF -.9305 RTF .9955
SGB 7949.8 R23 .0371 R13 -.9964
SG1 7916.1 SG2 731.7 THA 167.83

ORBIT DETERMINATION ACCURACY
ST 2575.0 SR 1152.9 SS 3570.4
CRT -.8768 CRS .9239 CST -.9940
LSA 4520.8 MSA 519.6 SSA 15.6
EL1 2774.0 EL2 514.6 ALF 157.76

LAUNCH DATE OCT 2 1964 FLIGHT TIME 356.00 ARRIVAL DATE SEP 23 1965

HELIOCENTRIC CONIC DISTANCE 813.710 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 32.482 GAL -8.22 AZL 88.89 HCA 256.18 SMA 184.88 ECC .23645 INC 1.1126 V1 29.762
RP 219.07 LAP -1.08 LOP 265.01 VP 22.222 GAP -8.62 AZP 90.27 TAL 314.55 TAP 210.74 RCA 141.17 APO 228.60 V2 25.088
RC 275.589 GL 7.43 GP 8.27 ZAL 149.29 ZAP 68.63 ETS 182.80 ZAE 101.03 ETE 177.13 ZAC 90.53 ETC 259.46 CLP 68.40

PLANETOCENTRIC CONIC

C3 23.288 VHL 4.826 DLA 15.09 RAL 163.43 RAD 6567.9 VEL 12.028 PTH 2.15 VHP 3.295 DPA 19.58 RAP 159.27 ECC 1.3833

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 29 35	2740.15	-27.91	77.47	32.86	94.98	20 15 15	2140.2	-26.93	68.94
90.00	11 31 10	4406.05	6.64	183.52	25.94	62.41	12 44 36	3806.0	2.89	176.85
100.00	20 59 7	2451.39	-29.28	56.07	32.70	96.31	21 39 58	1851.4	-28.10	47.47
100.00	12 44 19	4170.04	7.85	165.52	25.29	61.06	13 53 49	3570.0	3.93	158.92
110.00	22 25 39	2180.66	-32.87	34.92	32.10	99.96	23 1 59	1580.7	-31.15	26.12
110.00	13 34 16	4013.54	10.97	151.77	23.41	57.42	14 41 10	3413.5	6.59	145.41

DIFFERENTIAL CORRECTIONS
TDE-1.6135 TRA 5.1660 TC3-4.7539 BAU 1.5094
RDE .9233 RRA -.8524 RC3 .9512 FAU .45009
FDE-8.1230 FRA20.9662 FC-16.7322 BSP 27166
BDE 1.8590 BRA 5.2359 BC3 4.8482 FSP 9710

MID-COURSE EXECUTION ACCURACY
SGT 8067.2 SGR 1772.9 SG3 2757.4
RRT -.9069 RRF -.9265 RTF .9957
SGB 8259.7 R23 .0378 R13 -.9966
SG1 8227.1 SG2 732.4 THA 168.64

ORBIT DETERMINATION ACCURACY
ST 2705.7 SR 1140.8 SS 3522.4
CRT -.8757 CRS .9223 CST -.9942
LSA 4555.9 MSA 522.6 SSA 15.3
EL1 2890.8 EL2 515.5 ALF 159.04

LAUNCH DATE OCT 2 1964 FLIGHT TIME 358.00 ARRIVAL DATE SEP 25 1965

HELIOCENTRIC CONIC DISTANCE 817.730 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 32.483 GAL -8.30 AZL 88.86 HCA 257.32 SMA 184.90 ECC .23723 INC 1.1375 V1 29.762
RP 218.70 LAP -1.11 LOP 266.15 VP 22.268 GAP -8.84 AZP 90.25 TAL 314.24 TAP 211.56 RCA 141.03 APO 228.76 V2 25.128
RC 276.940 GL 7.55 GP 8.12 ZAL 149.55 ZAP 66.98 ETS 183.04 ZAE 99.15 ETE 177.48 ZAC 90.30 ETC 259.55 CLP 66.73

PLANETOCENTRIC CONIC

C3 23.622 VHL 4.860 DLA 15.08 RAL 163.76 RAD 6568.0 VEL 12.042 PTH 2.15 VHP 3.343 DPA 19.65 RAP 158.69 ECC 1.3888

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 30 59	2743.26	-27.93	77.69	33.45	94.87	20 16 42	2143.3	-26.96	69.16
90.00	11 32 23	4409.90	6.76	183.74	26.48	62.44	12 45 53	3809.9	3.02	177.06
100.00	21 0 31	2454.53	-29.30	56.30	33.30	96.20	21 41 26	1854.5	-28.13	47.70
100.00	12 45 32	4173.87	7.98	165.73	25.82	61.10	13 55 6	3573.9	4.06	159.14
110.00	22 27 2	2183.85	-32.91	35.16	32.71	99.82	23 3 25	1583.8	-31.20	26.35
110.00	13 35 31	4017.32	11.11	151.97	23.94	57.46	14 42 28	3417.3	6.74	145.61

DIFFERENTIAL CORRECTIONS
TDE-1.7110 TRA 5.4211 TC3-4.8716 BAU 1.5656
RDE .9218 RRA -.8260 RC3 .9179 FAU .43643
FDE-7.9730 FRA20.4211 FC-15.9946 BSP 28244
BDE 1.9435 BRA 5.4837 BC3 4.9574 FSP 9409

MID-COURSE EXECUTION ACCURACY
SGT 8384.6 SGR 1730.3 SG3 2665.4
RRT -.9024 RRF -.9223 RTF .9959
SGB 8561.3 R23 .0386 R13 -.9967
SG1 8529.8 SG2 732.9 THA 169.37

ORBIT DETERMINATION ACCURACY
ST 2833.9 SR 1128.3 SS 3472.3
CRT -.8745 CRS .9208 CST -.9944
LSA 4591.8 MSA 525.3 SSA 14.9
EL1 3006.4 EL2 515.8 ALF 160.19

LAUNCH DATE OCT 2 1964 FLIGHT TIME 360.00 ARRIVAL DATE SEP 27 1965

HELIOCENTRIC CONIC DISTANCE 821.752 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 32.484 GAL -8.37 AZL 88.84 HCA 258.45 SMA 184.91 ECC .23807 INC 1.1625 V1 29.762
RP 218.34 LAP -1.14 LOP 267.28 VP 22.315 GAP -9.06 AZP 90.23 TAL 313.91 TAP 212.37 RCA 140.89 APO 228.94 V2 25.168
RC 278.273 GL 7.65 GP 7.98 ZAL 149.83 ZAP 65.36 ETS 183.26 ZAE 97.30 ETE 177.82 ZAC 90.07 ETC 259.63 CLP 65.10

PLANETOCENTRIC CONIC

C3 23.979 VHL 4.897 DLA 15.06 RAL 164.10 RAD 6568.0 VEL 12.056 PTH 2.15 VHP 3.394 DPA 19.70 RAP 158.15 ECC 1.3946

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 32 31	2746.21	-27.95	77.91	34.06	94.76	20 18 17	2146.2	-26.99	69.37
90.00	11 33 32	4414.29	6.90	183.99	27.04	62.47	12 47 7	3814.3	3.16	177.31
100.00	21 2 2	2457.52	-29.32	56.52	33.91	96.08	21 42 59	1857.5	-28.17	47.91
100.00	12 46 42	4178.21	8.12	165.98	26.38	61.13	13 56 21	3578.2	4.20	159.37
110.00	22 28 31	2186.94	-32.94	35.39	33.32	99.69	23 4 57	1586.9	-31.26	26.57
110.00	13 36 43	4021.55	11.26	152.20	24.49	57.51	14 43 45	3421.6	6.90	145.83

DIFFERENTIAL CORRECTIONS
TDE-1.8092 TRA 5.6755 TC3-4.9782 BAU 1.6209
RDE .9204 RRA -.7998 RC3 .8846 FAU .42249
FDE-7.8186 FRA19.8663 FC-15.2536 BSP 29294
BDE 2.0299 BRA 5.7316 BC3 5.0562 FSP 9100

MID-COURSE EXECUTION ACCURACY
SGT 8691.6 SGR 1688.1 SG3 2572.2
RRT -.8975 RRF -.9178 RTF .9961
SGB 8854.0 R23 .0394 R13 -.9968
SG1 8823.6 SG2 733.3 THA 170.04

ORBIT DETERMINATION ACCURACY
ST 2959.5 SR 1115.8 SS 3420.6
CRT -.8732 CRS .9192 CST -.9945
LSA 4628.8 MSA 527.6 SSA 14.6
EL1 3120.5 EL2 515.8 ALF 161.25

LAUNCH DATE OCT 2 1964 FLIGHT TIME 362.00 ARRIVAL DATE SEP 29 1965

HELIOCENTRIC CONIC DISTANCE 825.777 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 32.485 GAL -8.45 AZL 88.81 HCA 259.59 SMA 184.93 ECC .23897 INC 1.1872 V1 29.762
RP 217.98 LAP -1.17 LOP 268.42 VP 22.362 GAP -9.28 AZP 90.21 TAL 313.57 TAP 213.16 RCA 140.74 APO 229.13 V2 25.208
RC 279.589 GL 7.75 GP 7.83 ZAL 150.12 ZAP 63.78 ETS 183.47 ZAE 95.49 ETE 178.14 ZAC 89.85 ETC 259.71 CLP 63.52

PLANETOCENTRIC CONIC

C3 24.358 VHL 4.935 DLA 15.03 RAL 164.44 RAD 6568.0 VEL 12.072 PTH 2.16 VHP 3.449 DPA 19.73 RAP 157.66 ECC 1.4009

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 34 10	2748.99	-27.96	78.11	34.69	94.66	20 19 59	2149.0	-27.02	69.57
90.00	11 34 38	4419.21	7.05	184.27	27.61	62.51	12 48 18	3819.2	3.32	177.58
100.00	21 3 39	2460.37	-29.34	56.73	34.54	95.97	21 44 40	1860.4	-28.21	48.12
100.00	12 47 50	4183.06	8.28	166.25	26.95	61.17	13 57 33	3583.1	4.37	159.64
110.00	22 30 5	2189.93	-32.98	35.62	33.96	99.56	23 6 35	1589.9	-31.31	26.79
110.00	13 37 53	4026.26	11.43	152.46	25.06	57.56	14 44 59	3426.3	7.07	146.08

DIFFERENTIAL CORRECTIONS
TDE-1.9078 TRA 5.9299 TC3-5.0729 BAU 1.6751
RDE .9190 RRA -.7741 RC3 .8513 FAU .40816
FDE-7.6576 FRA19.3083 FC-14.5068 BSP 30327
BDE 2.1176 BRA 5.9802 BC3 5.1439 FSP 8794

MID-COURSE EXECUTION ACCURACY
SGT 8988.2 SGR 1646.3 SG3 2478.3
RRT -.8923 RRF -.9130 RTF .9962
SGB 9137.8 R23 .0403 R13 -.9968
SG1 9108.3 SG2 733.4 THA 170.66

ORBIT DETERMINATION ACCURACY
ST 3082.3 SR 1103.1 SS 3367.0
CRT -.8716 CRS .9177 CST -.9946
LSA 4666.2 MSA 529.7 SSA 14.4
EL1 3232.9 EL2 515.5 ALF 162.21

LAUNCH DATE OCT 2 1964 FLIGHT TIME 364.00 ARRIVAL DATE OCT 1 1965

HELIOCENTRIC CONIC DISTANCE 829.804 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 32.487 GAL -8.54 AZL 88.79 HCA 260.73 SMA 184.96 ECC .23992 INC 1.2119 V1 29.762
RP 217.62 LAP -1.20 LOP 269.56 VP 22.409 GAP -9.50 AZP 90.20 TAL 313.22 TAP 213.95 RCA 140.58 APO 229.33 V2 25.248
RC 280.887 GL 7.85 GP 7.69 ZAL 150.41 ZAP 62.25 ETS 183.68 ZAE 93.71 ETE 178.44 ZAC 89.64 ETC 259.78 CLP 61.97

PLANETOCENTRIC CONIC

C3 24.761 VHL 4.976 DLA 14.99 RAL 164.79 RAD 6568.0 VEL 12.089 PTH 2.16 VHP 3.506 DPA 19.75 RAP 157.21 ECC 1.4075

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 35 56	2751.61	-27.98	78.30	35.33	94.57	20 21 47	2151.6	-27.05	69.76
90.00	11 35 41	4424.65	7.23	184.58	28.21	62.55	12 49 26	3824.7	3.49	177.89
100.00	21 5 24	2463.09	-29.36	56.93	35.19	95.87	21 46 27	1863.1	-28.24	48.31
100.00	12 48 54	4188.41	8.45	166.55	27.55	61.22	13 58 43	3588.4	4.55	159.94
110.00	22 31 46	2192.85	-33.01	35.84	34.61	99.43	23 8 19	1592.8	-31.36	27.00
110.00	13 39 1	4031.42	11.62	152.74	25.65	57.62	14 46 13	3431.4	7.27	146.35

DIFFERENTIAL CORRECTIONS
TDE-2.0072 TRA 6.1845 TC3-5.1568 BAU 1.7285
RDE .9178 RRA -.7490 RC3 .8185 FAU .39375
FDE-7.4936 FRA18.7484 FC-13.7668 BSP 31335
BDE 2.2070 BRA 6.2297 BC3 5.2214 FSP 8485

MID-COURSE EXECUTION ACCURACY
SGT 9275.0 SGR 1605.4 SG3 2384.4
RRT -.8868 RRF -.9080 RTF .9963
SGB 9412.9 R23 .0411 R13 -.9968
SG1 9384.3 SG2 733.3 THA 171.22

ORBIT DETERMINATION ACCURACY
ST 3202.5 SR 1090.4 SS 3312.1
CRT -.8701 CRS .9161 CST -.9947
LSA 4704.5 MSA 531.4 SSA 14.1
EL1 3343.6 EL2 514.8 ALF 163.09

LAUNCH DATE OCT 2 1964 FLIGHT TIME 366.00 ARRIVAL DATE OCT 3 1965

HELIOCENTRIC CONIC DISTANCE 833.832 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 32.488 GAL -8.63 AZL 88.76 HCA 261.88 SMA 184.98 ECC .24094 INC 1.2364 V1 29.762
RP 217.27 LAP -1.22 LOP 270.71 VP 22.455 GAP -9.71 AZP 90.17 TAL 312.85 TAP 214.73 RCA 140.41 APO 229.55 V2 25.287
RC 282.167 GL 7.94 GP 7.55 ZAL 150.72 ZAP 60.75 ETS 183.87 ZAE 91.98 ETE 178.72 ZAC 89.44 ETC 259.84 CLP 60.47

PLANETOCENTRIC CONIC

C3 25.190 VHL 5.019 DLA 14.94 RAL 165.16 RAD 6568.0 VEL 12.106 PTH 2.17 VHP 3.566 DPA 19.75 RAP 156.81 ECC 1.4146

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 37 49	2754.08	-27.99	78.48	35.99	94.48	20 23 43	2154.1	-27.08	69.93
90.00	11 36 40	4430.63	7.41	184.92	28.82	62.59	12 50 31	3830.6	3.68	178.22
100.00	21 7 15	2465.68	-29.38	57.12	35.85	95.77	21 48 21	1865.7	-28.27	48.50
100.00	12 49 56	4194.27	8.64	166.88	28.16	61.27	13 59 50	3594.3	4.74	160.26
110.00	22 33 32	2195.67	-33.04	36.05	35.28	99.31	23 10 8	1595.7	-31.40	27.21
110.00	13 40 7	4037.04	11.83	153.05	26.25	57.69	14 47 25	3437.0	7.48	146.65

DIFFERENTIAL CORRECTIONS
TDE-2.1075 TRA 6.4386 TC3-5.2303 BAU 1.7812
RDE .9166 RRA -.7243 RC3 .7862 FAU .37926
FDE-7.3259 FRA18.1868 FC-13.0345 BSP 32316
BDE 2.2982 BRA 6.4792 BC3 5.2891 FSP 8177

MID-COURSE EXECUTION ACCURACY
SGT 9551.3 SGR 1565.3 SG3 2290.7
RRT -.8810 RRF -.9028 RTF .9963
SGB 9678.7 R23 .0420 R13 -.9968
SG1 9650.9 SG2 733.0 THA 171.74

ORBIT DETERMINATION ACCURACY
ST 3319.9 SR 1077.7 SS 3255.7
CRT -.8684 CRS .9146 CST -.9947
LSA 4743.3 MSA 532.7 SSA 13.9
EL1 3452.4 EL2 513.8 ALF 163.89

LAUNCH DATE OCT 2 1964 FLIGHT TIME 368.00 ARRIVAL DATE OCT 5 1965

HELIOCENTRIC CONIC DISTANCE 837.862 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 32.490 GAL -8.72 AZL 88.74 HCA 263.03 SMA 185.01 ECC .24201 INC 1.2610 V1 29.762
RP 216.91 LAP -1.25 LOP 271.86 VP 22.502 GAP -9.93 AZP 90.15 TAL 312.47 TAP 215.50 RCA 140.24 APO 229.78 V2 25.327
RC 283.431 GL 8.02 GP 7.41 ZAL 151.04 ZAP 59.30 ETS 184.05 ZAE 90.28 ETE 178.98 ZAC 89.25 ETC 259.89 CLP 59.01

PLANETOCENTRIC CONIC

C3 25.644 VHL 5.064 DLA 14.89 RAL 165.52 RAD 6568.0 VEL 12.125 PTH 2.17 VHP 3.629 DPA 19.74 RAP 156.45 ECC 1.4220

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 39 49	2756.41	-28.00	78.65	36.67	94.39	20 25 46	2156.4	-27.10	70.10
90.00	11 37 36	4437.13	7.62	185.29	29.45	62.64	12 51 34	3837.1	3.89	178.59
100.00	21 9 12	2468.14	-29.40	57.31	36.53	95.68	21 50 21	1868.1	-28.30	48.67
100.00	12 50 54	4200.62	8.85	167.24	28.79	61.33	14 0 55	3600.6	4.96	160.61
110.00	22 35 24	2198.42	-33.07	36.26	35.97	99.19	23 12 3	1598.4	-31.45	27.41
110.00	13 41 12	4043.11	12.05	153.38	26.88	57.77	14 48 35	3443.1	7.71	146.97

DIFFERENTIAL CORRECTIONS
TDE-2.2092 TRA 6.6940 TC3-5.2926 BAU 1.8329
RDE .9158 RRA -.7003 RC3 .7547 FAU .36479
FDE-7.1588 FRA17.6293 FC-12.3152 BSP 33268
BDE 2.3915 BRA 6.7306 BC3 5.3461 FSP 7871

MID-COURSE EXECUTION ACCURACY
SGT 9818.2 SGR 1526.5 SG3 2197.9
RRT -.8749 RRF -.8974 RTF .9963
SGB 9936.2 R23 .0430 R13 -.9968
SG1 9909.1 SG2 732.5 THA 172.21

ORBIT DETERMINATION ACCURACY
ST 3435.2 SR 1065.2 SS 3199.0
CRT -.8668 CRS .9132 CST -.9947
LSA 4783.8 MSA 533.7 SSA 13.7
EL1 3559.9 EL2 512.6 ALF 164.63

LAUNCH DATE OCT 2 1964 FLIGHT TIME 370.00 ARRIVAL DATE OCT 7 1965

HELIOCENTRIC CONIC DISTANCE 841.892 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 32.492 GAL -8.82 AZL 88.71 HCA 264.18 SMA 185.04 ECC .24314 INC 1.2855 V1 29.762
RP 216.57 LAP -1.28 LOP 273.01 VP 22.548 GAP -10.14 AZP 90.13 TAL 312.07 TAP 216.25 RCA 140.05 APO 230.03 V2 25.365
RC 284.679 GL 8.10 GP 7.27 ZAL 151.37 ZAP 57.89 ETS 184.22 ZAE 88.62 ETE 179.23 ZAC 89.07 ETC 259.94 CLP 57.60

PLANETOCENTRIC CONIC

C3 26.126 VHL 5.111 DLA 14.82 RAL 165.90 RAD 6568.1 VEL 12.145 PTH 2.18 VHP 3.695 DPA 19.70 RAP 156.14 ECC 1.4300

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 41 56	2758.60	-28.01	78.81	37.37	94.31	20 27 55	2158.6	-27.12	70.26
90.00	11 38 29	4444.14	7.84	185.69	30.10	62.70	12 52 33	3844.1	4.12	178.98
100.00	21 11 16	2470.49	-29.41	57.48	37.23	95.59	21 52 27	1870.5	-28.33	48.84
100.00	12 51 50	4207.48	9.08	167.62	29.43	61.40	14 1 58	3607.5	5.19	160.99
110.00	22 37 22	2201.09	-33.10	36.47	36.68	99.07	23 14 3	1601.1	-31.49	27.61
110.00	13 42 14	4049.64	12.28	153.74	27.52	57.85	14 49 43	3449.6	7.95	147.32

DIFFERENTIAL CORRECTIONS
TDE-2.3107 TRA 6.9504 TC3-5.3439 BAU 1.8835
RDE .9151 RRA -.6772 RC3 .7237 FAU .35034
FDE-6.9873 FRA17.0755 FC-11.6091 BSP 34211
BDE 2.4853 BRA 6.9833 BC3 5.3927 FSP 7568

MID-COURSE EXECUTION ACCURACY
SGT10074.8 SGR 1488.6 SG3 2106.1
RRT -.8686 RRF -.8918 RTF .9963
SGB10184.2 R23 .0440 R13 -.9968
SG110157.8 SG2 731.7 THA 172.65

ORBIT DETERMINATION ACCURACY
ST 3547.0 SR 1052.7 SS 3140.5
CRT -.8651 CRS .9118 CST -.9947
LSA 4823.6 MSA 534.5 SSA 13.5
EL1 3664.5 EL2 511.2 ALF 165.31

LAUNCH DATE OCT 2 1964 FLIGHT TIME 372.00 ARRIVAL DATE OCT 9 1965

HELIOCENTRIC CONIC DISTANCE 845.923 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 32.494 GAL -8.93 AZL 88.69 HCA 265.34 SMA 185.08 ECC .24434 INC 1.3099 V1 29.762
RP 216.22 LAP -1.31 LOP 274.17 VP 22.594 GAP -10.35 AZP 90.11 TAL 311.65 TAP 217.00 RCA 139.85 APO 230.30 V2 25.404
RC 285.910 GL 8.17 GP 7.13 ZAL 151.70 ZAP 56.52 ETS 184.38 ZAE 87.00 ETE 179.47 ZAC 88.89 ETC 259.97 CLP 56.22

PLANETOCENTRIC CONIC

C3 26.636 VHL 5.161 DLA 14.74 RAL 166.28 RAD 6568.1 VEL 12.166 PTH 2.18 VHP 3.764 DPA 19.66 RAP 155.87 ECC 1.4384

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 44 10	2760.65	-28.02	78.96	38.09	94.24	20 30 11	2160.6	-27.14	70.40
90.00	11 39 19	4451.68	8.07	186.11	30.77	62.77	12 53 31	3851.7	4.36	179.40
100.00	21 13 27	2472.72	-29.43	57.64	37.95	95.50	21 54 39	1872.7	-28.35	49.00
100.00	12 52 43	4214.84	9.32	168.04	30.10	61.47	14 2 58	3614.8	5.43	161.40
110.00	22 39 26	2203.70	-33.13	36.66	37.40	98.96	23 16 9	1603.7	-31.54	27.80
110.00	13 43 14	4056.63	12.54	154.12	28.18	57.94	14 50 50	3456.6	8.21	147.69

DIFFERENTIAL CORRECTIONS
TDE-2.4149 TRA 7.2079 TC3-5.3855 BAU 1.9336
RDE .9147 RRA -.6548 RC3 .6937 FAU .33603
FDE-6.8179 FRA16.5274 FC-10.9215 BSP 35105
BDE 2.5823 BRA 7.2376 BC3 5.4299 FSP 7268

MID-COURSE EXECUTION ACCURACY
SGT10322.4 SGR 1452.2 SG3 2015.8
RRT -.8620 RRF -.8860 RTF .9963
SGB10424.0 R23 .0450 R13 -.9967
SG110398.4 SG2 730.7 THA 173.05

ORBIT DETERMINATION ACCURACY
ST 3657.4 SR 1040.5 SS 3082.0
CRT -.8635 CRS .9105 CST -.9947
LSA 4865.4 MSA 534.8 SSA 13.4
EL1 3768.3 EL2 509.4 ALF 165.94

LAUNCH DATE OCT 2 1964 FLIGHT TIME 374.00 ARRIVAL DATE OCT 11 1965

HELIOCENTRIC CONIC DISTANCE 849.953 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 32.496 GAL -9.03 AZL 88.67 HCA 266.50 SMA 185.11 ECC .24561 INC 1.3344 V1 29.762
RP 215.88 LAP -1.33 LOP 275.33 VP 22.640 GAP -10.57 AZP 90.08 TAL 311.23 TAP 217.73 RCA 139.65 APO 230.58 V2 25.442
RC 287.127 GL 8.24 GP 6.99 ZAL 152.05 ZAP 55.19 ETS 184.54 ZAE 85.42 ETE 179.69 ZAC 88.73 ETC 260.00 CLP 54.89

PLANETOCENTRIC CONIC

C3 27.177 VHL 5.213 DLA 14.65 RAL 166.67 RAD 6568.1 VEL 12.188 PTH 2.19 VHP 3.836 DPA 19.60 RAP 155.65 ECC 1.4473

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 46 30	2762.58	-28.03	79.10	38.82	94.17	20 32 33	2162.6	-27.16	70.54
90.00	11 40 5	4459.73	8.32	186.57	31.45	62.84	12 54 25	3859.7	4.61	179.86
100.00	21 15 43	2474.85	-29.44	57.80	38.69	95.42	21 56 58	1874.9	-28.38	49.16
100.00	12 53 33	4222.69	9.57	168.48	30.79	61.55	14 3 56	3622.7	5.70	161.83
110.00	22 41 34	2206.24	-33.15	36.86	38.14	98.84	23 18 20	1606.2	-31.58	27.99
110.00	13 44 12	4064.07	12.80	154.53	28.87	58.03	14 51 56	3464.1	8.49	148.09

DIFFERENTIAL CORRECTIONS
TDE-2.5190 TRA 7.4675 TC3-5.4157 BAU 1.9824
RDE .9145 RRA -.6333 RC3 .6644 FAU .32180
FDE-6.6454 FRA15.9872 FC-10.2512 BSP 36012
BDE 2.6799 BRA 7.4943 BC3 5.4563 FSP 6977

MID-COURSE EXECUTION ACCURACY
SGT10560.0 SGR 1416.9 SG3 1927.0
RRT -.8553 RRF -.8800 RTF .9963
SGB10654.7 R23 .0461 R13 -.9967
SG110629.7 SG2 729.4 THA 173.42

ORBIT DETERMINATION ACCURACY
ST 3764.4 SR 1028.2 SS 3022.0
CRT -.8617 CRS .9092 CST -.9947
LSA 4906.6 MSA 534.9 SSA 13.3
EL1 3869.2 EL2 507.5 ALF 166.52

LAUNCH DATE OCT 2 1964 FLIGHT TIME 376.00 ARRIVAL DATE OCT 13 1965

HELIOCENTRIC CONIC DISTANCE 853.983 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 32.498 GAL -9.15 AZL 88.64 HCA 267.67 SMA 185.15 ECC .24694 INC 1.3588 V1 29.762
RP 215.54 LAP -1.36 LOP 276.50 VP 22.686 GAP -10.78 AZP 90.06 TAL 310.78 TAP 218.45 RCA 139.43 APO 230.87 V2 25.480
RC 288.329 GL 8.31 GP 6.86 ZAL 152.41 ZAP 53.90 ETS 184.68 ZAE 83.87 ETE 179.91 ZAC 88.58 ETC 260.03 CLP 53.59

PLANETOCENTRIC CONIC

C3 27.749 VHL 5.268 DLA 14.56 RAL 167.07 RAD 6568.1 VEL 12.212 PTH 2.19 VHP 3.911 DPA 19.52 RAP 155.47 ECC 1.4567

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 48 57	2764.38	-28.04	79.23	39.58	94.10	20 35 1	2164.4	-27.18	70.67
90.00	11 40 46	4468.30	8.59	187.06	32.16	62.91	12 55 17	3868.3	4.89	180.34
100.00	21 18 6	2476.88	-29.45	57.95	39.44	95.34	21 59 23	1876.9	-28.40	49.30
100.00	12 54 21	4231.03	9.84	168.95	31.49	61.63	14 4 52	3631.0	5.98	162.30
110.00	22 43 48	2208.72	-33.18	37.05	38.90	98.74	23 20 37	1608.7	-31.62	28.17
110.00	13 45 8	4071.96	13.09	154.96	29.57	58.14	14 53 0	3472.0	8.78	148.51

DIFFERENTIAL CORRECTIONS
TDE-2.6260 TRA 7.7284 TC3-5.4381 BAU 2.0312
RDE .9148 RRA -.6126 RC3 .6363 FAU .30792
FDE-6.4767 FRA15.4531 FC3-9.6068 BSP 36864
BDE 2.7808 BRA 7.7526 BC3 5.4752 FSP 6687

MID-COURSE EXECUTION ACCURACY
SGT10789.3 SGR 1383.2 SG3 1840.2
RRT -.8484 RRF -.8740 RTF .9962
SGB10877.6 R23 .0472 R13 -.9966
SG110853.2 SG2 727.9 THA 173.76

ORBIT DETERMINATION ACCURACY
ST 3869.9 SR 1016.4 SS 2962.3
CRT -.8602 CRS .9080 CST -.9947
LSA 4949.6 MSA 534.6 SSA 13.1
EL1 3969.1 EL2 505.4 ALF 167.06

LAUNCH DATE OCT 2 1964 FLIGHT TIME 378.00 ARRIVAL DATE OCT 15 1965

HELIOCENTRIC CONIC DISTANCE 858.011 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 32.501 GAL -9.26 AZL 88.62 HCA 268.84 SMA 185.19 ECC .24834 INC 1.3833 V1 29.762
RP 215.21 LAP -1.38 LOP 277.67 VP 22.731 GAP -10.99 AZP 90.03 TAL 310.32 TAP 219.16 RCA 139.20 APO 231.18 V2 25.517
RC 289.516 GL 8.36 GP 6.73 ZAL 152.78 ZAP 52.64 ETS 184.82 ZAE 82.37 ETE 180.11 ZAC 88.44 ETC 260.04 CLP 52.34

PLANETOCENTRIC CONIC

C3 28.355 VHL 5.325 DLA 14.45 RAL 167.47 RAD 6568.1 VEL 12.236 PTH 2.20 VHP 3.988 DPA 19.43 RAP 155.33 ECC 1.4666

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 51 30	2766.08	-28.05	79.35	40.35	94.04	20 37 36	2166.1	-27.19	70.79
90.00	11 41 29	4477.37	8.87	187.58	32.88	63.00	12 56 6	3877.4	5.18	180.85
100.00	21 20 35	2478.81	-29.47	58.09	40.21	95.27	22 1 53	1878.8	-28.42	49.44
100.00	12 55 5	4239.86	10.13	169.45	32.21	61.72	14 5 45	3639.9	6.27	162.79
110.00	22 46 7	2211.15	-33.21	37.23	39.68	98.63	23 22 58	1611.1	-31.66	28.35
110.00	13 46 2	4080.29	13.39	155.42	30.29	58.25	14 54 2	3480.3	9.09	148.96

DIFFERENTIAL CORRECTIONS
TDE-2.7337 TRA 7.9919 TC3-5.4496 BAU 2.0787
RDE .9153 RRA -.5929 RC3 .6090 FAU .29417
FDE-6.3065 FRA14.9284 FC3-8.9818 BSP 37707
BDE 2.8829 BRA 8.0139 BC3 5.4835 FSP 6404

MID-COURSE EXECUTION ACCURACY
SGT11008.9 SGR 1350.8 SG3 1755.2
RRT -.8414 RRF -.8679 RTF .9961
SGB11091.5 R23 .0483 R13 -.9965
SG111067.7 SG2 726.2 THA 174.08

ORBIT DETERMINATION ACCURACY
ST 3972.4 SR 1004.7 SS 2901.5
CRT -.8586 CRS .9070 CST -.9946
LSA 4992.3 MSA 534.1 SSA 13.0
EL1 4066.5 EL2 503.1 ALF 167.55

LAUNCH DATE OCT 2 1964 FLIGHT TIME 380.00 ARRIVAL DATE OCT 17 1965

HELIOCENTRIC CONIC DISTANCE 862.038 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 32.503 GAL -9.39 AZL 88.59 HCA 270.01 SMA 185.24 ECC .24981 INC 1.4079 V1 29.762
RP 214.88 LAP -1.41 LOP 278.84 VP 22.776 GAP -11.20 AZP 90.00 TAL 309.85 TAP 219.86 RCA 138.96 APO 231.51 V2 25.554
RC 290.691 GL 8.41 GP 6.61 ZAL 153.16 ZAP 51.43 ETS 184.95 ZAE 80.89 ETE 180.29 ZAC 88.31 ETC 260.05 CLP 51.12

PLANETOCENTRIC CONIC

C3 28.995 VHL 5.385 DLA 14.34 RAL 167.88 RAD 6568.2 VEL 12.263 PTH 2.21 VHP 4.069 DPA 19.33 RAP 155.24 ECC 1.4772

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 54 9	2767.67	-28.06	79.47	41.13	93.99	20 40 17	2167.7	-27.21	70.90
90.00	11 42 6	4486.94	9.16	188.13	33.63	63.09	12 56 53	3886.9	5.48	181.39
100.00	21 23 9	2480.66	-29.48	58.23	41.00	95.20	22 4 30	1880.7	-28.45	49.58
100.00	12 55 47	4249.17	10.43	169.98	32.96	61.83	14 6 36	3649.2	6.58	163.31
110.00	22 48 31	2213.53	-33.23	37.41	40.47	98.52	23 25 25	1613.5	-31.70	28.52
110.00	13 46 54	4089.08	13.70	155.91	31.03	58.37	14 55 3	3489.1	9.42	149.43

DIFFERENTIAL CORRECTIONS
TDE-2.8442 TRA 8.2580 TC3-5.4531 BAU 2.1259
RDE .9163 RRA -.5741 RC3 .5829 FAU .28077
FDE-6.1402 FRA14.4121 FC3-8.3832 BSP 38512
BDE 2.9882 BRA 8.2779 BC3 5.4842 FSP 6125

MID-COURSE EXECUTION ACCURACY
SGT11220.6 SGR 1319.9 SG3 1672.5
RRT -.8342 RRF -.8617 RTF .9960
SGB11298.0 R23 .0495 R13 -.9964
SG111274.7 SG2 724.3 THA 174.37

ORBIT DETERMINATION ACCURACY
ST 4073.4 SR 993.3 SS 2840.9
CRT -.8572 CRS .9060 CST -.9946
LSA 5036.5 MSA 533.2 SSA 12.9
EL1 4162.8 EL2 500.5 ALF 168.02

LAUNCH DATE OCT 2 1964 FLIGHT TIME 382.00 ARRIVAL DATE OCT 19 1965

HELIOCENTRIC CONIC DISTANCE 866.062 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 32.506 GAL -9.52 AZL 88.57 HCA 271.18 SMA 185.28 ECC .25136 INC 1.4325 V1 29.762
RP 214.56 LAP -1.43 LOP 280.02 VP 22.821 GAP -11.42 AZP 89.97 TAL 309.36 TAP 220.54 RCA 138.71 APO 231.85 V2 25.590
RC 291.851 GL 8.46 GP 6.48 ZAL 153.54 ZAP 50.25 ETS 185.08 ZAE 79.46 ETE 180.47 ZAC 88.18 ETC 260.05 CLP 49.94

PLANETOCENTRIC CONIC

C3 29.673 VHL 5.447 DLA 14.22 RAL 168.30 RAD 6568.2 VEL 12.290 PTH 2.21 VHP 4.152 DPA 19.22 RAP 155.19 ECC 1.4883

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 56 55	2769.16	-28.07	79.58	41.94	93.93	20 43 4	2169.2	-27.22	71.01
90.00	11 42 40	4497.02	9.47	188.71	34.39	63.19	12 57 37	3897.0	5.80	181.95
100.00	21 25 49	2482.43	-29.49	58.36	41.81	95.13	22 7 12	1882.4	-28.47	49.70
100.00	12 56 27	4258.98	10.74	170.54	33.72	61.94	14 7 26	3659.0	6.90	163.85
110.00	22 51 1	2215.87	-33.25	37.59	41.29	98.42	23 27 56	1615.9	-31.73	28.69
110.00	13 47 45	4098.30	14.03	156.42	31.79	58.50	14 56 3	3498.3	9.76	149.93

DIFFERENTIAL CORRECTIONS
TDE-2.9564 TRA 8.5273 TC3-5.4481 BAU 2.1725
RDE .9176 RRA -.5562 RC3 .5577 FAU .26765
FDE-5.9741 FRA13.9062 FC3-7.8089 BSP 39309
BDE 3.0955 BRA 8.5454 BC3 5.4766 FSP 5854

MID-COURSE EXECUTION ACCURACY
SGT11424.1 SGR 1290.4 SG3 1592.1
RRT -.8271 RRF -.8555 RTF .9959
SGB11496.8 R23 .0507 R13 -.9962
SG111474.1 SG2 722.1 THA 174.64

ORBIT DETERMINATION ACCURACY
ST 4172.1 SR 982.2 SS 2779.7
CRT -.8559 CRS .9052 CST -.9945
LSA 5080.8 MSA 532.0 SSA 12.8
EL1 4257.1 EL2 497.8 ALF 168.45

LAUNCH DATE OCT 2 1964 FLIGHT TIME 384.00 ARRIVAL DATE OCT 21 1965

HELIOCENTRIC CONIC DISTANCE 870.083 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 32.509 GAL -9.65 AZL 88.54 HCA 272.36 SMA 185.33 ECC .25298 INC 1.4573 V1 29.762
RP 214.24 LAP -1.46 LOP 281.20 VP 22.866 GAP -11.63 AZP 89.94 TAL 308.85 TAP 221.21 RCA 138.45 APO 232.22 V2 25.626
RC 292.998 GL 8.50 GP 6.36 ZAL 153.94 ZAP 49.11 ETS 185.19 ZAE 78.05 ETE 180.64 ZAC 88.07 ETC 260.04 CLP 48.80

PLANETOCENTRIC CONIC

C3 30.390 VHL 5.513 DLA 14.09 RAL 168.72 RAD 6568.2 VEL 12.319 PTH 2.22 VHP 4.238 DPA 19.09 RAP 155.18 ECC 1.5001

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 59 46	2770.56	-28.07	79.68	42.76	93.88	20 45 56	2170.6	-27.24	71.11
90.00	11 43 12	4507.58	9.80	189.31	35.17	63.30	12 58 19	3907.6	6.14	182.55
100.00	21 28 35	2484.12	-29.50	58.48	42.63	95.07	22 9 59	1884.1	-28.48	49.83
100.00	12 57 4	4269.25	11.07	171.12	34.50	62.05	14 8 13	3669.3	7.25	164.42
110.00	22 53 35	2218.17	-33.28	37.77	42.12	98.32	23 30 33	1618.2	-31.77	28.86
110.00	13 48 33	4107.97	14.37	156.96	32.58	58.65	14 57 1	3508.0	10.12	150.45

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-3.0709 TRA 8.8000 TC3-5.4351 BAU 2.2188 SGT11619.7 SGR 1262.3 SG3 1514.0 ST 4268.8 SR 971.3 SS 2718.4
RDE .9193 RRA -.5394 RC3 .5337 FAU .25487 RRT -.8199 RRF -.8494 RTF .9958 CRT -.8546 CRS .9045 CST -.9944
FDE-5.8105 FRA13.4100 FC3-7.2607 BSP 40070 SGB11688.1 R23 .0520 R13 -.9961 LSA 5125.8 MSA 530.5 SSA 12.8
BDE 3.2055 BRA 8.8165 BC3 5.4612 FSP 5590 SG111665.9 SG2 719.7 THA 174.89 EL1 4349.8 EL2 494.9 ALF 168.85

LAUNCH DATE OCT 2 1964 FLIGHT TIME 386.00 ARRIVAL DATE OCT 23 1965

HELIOCENTRIC CONIC DISTANCE 874.100 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 32.512 GAL -9.79 AZL 88.52 HCA 273.55 SMA 185.38 ECC .25468 INC 1.4821 V1 29.762
RP 213.93 LAP -1.48 LOP 282.38 VP 22.910 GAP -11.85 AZP 89.91 TAL 308.33 TAP 221.87 RCA 138.17 APO 232.59 V2 25.662
RC 294.131 GL 8.54 GP 6.24 ZAL 154.35 ZAP 48.00 ETS 185.30 ZAE 76.68 ETE 180.80 ZAC 87.97 ETC 260.03 CLP 47.69

PLANETOCENTRIC CONIC

C3 31.147 VHL 5.581 DLA 13.95 RAL 169.15 RAD 6568.2 VEL 12.350 PTH 2.23 VHP 4.327 DPA 18.96 RAP 155.21 ECC 1.5126

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 2 43	2771.88	-28.08	79.77	43.60	93.83	20 48 55	2171.9	-27.25	71.21
90.00	11 43 40	4518.63	10.13	189.95	35.97	63.42	12 58 59	3918.6	6.48	183.17
100.00	21 31 26	2485.75	-29.51	58.60	43.48	95.00	22 12 52	1885.8	-28.50	49.94
100.00	12 57 38	4279.99	11.41	171.74	35.31	62.18	14 8 58	3680.0	7.60	165.02
110.00	22 56 14	2220.44	-33.30	37.94	42.96	98.22	23 33 14	1620.4	-31.80	29.03
110.00	13 49 20	4118.07	14.73	157.53	33.38	58.80	14 57 58	3518.1	10.49	150.99

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-3.1884 TRA 9.0761 TC3-5.4149 BAU 2.2649 SGT11807.7 SGR 1235.6 SG3 1438.3 ST 4363.9 SR 960.7 SS 2657.1
RDE .9215 RRA -.5234 RC3 .5107 FAU .24248 RRT -.8128 RRF -.8433 RTF .9956 CRT -.8535 CRS .9040 CST -.9943
FDE-5.6498 FRA12.9229 FC3-6.7396 BSP 40805 SGB11872.2 R23 .0533 R13 -.9959 LSA 5171.7 MSA 528.8 SSA 12.7
BDE 3.3189 BRA 9.0912 BC3 5.4390 FSP 5331 SG111850.5 SG2 717.1 THA 175.12 EL1 4441.2 EL2 491.8 ALF 169.22

LAUNCH DATE OCT 2 1964 FLIGHT TIME 388.00 ARRIVAL DATE OCT 25 1965

HELIOCENTRIC CONIC DISTANCE 878.113 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 32.515 GAL -9.94 AZL 88.49 HCA 274.73 SMA 185.43 ECC .25646 INC 1.5071 V1 29.762
RP 213.62 LAP -1.50 LOP 283.57 VP 22.953 GAP -12.06 AZP 89.88 TAL 307.79 TAP 222.52 RCA 137.88 APO 232.99 V2 25.697
RC 295.251 GL 8.57 GP 6.13 ZAL 154.76 ZAP 46.93 ETS 185.41 ZAE 75.34 ETE 180.96 ZAC 87.87 ETC 260.01 CLP 46.62

PLANETOCENTRIC CONIC

C3 31.949 VHL 5.652 DLA 13.80 RAL 169.59 RAD 6568.3 VEL 12.382 PTH 2.24 VHP 4.419 DPA 18.81 RAP 155.27 ECC 1.5258

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 5 45	2773.13	-28.08	79.87	44.46	93.79	20 51 58	2173.1	-27.26	71.30
90.00	11 44 6	4530.17	10.48	190.62	36.80	63.55	12 59 36	3930.2	6.85	183.83
100.00	21 34 23	2487.32	-29.52	58.72	44.34	94.94	22 15 50	1887.3	-28.52	50.06
100.00	12 58 10	4291.20	11.77	172.38	36.13	62.32	14 9 41	3691.2	7.97	165.65
110.00	22 58 57	2222.69	-33.32	38.11	43.83	98.12	23 36 0	1622.7	-31.84	29.20
110.00	13 50 5	4128.60	15.10	158.12	34.20	58.96	14 58 53	3528.6	10.88	151.56

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-3.3086 TRA 9.3564 TC3-5.3875 BAU 2.3106 SGT11988.3 SGR 1210.2 SG3 1364.9 ST 4457.1 SR 950.4 SS 2595.7
RDE .9242 RRA -.5085 RC3 .4888 FAU .23041 RRT -.8058 RRF -.8374 RTF .9955 CRT -.8526 CRS .9037 CST -.9942
FDE-5.4913 FRA12.4463 FC3-6.2434 BSP 41518 SGB12049.2 R23 .0547 R13 -.9957 LSA 5218.1 MSA 526.7 SSA 12.6
BDE 3.4353 BRA 9.3702 BC3 5.4096 FSP 5077 SG112028.0 SG2 714.3 THA 175.33 EL1 4531.0 EL2 488.6 ALF 169.57

LAUNCH DATE OCT 2 1964 FLIGHT TIME 390.00 ARRIVAL DATE OCT 27 1965

HELIOCENTRIC CONIC DISTANCE 882.121 EARTH TO MARS

RL 149.71 LAL -.00 LOL 8.83 VL 32.518 GAL -10.09 AZL 88.47 HCA 275.92 SMA 185.49 ECC .25833 INC 1.5322 V1 29.762
RP 213.31 LAP -1.52 LOP 284.76 VP 22.996 GAP -12.28 AZP 89.84 TAL 307.23 TAP 223.15 RCA 137.57 APO 233.41 V2 25.731
RC 296.356 GL 8.60 GP 6.02 ZAL 155.18 ZAP 45.89 ETS 185.51 ZAE 74.04 ETE 181.10 ZAC 87.79 ETC 259.98 CLP 45.58

PLANETOCENTRIC CONIC

C3 32.797 VHL 5.727 DLA 13.64 RAL 170.03 RAD 6568.3 VEL 12.416 PTH 2.24 VHP 4.514 DPA 18.65 RAP 155.38 ECC 1.5398

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 8 53	2774.31	-28.09	79.95	45.34	93.74	20 55 8	2174.3	-27.27	71.38
90.00	11 44 29	4542.18	10.85	191.31	37.64	63.68	13 0 12	3942.2	7.23	184.51
100.00	21 37 24	2488.84	-29.53	58.83	45.21	94.88	22 18 53	1888.8	-28.54	50.17
100.00	12 58 40	4302.88	12.13	173.05	36.97	62.47	14 10 22	3702.9	8.35	166.30
110.00	23 1 45	2224.92	-33.34	38.28	44.71	98.02	23 38 50	1624.9	-31.87	29.36
110.00	13 50 48	4139.57	15.49	158.74	35.05	59.14	14 59 48	3539.6	11.28	152.16

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-3.4325 TRA 9.6415 TC3-5.3542 BAU 2.3566 SGT12162.7 SGR 1186.2 SG3 1294.1 ST 4549.1 SR 940.3 SS 2534.3
RDE .9273 RRA -.4946 RC3 .4679 FAU .21873 RRT -.7989 RRF -.8317 RTF .9953 CRT -.8518 CRS .9035 CST -.9941
FDE-5.3357 FRA11.9795 FC3-5.7739 BSP 42193 SGB12220.4 R23 .0562 R13 -.9955 LSA 5265.6 MSA 524.4 SSA 12.5
BDE 3.5556 BRA 9.6541 BC3 5.3746 FSP 4831 SG112199.7 SG2 711.3 THA 175.53 EL1 4619.9 EL2 485.1 ALF 169.90

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LAUNCH DATE  OCT  2 1964                          FLIGHT TIME 392.00                                ARRIVAL DATE  OCT 29 1965

  HELIOCENTRIC CONIC                                  DISTANCE 886.122                                   EARTH  TO  MARS
   RL  149.71 LAL   -.00 LOL   8.83 VL  32.522 GAL -10.24 AZL  88.44 HCA 277.11 SMA 185.55 ECC .26029 INC 1.5575 V1  29.762
   RP  213.01 LAP  -1.55 LOP 285.95 VP  23.039 GAP -12.50 AZP  89.81 TAL 306.66 TAP 223.77 RCA 137.25 APO 233.84 V2  25.765
   RC 297.448 GL    8.62 GP    5.91 ZAL 155.61 ZAP  44.89 ETS 185.60 ZAE  72.76 ETE 181.24 ZAC  87.72 ETC 259.95 CLP  44.58
  PLANETOCENTRIC CONIC
   C3  33.694 VHL  5.805 DLA  13.48 RAL 170.48 RAD 6568.3 VEL 12.453 PTH   2.25 VHP  4.612 DPA  18.48 RAP 155.52 ECC 1.5545
   LNCH AZMTH  LNCH TIME  L-I TIME    INJ LAT    INJ LONG  INJ RT ASC  INJ AZMTH  INJ TIME  PO CST TIM  INJ 2 LAT INJ 2 LONG
      90.00    20 12  6   2775.43     -28.09      80.03      46.23      93.70   20 58 22    2175.4     -27.28      71.46
      90.00    11 44 50   4554.67      11.22     192.04      38.50      63.83   13  0 45    3954.7       7.62     185.22
     100.00    21 40 31   2490.32     -29.54      58.94      46.11      94.83   22 22  1    1890.3     -28.55      50.27
     100.00    12 59  7   4315.01      12.52     173.75      37.84      62.63   14 11  2    3715.0       8.75     166.99
     110.00    23  4 38   2227.13     -33.36      38.45      45.61      97.92   23 41 45    1627.1     -31.91      29.53
     110.00    13 51 30   4150.96      15.88     159.38      35.91      59.33   15  0 40    3551.0      11.69     152.78
  DIFFERENTIAL CORRECTIONS                          MID-COURSE EXECUTION ACCURACY          ORBIT DETERMINATION ACCURACY
   TDE-3.5598 TRA 9.9304 TC3-5.3152 BAU 2.4028      SGT12329.8 SGR 1163.5 SG3 1225.7       ST  4639.5 SR   930.6 SS  2472.9
   RDE  .9309 RRA -.4816 RC3  .4480 FAU .20746      RRT -.7922 RRF -.8262 RTF  .9951        CRT -.8512 CRS  .9035 CST -.9940
   FDE-5.1832 FRA11.5215 FC3-5.3306 BSP  42828      SGB12384.6 R23  .0578 R13 -.9953       LSA 5313.6 MSA  521.8 SSA   12.5
   BDE 3.6795 BRA 9.9421 BC3 5.3341 FSP   4589      SG112364.3 SG2  708.0 THA 175.71       EL1 4707.4 EL2  481.4 ALF 170.21

LAUNCH DATE  OCT  2 1964                          FLIGHT TIME 394.00                                ARRIVAL DATE  OCT 31 1965

  HELIOCENTRIC CONIC                                  DISTANCE 890.116                                   EARTH  TO  MARS
   RL  149.71 LAL   -.00 LOL   8.83 VL  32.525 GAL -10.41 AZL  88.42 HCA 278.31 SMA 185.61 ECC .26233 INC 1.5830 V1  29.762
   RP  212.72 LAP  -1.57 LOP 287.15 VP  23.082 GAP -12.72 AZP  89.77 TAL 306.06 TAP 224.37 RCA 136.92 APO 234.30 V2  25.798
   RC 298.526 GL    8.64 GP    5.81 ZAL 156.05 ZAP  43.91 ETS 185.69 ZAE  71.51 ETE 181.37 ZAC  87.65 ETC 259.91 CLP  43.60
  PLANETOCENTRIC CONIC
   C3  34.643 VHL  5.886 DLA  13.31 RAL 170.93 RAD 6568.4 VEL 12.491 PTH   2.26 VHP  4.713 DPA  18.30 RAP 155.69 ECC 1.5701
   LNCH AZMTH  LNCH TIME  L-I TIME    INJ LAT    INJ LONG  INJ RT ASC  INJ AZMTH  INJ TIME  PO CST TIM  INJ 2 LAT INJ 2 LONG
      90.00    20 15 25   2776.49     -28.10      80.11      47.14      93.67   21  1 41    2176.5     -27.29      71.54
      90.00    11 45  8   4567.62      11.61     192.79      39.39      63.99   13  1 16    3967.6       8.02     185.95
     100.00    21 43 42   2491.75     -29.54      59.05      47.02      94.77   22 25 14    1891.8     -28.57      50.38
     100.00    12 59 32   4327.59      12.91     174.48      38.72      62.80   14 11 40    3727.6       9.16     167.69
     110.00    23  7 34   2229.33     -33.38      38.62      46.52      97.82   23 44 44    1629.3     -31.94      29.69
     110.00    13 52  9   4162.77      16.29     160.05      36.80      59.52   15  1 32    3562.8      12.12     153.42
  DIFFERENTIAL CORRECTIONS                          MID-COURSE EXECUTION ACCURACY          ORBIT DETERMINATION ACCURACY
   TDE-3.6906 TRA10.2247 TC3-5.2707 BAU 2.4491      SGT12490.6 SGR 1142.0 SG3 1159.6       ST  4728.3 SR   921.1 SS  2411.4
   RDE  .9350 RRA -.4696 RC3  .4292 FAU .19656      RRT -.7858 RRF -.8210 RTF  .9948        CRT -.8507 CRS  .9037 CST -.9938
   FDE-5.0326 FRA11.0735 FC3-4.9120 BSP  43433      SGB12542.7 R23  .0594 R13 -.9951       LSA 5361.9 MSA  519.0 SSA   12.4
   BDE 3.8071 BRA10.2355 BC3 5.2881 FSP   4354      SG112522.9 SG2  704.5 THA 175.88       EL1 4793.4 EL2  477.6 ALF 170.49

LAUNCH DATE  OCT  2 1964                          FLIGHT TIME 396.00                                ARRIVAL DATE  NOV  2 1965

  HELIOCENTRIC CONIC                                  DISTANCE 894.102                                   EARTH  TO  MARS
   RL  149.71 LAL   -.00 LOL   8.83 VL  32.529 GAL -10.58 AZL  88.39 HCA 279.51 SMA 185.67 ECC .26448 INC 1.6088 V1  29.762
   RP  212.43 LAP  -1.59 LOP 288.35 VP  23.123 GAP -12.95 AZP  89.73 TAL 305.46 TAP 224.97 RCA 136.56 APO 234.77 V2  25.831
   RC 299.592 GL    8.65 GP    5.70 ZAL 156.50 ZAP  42.97 ETS 185.78 ZAE  70.30 ETE 181.50 ZAC  87.59 ETC 259.86 CLP  42.66
  PLANETOCENTRIC CONIC
   C3  35.647 VHL  5.971 DLA  13.13 RAL 171.39 RAD 6568.4 VEL 12.531 PTH   2.27 VHP  4.817 DPA  18.11 RAP 155.90 ECC 1.5867
   LNCH AZMTH  LNCH TIME  L-I TIME    INJ LAT    INJ LONG  INJ RT ASC  INJ AZMTH  INJ TIME  PO CST TIM  INJ 2 LAT INJ 2 LONG
      90.00    20 18 48   2777.52     -28.10      80.19      48.07      93.63   21  5  6    2177.5     -27.30      71.61
      90.00    11 45 24   4581.02      12.01     193.57      40.29      64.16   13  1 45    3981.0       8.44     186.72
     100.00    21 46 59   2493.16     -29.55      59.15      47.95      94.72   22 28 32    1893.2     -28.58      50.48
     100.00    12 59 55   4340.62      13.31     175.24      39.63      62.99   14 12 16    3740.6       9.58     168.43
     110.00    23 10 35   2231.54     -33.40      38.79      47.46      97.73   23 47 47    1631.5     -31.97      29.85
     110.00    13 52 48   4175.00      16.71     160.75      37.71      59.74   15  2 23    3575.0      12.57     154.09
  DIFFERENTIAL CORRECTIONS                          MID-COURSE EXECUTION ACCURACY          ORBIT DETERMINATION ACCURACY
   TDE-3.8261 TRA10.5245 TC3-5.2213 BAU 2.4960      SGT12645.5 SGR 1121.8 SG3 1095.9       ST  4816.2 SR   911.9 SS  2350.1
   RDE  .9396 RRA -.4586 RC3  .4112 FAU .18603      RRT -.7796 RRF -.8161 RTF  .9945        CRT -.8504 CRS  .9041 CST -.9937
   FDE-4.8856 FRA10.6342 FC3-4.5180 BSP  43990      SGB12695.1 R23  .0612 R13 -.9948       LSA 5411.5 MSA  515.8 SSA   12.3
   BDE 3.9397 BRA10.5345 BC3 5.2375 FSP   4123      SG112675.8 SG2  700.8 THA 176.03       EL1 4878.9 EL2  473.6 ALF 170.76

LAUNCH DATE  OCT  2 1964                          FLIGHT TIME 398.00                                ARRIVAL DATE  NOV  4 1965

  HELIOCENTRIC CONIC                                  DISTANCE 898.079                                   EARTH  TO  MARS
   RL  149.71 LAL   -.00 LOL   8.83 VL  32.533 GAL -10.76 AZL  88.37 HCA 280.71 SMA 185.73 ECC .26672 INC 1.6348 V1  29.762
   RP  212.15 LAP  -1.61 LOP 289.55 VP  23.165 GAP -13.18 AZP  89.70 TAL 304.83 TAP 225.54 RCA 136.19 APO 235.27 V2  25.863
   RC 300.645 GL    8.66 GP    5.60 ZAL 156.95 ZAP  42.05 ETS 185.86 ZAE  69.11 ETE 181.62 ZAC  87.54 ETC 259.81 CLP  41.75
  PLANETOCENTRIC CONIC
   C3  36.710 VHL  6.059 DLA  12.94 RAL 171.85 RAD 6568.4 VEL 12.573 PTH   2.28 VHP  4.924 DPA  17.91 RAP 156.15 ECC 1.6042
   LNCH AZMTH  LNCH TIME  L-I TIME    INJ LAT    INJ LONG  INJ RT ASC  INJ AZMTH  INJ TIME  PO CST TIM  INJ 2 LAT INJ 2 LONG
      90.00    20 22 16   2778.51     -28.11      80.26      49.02      93.59   21  8 35    2178.5     -27.31      71.68
      90.00    11 45 38   4594.88      12.42     194.39      41.22      64.35   13  2 13    3994.9       8.87     187.51
     100.00    21 50 19   2494.54     -29.56      59.25      48.90      94.66   22 31 54    1894.5     -28.60      50.58
     100.00    13  0 16   4354.08      13.73     176.02      40.56      63.18   14 12 50    3754.1      10.02     169.19
     110.00    23 13 40   2233.74     -33.42      38.96      48.41      97.63   23 50 54    1633.7     -32.01      30.02
     110.00    13 53 25   4187.65      17.14     161.48      38.64      59.96   15  3 12    3587.6      13.02     154.79
  DIFFERENTIAL CORRECTIONS                          MID-COURSE EXECUTION ACCURACY          ORBIT DETERMINATION ACCURACY
   TDE-3.9660 TRA10.8304 TC3-5.1671 BAU 2.5433      SGT12794.6 SGR 1102.6 SG3 1034.6       ST  4903.0 SR   903.0 SS  2288.8
   RDE  .9447 RRA -.4487 RC3  .3942 FAU .17586      RRT -.7738 RRF -.8116 RTF  .9943        CRT -.8504 CRS  .9047 CST -.9935
   FDE-4.7410 FRA10.2046 FC3-4.1473 BSP  44519      SGB12842.0 R23  .0631 R13 -.9945       LSA 5461.8 MSA  512.5 SSA   12.3
   BDE 4.0770 BRA10.8397 BC3 5.1821 FSP   3900      SG112823.1 SG2  696.9 THA 176.17       EL1 4963.4 EL2  469.4 ALF 171.02
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LAUNCH DATE OCT 3 1964 FLIGHT TIME 240.00 ARRIVAL DATE MAY 31 1965

HELIOCENTRIC CONIC DISTANCE 591.742 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 33.102 GAL -9.34 AZL 92.63 HCA 196.16 SMA 195.84 ECC .28368 INC 2.6327 V1 29.771
RP 240.19 LAP .73 LOP 205.96 VP 20.674 GAP 10.10 AZP 87.47 TAL 315.74 TAP 151.91 RCA 140.28 APO 251.40 V2 22.866
RC 166.536 GL -14.86 GP 14.21 ZAL 146.47 ZAP 151.51 ETS 150.92 ZAE 159.90 ETE 44.94 ZAC 101.78 ETC 255.95 CLP 155.04

PLANETOCENTRIC CONIC

C3 34.225 VHL 5.850 DLA -5.74 RAL 155.42 RAD 6568.3 VEL 12.474 PTH 2.26 VHP 6.114 DPA 13.75 RAP 187.53 ECC 1.5633

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 36 24	2168.09	-18.41	38.56	24.33	111.90	22 12 32	1568.1	-15.28	31.28
90.00	8 12 32	5169.89	25.70	231.15	27.95	77.69	9 38 42	4569.9	23.75	223.02
100.00	22 55 1	1914.46	-19.62	19.38	23.81	113.02	23 26 55	1314.5	-16.33	12.13
100.00	9 36 36	4898.76	26.97	210.89	27.63	76.60	10 58 14	4298.8	24.86	202.72
110.00	0 0 58	1720.28	-22.83	3.07	22.23	116.16	0 29 38	1120.3	-19.13	355.89
110.00	10 51 4	4665.70	30.38	192.15	26.59	73.53	12 8 50	4065.7	27.83	183.89

DIFFERENTIAL CORRECTIONS

TDE 1.9119 TRA-4.4741 TC3 1.0064 BAU .5344
RDE .8314 RRA-1.2483 RC3 .5927 FAU .15349
FDE-3.6236 FRA 7.3389 FC3-3.8826 BSP 17772
BDE 2.0848 BRA 4.6450 BC3 1.1680 FSP 2483

MID-COURSE EXECUTION ACCURACY

SGT 4928.2 SGR 1629.0 SG3 798.5
RRT .9657 RRF -.9908 RTF -.9618
SGB 5190.5 R23 -.2144 R13 -.9675
SG1 5174.8 SG2 403.0 THA 17.81

ORBIT DETERMINATION ACCURACY

ST 2291.9 SR 894.0 SS 2197.8
CRT .9821 CRS .9924 CST .9977
LSA 3294.3 MSA 172.0 SSA 21.7
EL1 2455.1 EL2 157.2 ALF 21.05

LAUNCH DATE OCT 3 1964 FLIGHT TIME 242.00 ARRIVAL DATE JUN 2 1965

HELIOCENTRIC CONIC DISTANCE 595.228 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 33.072 GAL -9.23 AZL 92.40 HCA 197.10 SMA 195.25 ECC .28080 INC 2.3972 V1 29.771
RP 239.88 LAP .70 LOP 206.90 VP 20.659 GAP 9.64 AZP 87.71 TAL 315.91 TAP 153.01 RCA 140.43 APO 250.08 V2 22.897
RC 168.857 GL -13.73 GP 13.76 ZAL 146.71 ZAP 151.12 ETS 152.35 ZAE 160.51 ETE 45.24 ZAC 101.40 ETC 255.95 CLP 154.36

PLANETOCENTRIC CONIC

C3 33.103 VHL 5.753 DLA -4.61 RAL 155.64 RAD 6568.3 VEL 12.429 PTH 2.25 VHP 5.974 DPA 13.24 RAP 187.57 ECC 1.5448

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 28 42	2195.30	-19.10	40.26	24.22	111.31	22 5 17	1595.3	-16.03	32.93
90.00	8 22 0	5125.86	25.03	228.10	27.09	76.31	9 47 26	4525.9	22.90	220.08
100.00	22 47 52	1939.88	-20.29	20.98	23.72	112.44	23 20 12	1339.9	-17.07	13.66
100.00	9 45 31	4856.51	26.27	207.94	26.74	75.20	11 6 27	4256.5	23.98	199.89
110.00	23 51 9	1741.78	-23.47	4.41	22.19	115.60	24 20 11	1141.8	-19.83	357.16
110.00	10 58 44	4627.38	29.61	189.44	25.63	72.09	12 15 51	4027.4	26.88	181.32

DIFFERENTIAL CORRECTIONS

TDE 1.8766 TRA-4.4161 TC3 1.0422 BAU .5317
RDE .8074 RRA-1.2039 RC3 .5976 FAU .15902
FDE-3.6788 FRA 7.6310 FC3-4.1588 BSP 17865
BDE 2.0429 BRA 4.5772 BC3 1.2014 FSP 2630

MID-COURSE EXECUTION ACCURACY

SGT 4939.3 SGR 1602.0 SG3 839.7
RRT .9648 RRF -.9896 RTF -.9629
SGB 5192.5 R23 -.2068 R13 -.9683
SG1 5177.0 SG2 401.7 THA 17.48

ORBIT DETERMINATION ACCURACY

ST 2290.3 SR 881.6 SS 2230.6
CRT .9811 CRS .9907 CST .9982
LSA 3311.9 MSA 169.2 SSA 23.5
EL1 2448.9 EL2 159.4 ALF 20.78

LAUNCH DATE OCT 3 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUN 4 1965

HELIOCENTRIC CONIC DISTANCE 598.734 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 33.042 GAL -9.13 AZL 92.18 HCA 198.04 SMA 194.70 ECC .27803 INC 2.1842 V1 29.771
RP 239.58 LAP .68 LOP 207.84 VP 20.646 GAP 9.19 AZP 87.92 TAL 316.08 TAP 154.12 RCA 140.56 APO 248.83 V2 22.928
RC 171.174 GL -12.68 GP 13.37 ZAL 146.88 ZAP 150.67 ETS 153.69 ZAE 161.12 ETE 45.76 ZAC 101.07 ETC 255.95 CLP 153.65

PLANETOCENTRIC CONIC

C3 32.079 VHL 5.664 DLA -3.56 RAL 155.83 RAD 6568.3 VEL 12.388 PTH 2.24 VHP 5.840 DPA 12.79 RAP 187.61 ECC 1.5279

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 21 37	2220.10	-19.70	41.83	24.12	110.76	21 58 37	1620.1	-16.70	34.44
90.00	8 30 39	5085.23	24.34	225.32	26.31	75.07	9 55 24	4485.2	22.06	217.39
100.00	22 41 17	1963.08	-20.88	22.44	23.63	111.89	23 14 0	1363.1	-17.73	15.07
100.00	9 53 39	4817.49	25.56	205.26	25.94	73.96	11 13 57	4217.5	23.12	197.31
110.00	23 45 43	1761.40	-24.04	5.65	22.14	115.07	24 15 4	1161.4	-20.46	358.33
110.00	11 5 43	4591.94	28.85	186.96	24.76	70.81	12 22 15	3991.9	25.96	178.97

DIFFERENTIAL CORRECTIONS

TDE 1.8473 TRA-4.3515 TC3 1.0835 BAU .5324
RDE .7892 RRA-1.1635 RC3 .6059 FAU .16525
FDE-3.7496 FRA 7.9182 FC3-4.4598 BSP 17816
BDE 2.0089 BRA 4.5044 BC3 1.2414 FSP 2760

MID-COURSE EXECUTION ACCURACY

SGT 4944.9 SGR 1580.9 SG3 882.5
RRT .9640 RRF -.9885 RTF -.9640
SGB 5191.5 R23 -.1993 R13 -.9691
SG1 5175.9 SG2 401.7 THA 17.24

ORBIT DETERMINATION ACCURACY

ST 2290.1 SR 873.5 SS 2268.1
CRT .9803 CRS .9890 CST .9986
LSA 3335.1 MSA 167.7 SSA 25.1
EL1 2445.7 EL2 161.7 ALF 20.59

LAUNCH DATE OCT 3 1964 FLIGHT TIME 246.00 ARRIVAL DATE JUN 6 1965

HELIOCENTRIC CONIC DISTANCE 602.258 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 33.014 GAL -9.02 AZL 91.99 HCA 198.98 SMA 194.16 ECC .27536 INC 1.9919 V1 29.771
RP 239.26 LAP .65 LOP 208.79 VP 20.636 GAP 8.74 AZP 88.12 TAL 316.25 TAP 155.23 RCA 140.70 APO 247.63 V2 22.959
RC 173.485 GL -11.72 GP 13.02 ZAL 147.01 ZAP 150.17 ETS 154.93 ZAE 161.73 ETE 46.51 ZAC 100.78 ETC 255.96 CLP 152.92

PLANETOCENTRIC CONIC

C3 31.139 VHL 5.580 DLA -2.59 RAL 156.00 RAD 6568.2 VEL 12.350 PTH 2.23 VHP 5.709 DPA 12.38 RAP 187.65 ECC 1.5125

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 15 2	2242.88	-20.24	43.28	24.02	110.23	21 52 25	1642.9	-17.31	35.84
90.00	8 38 35	5047.51	23.66	222.77	25.59	73.97	10 2 42	4447.5	21.23	214.93
100.00	22 35 10	1984.37	-21.42	23.80	23.54	111.37	23 8 15	1384.4	-18.32	16.37
100.00	10 1 8	4781.24	24.86	202.79	25.20	72.84	11 20 49	4181.2	22.27	194.95
110.00	23 40 39	1779.41	-24.55	6.80	22.10	114.57	24 10 18	1179.4	-21.03	359.42
110.00	11 12 9	4558.97	28.09	184.70	23.97	69.66	12 28 8	3959.0	25.06	176.83

DIFFERENTIAL CORRECTIONS

TDE 1.8141 TRA-4.2898 TC3 1.1182 BAU .5311
RDE .7730 RRA-1.1295 RC3 .6138 FAU .17134
FDE-3.8170 FRA 8.2208 FC3-4.7636 BSP 17862
BDE 1.9719 BRA 4.4360 BC3 1.2756 FSP 2914

MID-COURSE EXECUTION ACCURACY

SGT 4946.4 SGR 1564.3 SG3 926.6
RRT .9631 RRF -.9872 RTF -.9650
SGB 5187.9 R23 -.1919 R13 -.9698
SG1 5172.2 SG2 402.8 THA 17.05

ORBIT DETERMINATION ACCURACY

ST 2284.8 SR 867.0 SS 2303.7
CRT .9792 CRS .9871 CST .9989
LSA 3354.1 MSA 167.7 SSA 26.5
EL1 2438.2 EL2 164.7 ALF 20.48

LAUNCH DATE OCT 3 1964 FLIGHT TIME 248.00 ARRIVAL DATE JUN 8 1965

DISTANCE 605.802

HELIOCENTRIC CONIC

RL 149.67 LAL -.00 LOL 9.82 VL 32.987 GAL -8.92 AZL 91.82 HCA 199.93 SMA 193.65 ECC .27278 INC 1.8161 V1 29.771
RP 238.95 LAP .62 LOP 209.74 VP 20.628 GAP 8.30 AZP 88.29 TAL 316.42 TAP 156.35 RCA 140.83 APO 246.48 V2 22.991
RC 175.790 GL -10.82 GP 12.71 ZAL 147.10 ZAP 149.61 ETS 156.08 ZAE 162.34 ETE 47.49 ZAC 100.52 ETC 255.96 CLP 152.16

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 30.272 VHL 5.502 DLA -1.68 RAL 156.15 RAD 6568.2 VEL 12.314 PTH 2.22 VHP 5.583 DPA 12.02 RAP 187.68 ECC 1.4982

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 8 54	2263.92	-20.73	44.63	23.91	109.73	21 46 38	1663.9	-17.86	37.14
90.00	8 45 55	5012.28	22.98	220.41	24.92	72.98	10 9 27	4412.3	20.43	212.66
100.00	22 29 27	2004.05	-21.90	25.06	23.45	110.87	23 2 51	1404.1	-18.86	17.58
100.00	10 8 2	4747.38	24.16	200.52	24.51	71.84	11 27 9	4147.4	21.45	192.77
110.00	23 35 54	1796.05	-25.02	7.86	22.04	114.09	24 5 50	1196.0	-21.55	.43
110.00	11 18 5	4528.15	27.34	182.61	23.24	68.63	12 33 33	3928.1	24.19	174.86

DIFFERENTIAL CORRECTIONS
TDE 1.7983 TRA-4.2099 TC3 1.1734 BAU .5382
RDE .7622 RRA-1.0973 RC3 .6261 FAU .17837
FDE-3.9047 FRA 8.5143 FC3-5.1012 BSP 17484
BDE 1.9531 BRA 4.3506 BC3 1.3300 FSP 3039

MID-COURSE EXECUTION ACCURACY
SGT 4940.7 SGR 1552.9 SG3 972.6
RRT .9632 RRF -.9859 RTF -.9667
SGB 5179.0 R23 -.1810 R13 -.9712
SG1 5163.6 SG2 399.5 THA 16.95

ORBIT DETERMINATION ACCURACY
ST 2289.0 SR 864.9 SS 2345.5
CRT .9791 CRS .9853 CST .9993
LSA 3385.4 MSA 165.5 SSA 27.8
EL1 2441.4 EL2 164.8 ALF 20.40

LAUNCH DATE OCT 3 1964 FLIGHT TIME 250.00 ARRIVAL DATE JUN 10 1965

DISTANCE 609.360

HELIOCENTRIC CONIC

RL 149.67 LAL -.00 LOL 9.82 VL 32.960 GAL -8.83 AZL 91.66 HCA 200.88 SMA 193.17 ECC .27031 INC 1.6556 V1 29.771
RP 238.63 LAP .59 LOP 210.69 VP 20.622 GAP 7.86 AZP 88.45 TAL 316.58 TAP 157.46 RCA 140.95 APO 245.38 V2 23.024
RC 178.086 GL -9.98 GP 12.44 ZAL 147.16 ZAP 149.01 ETS 157.17 ZAE 162.94 ETE 48.72 ZAC 100.29 ETC 255.96 CLP 151.38

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 29.471 VHL 5.429 DLA -.84 RAL 156.29 RAD 6568.2 VEL 12.282 PTH 2.21 VHP 5.460 DPA 11.70 RAP 187.72 ECC 1.4850

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 3 8	2283.49	-21.18	45.89	23.81	109.25	21 41 12	1683.5	-18.36	38.35
90.00	8 52 44	4979.26	22.30	218.23	24.31	72.08	10 15 43	4379.3	19.64	210.56
100.00	22 24 5	2022.35	-22.34	26.24	23.36	110.40	22 57 48	1422.4	-19.36	18.71
100.00	10 14 27	4715.63	23.47	198.42	23.88	70.94	11 33 3	4115.6	20.65	190.75
110.00	23 31 27	1811.52	-25.45	8.86	21.99	113.64	24 1 38	1211.5	-22.03	1.38
110.00	11 23 36	4499.23	26.61	180.68	22.58	67.70	12 38 35	3899.2	23.35	173.04

DIFFERENTIAL CORRECTIONS
TDE 1.7595 TRA-4.1514 TC3 1.1963 BAU .5337
RDE .7508 RRA-1.0724 RC3 .6354 FAU .18481
FDE-3.9790 FRA 8.8368 FC3-5.4290 BSP 17637
BDE 1.9130 BRA 4.2877 BC3 1.3546 FSP 3209

MID-COURSE EXECUTION ACCURACY
SGT 4933.3 SGR 1544.4 SG3 1020.1
RRT .9618 RRF -.9846 RTF -.9671
SGB 5169.4 R23 -.1758 R13 -.9716
SG1 5153.5 SG2 404.8 THA 16.86

ORBIT DETERMINATION ACCURACY
ST 2275.6 SR 862.3 SS 2382.3
CRT .9778 CRS .9833 CST .9994
LSA 3401.1 MSA 169.5 SSA 28.8
EL1 2427.6 EL2 169.5 ALF 20.43

LAUNCH DATE OCT 3 1964 FLIGHT TIME 252.00 ARRIVAL DATE JUN 12 1965

DISTANCE 612.936

HELIOCENTRIC CONIC

RL 149.67 LAL -.00 LOL 9.82 VL 32.935 GAL -8.74 AZL 91.51 HCA 201.83 SMA 192.71 ECC .26793 INC 1.5081 V1 29.771
RP 238.31 LAP .56 LOP 211.64 VP 20.619 GAP 7.43 AZP 88.60 TAL 316.74 TAP 158.57 RCA 141.07 APO 244.34 V2 23.056
RC 180.373 GL -9.20 GP 12.19 ZAL 147.18 ZAP 148.36 ETS 158.18 ZAE 163.54 ETE 50.20 ZAC 100.08 ETC 255.96 CLP 150.57

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 28.726 VHL 5.360 DLA -.04 RAL 156.40 RAD 6568.2 VEL 12.252 PTH 2.20 VHP 5.342 DPA 11.42 RAP 187.74 ECC 1.4728

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 57 42	2301.78	-21.58	47.08	23.72	108.79	21 36 4	1701.8	-18.82	39.50
90.00	8 59 6	4948.17	21.64	216.19	23.74	71.27	10 21 34	4348.2	18.88	208.60
100.00	22 19 2	2039.45	-22.74	27.35	23.28	109.94	22 53 1	1439.5	-19.82	19.78
100.00	10 20 28	4685.73	22.79	196.45	23.30	70.12	11 38 33	4085.7	19.87	188.87
110.00	23 27 14	1825.96	-25.84	9.80	21.93	113.20	23 57 40	1226.0	-22.47	2.26
110.00	11 28 45	4471.98	25.89	178.89	21.96	66.86	12 43 17	3872.0	22.53	171.34

DIFFERENTIAL CORRECTIONS
TDE 1.7232 TRA-4.0892 TC3 1.2199 BAU .5302
RDE .7417 RRA-1.0507 RC3 .6463 FAU .19158
FDE-4.0593 FRA 9.1683 FC3-5.7737 BSP 17725
BDE 1.8761 BRA 4.2221 BC3 1.3805 FSP 3383

MID-COURSE EXECUTION ACCURACY
SGT 4920.7 SGR 1539.6 SG3 1069.4
RRT .9605 RRF -.9833 RTF -.9676
SGB 5155.9 R23 -.1702 R13 -.9720
SG1 5139.6 SG2 410.1 THA 16.84

ORBIT DETERMINATION ACCURACY
ST 2261.6 SR 861.8 SS 2420.7
CRT .9766 CRS .9813 CST .9996
LSA 3418.5 MSA 173.8 SSA 29.5
EL1 2414.0 EL2 173.7 ALF 20.52

LAUNCH DATE OCT 3 1964 FLIGHT TIME 254.00 ARRIVAL DATE JUN 14 1965

DISTANCE 616.528

HELIOCENTRIC CONIC

RL 149.67 LAL -.00 LOL 9.82 VL 32.911 GAL -8.65 AZL 91.37 HCA 202.79 SMA 192.26 ECC .26564 INC 1.3719 V1 29.771
RP 237.98 LAP .53 LOP 212.60 VP 20.617 GAP 7.00 AZP 88.73 TAL 316.89 TAP 159.68 RCA 141.19 APO 243.34 V2 23.089
RC 182.651 GL -8.46 GP 11.97 ZAL 147.18 ZAP 147.67 ETS 159.13 ZAE 164.13 ETE 51.97 ZAC 99.89 ETC 255.96 CLP 149.74

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 28.032 VHL 5.295 DLA .71 RAL 156.51 RAD 6568.1 VEL 12.223 PTH 2.20 VHP 5.226 DPA 11.17 RAP 187.75 ECC 1.4613

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 52 33	2318.97	-21.96	48.20	23.62	108.34	21 31 12	1719.0	-19.25	40.58
90.00	9 5 5	4918.77	20.98	214.28	23.21	70.54	10 27 4	4318.8	18.14	206.76
100.00	22 14 13	2055.52	-23.11	28.40	23.19	109.51	22 48 29	1455.5	-20.24	20.78
100.00	10 26 6	4657.46	22.12	194.62	22.76	69.37	11 43 43	4057.5	19.12	187.11
110.00	23 23 14	1839.52	-26.20	10.69	21.88	112.79	23 53 53	1239.5	-22.88	3.10
110.00	11 33 35	4446.22	25.19	177.21	21.39	66.09	12 47 41	3846.2	21.74	169.76

DIFFERENTIAL CORRECTIONS
TDE 1.6906 TRA-4.0212 TC3 1.2459 BAU .5282
RDE .7351 RRA-1.0316 RC3 .6590 FAU .19881
FDE-4.1486 FRA 9.5053 FC3-6.1399 BSP 17703
BDE 1.8435 BRA 4.1515 BC3 1.4094 FSP 3555

MID-COURSE EXECUTION ACCURACY
SGT 4901.8 SGR 1538.3 SG3 1120.7
RRT .9595 RRF -.9820 RTF -.9682
SGB 5137.5 R23 -.1642 R13 -.9725
SG1 5120.7 SG2 414.9 THA 16.87

ORBIT DETERMINATION ACCURACY
ST 2247.9 SR 863.4 SS 2461.4
CRT .9756 CRS .9793 CST .9997
LSA 3438.7 MSA 178.2 SSA 30.1
EL1 2401.5 EL2 177.4 ALF 20.66

LAUNCH DATE OCT 3 1964 FLIGHT TIME 256.00 ARRIVAL DATE JUN 16 1965

HELIOCENTRIC CONIC DISTANCE 620.135 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.888 GAL -8.56 AZL 91.25 HCA 203.74 SMA 191.84 ECC .26344 INC 1.2459 V1 29.771
RP 237.65 LAP .50 LOP 213.56 VP 20.618 GAP 6.58 AZP 88.86 TAL 317.04 TAP 160.79 RCA 141.30 APO 242.38 V2 23.123
RC 184.919 GL -7.77 GP 11.78 ZAL 147.17 ZAP 146.93 ETS 160.02 ZAE 164.72 ETE 54.05 ZAC 99.72 ETC 255.96 CLP 148.88

PLANETOCENTRIC CONIC

C3 27.384 VHL 5.233 DLA 1.43 RAL 156.60 RAD 6568.1 VEL 12.197 PTH 2.19 VHP 5.113 DPA 10.95 RAP 187.76 ECC 1.4507

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 47 39	2335.19	-22.30	49.27	23.52	107.92	21 26 34	1735.2	-19.64	41.60
90.00	9 10 44	4890.91	20.34	212.49	22.72	69.86	10 32 14	4290.9	17.41	205.04
100.00	22 9 39	2070.67	-23.45	29.40	23.11	109.09	22 44 10	1470.7	-20.63	21.74
100.00	10 31 24	4630.65	21.47	192.89	22.26	68.69	11 48 35	4030.7	18.39	185.46
110.00	23 19 25	1852.31	-26.53	11.54	21.82	112.39	23 50 17	1252.3	-23.26	3.90
110.00	11 38 8	4421.79	24.51	175.64	20.86	65.39	12 51 50	3821.8	20.98	168.27

DIFFERENTIAL CORRECTIONS
TDE 1.6571 TRA-3.9517 TC3 1.2690 BAU .5258
RDE .7298 RRA-1.0157 RC3 .6727 FAU .20627
FDE-4.2405 FRA 9.8552 FC3-6.5211 BSP 17668
BDE 1.8107 BRA 4.0801 BC3 1.4363 FSP 3737

MID-COURSE EXECUTION ACCURACY
SGT 4877.2 SGR 1540.0 SG3 1174.0
RRT .9585 RRF -.9807 RTF -.9688
SGB 5114.6 R23 -.1584 R13 -.9731
SG1 5097.3 SG2 420.1 THA 16.96

ORBIT DETERMINATION ACCURACY
ST 2231.4 SR 866.2 SS 2502.5
CRT .9747 CRS .9773 CST .9998
LSA 3458.0 MSA 183.3 SSA 30.6
EL1 2386.8 EL2 181.1 ALF 20.85

LAUNCH DATE OCT 3 1964 FLIGHT TIME 258.00 ARRIVAL DATE JUN 18 1965

HELIOCENTRIC CONIC DISTANCE 623.757 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.866 GAL -8.48 AZL 91.13 HCA 204.70 SMA 191.44 ECC .26133 INC 1.1288 V1 29.771
RP 237.31 LAP .47 LOP 214.52 VP 20.621 GAP 6.17 AZP 88.97 TAL 317.19 TAP 161.90 RCA 141.41 APO 241.47 V2 23.157
RC 187.176 GL -7.11 GP 11.60 ZAL 147.13 ZAP 146.16 ETS 160.86 ZAE 165.29 ETE 56.47 ZAC 99.57 ETC 255.97 CLP 147.99

PLANETOCENTRIC CONIC

C3 26.779 VHL 5.175 DLA 2.10 RAL 156.68 RAD 6568.1 VEL 12.172 PTH 2.18 VHP 5.004 DPA 10.77 RAP 187.75 ECC 1.4407

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 42 58	2350.56	-22.62	50.28	23.43	107.50	21 22 9	1750.6	-20.01	42.58
90.00	9 16 4	4864.41	19.71	210.80	22.26	69.25	10 37 9	4264.4	16.71	203.41
100.00	22 5 17	2085.04	-23.77	30.35	23.02	108.69	22 40 2	1485.0	-20.99	22.65
100.00	10 36 26	4605.17	20.83	191.27	21.79	68.06	11 53 11	4005.2	17.67	183.90
110.00	23 15 47	1864.41	-26.84	12.34	21.76	112.01	23 46 51	1264.4	-23.62	4.66
110.00	11 42 26	4398.56	23.84	174.17	20.37	64.74	12 55 45	3798.6	20.24	166.88

DIFFERENTIAL CORRECTIONS
TDE 1.6251 TRA-3.8782 TC3 1.2914 BAU .5238
RDE .7263 RRA-1.0020 RC3 .6877 FAU .21412
FDE-4.3395 FRA10.2141 FC3-6.9224 BSP 17577
BDE 1.7800 BRA 4.0056 BC3 1.4631 FSP 3921

MID-COURSE EXECUTION ACCURACY
SGT 4846.3 SGR 1544.6 SG3 1229.4
RRT .9576 RRF -.9794 RTF -.9693
SGB 5086.5 R23 -.1525 R13 -.9736
SG1 5068.7 SG2 425.3 THA 17.10

ORBIT DETERMINATION ACCURACY
ST 2213.8 SR 870.6 SS 2545.3
CRT .9739 CRS .9753 CST .9998
LSA 3478.6 MSA 188.8 SSA 30.9
EL1 2371.6 EL2 184.5 ALF 21.09

LAUNCH DATE OCT 3 1964 FLIGHT TIME 260.00 ARRIVAL DATE JUN 20 1965

HELIOCENTRIC CONIC DISTANCE 627.396 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.845 GAL -8.40 AZL 91.02 HCA 205.67 SMA 191.06 ECC .25931 INC 1.0193 V1 29.771
RP 236.98 LAP .44 LOP 215.48 VP 20.626 GAP 5.75 AZP 89.08 TAL 317.34 TAP 163.01 RCA 141.51 APO 240.60 V2 23.191
RC 189.421 GL -6.48 GP 11.45 ZAL 147.08 ZAP 145.35 ETS 161.66 ZAE 165.84 ETE 59.26 ZAC 99.43 ETC 255.97 CLP 147.07

PLANETOCENTRIC CONIC

C3 26.210 VHL 5.120 DLA 2.74 RAL 156.76 RAD 6568.1 VEL 12.149 PTH 2.18 VHP 4.898 DPA 10.61 RAP 187.72 ECC 1.4314

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 38 29	2365.20	-22.92	51.25	23.34	107.11	21 17 54	1765.2	-20.36	43.52
90.00	9 21 9	4839.14	19.09	209.21	21.83	68.68	10 41 48	4239.1	16.03	201.87
100.00	22 1 6	2098.70	-24.06	31.26	22.94	108.29	22 36 5	1498.7	-21.34	23.52
100.00	10 41 12	4580.87	20.21	189.74	21.35	67.49	11 57 33	3980.9	16.98	182.43
110.00	23 12 17	1875.92	-27.13	13.11	21.70	111.64	23 43 33	1275.9	-23.95	5.39
110.00	11 46 31	4376.42	23.19	172.78	19.91	64.15	12 59 28	3776.4	19.52	165.56

DIFFERENTIAL CORRECTIONS
TDE 1.6088 TRA-3.7867 TC3 1.3351 BAU .5294
RDE .7260 RRA -.9886 RC3 .7070 FAU .22315
FDE-4.4618 FRA10.5641 FC3-7.3708 BSP 17079
BDE 1.7650 BRA 3.9137 BC3 1.5108 FSP 4073

MID-COURSE EXECUTION ACCURACY
SGT 4807.4 SGR 1552.8 SG3 1287.3
RRT .9581 RRF -.9782 RTF -.9707
SGB 5052.0 R23 -.1428 R13 -.9748
SG1 5034.1 SG2 424.8 THA 17.32

ORBIT DETERMINATION ACCURACY
ST 2205.3 SR 878.1 SS 2594.5
CRT .9743 CRS .9736 CST .9998
LSA 3511.1 MSA 193.1 SSA 30.7
EL1 2366.5 EL2 184.3 ALF 21.34

LAUNCH DATE OCT 3 1964 FLIGHT TIME 262.00 ARRIVAL DATE JUN 22 1965

HELIOCENTRIC CONIC DISTANCE 631.045 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.825 GAL -8.32 AZL 90.92 HCA 206.63 SMA 190.69 ECC .25737 INC .9173 V1 29.771
RP 236.64 LAP .41 LOP 216.45 VP 20.633 GAP 5.35 AZP 89.18 TAL 317.48 TAP 164.11 RCA 141.61 APO 239.77 V2 23.226
RC 191.655 GL -5.89 GP 11.31 ZAL 147.02 ZAP 144.50 ETS 162.41 ZAE 166.36 ETE 62.44 ZAC 99.30 ETC 255.97 CLP 146.13

PLANETOCENTRIC CONIC

C3 25.680 VHL 5.068 DLA 3.35 RAL 156.83 RAD 6568.0 VEL 12.127 PTH 2.17 VHP 4.794 DPA 10.47 RAP 187.68 ECC 1.4226

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 34 12	2379.17	-23.19	52.19	23.25	106.72	21 13 51	1779.2	-20.68	44.41
90.00	9 25 59	4815.05	18.49	207.70	21.43	68.16	10 46 14	4215.0	15.36	200.41
100.00	21 57 7	2111.75	-24.34	32.13	22.86	107.92	22 32 18	1511.7	-21.66	24.36
100.00	10 45 46	4557.70	19.60	188.29	20.94	66.96	12 1 43	3957.7	16.31	181.04
110.00	23 8 57	1886.90	-27.41	13.84	21.65	111.28	23 40 24	1286.9	-24.27	6.08
110.00	11 50 25	4355.32	22.56	171.47	19.48	63.61	13 3 0	3755.3	18.83	164.32

DIFFERENTIAL CORRECTIONS
TDE 1.5608 TRA-3.7228 TC3 1.3282 BAU .5189
RDE .7228 RRA -.9818 RC3 .7213 FAU .23088
FDE-4.5529 FRA10.9665 FC3-7.7834 BSP 17293
BDE 1.7200 BRA 3.8501 BC3 1.5114 FSP 4309

MID-COURSE EXECUTION ACCURACY
SGT 4764.9 SGR 1561.7 SG3 1346.8
RRT .9561 RRF -.9770 RTF -.9703
SGB 5014.3 R23 -.1414 R13 -.9746
SG1 4995.3 SG2 436.3 THA 17.54

ORBIT DETERMINATION ACCURACY
ST 2171.6 SR 883.0 SS 2634.0
CRT .9727 CRS .9715 CST .9998
LSA 3520.2 MSA 201.3 SSA 31.0
EL1 2336.5 EL2 190.6 ALF 21.73

LAUNCH DATE OCT 3 1964 FLIGHT TIME 264.00 ARRIVAL DATE JUN 24 1965

HELIOCENTRIC CONIC DISTANCE 634.708 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.805 GAL -8.24 AZL 90.82 HCA 207.60 SMA 190.34 ECC .25550 INC .8212 V1 29.771
RP 236.29 LAP .38 LOP 217.42 VP 20.642 GAP 4.95 AZP 89.27 TAL 317.62 TAP 165.22 RCA 141.71 APO 238.98 V2 23.261
RC 193.877 GL -5.32 GP 11.19 ZAL 146.96 ZAP 143.62 ETS 163.13 ZAE 166.83 ETE 66.06 ZAC 99.18 ETC 255.98 CLP 145.15

PLANETOCENTRIC CONIC

C3 25.182 VHL 5.018 DLA 3.94 RAL 156.89 RAD 6568.0 VEL 12.106 PTH 2.17 VHP 4.693 DPA 10.37 RAP 187.62 ECC 1.4144

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 30 5	2392.57	-23.45	53.08	23.17	106.34	21 9 57	1792.6	-20.99	45.28
90.00	9 30 37	4791.98	17.90	206.26	21.06	67.68	10 50 29	4192.0	14.72	199.03
100.00	21 53 16	2124.25	-24.60	32.97	22.79	107.55	22 28 40	1524.2	-21.96	25.16
100.00	10 50 7	4535.53	19.00	186.91	20.57	66.48	12 5 42	3935.5	15.66	179.71
110.00	23 5 44	1897.42	-27.67	14.55	21.60	110.93	23 37 22	1297.4	-24.57	6.75
110.00	11 54 8	4335.13	21.94	170.22	19.09	63.11	13 6 23	3735.1	18.16	163.14

DIFFERENTIAL CORRECTIONS
TDE 1.5230 TRA-3.6458 TC3 1.3333 BAU .5131
RDE .7221 RRA -.9756 RC3 .7387 FAU .23951
FDE-4.6613 FRA11.3680 FC3-8.2343 BSP 17227
BDE 1.6855 BRA 3.7741 BC3 1.5242 FSP 4523

MID-COURSE EXECUTION ACCURACY
SGT 4714.3 SGR 1573.5 SG3 1408.9
RRT .9550 RRF -.9759 RTF -.9704
SGB 4970.0 R23 -.1377 R13 -.9748
SG1 4950.1 SG2 444.4 THA 17.83

ORBIT DETERMINATION ACCURACY
ST 2143.0 SR 890.2 SS 2678.2
CRT .9718 CRS .9696 CST .9998
LSA 3537.4 MSA 208.6 SSA 31.1
EL1 2312.4 EL2 194.5 ALF 22.15

LAUNCH DATE OCT 3 1964 FLIGHT TIME 266.00 ARRIVAL DATE JUN 26 1965

HELIOCENTRIC CONIC DISTANCE 638.384 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.787 GAL -8.17 AZL 90.73 HCA 208.57 SMA 190.01 ECC .25372 INC .7309 V1 29.771
RP 235.94 LAP .35 LOP 218.39 VP 20.652 GAP 4.55 AZP 89.36 TAL 317.75 TAP 166.32 RCA 141.80 APO 238.22 V2 23.297
RC 196.086 GL -4.78 GP 11.08 ZAL 146.88 ZAP 142.69 ETS 163.81 ZAE 167.26 ETE 70.13 ZAC 99.06 ETC 255.99 CLP 144.14

PLANETOCENTRIC CONIC

C3 24.714 VHL 4.971 DLA 4.50 RAL 156.95 RAD 6568.0 VEL 12.087 PTH 2.16 VHP 4.595 DPA 10.28 RAP 187.55 ECC 1.4067

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 26 7	2405.44	-23.70	53.95	23.09	105.97	21 6 12	1805.4	-21.28	46.11
90.00	9 35 3	4769.88	17.32	204.89	20.71	67.24	10 54 33	4169.9	14.09	197.71
100.00	21 49 34	2136.26	-24.84	33.78	22.72	107.19	22 25 10	1536.3	-22.25	25.93
100.00	10 54 17	4514.29	18.42	185.60	20.21	66.03	12 9 31	3914.3	15.02	178.45
110.00	23 2 39	1907.51	-27.91	15.24	21.55	110.59	23 34 27	1307.5	-24.85	7.40
110.00	11 57 41	4315.81	21.34	169.05	18.72	62.64	13 9 37	3715.8	17.51	162.02

DIFFERENTIAL CORRECTIONS
TDE 1.4871 TRA-3.5638 TC3 1.3381 BAU .5081
RDE .7226 RRA -.9709 RC3 .7577 FAU .24864
FDE-4.7779 FRA11.7799 FC3-8.7099 BSP 17087
BDE 1.6534 BRA 3.6937 BC3 1.5377 FSP 4741

MID-COURSE EXECUTION ACCURACY
SGT 4656.4 SGR 1587.8 SG3 1473.3
RRT .9541 RRF -.9749 RTF -.9706
SGB 4919.7 R23 -.1337 R13 -.9751
SG1 4898.9 SG2 451.8 THA 18.18

ORBIT DETERMINATION ACCURACY
ST 2113.5 SR 898.6 SS 2724.2
CRT .9712 CRS .9678 CST .9997
LSA 3556.5 MSA 215.9 SSA 31.1
EL1 2288.1 EL2 197.8 ALF 22.62

LAUNCH DATE OCT 3 1964 FLIGHT TIME 268.00 ARRIVAL DATE JUN 28 1965

HELIOCENTRIC CONIC DISTANCE 642.074 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.769 GAL -8.11 AZL 90.65 HCA 209.55 SMA 189.69 ECC .25202 INC .6464 V1 29.771
RP 235.59 LAP .32 LOP 219.36 VP 20.664 GAP 4.16 AZP 89.44 TAL 317.87 TAP 167.42 RCA 141.89 APO 237.50 V2 23.333
RC 198.280 GL -4.26 GP 10.99 ZAL 146.80 ZAP 141.73 ETS 164.46 ZAE 167.62 ETE 74.67 ZAC 98.96 ETC 255.99 CLP 143.11

PLANETOCENTRIC CONIC

C3 24.275 VHL 4.927 DLA 5.03 RAL 157.01 RAD 6568.0 VEL 12.069 PTH 2.16 VHP 4.500 DPA 10.22 RAP 187.45 ECC 1.3995

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 22 17	2417.85	-23.93	54.78	23.02	105.61	21 2 35	1817.8	-21.55	46.91
90.00	9 39 19	4748.68	16.76	203.59	20.39	66.84	10 58 28	4148.7	13.48	196.45
100.00	21 46 0	2147.83	-25.07	34.56	22.66	106.84	22 21 48	1547.8	-22.53	26.69
100.00	10 58 18	4493.92	17.85	184.36	19.89	65.62	12 13 12	3893.9	14.41	177.25
110.00	22 59 41	1917.24	-28.14	15.90	21.51	110.26	23 31 38	1317.2	-25.12	8.03
110.00	12 1 6	4297.28	20.76	167.92	18.38	62.21	13 12 44	3697.3	16.88	160.95

DIFFERENTIAL CORRECTIONS
TDE 1.4506 TRA-3.4778 TC3 1.3378 BAU .5021
RDE .7238 RRA -.9682 RC3 .7772 FAU .25797
FDE-4.8970 FRA12.2065 FC3-9.2001 BSP 16907
BDE 1.6212 BRA 3.6100 BC3 1.5472 FSP 4969

MID-COURSE EXECUTION ACCURACY
SGT 4589.8 SGR 1604.0 SG3 1539.9
RRT .9534 RRF -.9740 RTF -.9707
SGB 4862.0 R23 -.1297 R13 -.9753
SG1 4840.3 SG2 459.0 THA 18.60

ORBIT DETERMINATION ACCURACY
ST 2081.0 SR 907.7 SS 2770.4
CRT .9708 CRS .9661 CST .9996
LSA 3574.8 MSA 223.5 SSA 31.0
EL1 2261.5 EL2 200.5 ALF 23.14

LAUNCH DATE OCT 3 1964 FLIGHT TIME 270.00 ARRIVAL DATE JUN 30 1965

HELIOCENTRIC CONIC DISTANCE 645.775 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.752 GAL -8.04 AZL 90.57 HCA 210.52 SMA 189.39 ECC .25039 INC .5662 V1 29.771
RP 235.24 LAP .29 LOP 220.34 VP 20.678 GAP 3.78 AZP 89.51 TAL 318.00 TAP 168.52 RCA 141.97 APO 236.81 V2 23.369
RC 200.460 GL -3.76 GP 10.90 ZAL 146.71 ZAP 140.73 ETS 165.08 ZAE 167.90 ETE 79.66 ZAC 98.86 ETC 256.00 CLP 142.03

PLANETOCENTRIC CONIC

C3 23.864 VHL 4.885 DLA 5.55 RAL 157.06 RAD 6568.0 VEL 12.052 PTH 2.15 VHP 4.407 DPA 10.19 RAP 187.33 ECC 1.3927

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 18 36	2429.83	-24.14	55.59	22.96	105.26	20 59 6	1829.8	-21.81	47.70
90.00	9 43 26	4728.31	16.21	202.35	20.10	66.46	11 2 15	4128.3	12.89	195.25
100.00	21 42 34	2159.01	-25.29	35.32	22.60	106.49	22 18 33	1559.0	-22.79	27.41
100.00	11 2 9	4474.37	17.30	183.17	19.59	65.23	12 16 44	3874.4	13.81	176.11
110.00	22 56 49	1926.63	-28.36	16.54	21.47	109.94	23 28 56	1326.6	-25.38	8.63
110.00	12 4 24	4279.51	20.19	166.86	18.06	61.81	13 15 43	3679.5	16.26	159.93

DIFFERENTIAL CORRECTIONS
TDE 1.4134 TRA-3.3887 TC3 1.3327 BAU .4956
RDE .7258 RRA -.9672 RC3 .7980 FAU .26774
FDE-5.0217 FRA12.6461 FC3-9.7130 BSP 16708
BDE 1.5889 BRA 3.5240 BC3 1.5533 FSP 5205

MID-COURSE EXECUTION ACCURACY
SGT 4515.4 SGR 1622.2 SG3 1609.0
RRT .9526 RRF -.9731 RTF -.9707
SGB 4798.0 R23 -.1262 R13 -.9755
SG1 4775.2 SG2 466.8 THA 19.08

ORBIT DETERMINATION ACCURACY
ST 2045.7 SR 917.7 SS 2817.7
CRT .9704 CRS .9644 CST .9995
LSA 3593.3 MSA 231.4 SSA 30.8
EL1 2232.9 EL2 203.0 ALF 23.73

LAUNCH DATE OCT 3 1964 FLIGHT TIME 272.00 ARRIVAL DATE JUL 2 1965

HELIOCENTRIC CONIC DISTANCE 649.488 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.736 GAL -7.98 AZL 90.49 HCA 211.51 SMA 189.10 ECC .24883 INC .4906 V1 29.771
RP 234.89 LAP .26 LOP 221.32 VP 20.694 GAP 3.40 AZP 89.58 TAL 318.11 TAP 169.62 RCA 142.05 APO 236.16 V2 23.405
RC 202.623 GL -3.28 GP 10.83 ZAL 146.63 ZAP 139.69 ETS 165.68 ZAE 168.07 ETE 85.07 ZAC 98.76 ETC 256.01 CLP 140.93

PLANETOCENTRIC CONIC

C3 23.478 VHL 4.845 DLA 6.04 RAL 157.11 RAD 6568.0 VEL 12.036 PTH 2.15 VHP 4.317 DPA 10.17 RAP 187.19 ECC 1.3864

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 15 3	2441.44	-24.35	56.38	22.91	104.92	20 55 44	1841.4	-22.06	48.46
90.00	9 47 25	4708.73	15.67	201.16	19.82	66.11	11 5 53	4108.7	12.31	194.10
100.00	21 39 15	2169.83	-25.50	36.06	22.55	106.16	22 15 25	1569.8	-23.04	28.12
100.00	11 5 53	4455.57	16.76	182.03	19.31	64.88	12 20 9	3855.6	13.23	175.01
110.00	22 54 3	1935.72	-28.57	17.17	21.44	109.62	23 26 19	1335.7	-25.63	9.22
110.00	12 7 34	4262.45	19.64	165.84	17.77	61.44	13 18 37	3662.5	15.67	158.97

DIFFERENTIAL CORRECTIONS
TDE 1.3744 TRA-3.2968 TC3 1.3206 BAU .4878
RDE .7284 RRA -.9679 RC3 .8193 FAU .27776
FDE-5.1492 FRA13.1019 FC-10.2419 BSP 16497
BDE 1.5554 BRA 3.4360 BC3 1.5541 FSP 5450

MID-COURSE EXECUTION ACCURACY
SGT 4432.4 SGR 1642.2 SG3 1680.5
RRT .9517 RRF -.9723 RTF -.9705
SGB 4726.9 R23 -.1233 R13 -.9756
SG1 4702.9 SG2 475.1 THA 19.63

ORBIT DETERMINATION ACCURACY
ST 2006.4 SR 928.2 SS 2865.1
CRT .9701 CRS .9628 CST .9994
LSA 3610.8 MSA 239.4 SSA 30.7
EL1 2201.1 EL2 205.4 ALF 24.40

LAUNCH DATE OCT 3 1964 FLIGHT TIME 274.00 ARRIVAL DATE JUL 4 1965

HELIOCENTRIC CONIC DISTANCE 653.213 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.720 GAL -7.92 AZL 90.42 HCA 212.49 SMA 188.83 ECC .24735 INC .4184 V1 29.771
RP 234.53 LAP .22 LOP 222.30 VP 20.711 GAP 3.02 AZP 89.65 TAL 318.22 TAP 170.71 RCA 142.12 APO 235.54 V2 23.442
RC 204.770 GL -2.82 GP 10.77 ZAL 146.54 ZAP 138.61 ETS 166.25 ZAE 168.14 ETE 90.80 ZAC 98.66 ETC 256.03 CLP 139.79

PLANETOCENTRIC CONIC

C3 23.117 VHL 4.808 DLA 6.52 RAL 157.16 RAD 6567.9 VEL 12.021 PTH 2.15 VHP 4.230 DPA 10.18 RAP 187.02 ECC 1.3804

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 11 36	2452.70	-24.54	57.15	22.86	104.58	20 52 29	1852.7	-22.30	49.20
90.00	9 51 15	4689.90	15.15	200.03	19.57	65.79	11 9 25	4089.9	11.75	193.00
100.00	21 36 3	2180.33	-25.69	36.77	22.51	105.83	22 12 23	1580.3	-23.27	28.81
100.00	11 9 30	4437.51	16.23	180.95	19.05	64.55	12 23 27	3837.5	12.67	173.97
110.00	22 51 24	1944.54	-28.77	17.78	21.42	109.31	23 23 48	1344.5	-25.87	9.80
110.00	12 10 38	4246.06	19.10	164.87	17.51	61.10	13 21 24	3646.1	15.10	158.04

DIFFERENTIAL CORRECTIONS
TDE 1.3354 TRA-3.2000 TC3 1.3047 BAU .4799
RDE .7317 RRA -.9699 RC3 .8419 FAU .28823
FDE-5.2834 FRA13.5687 FC-10.7944 BSP 16230
BDE 1.5228 BRA 3.3437 BC3 1.5527 FSP 5699

MID-COURSE EXECUTION ACCURACY
SGT 4340.3 SGR 1664.0 SG3 1754.3
RRT .9510 RRF -.9716 RTF -.9703
SGB 4648.3 R23 -.1204 R13 -.9757
SG1 4623.1 SG2 483.1 THA 20.26

ORBIT DETERMINATION ACCURACY
ST 1964.6 SR 959.5 SS 2913.8
CRT .9700 CRS .9613 CST .9992
LSA 3629.1 MSA 247.6 SSA 30.4
EL1 2167.9 EL2 207.1 ALF 25.13

LAUNCH DATE OCT 3 1964 FLIGHT TIME 276.00 ARRIVAL DATE JUL 6 1965

HELIOCENTRIC CONIC DISTANCE 656.949 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.705 GAL -7.86 AZL 90.35 HCA 213.48 SMA 188.57 ECC .24593 INC .3504 V1 29.771
RP 234.17 LAP .19 LOP 223.29 VP 20.730 GAP 2.65 AZP 89.71 TAL 318.33 TAP 171.81 RCA 142.20 APO 234.95 V2 23.479
RC 206.900 GL -2.38 GP 10.71 ZAL 146.45 ZAP 137.49 ETS 166.81 ZAE 168.07 ETE 96.76 ZAC 98.57 ETC 256.04 CLP 138.61

PLANETOCENTRIC CONIC

C3 22.779 VHL 4.773 DLA 6.98 RAL 157.21 RAD 6567.9 VEL 12.007 PTH 2.14 VHP 4.145 DPA 10.21 RAP 186.82 ECC 1.3749

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 8 17	2463.65	-24.73	57.90	22.82	104.25	20 49 21	1863.7	-22.53	49.92
90.00	9 54 59	4671.78	14.64	198.94	19.34	65.49	11 12 51	4071.8	11.21	191.94
100.00	21 32 58	2190.54	-25.88	37.47	22.48	105.51	22 9 28	1590.5	-23.50	29.48
100.00	11 12 59	4420.13	15.72	179.91	18.82	64.24	12 26 40	3820.1	12.13	172.96
110.00	22 48 50	1953.11	-28.96	18.37	21.40	109.01	23 21 23	1353.1	-26.09	10.36
110.00	12 13 37	4230.32	18.58	163.95	17.26	60.78	13 24 7	3630.3	14.54	157.16

DIFFERENTIAL CORRECTIONS
TDE 1.2939 TRA-3.1006 TC3 1.2794 BAU .4702
RDE .7353 RRA -.9736 RC3 .8646 FAU .29883
FDE-5.4177 FRA14.0544 FC-11.3575 BSP 15982
BDE 1.4882 BRA 3.2499 BC3 1.5442 FSP 5967

MID-COURSE EXECUTION ACCURACY
SGT 4238.7 SGR 1687.3 SG3 1830.3
RRT .9501 RRF -.9709 RTF -.9698
SGB 4562.2 R23 -.1182 R13 -.9756
SG1 4535.6 SG2 492.0 THA 20.97

ORBIT DETERMINATION ACCURACY
ST 1918.3 SR 951.1 SS 2961.9
CRT .9698 CRS .9598 CST .9991
LSA 3645.7 MSA 255.9 SSA 30.2
EL1 2130.9 EL2 208.7 ALF 25.95

LAUNCH DATE OCT 3 1964 FLIGHT TIME 278.00 ARRIVAL DATE JUL 8 1965

HELIOCENTRIC CONIC DISTANCE 660.696 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.691 GAL -7.81 AZL 90.29 HCA 214.46 SMA 188.32 ECC .24459 INC .2847 V1 29.771
RP 233.80 LAP .16 LOP 224.28 VP 20.750 GAP 2.29 AZP 89.76 TAL 318.43 TAP 172.89 RCA 142.26 APO 234.38 V2 23.517
RC 209.011 GL -1.95 GP 10.66 ZAL 146.36 ZAP 136.34 ETS 167.35 ZAE 167.86 ETE 102.79 ZAC 98.47 ETC 256.06 CLP 137.40

PLANETOCENTRIC CONIC

C3 22.463 VHL 4.739 DLA 7.42 RAL 157.27 RAD 6567.9 VEL 11.993 PTH 2.14 VHP 4.063 DPA 10.26 RAP 186.60 ECC 1.3697

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 5 5	2474.31	-24.91	58.63	22.79	103.93	20 46 19	1874.3	-22.75	50.62
90.00	9 58 36	4654.33	14.15	197.90	19.14	65.21	11 16 10	4054.3	10.69	190.93
100.00	21 29 59	2200.47	-26.06	38.16	22.46	105.19	22 6 39	1600.5	-23.72	30.14
100.00	11 16 23	4403.40	15.22	178.92	18.61	63.96	12 29 47	3803.4	11.60	172.00
110.00	22 46 21	1961.45	-29.14	18.95	21.40	108.71	23 19 3	1361.5	-26.31	10.91
110.00	12 16 30	4215.18	18.08	163.07	17.04	60.48	13 26 45	3615.2	14.01	156.32

DIFFERENTIAL CORRECTIONS
TDE 1.2536 TRA-2.9945 TC3 1.2510 BAU .4609
RDE .7400 RRA -.9781 RC3 .8889 FAU .31007
FDE-5.5633 FRA14.5454 FC-11.9504 BSP 15640
BDE 1.4557 BRA 3.1502 BC3 1.5346 FSP 6227

MID-COURSE EXECUTION ACCURACY
SGT 4126.7 SGR 1712.3 SG3 1908.6
RRT .9493 RRF -.9704 RTF -.9693
SGB 4467.9 R23 -.1161 R13 -.9755
SG1 4439.7 SG2 500.5 THA 21.79

ORBIT DETERMINATION ACCURACY
ST 1870.1 SR 963.8 SS 3012.3
CRT .9700 CRS .9585 CST .9988
LSA 3664.6 MSA 264.2 SSA 30.0
EL1 2093.5 EL2 209.2 ALF 26.85

LAUNCH DATE OCT 3 1964 FLIGHT TIME 280.00 ARRIVAL DATE JUL 10 1965

HELIOCENTRIC CONIC DISTANCE 664.454 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.678 GAL -7.76 AZL 90.22 HCA 215.46 SMA 188.09 ECC .24331 INC .2224 V1 29.771
RP 233.44 LAP .13 LOP 225.27 VP 20.771 GAP 1.93 AZP 89.82 TAL 318.52 TAP 173.98 RCA 142.32 APO 233.85 V2 23.555
RC 211.104 GL -1.53 GP 10.62 ZAL 146.27 ZAP 135.14 ETS 167.87 ZAE 167.51 ETE 108.76 ZAC 98.38 ETC 256.08 CLP 136.15

PLANETOCENTRIC CONIC

C3 22.168 VHL 4.708 DLA 7.84 RAL 157.32 RAD 6567.9 VEL 11.981 PTH 2.14 VHP 3.983 DPA 10.33 RAP 186.35 ECC 1.3648

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 1 59	2484.70	-25.07	59.34	22.77	103.61	20 43 24	1884.7	-22.96	51.31
90.00	10 2 7	4637.54	13.66	196.90	18.95	64.96	11 19 25	4037.5	10.18	189.96
100.00	21 27 6	2210.15	-26.23	38.83	22.45	104.88	22 3 56	1610.2	-23.93	30.78
100.00	11 19 41	4387.31	14.74	177.97	18.42	63.70	12 32 48	3787.3	11.09	171.08
110.00	22 43 59	1969.59	-29.32	19.52	21.40	108.42	23 16 48	1369.6	-26.53	11.45
110.00	12 19 18	4200.64	17.59	162.22	16.84	60.20	13 29 19	3600.6	13.49	155.51

DIFFERENTIAL CORRECTIONS
TDE 1.2105 TRA-2.8859 TC3 1.2129 BAU .4500
RDE .7448 RRA -.9842 RC3 .9134 FAU .32144
FDE-5.7085 FRA15.0559 FC-12.5532 BSP 15310
BDE 1.4213 BRA 3.0491 BC3 1.5184 FSP 6504

MID-COURSE EXECUTION ACCURACY
SGT 4005.2 SGR 1738.7 SG3 1989.2
RRT .9483 RRF -.9699 RTF -.9684
SGB 4366.3 R23 -.1147 R13 -.9752
SG1 4336.4 SG2 509.9 THA 22.71

ORBIT DETERMINATION ACCURACY
ST 1817.2 SR 976.6 SS 3062.0
CRT .9702 CRS .9572 CST .9986
LSA 3681.9 MSA 272.7 SSA 29.7
EL1 2052.3 EL2 209.5 ALF 27.85

LAUNCH DATE OCT 3 1964 FLIGHT TIME 282.00 ARRIVAL DATE JUL 12 1965

HELIOCENTRIC CONIC DISTANCE 668.222 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.665 GAL -7.71 AZL 90.16 HCA 216.45 SMA 187.86 ECC .24209 INC .1634 V1 29.771
RP 233.07 LAP .10 LOP 226.27 VP 20.794 GAP 1.57 AZP 89.87 TAL 318.61 TAP 175.06 RCA 142.38 APO 233.34 V2 23.593
RC 213.179 GL -1.13 GP 10.59 ZAL 146.18 ZAP 133.90 ETS 168.37 ZAE 167.00 ETE 114.53 ZAC 98.28 ETC 256.10 CLP 134.86

PLANETOCENTRIC CONIC

C3 21.893 VHL 4.679 DLA 8.25 RAL 157.37 RAD 6567.9 VEL 11.970 PTH 2.13 VHP 3.906 DPA 10.42 RAP 186.07 ECC 1.3603

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 59 0	2494.83	-25.23	60.04	22.77	103.29	20 40 35	1894.8	-23.16	51.99
90.00	10 5 33	4621.36	13.20	195.94	18.79	64.72	11 22 34	4021.4	9.68	189.03
100.00	21 24 20	2219.60	-26.39	39.48	22.45	104.57	22 1 19	1619.6	-24.13	31.41
100.00	11 22 54	4371.83	14.27	177.06	18.25	63.45	12 35 46	3771.8	10.59	170.20
110.00	22 41 41	1977.53	-29.49	20.07	21.42	108.13	23 14 39	1377.5	-26.73	11.97
110.00	12 22 2	4186.67	17.11	161.42	16.66	59.95	13 31 49	3586.7	12.99	154.74

DIFFERENTIAL CORRECTIONS
TDE 1.1657 TRA-2.7722 TC3 1.1664 BAU .4381
RDE .7499 RRA -.9914 RC3 .9381 FAU .33298
FDE-5.8550 FRA15.5785 FC-13.1674 BSP 14956
BDE 1.3860 BRA 2.9442 BC3 1.4968 FSP 6792

MID-COURSE EXECUTION ACCURACY
SGT 3872.3 SGR 1766.0 SG3 2071.4
RRT .9471 RRF -.9695 RTF -.9673
SGB 4256.0 R23 -.1137 R13 -.9749
SG1 4224.2 SG2 519.6 THA 23.74

ORBIT DETERMINATION ACCURACY
ST 1760.0 SR 989.6 SS 3111.1
CRT .9705 CRS .9560 CST .9983
LSA 3698.1 MSA 281.2 SSA 29.4
EL1 2008.2 EL2 209.1 ALF 28.97

LAUNCH DATE OCT 3 1964 FLIGHT TIME 284.00 ARRIVAL DATE JUL 14 1965

HELIOCENTRIC CONIC DISTANCE 672.000 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.653 GAL -7.67 AZL 90.11 HCA 217.45 SMA 187.65 ECC .24095 INC .1061 V1 29.771
RP 232.70 LAP .07 LOP 227.27 VP 20.819 GAP 1.22 AZP 89.92 TAL 318.69 TAP 176.14 RCA 142.44 APO 232.87 V2 23.631
RC 215.236 GL -.74 GP 10.56 ZAL 146.10 ZAP 132.62 ETS 168.87 ZAE 166.35 ETE 120.00 ZAC 98.18 ETC 256.12 CLP 133.53

PLANETOCENTRIC CONIC

C3 21.638 VHL 4.652 DLA 8.65 RAL 157.43 RAD 6567.9 VEL 11.959 PTH 2.13 VHP 3.832 DPA 10.53 RAP 185.76 ECC 1.3561

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 56 7	2504.74	-25.39	60.73	22.77	102.98	20 37 51	1904.7	-23.35	52.65
90.00	10 8 54	4605.79	12.74	195.03	18.64	64.50	11 25 39	4005.8	9.20	188.13
100.00	21 21 39	2228.83	-26.55	40.12	22.46	104.27	21 58 48	1628.8	-24.33	32.03
100.00	11 26 2	4356.94	13.81	176.19	18.10	63.23	12 38 39	3756.9	10.11	169.35
110.00	22 39 29	1985.29	-29.65	20.62	21.44	107.84	23 12 34	1385.3	-26.93	12.49
110.00	12 24 42	4173.24	16.65	160.65	16.50	59.71	13 34 15	3573.2	12.50	154.00

DIFFERENTIAL CORRECTIONS
TDE 1.1201 TRA-2.6534 TC3 1.1123 BAU .4257
RDE .7557 RRA -.9996 RC3 .9637 FAU .34492
FDE-6.0088 FRA16.1122 FC-13.8003 BSP 14569
BDE 1.3512 BRA 2.8355 BC3 1.4717 FSP 7086

MID-COURSE EXECUTION ACCURACY
SGT 3728.7 SGR 1794.7 SG3 2155.8
RRT .9457 RRF -.9691 RTF -.9658
SGB 4138.2 R23 -.1133 R13 -.9744
SG1 4104.1 SG2 529.8 THA 24.92

ORBIT DETERMINATION ACCURACY
ST 1699.5 SR 1003.3 SS 3161.6
CRT .9709 CRS .9549 CST .9980
LSA 3715.6 MSA 289.7 SSA 29.2
EL1 1962.5 EL2 207.9 ALF 30.20

LAUNCH DATE OCT 3 1964 FLIGHT TIME 286.00 ARRIVAL DATE JUL 16 1965

HELIOCENTRIC CONIC DISTANCE 675.788 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.641 GAL -7.63 AZL 90.05 HCA 218.46 SMA 187.45 ECC .23986 INC .0499 V1 29.771
RP 232.32 LAP .03 LOP 228.27 VP 20.844 GAP .88 AZP 89.96 TAL 318.76 TAP 177.21 RCA 142.49 APO 232.41 V2 23.670
RC 217.275 GL -.37 GP 10.54 ZAL 146.02 ZAP 131.30 ETS 169.35 ZAE 165.57 ETE 125.09 ZAC 98.08 ETC 256.15 CLP 132.17

PLANETOCENTRIC CONIC

C3 21.401 VHL 4.626 DLA 9.03 RAL 157.49 RAD 6567.9 VEL 11.949 PTH 2.13 VHP 3.760 DPA 10.66 RAP 185.42 ECC 1.3522

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 53 20	2514.42	-25.53	61.40	22.79	102.67	20 35 14	1914.4	-23.53	53.30
90.00	10 12 9	4590.81	12.30	194.15	18.52	64.29	11 28 40	3990.8	8.74	187.28
100.00	21 19 5	2237.85	-26.70	40.75	22.48	103.97	21 56 23	1637.9	-24.52	32.63
100.00	11 29 5	4342.61	13.37	175.35	17.97	63.02	12 41 28	3742.6	9.65	168.54
110.00	22 37 22	1992.88	-29.81	21.15	21.48	107.56	23 10 35	1392.9	-27.12	13.00
110.00	12 27 18	4160.35	16.21	159.91	16.36	59.48	13 36 38	3560.4	12.04	153.29

DIFFERENTIAL CORRECTIONS
TDE 1.0733 TRA-2.5283 TC3 1.0512 BAU .4131
RDE .7617 RRA-1.0084 RC3 .9896 FAU .35711
FDE-6.1643 FRA16.6534 FC-14.4460 BSP 14129
BDE 1.3161 BRA 2.7220 BC3 1.4438 FSP 7380

MID-COURSE EXECUTION ACCURACY
SGT 3573.0 SGR 1824.1 SG3 2241.6
RRT .9442 RRF -.9688 RTF -.9641
SGB 4011.7 R23 -.1129 R13 -.9738
SG1 3975.2 SG2 539.9 THA 26.26

ORBIT DETERMINATION ACCURACY
ST 1634.9 SR 1017.1 SS 3211.4
CRT .9716 CRS .9539 CST .9976
LSA 3732.4 MSA 298.3 SSA 28.9
EL1 1914.4 EL2 205.5 ALF 31.56

LAUNCH DATE OCT 3 1964 FLIGHT TIME 288.00 ARRIVAL DATE JUL 18 1965

HELIOCENTRIC CONIC DISTANCE 679.586 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.630 GAL -7.59 AZL 90.00 HCA 219.46 SMA 187.26 ECC .23884 INC .0000 V1 29.771
RP 231.95 LAP .00 LOP 229.28 VP 20.871 GAP .54 AZP 90.00 TAL 318.82 TAP 178.29 RCA 142.53 APO 231.98 V2 23.709
RC 219.295 GL -.00 GP 10.52 ZAL 145.95 ZAP 129.93 ETS 169.83 ZAE 164.65 ETE 129.77 ZAC 97.98 ETC 256.18 CLP 130.76

PLANETOCENTRIC CONIC

C3 21.183 VHL 4.602 DLA 9.40 RAL 157.56 RAD 6567.9 VEL 11.940 PTH 2.12 VHP 3.692 DPA 10.81 RAP 185.05 ECC 1.3486

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 50 40	2523.89	-25.67	62.06	22.81	102.37	20 32 43	1923.9	-23.71	53.94
90.00	10 15 20	4576.40	11.87	193.30	18.41	64.10	11 31 37	3976.4	8.29	186.45
100.00	21 16 37	2246.68	-26.84	41.37	22.51	103.67	21 54 3	1646.7	-24.70	33.23
100.00	11 32 4	4328.84	12.95	174.55	17.86	62.82	12 44 13	3728.8	9.20	167.77
110.00	22 35 20	2000.31	-29.96	21.68	21.53	107.28	23 8 41	1400.3	-27.31	13.50
110.00	12 29 50	4147.98	15.78	159.21	16.25	59.28	13 38 58	3548.0	11.59	152.62

DIFFERENTIAL CORRECTIONS
TDE 1.0247 TRA-2.3985 TC3 .9798 BAU .3996
RDE .7680 RRA-1.0183 RC3 1.0156 FAU .36943
FDE-6.3222 FRA17.2067 FC-15.0984 BSP 13674
BDE 1.2805 BRA 2.6057 BC3 1.4112 FSP 7685

MID-COURSE EXECUTION ACCURACY
SGT 3405.9 SGR 1854.4 SG3 2328.8
RRT .9423 RRF -.9686 RTF -.9617
SGB 3878.0 R23 -.1134 R13 -.9730
SG1 3838.7 SG2 551.0 THA 27.78

ORBIT DETERMINATION ACCURACY
ST 1566.0 SR 1031.2 SS 3261.2
CRT .9724 CRS .9529 CST .9971
LSA 3749.2 MSA 306.8 SSA 28.6
EL1 1864.1 EL2 202.1 ALF 33.07

LAUNCH DATE OCT 3 1964 FLIGHT TIME 290.00 ARRIVAL DATE JUL 20 1965

HELIOCENTRIC CONIC DISTANCE 683.393 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.619 GAL -7.56 AZL 89.95 HCA 220.47 SMA 187.08 ECC .23787 INC .0464 V1 29.771
RP 231.57 LAP -.03 LOP 230.29 VP 20.900 GAP .20 AZP 90.04 TAL 318.88 TAP 179.35 RCA 142.58 APO 231.58 V2 23.748
RC 221.297 GL .35 GP 10.50 ZAL 145.88 ZAP 128.52 ETS 170.29 ZAE 163.61 ETE 134.03 ZAC 97.87 ETC 256.21 CLP 129.31

PLANETOCENTRIC CONIC

C3 20.982 VHL 4.581 DLA 9.75 RAL 157.62 RAD 6567.9 VEL 11.932 PTH 2.12 VHP 3.626 DPA 10.98 RAP 184.64 ECC 1.3453

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 48 5	2533.17	-25.81	62.70	22.85	102.08	20 30 18	1933.2	-23.89	54.56
90.00	10 18 27	4562.55	11.46	192.50	18.33	63.93	11 34 30	3962.5	7.86	185.66
100.00	21 14 14	2255.33	-26.98	41.97	22.56	103.38	21 51 49	1655.3	-24.87	33.81
100.00	11 35 0	4315.62	12.53	173.79	17.77	62.64	12 46 55	3715.6	8.77	167.02
110.00	22 33 24	2007.59	-30.11	22.20	21.59	107.01	23 6 52	1407.6	-27.49	13.99
110.00	12 32 19	4136.12	15.36	158.54	16.15	59.08	13 41 15	3536.1	11.15	151.97

DIFFERENTIAL CORRECTIONS
TDE .9747 TRA-2.2622 TC3 .9004 BAU .3863
RDE .7746 RRA-1.0285 RC3 1.0420 FAU .38203
FDE-6.4839 FRA17.7641 FC-15.7628 BSP 13187
BDE 1.2450 BRA 2.4851 BC3 1.3771 FSP 7992

MID-COURSE EXECUTION ACCURACY
SGT 3226.5 SGR 1885.2 SG3 2417.1
RRT .9398 RRF -.9684 RTF -.9587
SGB 3736.9 R23 -.1143 R13 -.9721
SG1 3694.3 SG2 562.5 THA 29.52

ORBIT DETERMINATION ACCURACY
ST 1493.0 SR 1045.5 SS 3310.9
CRT .9734 CRS .9520 CST .9965
LSA 3766.1 MSA 315.3 SSA 28.3
EL1 1811.9 EL2 197.4 ALF 34.75

LAUNCH DATE OCT 3 1964 FLIGHT TIME 292.00 ARRIVAL DATE JUL 22 1965

HELIOCENTRIC CONIC DISTANCE 687.209 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.609 GAL -7.52 AZL 89.90 HCA 221.48 SMA 186.91 ECC .23697 INC .0979 V1 29.771
RP 231.20 LAP -.06 LOP 231.30 VP 20.929 GAP -.13 AZP 90.07 TAL 318.93 TAP 180.41 RCA 142.61 APO 231.20 V2 23.788
RC 223.281 GL .70 GP 10.49 ZAL 145.81 ZAP 127.07 ETS 170.75 ZAE 162.45 ETE 137.88 ZAC 97.75 ETC 256.25 CLP 127.81

PLANETOCENTRIC CONIC

C3 20.798 VHL 4.560 DLA 10.09 RAL 157.70 RAD 6567.8 VEL 11.924 PTH 2.12 VHP 3.562 DPA 11.17 RAP 184.20 ECC 1.3423

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 45 37	2542.24	-25.94	63.34	22.91	101.78	20 27 59	1942.2	-24.05	55.17
90.00	10 21 30	4549.24	11.06	191.72	18.26	63.77	11 37 19	3949.2	7.45	184.91
100.00	21 11 57	2263.79	-27.11	42.57	22.62	103.10	21 49 41	1663.8	-25.04	34.38
100.00	11 37 51	4302.93	12.14	173.06	17.70	62.47	12 49 34	3702.9	8.35	166.31
110.00	22 31 35	2014.73	-30.25	22.69	21.66	106.74	23 5 10	1414.7	-27.66	14.46
110.00	12 34 45	4124.76	14.97	157.90	16.07	58.90	13 43 29	3524.8	10.74	151.35

DIFFERENTIAL CORRECTIONS
TDE .9226 TRA-2.1204 TC3 .8100 BAU .3726
RDE .7814 RRA-1.0395 RC3 1.0677 FAU .39452
FDE-6.6442 FRA18.3293 FC-16.4225 BSP 12682
BDE 1.2090 BRA 2.3615 BC3 1.3402 FSP 8309

MID-COURSE EXECUTION ACCURACY
SGT 3035.0 SGR 1916.2 SG3 2505.8
RRT .9366 RRF -.9682 RTF -.9547
SGB 3589.2 R23 -.1158 R13 -.9709
SG1 3542.8 SG2 575.3 THA 31.52

ORBIT DETERMINATION ACCURACY
ST 1415.2 SR 1059.7 SS 3359.3
CRT .9746 CRS .9511 CST .9958
LSA 3782.3 MSA 323.8 SSA 28.0
EL1 1757.6 EL2 191.3 ALF 36.62

LAUNCH DATE OCT 3 1964 FLIGHT TIME 294.00 ARRIVAL DATE JUL 24 1965

HELIOCENTRIC CONIC DISTANCE 691.035 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.600 GAL -7.49 AZL 89.86 HCA 222.50 SMA 186.74 ECC .23613 INC .1447 V1 29.771
RP 230.82 LAP -.10 LOP 232.31 VP 20.959 GAP -.45 AZP 90.11 TAL 318.97 TAP 181.47 RCA 142.65 APO 230.84 V2 23.827
RC 225.247 GL 1.03 GP 10.47 ZAL 145.75 ZAP 125.58 ETS 171.20 ZAE 161.19 ETE 141.36 ZAC 97.63 ETC 256.29 CLP 126.28

PLANETOCENTRIC CONIC

C3 20.630 VHL 4.542 DLA 10.42 RAL 157.77 RAD 6567.8 VEL 11.917 PTH 2.12 VHP 3.502 DPA 11.37 RAP 183.72 ECC 1.3395

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 43 15	2551.13	-26.06	63.96	22.97	101.49	20 25 46	1951.1	-24.21	55.78
90.00	10 24 29	4536.48	10.68	190.98	18.21	63.62	11 40 5	3936.5	7.05	184.18
100.00	21 9 47	2272.08	-27.24	43.15	22.69	102.81	21 47 39	1672.1	-25.20	34.94
100.00	11 40 39	4290.77	11.75	172.36	17.65	62.32	12 52 9	3690.8	7.96	165.63
110.00	22 29 47	2021.72	-30.38	23.20	21.75	106.47	23 3 29	1421.7	-27.83	14.94
110.00	12 37 8	4113.89	14.58	157.29	16.01	58.74	13 45 41	3513.9	10.34	150.77

DIFFERENTIAL CORRECTIONS
TDE .8696 TRA-1.9716 TC3 .7121 BAU .3600
RDE .7884 RRA-1.0506 RC3 1.0938 FAU .40730
FDE-6.8084 FRA18.8938 FC-17.0920 BSP 12131
BDE 1.1738 BRA 2.2340 BC3 1.3052 FSP 8621

MID-COURSE EXECUTION ACCURACY
SGT 2831.4 SGR 1947.4 SG3 2595.0
RRT .9325 RRF -.9681 RTF -.9495
SGB 3436.4 R23 -.1176 R13 -.9696
SG1 3385.6 SG2 588.4 THA 33.83

ORBIT DETERMINATION ACCURACY
ST 1333.8 SR 1074.0 SS 3407.7
CRT .9760 CRS .9503 CST .9949
LSA 3799.2 MSA 332.3 SSA 27.7
EL1 1702.7 EL2 183.1 ALF 38.69

LAUNCH DATE OCT 3 1964 FLIGHT TIME 296.00 ARRIVAL DATE JUL 26 1965

HELIOCENTRIC CONIC DISTANCE 694.870 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.591 GAL -7.47 AZL 89.81 HCA 223.52 SMA 186.59 ECC .23534 INC .1895 V1 29.771
RP 230.43 LAP -.13 LOP 233.33 VP 20.991 GAP -.78 AZP 90.14 TAL 319.01 TAP 182.52 RCA 142.68 APO 230.50 V2 23.867
RC 227.193 GL 1.35 GP 10.46 ZAL 145.70 ZAP 124.04 ETS 171.65 ZAE 159.84 ETE 144.49 ZAC 97.50 ETC 256.33 CLP 124.70

PLANETOCENTRIC CONIC

C3 20.478 VHL 4.525 DLA 10.74 RAL 157.86 RAD 6567.8 VEL 11.910 PTH 2.12 VHP 3.445 DPA 11.60 RAP 183.21 ECC 1.3370

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 40 59	2559.84	-26.17	64.57	23.05	101.21	20 23 39	1959.8	-24.36	56.37
90.00	10 27 24	4524.23	10.30	190.27	18.19	63.48	11 42 48	3924.2	6.66	183.49
100.00	21 7 42	2280.20	-27.36	43.72	22.77	102.53	21 45 42	1680.2	-25.36	35.49
100.00	11 43 23	4279.11	11.38	171.69	17.62	62.17	12 54 42	3679.1	7.57	164.97
110.00	22 28 6	2028.58	-30.52	23.69	21.85	106.21	23 1 55	1428.6	-27.99	15.41
110.00	12 39 28	4103.49	14.21	156.71	15.97	58.58	13 47 51	3503.5	9.95	150.20

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .8175 TRA-1.8138 TC3 .6095 BAU .3494 SGT 2615.1 SGR 1978.9 SG3 2684.2 ST 1250.3 SR 1089.2 SS 3458.1
RDE .7966 RRA-1.0609 RC3 1.1211 FAU .42068 RRT .9274 RRF -.9680 RTF -.9429 CRT .9781 CRS .9498 CST .9937
FDE-6.9874 FRA19.4427 FC-17.7846 BSP 11495 SGB 3279.5 R23 -.1191 R13 -.9682 LSA 3819.8 MSA 340.6 SSA 27.2
BDE 1.1414 BRA 2.1013 BC3 1.2761 FSP 8904 SG1 3224.0 SG2 600.5 THA 36.53 EL1 1649.3 EL2 171.8 ALF 40.97

LAUNCH DATE OCT 3 1964 FLIGHT TIME 298.00 ARRIVAL DATE JUL 28 1965

HELIOCENTRIC CONIC DISTANCE 698.713 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.583 GAL -7.44 AZL 89.77 HCA 224.54 SMA 186.45 ECC .23461 INC .2327 V1 29.771
RP 230.05 LAP -.16 LOP 234.35 VP 21.023 GAP -1.09 AZP 90.17 TAL 319.03 TAP 183.57 RCA 142.70 APO 230.19 V2 23.907
RC 229.120 GL 1.67 GP 10.45 ZAL 145.66 ZAP 122.47 ETS 172.09 ZAE 158.40 ETE 147.30 ZAC 97.36 ETC 256.38 CLP 123.08

PLANETOCENTRIC CONIC

C3 20.343 VHL 4.510 DLA 11.05 RAL 157.94 RAD 6567.8 VEL 11.905 PTH 2.12 VHP 3.390 DPA 11.83 RAP 182.67 ECC 1.3348

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 38 50	2568.37	-26.29	65.17	23.15	100.93	20 21 38	1968.4	-24.51	56.95
90.00	10 30 16	4512.53	9.95	189.60	18.18	63.35	11 45 28	3912.5	6.29	182.83
100.00	21 5 43	2288.16	-27.48	44.29	22.87	102.26	21 43 51	1688.2	-25.51	36.04
100.00	11 46 4	4267.98	11.03	171.05	17.61	62.04	12 57 12	3668.0	7.20	164.35
110.00	22 26 31	2035.31	-30.64	24.18	21.96	105.95	23 0 26	1435.3	-28.15	15.87
110.00	12 41 45	4093.58	13.86	156.16	15.95	58.44	13 49 59	3493.6	9.59	149.67

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .7597 TRA-1.6527 TC3 .4895 BAU .3389 SGT 2387.9 SGR 2009.3 SG3 2772.4 ST 1159.1 SR 1103.1 SS 3503.9
RDE .8038 RRA-1.0724 RC3 1.1459 FAU .43328 RRT .9193 RRF -.9679 RTF -.9331 CRT .9800 CRS .9491 CST .9923
FDE-7.1499 FRA20.0053 FC-18.4394 BSP 10931 SGB 3120.9 R23 -.1219 R13 -.9665 LSA 3836.0 MSA 348.8 SSA 27.0
BDE 1.1060 BRA 1.9701 BC3 1.2461 FSP 9220 SG1 3059.2 SG2 617.3 THA 39.66 EL1 1592.1 EL2 159.7 ALF 43.56

LAUNCH DATE OCT 3 1964 FLIGHT TIME 300.00 ARRIVAL DATE JUL 30 1965

HELIOCENTRIC CONIC DISTANCE 702.564 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.575 GAL -7.42 AZL 89.72 HCA 225.56 SMA 186.31 ECC .23393 INC .2749 V1 29.771
RP 229.67 LAP -.20 LOP 235.38 VP 21.057 GAP -1.41 AZP 90.19 TAL 319.05 TAP 184.61 RCA 142.73 APO 229.89 V2 23.948
RC 231.027 GL 1.98 GP 10.44 ZAL 145.62 ZAP 120.85 ETS 172.53 ZAE 156.87 ETE 149.84 ZAC 97.21 ETC 256.44 CLP 121.42

PLANETOCENTRIC CONIC

C3 20.222 VHL 4.497 DLA 11.34 RAL 158.04 RAD 6567.8 VEL 11.900 PTH 2.11 VHP 3.339 DPA 12.09 RAP 182.08 ECC 1.3328

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 36 47	2576.72	-26.39	65.76	23.26	100.65	20 19 44	1976.7	-24.65	57.52
90.00	10 33 4	4501.34	9.61	188.96	18.19	63.23	11 48 5	3901.3	5.94	182.20
100.00	21 3 50	2295.95	-27.59	44.84	22.99	101.99	21 42 6	1696.0	-25.66	36.57
100.00	11 48 41	4257.35	10.69	170.45	17.62	61.92	12 59 39	3657.4	6.85	163.76
110.00	22 25 1	2041.92	-30.77	24.65	22.09	105.69	22 59 3	1441.9	-28.31	16.32
110.00	12 44 0	4084.14	13.53	155.64	15.95	58.30	13 52 4	3484.1	9.24	149.16

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .7022 TRA-1.4830 TC3 .3639 BAU .3315 SGT 2149.7 SGR 2039.4 SG3 2859.4 ST 1065.2 SR 1117.4 SS 3550.0
RDE .8116 RRA-1.0831 RC3 1.1709 FAU .44615 RRT .9083 RRF -.9678 RTF -.9197 CRT .9826 CRS .9486 CST .9902
FDE-7.3198 FRA20.5513 FC-19.1006 BSP 10315 SGB 2963.1 R23 -.1241 R13 -.9647 LSA 3854.5 MSA 357.0 SSA 26.6
BDE 1.0732 BRA 1.8363 BC3 1.2262 FSP 9519 SG1 2894.6 SG2 633.6 THA 43.34 EL1 1537.0 EL2 143.9 ALF 46.39

LAUNCH DATE OCT 3 1964 FLIGHT TIME 302.00 ARRIVAL DATE AUG 1 1965

HELIOCENTRIC CONIC DISTANCE 706.424 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.567 GAL -7.41 AZL 89.68 HCA 226.59 SMA 186.18 ECC .23331 INC .3156 V1 29.771
RP 229.28 LAP -.23 LOP 236.41 VP 21.091 GAP -1.71 AZP 90.22 TAL 319.05 TAP 185.65 RCA 142.74 APO 229.62 V2 23.988
RC 232.913 GL 2.28 GP 10.43 ZAL 145.59 ZAP 119.18 ETS 172.97 ZAE 155.27 ETE 152.14 ZAC 97.06 ETC 256.49 CLP 119.72

PLANETOCENTRIC CONIC

C3 20.116 VHL 4.485 DLA 11.62 RAL 158.14 RAD 6567.8 VEL 11.895 PTH 2.11 VHP 3.291 DPA 12.36 RAP 181.47 ECC 1.3311

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 34 50	2584.90	-26.49	66.34	23.38	100.38	20 17 55	1984.9	-24.79	58.08
90.00	10 35 49	4490.66	9.28	188.34	18.22	63.13	11 50 39	3890.7	5.60	181.59
100.00	21 2 4	2303.58	-27.70	45.38	23.12	101.72	21 40 27	1703.6	-25.80	37.09
100.00	11 51 16	4247.21	10.36	169.87	17.65	61.80	13 2 3	3647.2	6.51	163.20
110.00	22 23 37	2048.39	-30.88	25.12	22.23	105.44	22 57 45	1448.4	-28.46	16.76
110.00	12 46 12	4075.17	13.20	155.14	15.97	58.18	13 54 7	3475.2	8.90	148.68

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .6414 TRA-1.3076 TC3 .2256 BAU .3269 SGT 1902.7 SGR 2068.2 SG3 2944.6 ST 965.9 SR 1130.9 SS 3593.5
RDE .8191 RRA-1.0937 RC3 1.1945 FAU .45859 RRT .8911 RRF -.9677 RTF -.8994 CRT .9854 CRS .9480 CST .9875
FDE-7.4829 FRA21.0922 FC-19.7362 BSP 9723 SGB 2810.3 R23 -.1259 R13 -.9630 LSA 3871.9 MSA 365.0 SSA 26.3
BDE 1.0403 BRA 1.7047 BC3 1.2156 FSP 9821 SG1 2733.3 SG2 653.4 THA 47.68 EL1 1482.0 EL2 125.7 ALF 49.56

LAUNCH DATE OCT 3 1964 FLIGHT TIME 304.00 ARRIVAL DATE AUG 3 1965

HELIOCENTRIC CONIC DISTANCE 710.292 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.560 GAL -7.39 AZL 89.64 HCA 227.63 SMA 186.06 ECC .23274 INC .3549 V1 29.771
RP 228.89 LAP -.26 LOP 237.44 VP 21.127 GAP -2.02 AZP 90.24 TAL 319.05 TAP 186.68 RCA 142.76 APO 229.36 V2 24.029
RC 234.778 GL 2.57 GP 10.41 ZAL 145.57 ZAP 117.48 ETS 173.40 ZAE 153.60 ETE 154.23 ZAC 96.89 ETC 256.56 CLP 117.98

PLANETOCENTRIC CONIC

C3 20.025 VHL 4.475 DLA 11.89 RAL 158.25 RAD 6567.8 VEL 11.891 PTH 2.11 VHP 3.245 DPA 12.64 RAP 180.81 ECC 1.3296

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 33 0	2592.90	-26.59	66.90	23.52	100.11	20 16 13	1992.9	-24.92	58.63
90.00	10 38 30	4480.51	8.96	187.76	18.27	63.03	11 53 11	3880.5	5.28	181.02
100.00	21 0 23	2311.06	-27.80	45.91	23.26	101.46	21 38 54	1711.1	-25.93	37.61
100.00	11 53 48	4237.58	10.05	169.32	17.70	61.70	13 4 25	3637.6	6.19	162.66
110.00	22 22 18	2054.74	-31.00	25.58	22.39	105.19	22 56 33	1454.7	-28.60	17.20
110.00	12 48 22	4066.66	12.90	154.67	16.01	58.07	13 56 9	3466.7	8.59	148.23

DIFFERENTIAL CORRECTIONS
TDE .5789 TRA-1.1248 TC3 .0779 BAU .3265
RDE .8266 RRA-1.1037 RC3 1.2169 FAU .47081
FDE-7.6443 FRA21.6158 FC-20.3540 BSP 9137
BDE 1.0092 BRA 1.5759 BC3 1.2194 FSP 10108

MID-COURSE EXECUTION ACCURACY
SGT 1649.3 SGR 2095.7 SG3 3027.2
RRT .8638 RRF -.9676 RTF -.8679
SGB 2666.9 R23 -.1259 R13 -.9614
SG1 2580.1 SG2 674.9 THA 52.82

ORBIT DETERMINATION ACCURACY
ST 862.7 SR 1144.1 SS 3635.4
CRT .9886 CRS .9474 CST .9836
LSA 3889.6 MSA 372.9 SSA 26.0
EL1 1429.1 EL2 103.9 ALF 53.07

LAUNCH DATE OCT 3 1964 FLIGHT TIME 306.00 ARRIVAL DATE AUG 5 1965

HELIOCENTRIC CONIC DISTANCE 714.168 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.553 GAL -7.38 AZL 89.61 HCA 228.66 SMA 185.95 ECC .23223 INC .3937 V1 29.771
RP 228.51 LAP -.30 LOP 238.48 VP 21.163 GAP -2.32 AZP 90.26 TAL 319.04 TAP 187.70 RCA 142.76 APO 229.13 V2 24.070
RC 236.623 GL 2.85 GP 10.39 ZAL 145.56 ZAP 115.74 ETS 173.83 ZAE 151.86 ETE 156.12 ZAC 96.72 ETC 256.63 CLP 116.20

PLANETOCENTRIC CONIC

C3 19.949 VHL 4.466 DLA 12.15 RAL 158.36 RAD 6567.8 VEL 11.888 PTH 2.11 VHP 3.203 DPA 12.93 RAP 180.13 ECC 1.3283

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 31 16	2600.72	-26.68	67.46	23.67	99.85	20 14 37	2000.7	-25.05	59.17
90.00	10 41 8	4470.86	8.67	187.21	18.34	62.94	11 55 39	3870.9	4.97	180.48
100.00	20 58 49	2318.37	-27.90	46.43	23.42	101.20	21 37 27	1718.4	-26.07	38.11
100.00	11 56 16	4228.45	9.76	168.81	17.76	61.60	13 6 45	3628.4	5.89	162.15
110.00	22 21 5	2060.96	-31.11	26.03	22.56	104.94	22 55 26	1461.0	-28.74	17.63
110.00	12 50 30	4058.62	12.61	154.23	16.07	57.96	13 58 9	3458.6	8.29	147.80

DIFFERENTIAL CORRECTIONS
TDE .5140 TRA -.9356 TC3 -.0799 BAU .3306
RDE .8337 RRA-1.1134 RC3 1.2372 FAU .48232
FDE-7.7954 FRA22.1276 FC-20.9312 BSP 8598
BDE .9795 BRA 1.4543 BC3 1.2398 FSP 10406

MID-COURSE EXECUTION ACCURACY
SGT 1395.4 SGR 2121.3 SG3 3106.4
RRT .8176 RRF -.9674 RTF -.8154
SGB 2539.1 R23 -.1226 R13 -.9605
SG1 2441.2 SG2 698.2 THA 58.90

ORBIT DETERMINATION ACCURACY
ST 755.3 SR 1156.3 SS 3673.9
CRT .9923 CRS .9468 CST .9776
LSA 3906.3 MSA 380.8 SSA 25.6
EL1 1378.9 EL2 78.7 ALF 56.93

LAUNCH DATE OCT 3 1964 FLIGHT TIME 308.00 ARRIVAL DATE AUG 7 1965

HELIOCENTRIC CONIC DISTANCE 718.050 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.547 GAL -7.37 AZL 89.57 HCA 229.70 SMA 185.84 ECC .23177 INC .4307 V1 29.771
RP 228.12 LAP -.33 LOP 239.52 VP 21.200 GAP -2.61 AZP 90.28 TAL 319.02 TAP 188.72 RCA 142.77 APO 228.91 V2 24.111
RC 238.446 GL 3.12 GP 10.37 ZAL 145.56 ZAP 113.96 ETS 174.26 ZAE 150.06 ETE 157.86 ZAC 96.54 ETC 256.70 CLP 114.39

PLANETOCENTRIC CONIC

C3 19.887 VHL 4.460 DLA 12.40 RAL 158.48 RAD 6567.8 VEL 11.886 PTH 2.11 VHP 3.165 DPA 13.24 RAP 179.41 ECC 1.3273

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 29 39	2608.37	-26.77	68.00	23.84	99.59	20 13 8	2008.4	-25.17	59.69
90.00	10 43 43	4461.74	8.38	186.69	18.43	62.85	11 58 5	3861.7	4.68	179.97
100.00	20 57 21	2325.52	-27.99	46.95	23.59	100.95	21 36 7	1725.5	-26.19	38.60
100.00	11 58 42	4219.83	9.48	168.32	17.85	61.52	13 9 2	3619.8	5.60	161.68
110.00	22 19 57	2067.06	-31.21	26.48	22.75	104.70	22 54 24	1467.1	-28.88	18.05
110.00	12 52 36	4051.05	12.33	153.81	16.15	57.86	14 0 7	3451.0	8.00	147.40

DIFFERENTIAL CORRECTIONS
TDE .4428 TRA -.7427 TC3 -.2562 BAU .3399
RDE .8390 RRA-1.1240 RC3 1.2523 FAU .49192
FDE-7.9095 FRA22.6491 FC-21.4140 BSP 8200
BDE .9486 BRA 1.3472 BC3 1.2783 FSP 10757

MID-COURSE EXECUTION ACCURACY
SGT 1153.5 SGR 2143.7 SG3 3181.3
RRT .7290 RRF -.9671 RTF -.7188
SGB 2434.4 R23 -.1134 R13 -.9607
SG1 2322.7 SG2 728.7 THA 66.08

ORBIT DETERMINATION ACCURACY
ST 640.0 SR 1166.1 SS 3703.9
CRT .9956 CRS .9457 CST .9686
LSA 3916.2 MSA 388.4 SSA 25.6
EL1 1329.1 EL2 52.7 ALF 61.30

LAUNCH DATE OCT 3 1964 FLIGHT TIME 310.00 ARRIVAL DATE AUG 9 1965

HELIOCENTRIC CONIC DISTANCE 721.943 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.541 GAL -7.36 AZL 89.53 HCA 230.75 SMA 185.74 ECC .23136 INC .4671 V1 29.771
RP 227.73 LAP -.36 LOP 240.56 VP 21.238 GAP -2.90 AZP 90.30 TAL 318.99 TAP 189.74 RCA 142.77 APO 228.72 V2 24.152
RC 240.248 GL 3.39 GP 10.35 ZAL 145.56 ZAP 112.15 ETS 174.69 ZAE 148.21 ETE 159.45 ZAC 96.35 ETC 256.78 CLP 112.53

PLANETOCENTRIC CONIC

C3 19.839 VHL 4.454 DLA 12.64 RAL 158.61 RAD 6567.8 VEL 11.884 PTH 2.11 VHP 3.129 DPA 13.55 RAP 178.66 ECC 1.3265

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 28 9	2615.85	-26.85	68.53	24.03	99.34	20 11 44	2015.8	-25.29	60.21
90.00	10 46 15	4453.11	8.11	186.20	18.54	62.78	12 0 28	3853.1	4.40	179.48
100.00	20 56 0	2332.51	-28.08	47.45	23.78	100.70	21 34 52	1732.5	-26.31	39.09
100.00	12 1 5	4211.68	9.21	167.86	17.95	61.44	13 11 17	3611.7	5.33	161.22
110.00	22 18 55	2073.04	-31.32	26.91	22.95	104.46	22 53 28	1473.0	-29.01	18.46
110.00	12 54 39	4043.91	12.08	153.42	16.24	57.78	14 2 3	3443.9	7.74	147.02

DIFFERENTIAL CORRECTIONS
TDE .3774 TRA -.5371 TC3 -.4256 BAU .3557
RDE .8472 RRA-1.1299 RC3 1.2719 FAU .50351
FDE-8.0756 FRA23.0794 FC-21.9718 BSP 7726
BDE .9275 BRA 1.2510 BC3 1.3412 FSP 10969

MID-COURSE EXECUTION ACCURACY
SGT 938.5 SGR 2165.7 SG3 3252.0
RRT .5678 RRF -.9669 RTF -.5425
SGB 2360.3 R23 -.0977 R13 -.9620
SG1 2238.9 SG2 747.3 THA 74.39

ORBIT DETERMINATION ACCURACY
ST 530.1 SR 1178.4 SS 3742.3
CRT .9985 CRS .9454 CST .9508
LSA 3939.1 MSA 396.0 SSA 25.1
EL1 1291.8 EL2 26.8 ALF 65.80

LAUNCH DATE OCT 3 1964 FLIGHT TIME 312.00 ARRIVAL DATE AUG 11 1965

HELIOCENTRIC CONIC DISTANCE 725.842 EARTH TO MARS
RL 149.67 LAL -.00 LOL 9.82 VL 32.536 GAL -7.36 AZL 89.50 HCA 231.79 SMA 185.65 ECC .23100 INC .5023 V1 29.771
RP 227.34 LAP -.39 LOP 241.61 VP 21.277 GAP -3.19 AZP 90.31 TAL 318.95 TAP 190.74 RCA 142.76 APO 228.53 V2 24.193
RC 242.030 GL 3.65 GP 10.32 ZAL 145.58 ZAP 110.30 ETS 175.11 ZAE 146.30 ETE 160.91 ZAC 96.15 ETC 256.87 CLP 110.65

PLANETOCENTRIC CONIC
C3 19.805 VHL 4.450 DLA 12.86 RAL 158.74 RAD 6567.8 VEL 11.882 PTH 2.11 VHP 3.097 DPA 13.87 RAP 177.88 ECC 1.3259

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 26 45	2623.15	-26.93	69.05	24.23	99.09	20 10 28	2023.1	-25.40	60.72
90.00	10 48 44	4445.00	7.86	185.73	18.66	62.71	12 2 49	3845.0	4.14	179.03
100.00	20 54 45	2339.35	-28.16	47.94	23.99	100.46	21 33 44	1739.3	-26.43	39.56
100.00	12 3 25	4204.03	8.96	167.43	18.07	61.36	13 13 29	3604.0	5.07	160.80
110.00	22 17 59	2078.90	-31.42	27.34	23.17	104.22	22 52 38	1478.9	-29.14	18.87
110.00	12 56 40	4037.24	11.83	153.06	16.36	57.69	14 3 57	3437.2	7.49	146.66

DIFFERENTIAL CORRECTIONS
TDE .3082 TRA -.3264 TC3 -.6070 BAU .3771
RDE .8547 RRA-1.1350 RC3 1.2886 FAU .51408
FDE-8.2244 FRA23.4867 FC-22.4718 BSP 7405
BDE .9086 BRA 1.1810 BC3 1.4244 FSP 11183

MID-COURSE EXECUTION ACCURACY
SGT 796.9 SGR 2184.7 SG3 3317.3
RRT .2660 RRF -.9666 RTF -.2211
SGB 2325.5 R23 -.0745 R13 -.9645
SG1 2196.4 SG2 764.2 THA 83.69

ORBIT DETERMINATION ACCURACY
ST 417.6 SR 1189.2 SS 3775.7
CRT .9951 CRS .9450 CST .9156
LSA 3960.0 MSA 403.3 SSA 24.6
EL1 1259.8 EL2 39.2 ALF 70.72

LAUNCH DATE OCT 3 1964 FLIGHT TIME 314.00 ARRIVAL DATE AUG 13 1965

HELIOCENTRIC CONIC DISTANCE 729.749 EARTH TO MARS
RL 149.67 LAL -.00 LOL 9.82 VL 32.531 GAL -7.36 AZL 89.46 HCA 232.84 SMA 185.56 ECC .23069 INC .5368 V1 29.771
RP 226.95 LAP -.43 LOP 242.66 VP 21.316 GAP -3.47 AZP 90.32 TAL 318.90 TAP 191.74 RCA 142.76 APO 228.37 V2 24.235
RC 243.792 GL 3.90 GP 10.28 ZAL 145.60 ZAP 108.42 ETS 175.53 ZAE 144.35 ETE 162.26 ZAC 95.93 ETC 256.96 CLP 108.74

PLANETOCENTRIC CONIC
C3 19.785 VHL 4.448 DLA 13.08 RAL 158.89 RAD 6567.8 VEL 11.881 PTH 2.11 VHP 3.069 DPA 14.20 RAP 177.07 ECC 1.3256

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 25 28	2630.27	-27.01	69.56	24.44	98.84	20 9 18	2030.3	-25.51	61.21
90.00	10 51 9	4437.40	7.62	185.30	18.81	62.65	12 5 7	3837.4	3.90	178.60
100.00	20 53 36	2346.02	-28.25	48.42	24.21	100.22	21 32 42	1746.0	-26.54	40.03
100.00	12 5 42	4196.88	8.73	167.02	18.21	61.30	13 15 39	3596.9	4.83	160.41
110.00	22 17 9	2084.63	-31.51	27.76	23.40	103.99	22 51 53	1484.6	-29.27	19.27
110.00	12 58 39	4031.03	11.61	152.72	16.49	57.62	14 5 50	3431.0	7.25	146.33

DIFFERENTIAL CORRECTIONS
TDE .2361 TRA -.1099 TC3 -.7977 BAU .4039
RDE .8615 RRA-1.1390 RC3 1.3019 FAU .52349
FDE-8.3582 FRA23.8622 FC-22.9063 BSP 7255
BDE .8933 BRA 1.1442 BC3 1.5269 FSP 11393

MID-COURSE EXECUTION ACCURACY
SGT 785.7 SGR 2200.3 SG3 3376.1
RRT -.1536 RRF -.9662 RTF .2150
SGB 2336.4 R23 -.0461 R13 -.9675
SG1 2204.1 SG2 775.0 THA 93.58

ORBIT DETERMINATION ACCURACY
ST 308.0 SR 1198.7 SS 3804.7
CRT .9656 CRS .9445 CST .8314
LSA 3979.7 MSA 410.4 SSA 24.3
EL1 1235.2 EL2 77.7 ALF 76.01

LAUNCH DATE OCT 3 1964 FLIGHT TIME 316.00 ARRIVAL DATE AUG 15 1965

HELIOCENTRIC CONIC DISTANCE 733.663 EARTH TO MARS
RL 149.67 LAL -.00 LOL 9.82 VL 32.526 GAL -7.36 AZL 89.43 HCA 233.90 SMA 185.48 ECC .23043 INC .5703 V1 29.771
RP 226.56 LAP -.46 LOP 243.71 VP 21.356 GAP -3.75 AZP 90.34 TAL 318.84 TAP 192.74 RCA 142.74 APO 228.23 V2 24.277
RC 245.534 GL 4.14 GP 10.24 ZAL 145.64 ZAP 106.52 ETS 175.95 ZAE 142.36 ETE 163.51 ZAC 95.71 ETC 257.06 CLP 106.79

PLANETOCENTRIC CONIC
C3 19.779 VHL 4.447 DLA 13.28 RAL 159.04 RAD 6567.8 VEL 11.881 PTH 2.11 VHP 3.044 DPA 14.53 RAP 176.23 ECC 1.3255

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 24 18	2637.21	-27.08	70.05	24.67	98.61	20 8 15	2037.2	-25.61	61.69
90.00	10 53 32	4430.31	7.40	184.90	18.97	62.59	12 7 22	3830.3	3.67	178.21
100.00	20 52 35	2352.53	-28.32	48.88	24.45	99.98	21 31 47	1752.5	-26.65	40.48
100.00	12 7 57	4190.22	8.51	166.65	18.37	61.24	13 17 47	3590.2	4.61	160.04
110.00	22 16 24	2090.24	-31.60	28.17	23.65	103.76	22 51 14	1490.2	-29.39	19.66
110.00	13 0 36	4025.28	11.40	152.41	16.64	57.55	14 7 42	3425.3	7.04	146.03

DIFFERENTIAL CORRECTIONS
TDE .1621 TRA .1123 TC3 -.9960 BAU .4357
RDE .8678 RRA-1.1415 RC3 1.3126 FAU .53195
FDE-8.4781 FRA24.2006 FC-23.2835 BSP 7287
BDE .8828 BRA 1.1470 BC3 1.6477 FSP 11583

MID-COURSE EXECUTION ACCURACY
SGT 922.3 SGR 2212.7 SG3 3428.3
RRT -.5025 RRF -.9658 RTF .5692
SGB 2397.2 R23 -.0177 R13 -.9705
SG1 2267.4 SG2 778.1 THA 103.44

ORBIT DETERMINATION ACCURACY
ST 215.2 SR 1206.9 SS 3829.4
CRT .8175 CRS .9439 CST .5858
LSA 3999.1 MSA 417.5 SSA 23.9
EL1 1219.8 EL2 122.6 ALF 81.62

LAUNCH DATE OCT 3 1964 FLIGHT TIME 318.00 ARRIVAL DATE AUG 17 1965

HELIOCENTRIC CONIC DISTANCE 737.584 EARTH TO MARS
RL 149.67 LAL -.00 LOL 9.82 VL 32.522 GAL -7.37 AZL 89.40 HCA 234.95 SMA 185.41 ECC .23022 INC .6032 V1 29.771
RP 226.17 LAP -.49 LOP 244.77 VP 21.397 GAP -4.02 AZP 90.35 TAL 318.77 TAP 193.72 RCA 142.73 APO 228.10 V2 24.318
RC 247.256 GL 4.38 GP 10.20 ZAL 145.69 ZAP 104.59 ETS 176.36 ZAE 140.32 ETE 164.68 ZAC 95.48 ETC 257.16 CLP 104.83

PLANETOCENTRIC CONIC
C3 19.787 VHL 4.448 DLA 13.47 RAL 159.20 RAD 6567.8 VEL 11.881 PTH 2.11 VHP 3.022 DPA 14.86 RAP 175.37 ECC 1.3256

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 23 16	2643.97	-27.15	70.53	24.92	98.37	20 7 19	2044.0	-25.71	62.16
90.00	10 55 51	4423.74	7.20	184.53	19.15	62.54	12 9 35	3823.7	3.46	177.84
100.00	20 51 39	2358.88	-28.40	49.34	24.70	99.75	21 30 58	1758.9	-26.76	40.92
100.00	12 10 8	4184.06	8.31	166.30	18.55	61.18	13 19 52	3584.1	4.40	159.70
110.00	22 15 46	2095.72	-31.69	28.57	23.91	103.54	22 50 41	1495.7	-29.50	20.05
110.00	13 2 31	4019.98	11.20	152.12	16.81	57.49	14 9 31	3420.0	6.84	145.75

DIFFERENTIAL CORRECTIONS
TDE .0859 TRA .3404 TC3-1.2013 BAU .4722
RDE .8736 RRA-1.1422 RC3 1.3202 FAU .53923
FDE-8.5848 FRA24.4959 FC-23.5929 BSP 7519
BDE .8778 BRA 1.1919 BC3 1.7849 FSP 11758

MID-COURSE EXECUTION ACCURACY
SGT 1165.2 SGR 2221.4 SG3 3472.7
RRT -.7004 RRF -.9652 RTF .7652
SGB 2508.4 R23 .0060 R13 -.9733
SG1 2385.9 SG2 774.3 THA 112.69

ORBIT DETERMINATION ACCURACY
ST 177.7 SR 1213.8 SS 3850.1
CRT .2873 CRS .9433 CST -.0433
LSA 4018.4 MSA 424.4 SSA 23.5
EL1 1214.9 EL2 170.0 ALF 87.54

LAUNCH DATE OCT 3 1964 FLIGHT TIME 320.00 ARRIVAL DATE AUG 19 1965

HELIOCENTRIC CONIC DISTANCE 741.511 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.518 GAL -7.38 AZL 89.36 HCA 236.02 SMA 185.34 ECC .23006 INC .6353 V1 29.771
RP 225.78 LAP -.53 LOP 245.83 VP 21.438 GAP -4.30 AZP 90.36 TAL 318.69 TAP 194.70 RCA 142.70 APO 227.98 V2 24.360
RC 248.959 GL 4.61 GP 10.14 ZAL 145.74 ZAP 102.64 ETS 176.77 ZAE 138.26 ETE 165.76 ZAC 95.24 ETC 257.27 CLP 102.84

PLANETOCENTRIC CONIC

C3 19.808 VHL 4.451 DLA 13.66 RAL 159.37 RAD 6567.8 VEL 11.882 PTH 2.11 VHP 3.004 DPA 15.20 RAP 174.50 ECC 1.3260

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 22 20	2650.54	-27.21	71.01	25.19	98.14	20 6 30	2050.5	-25.81	62.62
90.00	10 58 7	4417.68	7.01	184.18	19.35	62.49	12 11 45	3817.7	3.27	177.50
100.00	20 50 51	2365.05	-28.47	49.79	24.97	99.53	21 30 16	1765.1	-26.86	41.35
100.00	12 12 17	4178.40	8.12	165.99	18.75	61.13	13 21 55	3578.4	4.21	159.39
110.00	22 15 13	2101.08	-31.78	28.97	24.20	103.32	22 50 14	1501.1	-29.62	20.42
110.00	13 4 25	4015.14	11.03	151.85	17.00	57.44	14 11 20	3415.1	6.65	145.49

DIFFERENTIAL CORRECTIONS
TDE .0080 TRA .5734 TC3-1.4118 BAU .5127
RDE .8790 RRA-1.1411 RC3 1.3248 FAU .54539
FDE-8.6795 FRA24.7427 FC-23.8367 BSP 7941
BDE .8790 BRA 1.2771 BC3 1.9361 FSP 11907

MID-COURSE EXECUTION ACCURACY
SGT 1468.5 SGR 2226.3 SG3 3509.1
RRT -.8010 RRF -.9646 RTF .8627
SGB 2667.0 R23 .0227 R13 -.9760
SG1 2554.6 SG2 766.1 THA 120.94

ORBIT DETERMINATION ACCURACY
ST 231.2 SR 1219.6 SS 3867.0
CRT -.3302 CRS .9426 CST -.6243
LSA 4038.3 MSA 431.1 SSA 23.1
EL1 1222.0 EL2 217.8 ALF 93.70

LAUNCH DATE OCT 3 1964 FLIGHT TIME 322.00 ARRIVAL DATE AUG 21 1965

HELIOCENTRIC CONIC DISTANCE 745.446 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.514 GAL -7.39 AZL 89.33 HCA 237.08 SMA 185.28 ECC .22995 INC .6668 V1 29.771
RP 225.38 LAP -.56 LOP 246.90 VP 21.480 GAP -4.56 AZP 90.36 TAL 318.59 TAP 195.68 RCA 142.68 APO 227.89 V2 24.402
RC 250.643 GL 4.83 GP 10.08 ZAL 145.81 ZAP 100.67 ETS 177.18 ZAE 136.17 ETE 166.77 ZAC 95.00 ETC 257.38 CLP 100.84

PLANETOCENTRIC CONIC

C3 19.844 VHL 4.455 DLA 13.83 RAL 159.54 RAD 6567.8 VEL 11.884 PTH 2.11 VHP 2.990 DPA 15.53 RAP 173.60 ECC 1.3266

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 21 32	2656.93	-27.27	71.46	25.47	97.92	20 5 49	2056.9	-25.90	63.07
90.00	11 0 20	4412.14	6.83	183.87	19.57	62.45	12 13 52	3812.1	3.09	177.19
100.00	20 50 10	2371.07	-28.53	50.22	25.26	99.31	21 29 41	1771.1	-26.95	41.78
100.00	12 14 23	4173.23	7.95	165.70	18.96	61.09	13 23 56	3573.2	4.04	159.10
110.00	22 14 47	2106.31	-31.86	29.35	24.49	103.11	22 49 53	1506.3	-29.73	20.79
110.00	13 6 15	4010.75	10.87	151.62	17.21	57.39	14 13 6	3410.8	6.49	145.26

DIFFERENTIAL CORRECTIONS
TDE -.0716 TRA .8114 TC3-1.6265 BAU .5568
RDE .8839 RRA-1.1379 RC3 1.3267 FAU .55052
FDE-8.7611 FRA24.9363 FC-24.0180 BSP 8540
BDE .8868 BRA 1.3976 BC3 2.0990 FSP 12025

MID-COURSE EXECUTION ACCURACY
SGT 1806.5 SGR 2227.4 SG3 3537.0
RRT -.8543 RRF -.9639 RTF .9134
SGB 2867.9 R23 .0325 R13 -.9787
SG1 2766.5 SG2 756.1 THA 128.06

ORBIT DETERMINATION ACCURACY
ST 338.1 SR 1224.0 SS 3879.8
CRT -.6089 CRS .9418 CST -.8389
LSA 4058.7 MSA 437.8 SSA 22.7
EL1 1242.0 EL2 264.3 ALF 100.01

LAUNCH DATE OCT 3 1964 FLIGHT TIME 324.00 ARRIVAL DATE AUG 23 1965

HELIOCENTRIC CONIC DISTANCE 749.387 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.510 GAL -7.41 AZL 89.30 HCA 238.15 SMA 185.23 ECC .22989 INC .6976 V1 29.771
RP 224.99 LAP -.59 LOP 247.96 VP 21.522 GAP -4.83 AZP 90.37 TAL 318.49 TAP 196.64 RCA 142.64 APO 227.81 V2 24.444
RC 252.307 GL 5.05 GP 10.02 ZAL 145.89 ZAP 98.69 ETS 177.58 ZAE 134.05 ETE 167.72 ZAC 94.74 ETC 257.49 CLP 98.82

PLANETOCENTRIC CONIC

C3 19.893 VHL 4.460 DLA 13.99 RAL 159.73 RAD 6567.8 VEL 11.886 PTH 2.11 VHP 2.979 DPA 15.86 RAP 172.69 ECC 1.3274

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 20 51	2663.13	-27.33	71.91	25.77	97.71	20 5 14	2063.1	-25.98	63.50
90.00	11 2 30	4407.13	6.67	183.59	19.81	62.42	12 15 57	3807.1	2.93	176.91
100.00	20 49 36	2376.91	-28.60	50.64	25.56	99.09	21 29 12	1776.9	-27.04	42.19
100.00	12 16 26	4168.57	7.80	165.44	19.20	61.05	13 25 55	3568.6	3.88	158.84
110.00	22 14 26	2111.42	-31.93	29.73	24.81	102.90	22 49 38	1511.4	-29.83	21.15
110.00	13 8 4	4006.83	10.72	151.40	17.43	57.35	14 14 51	3406.8	6.34	145.05

DIFFERENTIAL CORRECTIONS
TDE -.1527 TRA 1.0536 TC3-1.8447 BAU .6040
RDE .8882 RRA-1.1326 RC3 1.3251 FAU .55419
FDE-8.8270 FRA25.0771 FC-24.1178 BSP 9294
BDE .9013 BRA 1.5469 BC3 2.2712 FSP 12119

MID-COURSE EXECUTION ACCURACY
SGT 2166.1 SGR 2224.3 SG3 3555.6
RRT -.8843 RRF -.9630 RTF .9416
SGB 3104.7 R23 .0376 R13 -.9814
SG1 3013.6 SG2 746.6 THA 134.14

ORBIT DETERMINATION ACCURACY
ST 464.8 SR 1227.0 SS 3888.1
CRT -.7256 CRS .9410 CST -.9150
LSA 4079.3 MSA 444.2 SSA 22.3
EL1 1275.5 EL2 307.7 ALF 106.35

LAUNCH DATE OCT 3 1964 FLIGHT TIME 326.00 ARRIVAL DATE AUG 25 1965

HELIOCENTRIC CONIC DISTANCE 753.334 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.507 GAL -7.42 AZL 89.27 HCA 239.22 SMA 185.17 ECC .22988 INC .7278 V1 29.771
RP 224.60 LAP -.63 LOP 249.04 VP 21.565 GAP -5.09 AZP 90.37 TAL 318.38 TAP 197.60 RCA 142.61 APO 227.74 V2 24.486
RC 253.951 GL 5.26 GP 9.94 ZAL 145.98 ZAP 96.69 ETS 177.98 ZAE 131.91 ETE 168.61 ZAC 94.48 ETC 257.61 CLP 96.80

PLANETOCENTRIC CONIC

C3 19.956 VHL 4.467 DLA 14.14 RAL 159.92 RAD 6567.8 VEL 11.889 PTH 2.11 VHP 2.972 DPA 16.18 RAP 171.77 ECC 1.3284

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 20 17	2669.13	-27.39	72.34	26.09	97.50	20 4 46	2069.1	-26.06	63.92
90.00	11 4 36	4402.63	6.53	183.33	20.06	62.39	12 17 59	3802.6	2.78	176.66
100.00	20 49 8	2382.58	-28.66	51.05	25.88	98.89	21 28 51	1782.6	-27.13	42.58
100.00	12 18 26	4164.41	7.66	165.20	19.45	61.02	13 27 51	3564.4	3.74	158.61
110.00	22 14 12	2116.40	-32.01	30.10	25.14	102.69	22 49 29	1516.4	-29.93	21.50
110.00	13 9 51	4003.36	10.59	151.22	17.68	57.31	14 16 35	3403.4	6.21	144.87

DIFFERENTIAL CORRECTIONS
TDE -.2353 TRA 1.2997 TC3-2.0650 BAU .6540
RDE .8923 RRA-1.1250 RC3 1.3209 FAU .55683
FDE-8.8821 FRA25.1579 FC-24.1558 BSP 10165
BDE .9228 BRA 1.7190 BC3 2.4513 FSP 12171

MID-COURSE EXECUTION ACCURACY
SGT 2539.7 SGR 2217.3 SG3 3565.3
RRT -.9022 RRF -.9620 RTF .9586
SGB 3371.4 R23 .0395 R13 -.9839
SG1 3289.6 SG2 738.3 THA 139.29

ORBIT DETERMINATION ACCURACY
ST 600.1 SR 1228.9 SS 3892.8
CRT -.7832 CRS .9402 CST -.9477
LSA 4101.3 MSA 450.5 SSA 21.9
EL1 1322.9 EL2 346.6 ALF 112.56

LAUNCH DATE OCT 3 1964 FLIGHT TIME 328.00 ARRIVAL DATE AUG 27 1965

HELIOCENTRIC CONIC DISTANCE 757.288 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.505 GAL -7.45 AZL 89.24 HCA 240.30 SMA 185.13 ECC .22991 INC .7573 V1 29.771
RP 224.21 LAP -.66 LOP 250.11 VP 21.609 GAP -5.34 AZP 90.38 TAL 318.25 TAP 198.55 RCA 142.57 APO 227.69 V2 24.527
RC 255.576 GL 5.46 GP 9.86 ZAL 146.08 ZAP 94.70 ETS 178.37 ZAE 129.76 ETE 169.45 ZAC 94.21 ETC 257.74 CLP 94.77

PLANETOCENTRIC CONIC

C3 20.034 VHL 4.476 DLA 14.28 RAL 160.13 RAD 6567.8 VEL 11.892 PTH 2.11 VHP 2.968 DPA 16.50 RAP 170.85 ECC 1.3297

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 19 51	2674.95	-27.44	72.76	26.42	97.29	20 4 26	2075.0	-26.14	64.33
90.00	11 6 40	4398.66	6.41	183.11	20.34	62.36	12 19 58	3798.7	2.66	176.44
100.00	20 48 48	2388.09	-28.72	51.45	26.22	98.68	21 28 36	1788.1	-27.22	42.97
100.00	12 20 24	4160.76	7.54	165.00	19.72	60.99	13 29 45	3560.8	3.62	158.41
110.00	22 14 5	2121.25	-32.08	30.46	25.49	102.49	22 49 26	1521.3	-30.03	21.85
110.00	13 11 36	4000.35	10.48	151.05	17.94	57.28	14 18 17	3400.4	6.10	144.71

DIFFERENTIAL CORRECTIONS
TDE -.3195 TRA 1.5486 TC3-2.2863 BAU .7062
RDE .8958 RRA-1.1154 RC3 1.3134 FAU .55807
FDE-8.9215 FRA25.1833 FC-24.1160 BSP 11133
BDE .9510 BRA 1.9085 BC3 2.6367 FSP 12195

MID-COURSE EXECUTION ACCURACY
SGT 2922.4 SGR 2206.2 SG3 3565.5
RRT -.9134 RRF -.9609 RTF .9693
SGB 3661.7 R23 .0397 R13 -.9861
SG1 3587.8 SG2 731.7 THA 143.66

ORBIT DETERMINATION ACCURACY
ST 740.0 SR 1229.4 SS 3893.2
CRT -.8160 CRS .9393 CST -.9645
LSA 4124.0 MSA 456.6 SSA 21.4
EL1 1383.7 EL2 380.1 ALF 118.51

LAUNCH DATE OCT 3 1964 FLIGHT TIME 330.00 ARRIVAL DATE AUG 29 1965

HELIOCENTRIC CONIC DISTANCE 761.248 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.502 GAL -7.47 AZL 89.21 HCA 241.38 SMA 185.09 ECC .22999 INC .7864 V1 29.771
RP 223.82 LAP -.69 LOP 251.19 VP 21.653 GAP -5.60 AZP 90.38 TAL 318.11 TAP 199.49 RCA 142.52 APO 227.66 V2 24.569
RC 257.180 GL 5.66 GP 9.77 ZAL 146.19 ZAP 92.70 ETS 178.75 ZAE 127.60 ETE 170.24 ZAC 93.94 ETC 257.86 CLP 92.74

PLANETOCENTRIC CONIC

C3 20.126 VHL 4.486 DLA 14.41 RAL 160.34 RAD 6567.8 VEL 11.896 PTH 2.11 VHP 2.969 DPA 16.80 RAP 169.92 ECC 1.3312

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 19 32	2680.57	-27.48	73.16	26.77	97.10	20 4 13	2080.6	-26.22	64.72
90.00	11 8 40	4395.22	6.30	182.91	20.63	62.34	12 21 55	3795.2	2.54	176.24
100.00	20 48 35	2393.42	-28.77	51.84	26.57	98.49	21 28 28	1793.4	-27.30	43.35
100.00	12 22 18	4157.60	7.44	164.82	20.01	60.96	13 31 36	3557.6	3.51	158.24
110.00	22 14 3	2125.98	-32.15	30.81	25.85	102.29	22 49 29	1526.0	-30.13	22.18
110.00	13 13 19	3997.81	10.39	150.92	18.22	57.25	14 19 57	3397.8	6.00	144.57

DIFFERENTIAL CORRECTIONS
TDE -.4048 TRA 1.8005 TC3-2.5075 BAU .7603
RDE .8985 RRA-1.1035 RC3 1.3028 FAU .55799
FDE-8.9418 FRA25.1505 FC-24.0027 BSP 12182
BDE .9855 BRA 2.1117 BC3 2.8258 FSP 12187

MID-COURSE EXECUTION ACCURACY
SGT 3311.4 SGR 2191.1 SG3 3556.2
RRT -.9204 RRF -.9596 RTF .9765
SGB 3970.7 R23 .0390 R13 -.9880
SG1 3903.6 SG2 726.8 THA 147.39

ORBIT DETERMINATION ACCURACY
ST 882.7 SR 1228.3 SS 3888.3
CRT -.8362 CRS .9383 CST -.9740
LSA 4146.4 MSA 462.6 SSA 21.0
EL1 1456.4 EL2 408.3 ALF 124.04

LAUNCH DATE OCT 3 1964 FLIGHT TIME 332.00 ARRIVAL DATE AUG 31 1965

HELIOCENTRIC CONIC DISTANCE 765.211 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.500 GAL -7.50 AZL 89.18 HCA 242.46 SMA 185.05 ECC .23012 INC .8150 V1 29.771
RP 223.44 LAP -.72 LOP 252.28 VP 21.697 GAP -5.85 AZP 90.38 TAL 317.96 TAP 200.43 RCA 142.47 APO 227.64 V2 24.611
RC 258.763 GL 5.85 GP 9.67 ZAL 146.31 ZAP 90.71 ETS 179.12 ZAE 125.44 ETE 170.98 ZAC 93.67 ETC 257.99 CLP 90.72

PLANETOCENTRIC CONIC

C3 20.233 VHL 4.498 DLA 14.52 RAL 160.56 RAD 6567.8 VEL 11.900 PTH 2.11 VHP 2.972 DPA 17.09 RAP 169.00 ECC 1.3330

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 19 22	2685.99	-27.53	73.55	27.14	96.91	20 4 8	2086.0	-26.29	65.10
90.00	11 10 36	4392.33	6.21	182.75	20.94	62.32	12 23 49	3792.3	2.45	176.08
100.00	20 48 29	2398.56	-28.82	52.21	26.94	98.30	21 28 28	1798.6	-27.37	43.71
100.00	12 24 10	4154.99	7.35	164.68	20.32	60.94	13 33 25	3555.0	3.42	158.10
110.00	22 14 8	2130.57	-32.22	31.15	26.23	102.10	22 49 39	1530.6	-30.22	22.51
110.00	13 15 0	3995.75	10.31	150.80	18.53	57.23	14 21 36	3395.7	5.92	144.47

DIFFERENTIAL CORRECTIONS
TDE -.4899 TRA 2.0593 TC3-2.7250 BAU .8143
RDE .8960 RRA-1.0947 RC3 1.2790 FAU .55176
FDE-8.8487 FRA25.1608 FC-23.6091 BSP 13416
BDE 1.0212 BRA 2.3322 BC3 3.0102 FSP 12356

MID-COURSE EXECUTION ACCURACY
SGT 3707.0 SGR 2168.3 SG3 3535.3
RRT -.9252 RRF -.9580 RTF .9811
SGB 4294.5 R23 .0384 R13 -.9893
SG1 4233.6 SG2 720.6 THA 150.65

ORBIT DETERMINATION ACCURACY
ST 1027.5 SR 1220.8 SS 3861.7
CRT -.8499 CRS .9357 CST -.9809
LSA 4152.0 MSA 468.8 SSA 20.9
EL1 1536.6 EL2 430.2 ALF 129.24

LAUNCH DATE OCT 3 1964 FLIGHT TIME 334.00 ARRIVAL DATE SEP 2 1965

HELIOCENTRIC CONIC DISTANCE 769.184 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.498 GAL -7.53 AZL 89.16 HCA 243.55 SMA 185.02 ECC .23030 INC .8431 V1 29.771
RP 223.05 LAP -.75 LOP 253.36 VP 21.742 GAP -6.09 AZP 90.38 TAL 317.80 TAP 201.35 RCA 142.41 APO 227.63 V2 24.653
RC 260.326 GL 6.03 GP 9.57 ZAL 146.45 ZAP 88.72 ETS 179.49 ZAE 123.28 ETE 171.68 ZAC 93.39 ETC 258.12 CLP 88.70

PLANETOCENTRIC CONIC

C3 20.354 VHL 4.512 DLA 14.63 RAL 160.79 RAD 6567.8 VEL 11.905 PTH 2.12 VHP 2.980 DPA 17.38 RAP 168.08 ECC 1.3350

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 19 18	2691.23	-27.57	73.93	27.52	96.72	20 4 9	2091.2	-26.35	65.47
90.00	11 12 29	4389.94	6.13	182.61	21.27	62.30	12 25 39	3789.9	2.37	175.95
100.00	20 48 30	2403.55	-28.87	52.58	27.33	98.11	21 28 34	1803.6	-27.45	44.06
100.00	12 25 58	4152.84	7.28	164.56	20.64	60.93	13 35 11	3552.8	3.35	157.98
110.00	22 14 19	2135.05	-32.28	31.49	26.63	101.91	22 49 54	1535.0	-30.30	22.83
110.00	13 16 39	3994.11	10.25	150.72	18.84	57.21	14 23 13	3394.1	5.86	144.38

DIFFERENTIAL CORRECTIONS
TDE -.5777 TRA 2.3131 TC3-2.9427 BAU .8718
RDE .9002 RRA-1.0767 RC3 1.2674 FAU .55116
FDE-8.8860 FRA24.9716 FC-23.4433 BSP 14514
BDE 1.0696 BRA 2.5514 BC3 3.2040 FSP 12187

MID-COURSE EXECUTION ACCURACY
SGT 4099.5 SGR 2147.5 SG3 3508.6
RRT -.9275 RRF -.9564 RTF .9849
SGB 4627.9 R23 .0371 R13 -.9908
SG1 4571.6 SG2 719.8 THA 153.37

ORBIT DETERMINATION ACCURACY
ST 1172.2 SR 1219.8 SS 3857.3
CRT -.8585 CRS .9353 CST -.9843
LSA 4185.1 MSA 474.3 SSA 20.3
EL1 1630.9 EL2 449.6 ALF 133.67

LAUNCH DATE OCT 3 1964 FLIGHT TIME 336.00 ARRIVAL DATE SEP 4 1965

HELIOCENTRIC CONIC DISTANCE 773.163 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.497 GAL -7.56 AZL 89.13 HCA 244.64 SMA 184.99 ECC .23053 INC .8708 V1 29.771
RP 222.66 LAP -.79 LOP 254.46 VP 21.787 GAP -6.34 AZP 90.37 TAL 317.63 TAP 202.27 RCA 142.35 APO 227.64 V2 24.695
RC 261.869 GL 6.21 GP 9.46 ZAL 146.59 ZAP 86.74 ETS 179.84 ZAE 121.12 ETE 172.35 ZAC 93.11 ETC 258.25 CLP 86.69

PLANETOCENTRIC CONIC

C3 20.490 VHL 4.527 DLA 14.73 RAL 161.03 RAD 6567.8 VEL 11.911 PTH 2.12 VHP 2.991 DPA 17.64 RAP 167.17 ECC 1.3372

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 19 22	2696.27	-27.61	74.29	27.93	96.54	20 4 19	2096.3	-26.42	65.83
90.00	11 14 19	4388.08	6.07	182.51	21.62	62.29	12 27 27	3788.1	2.32	175.84
100.00	20 48 39	2408.36	-28.92	52.93	27.74	97.93	21 28 47	1808.4	-27.52	44.40
100.00	12 27 44	4151.21	7.23	164.47	20.99	60.92	13 36 55	3551.2	3.29	157.89
110.00	22 14 37	2139.39	-32.34	31.81	27.05	101.73	22 50 16	1539.4	-30.39	23.14
110.00	13 18 16	3992.95	10.21	150.65	19.18	57.20	14 24 49	3392.9	5.82	144.32

DIFFERENTIAL CORRECTIONS
TDE -.6665 TRA 2.5683 TC3-3.1568 BAU .9301
RDE .9028 RRA-1.0578 RC3 1.2506 FAU .54816
FDE-8.8855 FRA24.7500 FC-23.1606 BSP 15664
BDE 1.1222 BRA 2.7776 BC3 3.3955 FSP 12032

MID-COURSE EXECUTION ACCURACY
SGT 4492.0 SGR 2122.4 SG3 3472.6
RRT -.9286 RRF -.9547 RTF .9875
SGB 4968.1 R23 .0362 R13 -.9921
SG1 4915.8 SG2 719.4 THA 155.76

ORBIT DETERMINATION ACCURACY
ST 1317.5 SR 1216.3 SS 3844.7
CRT -.8647 CRS .9345 CST -.9868
LSA 4215.0 MSA 479.7 SSA 19.7
EL1 1731.9 EL2 464.8 ALF 137.64

LAUNCH DATE OCT 3 1964 FLIGHT TIME 338.00 ARRIVAL DATE SEP 6 1965

HELIOCENTRIC CONIC DISTANCE 777.146 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.495 GAL -7.60 AZL 89.10 HCA 245.74 SMA 184.97 ECC .23080 INC .8981 V1 29.771
RP 222.28 LAP -.82 LOP 255.55 VP 21.832 GAP -6.58 AZP 90.37 TAL 317.44 TAP 203.18 RCA 142.28 APO 227.66 V2 24.737
RC 263.392 GL 6.38 GP 9.35 ZAL 146.75 ZAP 84.78 ETS 180.19 ZAE 118.97 ETE 172.97 ZAC 92.83 ETC 258.38 CLP 84.71

PLANETOCENTRIC CONIC

C3 20.641 VHL 4.543 DLA 14.82 RAL 161.28 RAD 6567.8 VEL 11.917 PTH 2.12 VHP 3.006 DPA 17.89 RAP 166.27 ECC 1.3397

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 19 34	2701.11	-27.65	74.64	28.35	96.37	20 4 36	2101.1	-26.48	66.17
90.00	11 16 6	4386.76	6.03	182.44	21.98	62.28	12 29 13	3786.8	2.27	175.77
100.00	20 48 55	2413.00	-28.96	53.27	28.16	97.76	21 29 8	1813.0	-27.58	44.73
100.00	12 29 27	4150.10	7.19	164.40	21.35	60.91	13 38 37	3550.1	3.26	157.83
110.00	22 15 0	2143.61	-32.40	32.13	27.48	101.55	22 50 44	1543.6	-30.47	23.44
110.00	13 19 50	3992.25	10.18	150.62	19.53	57.19	14 26 23	3392.2	5.79	144.28

DIFFERENTIAL CORRECTIONS
TDE -.7561 TRA 2.8248 TC3-3.3663 BAU .9890
RDE .9044 RRA-1.0380 RC3 1.2299 FAU .54325
FDE-8.8587 FRA24.4909 FC-22.7849 BSP 16846
BDE 1.1788 BRA 3.0095 BC3 3.5840 FSP 11876

MID-COURSE EXECUTION ACCURACY
SGT 4883.0 SGR 2093.6 SG3 3427.9
RRT -.9288 RRF -.9527 RTF .9895
SGB 5313.0 R23 .0357 R13 -.9930
SG1 5264.0 SG2 719.6 THA 157.85

ORBIT DETERMINATION ACCURACY
ST 1462.7 SR 1211.2 SS 3826.2
CRT -.8690 CRS .9334 CST -.9886
LSA 4243.9 MSA 485.0 SSA 19.2
EL1 1838.3 EL2 476.8 ALF 141.16

LAUNCH DATE OCT 3 1964 FLIGHT TIME 340.00 ARRIVAL DATE SEP 8 1965

HELIOCENTRIC CONIC DISTANCE 781.134 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.494 GAL -7.64 AZL 89.07 HCA 246.84 SMA 184.95 ECC .23113 INC .9250 V1 29.771
RP 221.89 LAP -.85 LOP 256.65 VP 21.878 GAP -6.82 AZP 90.36 TAL 317.25 TAP 204.08 RCA 142.20 APO 227.70 V2 24.779
RC 264.895 GL 6.55 GP 9.23 ZAL 146.92 ZAP 82.83 ETS 180.52 ZAE 116.83 ETE 173.56 ZAC 92.55 ETC 258.51 CLP 82.74

PLANETOCENTRIC CONIC

C3 20.808 VHL 4.562 DLA 14.89 RAL 161.53 RAD 6567.8 VEL 11.924 PTH 2.12 VHP 3.024 DPA 18.13 RAP 165.40 ECC 1.3425

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 19 54	2705.75	-27.68	74.98	28.78	96.21	20 5 0	2105.7	-26.53	66.50
90.00	11 17 49	4385.98	6.01	182.39	22.36	62.28	12 30 55	3786.0	2.25	175.73
100.00	20 49 18	2417.46	-29.00	53.59	28.60	97.59	21 29 35	1817.5	-27.64	45.05
100.00	12 31 6	4149.50	7.17	164.37	21.73	60.90	13 40 16	3549.5	3.24	157.79
110.00	22 15 30	2147.71	-32.45	32.43	27.93	101.37	22 51 18	1547.7	-30.55	23.74
110.00	13 21 23	3992.02	10.18	150.60	19.91	57.19	14 27 55	3392.0	5.78	144.27

DIFFERENTIAL CORRECTIONS
TDE -.8468 TRA 3.0816 TC3-3.5703 BAU 1.0484
RDE .9053 RRA-1.0170 RC3 1.2068 FAU .53707
FDE-8.8130 FRA24.1895 FC-22.3451 BSP 18038
BDE 1.2396 BRA 3.2451 BC3 3.7687 FSP 11698

MID-COURSE EXECUTION ACCURACY
SGT 5270.9 SGR 2062.1 SG3 3375.7
RRT -.9283 RRF -.9506 RTF .9910
SGB 5660.0 R23 .0353 R13 -.9938
SG1 5614.0 SG2 720.0 THA 159.69

ORBIT DETERMINATION ACCURACY
ST 1607.7 SR 1204.7 SS 3803.2
CRT -.8721 CRS .9323 CST -.9900
LSA 4273.1 MSA 490.0 SSA 18.6
EL1 1949.3 EL2 486.1 ALF 144.27

LAUNCH DATE OCT 3 1964 FLIGHT TIME 342.00 ARRIVAL DATE SEP 10 1965

HELIOCENTRIC CONIC DISTANCE 785.128 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.493 GAL -7.68 AZL 89.05 HCA 247.94 SMA 184.94 ECC .23150 INC .9515 V1 29.771
RP 221.51 LAP -.88 LOP 257.75 VP 21.924 GAP -7.05 AZP 90.36 TAL 317.04 TAP 204.98 RCA 142.12 APO 227.75 V2 24.820
RC 266.379 GL 6.70 GP 9.10 ZAL 147.10 ZAP 80.91 ETS 180.85 ZAE 114.71 ETE 174.12 ZAC 92.27 ETC 258.64 CLP 80.80

PLANETOCENTRIC CONIC

C3 20.992 VHL 4.582 DLA 14.96 RAL 161.80 RAD 6567.9 VEL 11.932 PTH 2.12 VHP 3.046 DPA 18.35 RAP 164.55 ECC 1.3455

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 20 22	2710.19	-27.72	75.30	29.24	96.05	20 5 32	2110.2	-26.59	66.81
90.00	11 19 28	4385.75	6.00	182.38	22.77	62.27	12 32 34	3785.7	2.24	175.71
100.00	20 49 48	2421.75	-29.04	53.90	29.06	97.43	21 30 10	1821.8	-27.70	45.35
100.00	12 32 43	4149.42	7.17	164.37	22.13	60.90	13 41 52	3549.4	3.23	157.79
110.00	22 16 7	2151.68	-32.51	32.73	28.40	101.21	22 51 59	1551.7	-30.62	24.02
110.00	13 22 54	3992.25	10.18	150.62	20.30	57.19	14 29 26	3392.3	5.79	144.28

DIFFERENTIAL CORRECTIONS
TDE -.9376 TRA 3.3387 TC3-3.7665 BAU 1.1077
RDE .9055 RRA -.9949 RC3 1.1807 FAU .52933
FDE-8.7456 FRA23.8492 FC-21.8307 BSP 19246
BDE 1.3035 BRA 3.4838 BC3 3.9472 FSP 11509

MID-COURSE EXECUTION ACCURACY
SGT 5653.6 SGR 2027.6 SG3 3315.8
RRT -.9271 RRF -.9482 RTF .9922
SGB 6006.2 R23 .0351 R13 -.9945
SG1 5962.8 SG2 720.8 THA 161.33

ORBIT DETERMINATION ACCURACY
ST 1751.1 SR 1196.9 SS 3774.9
CRT -.8741 CRS .9309 CST -.9911
LSA 4301.6 MSA 495.0 SSA 18.2
EL1 2062.9 EL2 493.6 ALF 147.02

LAUNCH DATE OCT 3 1964 FLIGHT TIME 344.00 ARRIVAL DATE SEP 12 1965

HELIOCENTRIC CONIC DISTANCE 789.126 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.493 GAL -7.73 AZL 89.02 HCA 249.05 SMA 184.93 ECC .23192 INC .9778 V1 29.771
RP 221.13 LAP -.91 LOP 258.86 VP 21.970 GAP -7.29 AZP 90.35 TAL 316.81 TAP 205.86 RCA 142.04 APO 227.82 V2 24.862
RC 267.844 GL 6.86 GP 8.97 ZAL 147.29 ZAP 79.02 ETS 181.16 ZAE 112.62 ETE 174.64 ZAC 91.99 ETC 258.76 CLP 78.88

PLANETOCENTRIC CONIC

C3 21.191 VHL 4.603 DLA 15.01 RAL 162.07 RAD 6567.9 VEL 11.940 PTH 2.12 VHP 3.071 DPA 18.55 RAP 163.72 ECC 1.3488

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 20 57	2714.44	-27.75	75.61	29.71	95.90	20 6 12	2114.4	-26.64	67.11
90.00	11 21 4	4386.05	6.01	182.39	23.19	62.28	12 34 10	3786.0	2.25	175.73
100.00	20 50 26	2425.87	-29.07	54.21	29.54	97.28	21 30 52	1825.9	-27.76	45.65
100.00	12 34 17	4149.85	7.18	164.39	22.55	60.91	13 43 26	3549.8	3.25	157.81
110.00	22 16 50	2155.53	-32.56	33.02	28.88	101.04	22 52 46	1555.5	-30.69	24.30
110.00	13 24 22	3992.96	10.21	150.65	20.71	57.20	14 30 55	3393.0	5.82	144.32

DIFFERENTIAL CORRECTIONS
TDE-1.0292 TRA 3.5958 TC3-3.9552 BAU 1.1671
RDE .9053 RRA -.9718 RC3 1.1526 FAU .52042
FDE-8.6641 FRA23.4734 FC-21.2608 BSP 20453
BDE 1.3707 BRA 3.7248 BC3 4.1197 FSP 11299

MID-COURSE EXECUTION ACCURACY
SGT 6030.9 SGR 1991.0 SG3 3249.4
RRT -.9253 RRF -.9456 RTF .9931
SGB 6351.1 R23 .0351 R13 -.9950
SG1 6309.9 SG2 721.8 THA 162.78

ORBIT DETERMINATION ACCURACY
ST 1893.5 SR 1188.2 SS 3743.2
CRT -.8752 CRS .9295 CST -.9919
LSA 4331.1 MSA 499.6 SSA 17.7
EL1 2178.9 EL2 499.5 ALF 149.45

LAUNCH DATE OCT 3 1964 FLIGHT TIME 346.00 ARRIVAL DATE SEP 14 1965

HELIOCENTRIC CONIC DISTANCE 793.128 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.492 GAL -7.78 AZL 89.00 HCA 250.16 SMA 184.92 ECC .23239 INC 1.0038 V1 29.771
RP 220.75 LAP -.94 LOP 259.97 VP 22.016 GAP -7.52 AZP 90.34 TAL 316.58 TAP 206.74 RCA 141.95 APO 227.89 V2 24.903
RC 269.292 GL 7.00 GP 8.84 ZAL 147.50 ZAP 77.15 ETS 181.46 ZAE 110.54 ETE 175.14 ZAC 91.72 ETC 258.88 CLP 77.00

PLANETOCENTRIC CONIC

C3 21.408 VHL 4.627 DLA 15.06 RAL 162.36 RAD 6567.9 VEL 11.949 PTH 2.13 VHP 3.100 DPA 18.73 RAP 162.92 ECC 1.3523

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 21 40	2718.49	-27.77	75.90	30.20	95.75	20 6 59	2118.5	-26.69	67.40
90.00	11 22 37	4386.89	6.03	182.44	23.62	62.28	12 35 44	3786.9	2.28	175.78
100.00	20 51 11	2429.81	-29.11	54.49	30.03	97.13	21 31 41	1829.8	-27.81	45.93
100.00	12 35 47	4150.80	7.21	164.44	22.98	60.91	13 44 58	3550.8	3.28	157.86
110.00	22 17 39	2159.25	-32.61	33.30	29.38	100.88	22 53 39	1559.3	-30.76	24.57
110.00	13 25 48	3994.12	10.25	150.72	21.14	57.21	14 32 22	3394.1	5.86	144.38

DIFFERENTIAL CORRECTIONS
TDE-1.1213 TRA 3.8523 TC3-4.1352 BAU 1.2264
RDE .9049 RRA -.9479 RC3 1.1229 FAU .51053
FDE-8.5701 FRA23.0622 FC-20.6457 BSP 21654
BDE 1.4408 BRA 3.9672 BC3 4.2850 FSP 11070

MID-COURSE EXECUTION ACCURACY
SGT 6401.2 SGR 1952.6 SG3 3177.2
RRT -.9230 RRF -.9427 RTF .9938
SGB 6692.4 R23 .0352 R13 -.9954
SG1 6653.2 SG2 722.9 THA 164.08

ORBIT DETERMINATION ACCURACY
ST 2034.1 SR 1178.8 SS 3708.3
CRT -.8758 CRS .9280 CST -.9925
LSA 4361.6 MSA 504.1 SSA 17.3
EL1 2296.3 EL2 504.1 ALF 151.60

LAUNCH DATE OCT 3 1964 FLIGHT TIME 348.00 ARRIVAL DATE SEP 16 1965

HELIOCENTRIC CONIC DISTANCE 797.131 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.492 GAL -7.84 AZL 88.97 HCA 251.27 SMA 184.92 ECC .23292 INC 1.0294 V1 29.771
RP 220.37 LAP -.97 LOP 261.08 VP 22.063 GAP -7.74 AZP 90.33 TAL 316.33 TAP 207.60 RCA 141.85 APO 227.99 V2 24.945
RC 270.721 GL 7.14 GP 8.70 ZAL 147.71 ZAP 75.32 ETS 181.75 ZAE 108.50 ETE 175.60 ZAC 91.45 ETC 259.00 CLP 75.14

PLANETOCENTRIC CONIC

C3 21.643 VHL 4.652 DLA 15.09 RAL 162.65 RAD 6567.9 VEL 11.959 PTH 2.13 VHP 3.132 DPA 18.89 RAP 162.16 ECC 1.3562

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 22 32	2722.34	-27.80	76.18	30.71	95.62	20 7 54	2122.3	-26.73	67.67
90.00	11 24 6	4388.30	6.08	182.52	24.08	62.29	12 37 14	3788.3	2.32	175.86
100.00	20 52 4	2433.58	-29.14	54.77	30.54	96.99	21 32 38	1833.6	-27.86	46.20
100.00	12 37 15	4152.29	7.26	164.53	23.44	60.92	13 46 27	3552.3	3.33	157.95
110.00	22 18 36	2162.85	-32.65	33.57	29.90	100.73	22 54 38	1562.9	-30.83	24.83
110.00	13 27 12	3995.78	10.31	150.81	21.59	57.23	14 33 48	3395.8	5.92	144.47

DIFFERENTIAL CORRECTIONS
TDE-1.2048 TRA 4.1204 TC3-4.2893 BAU 1.2801
RDE .8997 RRA -.9272 RC3 1.0834 FAU .49543
FDE-8.3737 FRA22.7014 FC-19.8181 BSP 23112
BDE 1.5037 BRA 4.2235 BC3 4.4240 FSP 11003

MID-COURSE EXECUTION ACCURACY
SGT 6764.2 SGR 1908.6 SG3 3097.1
RRT -.9205 RRF -.9393 RTF .9943
SGB 7028.3 R23 .0346 R13 -.9956
SG1 6991.2 SG2 721.7 THA 165.28

ORBIT DETERMINATION ACCURACY
ST 2168.5 SR 1163.9 SS 3652.4
CRT -.8746 CRS .9248 CST -.9932
LSA 4374.7 MSA 508.8 SSA 17.2
EL1 2408.1 EL2 508.3 ALF 153.59

LAUNCH DATE OCT 3 1964 FLIGHT TIME 350.00 ARRIVAL DATE SEP 18 1965

HELIOCENTRIC CONIC DISTANCE 801.146 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.492 GAL -7.90 AZL 88.95 HCA 252.39 SMA 184.92 ECC .23349 INC 1.0548 V1 29.771
RP 220.00 LAP -1.01 LOP 262.20 VP 22.109 GAP -7.97 AZP 90.32 TAL 316.07 TAP 208.46 RCA 141.74 APO 228.09 V2 24.986
RC 272.134 GL 7.28 GP 8.56 ZAL 147.94 ZAP 73.52 ETS 182.03 ZAE 106.48 ETE 176.04 ZAC 91.19 ETC 259.11 CLP 73.32

PLANETOCENTRIC CONIC

C3 21.894 VHL 4.679 DLA 15.12 RAL 162.95 RAD 6567.9 VEL 11.970 PTH 2.13 VHP 3.168 DPA 19.03 RAP 161.43 ECC 1.3603

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 23 30	2726.02	-27.82	76.44	31.23	95.48	20 8 56	2126.0	-26.77	67.93
90.00	11 25 31	4390.20	6.14	182.63	24.55	62.30	12 38 41	3790.2	2.38	175.96
100.00	20 53 3	2437.20	-29.17	55.03	31.07	96.85	21 33 40	1837.2	-27.91	46.46
100.00	12 38 39	4154.25	7.33	164.64	23.91	60.94	13 47 53	3554.3	3.40	158.05
110.00	22 19 37	2166.35	-32.70	33.84	30.44	100.58	22 55 43	1566.4	-30.89	25.08
110.00	13 28 34	3997.86	10.39	150.92	22.05	57.25	14 35 12	3397.9	6.00	144.58

DIFFERENTIAL CORRECTIONS
TDE-1.3074 TRA 4.3622 TC3-4.4677 BAU 1.3440
RDE .9032 RRA -.8979 RC3 1.0597 FAU .48813
FDE-8.3494 FRA22.1489 FC-19.3016 BSP 23998
BDE 1.5891 BRA 4.4537 BC3 4.5916 FSP 10555

MID-COURSE EXECUTION ACCURACY
SGT 7117.4 SGR 1871.8 SG3 3017.9
RRT -.9171 RRF -.9363 RTF .9949
SGB 7359.4 R23 .0359 R13 -.9960
SG1 7323.6 SG2 725.2 THA 166.30

ORBIT DETERMINATION ACCURACY
ST 2309.5 SR 1158.0 SS 3629.5
CRT -.8755 CRS .9250 CST -.9934
LSA 4425.6 MSA 512.1 SSA 16.4
EL1 2532.7 EL2 510.2 ALF 155.23

LAUNCH DATE OCT 3 1964 FLIGHT TIME 352.00 ARRIVAL DATE SEP 20 1965

HELIOCENTRIC CONIC DISTANCE 805.161 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.492 GAL -7.96 AZL 88.92 HCA 253.51 SMA 184.92 ECC .23411 INC 1.0800 V1 29.771
RP 219.62 LAP -1.04 LOP 263.32 VP 22.156 GAP -8.19 AZP 90.31 TAL 315.79 TAP 209.30 RCA 141.63 APO 228.22 V2 25.027
RC 273.529 GL 7.40 GP 8.42 ZAL 148.18 ZAP 71.75 ETS 182.29 ZAE 104.49 ETE 176.46 ZAC 90.93 ETC 259.22 CLP 71.54

PLANETOCENTRIC CONIC

C3 22.165 VHL 4.708 DLA 15.13 RAL 163.26 RAD 6567.9 VEL 11.981 PTH 2.14 VHP 3.207 DPA 19.16 RAP 160.73 ECC 1.3648

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 24 36	2729.50	-27.85	76.70	31.78	95.36	20 10 6	2129.5	-26.81	68.18
90.00	11 26 53	4392.67	6.22	182.77	25.04	62.32	12 40 6	3792.7	2.46	176.10
100.00	20 54 10	2440.65	-29.20	55.29	31.62	96.72	21 34 51	1840.6	-27.96	46.70
100.00	12 40 0	4156.75	7.41	164.78	24.40	60.96	13 49 17	3556.8	3.48	158.19
110.00	22 20 45	2169.73	-32.74	34.09	30.99	100.43	22 56 55	1569.7	-30.95	25.32
110.00	13 29 54	4000.44	10.49	151.06	22.53	57.28	14 36 35	3400.4	6.10	144.71

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.4009 TRA 4.6164 TC3-4.6184 BAU 1.4019 SGT 7462.5 SGR 1830.1 SG3 2932.3 ST 2443.8 SR 1146.7 SS 3585.8
RDE .9021 RRA -.8724 RC3 1.0267 FAU .47581 RRT -.9135 RRF -.9327 RTF .9952 CRT -.8748 CRS .9234 CST -.9937
FDE-8.2227 FRA21.6578 FC-18.5844 BSP 25154 SGB 7683.6 R23 .0364 R13 -.9963 LSA 4458.6 MSA 515.8 SSA 16.1
BDE 1.6662 BRA 4.6981 BC3 4.7311 FSP 10281 SG1 7649.2 SG2 726.3 THA 167.26 EL1 2650.4 EL2 512.2 ALF 156.76

LAUNCH DATE OCT 3 1964 FLIGHT TIME 354.00 ARRIVAL DATE SEP 22 1965

HELIOCENTRIC CONIC DISTANCE 809.180 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.793 GAL -8.02 AZL 88.89 HCA 254.64 SMA 184.93 ECC .23479 INC 1.1050 V1 29.771
RP 219.25 LAP -1.07 LOP 264.45 VP 22.203 GAP -8.41 AZP 90.29 TAL 315.51 TAP 210.14 RCA 141.51 APO 228.35 V2 25.067
RC 274.906 GL 7.52 GP 8.27 ZAL 148.43 ZAP 70.02 ETS 182.54 ZAE 102.54 ETE 176.85 ZAC 90.68 ETC 259.32 CLP 69.80

PLANETOCENTRIC CONIC

C3 22.455 VHL 4.739 DLA 15.14 RAL 163.58 RAD 6567.9 VEL 11.993 PTH 2.14 VHP 3.249 DPA 19.26 RAP 160.08 ECC 1.3696

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 25 50	2732.79	-27.87	76.93	32.34	95.24	20 11 23	2132.8	-26.85	68.42
90.00	11 28 11	4395.68	6.31	182.94	25.55	62.34	12 41 27	3795.7	2.56	176.27
100.00	20 55 24	2443.93	-29.22	55.53	32.18	96.60	21 36 8	1843.9	-28.00	46.94
100.00	12 41 18	4159.77	7.51	164.94	24.90	60.98	13 50 38	3559.8	3.58	158.36
110.00	22 22 0	2172.99	-32.78	34.34	31.56	100.29	22 58 13	1573.0	-31.01	25.56
110.00	13 31 12	4003.48	10.60	151.22	23.04	57.31	14 37 56	3403.5	6.21	144.87

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.4956 TRA 4.8692 TC3-4.7590 BAU 1.4595 SGT 7798.1 SGR 1788.2 SG3 2844.0 ST 2576.1 SR 1135.3 SS 3540.5
RDE .9010 RRA -.8466 RC3 .9934 FAU .46303 RRT -.9096 RRF -.9288 RTF .9955 CRT -.8740 CRS .9218 CST -.9940
FDE-8.0910 FRA21.1463 FC-17.8517 BSP 26273 SGB 8000.5 R23 .0370 R13 -.9964 LSA 4493.4 MSA 519.1 SSA 15.7
BDE 1.7460 BRA 4.9422 BC3 4.8616 FSP 9991 SG1 7967.4 SG2 727.3 THA 168.12 EL1 2767.9 EL2 513.5 ALF 158.14

LAUNCH DATE OCT 3 1964 FLIGHT TIME 356.00 ARRIVAL DATE SEP 24 1965

HELIOCENTRIC CONIC DISTANCE 813.202 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.494 GAL -8.09 AZL 88.87 HCA 255.77 SMA 184.94 ECC .23552 INC 1.1298 V1 29.771
RP 218.89 LAP -1.10 LOP 265.58 VP 22.249 GAP -8.63 AZP 90.28 TAL 315.20 TAP 210.97 RCA 141.39 APO 228.50 V2 25.108
RC 276.266 GL 7.64 GP 8.13 ZAL 148.69 ZAP 68.33 ETS 182.79 ZAE 100.62 ETE 177.22 ZAC 90.44 ETC 259.41 CLP 68.10

PLANETOCENTRIC CONIC

C3 22.765 VHL 4.771 DLA 15.13 RAL 163.90 RAD 6567.9 VEL 12.006 PTH 2.14 VHP 3.294 DPA 19.35 RAP 159.47 ECC 1.3747

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 27 12	2735.90	-27.89	77.16	32.92	95.13	20 12 47	2135.9	-26.88	68.64
90.00	11 29 26	4399.23	6.42	183.14	26.08	62.36	12 42 45	3799.2	2.67	176.47
100.00	20 56 46	2447.06	-29.25	55.76	32.76	96.48	21 37 33	1847.1	-28.04	47.16
100.00	12 42 33	4163.31	7.63	165.14	25.43	61.01	13 51 57	3563.3	3.70	158.55
110.00	22 23 20	2176.15	-32.82	34.57	32.15	100.16	22 59 37	1576.2	-31.07	25.79
110.00	13 32 28	4006.98	10.73	151.41	23.56	57.35	14 39 15	3407.0	6.35	145.06

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.5908 TRA 5.1212 TC3-4.8889 BAU 1.5163 SGT 8124.0 SGR 1746.1 SG3 2753.3 ST 2705.8 SR 1123.5 SS 3493.0
RDE .8999 RRA -.8208 RC3 .9596 FAU .44970 RRT -.9052 RRF -.9247 RTF .9958 CRT -.8729 CRS .9202 CST -.9942
FDE-7.9516 FRA20.6206 FC-17.1015 BSP 27371 SGB 8309.5 R23 .0377 R13 -.9966 LSA 4529.0 MSA 522.1 SSA 15.3
BDE 1.8276 BRA 5.1866 BC3 4.9822 FSP 9692 SG1 8277.5 SG2 728.1 THA 168.90 EL1 2884.3 EL2 514.3 ALF 159.39

LAUNCH DATE OCT 3 1964 FLIGHT TIME 358.00 ARRIVAL DATE SEP 26 1965

HELIOCENTRIC CONIC DISTANCE 817.227 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.494 GAL -8.17 AZL 88.85 HCA 256.90 SMA 184.96 ECC .23630 INC 1.1545 V1 29.771
RP 218.52 LAP -1.12 LOP 266.71 VP 22.296 GAP -8.85 AZP 90.26 TAL 314.89 TAP 211.79 RCA 141.25 APO 228.66 V2 25.148
RC 277.609 GL 7.75 GP 7.98 ZAL 148.96 ZAP 66.68 ETS 183.02 ZAE 98.74 ETE 177.57 ZAC 90.20 ETC 259.50 CLP 66.44

PLANETOCENTRIC CONIC

C3 23.096 VHL 4.806 DLA 15.11 RAL 164.24 RAD 6567.9 VEL 12.020 PTH 2.15 VHP 3.342 DPA 19.41 RAP 158.90 ECC 1.3801

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 28 41	2738.84	-27.90	77.37	33.52	95.02	20 14 19	2138.8	-26.91	68.85
90.00	11 30 37	4403.32	6.55	183.37	26.63	62.39	12 44 1	3803.3	2.81	176.70
100.00	20 58 14	2450.03	-29.27	55.97	33.36	96.37	21 39 4	1850.0	-28.08	47.37
100.00	12 43 45	4167.36	7.76	165.37	25.97	61.04	13 53 13	3567.4	3.84	158.78
110.00	22 24 47	2179.20	-32.85	34.81	32.76	100.02	23 1 6	1579.2	-31.12	26.01
110.00	13 33 41	4010.96	10.87	151.63	24.10	57.39	14 40 32	3411.0	6.50	145.27

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.6863 TRA 5.3733 TC3-5.0066 BAU 1.5721 SGT 8439.8 SGR 1704.0 SG3 2660.8 ST 2832.9 SR 1111.5 SS 3443.5
RDE .8987 RRA -.7952 RC3 .9256 FAU .43587 RRT -.9005 RRF -.9203 RTF .9960 CRT -.8715 CRS .9186 CST -.9943
FDE-7.8054 FRA20.0853 FC-16.3384 BSP 28450 SGB 8610.1 R23 .0384 R13 -.9967 LSA 4565.4 MSA 524.8 SSA 15.0
BDE 1.9108 BRA 5.4319 BC3 5.0914 FSP 9387 SG1 8579.2 SG2 728.8 THA 169.62 EL1 2999.3 EL2 514.8 ALF 160.52

LAUNCH DATE OCT 3 1964 FLIGHT TIME 360.00 ARRIVAL DATE SEP 28 1965

HELIOCENTRIC CONIC DISTANCE 821.255 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.496 GAL -8.24 AZL 88.82 HCA 258.04 SMA 184.97 ECC .23714 INC 1.1789 V1 29.771
RP 218.16 LAP -1.15 LOP 267.85 VP 22.343 GAP -9.07 AZP 90.24 TAL 314.56 TAP 212.59 RCA 141.11 APO 228.84 V2 25.188
RC 278.933 GL 7.85 GP 7.84 ZAL 149.24 ZAP 65.07 ETS 183.23 ZAE 96.90 ETE 177.90 ZAC 89.98 ETC 259.58 CLP 64.82

PLANETOCENTRIC CONIC

C3 23.449 VHL 4.842 DLA 15.09 RAL 164.58 RAD 6568.0 VEL 12.034 PTH 2.15 VHP 3.394 DPA 19.46 RAP 158.37 ECC 1.3859

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 30 17	2741.60	-27.92	77.57	34.13	94.93	20 15 59	2141.6	-26.94	69.04
90.00	11 31 45	4407.95	6.70	183.63	27.19	62.42	12 45 13	3808.0	2.95	176.95
100.00	20 59 49	2452.86	-29.29	56.18	33.98	96.26	21 40 42	1852.9	-28.11	47.58
100.00	12 44 54	4171.93	7.91	165.62	26.54	61.08	13 54 26	3571.9	3.99	159.03
110.00	22 26 20	2182.16	-32.89	35.03	33.38	99.90	23 2 42	1582,2	-31.17	26.23
110.00	13 34 53	4015.39	11.04	151.87	24.65	57.44	14 41 48	3415.4	6.66	145.50

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.7827 TRA 5.6244 TC3-5.1135 BAU 1.6272 SGT 8745.3 SGR 1662.5 SG3 2567.4 ST 2957.5 SR 1099.4 SS 3392.3
RDE .8976 RRA -.7699 RC3 .8917 FAU .42183 RRT -.8955 RRF -.9157 RTF .9961 CRT -.8701 CRS .9170 CST -.9945
FDE-7.6542 FRA19.5417 FC-15.5742 BSP 29494 SGB 8901.9 R23 .0392 R13 -.9968 LSA 4602.7 MSA 527.2 SSA 14.7
BDE 1.9959 BRA 5.6769 BC3 5.1906 FSP 9079 SG1 8872.0 SG2 729.3 THA 170.27 EL1 3113.0 EL2 514.7 ALF 161.55

LAUNCH DATE OCT 3 1964 FLIGHT TIME 362.00 ARRIVAL DATE SEP 30 1965

HELIOCENTRIC CONIC DISTANCE 825.285 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.497 GAL -8.32 AZL 88.80 HCA 259.18 SMA 184.99 ECC .23803 INC 1.2033 V1 29.771
RP 217.80 LAP -1.18 LOP 268.99 VP 22.390 GAP -9.29 AZP 90.23 TAL 314.21 TAP 213.39 RCA 140.96 APO 229.03 V2 25.228
RC 280.240 GL 7.95 GP 7.69 ZAL 149.54 ZAP 63.50 ETS 183.44 ZAE 95.09 ETE 178.21 ZAC 89.76 ETC 259.66 CLP 63.24

PLANETOCENTRIC CONIC

C3 23.824 VHL 4.881 DLA 15.05 RAL 164.93 RAD 6568.0 VEL 12.050 PTH 2.15 VHP 3.448 DPA 19.49 RAP 157.89 ECC 1.3921

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 32 1	2744.20	-27.94	77.76	34.76	94.83	20 17 45	2144.2	-26.97	69.23
90.00	11 32 49	4413.12	6.86	183.92	27.77	62.46	12 46 23	3813.1	3.12	177.24
100.00	21 1 31	2455.54	-29.31	56.38	34.61	96.16	21 42 27	1855.5	-28.15	47.77
100.00	12 46 0	4177.01	8.08	165.91	27.12	61.12	13 55 37	3577.0	4.16	159.31
110.00	22 27 59	2185.01	-32.92	35.24	34.02	99.77	23 4 24	1585.0	-31.22	26.43
110.00	13 36 2	4020.30	11.21	152.13	25.23	57.50	14 43 2	3420.3	6.85	145.76

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.8802 TRA 5.8751 TC3-5.2089 BAU 1.6814 SGT 9040.5 SGR 1621.6 SG3 2473.4 ST 3079.8 SR 1087.3 SS 3339.9
RDE .8966 RRA -.7449 RC3 .8582 FAU .40755 RRT -.8901 RRF -.9108 RTF .9962 CRT -.8687 CRS .9155 CST -.9946
FDE-7.5002 FRA18.9924 FC-14.8101 BSP 30521 SGB 9184.8 R23 .0401 R13 -.9968 LSA 4641.4 MSA 529.2 SSA 14.5
BDE 2.0831 BRA 5.9222 BC3 5.2791 FSP 8769 SG1 8155.7 SG2 729.6 THA 170.87 EL1 3225.3 EL2 514.3 ALF 162.49

LAUNCH DATE OCT 3 1964 FLIGHT TIME 364.00 ARRIVAL DATE OCT 2 1965

HELIOCENTRIC CONIC DISTANCE 829.317 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.498 GAL -8.41 AZL 88.77 HCA 260.32 SMA 185.02 ECC .23898 INC 1.2276 V1 29.771
RP 217.44 LAP -1.21 LOP 270.14 VP 22.436 GAP -9.50 AZP 90.21 TAL 313.86 TAP 214.18 RCA 140.80 APO 229.23 V2 25.268
RC 281.529 GL 8.05 GP 7.55 ZAL 149.84 ZAP 61.97 ETS 183.64 ZAE 93.33 ETE 178.50 ZAC 89.55 ETC 259.72 CLP 61.71

PLANETOCENTRIC CONIC

C3 24.222 VHL 4.922 DLA 15.01 RAL 165.29 RAD 6568.0 VEL 12.066 PTH 2.16 VHP 3.506 DPA 19.51 RAP 157.45 ECC 1.3986

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 33 52	2746.63	-27.95	77.94	35.41	94.75	20 19 39	2146.6	-27.00	69.40
90.00	11 33 50	4418.82	7.04	184.25	28.38	62.50	12 47 29	3818.8	3.30	177.56
100.00	21 3 20	2458.08	-29.33	56.57	35.27	96.06	21 44 18	1858.1	-28.18	47.95
100.00	12 47 3	4182.60	8.26	166.22	27.72	61.17	13 56 45	3582.6	4.35	159.62
110.00	22 29 44	2187.77	-32.95	35.45	34.68	99.65	23 6 11	1587.8	-31.27	26.64
110.00	13 37 9	4025.67	11.41	152.43	25.82	57.56	14 44 15	3425.7	7.05	146.05

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.9779 TRA 6.1266 TC3-5.2931 BAU 1.7347 SGT 9326.0 SGR 1581.4 SG3 2379.4 ST 3199.0 SR 1075.1 SS 3285.6
RDE .8957 RRA -.7205 RC3 .8249 FAU .39308 RRT -.8845 RRF -.9057 RTF .9963 CRT -.8670 CRS .9139 CST -.9946
FDE-7.3400 FRA18.4436 FC-14.0493 BSP 31527 SGB 9459.1 R23 .0409 R13 -.9968 LSA 4680.0 MSA 530.9 SSA 14.2
BDE 2.1712 BRA 6.1688 BC3 5.3570 FSP 8462 SG1 9430.9 SG2 729.7 THA 171.42 EL1 3335.5 EL2 513.7 ALF 163.35

LAUNCH DATE OCT 3 1964 FLIGHT TIME 366.00 ARRIVAL DATE OCT 4 1965

HELIOCENTRIC CONIC DISTANCE 833.351 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.500 GAL -8.50 AZL 88.75 HCA 261.47 SMA 185.04 ECC .23999 INC 1.2518 V1 29.771
RP 217.09 LAP -1.24 LOP 271.28 VP 22.483 GAP -9.71 AZP 90.19 TAL 313.48 TAP 214.95 RCA 140.64 APO 229.45 V2 25.307
RC 282.801 GL 8.13 GP 7.41 ZAL 150.16 ZAP 60.49 ETS 183.82 ZAE 91.60 ETE 178.78 ZAC 89.36 ETC 259.78 CLP 60.21

PLANETOCENTRIC CONIC

C3 24.645 VHL 4.964 DLA 14.95 RAL 165.66 RAD 6568.0 VEL 12.084 PTH 2.16 VHP 3.566 DPA 19.51 RAP 157.06 ECC 1.4056

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 35 50	2748.90	-27.96	78.10	36.08	94.66	20 21 39	2148.9	-27.02	69.56
90.00	11 34 48	4425.05	7.24	184.60	28.99	62.55	12 48 33	3825.1	3.50	177.91
100.00	21 5 16	2460.48	-29.34	56.74	35.94	95.97	21 46 17	1860.5	-28.21	48.12
100.00	12 48 3	4188.70	8.46	166.57	28.33	61.22	13 57 51	3588.7	4.56	159.95
110.00	22 31 36	2190.45	-32.98	35.65	35.36	99.54	23 8 7	1590.5	-31.32	26.82
110.00	13 38 14	4031.50	11.62	152.74	26.44	57.63	14 45 25	3431.5	7.27	146.36

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-2.0766 TRA 6.3785 TC3-5.3656 BAU 1.7871 SGT 9601.2 SGR 1542.1 SG3 2285.7 ST 3315.8 SR 1062.9 SS 3230.2
RDE .8949 RRA -.6967 RC3 .7922 FAU .37855 RRT -.8785 RRF -.9003 RTF .9963 CRT -.8654 CRS .9124 CST -.9947
FDE-7.1777 FRA17.8946 FC-13.2977 BSP 32499 SGB 9724.2 R23 .0419 R13 -.9968 LSA 4719.6 MSA 532.3 SSA 14.0
BDE 2.2612 BRA 6.4164 BC3 5.4238 FSP 8152 SG1 9696.8 SG2 729.5 THA 171.92 EL1 3444.0 EL2 512.8 ALF 164.13

LAUNCH DATE OCT 3 1964 FLIGHT TIME 368.00 ARRIVAL DATE OCT 6 1965

HELIOCENTRIC CONIC DISTANCE 837.386 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.501 GAL -8.59 AZL 88.72 HCA 262.62 SMA 185.07 ECC .24106 INC 1.2758 V1 29.771
RP 216.74 LAP -1.27 LOP 272.44 VP 22.529 GAP -9.92 AZP 90.16 TAL 313.09 TAP 215.72 RCA 140.46 APO 229.69 V2 25.346
RC 284.057 GL 8.21 GP 7.27 ZAL 150.48 ZAP 59.04 ETS 184.00 ZAE 89.91 ETE 179.04 ZAC 89.17 ETC 259.83 CLP 58.76

PLANETOCENTRIC CONIC

C3 25.094 VHL 5.009 DLA 14.88 RAL 166.03 RAD 6568.0 VEL 12.103 PTH 2.17 VHP 3.630 DPA 19.49 RAP 156.71 ECC 1.4130

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 37 55	2751.03	-27.97	78.26	36.77	94.59	20 23 46	2151.0	-27.04	69.71
90.00	11 35 42	4431.81	7.45	184.98	29.63	62.60	12 49 33	3831.8	3.72	178.29
100.00	21 7 19	2462.76	-29.36	56.91	36.63	95.88	21 48 21	1862.8	-28.24	48.29
100.00	12 48 59	4195.31	8.68	166.94	28.97	61.28	13 58 55	3595.3	4.78	160.32
110.00	22 33 31	2193.04	-33.01	35.85	36.05	99.42	23 10 4	1593.0	-31.36	27.02
110.00	13 39 17	4037.79	11.85	153.09	27.07	57.70	14 46 35	3437.8	7.51	146.69

DIFFERENTIAL CORRECTIONS
TDE-2.1768 TRA 6.6306 TC3-5.4274 BAU 1.8386
RDE .8945 RRA -.6735 RC3 .7603 FAU .36408
FDE-7.0153 FRA17.3467 FC-12.5605 BSP 33448
BDE 2.3534 BRA 6.6647 BC3 5.4804 FSP 7845

MID-COURSE EXECUTION ACCURACY
SGT 9866.3 SGR 1504.1 SG3 2192.9
RRT -.8723 RRF -.8948 RTF .9963
SGB 9980.3 R23 .0428 R13 -.9968
SG1 9953.7 SG2 729.1 THA 172.38

ORBIT DETERMINATION ACCURACY
ST 3430.4 SR 1050.9 SS 3174.2
CRT -.8638 CRS .9110 CST -.9947
LSA 4760.5 MSA 533.3 SSA 13.8
EL1 3551.1 EL2 511.5 ALF 164.86

LAUNCH DATE OCT 3 1964 FLIGHT TIME 370.00 ARRIVAL DATE OCT 8 1965

HELIOCENTRIC CONIC DISTANCE 841.421 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.503 GAL -8.69 AZL 88.70 HCA 263.78 SMA 185.11 ECC .24219 INC 1.2999 V1 29.771
RP 216.39 LAP -1.29 LOP 273.59 VP 22.575 GAP -10.14 AZP 90.14 TAL 312.69 TAP 216.47 RCA 140.28 APO 229.94 V2 25.385
RC 285.296 GL 8.29 GP 7.13 ZAL 150.82 ZAP 57.64 ETS 184.17 ZAE 88.25 ETE 179.28 ZAC 88.99 ETC 259.88 CLP 57.36

PLANETOCENTRIC CONIC

C3 25.570 VHL 5.057 DLA 14.81 RAL 166.41 RAD 6568.0 VEL 12.122 PTH 2.17 VHP 3.696 DPA 19.45 RAP 156.41 ECC 1.4208

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 40 7	2753.01	-27.98	78.40	37.47	94.52	20 26 0	2153.0	-27.06	69.86
90.00	11 36 32	4439.10	7.68	185.40	30.29	62.66	12 50 31	3839.1	3.95	178.70
100.00	21 9 27	2464.92	-29.38	57.07	37.33	95.80	21 50 32	1864.9	-28.26	48.44
100.00	12 49 53	4202.42	8.91	167.34	29.63	61.35	13 59 56	3602.4	5.02	160.71
110.00	22 35 33	2195.56	-33.04	36.04	36.76	99.31	23 12 8	1595.6	-31.40	27.20
110.00	13 40 18	4044.54	12.10	153.46	27.72	57.78	14 47 42	3444.5	7.76	147.05

DIFFERENTIAL CORRECTIONS
TDE-2.2777 TRA 6.8843 TC3-5.4778 BAU 1.8891
RDE .8942 RRA -.6511 RC3 .7291 FAU .34961
FDE-6.8504 FRA16.8047 FC-11.8369 BSP 34376
BDE 2.4469 BRA 6.9150 BC3 5.5261 FSP 7542

MID-COURSE EXECUTION ACCURACY
SGT10121.8 SGR 1467.1 SG3 2101.2
RRT -.8658 RRF -.8890 RTF .9963
SGB10227.6 R23 .0438 R13 -.9968
SG110201.8 SG2 728.5 THA 172.81

ORBIT DETERMINATION ACCURACY
ST 3542.2 SR 1038.9 SS 3117.0
CRT -.8621 CRS .9096 CST -.9947
LSA 4801.8 MSA 534.1 SSA 13.6
EL1 3656.0 EL2 510.1 ALF 165.52

LAUNCH DATE OCT 3 1964 FLIGHT TIME 372.00 ARRIVAL DATE OCT 10 1965

HELIOCENTRIC CONIC DISTANCE 845.458 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.505 GAL -8.80 AZL 88.68 HCA 264.94 SMA 185.14 ECC .24338 INC 1.3239 V1 29.771
RP 216.05 LAP -1.32 LOP 274.75 VP 22.621 GAP -10.35 AZP 90.12 TAL 312.27 TAP 217.21 RCA 140.08 APO 230.20 V2 25.423
RC 286.520 GL 8.36 GP 6.99 ZAL 151.17 ZAP 56.27 ETS 184.33 ZAE 86.64 ETE 179.51 ZAC 88.82 ETC 259.91 CLP 55.99

PLANETOCENTRIC CONIC

C3 26.074 VHL 5.106 DLA 14.73 RAL 166.80 RAD 6568.1 VEL 12.143 PTH 2.18 VHP 3.765 DPA 19.41 RAP 156.15 ECC 1.4291

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 42 26	2754.85	-27.99	78.54	38.20	94.45	20 28 21	2154.9	-27.08	69.99
90.00	11 37 20	4446.91	7.92	185.84	30.96	62.73	12 51 26	3846.9	4.20	179.14
100.00	21 11 43	2466.96	-29.39	57.22	38.05	95.72	21 52 50	1867.0	-28.29	48.59
100.00	12 50 44	4210.03	9.16	167.77	30.30	61.42	14 0 55	3610.0	5.27	161.13
110.00	22 37 40	2198.00	-33.07	36.23	37.49	99.21	23 14 18	1598.0	-31.44	27.38
110.00	13 41 16	4051.75	12.36	153.85	28.39	57.87	14 48 48	3451.8	8.03	147.43

DIFFERENTIAL CORRECTIONS
TDE-2.3796 TRA 7.1398 TC3-5.5176 BAU 1.9387
RDE .8940 RRA -.6296 RC3 .6986 FAU .33524
FDE-6.6833 FRA16.2691 FC-11.1310 BSP 35286
BDE 2.5420 BRA 7.1675 BC3 5.5617 FSP 7246

MID-COURSE EXECUTION ACCURACY
SGT10368.0 SGR 1431.4 SG3 2011.0
RRT -.8581 RRF -.8831 RTF .9963
SGB10466.4 R23 .0448 R13 -.9967
SG110441.0 SG2 727.6 THA 173.20

ORBIT DETERMINATION ACCURACY
ST 3651.4 SR 1027.1 SS 3058.6
CRT -.8604 CRS .9082 CST -.9947
LSA 4843.3 MSA 534.4 SSA 13.5
EL1 3758.9 EL2 508.5 ALF 166.14

LAUNCH DATE OCT 3 1964 FLIGHT TIME 374.00 ARRIVAL DATE OCT 12 1965

HELIOCENTRIC CONIC DISTANCE 849.494 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.508 GAL -8.90 AZL 88.65 HCA 266.10 SMA 185.18 ECC .24464 INC 1.3479 V1 29.771
RP 215.71 LAP -1.34 LOP 275.92 VP 22.667 GAP -10.56 AZP 90.09 TAL 311.84 TAP 217.94 RCA 139.88 APO 230.48 V2 25.461
RC 287.729 GL 8.42 GP 6.86 ZAL 151.53 ZAP 54.95 ETS 184.48 ZAE 85.06 ETE 179.73 ZAC 88.66 ETC 259.94 CLP 54.66

PLANETOCENTRIC CONIC

C3 26.608 VHL 5.158 DLA 14.63 RAL 167.20 RAD 6568.1 VEL 12.165 PTH 2.18 VHP 3.837 DPA 19.34 RAP 155.94 ECC 1.4379

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 44 52	2756.57	-28.00	78.66	38.94	94.39	20 30 48	2156.6	-27.10	70.11
90.00	11 38 4	4455.24	8.18	186.32	31.66	62.80	12 52 19	3855.2	4.47	179.60
100.00	21 14 4	2468.89	-29.40	57.36	38.80	95.65	21 55 13	1868.9	-28.31	48.73
100.00	12 51 33	4218.14	9.42	168.22	30.99	61.50	14 1 51	3618.1	5.54	161.58
110.00	22 39 53	2200.38	-33.09	36.41	38.24	99.10	23 16 33	1600.4	-31.48	27.56
110.00	13 42 13	4059.42	12.64	154.27	29.08	57.97	14 49 53	3459.4	8.32	147.84

DIFFERENTIAL CORRECTIONS
TDE-2.4836 TRA 7.3963 TC3-5.5476 BAU 1.9877
RDE .8944 RRA -.6088 RC3 .6692 FAU .32109
FDE-6.5169 FRA15.7386 FC-10.4471 BSP 36170
BDE 2.6397 BRA 7.4213 BC3 5.5878 FSP 6953

MID-COURSE EXECUTION ACCURACY
SGT10604.7 SGR 1397.1 SG3 1922.3
RRT -.8522 RRF -.8770 RTF .9963
SGB10696.3 R23 .0458 R13 -.9967
SG110671.6 SG2 726.5 THA 173.56

ORBIT DETERMINATION ACCURACY
ST 3758.7 SR 1015.5 SS 3000.3
CRT -.8588 CRS .9070 CST -.9947
LSA 4886.2 MSA 534.5 SSA 13.3
EL1 3860.4 EL2 506.5 ALF 166.70

LAUNCH DATE OCT 3 1964 FLIGHT TIME 376.00 ARRIVAL DATE OCT 14 1965

DISTANCE 853.529

HELIOCENTRIC CONIC

RL 149.67 LAL -.00 LOL 9.82 VL 32.510 GAL -9.02 AZL 88.63 HCA 267.27 SMA 185.22 ECC .24596 INC 1.3720 V1 29.771
RP 215.38 LAP -1.37 LOP 277.08 VP 22.713 GAP -10.77 AZP 90.07 TAL 311.39 TAP 218.66 RCA 139.66 APO 230.77 V2 25.498
RC 288.924 GL 8.48 GP 6.73 ZAL 151.89 ZAP 53.67 ETS 184.62 ZAE 83.52 ETE 179.94 ZAC 88.51 ETC 259.96 CLP 53.37

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 27.173 VHL 5.213 DLA 14.53 RAL 167.60 RAD 6568.1 VEL 12.188 PTH 2.19 VHP 3.912 DPA 19.27 RAP 155.77 ECC 1.4472

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 47 24	2758.16	-28.01	78.78	39.69	94.33	20 33 22	2158.2	-27.12	70.22
90.00	11 38 45	4464.08	8.46	186.82	32.37	62.87	12 53 9	3864.1	4.75	180.10
100.00	21 16 32	2470.72	-29.41	57.50	39.56	95.58	21 57 42	1870.7	-28.33	48.86
100.00	12 52 18	4226.75	9.70	168.71	31.70	61.39	14 2 45	3626.7	5.83	162.06
110.00	22 42 11	2202.70	-33.12	36.59	39.00	99.00	23 18 54	1602.7	-31.52	27.73
110.00	13 43 8	4067.54	12.93	154.72	29.79	58.08	14 50 55	3467.5	8.62	148.28

DIFFERENTIAL CORRECTIONS
TDE-2.5888 TRA 7.6553 TC3-5.5673 BAU 2.0358
RDE .8949 RRA -.5889 RC3 .6407 FAU .30712
FDE-6.3536 FRA15.2172 FC3-9.7849 BSP 37020
BDE 2.7391 BRA 7.6779 BC3 5.6041 FSP 6663

MID-COURSE EXECUTION ACCURACY
SGT10832.4 SGR 1364.2 SG3 1835.6
RRT -.8451 RRF -.8708 RTF .9962
SGB10918.0 R23 .0469 R13 -.9966
SG110893.9 SG2 725.1 THA 173.90

ORBIT DETERMINATION ACCURACY
ST 3863.5 SR 1004.1 SS 2941.0
CRT -.8572 CRS .9058 CST -.9946
LSA 4929.4 MSA 534.2 SSA 13.2
EL1 3959.9 EL2 504.4 ALF 167.23

LAUNCH DATE OCT 3 1964 FLIGHT TIME 378.00 ARRIVAL DATE OCT 16 1965

DISTANCE 857.563

HELIOCENTRIC CONIC

RL 149.67 LAL -.00 LOL 9.82 VL 32.513 GAL -9.14 AZL 88.60 HCA 268.44 SMA 185.26 ECC .24736 INC 1.3960 V1 29.771
RP 215.05 LAP -1.40 LOP 278.25 VP 22.758 GAP -10.98 AZP 90.04 TAL 310.93 TAP 219.37 RCA 139.43 APO 231.08 V2 25.535
RC 290.105 GL 8.54 GP 6.60 ZAL 152.27 ZAP 52.42 ETS 184.75 ZAE 82.02 ETE 180.13 ZAC 88.37 ETC 259.97 CLP 52.13

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 27.771 VHL 5.270 DLA 14.42 RAL 168.01 RAD 6568.1 VEL 12.213 PTH 2.19 VHP 3.989 DPA 19.18 RAP 155.65 ECC 1.4570

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 50 2	2759.64	-28.02	78.88	40.47	94.28	20 36 2	2159.6	-27.13	70.33
90.00	11 39 23	4473.43	8.75	187.36	33.10	62.96	12 53 56	3873.4	5.05	180.63
100.00	21 19 5	2472.45	-29.43	57.62	40.33	95.51	22 0 18	1872.5	-28.35	48.98
100.00	12 53 1	4235.84	10.00	169.22	32.44	61.68	14 3 37	3635.8	6.14	162.56
110.00	22 44 35	2204.96	-33.14	36.76	39.78	98.90	23 21 20	1605.0	-31.56	27.89
110.00	13 44 1	4076.11	13.24	155.19	30.52	58.19	14 51 57	3476.1	8.94	148.73

DIFFERENTIAL CORRECTIONS
TDE-2.6957 TRA 7.9168 TC3-5.5779 BAU 2.0834
RDE .8958 RRA -.5699 RC3 .6133 FAU .29344
FDE-6.1893 FRA14.7033 FC3-9.1479 BSP 37856
BDE 2.8407 BRA 7.9373 BC3 5.6115 FSP 6361

MID-COURSE EXECUTION ACCURACY
SGT11051.6 SGR 1332.6 SG3 1750.9
RRT -.8380 RRF -.8645 RTF .9961
SGB11131.7 R23 .0480 R13 -.9965
SG111108.1 SG2 723.5 THA 174.21

ORBIT DETERMINATION ACCURACY
ST 3966.2 SR 992.9 SS 2881.3
CRT -.8557 CRS .9048 CST -.9946
LSA 4973.2 MSA 533.6 SSA 13.1
EL1 4057.6 EL2 502.2 ALF 167.72

LAUNCH DATE OCT 3 1964 FLIGHT TIME 380.00 ARRIVAL DATE OCT 18 1965

DISTANCE 861.596

HELIOCENTRIC CONIC

RL 149.67 LAL -.00 LOL 9.82 VL 32.515 GAL -9.26 AZL 88.58 HCA 269.61 SMA 185.30 ECC .24882 INC 1.4202 V1 29.771
RP 214.72 LAP -1.42 LOP 279.43 VP 22.803 GAP -11.19 AZP 90.01 TAL 310.45 TAP 220.06 RCA 139.20 APO 231.41 V2 25.572
RC 291.272 GL 8.58 GP 6.48 ZAL 152.66 ZAP 51.21 ETS 184.88 ZAE 80.55 ETE 180.32 ZAC 88.24 ETC 259.98 CLP 50.92

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 28.403 VHL 5.329 DLA 14.30 RAL 168.43 RAD 6568.1 VEL 12.238 PTH 2.20 VHP 4.069 DPA 19.07 RAP 155.56 ECC 1.4674

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 52 47	2761.01	-28.03	78.98	41.26	94.23	20 38 48	2161.0	-27.14	70.43
90.00	11 39 58	4483.29	9.05	187.92	33.85	63.05	12 54 41	3883.3	5.36	181.18
100.00	21 21 45	2474.10	-29.44	57.74	41.13	95.45	22 2 59	1874.1	-28.37	49.10
100.00	12 53 41	4245.42	10.31	169.77	33.19	61.78	14 4 26	3645.4	6.45	163.10
110.00	22 47 3	2207.17	-33.16	36.93	40.58	98.80	23 23 50	1607.2	-31.59	28.05
110.00	13 44 52	4085.12	13.56	155.69	31.27	58.32	14 52 57	3485.1	9.27	149.22

DIFFERENTIAL CORRECTIONS
TDE-2.8047 TRA 8.1809 TC3-5.5787 BAU 2.1300
RDE .8971 RRA -.5518 RC3 .5869 FAU .28001
FDE-6.0277 FRA14.1981 FC3-8.5349 BSP 38673
BDE 2.9447 BRA 8.1995 BC3 5.6095 FSP 6105

MID-COURSE EXECUTION ACCURACY
SGT11261.8 SGR 1302.5 SG3 1668.4
RRT -.8307 RRF -.8582 RTF .9960
SGB11336.9 R23 .0492 R13 -.9964
SG111313.9 SG2 721.8 THA 174.49

ORBIT DETERMINATION ACCURACY
ST 4066.7 SR 982.0 SS 2821.6
CRT -.8543 CRS .9039 CST -.9945
LSA 5017.9 MSA 532.9 SSA 13.0
EL1 4153.6 EL2 499.7 ALF 168.17

LAUNCH DATE OCT 3 1964 FLIGHT TIME 382.00 ARRIVAL DATE OCT 20 1965

DISTANCE 865.626

HELIOCENTRIC CONIC

RL 149.67 LAL -.00 LOL 9.82 VL 32.518 GAL -9.39 AZL 88.56 HCA 270.79 SMA 185.35 ECC .25036 INC 1.4443 V1 29.771
RP 214.40 LAP -1.44 LOP 280.61 VP 22.847 GAP -11.40 AZP 89.98 TAL 309.96 TAP 220.74 RCA 138.95 APO 231.76 V2 25.608
RC 292.426 GL 8.63 GP 6.36 ZAL 153.05 ZAP 50.04 ETS 185.00 ZAE 79.12 ETE 180.49 ZAC 88.13 ETC 259.98 CLP 49.74

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 29.072 VHL 5.392 DLA 14.17 RAL 168.85 RAD 6568.2 VEL 12.266 PTH 2.21 VHP 4.153 DPA 18.96 RAP 155.52 ECC 1.4784

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 55 37	2762.29	-28.03	79.08	42.07	94.18	20 41 40	2162.3	-27.16	70.52
90.00	11 40 29	4493.64	9.37	188.51	34.62	63.16	12 55 23	3893.6	5.69	181.76
100.00	21 24 30	2475.67	-29.45	57.86	41.94	95.39	22 5 45	1875.7	-28.39	49.22
100.00	12 54 18	4255.51	10.63	170.34	33.96	61.90	14 5 14	3655.5	6.79	163.66
110.00	22 49 37	2209.34	-33.19	37.09	41.40	98.71	23 26 26	1609.3	-31.63	28.21
110.00	13 45 41	4094.58	13.90	156.22	32.04	58.45	14 53 55	3494.6	9.62	149.73

DIFFERENTIAL CORRECTIONS
TDE-2.9159 TRA 8.4486 TC3-5.5713 BAU 2.1763
RDE .8988 RRA -.5347 RC3 .5616 FAU .26690
FDE-5.8662 FRA13.7034 FC3-7.9479 BSP 39464
BDE 3.0513 BRA 8.4655 BC3 5.5995 FSP 5836

MID-COURSE EXECUTION ACCURACY
SGT11464.5 SGR 1273.7 SG3 1588.2
RRT -.8234 RRF -.8519 RTF .9959
SGB11535.1 R23 .0504 R13 -.9962
SG111512.6 SG2 719.7 THA 174.75

ORBIT DETERMINATION ACCURACY
ST 4165.4 SR 971.3 SS 2761.2
CRT -.8530 CRS .9031 CST -.9944
LSA 5063.1 MSA 531.6 SSA 12.9
EL1 4248.1 EL2 497.1 ALF 168.59

LAUNCH DATE OCT 3 1964 FLIGHT TIME 384.00 ARRIVAL DATE OCT 22 1965

HELIOCENTRIC CONIC DISTANCE 869.654 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.521 GAL -9.52 AZL 88.53 HCA 271.97 SMA 185.40 ECC .25197 INC 1.4686 V1 29.771
RP 214.08 LAP -1.47 LOP 281.79 VP 22.891 GAP -11.61 AZP 89.95 TAL 309.44 TAP 221.41 RCA 138.69 APO 232.12 V2 25.644
RC 293.566 GL 8.66 GP 6.24 ZAL 153.46 ZAP 48.91 ETS 185.11 ZAE 77.72 ETE 180.66 ZAC 88.02 ETC 259.97 CLP 48.61

PLANETOCENTRIC CONIC

C3 29.779 VHL 5.457 DLA 14.03 RAL 169.28 RAD 6568.2 VEL 12.294 PTH 2.21 VHP 4.239 DPA 18.83 RAP 155.52 ECC 1.4901

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 58 34	2763.47	-28.04	79.16	42.90	94.14	20 44 37	2163.5	-27.17	70.60
90.00	11 40 59	4504.49	9.70	189.14	35.41	63.27	12 56 3	3904.5	6.04	182.37
100.00	21 27 20	2477.16	-29.46	57.97	42.77	95.33	22 8 38	1877.2	-28.41	49.32
100.00	12 54 53	4266.03	10.97	170.94	34.75	62.02	14 5 59	3666.0	7.14	164.24
110.00	22 52 15	2211.48	-33.21	37.26	42.23	98.61	23 29 7	1611.5	-31.66	28.37
110.00	13 46 28	4104.49	14.25	156.77	32.83	58.60	14 54 52	3504.5	9.99	150.26

DIFFERENTIAL CORRECTIONS
TDE-3.0292 TRA 8.7196 TC3-5.5559 BAU 2.2222
RDE .9008 RRA -.5185 RC3 .5373 FAU .25413
FDE-5.7073 FRA13.2176 FC3-7.3880 BSP 40226
BDE 3.1603 BRA 8.7350 BC3 5.5818 FSP 5572

MID-COURSE EXECUTION ACCURACY
SGT11659.1 SGR 1246.4 SG3 1510.3
RRT -.8162 RRF -.8457 RTF .9958
SGB11725.6 R23 .0517 R13 -.9961
SG111703.6 SG2 717.5 THA 174.99

ORBIT DETERMINATION ACCURACY
ST 4261.8 SR 960.9 SS 2700.7
CRT -.8518 CRS .9024 CST -.9944
LSA 5108.7 MSA 530.2 SSA 12.8
EL1 4340.8 EL2 494.3 ALF 168.98

LAUNCH DATE OCT 3 1964 FLIGHT TIME 386.00 ARRIVAL DATE OCT 24 1965

HELIOCENTRIC CONIC DISTANCE 873.677 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.524 GAL -9.66 AZL 88.51 HCA 273.15 SMA 185.45 ECC .25366 INC 1.4929 V1 29.771
RP 213.77 LAP -1.49 LOP 282.97 VP 22.935 GAP -11.83 AZP 89.92 TAL 308.92 TAP 222.07 RCA 138.41 APO 232.49 V2 25.679
RC 294.693 GL 8.70 GP 6.12 ZAL 153.87 ZAP 47.81 ETS 185.22 ZAE 76.36 ETE 180.81 ZAC 87.92 ETC 259.95 CLP 47.51

PLANETOCENTRIC CONIC

C3 30.527 VHL 5.525 DLA 13.88 RAL 169.72 RAD 6568.2 VEL 12.325 PTH 2.22 VHP 4.328 DPA 18.69 RAP 155.55 ECC 1.5024

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 1 36	2764.58	-28.04	79.24	43.75	94.10	20 47 41	2164.6	-27.18	70.68
90.00	11 41 25	4515.83	10.05	189.79	36.22	63.39	12 56 41	3915.8	6.40	183.01
100.00	21 30 17	2478.59	-29.47	58.08	43.61	95.28	22 11 35	1878.6	-28.42	49.43
100.00	12 55 25	4277.05	11.32	171.57	35.56	62.15	14 6 42	3677.0	7.50	164.86
110.00	22 54 58	2213.58	-33.23	37.42	43.08	98.52	23 31 52	1613.6	-31.70	28.53
110.00	13 47 13	4114.83	14.62	157.35	33.64	58.75	14 55 48	3514.8	10.37	150.82

DIFFERENTIAL CORRECTIONS
TDE-3.1455 TRA 8.9945 TC3-5.5330 BAU 2.2678
RDE .9033 RRA -.5033 RC3 .5142 FAU .24172
FDE-5.5508 FRA12.7415 FC3-6.8551 BSP 40963
BDE 3.2727 BRA 9.0085 BC3 5.5568 FSP 5314

MID-COURSE EXECUTION ACCURACY
SGT11846.4 SGR 1220.4 SG3 1434.8
RRT -.8089 RRF -.8395 RTF .9956
SGB11909.1 R23 .0530 R13 -.9959
SG111887.6 SG2 715.0 THA 175.22

ORBIT DETERMINATION ACCURACY
ST 4356.8 SR 950.7 SS 2640.1
CRT -.8507 CRS .9019 CST -.9943
LSA 5155.2 MSA 528.5 SSA 12.8
EL1 4432.2 EL2 491.2 ALF 169.35

LAUNCH DATE OCT 3 1964 FLIGHT TIME 388.00 ARRIVAL DATE OCT 26 1965

HELIOCENTRIC CONIC DISTANCE 877.696 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.527 GAL -9.81 AZL 88.48 HCA 274.34 SMA 185.51 ECC .25543 INC 1.5174 V1 29.771
RP 213.46 LAP -1.51 LOP 284.16 VP 22.979 GAP -12.04 AZP 89.89 TAL 308.37 TAP 222.71 RCA 138.12 APO 232.89 V2 25.714
RC 295.805 GL 8.72 GP 6.01 ZAL 154.30 ZAP 46.74 ETS 185.32 ZAE 75.02 ETE 180.96 ZAC 87.82 ETC 259.93 CLP 46.44

PLANETOCENTRIC CONIC

C3 31.318 VHL 5.596 DLA 13.73 RAL 170.16 RAD 6568.2 VEL 12.357 PTH 2.23 VHP 4.419 DPA 18.54 RAP 155.63 ECC 1.5154

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 4 44	2765.61	-28.05	79.32	44.61	94.06	20 50 49	2165.6	-27.19	70.76
90.00	11 41 48	4527.65	10.41	190.47	37.05	63.52	12 57 16	3927.7	6.77	183.68
100.00	21 33 18	2479.97	-29.47	58.18	44.48	95.22	22 14 38	1880.0	-28.44	49.53
100.00	12 55 55	4288.53	11.68	172.23	36.39	62.29	14 7 24	3688.5	7.88	165.50
110.00	22 57 46	2215.66	-33.25	37.58	43.95	98.43	23 34 42	1615.7	-31.73	28.68
110.00	13 47 56	4125.60	15.00	157.95	34.47	58.92	14 56 42	3525.6	10.77	151.40

DIFFERENTIAL CORRECTIONS
TDE-3.2651 TRA 9.2728 TC3-5.5040 BAU 2.3137
RDE .9063 RRA -.4890 RC3 .4922 FAU .22973
FDE-5.3974 FRA12.2742 FC3-6.3506 BSP 41649
BDE 3.3885 BRA 9.2857 BC3 5.5260 FSP 5060

MID-COURSE EXECUTION ACCURACY
SGT12026.5 SGR 1195.8 SG3 1361.7
RRT -.8018 RRF -.8335 RTF .9955
SGB12085.8 R23 .0544 R13 -.9957
SG112064.8 SG2 712.3 THA 175.43

ORBIT DETERMINATION ACCURACY
ST 4450.3 SR 940.9 SS 2579.6
CRT -.8498 CRS .9016 CST -.9942
LSA 5202.6 MSA 526.5 SSA 12.7
EL1 4522.4 EL2 488.0 ALF 169.69

LAUNCH DATE OCT 3 1964 FLIGHT TIME 390.00 ARRIVAL DATE OCT 28 1965

HELIOCENTRIC CONIC DISTANCE 881.711 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.530 GAL -9.96 AZL 88.46 HCA 275.53 SMA 185.56 ECC .25729 INC 1.5421 V1 29.771
RP 213.16 LAP -1.53 LOP 285.35 VP 23.022 GAP -12.26 AZP 89.85 TAL 307.81 TAP 223.34 RCA 137.82 APO 233.30 V2 25.748
RC 296.904 GL 8.75 GP 5.90 ZAL 154.73 ZAP 45.71 ETS 185.41 ZAE 73.72 ETE 181.11 ZAC 87.74 ETC 259.90 CLP 45.41

PLANETOCENTRIC CONIC

C3 32.155 VHL 5.671 DLA 13.57 RAL 170.60 RAD 6568.3 VEL 12.391 PTH 2.24 VHP 4.514 DPA 18.38 RAP 155.74 ECC 1.5292

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 7 57	2766.58	-28.05	79.39	45.49	94.02	20 54 3	2166.6	-27.20	70.83
90.00	11 42 9	4539.95	10.78	191.18	37.90	63.66	12 57 49	3939.9	7.16	184.38
100.00	21 36 24	2481.29	-29.48	58.27	45.36	95.17	22 17 46	1881.3	-28.45	49.62
100.00	12 56 23	4300.47	12.06	172.91	37.24	62.44	14 8 3	3700.5	8.27	166.17
110.00	23 0 38	2217.72	-33.27	37.73	44.84	98.34	23 37 36	1617.7	-31.76	28.83
110.00	13 48 38	4136.81	15.39	158.58	35.32	59.09	14 57 35	3536.8	11.18	152.01

DIFFERENTIAL CORRECTIONS
TDE-3.3881 TRA 9.5558 TC3-5.4684 BAU 2.3595
RDE .9098 RRA -.4756 RC3 .4712 FAU .21810
FDE-5.2467 FRA11.8165 FC3-5.8722 BSP 42321
BDE 3.5081 BRA 9.5676 BC3 5.4887 FSP 4814

MID-COURSE EXECUTION ACCURACY
SGT12199.8 SGR 1172.6 SG3 1291.1
RRT -.7949 RRF -.8277 RTF .9953
SGB12256.0 R23 .0559 R13 -.9955
SG112235.4 SG2 709.4 THA 175.62

ORBIT DETERMINATION ACCURACY
ST 4542.4 SR 931.3 SS 2519.1
CRT -.8491 CRS .9015 CST -.9940
LSA 5250.9 MSA 524.1 SSA 12.6
EL1 4611.5 EL2 484.6 ALF 170.01

LAUNCH DATE OCT 3 1964 FLIGHT TIME 392.00 ARRIVAL DATE OCT 30 1965

HELIOCENTRIC CONIC DISTANCE 885.719 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.534 GAL -10.12 AZL 88.43 HCA 276.73 SMA 185.62 ECC .25923 INC 1.5668 V1 29.771
RP 212.87 LAP -1.56 LOP 286.55 VP 23.064 GAP -12.47 AZP 89.82 TAL 307.23 TAP 223.96 RCA 137.50 APO 233.74 V2 25.782
RC 297.989 GL 8.76 GP 5.79 ZAL 155.17 ZAP 44.71 ETS 185.50 ZAE 72.45 ETE 181.24 ZAC 87.67 ETC 259.87 CLP 44.41

PLANETOCENTRIC CONIC

C3 33.040 VHL 5.748 DLA 13.39 RAL 171.06 RAD 6568.3 VEL 12.426 PTH 2.25 VHP 4.612 DPA 18.21 RAP 155.89 ECC 1.5438

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 11 15	2767.49	-28.06	79.46	46.39	93.99	20 57 22	2167.5	-27.21	70.89
90.00	11 42 28	4552.72	11.17	191.92	38.77	63.81	12 58 20	3952.7	7.56	185.10
100.00	21 39 36	2482.57	-29.49	58.37	46.26	95.12	22 20 58	1882.6	-28.47	49.71
100.00	12 56 48	4312.87	12.45	173.63	38.11	62.60	14 8 41	3712.9	8.68	166.87
110.00	23 3 35	2219.77	-33.29	37.89	45.74	98.25	23 40 35	1619.8	-31.79	28.98
110.00	13 49 18	4148.44	15.79	159.24	36.19	59.28	14 58 27	3548.4	11.60	152.64

DIFFERENTIAL CORRECTIONS
TDE-3.5145 TRA 9.8436 TC3-5.4266 BAU 2.4053
RDE .9137 RRA -.4632 RC3 .4512 FAU .20684
FDE-5.0984 FRA11.3682 FC3-5.4198 BSP 42959
BDE 3.6313 BRA 9.8545 BC3 5.4453 FSP 4574

MID-COURSE EXECUTION ACCURACY
SGT12366.3 SGR 1150.6 SG3 1222.9
RRT -.7881 RRF -.8222 RTF .9950
SGB12419.7 R23 .0575 R13 -.9953
SG112399.6 SG2 706.3 THA 175.79

ORBIT DETERMINATION ACCURACY
ST 4632.9 SR 922.0 SS 2458.6
CRT -.8485 CRS .9016 CST -.9939
LSA 5299.6 MSA 521.6 SSA 12.6
EL1 4699.2 EL2 481.0 ALF 170.31

LAUNCH DATE OCT 3 1964 FLIGHT TIME 394.00 ARRIVAL DATE NOV 1 1965

HELIOCENTRIC CONIC DISTANCE 889.720 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.537 GAL -10.28 AZL 88.41 HCA 277.93 SMA 185.68 ECC .26127 INC 1.5918 V1 29.771
RP 212.57 LAP -1.58 LOP 287.75 VP 23.106 GAP -12.69 AZP 89.78 TAL 306.64 TAP 224.56 RCA 137.17 APO 234.19 V2 25.815
RC 299.061 GL 8.78 GP 5.69 ZAL 155.62 ZAP 43.74 ETS 185.59 ZAE 71.21 ETE 181.37 ZAC 87.61 ETC 259.83 CLP 43.44

PLANETOCENTRIC CONIC

C3 33.976 VHL 5.829 DLA 13.21 RAL 171.52 RAD 6568.3 VEL 12.464 PTH 2.25 VHP 4.712 DPA 18.03 RAP 156.07 ECC 1.5592

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 14 38	2768.35	-28.06	79.52	47.31	93.96	21 0 47	2168.4	-27.22	70.95
90.00	11 42 44	4565.95	11.56	192.69	39.66	63.97	12 58 50	3966.0	7.97	185.86
100.00	21 42 52	2483.81	-29.50	58.46	47.18	95.08	22 24 16	1883.8	-28.48	49.80
100.00	12 57 11	4325.72	12.85	174.37	39.00	62.78	14 9 17	3725.7	9.10	167.59
110.00	23 6 36	2221.81	-33.31	38.05	46.66	98.16	23 43 38	1621.8	-31.83	29.13
110.00	13 49 57	4160.49	16.21	159.92	37.09	59.49	14 59 17	3560.5	12.04	153.30

DIFFERENTIAL CORRECTIONS
TDE-3.6443 TRA10.1369 TC3-5.3792 BAU 2.4513
RDE .9180 RRA -.4518 RC3 .4322 FAU .19595
FDE-4.9519 FRA10.9297 FC3-4.9929 BSP 43569
BDE 3.7582 BRA10.1470 BC3 5.3966 FSP 4341

MID-COURSE EXECUTION ACCURACY
SGT12526.7 SGR 1129.7 SG3 1157.1
RRT -.7816 RRF -.8169 RTF .9948
SGB12577.5 R23 .0591 R13 -.9950
SG112557.9 SG2 702.9 THA 175.96

ORBIT DETERMINATION ACCURACY
ST 4721.9 SR 912.8 SS 2397.8
CRT -.8481 CRS .9018 CST -.9938
LSA 5348.8 MSA 518.8 SSA 12.5
EL1 4785.6 EL2 477.2 ALF 170.59

LAUNCH DATE OCT 3 1964 FLIGHT TIME 396.00 ARRIVAL DATE NOV 3 1965

HELIOCENTRIC CONIC DISTANCE 893.713 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.541 GAL -10.45 AZL 88.38 HCA 279.13 SMA 185.74 ECC .26339 INC 1.6171 V1 29.771
RP 212.29 LAP -1.60 LOP 288.95 VP 23.148 GAP -12.92 AZP 89.74 TAL 306.02 TAP 225.15 RCA 136.82 APO 234.66 V2 25.847
RC 300.120 GL 8.78 GP 5.59 ZAL 156.07 ZAP 42.80 ETS 185.67 ZAE 70.00 ETE 181.50 ZAC 87.55 ETC 259.78 CLP 42.50

PLANETOCENTRIC CONIC

C3 34.967 VHL 5.913 DLA 13.03 RAL 171.98 RAD 6568.4 VEL 12.503 PTH 2.26 VHP 4.816 DPA 17.84 RAP 156.29 ECC 1.5755

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 18 7	2769.17	-28.07	79.58	48.24	93.93	21 4 16	2169.2	-27.22	71.01
90.00	11 42 57	4579.64	11.97	193.49	40.58	64.15	12 59 17	3979.6	8.40	186.64
100.00	21 46 13	2485.02	-29.50	58.55	48.11	95.03	22 27 38	1885.0	-28.49	49.89
100.00	12 57 32	4339.02	13.26	175.14	39.92	62.96	14 9 51	3739.0	9.53	168.34
110.00	23 9 41	2223.85	-33.33	38.20	47.60	98.07	23 46 45	1623.8	-31.86	29.28
110.00	13 50 33	4172.96	16.64	160.63	38.01	59.70	15 0 6	3573.0	12.49	153.98

DIFFERENTIAL CORRECTIONS
TDE-3.7782 TRA10.4361 TC3-5.3260 BAU 2.4973
RDE .9229 RRA -.4414 RC3 .4141 FAU .18540
FDE-4.8079 FRA10.5001 FC3-4.5901 BSP 44150
BDE 3.8893 BRA10.4454 BC3 5.3421 FSP 4114

MID-COURSE EXECUTION ACCURACY
SGT12680.7 SGR 1110.0 SG3 1093.6
RRT -.7754 RRF -.8119 RTF .9945
SGB12729.2 R23 .0609 R13 -.9948
SG112710.0 SG2 699.3 THA 176.11

ORBIT DETERMINATION ACCURACY
ST 4809.6 SR 904.0 SS 2337.0
CRT -.8479 CRS .9022 CST -.9936
LSA 5398.6 MSA 515.7 SSA 12.4
EL1 4870.9 EL2 473.3 ALF 170.86

LAUNCH DATE OCT 3 1964 FLIGHT TIME 398.00 ARRIVAL DATE NOV 5 1965

HELIOCENTRIC CONIC DISTANCE 897.697 EARTH TO MARS

RL 149.67 LAL -.00 LOL 9.82 VL 32.545 GAL -10.63 AZL 88.36 HCA 280.33 SMA 185.81 ECC .26562 INC 1.6425 V1 29.771
RP 212.01 LAP -1.62 LOP 290.15 VP 23.188 GAP -13.14 AZP 89.71 TAL 305.39 TAP 225.72 RCA 136.45 APO 235.16 V2 25.879
RC 301.167 GL 8.79 GP 5.49 ZAL 156.54 ZAP 41.89 ETS 185.75 ZAE 68.81 ETE 181.61 ZAC 87.51 ETC 259.73 CLP 41.60

PLANETOCENTRIC CONIC

C3 36.016 VHL 6.001 DLA 12.83 RAL 172.45 RAD 6568.4 VEL 12.545 PTH 2.27 VHP 4.923 DPA 17.64 RAP 156.54 ECC 1.5927

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 21 40	2769.96	-28.07	79.63	49.19	93.90	21 7 50	2170.0	-27.23	71.07
90.00	11 43 9	4593.78	12.39	194.32	41.51	64.33	12 59 42	3993.8	8.83	187.45
100.00	21 49 38	2486.22	-29.51	58.64	49.06	94.98	22 31 5	1886.2	-28.51	49.98
100.00	12 57 51	4352.76	13.69	175.94	40.86	63.16	14 10 24	3752.8	9.98	169.12
110.00	23 12 50	2225.89	-33.35	38.36	48.55	97.98	23 49 56	1625.9	-31.89	29.43
110.00	13 51 9	4185.84	17.08	161.37	38.95	59.93	15 0 54	3585.8	12.96	154.69

DIFFERENTIAL CORRECTIONS
TDE-3.9174 TRA10.7402 TC3-5.2699 BAU 2.5446
RDE .9283 RRA -.4319 RC3 .3970 FAU .17529
FDE-4.6678 FRA10.0782 FC3-4.2136 BSP 44673
BDE 4.0259 BRA10.7489 BC3 5.2848 FSP 3891

MID-COURSE EXECUTION ACCURACY
SGT12829.5 SGR 1091.5 SG3 1032.5
RRT -.7695 RRF -.8074 RTF .9942
SGB12875.8 R23 .0628 R13 -.9945
SG112857.0 SG2 695.6 THA 176.24

ORBIT DETERMINATION ACCURACY
ST 4896.7 SR 895.5 SS 2276.5
CRT -.8479 CRS .9029 CST -.9934
LSA 5449.7 MSA 512.4 SSA 12.3
EL1 4955.7 EL2 469.1 ALF 171.11

LAUNCH DATE OCT 4 1964 FLIGHT TIME 240.00 ARRIVAL DATE JUN 1 1965

HELIOCENTRIC CONIC DISTANCE 590.990 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 33.107 GAL -9.17 AZL 92.67 HCA 195.65 SMA 195.79 ECC .28211 INC 2.6655 V1 29.779
RP 240.04 LAP .72 LOP 206.43 VP 20.687 GAP 9.98 AZP 87.43 TAL 316.42 TAP 152.07 RCA 140.56 APO 251.02 V2 22.881
RC 167.697 GL -15.25 GP 14.43 ZAL 145.78 ZAP 151.34 ETS 150.64 ZAE 159.71 ETE 45.34 ZAC 102.08 ETC 255.91 CLP 154.96

PLANETOCENTRIC CONIC

C3 33.410 VHL 5.780 DLA -6.24 RAL 155.61 RAD 6568.3 VEL 12.441 PTH 2.25 VHP 6.091 DPA 13.78 RAP 187.98 ECC 1.5498

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 37 0	2146.43	-17.86	37.21	24.03	112.35	22 12 46	1546.4	-14.67	29.98
90.00	8 5 37	5179.40	25.84	231.81	27.90	78.00	9 31 56	4579.4	23.93	223.66
100.00	22 55 23	1893.58	-19.06	18.09	23.50	113.48	23 26 56	1293.6	-15.72	10.88
100.00	9 29 55	4907.48	27.11	211.50	27.59	76.89	10 51 42	4307.5	25.03	203.31
110.00	0 0 47	1701.14	-22.25	1.89	21.91	116.65	0 29 8	1101.1	-18.49	354.77
110.00	10 44 56	4672.69	30.52	192.65	26.57	73.80	12 2 49	4072.7	28.00	184.37

DIFFERENTIAL CORRECTIONS
TDE 1.8977 TRA-4.3881 TC3 1.0403 BAU .5405
RDE .8311 RRA-1.2466 RC3 .6182 FAU .15395
FDE-3.6332 FRA 7.2285 FC3-3.9892 BSP 17778
BDE 2.0717 BRA 4.5617 BC3 1.2102 FSP 2501

MID-COURSE EXECUTION ACCURACY
SGT 4912.3 SGR 1653.7 SG3 802.1
RRT .9661 RRF -.9915 RTF -.9617
SGB 5183.2 R23 -.2169 R13 -.9676
SG1 5167.3 SG2 405.6 THA 18.13

ORBIT DETERMINATION ACCURACY
ST 2294.1 SR 904.6 SS 2211.8
CRT .9831 CRS .9933 CST .9975
LSA 3308.1 MSA 171.5 SSA 21.0
EL1 2461.2 EL2 154.6 ALF 21.28

LAUNCH DATE OCT 4 1964 FLIGHT TIME 242.00 ARRIVAL DATE JUN 3 1965

HELIOCENTRIC CONIC DISTANCE 594.480 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 33.077 GAL -9.06 AZL 92.42 HCA 196.58 SMA 195.21 ECC .27925 INC 2.4198 V1 29.779
RP 239.73 LAP .69 LOP 207.37 VP 20.672 GAP 9.53 AZP 87.68 TAL 316.60 TAP 153.18 RCA 140.70 APO 249.72 V2 22.912
RC 170.016 GL -14.05 GP 13.95 ZAL 146.03 ZAP 150.97 ETS 152.12 ZAE 160.35 ETE 45.62 ZAC 101.67 ETC 255.91 CLP 154.28

PLANETOCENTRIC CONIC

C3 32.286 VHL 5.682 DLA -5.04 RAL 155.85 RAD 6568.3 VEL 12.396 PTH 2.24 VHP 5.950 DPA 13.25 RAP 188.00 ECC 1.5314

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 28 51	2175.54	-18.60	39.02	23.93	111.74	22 5 7	1575.5	-15.49	31.73
90.00	8 15 41	5133.04	25.14	228.59	27.02	76.53	9 41 14	4533.0	23.04	220.55
100.00	22 47 49	1920.79	-19.78	19.78	23.41	112.88	23 19 50	1320.8	-16.52	12.51
100.00	9 39 24	4863.02	26.38	208.39	26.67	75.41	11 0 27	4263.0	24.12	200.32
110.00	23 50 38	1724.17	-22.94	3.31	21.87	116.06	24 19 22	1124.2	-19.25	356.12
110.00	10 53 5	4632.41	29.72	189.79	25.58	72.27	12 10 17	4032.4	27.01	181.65

DIFFERENTIAL CORRECTIONS
TDE 1.8618 TRA-4.3289 TC3 1.0805 BAU .5385
RDE .8052 RRA-1.1996 RC3 .6235 FAU .15974
FDE-3.6871 FRA 7.5174 FC3-4.2833 BSP 17823
BDE 2.0285 BRA 4.4920 BC3 1.2475 FSP 2643

MID-COURSE EXECUTION ACCURACY
SGT 4922.8 SGR 1623.5 SG3 844.0
RRT .9654 RRF -.9905 RTF -.9629
SGB 5183.6 R23 -.2095 R13 -.9684
SG1 5167.9 SG2 403.5 THA 17.77

ORBIT DETERMINATION ACCURACY
ST 2292.2 SR 890.1 SS 2244.3
CRT .9821 CRS .9917 CST .9980
LSA 3324.8 MSA 167.9 SSA 22.9
EL1 2454.0 EL2 156.4 ALF 20.97

LAUNCH DATE OCT 4 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUN 5 1965

HELIOCENTRIC CONIC DISTANCE 597.990 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 33.048 GAL -8.96 AZL 92.20 HCA 197.53 SMA 194.65 ECC .27650 INC 2.1991 V1 29.779
RP 239.42 LAP .66 LOP 208.32 VP 20.660 GAP 9.07 AZP 87.90 TAL 316.77 TAP 154.30 RCA 140.83 APO 248.47 V2 22.943
RC 172.331 GL -12.95 GP 13.53 ZAL 146.22 ZAP 150.53 ETS 153.49 ZAE 160.99 ETE 46.13 ZAC 101.31 ETC 255.92 CLP 153.57

PLANETOCENTRIC CONIC

C3 31.266 VHL 5.592 DLA -3.94 RAL 156.06 RAD 6568.2 VEL 12.355 PTH 2.23 VHP 5.815 DPA 12.77 RAP 188.03 ECC 1.5146

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 21 23	2201.98	-19.26	40.69	23.83	111.17	21 58 5	1602.0	-16.21	33.34
90.00	8 24 49	5090.44	24.44	225.67	26.21	75.23	9 49 40	4490.4	22.17	217.74
100.00	22 40 53	1945.53	-20.43	21.33	23.33	112.31	23 13 19	1345.5	-17.23	14.00
100.00	9 48 1	4822.13	25.65	205.57	25.84	74.10	11 8 23	4222.1	23.22	197.62
110.00	23 44 54	1745.12	-23.56	4.62	21.83	115.51	24 13 59	1145.1	-19.94	357.36
110.00	11 0 29	4595.30	28.92	187.20	24.68	70.93	12 17 4	3995.3	26.05	179.19

DIFFERENTIAL CORRECTIONS
TDE 1.8285 TRA-4.2672 TC3 1.1204 BAU .5374
RDE .7841 RRA-1.1582 RC3 .6304 FAU .16582
FDE-3.7489 FRA 7.8093 FC3-4.5914 BSP 17834
BDE 1.9896 BRA 4.4216 BC3 1.2856 FSP 2787

MID-COURSE EXECUTION ACCURACY
SGT 4928.5 SGR 1599.3 SG3 887.3
RRT .9645 RRF -.9893 RTF -.9639
SGB 5181.5 R23 -.2020 R13 -.9692
SG1 5165.8 SG2 402.7 THA 17.49

ORBIT DETERMINATION ACCURACY
ST 2289.3 SR 879.4 SS 2278.7
CRT .9812 CRS .9900 CST .9985
LSA 3343.5 MSA 165.7 SSA 24.6
EL1 2447.3 EL2 158.6 ALF 20.74

LAUNCH DATE OCT 4 1964 FLIGHT TIME 246.00 ARRIVAL DATE JUN 7 1965

HELIOCENTRIC CONIC DISTANCE 601.519 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 33.019 GAL -8.86 AZL 92.00 HCA 198.47 SMA 194.12 ECC .27385 INC 1.9996 V1 29.779
RP 239.11 LAP .63 LOP 209.26 VP 20.650 GAP 8.63 AZP 88.10 TAL 316.94 TAP 155.41 RCA 140.96 APO 247.28 V2 22.975
RC 174.639 GL -11.93 GP 13.16 ZAL 146.36 ZAP 150.03 ETS 154.77 ZAE 161.62 ETE 46.87 ZAC 101.00 ETC 255.92 CLP 152.84

PLANETOCENTRIC CONIC

C3 30.333 VHL 5.508 DLA -2.92 RAL 156.25 RAD 6568.2 VEL 12.317 PTH 2.22 VHP 5.684 DPA 12.35 RAP 188.06 ECC 1.4992

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 14 29	2226.19	-19.85	42.22	23.73	110.62	21 51 36	1626.2	-16.87	34.81
90.00	8 33 11	5051.02	23.73	223.00	25.47	74.07	9 57 22	4451.0	21.31	215.16
100.00	22 34 28	1968.18	-21.01	22.76	23.25	111.77	23 7 17	1368.2	-17.87	15.38
100.00	9 55 53	4784.27	24.92	203.00	25.09	72;93	11 15 38	4184.3	22.35	195.15
110.00	23 39 36	1764.31	-24.12	5.83	21.79	114.99	24 9 0	1164.3	-20.55	358.51
110.00	11 7 15	4560.90	28.13	184.83	23.87	69.73	12 23 16	3960.9	25.11	176.96

DIFFERENTIAL CORRECTIONS
TDE 1.7972 TRA-4.2029 TC3 1.1606 BAU .5373
RDE .7671 RRA-1.1218 RC3 .6391 FAU .17224
FDE-3.8179 FRA 8.1051 FC3-4.9158 BSP 17786
BDE 1.9541 BRA 4.3500 BC3 1.3249 FSP 2930

MID-COURSE EXECUTION ACCURACY
SGT 4929.1 SGR 1580.5 SG3 932.1
RRT .9637 RRF -.9881 RTF -.9649
SGB 5176.3 R23 -.1945 R13 -.9700
SG1 5160.6 SG2 402.8 THA 17.28

ORBIT DETERMINATION ACCURACY
ST 2285.2 SR 871.9 SS 2314.9
CRT .9804 CRS .9882 CST .9988
LSA 3363.5 MSA 164.8 SSA 26.2
EL1 2440.6 EL2 161.0 ALF 20.60

LAUNCH DATE OCT 4 1964 FLIGHT TIME 248.00 ARRIVAL DATE JUN 9 1965

HELIOCENTRIC CONIC DISTANCE 605.068 EARTH TO MARS
RL 149.63 LAL -.00 LOL 10.80 VL 32.992 GAL -8.76 AZL 91.82 HCA 199.42 SMA 193.62 ECC .27129 INC 1.8184 V1 29.779
RP 238.79 LAP .60 LOP 210.21 VP 20.643 GAP 8.19 AZP 88.28 TAL 317.11 TAP 156.53 RCA 141.09 APO 246.15 V2 23.007
RC 176.939 GL -10.99 GP 12.83 ZAL 146.45 ZAP 149.48 ETS 155.96 ZAE 162.25 ETE 47.84 ZAC 100.72 ETC 255.93 CLP 152.07

PLANETOCENTRIC CONIC
C3 29.475 VHL 5.429 DLA -1.97 RAL 156.41 RAD 6568.2 VEL 12.282 PTH 2.21 VHP 5.558 DPA 11.97 RAP 188.08 ECC 1.4851

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 8 4	2248.49	-20.38	43.64	23.64	110.10	21 45 32	1648.5	-17.46	36.18
90.00	8 40 54	5014.33	23.02	220.55	24.80	73.04	10 4 28	4414.3	20.48	212.80
100.00	22 28 30	1989.05	-21.53	24.10	23.17	111.25	23 1 39	1389.1	-18.45	16.65
100.00	10 3 9	4749.01	24.19	200.63	24.39	71.89	11 22 18	4149.0	21.49	192.88
110.00	23 34 38	1781.99	-24.63	6.96	21.75	114.49	24 4 20	1182.0	-21.11	359.58
110.00	11 13 30	4528.84	27.36	182.66	23.13	68.66	12 28 59	3928.8	24.21	174.90

DIFFERENTIAL CORRECTIONS
TDE 1.7776 TRA-4.1260 TC3 1.2143 BAU .5429
RDE .7543 RRA-1.0888 RC3 .6506 FAU .17923
FDE-3.8991 FRA 8.4002 FC3-5.2641 BSP 17473
BDE 1.9311 BRA 4.2673 BC3 1.3776 FSP 3064

MID-COURSE EXECUTION ACCURACY
SGT 4923.5 SGR 1566.7 SG3 978.6
RRT .9638 RRF -.9869 RTF -.9666
SGB 5166.8 R23 -.1840 R13 -.9713
SG1 5151.3 SG2 399.5 THA 17.16

ORBIT DETERMINATION ACCURACY
ST 2286.8 SR 867.8 SS 2354.5
CRT .9801 CRS .9863 CST .9992
LSA 3391.1 MSA 162.3 SSA 27.6
EL1 2440.6 EL2 161.4 ALF 20.50

LAUNCH DATE OCT 4 1964 FLIGHT TIME 250.00 ARRIVAL DATE JUN 11 1965

HELIOCENTRIC CONIC DISTANCE 608.631 EARTH TO MARS
RL 149.63 LAL -.00 LOL 10.80 VL 32.966 GAL -8.66 AZL 91.65 HCA 200.37 SMA 193.14 ECC .26884 INC 1.6531 V1 29.779
RP 238.47 LAP .58 LOP 211.16 VP 20.638 GAP 7.75 AZP 88.45 TAL 317.27 TAP 157.64 RCA 141.21 APO 245.06 V2 23.040
RC 179.231 GL -10.11 GP 12.54 ZAL 146.51 ZAP 148.88 ETS 157.08 ZAE 162.87 ETE 49.07 ZAC 100.47 ETC 255.93 CLP 151.29

PLANETOCENTRIC CONIC
C3 28.684 VHL 5.356 DLA -1.08 RAL 156.55 RAD 6568.2 VEL 12.250 PTH 2.20 VHP 5.435 DPA 11.64 RAP 188.10 ECC 1.4721

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 2 3	2269.19	-20.86	44.97	23.54	109.60	21 39 52	1669.2	-17.99	37.46
90.00	8 48 2	4980.04	22.32	218.28	24.17	72.11	10 11 2	4380.0	19.66	210.61
100.00	22 22 54	2008.41	-22.00	25.34	23.09	110.76	22 56 22	1408.4	-18.98	17.85
100.00	10 9 53	4716.04	23.48	198.44	23.75	70.95	11 28 29	4116.0	20.66	190.78
110.00	23 29 59	1798.39	-25.08	8.01	21.71	114.02	23 59 58	1198.4	-21.62	.57
110.00	11 19 17	4498.83	26.60	180.65	22.45	67.69	12 34 16	3898.8	23.33	173.01

DIFFERENTIAL CORRECTIONS
TDE 1.7398 TRA-4.0662 TC3 1.2418 BAU .5394
RDE .7421 RRA-1.0622 RC3 .6605 FAU .18594
FDE-3.9732 FRA 8.7176 FC3-5.6118 BSP 17567
BDE 1.8915 BRA 4.2026 BC3 1.4066 FSP 3229

MID-COURSE EXECUTION ACCURACY
SGT 4915.5 SGR 1556.5 SG3 1026.7
RRT .9625 RRF -.9856 RTF -.9671
SGB 5156.1 R23 -.1785 R13 -.9717
SG1 5140.2 SG2 404.0 THA 17.06

ORBIT DETERMINATION ACCURACY
ST 2273.6 SR 864.3 SS 2391.3
CRT .9789 CRS .9844 CST .9994
LSA 3406.8 MSA 165.8 SSA 28.6
EL1 2426.7 EL2 165.6 ALF 20.51

LAUNCH DATE OCT 4 1964 FLIGHT TIME 252.00 ARRIVAL DATE JUN 13 1965

HELIOCENTRIC CONIC DISTANCE 612.210 EARTH TO MARS
RL 149.63 LAL -.00 LOL 10.80 VL 32.942 GAL -8.57 AZL 91.50 HCA 201.32 SMA 192.68 ECC .26648 INC 1.5018 V1 29.779
RP 238.14 LAP .55 LOP 212.12 VP 20.635 GAP 7.32 AZP 88.60 TAL 317.43 TAP 158.76 RCA 141.33 APO 244.02 V2 23.073
RC 181.513 GL -9.29 GP 12.28 ZAL 146.54 ZAP 148.24 ETS 158.11 ZAE 163.49 ETE 50.56 ZAC 100.24 ETC 255.93 CLP 150.48

PLANETOCENTRIC CONIC
C3 27.951 VHL 5.287 DLA -.25 RAL 156.67 RAD 6568.1 VEL 12.220 PTH 2.20 VHP 5.316 DPA 11.34 RAP 188.12 ECC 1.4600

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 56 24	2288.48	-21.29	46.22	23.45	109.12	21 34 32	1688.5	-18.49	38.67
90.00	8 54 42	4947.82	21.63	216.17	23.60	71.27	10 17 10	4347.8	18.87	208.58
100.00	22 17 37	2026.47	-22.43	26.51	23.01	110.29	22 51 24	1426.5	-19.47	18.97
100.00	10 16 9	4685.07	22.78	196.41	23.16	70.10	11 34 14	4085.1	19.86	188.83
110.00	23 25 36	1813.68	-25.50	9.00	21.66	113.57	23 55 50	1213.7	-22.10	1.51
110.00	11 24 40	4470.62	25.85	178.80	21.83	66.82	12 39 11	3870.6	22.49	171.26

DIFFERENTIAL CORRECTIONS
TDE 1.7030 TRA-4.0042 TC3 1.2667 BAU .5357
RDE .7321 RRA-1.0395 RC3 .6712 FAU .19280
FDE-4.0508 FRA 9.0467 FC3-5.9715 BSP 17645
BDE 1.8537 BRA 4.1370 BC3 1.4336 FSP 3405

MID-COURSE EXECUTION ACCURACY
SGT 4902.3 SGR 1550.0 SG3 1076.6
RRT .9612 RRF -.9843 RTF -.9676
SGB 5141.4 R23 -.1728 R13 -.9721
SG1 5125.2 SG2 408.7 THA 17.02

ORBIT DETERMINATION ACCURACY
ST 2258.9 SR 862.6 SS 2428.7
CRT .9777 CRS .9824 CST .9995
LSA 3422.9 MSA 169.8 SSA 29.4
EL1 2412.1 EL2 169.7 ALF 20.58

LAUNCH DATE OCT 4 1964 FLIGHT TIME 254.00 ARRIVAL DATE JUN 15 1965

HELIOCENTRIC CONIC DISTANCE 615.806 EARTH TO MARS
RL 149.63 LAL -.00 LOL 10.80 VL 32.918 GAL -8.48 AZL 91.36 HCA 202.28 SMA 192.24 ECC .26421 INC 1.3622 V1 29.779
RP 237.81 LAP .52 LOP 213.08 VP 20.634 GAP 6.89 AZP 88.74 TAL 317.59 TAP 159.87 RCA 141.45 APO 243.03 V2 23.106
RC 183.786 GL -8.53 GP 12.04 ZAL 146.54 ZAP 147.55 ETS 159.09 ZAE 164.10 ETE 52.35 ZAC 100.04 ETC 255.93 CLP 149.64

PLANETOCENTRIC CONIC
C3 27.270 VHL 5.222 DLA .54 RAL 156.78 RAD 6568.1 VEL 12.192 PTH 2.19 VHP 5.201 DPA 11.08 RAP 188.12 ECC 1.4488

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 51 3	2306.58	-21.69	47.39	23.37	108.66	21 29 29	1706.6	-18.94	39.80
90.00	9 0 56	4917.43	20.95	214.20	23.06	70.50	10 22 54	4317.4	18.10	206.68
100.00	22 12 38	2043.39	-22.83	27.61	22.93	109.84	22 46 41	1443.4	-19.92	20.02
100.00	10 22 2	4655.85	22.09	194.51	22.62	69.33	11 39 38	4055.8	19.08	187.01
110.00	23 21 27	1827.99	-25.89	9.94	21.61	113.14	23 51 55	1228.0	-22.53	2.39
110.00	11 29 42	4444.01	25.13	177.07	21.25	66.03	12 43 46	3844.0	21.67	169.62

DIFFERENTIAL CORRECTIONS
TDE 1.6681 TRA-3.9378 TC3 1.2922 BAU .5330
RDE .7243 RRA-1.0196 RC3 .6837 FAU .20009
FDE-4.1352 FRA 9.3819 FC3-6.3521 BSP 17642
BDE 1.8186 BRA 4.0677 BC3 1.4620 FSP 3581

MID-COURSE EXECUTION ACCURACY
SGT 4882.6 SGR 1547.0 SG3 1128.4
RRT .9601 RRF -.9830 RTF -.9681
SGB 5121.8 R23 -.1671 R13 -.9726
SG1 5105.1 SG2 413.6 THA 17.04

ORBIT DETERMINATION ACCURACY
ST 2243.1 SR 863.0 SS 2467.8
CRT .9766 CRS .9804 CST .9997
LSA 3440.2 MSA 174.2 SSA 30.1
EL1 2397.1 EL2 173.6 ALF 20.71

LAUNCH DATE OCT 4 1964 FLIGHT TIME 256.00 ARRIVAL DATE JUN 17 1965

HELIOCENTRIC CONIC DISTANCE 619.418 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.895 GAL -8.39 AZL 91.23 HCA 203.24 SMA 191.82 ECC .26204 INC 1.2334 V1 29.779
RP 237.48 LAP .49 LOP 214.04 VP 20.635 GAP 6.47 AZP 88.87 TAL 317.75 TAP 160.99 RCA 141.56 APO 242.08 V2 23.140
RC 186.049 GL -7.80 GP 11.84 ZAL 146.52 ZAP 146.82 ETS 160.00 ZAE 164.70 ETE 54.45 ZAC 99.86 ETC 255.94 CLP 148.77

PLANETOCENTRIC CONIC

C3 26.635 VHL 5.161 DLA 1.27 RAL 156.88 RAD 6568.1 VEL 12.166 PTH 2.18 VHP 5.088 DPA 10.85 RAP 188.12 ECC 1.4383

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 45 58	2323.62	-22.06	48.51	23.28	108.22	21 24 41	1723.6	-19.36	40.87
90.00	9 6 48	4888.68	20.29	212.35	22.57	69.81	10 28 17	4288.7	17.36	204.90
100.00	22 7 54	2059.33	-23.19	28.65	22.86	109.40	22 42 13	1459.3	-20.34	21.02
100.00	10 27 33	4628.20	21.41	192.74	22.11	68.63	11 44 42	4028.2	18.32	185.31
110.00	23 17 30	1841.47	-26.25	10.82	21.56	112.73	23 48 11	1241.5	-22.94	3.23
110.00	11 34 27	4418.83	24.42	175.46	20.72	65.30	12 48 5	3818.8	20.89	168.09

DIFFERENTIAL CORRECTIONS

TDE 1.6355 TRA-3.8692 TC3 1.3157 BAU .5302
RDE .7182 RRA-1.0028 RC3 .6972 FAU .20763
FDE-4.2232 FRA 9.7293 FC3-6.7489 BSP 17615
BDE 1.7845 BRA 3.9971 BC3 1.4891 FSP 3767

MID-COURSE EXECUTION ACCURACY

SGT 4857.4 SGR 1547.2 SG3 1182.2
RRT .9591 RRF -.9817 RTF -.9687
SGB 5097.9 R23 -.1613 R13 -.9731
SG1 5080.7 SG2 418.6 THA 17.11

ORBIT DETERMINATION ACCURACY

ST 2225.3 SR 864.8 SS 2507.6
CRT .9756 CRS .9784 CST .9997
LSA 3457.6 MSA 179.2 SSA 30.6
EL1 2380.9 EL2 177.3 ALF 20.88

LAUNCH DATE OCT 4 1964 FLIGHT TIME 258.00 ARRIVAL DATE JUN 19 1965

HELIOCENTRIC CONIC DISTANCE 623.044 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.873 GAL -8.31 AZL 91.11 HCA 204.20 SMA 191.42 ECC .25994 INC 1.1139 V1 29.779
RP 237.15 LAP .46 LOP 215.00 VP 20.639 GAP 6.06 AZP 88.98 TAL 317.90 TAP 162.10 RCA 141.66 APO 241.18 V2 23.174
RC 188.300 GL -7.12 GP 11.65 ZAL 146.48 ZAP 146.04 ETS 160.86 ZAE 165.28 ETE 56.89 ZAC 99.69 ETC 255.94 CLP 147.88

PLANETOCENTRIC CONIC

C3 26.042 VHL 5.103 DLA 1.97 RAL 156.97 RAD 6568.1 VEL 12.142 PTH 2.18 VHP 4.979 DPA 10.66 RAP 188.10 ECC 1.4286

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 41 7	2339.75	-22.40	49.57	23.19	107.80	21 20 7	1739.7	-19.75	41.89
90.00	9 12 21	4861.39	19.64	210.61	22.11	69.18	10 33 23	4261.4	16.63	203.23
100.00	22 3 23	2074.41	-23.53	29.65	22.78	108.99	22 37 57	1474.4	-20.72	21.98
100.00	10 32 47	4601.96	20.75	191.07	21.64	67.99	11 49 29	4002.0	17.58	183.71
110.00	23 13 44	1854.21	-26.58	11.66	21.51	112.33	23 44 38	1254.2	-23.32	4.02
110.00	11 38 55	4394.93	23.73	173.94	20.23	64.65	12 52 10	3794.9	20.12	166.66

DIFFERENTIAL CORRECTIONS

TDE 1.5995 TRA-3.7983 TC3 1.3363 BAU .5271
RDE .7137 RRA -.9888 RC3 .7119 FAU .21549
FDE-4.3172 FRA10.0881 FC3-7.1637 BSP 17554
BDE 1.7515 BRA 3.9249 BC3 1.5141 FSP 3958

MID-COURSE EXECUTION ACCURACY

SGT 4826.4 SGR 1550.5 SG3 1238.3
RRT .9582 RRF -.9804 RTF -.9692
SGB 5069.3 R23 -.1557 R13 -.9736
SG1 5051.5 SG2 424.0 THA 17.23

ORBIT DETERMINATION ACCURACY

ST 2205.8 SR 868.1 SS 2548.9
CRT .9747 CRS .9764 CST .9998
LSA 3475.8 MSA 184.8 SSA 30.9
EL1 2363.6 EL2 180.9 ALF 21.12

LAUNCH DATE OCT 4 1964 FLIGHT TIME 260.00 ARRIVAL DATE JUN 21 1965

HELIOCENTRIC CONIC DISTANCE 626.687 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.852 GAL -8.23 AZL 91.00 HCA 205.16 SMA 191.04 ECC .25793 INC 1.0027 V1 29.779
RP 236.81 LAP .43 LOP 215.96 VP 20.644 GAP 5.65 AZP 89.09 TAL 318.05 TAP 163.21 RCA 141.76 APO 240.31 V2 23.209
RC 190.540 GL -6.47 GP 11.49 ZAL 146.43 ZAP 145.23 ETS 161.67 ZAE 165.84 ETE 59.72 ZAC 99.54 ETC 255.95 CLP 146.95

PLANETOCENTRIC CONIC

C3 25.486 VHL 5.048 DLA 2.64 RAL 157.05 RAD 6568.0 VEL 12.119 PTH 2.17 VHP 4.873 DPA 10.49 RAP 188.07 ECC 1.4194

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 36 29	2355.07	-22.71	50.58	23.11	107.38	21 15 44	1755.1	-20.12	42.87
90.00	9 17 37	4835.41	19.00	208.97	21.68	68.60	10 38 12	4235.4	15.92	201.64
100.00	21 59 4	2088.73	-23.85	30.59	22.71	108.58	22 33 52	1488.7	-21.09	22.88
100.00	10 37 44	4576.98	20.10	189.49	21.20	67.40	11 54 1	3977.0	16.87	182.20
110.00	23 10 8	1866.29	-26.89	12.46	21.46	111.95	23 41 14	1266.3	-23.67	4.78
110.00	11 43 9	4372.18	23.06	172.51	19.77	64.04	12 56 1	3772.2	19.38	165.31

DIFFERENTIAL CORRECTIONS

TDE 1.5833 TRA-3.7064 TC3 1.3829 BAU .5331
RDE .7128 RRA -.9744 RC3 .7317 FAU .22469
FDE-4.4366 FRA10.4333 FC3-7.6326 BSP 17029
BDE 1.7364 BRA 3.8323 BC3 1.5646 FSP 4109

MID-COURSE EXECUTION ACCURACY

SGT 4786.6 SGR 1557.5 SG3 1296.7
RRT .9587 RRF -.9792 RTF -.9706
SGB 5033.6 R23 -.1455 R13 -.9748
SG1 5015.8 SG2 422.8 THA 17.45

ORBIT DETERMINATION ACCURACY

ST 2197.0 SR 874.8 SS 2597.1
CRT .9752 CRS .9747 CST .9998
LSA 3507.2 MSA 188.9 SSA 30.8
EL1 2357.9 EL2 180.5 ALF 21.35

LAUNCH DATE OCT 4 1964 FLIGHT TIME 262.00 ARRIVAL DATE JUN 23 1965

HELIOCENTRIC CONIC DISTANCE 630.341 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.832 GAL -8.16 AZL 90.90 HCA 206.13 SMA 190.68 ECC .25601 INC .8988 V1 29.779
RP 236.46 LAP .40 LOP 216.93 VP 20.651 GAP 5.25 AZP 89.19 TAL 318.19 TAP 164.32 RCA 141.86 APO 239.49 V2 23.244
RC 192.768 GL -5.86 GP 11.34 ZAL 146.36 ZAP 144.38 ETS 162.44 ZAE 166.37 ETE 62.96 ZAC 99.40 ETC 255.95 CLP 146.00

PLANETOCENTRIC CONIC

C3 24.967 VHL 4.997 DLA 3.27 RAL 157.12 RAD 6568.0 VEL 12.097 PTH 2.17 VHP 4.769 DPA 10.35 RAP 188.02 ECC 1.4109

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 32 4	2369.68	-23.01	51.55	23.03	106.98	21 11 33	1769.7	-20.46	43.80
90.00	9 22 37	4810.65	18.38	207.42	21.28	68.07	10 42 48	4210.7	15.24	200.15
100.00	21 54 56	2102.38	-24.14	31.50	22.64	108.19	22 29 58	1502.4	-21.43	23.76
100.00	10 42 26	4553.18	19.48	188.01	20.80	66.86	11 58 19	3953.2	16.18	180.77
110.00	23 6 41	1877.81	-27.18	13.23	21.42	111.57	23 37 59	1277.8	-24.01	5.51
110.00	11 47 10	4350.52	22.41	171.17	19.34	63.49	12 59 41	3750.5	18.67	164.03

DIFFERENTIAL CORRECTIONS

TDE 1.5489 TRA-3.6297 TC3 1.3975 BAU .5292
RDE .7109 RRA -.9648 RC3 .7489 FAU .23332
FDE-4.5422 FRA10.8124 FC3-8.0904 BSP 16909
BDE 1.7043 BRA 3.7558 BC3 1.5856 FSP 4308

MID-COURSE EXECUTION ACCURACY

SGT 4741.8 SGR 1566.1 SG3 1357.1
RRT .9578 RRF -.9780 RTF -.9709
SGB 4993.8 R23 -.1405 R13 -.9751
SG1 4975.3 SG2 429.0 THA 17.69

ORBIT DETERMINATION ACCURACY

ST 2172.7 SR 880.7 SS 2640.8
CRT .9745 CRS .9728 CST .9998
LSA 3525.7 MSA 195.7 SSA 30.9
EL1 2337.2 EL2 183.7 ALF 21.70

LAUNCH DATE OCT 4 1964 FLIGHT TIME 264.00 ARRIVAL DATE JUN 25 1965

HELIOCENTRIC CONIC DISTANCE 634.006 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.812 GAL -8.08 AZL 90.80 HCA 207.10 SMA 190.33 ECC .25417 INC .8015 V1 29.779
RP 236.12 LAP .37 LOP 217.90 VP 20.660 GAP 4.85 AZP 89.29 TAL 318.33 TAP 165.43 RCA 141.95 APO 238.71 V2 23.279
RC 194.983 GL -5.27 GP 11.21 ZAL 146.29 ZAP 143.49 ETS 163.17 ZAE 166.85 ETE 66.63 ZAC 99.27 ETC 255.96 CLP 145.02

PLANETOCENTRIC CONIC

C3 24.482 VHL 4.948 DLA 3.88 RAL 157.19 RAD 6568.0 VEL 12.077 PTH 2.16 VHP 4.669 DPA 10.24 RAP 187.95 ECC 1.4029

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 27 49	2383.66	-23.28	52.49	22.96	106.59	21 7 33	1783.7	-20.79	44.70
90.00	9 27 24	4787.03	17.77	205.95	20.91	67.58	10 47 11	4187.0	14.58	198.73
100.00	21 50 59	2115.44	-24.41	32.38	22.57	107.81	22 26 14	1515.4	-21.75	24.59
100.00	10 46 56	4530.48	18.86	186.60	20.42	66.37	12 2 27	3930.5	15.51	179.41
110.00	23 3 23	1888.82	-27.45	13.97	21.37	111.21	23 34 52	1288.8	-24.32	6.21
110.00	11 51 1	4329.86	21.78	169.90	18.95	62.98	13 3 11	3729.9	17.98	162.83

DIFFERENTIAL CORRECTIONS
TDE 1.4932 TRA-3.5707 TC3 1.3739 BAU .5143
RDE .7074 RRA -.9605 RC3 .7626 FAU .24100
FDE-4.6250 FRA11.2357 FC3-8.5223 BSP 17255
BDE 1.6523 BRA 3.6976 BC3 1.5713 FSP 4575

MID-COURSE EXECUTION ACCURACY
SGT 4691.8 SGR 1575.8 SG3 1419.3
RRT .9552 RRF -.9769 RTF -.9701
SGB 4949.4 R23 -.1415 R13 -.9746
SG1 4929.4 SG2 443.8 THA 17.94

ORBIT DETERMINATION ACCURACY
ST 2130.1 SR 885.1 SS 2677.5
CRT .9723 CRS .9705 CST .9998
LSA 3528.0 MSA 204.7 SSA 31.3
EL1 2298.7 EL2 191.6 ALF 22.16

LAUNCH DATE OCT 4 1964 FLIGHT TIME 266.00 ARRIVAL DATE JUN 27 1965

HELIOCENTRIC CONIC DISTANCE 637.687 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.794 GAL -8.01 AZL 90.71 HCA 208.07 SMA 190.00 ECC .25240 INC .7102 V1 29.779
RP 235.77 LAP .33 LOP 218.87 VP 20.671 GAP 4.45 AZP 89.37 TAL 318.46 TAP 166.54 RCA 142.04 APO 237.96 V2 23.315
RC 197.185 GL -4.71 GP 11.09 ZAL 146.21 ZAP 142.56 ETS 163.86 ZAE 167.28 ETE 70.77 ZAC 99.15 ETC 255.96 CLP 144.01

PLANETOCENTRIC CONIC

C3 24.026 VHL 4.902 DLA 4.45 RAL 157.25 RAD 6568.0 VEL 12.058 PTH 2.16 VHP 4.571 DPA 10.15 RAP 187.87 ECC 1.3954

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 23 44	2397.08	-23.54	53.38	22.89	106.21	21 3 41	1797.1	-21.09	45.57
90.00	9 31 59	4764.39	17.18	204.56	20.57	67.14	10 51 24	4164.4	13.93	197.38
100.00	21 47 10	2127.97	-24.67	33.22	22.51	107.44	22 22 38	1528.0	-22.05	25.40
100.00	10 51 14	4508.73	18.26	185.26	20.07	65.92	12 6 23	3908.7	14.86	178.13
110.00	23 0 12	1899.38	-27.71	14.69	21.33	110.86	23 31 52	1299.4	-24.62	6.88
110.00	11 54 41	4310.09	21.16	168.70	18.58	62.51	13 6 31	3710.1	17.31	161.69

DIFFERENTIAL CORRECTIONS
TDE 1.4602 TRA-3.4859 TC3 1.3838 BAU .5106
RDE .7078 RRA -.9548 RC3 .7823 FAU .25041
FDE-4.7419 FRA11.6383 FC3-9.0228 BSP 17029
BDE 1.6227 BRA 3.6143 BC3 1.5897 FSP 4786

MID-COURSE EXECUTION ACCURACY
SGT 4632.2 SGR 1589.3 SG3 1484.4
RRT .9546 RRF -.9758 RTF -.9704
SGB 4897.2 R23 -.1364 R13 -.9750
SG1 4876.5 SG2 449.7 THA 18.30

ORBIT DETERMINATION ACCURACY
ST 2102.0 SR 893.2 SS 2723.5
CRT .9720 CRS .9687 CST .9997
LSA 3547.9 MSA 211.8 SSA 31.2
EL1 2275.6 EL2 194.0 ALF 22.62

LAUNCH DATE OCT 4 1964 FLIGHT TIME 268.00 ARRIVAL DATE JUN 29 1965

HELIOCENTRIC CONIC DISTANCE 641.380 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.776 GAL -7.95 AZL 90.62 HCA 209.05 SMA 189.69 ECC .25072 INC .6243 V1 29.779
RP 235.42 LAP .30 LOP 219.85 VP 20.684 GAP 4.07 AZP 89.45 TAL 318.59 TAP 167.64 RCA 142.13 APO 237.24 V2 23.351
RC 199.372 GL -4.18 GP 10.99 ZAL 146.12 ZAP 141.59 ETS 164.52 ZAE 167.64 ETE 75.38 ZAC 99.04 ETC 255.97 CLP 142.96

PLANETOCENTRIC CONIC

C3 23.599 VHL 4.858 DLA 5.00 RAL 157.31 RAD 6568.0 VEL 12.041 PTH 2.15 VHP 4.476 DPA 10.08 RAP 187.76 ECC 1.3884

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 19 48	2409.99	-23.78	54.25	22.82	105.84	20 59 58	1810.0	-21.38	46.40
90.00	9 36 23	4742.70	16.60	203.23	20.25	66.72	10 55 26	4142.7	13.31	196.10
100.00	21 43 30	2140.02	-24.92	34.03	22.46	107.07	22 19 10	1540.0	-22.34	26.18
100.00	10 55 22	4487.90	17.68	183.99	19.75	65.50	12 10 10	3887.9	14.23	176.90
110.00	22 57 9	1909.53	-27.96	15.38	21.30	110.52	23 28 58	1309.5	-24.91	7.53
110.00	11 58 13	4291.16	20.56	167.56	18.25	62.07	13 9 44	3691.2	16.67	160.60

DIFFERENTIAL CORRECTIONS
TDE 1.4235 TRA-3.4012 TC3 1.3836 BAU .5046
RDE .7086 RRA -.9514 RC3 .8024 FAU .25995
FDE-4.8587 FRA12.0603 FC3-9.5361 BSP 16847
BDE 1.5901 BRA 3.5318 BC3 1.5994 FSP 5015

MID-COURSE EXECUTION ACCURACY
SGT 4565.2 SGR 1604.7 SG3 1551.7
RRT .9538 RRF -.9749 RTF -.9705
SGB 4839.1 R23 -.1325 R13 -.9753
SG1 4817.4 SG2 457.1 THA 18.71

ORBIT DETERMINATION ACCURACY
ST 2068.8 SR 901.8 SS 2769.1
CRT .9715 CRS .9669 CST .9996
LSA 3565.4 MSA 219.4 SSA 31.1
EL1 2248.2 EL2 196.9 ALF 23.14

LAUNCH DATE OCT 4 1964 FLIGHT TIME 270.00 ARRIVAL DATE JUL 1 1965

HELIOCENTRIC CONIC DISTANCE 645.086 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.759 GAL -7.88 AZL 90.54 HCA 210.03 SMA 189.39 ECC .24910 INC .5433 V1 29.779
RP 235.06 LAP .27 LOP 220.83 VP 20.698 GAP 3.68 AZP 89.53 TAL 318.71 TAP 168.74 RCA 142.21 APO 236.56 V2 23.387
RC 201.544 GL -3.67 GP 10.90 ZAL 146.03 ZAP 140.58 ETS 165.15 ZAE 167.91 ETE 80.45 ZAC 98.93 ETC 255.98 CLP 141.88

PLANETOCENTRIC CONIC

C3 23.199 VHL 4.817 DLA 5.53 RAL 157.37 RAD 6567.9 VEL 12.024 PTH 2.15 VHP 4.384 DPA 10.04 RAP 187.63 ECC 1.3818

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 16 1	2422.44	-24.01	55.09	22.77	105.48	20 56 23	1822.4	-21.65	47.21
90.00	9 40 37	4721.89	16.03	201.96	19.96	66.34	10 59 19	4121.9	12.70	194.87
100.00	21 39 58	2151.65	-25.15	34.82	22.41	106.72	22 15 50	1551.6	-22.61	26.93
100.00	10 59 21	4467.93	17.11	182.78	19.45	65.11	12 13 48	3867.9	13.61	175.73
110.00	22 54 12	1919.32	-28.19	16.04	21.27	110.19	23 26 12	1319.3	-25.18	8.16
110.00	12 1 36	4273.02	19.98	166.47	17.93	61.67	13 12 49	3673.0	16.04	159.57

DIFFERENTIAL CORRECTIONS
TDE 1.3862 TRA-3.3128 TC3 1.3781 BAU .4979
RDE .7102 RRA -.9496 RC3 .8234 FAU .26986
FDE-4.9803 FRA12.4948 FC-10.0705 BSP 16636
BDE 1.5575 BRA 3.4462 BC3 1.6054 FSP 5251

MID-COURSE EXECUTION ACCURACY
SGT 4489.6 SGR 1622.0 SG3 1621.5
RRT .9529 RRF -.9740 RTF -.9705
SGB 4773.6 R23 -.1290 R13 -.9754
SG1 4750.9 SG2 464.8 THA 19.19

ORBIT DETERMINATION ACCURACY
ST 2032.6 SR 911.2 SS 2815.4
CRT .9711 CRS .9652 CST .9995
LSA 3582.6 MSA 227.3 SSA 31.0
EL1 2218.5 EL2 199.4 ALF 23.73

LAUNCH DATE OCT 4 1964 FLIGHT TIME 272.00 ARRIVAL DATE JUL 3 1965

HELIOCENTRIC CONIC DISTANCE 648.803 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.743 GAL -7.82 AZL 90.47 HCA 211.01 SMA 189.10 ECC .24756 INC .4667 V1 29.779
RP 234.71 LAP .24 LOP 221.81 VP 20.714 GAP 3.30 AZP 89.60 TAL 318.83 TAP 169.84 RCA 142.29 APO 235.92 V2 23.424
RC 203.699 GL -3.17 GP 10.82 ZAL 145.94 ZAP 130.54 ETS 165.75 ZAE 168.08 ETE 85.93 ZAC 98.82 ETC 255.99 CLP 140.77

PLANETOCENTRIC CONIC

C3 22.825 VHL 4.778 DLA 6.04 RAL 157.42 RAD 6567.9 VEL 12.008 PTH 2.14 VHP 4.294 DPA 10.03 RAP 187.48 ECC 1.3756

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 12 22	2434.49	-24.23	55.91	22.72	105.13	20 52 56	1834.5	-21.91	48.00
90.00	9 44 42	4701.91	15.48	200.75	19.69	65.99	11 3 4	4101.9	12.11	193.70
100.00	21 36 34	2162.89	-25.36	35.58	22.36	106.37	22 12 37	1562.9	-22.88	27.67
100.00	11 3 10	4448.75	16.56	181.62	19.18	64.75	12 17 19	3848.8	13.02	174.62
110.00	22 51 22	1928.78	-28.41	16.69	21.25	109.86	23 23 31	1328.8	-25.44	8.77
110.00	12 4 52	4255.63	19.41	165.44	17.65	61.30	13 15 47	3655.6	15.43	158.58

DIFFERENTIAL CORRECTIONS
TDE 1.3483 TRA-3.2207 TC3 1.3668 BAU .4904
RDE .7126 RRA -.9495 RC3 .8453 FAU .28009
FDE-5.1067 FRA12.9433 FC-10.6239 BSP 16394
BDE 1.5250 BRA 3.3577 BC3 1.6071 FSP 5496

MID-COURSE EXECUTION ACCURACY
SGT 4405.3 SGR 1641.3 SG3 1693.5
RRT .9521 RRF -.9731 RTF -.9704
SGB 4701.1 RZ3 -.1257 R13 -.9756
SG1 4677.3 SG2 472.6 THA 19.74

ORBIT DETERMINATION ACCURACY
ST 1993.4 SR 921.3 SS 2862.5
CRT .9708 CRS .9636 CST .9994
LSA 3600.0 MSA 235.4 SSA 30.8
EL1 2186.8 EL2 201.5 ALF 24.39

LAUNCH DATE OCT 4 1964 FLIGHT TIME 274.00 ARRIVAL DATE JUL 5 1965

HELIOCENTRIC CONIC DISTANCE 652.531 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.728 GAL -7.76 AZL 90.39 HCA 212.00 SMA 188.83 ECC .24610 INC .3943 V1 29.779
RP 234.35 LAP .21 LOP 222.80 VP 20.732 GAP 2.93 AZP 89.67 TAL 318.94 TAP 170.94 RCA 142.36 APO 235.30 V2 23.461
RC 205.837 GL -2.70 GP 10.75 ZAL 145.85 ZAP 130.45 ETS 166.33 ZAE 168.13 ETE 91.73 ZAC 98.72 ETC 256.01 CLP 139.62

PLANETOCENTRIC CONIC

C3 22.474 VHL 4.741 DLA 6.53 RAL 157.47 RAD 6567.9 VEL 11.994 PTH 2.14 VHP 4.207 DPA 10.03 RAP 187.31 ECC 1.3699

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 8 50	2446.17	-24.43	56.70	22.68	104.78	20 49 36	1846.2	-22.16	48.77
90.00	9 48 39	4682.71	14.95	199.60	19.44	65.67	11 6 41	4082.7	11.54	192.58
100.00	21 33 17	2173.78	-25.57	36.32	22.33	106.05	22 9 31	1573.8	-23.12	28.38
100.00	11 6 53	4430.33	16.02	180.52	18.92	64.42	12 20 43	3830.3	12.45	173.55
110.00	22 48 39	1937.95	-28.62	17.32	21.23	109.54	23 20 57	1337.9	-25.69	9.37
110.00	12 8 1	4238.93	18.87	164.45	17.38	60.95	13 18 40	3638.9	14.85	157.64

DIFFERENTIAL CORRECTIONS
TDE 1.3086 TRA-3.1256 TC3 1.3484 BAU .4818
RDE .7154 RRA -.9511 RC3 .8678 FAU .29059
FDE-5.2353 FRA13.4077 FC-11.1941 BSP 16140
BDE 1.4913 BRA 3.2671 BC3 1.6035 FSP 5751

MID-COURSE EXECUTION ACCURACY
SGT 4311.9 SGR 1662.2 SG3 1768.0
RRT .9513 RRF -.9724 RTF -.9701
SGB 4621.2 RZ3 -.1230 R13 -.9756
SG1 4596.2 SG2 480.8 THA 20.37

ORBIT DETERMINATION ACCURACY
ST 1950.4 SR 932.0 SS 2909.7
CRT .9706 CRS .9620 CST .9992
LSA 3616.4 MSA 243.7 SSA 30.5
EL1 2152.0 EL2 203.3 ALF 25.12

LAUNCH DATE OCT 4 1964 FLIGHT TIME 276.00 ARRIVAL DATE JUL 7 1965

HELIOCENTRIC CONIC DISTANCE 656.271 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.713 GAL -7.71 AZL 90.33 HCA 212.98 SMA 188.57 ECC .24470 INC .3253 V1 29.779
RP 233.98 LAP .18 LOP 223.79 VP 20.751 GAP 2.56 AZP 89.73 TAL 319.05 TAP 172.04 RCA 142.43 APO 234.72 V2 23.498
RC 207.958 GL -2.24 GP 10.69 ZAL 145.75 ZAP 137.33 ETS 166.89 ZAE 168.05 ETE 97.74 ZAC 98.62 ETC 256.02 CLP 138.44

PLANETOCENTRIC CONIC

C3 22.146 VHL 4.706 DLA 7.00 RAL 157.53 RAD 6567.9 VEL 11.980 PTH 2.14 VHP 4.123 DPA 10.06 RAP 187.10 ECC 1.3645

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 5 26	2457.50	-24.63	57.48	22.65	104.44	20 46 24	1857.5	-22.40	49.51
90.00	9 52 28	4664.26	14.43	198.49	19.22	65.37	11 10 12	4064.3	10.99	191.50
100.00	21 30 7	2184.35	-25.77	37.05	22.31	105.70	22 6 32	1584.4	-23.36	29.07
100.00	11 10 28	4412.64	15.50	179.47	18.70	64.11	12 24 0	3812.6	11.89	172.53
110.00	22 46 1	1946.84	-28.82	17.93	21.22	109.23	23 18 28	1346.8	-25.93	9.95
110.00	12 11 4	4222.91	18.33	163.52	17.14	60.63	13 21 27	3622.9	14.28	156.75

DIFFERENTIAL CORRECTIONS
TDE 1.2676 TRA-3.0267 TC3 1.3224 BAU .4721
RDE .7188 RRA -.9539 RC3 .8911 FAU .30142
FDE-5.3686 FRA13.8849 FC-11.7831 BSP 15865
BDE 1.4572 BRA 3.1735 BC3 1.5946 FSP 6015

MID-COURSE EXECUTION ACCURACY
SGT 4209.0 SGR 1684.8 SG3 1844.6
RRT .9503 RRF -.9717 RTF -.9696
SGB 4533.7 RZ3 -.1208 R13 -.9755
SG1 4507.1 SG2 489.8 THA 21.09

ORBIT DETERMINATION ACCURACY
ST 1903.6 SR 943.3 SS 2957.5
CRT .9704 CRS .9605 CST .9991
LSA 3632.6 MSA 252.1 SSA 30.3
EL1 2114.6 EL2 204.9 ALF 25.94

LAUNCH DATE OCT 4 1964 FLIGHT TIME 278.00 ARRIVAL DATE JUL 9 1965

HELIOCENTRIC CONIC DISTANCE 660.022 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.699 GAL -7.66 AZL 90.26 HCA 213.98 SMA 188.33 ECC .24337 INC .2593 V1 29.779
RP 233.62 LAP .15 LOP 224.78 VP 20.772 GAP 2.20 AZP 89.78 TAL 319.15 TAP 173.13 RCA 142.49 APO 234.16 V2 23.536
RC 210.060 GL -1.80 GP 10.64 ZAL 145.66 ZAP 136.16 ETS 167.43 ZAE 167.82 ETE 103.81 ZAC 98.52 ETC 256.04 CLP 137.22

PLANETOCENTRIC CONIC

C3 21.840 VHL 4.673 DLA 7.45 RAL 157.58 RAD 6567.9 VEL 11.967 PTH 2.13 VHP 4.041 DPA 10.11 RAP 186.87 ECC 1.3594

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 2 9	2468.52	-24.81	58.23	22.62	104.10	20 43 18	1868.5	-22.63	50.24
90.00	9 56 10	4646.50	13.92	197.43	19.01	65.09	11 13 37	4046.5	10.45	190.48
100.00	21 27 4	2194.63	-25.95	37.75	22.29	105.38	22 3 39	1594.6	-23.59	29.75
100.00	11 13 56	4395.62	14.99	178.46	18.49	63.83	12 27 12	3795.6	11.35	171.56
110.00	22 43 29	1955.49	-29.01	18.53	21.23	108.92	23 16 5	1355.5	-26.16	10.52
110.00	12 14 1	4207.52	17.82	162.62	16.93	60.33	13 24 9	3607.5	13.74	155.89

DIFFERENTIAL CORRECTIONS
TDE 1.2267 TRA-2.9226 TC3 1.2910 BAU .4621
RDE .7229 RRA -.9579 RC3 .9155 FAU .31269
FDE-5.5082 FRA14.3733 FC-12.3951 BSP 15539
BDE 1.4239 BRA 3.0756 BC3 1.5827 FSP 6282

MID-COURSE EXECUTION ACCURACY
SGT 4096.0 SGR 1709.0 SG3 1923.6
RRT .9494 RRF -.9711 RTF -.9689
SGB 4438.2 RZ3 -.1188 R13 -.9753
SG1 4410.1 SG2 498.5 THA 21.90

ORBIT DETERMINATION ACCURACY
ST 1854.4 SR 955.3 SS 3006.4
CRT .9705 CRS .9591 CST .9988
LSA 3649.7 MSA 260.6 SSA 30.1
EL1 2075.8 EL2 205.6 ALF 26.85

LAUNCH DATE OCT 4 1964 FLIGHT TIME 280.00 ARRIVAL DATE JUL 11 1965

HELIOCENTRIC CONIC DISTANCE 663.783 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.686 GAL -7.61 AZL 90.20 HCA 214.97 SMA 188.09 ECC .24211 INC .1975 V1 29.779
RP 233.25 LAP .11 LOP 225.77 VP 20.794 GAP 1.84 AZP 89.84 TAL 319.24 TAP 174.21 RCA 142.56 APO 233.63 V2 23.574
RC 212.144 GL -1.38 GP 10.59 ZAL 145.57 ZAP 134.96 ETS 167.96 ZAE 167.45 ETE 109.79 ZAC 98.42 ETC 256.06 CLP 135.96

PLANETOCENTRIC CONIC

C3 21.554 VHL 4.643 DLA 7.88 RAL 157.64 RAD 6567.9 VEL 11.955 PTH 2.13 VHP 3.962 DPA 10.17 RAP 186.62 ECC 1.3547

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 58 59	2479.24	-24.99	58.97	22.61	103.78	20 40 19	1879.2	-22.85	50.95
90.00	9 59 47	4629.42	13.43	196.42	18.83	64.83	11 16 56	4029.4	9.93	189.49
100.00	21 24 8	2204.63	-26.13	38.44	22.28	105.05	22 0 53	1604.6	-23.81	30.41
100.00	11 17 19	4379.27	14.50	177.50	18.30	63.57	12 30 18	3779.3	10.83	170.62
110.00	22 41 3	1963.91	-29.20	19.12	21.24	108.62	23 13 47	1363.9	-26.38	11.07
110.00	12 16 53	4192.75	17.32	161.77	16.73	60.06	13 26 46	3592.7	13.21	155.07

DIFFERENTIAL CORRECTIONS
TDE 1.1828 TRA-2.8155 TC3 1.2494 BAU .4505
RDE .7272 RRA -.9635 RC3 .9398 FAU .32403
FDE-5.6462 FRA14.8794 FC-13.0149 BSP 15220
BDE 1.3885 BRA 2.9758 BC3 1.5634 FSP 6568

MID-COURSE EXECUTION ACCURACY
SGT 3972.6 SGR 1734.3 SG3 2004.5
RRT .9483 RRF -.9706 RTF -.9680
SGB 4334.7 R23 -.1175 R13 -.9751
SG1 4304.8 SG2 508.2 THA 22.82

ORBIT DETERMINATION ACCURACY
ST 1799.9 SR 967.3 SS 3054.1
CRT .9706 CRS .9576 CST .9986
LSA 3664.6 MSA 269.2 SSA 29.8
EL1 2032.9 EL2 206.1 ALF 27.86

LAUNCH DATE OCT 4 1964 FLIGHT TIME 282.00 ARRIVAL DATE JUL 13 1965

HELIOCENTRIC CONIC DISTANCE 667.555 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.673 GAL -7.56 AZL 90.14 HCA 215.97 SMA 187.87 ECC .24091 INC .1369 V1 29.779
RP 232.88 LAP .08 LOP 226.77 VP 20.817 GAP 1.49 AZP 89.89 TAL 319.33 TAP 175.30 RCA 142.61 APO 233.13 V2 23.612
RC 214.210 GL -.97 GP 10.56 ZAL 145.48 ZAP 133.71 ETS 168.47 ZAE 166.92 ETE 115.55 ZAC 98.31 ETC 256.08 CLP 134.66

PLANETOCENTRIC CONIC

C3 21.289 VHL 4.614 DLA 8.30 RAL 157.69 RAD 6567.9 VEL 11.944 PTH 2.13 VHP 3.885 DPA 10.26 RAP 186.33 ECC 1.3504

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 55 56	2489.70	-25.15	59.69	22.61	103.45	20 37 26	1889.7	-23.05	51.65
90.00	10 3 17	4612.99	12.95	195.45	18.67	64.60	11 20 10	4013.0	9.43	188.55
100.00	21 21 18	2214.38	-26.30	39.12	22.29	104.74	21 58 12	1614.4	-24.02	31.06
100.00	11 20 36	4363.54	14.02	176.57	18.14	63.33	12 33 20	3763.5	10.32	169.73
110.00	22 38 43	1972.12	-29.37	19.69	21.26	108.32	23 11 35	1372.1	-26.59	11.62
110.00	12 19 41	4178.57	16.83	160.95	16.56	59.80	13 29 19	3578.6	12.70	154.29

DIFFERENTIAL CORRECTIONS
TDE 1.1388 TRA-2.7028 TC3 1.2010 BAU .4385
RDE .7321 RRA -.9700 RC3 .9651 FAU .33582
FDE-5.7922 FRA15.3945 FC-13.6568 BSP 14848
BDE 1.3539 BRA 2.8718 BC3 1.5408 FSP 6853

MID-COURSE EXECUTION ACCURACY
SGT 3838.4 SGR 1761.1 SG3 2087.6
RRT .9470 RRF -.9701 RTF -.9669
SGB 4223.1 R23 -.1166 R13 -.9747
SG1 4191.2 SG2 518.1 THA 23.87

ORBIT DETERMINATION ACCURACY
ST 1742.5 SR 980.1 SS 3103.3
CRT .9709 CRS .9564 CST .9983
LSA 3681.0 MSA 277.8 SSA 29.6
EL1 1988.7 EL2 205.7 ALF 28.98

LAUNCH DATE OCT 4 1964 FLIGHT TIME 284.00 ARRIVAL DATE JUL 15 1965

HELIOCENTRIC CONIC DISTANCE 671.337 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.661 GAL -7.52 AZL 90.08 HCA 216.97 SMA 187.66 ECC .23978 INC .0794 V1 29.779
RP 232.51 LAP .05 LOP 227.77 VP 20.842 GAP 1.14 AZP 89.94 TAL 319.41 TAP 176.38 RCA 142.66 APO 232.66 V2 23.650
RC 216.258 GL -.57 GP 10.52 ZAL 145.39 ZAP 132.42 ETS 168.97 ZAE 166.25 ETE 121.00 ZAC 98.21 ETC 256.10 CLP 133.32

PLANETOCENTRIC CONIC

C3 21.042 VHL 4.587 DLA 8.71 RAL 157.75 RAD 6567.9 VEL 11.934 PTH 2.12 VHP 3.811 DPA 10.37 RAP 186.01 ECC 1.3463

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 53 0	2499.90	-25.31	60.39	22.62	103.13	20 34 40	1899.9	-23.26	52.33
90.00	10 6 42	4597.19	12.49	194.52	18.53	64.38	11 23 19	3997.2	8.94	187.64
100.00	21 18 34	2223.89	-26.47	39.78	22.30	104.43	21 55 38	1623.9	-24.22	31.70
100.00	11 23 48	4348.43	13.55	175.69	17.99	63.10	12 36 17	3748.4	9.84	168.87
110.00	22 36 28	1980.13	-29.55	20.26	21.29	108.03	23 9 28	1380.1	-26.80	12.15
110.00	12 22 24	4164.95	16.37	160.18	16.40	59.56	13 31 49	3565.0	12.20	153.54

DIFFERENTIAL CORRECTIONS
TDE 1.0935 TRA-2.5850 TC3 1.1449 BAU .4260
RDE .7374 RRA -.9774 RC3 .9910 FAU .34788
FDE-5.9402 FRA15.9212 FC-14.3129 BSP 14447
BDE 1.3189 BRA 2.7636 BC3 1.5142 FSP 7148

MID-COURSE EXECUTION ACCURACY
SGT 3693.0 SGR 1788.9 SG3 2172.4
RRT .9456 RRF -.9697 RTF -.9654
SGB 4103.5 R23 -.1160 R13 -.9742
SG1 4069.3 SG2 528.2 THA 25.06

ORBIT DETERMINATION ACCURACY
ST 1681.3 SR 993.2 SS 3152.2
CRT .9713 CRS .9552 CST .9979
LSA 3696.9 MSA 286.5 SSA 29.3
EL1 1942.0 EL2 204.4 ALF 30.22

LAUNCH DATE OCT 4 1964 FLIGHT TIME 286.00 ARRIVAL DATE JUL 17 1965

HELIOCENTRIC CONIC DISTANCE 675.129 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.649 GAL -7.48 AZL 90.03 HCA 217.97 SMA 187.46 ECC .23870 INC .0185 V1 29.779
RP 232.14 LAP .02 LOP 228.77 VP 20.868 GAP .80 AZP 89.98 TAL 319.48 TAP 177.46 RCA 142.71 APO 232.21 V2 23.689
RC 218.287 GL -.19 GP 10.49 ZAL 145.31 ZAP 131.09 ETS 169.45 ZAE 165.44 ETE 126.05 ZAC 98.10 ETC 256.13 CLP 131.95

PLANETOCENTRIC CONIC

C3 20.814 VHL 4.562 DLA 9.10 RAL 157.81 RAD 6567.8 VEL 11.925 PTH 2.12 VHP 3.740 DPA 10.50 RAP 185.66 ECC 1.3425

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 50 10	2509.86	-25.47	61.08	22.64	102.82	20 32 0	1909.9	-23.45	52.99
90.00	10 10 1	4581.99	12.04	193.63	18.41	64.18	11 26 23	3982.0	8.47	186.77
100.00	21 15 57	2233.18	-26.62	40.42	22.33	104.12	21 53 10	1633.2	-24.42	32.32
100.00	11 26 55	4333.90	13.10	174.85	17.87	62.89	12 39 9	3733.9	9.37	168.05
110.00	22 34 19	1987.96	-29.71	20.81	21.33	107.74	23 7 27	1388.0	-27.00	12.67
110.00	12 25 3	4151.89	15.91	159.43	16.27	59.34	13 34 15	3551.9	11.73	152.83

DIFFERENTIAL CORRECTIONS
TDE 1.0472 TRA-2.4615 TC3 1.0804 BAU .4129
RDE .7432 RRA -.9856 RC3 1.0172 FAU .36021
FDE-6.0931 FRA16.4557 FC-14.9828 BSP 14002
BDE 1.2841 BRA 2.6515 BC3 1.4839 FSP 7445

MID-COURSE EXECUTION ACCURACY
SGT 3535.9 SGR 1817.7 SG3 2258.8
RRT .9439 RRF -.9694 RTF -.9635
SGB 3975.8 R23 -.1159 R13 -.9736
SG1 3939.1 SG2 538.6 THA 26.42

ORBIT DETERMINATION ACCURACY
ST 1616.4 SR 1006.7 SS 3201.6
CRT .9720 CRS .9541 CST .9975
LSA 3713.2 MSA 295.1 SSA 29.0
EL1 1893.5 EL2 202.0 ALF 31.59

LAUNCH DATE OCT 4 1964 FLIGHT TIME 288.00 ARRIVAL DATE JUL 19 1965

HELIOCENTRIC CONIC DISTANCE 678.930 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.638 GAL -7.44 AZL 89.97 HCA 218.98 SMA 187.27 ECC .23770 INC .0232 V1 29.779
RP 231.76 LAP -.02 LOP 229.78 VP 20.895 GAP .46 AZP 90.02 TAL 319.55 TAP 178.53 RCA 142.76 APO 231.79 V2 23.728
RC 220.299 GL .18 GP 10.47 ZAL 145.23 ZAP 129.72 ETS 169.93 ZAE 164.50 ETE 130.68 ZAC 97.99 ETC 256.16 CLP 130.53

PLANETOCENTRIC CONIC

C3 20.603 VHL 4.539 DLA 9.47 RAL 157.88 RAD 6567.8 VEL 11.916 PTH 2.12 VHP 3.672 DPA 10.65 RAP 185.28 ECC 1.3391

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 47 26	2519.59	-25.61	61.76	22.67	102.51	20 29 26	1919.6	-23.63	53.65
90.00	10 13 16	4567.39	11.60	192.78	18.32	63.99	11 29 24	3967.4	8.01	185.94
100.00	21 13 26	2242.26	-26.77	41.06	22.37	103.82	21 50 48	1642.3	-24.61	32.93
100.00	11 29 58	4319.96	12.67	174.04	17.77	62.70	12 41 58	3720.0	8.91	167.26
110.00	22 32 15	1995.61	-29.87	21.35	21.39	107.46	23 5 30	1395.6	-27.19	13.18
110.00	12 27 38	4139.37	15.48	158.73	16.16	59.13	13 36 38	3539.4	11.27	152.15

DIFFERENTIAL CORRECTIONS

TDE .9985 TRA-2.3332 TC3 1.0050 BAU .3990
RDE .7490 RRA -.9947 RC3 1.0431 FAU .37254
FDE-6.2441 FRA17.0028 FC-15.6540 BSP 13548
BDE 1.2482 BRA 2.5364 BC3 1.4485 FSP 7756

MID-COURSE EXECUTION ACCURACY

SGT 3366.9 SGR 1846.9 SG3 2346.4
RRT .9418 RRF -.9691 RTF -.9610
SGB 3840.2 R23 -.1164 R13 -.9727
SG1 3800.6 SG2 550.1 THA 27.96

ORBIT DETERMINATION ACCURACY

ST 1546.5 SR 1020.1 SS 3249.6
CRT .9727 CRS .9530 CST .9970
LSA 3728.1 MSA 303.9 SSA 28.7
EL1 1841.9 EL2 198.7 ALF 33.12

LAUNCH DATE OCT 4 1964 FLIGHT TIME 290.00 ARRIVAL DATE JUL 21 1965

HELIOCENTRIC CONIC DISTANCE 682.741 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.628 GAL -7.41 AZL 89.92 HCA 219.99 SMA 187.09 ECC .23675 INC .0734 V1 29.779
RP 231.38 LAP -.05 LOP 230.79 VP 20.923 GAP .13 AZP 90.06 TAL 319.61 TAP 179.60 RCA 142.80 APO 231.39 V2 23.768
RC 222.292 GL .54 GP 10.45 ZAL 145.16 ZAP 128.30 ETS 170.40 ZAE 163.43 ETE 134.88 ZAC 97.87 ETC 256.19 CLP 129.07

PLANETOCENTRIC CONIC

C3 20.410 VHL 4.518 DLA 9.83 RAL 157.95 RAD 6567.8 VEL 11.908 PTH 2.12 VHP 3.606 DPA 10.82 RAP 184.86 ECC 1.3359

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 44 49	2529.11	-25.75	62.42	22.72	102.21	20 26 58	1929.1	-23.81	54.29
90.00	10 16 27	4553.36	11.18	191.96	18.24	63.82	11 32 20	3953.4	7.58	185.14
100.00	21 11 1	2251.13	-26.91	41.68	22.42	103.52	21 48 32	1651.1	-24.79	33.52
100.00	11 32 57	4306.57	12.25	173.27	17.69	62.52	12 44 43	3706.6	8.47	166.51
110.00	22 30 16	2003.09	-30.02	21.88	21.45	107.18	23 3 39	1403.1	-27.37	13.68
110.00	12 30 10	4127.37	15.06	158.05	16.07	58.94	13 38 57	3527.4	10.83	151.50

DIFFERENTIAL CORRECTIONS

TDE .9490 TRA-2.1985 TC3 .9218 BAU .3853
RDE .7554 RRA-1.0042 RC3 1.0697 FAU .38526
FDE-6.4020 FRA17.5513 FC-16.3419 BSP 13045
BDE 1.2130 BRA 2.4170 BC3 1.4120 FSP 8061

MID-COURSE EXECUTION ACCURACY

SGT 3185.9 SGR 1876.9 SG3 2435.0
RRT .9391 RRF -.9689 RTF -.9578
SGB 3697.7 R23 -.1174 R13 -.9718
SG1 3654.7 SG2 562.1 THA 29.73

ORBIT DETERMINATION ACCURACY

ST 1473.1 SR 1033.9 SS 3298.4
CRT .9737 CRS .9520 CST .9964
LSA 3744.3 MSA 312.4 SSA 28.4
EL1 1789.3 EL2 194.0 ALF 34.82

LAUNCH DATE OCT 4 1964 FLIGHT TIME 292.00 ARRIVAL DATE JUL 23 1965

HELIOCENTRIC CONIC DISTANCE 686.561 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.618 GAL -7.37 AZL 89.88 HCA 221.00 SMA 186.92 ECC .23586 INC .1223 V1 29.779
RP 231.01 LAP -.08 LOP 231.81 VP 20.953 GAP -.20 AZP 90.09 TAL 319.66 TAP 180.66 RCA 142.84 APO 231.01 V2 23.807
RC 224.266 GL .89 GP 10.43 ZAL 145.09 ZAP 126.84 ETS 170.86 ZAE 162.26 ETE 138.68 ZAC 97.75 ETC 256.23 CLP 127.57

PLANETOCENTRIC CONIC

C3 20.233 VHL 4.498 DLA 10.18 RAL 158.02 RAD 6567.8 VEL 11.900 PTH 2.11 VHP 3.544 DPA 11.01 RAP 184.41 ECC 1.3330

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 42 19	2538.41	-25.88	63.07	22.78	101.91	20 24 37	1938.4	-23.98	54.92
90.00	10 19 33	4539.90	10.78	191.18	18.18	63.66	11 35 13	3939.9	7.15	184.38
100.00	21 8 42	2259.81	-27.05	42.29	22.49	103.23	21 46 21	1659.8	-24.96	34.11
100.00	11 35 51	4293.74	11.85	172.53	17.62	62.35	12 47 25	3693.7	8.05	165.79
110.00	22 28 24	2010.41	-30.16	22.40	21.53	106.90	23 1 54	1410.4	-27.56	14.18
110.00	12 32 39	4115.89	14.65	157.41	15.99	58.77	13 41 14	3515.9	10.41	150.87

DIFFERENTIAL CORRECTIONS

TDE .8980 TRA-2.0579 TC3 .8284 BAU .3717
RDE .7620 RRA-1.0143 RC3 1.0962 FAU .39806
FDE-6.5606 FRA18.1064 FC-17.0326 BSP 12524
BDE 1.1777 BRA 2.2943 BC3 1.3740 FSP 8375

MID-COURSE EXECUTION ACCURACY

SGT 2992.7 SGR 1907.2 SG3 2524.5
RRT .9357 RRF -.9687 RTF -.9536
SGB 3548.8 R23 -.1190 R13 -.9706
SG1 3501.9 SG2 574.9 THA 31.76

ORBIT DETERMINATION ACCURACY

ST 1395.4 SR 1047.8 SS 3346.6
CRT .9749 CRS .9511 CST .9956
LSA 3760.4 MSA 321.0 SSA 28.1
EL1 1734.9 EL2 187.7 ALF 36.71

LAUNCH DATE OCT 4 1964 FLIGHT TIME 294.00 ARRIVAL DATE JUL 25 1965

HELIOCENTRIC CONIC DISTANCE 690.391 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.609 GAL -7.35 AZL 89.83 HCA 222.02 SMA 186.76 ECC .23502 INC .1700 V1 29.779
RP 230.62 LAP -.11 LOP 232.82 VP 20.984 GAP -.53 AZP 90.13 TAL 319.70 TAP 181.72 RCA 142.87 APO 230.66 V2 23.847
RC 226.222 GL 1.23 GP 10.41 ZAL 145.03 ZAP 125.34 ETS 171.31 ZAE 160.98 ETE 142.10 ZAC 97.62 ETC 256.27 CLP 126.02

PLANETOCENTRIC CONIC

C3 20.072 VHL 4.480 DLA 10.51 RAL 158.10 RAD 6567.8 VEL 11.893 PTH 2.11 VHP 3.484 DPA 11.21 RAP 183.93 ECC 1.3303

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 39 54	2547.51	-26.01	63.71	22.85	101.61	20 22 22	1947.5	-24.15	55.53
90.00	10 22 35	4526.99	10.39	190.43	18.14	63.51	11 38 2	3927.0	6.75	183.65
100.00	21 6 29	2268.29	-27.18	42.88	22.57	102.94	21 44 17	1668.3	-25.13	34.69
100.00	11 38 42	4281.45	11.46	171.82	17.58	62.20	12 50 3	3681.4	7.65	165.10
110.00	22 26 36	2017.58	-30.30	22.91	21.63	106.63	23 0 14	1417.6	-27.73	14.66
110.00	12 35 4	4104.92	14.27	156.79	15.94	58.60	13 43 29	3504.9	10.01	150.28

DIFFERENTIAL CORRECTIONS

TDE .8450 TRA-1.9112 TC3 .7254 BAU .3586
RDE .7686 RRA-1.0248 RC3 1.1222 FAU .41083
FDE-6.7178 FRA18.6660 FC-17.7198 BSP 11976
BDE 1.1423 BRA 2.1687 BC3 1.3362 FSP 8692

MID-COURSE EXECUTION ACCURACY

SGT 2787.5 SGR 1937.5 SG3 2614.0
RRT .9312 RRF -.9685 RTF -.9481
SGB 3394.8 R23 -.1209 R13 -.9692
SG1 3343.3 SG2 588.7 THA 34.12

ORBIT DETERMINATION ACCURACY

ST 1313.2 SR 1061.6 SS 3393.5
CRT .9763 CRS .9502 CST .9947
LSA 3775.9 MSA 329.7 SSA 27.8
EL1 1679.0 EL2 179.6 ALF 38.81

LAUNCH DATE OCT 4 1964 FLIGHT TIME 296.00 ARRIVAL DATE JUL 27 1965

HELIOCENTRIC CONIC DISTANCE 694.229 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.600 GAL -7.32 AZL 89.78 HCA 223.04 SMA 186.61 ECC .23425 INC .2150 V1 29.779
RP 230.24 LAP -.15 LOP 233.84 VP 21.015 GAP -.85 AZP 90.16 TAL 319.73 TAP 182.77 RCA 142.90 APO 230.32 V2 23.887
RC 228.159 GL 1.56 GP 10.40 ZAL 144.98 ZAP 123.79 ETS 171.76 ZAE 159.60 ETE 145.18 ZAC 97.48 ETC 256.32 CLP 124.44

PLANETOCENTRIC CONIC

C3 19.926 VHL 4.464 DLA 10.83 RAL 158.19 RAD 6567.8 VEL 11.887 PTH 2.11 VHP 3.427 DPA 11.43 RAP 183.41 ECC 1.3279

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 37 37	2556.41	-26.13	64.33	22.94	101.32	20 20 13	1956.4	-24.30	56.14
90.00	10 25 33	4514.63	10.01	189.72	18.12	63.37	11 40 48	3914.6	6.36	182.95
100.00	21 4 22	2276.60	-27.31	43.47	22.66	102.66	21 42 19	1676.6	-25.29	35.25
100.00	11 41 29	4269.68	11.08	171.15	17.55	62.06	12 52 38	3669.7	7.26	164.45
110.00	22 24 54	2024.61	-30.44	23.41	21.73	106.36	22 58 39	1424.6	-27.90	15.14
110.00	12 37 26	4094.43	13.89	156.21	15.91	58.45	13 45 41	3494.4	9.62	149.72

DIFFERENTIAL CORRECTIONS

TDE .7936 TRA-1.7552 TC3 .6179 BAU .3477
RDE .7764 RRA-1.0344 RC3 1.1495 FAU .42426
FDE-6.8922 FRA19.2054 FC-10.4328 BSP 11335
BDE 1.1102 BRA 2.0373 BC3 1.3051 FSP 8977

MID-COURSE EXECUTION ACCURACY

SGT 2569.7 SGR 1968.1 SG3 2703.4
RRT .9257 RRF -.9683 RTF -.9410
SGB 3236.8 R23 -.1224 R13 -.9678
SG1 3180.4 SG2 601.4 THA 36.87

ORBIT DETERMINATION ACCURACY

ST 1229.4 SR 1076.3 SS 3442.9
CRT .9784 CRS .9496 CST .9934
LSA 3795.8 MSA 338.1 SSA 27.3
EL1 1625.3 EL2 168.2 ALF 41.12

LAUNCH DATE OCT 4 1964 FLIGHT TIME 298.00 ARRIVAL DATE JUL 29 1965

HELIOCENTRIC CONIC DISTANCE 698.076 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.592 GAL -7.30 AZL 89.74 HCA 224.07 SMA 186.47 ECC .23353 INC .2582 V1 29.779
RP 229.86 LAP -.18 LOP 234.87 VP 21.048 GAP -1.16 AZP 90.19 TAL 319.75 TAP 183.82 RCA 142.92 APO 230.01 V2 23.927
RC 230.076 GL 1.88 GP 10.38 ZAL 144.93 ZAP 122.21 ETS 172.20 ZAE 158.14 ETE 147.95 ZAC 97.34 ETC 256.36 CLP 122.81

PLANETOCENTRIC CONIC

C3 19.797 VHL 4.449 DLA 11.14 RAL 158.28 RAD 6567.8 VEL 11.882 PTH 2.11 VHP 3.373 DPA 11.67 RAP 182.85 ECC 1.3258

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 35 26	2565.12	-26.24	64.94	23.04	101.03	20 18 11	1965.1	-24.46	56.73
90.00	10 28 27	4502.82	9.65	189.04	18.11	63.25	11 43 30	3902.8	5.98	182.28
100.00	21 2 22	2284.72	-27.43	44.04	22.76	102.38	21 40 27	1684.7	-25.45	35.80
100.00	11 44 12	4258.46	10.72	170.51	17.55	61.93	12 55 10	3658.5	6.89	163.82
110.00	22 23 18	2031.49	-30.57	23.90	21.85	106.10	22 57 9	1431.5	-28.06	15.60
110.00	12 39 46	4084.45	13.54	155.65	15.90	58.31	13 47 50	3484.5	9.25	149.18

DIFFERENTIAL CORRECTIONS

TDE .7364 TRA-1.5961 TC3 .4929 BAU .3371
RDE .7831 RRA-1.0451 RC3 1.1743 FAU .43692
FDE-7.0481 FRA19.7607 FC-19.1073 BSP 10767
BDE 1.0750 BRA 1.9078 BC3 1.2735 FSP 9297

MID-COURSE EXECUTION ACCURACY

SGT 2341.0 SGR 1997.6 SG3 2791.8
RRT .9170 RRF -.9682 RTF -.9306
SGB 3077.5 R23 -.1253 R13 -.9660
SG1 3014.6 SG2 618.8 THA 40.07

ORBIT DETERMINATION ACCURACY

ST 1137.7 SR 1089.7 SS 3487.3
CRT .9804 CRS .9488 CST .9919
LSA 3810.8 MSA 346.5 SSA 27.1
EL1 1567.6 EL2 156.0 ALF 43.74

LAUNCH DATE OCT 4 1964 FLIGHT TIME 300.00 ARRIVAL DATE JUL 31 1965

HELIOCENTRIC CONIC DISTANCE 701.932 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.584 GAL -7.28 AZL 89.70 HCA 225.09 SMA 186.33 ECC .23287 INC .3003 V1 29.779
RP 229.47 LAP -.21 LOP 235.89 VP 21.082 GAP -1.47 AZP 90.21 TAL 319.77 TAP 184.86 RCA 142.94 APO 229.72 V2 23.968
RC 231.973 GL 2.19 GP 10.36 ZAL 144.89 ZAP 120.57 ETS 172.64 ZAE 156.60 ETE 150.45 ZAC 97.19 ETC 256.42 CLP 121.14

PLANETOCENTRIC CONIC

C3 19.682 VHL 4.436 DLA 11.44 RAL 158.37 RAD 6567.8 VEL 11.877 PTH 2.11 VHP 3.322 DPA 11.93 RAP 182.26 ECC 1.3239

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 33 21	2573.63	-26.35	65.54	23.15	100.75	20 16 15	1973.6	-24.60	57.31
90.00	10 31 18	4491.54	9.30	188.39	18.13	63.14	11 46 10	3891.5	5.63	181.64
100.00	21 0 28	2292.67	-27.54	44.61	22.88	102.10	21 38 41	1692.7	-25.60	36.35
100.00	11 46 52	4247.73	10.38	169.90	17.56	61.81	12 57 40	3647.7	6.53	163.22
110.00	22 21 47	2038.22	-30.70	24.39	21.98	105.83	22 55 45	1438.2	-28.22	16.06
110.00	12 42 3	4074.95	13.20	155.13	15.90	58.18	13 49 58	3474.9	8.89	148.67

DIFFERENTIAL CORRECTIONS

TDE .6793 TRA-1.4287 TC3 .3612 BAU .3295
RDE .7905 RRA-1.0550 RC3 1.1991 FAU .44977
FDE-7.2120 FRA20.2979 FC-19.7838 BSP 10146
BDE 1.0423 BRA 1.7760 BC3 1.2524 FSP 9594

MID-COURSE EXECUTION ACCURACY

SGT 2101.5 SGR 2026.6 SG3 2878.9
RRT .9049 RRF -.9680 RTF -.9161
SGB 2919.5 R23 -.1273 R13 -.9643
SG1 2849.3 SG2 636.2 THA 43.85

ORBIT DETERMINATION ACCURACY

ST 1043.4 SR 1103.3 SS 3532.2
CRT .9829 CRS .9482 CST .9898
LSA 3828.3 MSA 354.8 SSA 26.7
EL1 1512.1 EL2 140.2 ALF 46.63

LAUNCH DATE OCT 4 1964 FLIGHT TIME 302.00 ARRIVAL DATE AUG 2 1965

HELIOCENTRIC CONIC DISTANCE 705.795 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.576 GAL -7.26 AZL 89.66 HCA 226.12 SMA 186.21 ECC .23226 INC .3410 V1 29.779
RP 229.09 LAP -.25 LOP 236.93 VP 21.117 GAP -1.78 AZP 90.24 TAL 319.78 TAP 185.90 RCA 142.96 APO 229.45 V2 24.009
RC 233.848 GL 2.49 GP 10.35 ZAL 144.86 ZAP 118.90 ETS 173.08 ZAE 154.98 ETE 152.71 ZAC 97.03 ETC 256.48 CLP 119.43

PLANETOCENTRIC CONIC

C3 19.581 VHL 4.425 DLA 11.72 RAL 158.48 RAD 6567.8 VEL 11.873 PTH 2.11 VHP 3.275 DPA 12.19 RAP 181.63 ECC 1.3223

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 31 23	2581.96	-26.46	66.13	23.28	100.48	20 14 25	1982.0	-24.74	57.88
90.00	10 34 5	4480.79	8.97	187.78	18.17	63.03	11 48 46	3880.8	5.29	181.04
100.00	20 58 40	2300.44	-27.65	45.16	23.02	101.83	21 37 1	1700.4	-25.74	36.88
100.00	11 49 29	4237.54	10.05	169.32	17.60	61.70	13 0 6	3637.5	6.19	162.66
110.00	22 20 22	2044.82	-30.82	24.86	22.13	105.58	22 54 27	1444.8	-28.38	16.52
110.00	12 44 17	4065.93	12.87	154.63	15.93	58.06	13 52 3	3465.9	8.56	148.19

DIFFERENTIAL CORRECTIONS

TDE .6196 TRA-1.2554 TC3 .2174 BAU .3251
RDE .7977 RRA-1.0650 RC3 1.2226 FAU .46224
FDE-7.3696 FRA20.8297 FC-20.4366 BSP 9554
BDE 1.0101 BRA 1.6463 BC3 1.2417 FSP 9898

MID-COURSE EXECUTION ACCURACY

SGT 1853.8 SGR 2054.5 SG3 2964.0
RRT .8861 RRF -.9679 RTF -.8941
SGB 2767.2 R23 -.1288 R13 -.9625
SG1 2688.2 SG2 656.7 THA 48.31

ORBIT DETERMINATION ACCURACY

ST 944.3 SR 1116.4 SS 3574.6
CRT .9858 CRS .9475 CST .9869
LSA 3844.9 MSA 362.9 SSA 26.4
EL1 1457.1 EL2 121.6 ALF 49.84

LAUNCH DATE OCT 4 1964 FLIGHT TIME 304.00 ARRIVAL DATE AUG 4 1965

HELIOCENTRIC CONIC DISTANCE 709.667 EARTH TO MARS

RL	149.63	LAL	-.00	LOL	10.80	VL	32.569	GAL	-7.25	AZL	89.62	HCA	227.16	SMA	186.09	ECC	.23170	INC	.3804	V1	29.779
RP	228.70	LAP	-.28	LOP	237.96	VP	21.152	GAP	-2.08	AZP	90.26	TAL	319.77	TAP	186.93	RCA	142.97	APO	229.20	V2	24.049
RC	235.703	GL	2.79	GP	10.33	ZAL	144.84	ZAP	117.19	ETS	173.51	ZAE	153.29	ETE	154.75	ZAC	96.86	ETC	256.54	CLP	117.68

PLANETOCENTRIC CONIC

C3	19.495	VHL	4.415	DLA	12.00	RAL	158.58	RAD	6567.8	VEL	11.869	PTH	2.11	VHP	3.230	DPA	12.47	RAP	180.97	ECC	1.3208

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 29 32	2590.09	-26.56	66.70	23.42	100.21	20 12 42	1990.1	-24.88	58.44
90.00	10 36 49	4470.58	8.66	187.19	18.23	62.93	11 51 19	3870.6	4.96	180.46
100.00	20 56 59	2308.04	-27.76	45.70	23.16	101.57	21 35 27	1708.0	-25.88	37.40
100.00	11 52 2	4227.86	9.74	168.77	17.65	61.60	13 2 30	3627.9	5.87	162.12
110.00	22 19 2	2051.28	-30.94	25.33	22.29	105.32	22 53 14	1451.3	-28.52	16.96
110.00	12 46 29	4057.38	12.56	154.16	15.97	57.95	13 54 6	3457.4	8.24	147.73

DIFFERENTIAL CORRECTIONS

TDE	.5579	TRA-1.0751	TC3	.0641	BAU	.3248	
RDE	.8049	RRA-1.0743	RC3	1.2447	FAU	.47440	
FDE-7.5248		FRA21.3462	FC-21.0666		BSP	8972	
BDE	.9793	BRA 1.5199	BC3	1.2463	FSP	10190	

MID-COURSE EXECUTION ACCURACY

SGT	1600.5	SGR	2080.9	SG3	3046.6
RRT	.8561	RRF	-.9677	RTF	-.8596
SGB	2625.3	R23	-.1281	R13	-.9611
SG1	2536.0	SG2	678.9	THA	53.62

ORBIT DETERMINATION ACCURACY

ST	841.0	SR	1129.0	SS	3615.4
CRT	.9891	CRS	.9468	CST	.9826
LSA	3862.0	MSA	371.0	SSA	26.1
EL1	1404.3	EL2	99.5	ALF	53.40

LAUNCH DATE OCT 4 1964 FLIGHT TIME 306.00 ARRIVAL DATE AUG 6 1965

HELIOCENTRIC CONIC DISTANCE 713.547 EARTH TO MARS

RL	149.63	LAL	-.00	LOL	10.80	VL	32.563	GAL	-7.23	AZL	89.58	HCA	228.20	SMA	185.98	ECC	.23120	INC	.4184	V1	29.779
RP	228.31	LAP	-.31	LOP	239.00	VP	21.189	GAP	-2.38	AZP	90.28	TAL	319.76	TAP	187.96	RCA	142.98	APO	228.97	V2	24.090
RC	237.537	GL	3.07	GP	10.31	ZAL	144.83	ZAP	115.44	ETS	173.94	ZAE	151.54	ETE	156.62	ZAC	96.68	ETC	256.61	CLP	115.89

PLANETOCENTRIC CONIC

C3	19.424	VHL	4.407	DLA	12.26	RAL	158.70	RAD	6567.8	VEL	11.866	PTH	2.11	VHP	3.189	DPA	12.77	RAP	180.28	ECC	1.3197

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 27 47	2598.03	-26.65	67.26	23.58	99.94	20 11 5	1998.0	-25.01	58.98
90.00	10 39 29	4460.89	8.36	186.64	18.30	62.85	11 53 50	3860.9	4.65	179.92
100.00	20 55 24	2315.46	-27.86	46.23	23.33	101.31	21 34 0	1715.5	-26.01	37.91
100.00	11 54 33	4218.69	9.44	168.25	17.72	61.51	13 4 52	3618.7	5.56	161.61
110.00	22 17 49	2057.60	-31.05	25.79	22.47	105.07	22 52 6	1457.6	-28.67	17.39
110.00	12 48 38	4049.32	12.27	153.72	16.04	57.84	13 56 7	3449.3	7.94	147.30

DIFFERENTIAL CORRECTIONS

TDE	.4945	TRA -.8879	TC3	-.0991	BAU	.3296	
RDE	.8119	RRA-1.0828	RC3	1.2656	FAU	.48623	
FDE-7.6752		FRA21.8406	FC-21.6719		BSP	8427	
BDE	.9507	BRA 1.4003	BC3	1.2694	FSP	10472	

MID-COURSE EXECUTION ACCURACY

SGT	1347.7	SGR	2105.6	SG3	3125.6
RRT	.8044	RRF	-.9675	RTF	-.8013
SGB	2500.0	R23	-.1236	R13	-.9604
SG1	2399.2	SG2	702.6	THA	59.91

ORBIT DETERMINATION ACCURACY

ST	734.1	SR	1141.1	SS	3653.6
CRT	.9928	CRS	.9462	CST	.9761
LSA	3878.8	MSA	378.9	SSA	25.7
EL1	1354.8	EL2	73.9	ALF	57.32

LAUNCH DATE OCT 4 1964 FLIGHT TIME 308.00 ARRIVAL DATE AUG 8 1965

HELIOCENTRIC CONIC DISTANCE 717.433 EARTH TO MARS

RL	149.63	LAL	-.00	LOL	10.80	VL	32.556	GAL	-7.23	AZL	89.54	HCA	229.24	SMA	185.87	ECC	.23075	INC	.4556	V1	29.779
RP	227.92	LAP	-.35	LOP	240.04	VP	21.226	GAP	-2.67	AZP	90.30	TAL	319.74	TAP	188.98	RCA	142.98	APO	228.76	V2	24.132
RC	239.350	GL	3.35	GP	10.28	ZAL	144.83	ZAP	113.66	ETS	174.36	ZAE	149.73	ETE	158.32	ZAC	96.49	ETC	256.69	CLP	114.07

PLANETOCENTRIC CONIC

C3	19.366	VHL	4.401	DLA	12.51	RAL	158.83	RAD	6567.8	VEL	11.864	PTH	2.10	VHP	3.151	DPA	13.07	RAP	179.55	ECC	1.3187

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 26 10	2605.78	-26.74	67.81	23.76	99.68	20 9 36	2005.8	-25.13	59.52
90.00	10 42 6	4451.74	8.07	186.12	18.40	62.77	11 56 17	3851.7	4.36	179.41
100.00	20 53 57	2322.71	-27.95	46.74	23.51	101.05	21 32 39	1722.7	-26.14	38.41
100.00	11 57 0	4210.05	9.16	167.77	17.82	61.42	13 7 10	3610.0	5.27	161.13
110.00	22 16 41	2063.78	-31.16	26.24	22.66	104.83	22 51 5	1463.8	-28.81	17.82
110.00	12 50 45	4041.73	12.00	153.30	16.12	57.75	13 58 7	3441.7	7.65	146.90

DIFFERENTIAL CORRECTIONS

TDE	.4240	TRA -.6981	TC3	-.2830	BAU	.3393	
RDE	.8166	RRA-1.0929	RC3	1.2796	FAU	.49550	
FDE-7.7796		FRA22.3579	FC-22.1503		BSP	8046	
BDE	.9201	BRA 1.2969	BC3	1.3105	FSP	10833	

MID-COURSE EXECUTION ACCURACY

SGT	1110.6	SGR	2126.8	SG3	3200.0
RRT	.7042	RRF	-.9672	RTF	-.6927
SGB	2399.3	R23	-.1124	R13	-.9608
SG1	2284.2	SG2	734.2	THA	67.34

ORBIT DETERMINATION ACCURACY

ST	618.7	SR	1150.1	SS	3681.9
CRT	.9961	CRS	.9450	CST	.9662
LSA	3887.4	MSA	386.6	SSA	25.7
EL1	1305.0	EL2	48.2	ALF	61.77

LAUNCH DATE OCT 4 1964 FLIGHT TIME 310.00 ARRIVAL DATE AUG 10 1965

HELIOCENTRIC CONIC DISTANCE 721.330 EARTH TO MARS

RL	149.63	LAL	-.00	LOL	10.80	VL	32.551	GAL	-7.22	AZL	89.51	HCA	230.28	SMA	185.77	ECC	.23035	INC	.4916	V1	29.779
RP	227.53	LAP	-.38	LOP	241.08	VP	21.264	GAP	-2.96	AZP	90.31	TAL	319.71	TAP	189.99	RCA	142.98	APO	228.57	V2	24.173
RC	241.142	GL	3.62	GP	10.25	ZAL	144.84	ZAP	111.83	ETS	174.79	ZAE	147.86	ETE	159.88	ZAC	96.30	ETC	256.77	CLP	112.21

PLANETOCENTRIC CONIC

C3	19.322	VHL	4.396	DLA	12.75	RAL	158.96	RAD	6567.8	VEL	11.862	PTH	2.10	VHP	3.116	DPA	13.38	RAP	178.80	ECC	1.3180

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 24 39	2613.35	-26.83	68.35	23.95	99.42	20 8 13	2013.3	-25.25	60.04
90.00	10 44 39	4443.09	7.80	185.63	18.51	62.69	11 58 42	3843.1	4.08	178.92
100.00	20 52 35	2329.79	-28.04	47.25	23.70	100.80	21 31 25	1729.8	-26.27	38.90
100.00	11 59 25	4201.89	8.89	167.31	17.92	61.34	13 9 27	3601.9	5.00	160.68
110.00	22 15 39	2069.84	-31.26	26.68	22.87	104.59	22 50 9	1469.8	-28.94	18.24
110.00	12 52 50	4034.60	11.74	152.91	16.22	57.66	14 0 4	3434.6	7.39	146.52

DIFFERENTIAL CORRECTIONS

TDE	.3596	TRA -.4952	TC3	-.4587	BAU	.3559	
RDE	.8246	RRA-1.0979	RC3	1.2992	FAU	.50721	
FDE-7.9407		FRA22.7750	FC-22.7257		BSP	7590	
BDE	.8996	BRA 1.2044	BC3	1.3778	FSP	11040	

MID-COURSE EXECUTION ACCURACY

SGT	905.7	SGR	2147.7	SG3	3270.3
RRT	.5214	RRF	-.9669	RTF	-.4940
SGB	2330.8	R23	-.0941	R13	-.9624
SG1	2206.1	SG2	752.4	THA	75.93

ORBIT DETERMINATION ACCURACY

ST	509.2	SR	1161.9	SS	3719.1
CRT	.9985	CRS	.9447	CST	.9463
LSA	3909.6	MSA	394.2	SSA	25.2
EL1	1268.4	EL2	25.4	ALF	66.36

LAUNCH DATE OCT 4 1964 FLIGHT TIME 312.00 ARRIVAL DATE AUG 12 1965

HELIOCENTRIC CONIC DISTANCE 725.233 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.545 GAL -7.22 AZL 89.47 HCA 231.33 SMA 185.68 ECC .23000 INC .5267 V1 29.779
RP 227.14 LAP -.41 LOP 242.13 VP 21.303 GAP -3.24 AZP 90.33 TAL 319.67 TAP 191.00 RCA 142.98 APO 228.39 V2 24.214
RC 242.914 GL 3.88 GP 10.22 ZAL 144.85 ZAP 109.98 ETS 175.21 ZAE 145.94 ETE 161.32 ZAC 96.09 ETC 256.85 CLP 110.31

PLANETOCENTRIC CONIC

C3 19.292 VHL 4.392 DLA 12.97 RAL 159.10 RAD 6567.8 VEL 11.861 PTH 2.10 VHP 3.084 DPA 13.70 RAP 178.01 ECC 1.3175

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 23 16	2620.72	-26.91	68.88	24.15	99.17	20 6 56	2020.7	-25.36	60.55
90.00	10 47 9	4434.98	7.55	185.16	18.64	62.63	12 1 4	3835.0	3.82	178.47
100.00	20 51 20	2336.69	-28.13	47.75	23.91	100.55	21 30 17	1736.7	-26.39	39.38
100.00	12 1 46	4194.24	8.64	166.88	18.05	61.27	13 11 40	3594.2	4.74	160.26
110.00	22 14 43	2075.76	-31.36	27.11	23.09	104.35	22 49 19	1475.8	-29.07	18.65
110.00	12 54 52	4027.94	11.49	152.55	16.34	57.58	14 2 0	3427.9	7.14	146.17

DIFFERENTIAL CORRECTIONS
TDE .2916 TRA -.2874 TC3 -.6470 BAU .3780
RDE .8317 RRA-1.1024 RC3 1.3151 FAU .51759
FDE-8.0827 FRA23.1737 FC-23.2272 BSP 7296
BDE .8813 BRA 1.1393 BC3 1.4656 FSP 11257

MID-COURSE EXECUTION ACCURACY
SGT 784.6 SGR 2165.5 SG3 3334.9
RRT .1905 RRF -.9666 RTF -.1435
SGB 2303.3 R23 -.0684 R13 -.9650
SG1 2171.4 SG2 768.2 THA 85.48

ORBIT DETERMINATION ACCURACY
ST 397.8 SR 1172.2 SS 3751.3
CRT .9931 CRS .9442 CST .9060
LSA 3929.7 MSA 401.7 SSA 24.8
EL1 1237.1 EL2 44.3 ALF 71.35

LAUNCH DATE OCT 4 1964 FLIGHT TIME 314.00 ARRIVAL DATE AUG 14 1965

HELIOCENTRIC CONIC DISTANCE 729.144 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.540 GAL -7.22 AZL 89.44 HCA 232.38 SMA 185.60 ECC .22970 INC .5610 V1 29.779
RP 226.75 LAP -.44 LOP 243.18 VP 21.343 GAP -3.52 AZP 90.34 TAL 319.61 TAP 192.00 RCA 142.97 APO 228.23 V2 24.256
RC 244.666 GL 4.13 GP 10.18 ZAL 144.88 ZAP 108.09 ETS 175.63 ZAE 143.97 ETE 162.64 ZAC 95.87 ETC 256.94 CLP 108.39

PLANETOCENTRIC CONIC

C3 19.275 VHL 4.390 DLA 13.19 RAL 159.24 RAD 6567.8 VEL 11.860 PTH 2.10 VHP 3.056 DPA 14.03 RAP 177.19 ECC 1.3172

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 21 59	2627.90	-26.99	69.39	24.38	98.92	20 5 47	2027.9	-25.47	61.05
90.00	10 49 36	4427.39	7.31	184.73	18.79	62.57	12 3 24	3827.4	3.58	178.04
100.00	20 50 12	2343.42	-28.21	48.23	24.14	100.31	21 29 15	1743.4	-26.50	39.85
100.00	12 4 5	4187.10	8.41	166.48	18.20	61.21	13 13 52	3587.1	4.50	159.87
110.00	22 13 54	2081.54	-31.46	27.53	23.33	104.12	22 48 35	1481.5	-29.20	19.06
110.00	12 56 52	4021.75	11.27	152.21	16.48	57.51	14 3 54	3421.7	6.90	145.84

DIFFERENTIAL CORRECTIONS
TDE .2209 TRA -.0739 TC3 -.8445 BAU .4055
RDE .8380 RRA-1.1059 RC3 1.3276 FAU .52678
FDE-8.2084 FRA23.5436 FC-23.6598 BSP 7179
BDE .8667 BRA 1.1084 BC3 1.5734 FSP 11467

MID-COURSE EXECUTION ACCURACY
SGT 801.7 SGR 2180.0 SG3 3393.0
RRT -.2302 RRF -.9661 RTF .2920
SGB 2322.8 R23 -.0382 R13 -.9680
SG1 2189.0 SG2 777.0 THA 95.54

ORBIT DETERMINATION ACCURACY
ST 290.7 SR 1181.2 SS 3778.9
CRT .9546 CRS .9435 CST .8067
LSA 3948.7 MSA 409.0 SSA 24.4
EL1 1213.5 EL2 84.3 ALF 76.71

LAUNCH DATE OCT 4 1964 FLIGHT TIME 316.00 ARRIVAL DATE AUG 16 1965

HELIOCENTRIC CONIC DISTANCE 733.062 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.536 GAL -7.22 AZL 89.41 HCA 233.44 SMA 185.52 ECC .22945 INC .5943 V1 29.779
RP 226.36 LAP -.48 LOP 244.24 VP 21.383 GAP -3.80 AZP 90.35 TAL 319.55 TAP 192.99 RCA 142.95 APO 228.09 V2 24.297
RC 246.398 GL 4.38 GP 10.14 ZAL 144.92 ZAP 106.18 ETS 176.04 ZAE 141.97 ETE 163.87 ZAC 95.65 ETC 257.04 CLP 106.45

PLANETOCENTRIC CONIC

C3 19.272 VHL 4.390 DLA 13.39 RAL 159.40 RAD 6567.8 VEL 11.860 PTH 2.10 VHP 3.032 DPA 14.36 RAP 176.35 ECC 1.3172

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 20 50	2634.89	-27.06	69.89	24.61	98.68	20 4 45	2034.9	-25.58	61.53
90.00	10 52 0	4420.32	7.09	184.33	18.96	62.51	12 5 40	3820.3	3.35	177.65
100.00	20 49 11	2349.97	-28.29	48.70	24.38	100.07	21 28 21	1750.0	-26.61	40.30
100.00	12 6 20	4180.47	8.19	166.10	18.37	61.15	13 16 1	3580.5	4.28	159.50
110.00	22 13 10	2087.19	-31.55	27.95	23.59	103.89	22 47 57	1487.2	-29.32	19.45
110.00	12 58 50	4016.02	11.06	151.90	16.64	57.45	14 5 46	3416.0	6.69	145.54

DIFFERENTIAL CORRECTIONS
TDE .1485 TRA .1453 TC3-1.0490 BAU .4381
RDE .8442 RRA-1.1076 RC3 1.3381 FAU .53528
FDE-8.3267 FRA23.8675 FC-24.0455 BSP 7247
BDE .8572 BRA 1.1170 BC3 1.7002 FSP 11651

MID-COURSE EXECUTION ACCURACY
SGT 961.1 SGR 2191.4 SG3 3444.3
RRT -.5499 RRF -.9656 RTF .6155
SGB 2392.9 R23 -.0096 R13 -.9709
SG1 2263.1 SG2 777.3 THA 105.42

ORBIT DETERMINATION ACCURACY
ST 204.3 SR 1189.1 SS 3803.3
CRT .7676 CRS .9429 CST .5147
LSA 3968.3 MSA 416.1 SSA 24.0
EL1 1199.5 EL2 129.8 ALF 82.40

LAUNCH DATE OCT 4 1964 FLIGHT TIME 318.00 ARRIVAL DATE AUG 18 1965

HELIOCENTRIC CONIC DISTANCE 736.987 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.531 GAL -7.23 AZL 89.37 HCA 234.50 SMA 185.45 ECC .22925 INC .6269 V1 29.779
RP 225.97 LAP -.51 LOP 245.30 VP 21.424 GAP -4.07 AZP 90.36 TAL 319.48 TAP 193.98 RCA 142.94 APO 227.96 V2 24.339
RC 248.110 GL 4.61 GP 10.09 ZAL 144.97 ZAP 104.25 ETS 176.45 ZAE 139.93 ETE 165.02 ZAC 95.41 ETC 257.14 CLP 104.47

PLANETOCENTRIC CONIC

C3 19.283 VHL 4.391 DLA 13.58 RAL 159.56 RAD 6567.8 VEL 11.860 PTH 2.10 VHP 3.011 DPA 14.69 RAP 175.49 ECC 1.3173

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 19 48	2641.68	-27.13	70.37	24.87	98.45	20 3 50	2041.7	-25.68	62.00
90.00	10 54 20	4413.79	6.88	183.96	19.15	62.47	12 7 54	3813.8	3.14	177.28
100.00	20 48 17	2356.35	-28.37	49.16	24.64	99.84	21 27 33	1756.3	-26.72	40.75
100.00	12 8 33	4174.35	7.99	165.76	18.55	61.10	13 18 7	3574.4	4.08	159.16
110.00	22 12 32	2092.70	-31.64	28.35	23.86	103.66	22 47 25	1492.7	-29.44	19.84
110.00	13 0 46	4010.77	10.87	151.62	16.82	57.39	14 7 37	3410.8	6.49	145.26

DIFFERENTIAL CORRECTIONS
TDE .0739 TRA .3699 TC3-1.2607 BAU .4752
RDE .8498 RRA-1.1077 RC3 1.3450 FAU .54246
FDE-8.4289 FRA24.1530 FC-24.3547 BSP 7520
BDE .8530 BRA 1.1679 BC3 1.8435 FSP 11821

MID-COURSE EXECUTION ACCURACY
SGT 1217.3 SGR 2199.0 SG3 3487.8
RRT -.7245 RRF -.9651 RTF .7880
SGB 2513.5 R23 .0133 R13 -.9735
SG1 2392.2 SG2 771.3 THA 114.57

ORBIT DETERMINATION ACCURACY
ST 180.5 SR 1195.7 SS 3823.3
CRT .1817 CRS .9422 CST -.1547
LSA 3987.5 MSA 423.2 SSA 23.6
EL1 1196.2 EL2 177.4 ALF 88.39

LAUNCH DATE OCT 4 1964 FLIGHT TIME 320.00 ARRIVAL DATE AUG 20 1965

HELIOCENTRIC CONIC DISTANCE 740.919 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.528 GAL -7.24 AZL 89.34 HCA 235.56 SMA 185.38 ECC .22909 INC .6587 V1 29.779
RP 225.58 LAP -.54 LOP 246.36 VP 21.465 GAP -4.34 AZP 90.37 TAL 319.40 TAP 194.96 RCA 142.91 APO 227.85 V2 24.381
RC 249.803 GL 4.84 GP 10.03 ZAL 145.03 ZAP 102.29 ETS 176.86 ZAE 137.85 ETE 166.08 ZAC 95.17 ETC 257.25 CLP 102.48

PLANETOCENTRIC CONIC

C3 19.307 VHL 4.394 DLA 13.77 RAL 159.73 RAD 6567.8 VEL 11.861 PTH 2.10 VHP 2.994 DPA 15.02 RAP 174.61 ECC 1.3177

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 18 54	2648.27	-27.19	70.84	25.14	98.22	20 3 2	2048.3	-25.77	62.46
90.00	10 56 37	4407.79	6.69	183.62	19.36	62.42	12 10 5	3807.8	2.95	176.95
100.00	20 47 29	2362.55	-28.44	49.61	24.92	99.62	21 26 52	1762.5	-26.82	41.18
100.00	12 10 42	4168.74	7.81	165.45	18.76	61.05	13 20 11	3568.7	3.89	158.85
110.00	22 12 1	2098.07	-31.73	28.75	24.14	103.44	22 46 59	1498.1	-29.55	20.21
110.00	13 2 40	4005.98	10.69	151.36	17.02	57.34	14 9 26	3406.0	6.31	145.01

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.0026 TRA .5996 TC3-1.4783 BAU .5165 SGT 1528.2 SGR 2202.9 SG3 3523.1 ST 244.6 SR 1201.0 SS 3839.0
RDE .8549 RRA-1.1061 RC3 1.3488 FAU .54846 RRT -.8136 RRF -.9644 RTF .8741 CRT -.3838 CRS .9414 CST -.6708
FDE-8.5174 FRA24.3907 FC-24.5935 BSP 7982 SGB 2681.1 R23 .0286 R13 -.9762 LSA 4006.8 MSA 430.0 SSA 23.2
BDE .8549 BRA 1.2581 BC3 2.0011 FSP 11964 SG1 2570.7 SG2 761.5 THA 122.66 EL1 1204.8 EL2 225.2 ALF 94.63

LAUNCH DATE OCT 4 1964 FLIGHT TIME 322.00 ARRIVAL DATE AUG 22 1965

HELIOCENTRIC CONIC DISTANCE 744.857 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.524 GAL -7.25 AZL 89.31 HCA 236.63 SMA 185.32 ECC .22899 INC .6898 V1 29.779
RP 225.19 LAP -.58 LOP 247.43 VP 21.507 GAP -4.61 AZP 90.38 TAL 319.30 TAP 195.93 RCA 142.88 APO 227.76 V2 24.423
RC 251.477 GL 5.07 GP 9.96 ZAL 145.10 ZAP 100.32 ETS 177.26 ZAE 135.75 ETE 167.08 ZAC 94.92 ETC 257.36 CLP 100.48

PLANETOCENTRIC CONIC

C3 19.344 VHL 4.398 DLA 13.94 RAL 159.91 RAD 6567.8 VEL 11.863 PTH 2.10 VHP 2.980 DPA 15.35 RAP 173.71 ECC 1.3184

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 18 7	2654.66	-27.25	71.30	25.43	98.00	20 2 21	2054.7	-25.86	62.91
90.00	10 58 50	4402.31	6.52	183.31	19.58	62.38	12 12 13	3802.3	2.77	176.64
100.00	20 46 49	2368.57	-28.51	50.04	25.21	99.40	21 26 18	1768.6	-26.91	41.60
100.00	12 12 49	4163.64	7.64	165.16	18.98	61.01	13 22 12	3563.6	3.71	158.57
110.00	22 11 36	2103.31	-31.81	29.13	24.45	103.23	22 46 39	1503.3	-29.66	20.58
110.00	13 4 32	4001.66	10.53	151.12	17.23	57.29	14 11 13	3401.7	6.15	144.78

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.0806 TRA .8339 TC3-1.6996 BAU .5613 SGT 1870.5 SGR 2202.9 SG3 3549.6 ST 354.7 SR 1205.2 SS 3851.2
RDE .8597 RRA-1.1022 RC3 1.3499 FAU .55343 RRT -.8612 RRF -.9636 RTF .9195 CRT -.6276 CRS .9406 CST -.8535
FDE-8.5965 FRA24.5715 FC-24.7685 BSP 8614 SGB 2889.9 R23 .0370 R13 -.9789 LSA 4027.2 MSA 436.6 SSA 22.8
BDE .8634 BRA 1.3821 BC3 2.1704 FSP 12075 SG1 2790.7 SG2 750.4 THA 129.60 EL1 1226.6 EL2 271.3 ALF 101.01

LAUNCH DATE OCT 4 1964 FLIGHT TIME 324.00 ARRIVAL DATE AUG 24 1965

HELIOCENTRIC CONIC DISTANCE 748.802 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.521 GAL -7.27 AZL 89.28 HCA 237.70 SMA 185.27 ECC .22893 INC .7203 V1 29.779
RP 224.80 LAP -.61 LOP 248.50 VP 21.550 GAP -4.87 AZP 90.39 TAL 319.19 TAP 196.90 RCA 142.85 APO 227.68 V2 24.465
RC 253.132 GL 5.29 GP 9.89 ZAL 145.18 ZAP 98.33 ETS 177.66 ZAE 133.62 ETE 168.01 ZAC 94.66 ETC 257.48 CLP 98.46

PLANETOCENTRIC CONIC

C3 19.395 VHL 4.404 DLA 14.10 RAL 160.10 RAD 6567.8 VEL 11.865 PTH 2.10 VHP 2.970 DPA 15.68 RAP 172.80 ECC 1.3192

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 17 27	2660.86	-27.31	71.74	25.73	97.79	20 1 48	2060.9	-25.95	63.34
90.00	11 1 1	4397.37	6.37	183.03	19.83	62.35	12 14 18	3797.4	2.61	176.36
100.00	20 46 17	2374.40	-28.57	50.46	25.52	99.19	21 25 51	1774.4	-27.01	42.01
100.00	12 14 52	4159.06	7.49	164.90	19.22	60.98	13 24 11	3559.1	3.56	158.32
110.00	22 11 17	2108.42	-31.89	29.51	24.77	103.02	22 46 25	1508.4	-29.77	20.94
110.00	13 6 21	3997.81	10.39	150.92	17.46	57.25	14 12 59	3397.8	6.00	144.57

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.1599 TRA 1.0723 TC3-1.9241 BAU .6091 SGT 2232.6 SGR 2198.9 SG3 3567.1 ST 481.7 SR 1207.8 SS 3858.6
RDE .8638 RRA-1.0965 RC3 1.3476 FAU .55702 RRT -.8883 RRF -.9626 RTF .9452 CRT -.7321 CRS .9397 CST -.9203
FDE-8.6575 FRA24.7042 FC-24.8631 BSP 9398 SGB 3133.6 R23 .0408 R13 -.9816 LSA 4047.5 MSA 443.2 SSA 22.4
BDE .8785 BRA 1.5337 BC3 2.3491 FSP 12162 SG1 3044.9 SG2 740.3 THA 135.49 EL1 1261.8 EL2 314.1 ALF 107.39

LAUNCH DATE OCT 4 1964 FLIGHT TIME 326.00 ARRIVAL DATE AUG 26 1965

HELIOCENTRIC CONIC DISTANCE 752.754 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.518 GAL -7.29 AZL 89.25 HCA 238.78 SMA 185.22 ECC .22893 INC .7502 V1 29.779
RP 224.41 LAP -.64 LOP 249.57 VP 21.593 GAP -5.13 AZP 90.39 TAL 319.08 TAP 197.85 RCA 142.82 APO 227.62 V2 24.506
RC 254.766 GL 5.49 GP 9.82 ZAL 145.27 ZAP 96.33 ETS 178.05 ZAE 131.48 ETE 168.88 ZAC 94.39 ETC 257.60 CLP 96.43

PLANETOCENTRIC CONIC

C3 19.460 VHL 4.411 DLA 14.24 RAL 160.30 RAD 6567.8 VEL 11.868 PTH 2.11 VHP 2.963 DPA 16.00 RAP 171.88 ECC 1.3203

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 16 55	2666.84	-27.37	72.17	26.06	97.58	20 1 22	2066.8	-26.03	63.76
90.00	11 3 7	4392.96	6.23	182.79	20.09	62.32	12 16 20	3793.0	2.47	176.12
100.00	20 45 51	2380.06	-28.63	50.87	25.85	98.98	21 25 31	1780.1	-27.09	42.41
100.00	12 16 53	4154.98	7.35	164.68	19.48	60.94	13 26 8	3555.0	3.42	158.09
110.00	22 11 5	2113.38	-31.96	29.88	25.10	102.81	22 46 18	1513.4	-29.87	21.29
110.00	13 8 9	3994.42	10.26	150.73	17.71	57.21	14 14 43	3394.4	5.87	144.40

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2409 TRA 1.3144 TC3-2.1508 BAU .6596 SGT 2607.9 SGR 2190.9 SG3 3575.3 ST 616.8 SR 1209.3 SS 3862.2
RDE .8676 RRA-1.0886 RC3 1.3423 FAU .55936 RRT -.9047 RRF -.9616 RTF .9608 CRT -.7855 CRS .9388 CST -.9502
FDE-8.7071 FRA24.7780 FC-24.8847 BSP 10298 SGB 3406.1 R23 .0418 R13 -.9840 LSA 4069.0 MSA 449.5 SSA 22.0
BDE .9004 BRA 1.7067 BC3 2.5353 FSP 12212 SG1 3326.5 SG2 731.8 THA 140.48 EL1 1311.1 EL2 352.0 ALF 113.64

LAUNCH DATE OCT 4 1964 FLIGHT TIME 328.00 ARRIVAL DATE AUG 28 1965

HELIOCENTRIC CONIC DISTANCE 756.712 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.515 GAL -7.31 AZL 89.22 HCA 239.85 SMA 185.17 ECC .22897 INC .7795 V1 29.779
RP 224.02 LAP -.67 LOP 250.65 VP 21.637 GAP -5.38 AZP 90.39 TAL 318.95 TAP 198.80 RCA 142.77 APO 227.57 V2 24.548
RC 256.380 GL 5.70 GP 9.73 ZAL 145.38 ZAP 94.34 ETS 178.43 ZAE 129.32 ETE 169.71 ZAC 94.12 ETC 257.72 CLP 94.40

PLANETOCENTRIC CONIC

C3 19.539 VHL 4.420 DLA 14.38 RAL 160.51 RAD 6567.8 VEL 11.871 PTH 2.11 VHP 2.961 DPA 16.31 RAP 170.95 ECC 1.3216

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 16 31	2672.63	-27.42	72.59	26.40	97.38	20 1 4	2072.6	-26.11	64.17
90.00	11 5 11	4389.10	6.10	182.57	20.37	62.30	12 18 20	3789.1	2.35	175.90
100.00	20 45 33	2385.53	-28.69	51.27	26.19	98.78	21 25 18	1785.5	-27.18	42.79
100.00	12 18 51	4151.42	7.23	164.48	19.76	60.92	13 28 2	3551.4	3.30	157.90
110.00	22 10 59	2118.21	-32.04	30.24	25.46	102.61	22 46 17	1518.2	-29.97	21.63
110.00	13 9 54	3991.51	10.16	150.58	17.98	57.18	14 16 25	3391.5	5.76	144.24

DIFFERENTIAL CORRECTIONS
TDE -.3230 TRA 1.5598 TC3-2.3779 BAU .7122
RDE .8708 RRA-1.0788 RC3 1.3336 FAU .56029
FDE-8.7398 FRA24.7994 FC-24.8255 BSP 11294
BDE .9288 BRA 1.8965 BC3 2.7263 FSP 12236

MID-COURSE EXECUTION ACCURACY
SGT 2991.8 SGR 2178.9 SG3 3574.1
RRT -.9149 RRF -.9604 RTF .9708
SGB 3701.2 R23 .0413 R13 -.9863
SG1 3629.4 SG2 725.2 THA 144.71

ORBIT DETERMINATION ACCURACY
ST 755.9 SR 1209.4 SS 3861.4
CRT -.8160 CRS .9378 CST -.9656
LSA 4091.0 MSA 455.8 SSA 21.5
EL1 1373.3 EL2 384.8 ALF 119.57

LAUNCH DATE OCT 4 1964 FLIGHT TIME 330.00 ARRIVAL DATE AUG 30 1965

HELIOCENTRIC CONIC DISTANCE 760.677 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.513 GAL -7.33 AZL 89.19 HCA 240.94 SMA 185.13 ECC .22905 INC .8082 V1 29.779
RP 223.63 LAP -.71 LOP 251.73 VP 21.681 GAP -5.63 AZP 90.39 TAL 318.81 TAP 199.75 RCA 142.73 APO 227.54 V2 24.590
RC 257.974 GL 5.89 GP 9.64 ZAL 145.49 ZAP 92.34 ETS 178.81 ZAE 127.16 ETE 170.48 ZAC 93.85 ETC 257.84 CLP 92.37

PLANETOCENTRIC CONIC

C3 19.632 VHL 4.431 DLA 14.51 RAL 160.73 RAD 6567.8 VEL 11.875 PTH 2.11 VHP 2.961 DPA 16.61 RAP 170.03 ECC 1.3231

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 16 15	2678.20	-27.46	72.99	26.75	97.18	20 0 53	2078.2	-26.19	64.56
90.00	11 7 11	4385.76	6.00	182.38	20.67	62.27	12 20 17	3785.8	2.24	175.71
100.00	20 45 22	2390.82	-28.74	51.65	26.55	98.58	21 25 13	1790.8	-27.26	43.16
100.00	12 20 45	4148.38	7.13	164.31	20.05	60.89	13 29 54	3548.4	3.20	157.73
110.00	22 10 59	2122.91	-32.11	30.58	25.83	102.42	22 46 22	1522.9	-30.06	21.97
110.00	13 11 37	3989.06	10.07	150.44	18.27	57.16	14 18 6	3389.1	5.67	144.11

DIFFERENTIAL CORRECTIONS
TDE -.4066 TRA 1.8075 TC3-2.6051 BAU .7667
RDE .8736 RRA-1.0668 RC3 1.3221 FAU .55999
FDE-8.7603 FRA24.7603 FC-24.6951 BSP 12358
BDE .9636 BRA 2.0988 BC3 2.9214 FSP 12219

MID-COURSE EXECUTION ACCURACY
SGT 3381.5 SGR 2163.1 SG3 3563.4
RRT -.9213 RRF -.9590 RTF .9775
SGB 4014.2 R23 .0402 R13 -.9882
SG1 3949.0 SG2 720.4 THA 148.31

ORBIT DETERMINATION ACCURACY
ST 897.7 SR 1208.4 SS 3856.7
CRT -.8352 CRS .9367 CST -.9747
LSA 4114.2 MSA 461.8 SSA 21.1
EL1 1447.9 EL2 412.0 ALF 125.07

LAUNCH DATE OCT 4 1964 FLIGHT TIME 332.00 ARRIVAL DATE SEP 1 1965

HELIOCENTRIC CONIC DISTANCE 764.643 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.511 GAL -7.36 AZL 89.16 HCA 242.02 SMA 185.10 ECC .22919 INC .8365 V1 29.779
RP 223.24 LAP -.74 LOP 252.82 VP 21.725 GAP -5.88 AZP 90.39 TAL 318.66 TAP 200.68 RCA 142.67 APO 227.52 V2 24.632
RC 259.547 GL 6.08 GP 9.54 ZAL 145.62 ZAP 90.34 ETS 179.18 ZAE 125.00 ETE 171.21 ZAC 93.57 ETC 257.97 CLP 90.35

PLANETOCENTRIC CONIC

C3 19.739 VHL 4.443 DLA 14.62 RAL 160.95 RAD 6567.8 VEL 11.879 PTH 2.11 VHP 2.966 DPA 16.90 RAP 169.10 ECC 1.3249

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 16 7	2683.56	-27.51	73.38	27.13	96.99	20 0 51	2083.6	-26.26	64.93
90.00	11 9 7	4383.00	5.91	182.22	20.99	62.26	12 22 10	3783.0	2.15	175.56
100.00	20 45 19	2395.91	-28.79	52.02	26.93	98.39	21 25 15	1795.9	-27.33	43.52
100.00	12 22 37	4145.89	7.05	164.17	20.37	60.88	13 31 43	3545.9	3.12	157.59
110.00	22 11 7	2127.45	-32.17	30.92	26.22	102.23	22 46 34	1527.5	-30.15	22.29
110.00	13 13 18	3987.11	9.99	150.34	18.58	57.14	14 19 45	3387.1	5.60	144.01

DIFFERENTIAL CORRECTIONS
TDE -.4895 TRA 2.0625 TC3-2.8276 BAU .8210
RDE .8710 RRA-1.0579 RC3 1.2971 FAU .55351
FDE-8.6623 FRA24.7694 FC-24.2761 BSP 13605
BDE .9991 BRA 2.3180 BC3 3.1109 FSP 12383

MID-COURSE EXECUTION ACCURACY
SGT 3777.3 SGR 2139.6 SG3 3541.2
RRT -.9256 RRF -.9573 RTF .9818
SGB 4341.2 R23 .0392 R13 -.9894
SG1 4282.0 SG2 714.3 THA 151.46

ORBIT DETERMINATION ACCURACY
ST 1041.3 SR 1200.7 SS 3829.1
CRT -.8482 CRS .9340 CST -.9812
LSA 4119.3 MSA 468.1 SSA 21.0
EL1 1529.2 EL2 433.1 ALF 130.22

LAUNCH DATE OCT 4 1964 FLIGHT TIME 334.00 ARRIVAL DATE SEP 3 1965

HELIOCENTRIC CONIC DISTANCE 768.621 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.509 GAL -7.39 AZL 89.14 HCA 243.11 SMA 185.07 ECC .22937 INC .8643 V1 29.779
RP 222.85 LAP -.77 LOP 253.91 VP 21.770 GAP -6.13 AZP 90.39 TAL 318.49 TAP 201.60 RCA 142.62 APO 227.51 V2 24.674
RC 261.100 GL 6.27 GP 9.44 ZAL 145.76 ZAP 88.35 ETS 179.54 ZAE 122.83 ETE 171.90 ZAC 93.29 ETC 258.10 CLP 88.33

PLANETOCENTRIC CONIC

C3 19.861 VHL 4.457 DLA 14.73 RAL 161.19 RAD 6567.8 VEL 11.885 PTH 2.11 VHP 2.974 DPA 17.18 RAP 168.19 ECC 1.3269

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 16 6	2688.73	-27.55	73.75	27.52	96.81	20 0 55	2088.7	-26.32	65.30
90.00	11 11 0	4380.74	5.84	182.10	21.33	62.24	12 24 1	3780.7	2.08	175.43
100.00	20 45 23	2400.83	-28.84	52.38	27.32	98.21	21 25 23	1800.8	-27.41	43.87
100.00	12 24 25	4143.87	6.98	164.06	20.70	60.86	13 33 29	3543.9	3.05	157.48
110.00	22 11 20	2131.88	-32.24	31.25	26.62	102.04	22 46 52	1531.9	-30.24	22.60
110.00	13 14 57	3985.59	9.94	150.26	18.91	57.12	14 21 23	3385.6	5.54	143.93

DIFFERENTIAL CORRECTIONS
TDE -.5753 TRA 2.3121 TC3-3.0502 BAU .8787
RDE .8750 RRA-1.0400 RC3 1.2842 FAU .55256
FDE-8.6961 FRA24.5780 FC-24.0864 BSP 14722
BDE 1.0472 BRA 2.5352 BC3 3.3096 FSP 12213

MID-COURSE EXECUTION ACCURACY
SGT 4169.6 SGR 2118.2 SG3 3513.2
RRT -.9276 RRF -.9557 RTF .9853
SGB 4676.8 R23 .0377 R13 -.9909
SG1 4622.0 SG2 713.7 THA 154.10

ORBIT DETERMINATION ACCURACY
ST 1184.9 SR 1199.5 SS 3824.1
CRT -.8565 CRS .9335 CST -.9845
LSA 4152.3 MSA 473.6 SSA 20.3
EL1 1624.5 EL2 451.6 ALF 134.59

LAUNCH DATE OCT 4 1964 FLIGHT TIME 336.00 ARRIVAL DATE SEP 5 1965

HELIOCENTRIC CONIC DISTANCE 772.604 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.507 GAL -7.43 AZL 89.11 HCA 244.20 SMA 185.04 ECC .22960 INC .8916 V1 29.779
RP 222.47 LAP -.80 LOP 255.00 VP 21.815 GAP -6.37 AZP 90.39 TAL 318.32 TAP 202.52 RCA 142.55 APO 227.53 V2 24.716
RC 262.633 GL 6.44 GP 9.32 ZAL 145.91 ZAP 86.38 ETS 179.89 ZAE 120.67 ETE 172.55 ZAC 93.01 ETC 258.23 CLP 86.33

PLANETOCENTRIC CONIC

C3 19.996 VHL 4.472 DLA 14.82 RAL 161.43 RAD 6567.8 VEL 11.890 PTH 2.11 VHP 2.986 DPA 17.44 RAP 167.28 ECC 1.3291

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 16 14	2693.68	-27.59	74.11	27.93	96.63	20 1 7	2093.7	-26.39	65.65
90.00	11 12 50	4379.03	5.79	182.00	21.68	62.23	12 25 49	3779.0	2.02	175.34
100.00	20 45 34	2405.57	-28.89	52.72	27.74	98.04	21 25 39	1805.6	-27.48	44.21
100.00	12 26 10	4142.38	6.94	163.97	21.05	60.85	13 35 13	3542.4	3.00	157.40
110.00	22 11 40	2136.16	-32.30	31.57	27.04	101.86	22 47 16	1536.2	-30.33	22.91
110.00	13 16 34	3984.55	9.90	150.20	19.25	57.11	14 22 58	3384.6	5.50	143.88

DIFFERENTIAL CORRECTIONS
TDE -.6623 TRA 2.5631 TC3-3.2696 BAU .9374
RDE .8777 RRA-1.0212 RC3 1.2667 FAU .54942
FDE-8.6959 FRA24.3533 FC-23.7869 BSP 15873
BDE 1.0995 BRA 2.7591 BC3 3.5064 FSP 12049

MID-COURSE EXECUTION ACCURACY
SGT 4561.9 SGR 2092.8 SG3 3476.0
RRT -.9285 RRF -.9539 RTF .9879
SGB 5019.1 R23 .0366 R13 -.9921
SG1 4968.1 SG2 713.5 THA 156.41

ORBIT DETERMINATION ACCURACY
ST 1329.0 SR 1196.1 SS 3811.5
CRT -.8625 CRS .9327 CST -.9868
LSA 4182.7 MSA 479.1 SSA 19.8
EL1 1726.2 EL2 466.1 ALF 138.49

LAUNCH DATE OCT 4 1964 FLIGHT TIME 338.00 ARRIVAL DATE SEP 7 1965

HELIOCENTRIC CONIC DISTANCE 776.592 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.506 GAL -7.46 AZL 89.08 HCA 245.30 SMA 185.02 ECC .22988 INC .9186 V1 29.779
RP 222.08 LAP -.83 LOP 256.10 VP 21.860 GAP -6.61 AZP 90.38 TAL 318.13 TAP 203.43 RCA 142.49 APO 227.55 V2 24.758
RC 264.145 GL 6.61 GP 9.21 ZAL 146.07 ZAP 84.42 ETS 180.23 ZAE 118.52 ETE 173.16 ZAC 92.72 ETC 258.36 CLP 84.34

PLANETOCENTRIC CONIC

C3 20.148 VHL 4.489 DLA 14.90 RAL 161.68 RAD 6567.8 VEL 11.897 PTH 2.11 VHP 3.001 DPA 17.69 RAP 166.39 ECC 1.3316

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 16 29	2698.43	-27.63	74.45	28.35	96.47	20 1 27	2098.4	-26.44	65.98
90.00	11 14 36	4377.87	5.75	181.93	22.05	62.23	12 27 33	3777.9	1.99	175.27
100.00	20 45 53	2410.12	-28.93	53.06	28.16	97.87	21 26 3	1810.1	-27.54	44.53
100.00	12 27 53	4141.42	6.90	163.92	21.42	60.84	13 36 54	3541.4	2.96	157.35
110.00	22 12 7	2140.31	-32.35	31.88	27.48	101.69	22 47 47	1540.3	-30.41	23.21
110.00	13 18 8	3983.99	9.88	150.17	19.61	57.11	14 24 32	3384.0	5.48	143.85

DIFFERENTIAL CORRECTIONS
TDE -.7500 TRA 2.8152 TC3-3.4838 BAU .9965
RDE .8794 RRA-1.0015 RC3 1.2454 FAU .54446
FDE-8.6705 FRA24.0919 FC-23.3954 BSP 17055
BDE 1.1558 BRA 2.9881 BC3 3.6997 FSP 11882

MID-COURSE EXECUTION ACCURACY
SGT 4952.4 SGR 2064.0 SG3 3430.3
RRT -.9285 RRF -.9519 RTF .9898
SGB 5365.3 R23 .0359 R13 -.9931
SG1 5317.6 SG2 713.9 THA 158.44

ORBIT DETERMINATION ACCURACY
ST 1473.1 SR 1191.1 SS 3793.3
CRT -.8666 CRS .9316 CST -.9886
LSA 4212.2 MSA 484.4 SSA 19.2
EL1 1833.2 EL2 477.6 ALF 141.94

LAUNCH DATE OCT 4 1964 FLIGHT TIME 340.00 ARRIVAL DATE SEP 9 1965

HELIOCENTRIC CONIC DISTANCE 780.585 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.505 GAL -7.50 AZL 89.05 HCA 246.40 SMA 185.00 ECC .23021 INC .9453 V1 29.779
RP 221.70 LAP -.87 LOP 257.20 VP 21.906 GAP -6.84 AZP 90.38 TAL 317.93 TAP 204.33 RCA 142.41 APO 227.59 V2 24.799
RC 265.639 GL 6.77 GP 9.08 ZAL 146.25 ZAP 82.48 ETS 180.56 ZAE 116.38 ETE 173.73 ZAC 92.44 ETC 258.48 CLP 82.38

PLANETOCENTRIC CONIC

C3 20.314 VHL 4.507 DLA 14.98 RAL 161.95 RAD 6567.8 VEL 11.904 PTH 2.12 VHP 3.020 DPA 17.92 RAP 165.52 ECC 1.3343

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 16 52	2702.96	-27.66	74.78	28.79	96.31	20 1 55	2103.0	-26.50	66.30
90.00	11 16 18	4377.26	5.73	181.90	22.44	62.22	12 29 15	3777.3	1.97	175.24
100.00	20 46 19	2414.48	-28.97	53.37	28.61	97.70	21 26 34	1814.5	-27.60	44.84
100.00	12 29 32	4140.98	6.89	163.90	21.81	60.84	13 38 33	3541.0	2.95	157.32
110.00	22 12 40	2144.33	-32.41	32.18	27.93	101.52	22 48 24	1544.3	-30.48	23.49
110.00	13 19 41	3983.90	9.88	150.17	19.99	57.11	14 26 4	3383.9	5.47	143.84

DIFFERENTIAL CORRECTIONS
TDE -.8383 TRA 3.0683 TC3-3.6908 BAU 1.0557
RDE .8803 RRA -.9809 RC3 1.2207 FAU .53778
FDE-8.6210 FRA23.7935 FC-22.9190 BSP 18264
BDE 1.2156 BRA 3.2213 BC3 3.8874 FSP 11705

MID-COURSE EXECUTION ACCURACY
SGT 5339.2 SGR 2032.0 SG3 3376.5
RRT -.9277 RRF -.9496 RTF .9913
SGB 5712.8 R23 .0355 R13 -.9939
SG1 5668.0 SG2 714.6 THA 160.23

ORBIT DETERMINATION ACCURACY
ST 1616.4 SR 1184.6 SS 3769.5
CRT -.8695 CRS .9303 CST -.9900
LSA 4240.9 MSA 489.6 SSA 18.7
EL1 1944.1 EL2 486.6 ALF 144.98

LAUNCH DATE OCT 4 1964 FLIGHT TIME 342.00 ARRIVAL DATE SEP 11 1965

HELIOCENTRIC CONIC DISTANCE 784.583 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.504 GAL -7.55 AZL 89.03 HCA 247.51 SMA 184.99 ECC .23058 INC .9714 V1 29.779
RP 221.32 LAP -.90 LOP 258.31 VP 21.952 GAP -7.08 AZP 90.37 TAL 317.72 TAP 205.22 RCA 142.33 APO 227.64 V2 24.841
RC 267.114 GL 6.93 GP 8.96 ZAL 146.44 ZAP 80.56 ETS 180.87 ZAE 114.27 ETE 174.28 ZAC 92.16 ETC 258.61 CLP 80.44

PLANETOCENTRIC CONIC

C3 20.496 VHL 4.527 DLA 15.04 RAL 162.22 RAD 6567.8 VEL 11.911 PTH 2.12 VHP 3.042 DPA 18.14 RAP 164.68 ECC 1.3373

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 17 23	2707.29	-27.69	75.09	29.26	96.15	20 2 30	2107.3	-26.55	66.61
90.00	11 17 56	4377.20	5.73	181.90	22.85	62.22	12 30 54	3777.2	1.96	175.24
100.00	20 46 53	2418.67	-29.01	53.68	29.08	97.55	21 27 12	1818.7	-27.66	45.14
100.00	12 31 8	4141.06	6.89	163.90	22.22	60.84	13 40 9	3541.1	2.95	157.33
110.00	22 13 19	2148.21	-32.46	32.47	28.41	101.35	22 49 8	1548.2	-30.56	23.77
110.00	13 21 11	3984.28	9.89	150.19	20.39	57.11	14 27 35	3384.3	5.49	143.86

DIFFERENTIAL CORRECTIONS
TDE -.9274 TRA 3.3210 TC3-3.8916 BAU 1.1154
RDE .8807 RRA -.9591 RC3 1.1939 FAU .52997
FDE-8.5566 FRA23.4541 FC-22.3851 BSP 19464
BDE 1.2790 BRA 3.4567 BC3 4.0706 FSP 11506

MID-COURSE EXECUTION ACCURACY
SGT 5721.3 SGR 1997.7 SG3 3315.7
RRT -.9263 RRF -.9471 RTF .9924
SGB 6060.0 R23 .0352 R13 -.9945
SG1 6017.7 SG2 715.5 THA 161.81

ORBIT DETERMINATION ACCURACY
ST 1758.8 SR 1177.1 SS 3741.8
CRT -.8713 CRS .9290 CST -.9910
LSA 4270.3 MSA 494.5 SSA 18.3
EL1 2058.0 EL2 493.6 ALF 147.67

LAUNCH DATE OCT 4 1964 FLIGHT TIME 344.00 ARRIVAL DATE SEP 13 1965

HELIOCENTRIC CONIC DISTANCE 788.586 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.504 GAL -7.60 AZL 89.00 HCA 248.62 SMA 184.98 ECC .23101 INC .9974 V1 29.779
RP 220.94 LAP -.93 LOP 259.41 VP 21.998 GAP -7.31 AZP 90.36 TAL 317.49 TAP 206.11 RCA 142.25 APO 227.71 V2 24.883
RC 268.570 GL 7.08 GP 8.83 ZAL 146.63 ZAP 78.67 ETS 181.18 ZAE 112.17 ETE 174.79 ZAC 91.89 ETC 258.73 CLP 78.53

PLANETOCENTRIC CONIC

C3 20.695 VHL 4.549 DLA 15.09 RAL 162.50 RAD 6567.8 VEL 11.920 PTH 2.12 VHP 3.068 DPA 18.33 RAP 163.86 ECC 1.3406

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 18 2	2711.41	-27.72	75.39	29.73	96.01	20 3 14	2111.4	-26.60	66.90
90.00	11 19 31	4377.69	5.74	181.92	23.28	62.22	12 32 29	3777.7	1.98	175.26
100.00	20 47 34	2422.67	-29.04	53.97	29.56	97.40	21 27 57	1822.7	-27.72	45.42
100.00	12 32 40	4141.67	6.91	163.94	22.64	60.85	13 41 42	3541.7	2.97	157.36
110.00	22 14 5	2151.96	-32.51	32.75	28.90	101.19	22 49 57	1552.0	-30.63	24.04
110.00	13 22 39	3985.14	9.92	150.23	20.81	57.12	14 29 4	3385.1	5.52	143.91

DIFFERENTIAL CORRECTIONS
TDE-1.0171 TRA 3.5737 TC3-4.0834 BAU 1.1748
RDE .8807 RRA -.9364 RC3 1.1648 FAU .52081
FDE-8.4757 FRA23.0804 FC-21.7872 BSP 20670
BDE 1.3454 BRA 3.6944 BC3 4.2462 FSP 11292

MID-COURSE EXECUTION ACCURACY
SGT 6097.1 SGR 1961.0 SG3 3248.2
RRT -.9244 RRF -.9444 RTF .9932
SGB 6404.7 R23 .0351 R13 -.9950
SG1 6364.5 SG2 716.6 THA 163.22

ORBIT DETERMINATION ACCURACY
ST 1899.8 SR 1168.6 SS 3710.1
CRT -.8725 CRS .9275 CST -.9918
LSA 4300.1 MSA 499.1 SSA 17.8
EL1 2173.9 EL2 499.1 ALF 150.04

LAUNCH DATE OCT 4 1964 FLIGHT TIME 346.00 ARRIVAL DATE SEP 15 1965

HELIOCENTRIC CONIC DISTANCE 792.593 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.503 GAL -7.65 AZL 88.98 HCA 249.73 SMA 184.97 ECC .23148 INC 1.0229 V1 29.779
RP 220.56 LAP -.96 LOP 260.53 VP 22.044 GAP -7.54 AZP 90.35 TAL 317.25 TAP 206.98 RCA 142.16 APO 227.79 V2 24.924
RC 270.009 GL 7.23 GP 8.69 ZAL 146.85 ZAP 76.81 ETS 181.47 ZAE 110.10 ETE 175.28 ZAC 91.61 ETC 258.85 CLP 76.65

PLANETOCENTRIC CONIC

C3 20.910 VHL 4.573 DLA 15.13 RAL 162.79 RAD 6567.8 VEL 11.929 PTH 2.12 VHP 3.097 DPA 18.51 RAP 163.07 ECC 1.3441

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 18 49	2715.33	-27.75	75.67	30.23	95.87	20 4 5	2115.3	-26.65	67.18
90.00	11 21 3	4378.74	5.78	181.98	23.72	62.23	12 34 2	3778.7	2.01	175.32
100.00	20 48 23	2426.49	-29.08	54.25	30.06	97.25	21 28 50	1826.5	-27.77	45.69
100.00	12 34 10	4142.81	6.95	164.00	23.08	60.85	13 43 13	3542.8	3.01	157.43
110.00	22 14 58	2155.58	-32.56	33.03	29.40	101.04	22 50 54	1555.6	-30.69	24.30
110.00	13 24 4	3986.48	9.97	150.30	21.25	57.13	14 30 31	3386.5	5.57	143.98

DIFFERENTIAL CORRECTIONS
TDE-1.1073 TRA 3.8260 TC3-4.2664 BAU 1.2341
RDE .8804 RRA -.9129 RC3 1.1343 FAU .51074
FDE-8.3827 FRA22.6735 FC-21.1463 BSP 21867
BDE 1.4146 BRA 3.9334 BC3 4.4146 FSP 11058

MID-COURSE EXECUTION ACCURACY
SGT 6466.1 SGR 1922.8 SG3 3175.0
RRT -.9220 RRF -.9414 RTF .9939
SGB 6745.9 R23 .0352 R13 -.9954
SG1 6707.6 SG2 717.8 THA 164.49

ORBIT DETERMINATION ACCURACY
ST 2039.2 SR 1159.4 SS 3675.2
CRT -.8729 CRS .9259 CST -.9925
LSA 4330.8 MSA 503.6 SSA 17.4
EL1 2291.0 EL2 503.4 ALF 152.14

LAUNCH DATE OCT 4 1964 FLIGHT TIME 348.00 ARRIVAL DATE SEP 17 1965

HELIOCENTRIC CONIC DISTANCE 796.605 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.503 GAL -7.70 AZL 88.95 HCA 250.84 SMA 184.97 ECC .23200 INC 1.0482 V1 29.779
RP 220.18 LAP -.99 LOP 261.64 VP 22.091 GAP -7.76 AZP 90.34 TAL 317.00 TAP 207.84 RCA 142.06 APO 227.89 V2 24.965
RC 271.430 GL 7.36 GP 8.55 ZAL 147.07 ZAP 74.98 ETS 181.76 ZAE 108.06 ETE 175.74 ZAC 91.35 ETC 258.96 CLP 74.81

PLANETOCENTRIC CONIC

C3 21.142 VHL 4.598 DLA 15.16 RAL 163.09 RAD 6567.9 VEL 11.938 PTH 2.12 VHP 3.130 DPA 18.67 RAP 162.31 ECC 1.3479

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 19 44	2719.04	-27.78	75.94	30.74	95.73	20 5 3	2119.0	-26.69	67.44
90.00	11 22 31	4380.33	5.83	182.07	24.18	62.24	12 35 31	3780.3	2.07	175.41
100.00	20 49 20	2430.13	-29.11	54.52	30.57	97.12	21 29 50	1830.1	-27.82	45.95
100.00	12 35 36	4144.47	7.00	164.09	23.54	60.87	13 44 41	3544.5	3.07	157.52
110.00	22 15 57	2159.08	-32.60	33.29	29.93	100.89	22 51 56	1559.1	-30.76	24.55
110.00	13 25 28	3988.29	10.04	150.40	21.70	57.15	14 31 56	3388.3	5.64	144.07

DIFFERENTIAL CORRECTIONS
TDE-1.1978 TRA 4.0777 TC3-4.4396 BAU 1.2930
RDE .8798 RRA -.8888 RC3 1.1024 FAU .49977
FDE-8.2788 FRA22.2364 FC-20.4649 BSP 23054
BDE 1.4862 BRA 4.1734 BC3 4.5744 FSP 10808

MID-COURSE EXECUTION ACCURACY
SGT 6827.1 SGR 1883.2 SG3 3096.8
RRT -.9191 RRF -.9382 RTF .9945
SGB 7082.0 R23 .0355 R13 -.9958
SG1 7045.4 SG2 719.2 THA 165.62

ORBIT DETERMINATION ACCURACY
ST 2176.4 SR 1149.5 SS 3637.4
CRT -.8729 CRS .9244 CST -.9930
LSA 4362.4 MSA 507.9 SSA 16.9
EL1 2408.6 EL2 506.9 ALF 154.01

LAUNCH DATE OCT 4 1964 FLIGHT TIME 350.00 ARRIVAL DATE SEP 19 1965

HELIOCENTRIC CONIC DISTANCE 800.621 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.503 GAL -7.76 AZL 88.93 HCA 251.96 SMA 184.97 ECC .23258 INC 1.0732 V1 29.779
RP 219.81 LAP -1.02 LOP 262.76 VP 22.137 GAP -7.99 AZP 90.33 TAL 316.73 TAP 208.70 RCA 141.95 APO 227.99 V2 25.006
RC 272.833 GL 7.50 GP 8.41 ZAL 147.30 ZAP 73.19 ETS 182.03 ZAE 106.05 ETE 176.17 ZAC 91.09 ETC 259.07 CLP 73.00

PLANETOCENTRIC CONIC

C3 21.392 VHL 4.625 DLA 15.18 RAL 163.39 RAD 6567.9 VEL 11.949 PTH 2.13 VHP 3.166 DPA 18.81 RAP 161.59 ECC 1.3521

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 20 47	2722.56	-27.80	76.19	31.28	95.61	20 6 10	2122.6	-26.73	67.69
90.00	11 23 55	4382.47	5.89	182.19	24.67	62.25	12 36 57	3782.5	2.13	175.53
100.00	20 50 23	2433.59	-29.14	54.77	31.11	96.99	21 30 57	1833.6	-27.86	46.20
100.00	12 37 0	4146.66	7.08	164.21	24.02	60.88	13 46 6	3546.7	3.14	157.64
110.00	22 17 3	2162.45	-32.65	33.54	30.47	100.75	22 53 5	1562.5	-30.82	24.80
110.00	13 26 49	3990.57	10.12	150.53	22.17	57.17	14 33 20	3390.6	5.73	144.19

DIFFERENTIAL CORRECTIONS
TDE-1.2893 TRA 4.3287 TC3-4.6033 BAU 1.3516
RDE .8791 RRA -.8643 RC3 1.0696 FAU .48807
FDE-8.1650 FRA21.7742 FC-19.7522 BSP 24219
BDE 1.5604 BRA 4.4142 BC3 4.7259 FSP 10541

MID-COURSE EXECUTION ACCURACY
SGT 7180.1 SGR 1842.7 SG3 3014.4
RRT -.9157 RRF -.9348 RTF .9949
SGB 7412.8 R23 .0358 R13 -.9960
SG1 7377.7 SG2 720.5 THA 166.64

ORBIT DETERMINATION ACCURACY
ST 2312.0 SR 1139.1 SS 3596.9
CRT -.8725 CRS .9228 CST -.9934
LSA 4395.3 MSA 511.8 SSA 16.5
EL1 2526.6 EL2 509.4 ALF 155.69

LAUNCH DATE OCT 4 1964 FLIGHT TIME 352.00 ARRIVAL DATE SEP 21 1965

HELIOCENTRIC CONIC DISTANCE 804.640 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.504 GAL -7.82 AZL 88.90 HCA 253.09 SMA 184.98 ECC .23320 INC 1.0981 V1 29.779
RP 219.44 LAP -1.05 LOP 263.89 VP 22.184 GAP -8.21 AZP 90.32 TAL 316.46 TAP 209.54 RCA 141.84 APO 228.12 V2 25.047
RC 274.220 GL 7.62 GP 8.27 ZAL 147.55 ZAP 71.43 ETS 182.29 ZAE 104.07 ETE 176.57 ZAC 90.83 ETC 259.18 CLP 71.22

PLANETOCENTRIC CONIC

C3 21.660 VHL 4.654 DLA 15.19 RAL 163.71 RAD 6567.9 VEL 11.960 PTH 2.13 VHP 3.205 DPA 18.93 RAP 160.91 ECC 1.3565

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 21 58	2725.87	-27.82	76.43	31.83	95.49	20 7 24	2125.9	-26.77	67.92
90.00	11 25 15	4385.16	5.98	182.35	25.16	62.27	12 38 20	3785.2	2.22	175.68
100.00	20 51 35	2436.89	-29.17	55.01	31.66	96.86	21 32 12	1836.9	-27.91	46.43
100.00	12 38 19	4149.38	7.17	164.36	24.52	60.90	13 47 29	3549.4	3.23	157.79
110.00	22 18 15	2165.71	-32.69	33.79	31.03	100.61	22 54 21	1565.7	-30.88	25.03
110.00	13 28 9	3993.32	10.22	150.67	22.66	57.20	14 34 42	3393.3	5.83	144.34

DIFFERENTIAL CORRECTIONS
TDE-1.3812 TRA 4.5788 TC3-4.7558 BAU 1.4095
RDE .8783 RRA -.8394 RC3 1.0358 FAU .47557
FDE-8.0432 FRA21.2902 FC-19.0080 BSP 25366
BDE 1.6368 BRA 4.6551 BC3 4.8673 FSP 10262

MID-COURSE EXECUTION ACCURACY
SGT 7523.5 SGR 1801.4 SG3 2928.3
RRT -.9120 RRF -.9310 RTF .9953
SGB 7736.2 R23 .0363 R13 -.9963
SG1 7702.4 SG2 721.7 THA 167.57

ORBIT DETERMINATION ACCURACY
ST 2445.3 SR 1128.3 SS 3554.1
CRT -.8718 CRS .9211 CST -.9937
LSA 4429.3 MSA 515.4 SSA 16.1
EL1 2644.1 EL2 511.2 ALF 157.19

LAUNCH DATE OCT 4 1964 FLIGHT TIME 354.00 ARRIVAL DATE SEP 23 1965

HELIOCENTRIC CONIC DISTANCE 808.664 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.504 GAL -7.89 AZL 88.88 HCA 254.22 SMA 184.99 ECC .23387 INC 1.1227 V1 29.779
RP 219.07 LAP -1.08 LOP 265.01 VP 22.231 GAP -8.43 AZP 90.31 TAL 316.16 TAP 210.38 RCA 141.72 APO 228.25 V2 25.088
RC 275.589 GL 7.74 GP 8.13 ZAL 147.80 ZAP 69.70 ETS 182.53 ZAE 102.12 ETE 176.96 ZAC 90.58 ETC 259.28 CLP 69.49

PLANETOCENTRIC CONIC

C3 21.948 VHL 4.685 DLA 15.18 RAL 164.03 RAD 6567.9 VEL 11.972 PTH 2.13 VHP 3.248 DPA 19.03 RAP 160.26 ECC 1.3612

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 23 17	2728.99	-27.84	76.66	32.39	95.38	20 8 46	2129.0	-26.81	68.15
90.00	11 26 32	4388.40	6.08	182.53	25.68	62.29	12 39 40	3788.4	2.33	175.86
100.00	20 52 53	2440.02	-29.19	55.24	32.23	96.74	21 33 33	1840.0	-27.95	46.66
100.00	12 39 36	4152.61	7.27	164.55	25.03	60.93	13 48 49	3552.6	3.34	157.96
110.00	22 19 33	2168.84	-32.73	34.02	31.61	100.47	22 55 42	1568.8	-30.94	25.26
110.00	13 29 26	3996.55	10.34	150.85	23.17	57.24	14 36 2	3396.6	5.95	144.51

DIFFERENTIAL CORRECTIONS
TDE-1.4740 TRA 4.8277 TC3-4.8982 BAU 1.4670
RDE .8775 RRA -.8143 RC3 1.0019 FAU .46268
FDE-7.9144 FRA20.7871 FC-18.2508 BSP 26487
BDE 1.7154 BRA 4.8959 BC3 4.9996 FSP 9969

MID-COURSE EXECUTION ACCURACY
SGT 7857.6 SGR 1760.0 SG3 2839.4
RRT -.9079 RRF -.9271 RTF .9956
SGB 8052.3 R23 .0369 R13 -.9964
SG1 8019.7 SG2 722.9 THA 168.41

ORBIT DETERMINATION ACCURACY
ST 2576.3 SR 1117.3 SS 3509.2
CRT -.8708 CRS .9195 CST -.9939
LSA 4464.4 MSA 518.7 SSA 15.8
EL1 2761.0 EL2 512.5 ALF 158.53

LAUNCH DATE OCT 4 1964 FLIGHT TIME 356.00 ARRIVAL DATE SEP 25 1965

HELIOCENTRIC CONIC DISTANCE 812.691 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.505 GAL -7.96 AZL 88.85 HCA 255.35 SMA 185.00 ECC .23460 INC 1.1471 V1 29.779
RP 218.70 LAP -1.11 LOP 266.15 VP 22.277 GAP -8.65 AZP 90.29 TAL 315.86 TAP 211.20 RCA 141.60 APO 228.40 V2 25.128
RC 276.940 GL 7.85 GP 7.98 ZAL 148.07 ZAP 68.02 ETS 182.77 ZAE 100.21 ETE 177.32 ZAC 90.34 ETC 259.37 CLP 67.79

PLANETOCENTRIC CONIC

C3 22.254 VHL 4.717 DLA 15.17 RAL 164.37 RAD 6567.9 VEL 11.985 PTH 2.14 VHP 3.293 DPA 19.11 RAP 159.66 ECC 1.3663

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 24 43	2731.93	-27.86	76.87	32.98	95.27	20 10 15	2131.9	-26.84	68.35
90.00	11 27 45	4392.19	6.20	182.74	26.22	62.32	12 40 57	3792.2	2.45	176.07
100.00	20 54 19	2442.98	-29.21	55.46	32.82	96.63	21 35 2	1843.0	-27.99	46.87
100.00	12 40 50	4156.37	7.40	164.76	25.57	60.96	13 50 6	3556.4	3.47	158.17
110.00	22 20 58	2171.86	-32.76	34.25	32.20	100.34	22 57 10	1571.9	-30.99	25.48
110.00	13 30 40	4000.26	10.48	151.05	23.70	57.28	14 37 21	3400.3	6.09	144.70

DIFFERENTIAL CORRECTIONS
TDE-1.5667 TRA 5.0771 TC3-5.0272 BAU 1.5231
RDE .8765 RRA -.7893 RC3 .9671 FAU .44906
FDE-7.7762 FRA20.2726 FC-17.4692 BSP 27594
BDE 1.7953 BRA 5.1381 BC3 5.1194 FSP 9673

MID-COURSE EXECUTION ACCURACY
SGT 8181.6 SGR 1718.3 SG3 2748.1
RRT -.9034 RRF -.9228 RTF .9958
SGB 8360.1 R23 .0375 R13 -.9966
SG1 8328.7 SG2 723.9 THA 169.17

ORBIT DETERMINATION ACCURACY
ST 2704.6 SR 1105.8 SS 3461.8
CRT -.8696 CRS .9179 CST -.9941
LSA 4499.9 MSA 521.8 SSA 15.4
EL1 2876.5 EL2 513.4 ALF 159.75

LAUNCH DATE OCT 4 1964 FLIGHT TIME 358.00 ARRIVAL DATE SEP 27 1965

HELIOCENTRIC CONIC DISTANCE 816.721 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.506 GAL -8.03 AZL 88.83 HCA 256.48 SMA 185.02 ECC .23538 INC 1.1714 V1 29.779
RP 218.34 LAP -1.14 LOP 267.28 VP 22.324 GAP -8.86 AZP 90.27 TAL 315.54 TAP 212.02 RCA 141.47 APO 228.56 V2 25.168
RC 278.273 GL 7.96 GP 7.84 ZAL 148.35 ZAP 66.38 ETS 182.99 ZAE 98.33 ETE 177.66 ZAC 90.11 ETC 259.46 CLP 66.14

PLANETOCENTRIC CONIC

C3 22.582 VHL 4.752 DLA 15.15 RAL 164.71 RAD 6567.9 VEL 11.998 PTH 2.14 VHP 3.342 DPA 19.18 RAP 159.10 ECC 1.3716

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 26 17	2734.68	-27.88	77.07	33.58	95.17	20 11 51	2134.7	-26.87	68.55
90.00	11 28 54	4396.53	6.34	182.99	26.77	62.34	12 42 11	3796.5	2.59	176.32
100.00	20 55 52	2445.78	-29.24	55.66	33.42	96.53	21 36 38	1845.8	-28.02	47.07
100.00	12 42 0	4160.66	7.54	164.99	26.12	60.99	13 51 21	3560.7	3.61	158.41
110.00	22 22 29	2174.77	-32.80	34.47	32.81	100.22	22 58 43	1574.8	-31.04	25.69
110.00	13 31 53	4004.43	10.63	151.27	24.25	57.32	14 38 37	3404.4	6.25	144.92

DIFFERENTIAL CORRECTIONS
TDE-1.6614 TRA 5.3249 TC3-5.1464 BAU 1.5790
RDE .8758 RRA -.7645 RC3 .9328 FAU .43527
FDE-7.6364 FRA19.7454 FC-16.6873 BSP 28659
BDE 1.8781 BRA 5.3795 BC3 5.2303 FSP 9366

MID-COURSE EXECUTION ACCURACY
SGT 8495.8 SGR 1677.1 SG3 2655.5
RRT -.8985 RRF -.9183 RTF .9960
SGB 8659.8 R23 .0382 R13 -.9967
SG1 8629.4 SG2 724.7 THA 169.87

ORBIT DETERMINATION ACCURACY
ST 2831.3 SR 1094.4 SS 3413.4
CRT -.8684 CRS .9163 CST -.9943
LSA 4537.6 MSA 524.3 SSA 15.1
EL1 2991.7 EL2 513.6 ALF 160.86

LAUNCH DATE OCT 4 1964 FLIGHT TIME 360.00 ARRIVAL DATE SEP 29 1965

HELIOCENTRIC CONIC DISTANCE 820.754 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.507 GAL -8.11 AZL 88.80 HCA 257.62 SMA 185.03 ECC .23622 INC 1.1955 V1 29.779
RP 217.98 LAP -1.17 LOP 268.42 VP 22.371 GAP -9.08 AZP 90.26 TAL 315.20 TAP 212.82 RCA 141.33 APO 228.74 V2 25.208
RC 279.589 GL 8.06 GP 7.69 ZAL 148.65 ZAP 64.78 ETS 183.21 ZAE 96.49 ETE 177.98 ZAC 89.89 ETC 259.54 CLP 64.53

PLANETOCENTRIC CONIC

C3 22.930 VHL 4.789 DLA 15.12 RAL 165.06 RAD 6567.9 VEL 12.013 PTH 2.14 VHP 3.394 DPA 19.22 RAP 158.58 ECC 1.3774

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 27 58	2737.25	-27.89	77.26	34.20	95.08	20 13 36	2137.2	-26.90	68.73
90.00	11 30 0	4401.41	6.49	183.26	27.34	62.38	12 43 21	3801.4	2.74	176.59
100.00	20 57 32	2448.43	-29.26	55.86	34.05	96.43	21 38 20	1848.4	-28.06	47.26
100.00	12 43 8	4165.46	7.70	165.26	26.69	61.03	13 52 33	3565.5	3.78	158.67
110.00	22 24 6	2177.58	-32.83	34.68	33.44	100.09	23 0 23	1577.6	-31.09	25.89
110.00	13 33 3	4009.08	10.80	151.53	24.81	57.37	14 39 52	3409.1	6.43	145.17

DIFFERENTIAL CORRECTIONS
TDE-1.7559 TRA 5.5729 TC3-5.2541 BAU 1.6341
RDE .8750 RRA -.7399 RC3 .8985 FAU .42117
FDE-7.4895 FRA19.2118 FC-15.9014 BSP 29699
BDE 1.9618 BRA 5.6218 BC3 5.3304 FSP 9055

MID-COURSE EXECUTION ACCURACY
SGT 8800.1 SGR 1636.3 SG3 2561.9
RRT -.8933 RRF -.9135 RTF .9961
SGB 8951.0 R23 .0391 R13 -.9967
SG1 8921.5 SG2 725.4 THA 170.51

ORBIT DETERMINATION ACCURACY
ST 2954.7 SR 1082.8 SS 3362.9
CRT -.8669 CRS .9147 CST -.9944
LSA 4575.4 MSA 526.8 SSA 14.8
EL1 3104.7 EL2 513.7 ALF 161.86

LAUNCH DATE OCT 4 1964 FLIGHT TIME 362.00 ARRIVAL DATE OCT 1 1965

HELIOCENTRIC CONIC DISTANCE 824.789 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.508 GAL -8.19 AZL 88.78 HCA 258.76 SMA 185.06 ECC .23711 INC 1.2194 V1 29.779
RP 217.62 LAP -1.20 LOP 269.56 VP 22.417 GAP -9.29 AZP 90.24 TAL 314.86 TAP 213.62 RCA 141.18 APO 228.93 V2 25.248
RC 280.887 GL 8.16 GP 7.55 ZAL 148.95 ZAP 63.21 ETS 183.41 ZAE 94.69 ETE 178.28 ZAC 89.67 ETC 259.61 CLP 62.96

PLANETOCENTRIC CONIC

C3 23.301 VHL 4.827 DLA 15.08 RAL 165.41 RAD 6567.9 VEL 12.028 PTH 2.15 VHP 3.448 DPA 19.25 RAP 158.11 ECC 1.3835

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 29 47	2739.64	-27.91	77.43	34.84	95.00	20 15 27	2139.6	-26.92	68.90
90.00	11 31 2	4406.84	6.66	183.57	27.93	62.42	12 44 29	3806.8	2.92	176.89
100.00	20 59 19	2450.92	-29.27	56.04	34.69	96.33	21 40 10	1850.9	-28.09	47.44
100.00	12 44 12	4170.78	7.87	165.56	27.28	61.07	13 53 43	3570.8	3.96	158.97
110.00	22 25 49	2180.28	-32.87	34.89	34.09	99.98	23 2 9	1580.3	-31.14	26.09
110.00	13 34 11	4014.19	10.99	151.80	25.40	57.43	14 41 5	3414.2	6.62	145.44

DIFFERENTIAL CORRECTIONS
TDE-1.8516 TRA 5.8211 TC3-5.3497 BAU 1.6881
RDE .8743 RRA -.7158 RC3 .8645 FAU .40682
FDE-7.3385 FRA18.6751 FC-15.1151 BSP 30715
BDE 2.0476 BRA 5.8649 BC3 5.4191 FSP 8744

MID-COURSE EXECUTION ACCURACY
SGT 9094.3 SGR 1596.1 SG3 2467.8
RRT -.8878 RRF -.9085 RTF .9962
SGB 9233.3 R23 .0399 R13 -.9968
SG1 9204.8 SG2 725.8 THA 171.09

ORBIT DETERMINATION ACCURACY
ST 3076.1 SR 1071.1 SS 3311.0
CRT -.8654 CRS .9131 CST -.9945
LSA 4614.4 MSA 528.8 SSA 14.6
EL1 3216.5 EL2 513.3 ALF 162.78

LAUNCH DATE OCT 4 1964 FLIGHT TIME 364.00 ARRIVAL DATE OCT 3 1965

HELIOCENTRIC CONIC DISTANCE 828.827 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.510 GAL -8.28 AZL 88.76 HCA 259.91 SMA 185.08 ECC .23806 INC 1.2433 V1 29.779
RP 217.27 LAP -1.22 LOP 270.71 VP 22.464 GAP -9.50 AZP 90.22 TAL 314.49 TAP 214.40 RCA 141.02 APO 229.14 V2 25.287
RC 282.167 GL 8.25 GP 7.41 ZAL 149.26 ZAP 61.69 ETS 183.60 ZAE 92.93 ETE 178.57 ZAC 89.47 ETC 259.67 CLP 61.43

PLANETOCENTRIC CONIC

C3 23.695 VHL 4.868 DLA 15.02 RAL 165.78 RAD 6568.0 VEL 12.045 PTH 2.15 VHP 3.506 DPA 19.26 RAP 157.69 ECC 1.3900

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 31 43	2741.87	-27.92	77.59	35.50	94.92	20 17 25	2141.9	-26.95	69.06
90.00	11 32 1	4412.80	6.85	183.91	28.54	62.46	12 45 34	3812.8	3.11	177.23
100.00	21 1 13	2453.28	-29.29	56.21	35.35	96.24	21 42 6	1853.3	-28.12	47.61
100.00	12 45 13	4176.62	8.07	165.89	27.88	61.12	13 54 49	3576.6	4.15	159.29
110.00	22 27 40	2182.89	-32.90	35.07	34.75	99.86	23 4 3	1582.9	-31.19	26.27
110.00	13 35 17	4019.78	11.20	152.11	26.00	57.49	14 42 17	3419.8	6.83	145.74

DIFFERENTIAL CORRECTIONS
TDE-1.9479 TRA 6.0694 TC3-5.4332 BAU 1.7411
RDE .8737 RRA -.6922 RC3 .8308 FAU .39231
FDE-7.1837 FRA18.1369 FC-14.3337 BSP 31715
BDE 2.1349 BRA 6.1087 BC3 5.4963 FSP 8435

MID-COURSE EXECUTION ACCURACY
SGT 9378.0 SGR 1556.8 SG3 2373.7
RRT -.8820 RRF -.9032 RTF .9963
SGB 9506.3 R23 .0407 R13 -.9968
SG1 9478.6 SG2 725.9 THA 171.62

ORBIT DETERMINATION ACCURACY
ST 3194.7 SR 1059.4 SS 3257.6
CRT -.8638 CRS .9115 CST -.9945
LSA 4653.9 MSA 530.5 SSA 14.3
EL1 3326.5 EL2 512.6 ALF 163.62

LAUNCH DATE OCT 4 1964 FLIGHT TIME 366.00 ARRIVAL DATE OCT 5 1965

HELIOCENTRIC CONIC DISTANCE 832.866 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.511 GAL -8.37 AZL 88.73 HCA 261.06 SMA 185.11 ECC .23906 INC 1.2670 V1 29.779
RP 216.91 LAP -1.25 LOP 271.86 VP 22.510 GAP -9.71 AZP 90.20 TAL 314.12 TAP 215.18 RCA 140.85 APO 229.36 V2 25.327
RC 283.431 GL 8.33 GP 7.27 ZAL 149.59 ZAP 60.22 ETS 183.78 ZAE 91.21 ETE 178.84 ZAC 89.27 ETC 259.73 CLP 59.95

PLANETOCENTRIC CONIC

C3 24.113 VHL 4.911 DLA 14.96 RAL 166.15 RAD 6568.0 VEL 12.062 PTH 2.16 VHP 3.567 DPA 19.26 RAP 157.31 ECC 1.3968

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 33 47	2743.93	-27.93	77.74	36.17	94.84	20 19 31	2143.9	-26.97	69.21
90.00	11 32 56	4419.30	7.06	184.28	29.16	62.51	12 46 36	3819.3	3.32	177.59
100.00	21 3 13	2455.49	-29.31	56.38	36.02	96.16	21 44 9	1855.5	-28.15	47.76
100.00	12 46 11	4182.98	8.27	166.24	28.51	61.17	13 55 54	3583.0	4.37	159.64
110.00	22 29 32	2185.40	-32.93	35.27	35.43	99.76	23 5 58	1585.4	-31.23	26.46
110.00	13 36 21	4025.83	11.42	152.44	26.62	57.56	14 43 27	3425.8	7.06	146.06

DIFFERENTIAL CORRECTIONS
TDE-2.0450 TRA 6.3184 TC3-5.5053 BAU 1.7933
RDE .8733 RRA -.6692 RC3 .7978 FAU .37776
FDE-7.0267 FRA17.5992 FC-13.5625 BSP 32692
BDE 2.2237 BRA 6.3538 BC3 5.5628 FSP 8127

MID-COURSE EXECUTION ACCURACY
SGT 9651.9 SGR 1518.4 SG3 2280.1
RRT -.8758 RRF -.8977 RTF .9963
SGB 9770.6 R23 .0417 R13 -.9968
SG1 9743.6 SG2 725.9 THA 172.11

ORBIT DETERMINATION ACCURACY
ST 3310.7 SR 1047.7 SS 3203.2
CRT -.8621 CRS .9100 CST -.9946
LSA 4694.2 MSA 532.0 SSA 14.1
EL1 3434.6 EL2 511.8 ALF 164.38

LAUNCH DATE OCT 4 1964 FLIGHT TIME 368.00 ARRIVAL DATE OCT 7 1965

HELIOCENTRIC CONIC DISTANCE 836.906 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.513 GAL -8.47 AZL 88.71 HCA 262.21 SMA 185.14 ECC .24013 INC 1.2907 V1 29.779
RP 216.57 LAP -1.28 LOP 273.01 VP 22.556 GAP -9.92 AZP 90.18 TAL 313.72 TAP 215.94 RCA 140.68 APO 229.59 V2 25.365
RC 284.679 GL 8.41 GP 7.13 ZAL 149.92 ZAP 58.78 ETS 183.95 ZAE 89.53 ETE 179.09 ZAC 89.08 ETC 259.78 CLP 58.51

PLANETOCENTRIC CONIC

C3 24.557 VHL 4.955 DLA 14.89 RAL 166.53 RAD 6568.0 VEL 12.080 PTH 2.16 VHP 3.630 DPA 19.24 RAP 156.97 ECC 1.4041

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 35 57	2745.85	-27.94	77.88	36.86	94.77	20 21 43	2145.8	-26.99	69.35
90.00	11 33 48	4426.34	7.28	184.67	29.81	62.56	12 47 34	3826.3	3.54	177.98
100.00	21 5 21	2457.57	-29.32	56.53	36.72	96.08	21 46 18	1857.6	-28.17	47.91
100.00	12 47 6	4189.84	8.50	166.63	29.15	61.23	13 56 56	3589.8	4.60	160.02
110.00	22 31 33	2187.83	-32.95	35.46	36.13	99.65	23 8 1	1587.8	-31.27	26.64
110.00	13 37 23	4032.35	11.65	152.79	27.26	57.64	14 44 35	3432.3	7.30	146.40

DIFFERENTIAL CORRECTIONS
TDE-2.1438 TRA 6.5679 TC3-5.5661 BAU 1.8446
RDE .8732 RRA -.6469 RC3 .7654 FAU .36321
FDE-6.8690 FRA17.0636 FC-12.8048 BSP 33633
BDE 2.3148 BRA 6.5997 BC3 5.6185 FSP 7820

MID-COURSE EXECUTION ACCURACY
SGT 9915.6 SGR 1481.1 SG3 2187.3
RRT -.8694 RRF -.8920 RTF .9964
SGB10025.6 R23 .0426 R13 -.9968
SG1 9999.3 SG2 725.7 THA 172.56

ORBIT DETERMINATION ACCURACY
ST 3424.6 SR 1036.2 SS 3148.0
CRT -.8605 CRS .9086 CST -.9946
LSA 4735.8 MSA 532.9 SSA 13.9
EL1 3541.3 EL2 510.5 ALF 165.09

LAUNCH DATE OCT 4 1964 FLIGHT TIME 370.00 ARRIVAL DATE OCT 9 1965

HELIOCENTRIC CONIC DISTANCE 840.947 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.515 GAL -8.56 AZL 88.69 HCA 263.37 SMA 185.17 ECC .24125 INC 1.3144 V1 29.779
RP 216.22 LAP -1.31 LOP 274.17 VP 22.602 GAP -10.13 AZP 90.15 TAL 313.32 TAP 216.69 RCA 140.50 APO 229.84 V2 25.404
RC 285.910 GL 8.48 GP 6.99 ZAL 150.27 ZAP 57.38 ETS 184.11 ZAE 87.88 ETE 179.33 ZAC 88.91 ETC 259.82 CLP 57.11

PLANETOCENTRIC CONIC

C3 25.027 VHL 5.003 DLA 14.81 RAL 166.92 RAD 6568.0 VEL 12.100 PTH 2.17 VHP 3.697 DPA 19.20 RAP 156.68 ECC 1.4119

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 38 15	2747.61	-27.95	78.01	37.57	94.71	20 24 2	2147.6	-27.01	69.47
90.00	11 34 37	4433.90	7.52	185.10	30.47	62.62	12 48 30	3833.9	3.79	178.41
100.00	21 7 35	2459.53	-29.34	56.67	37.43	96.01	21 48 34	1859.5	-28.20	48.05
100.00	12 47 58	4197.22	8.74	167.04	29.81	61.30	13 57 55	3597.2	4.84	160.42
110.00	22 33 40	2190.18	-32.98	35.64	36.85	99.55	23 10 10	1590.2	-31.31	26.81
110.00	13 38 22	4039.32	11.91	153.17	27.92	57.72	14 45 42	3439.3	7.56	146.77

DIFFERENTIAL CORRECTIONS
TDE-2.2429 TRA 6.8191 TC3-5.6155 BAU 1.8948
RDE .8732 RRA -.6253 RC3 .7339 FAU .34874
FDE-6.7072 FRA16.5335 FC-12.0636 BSP 34566
BDE 2.4068 BRA 6.8478 BC3 5.6633 FSP 7519

MID-COURSE EXECUTION ACCURACY
SGT10169.8 SGR 1445.0 SG3 2095.7
RRT -.8628 RRF -.8860 RTF .9964
SGB10271.9 R23 .0435 R13 -.9968
SG110246.3 SG2 725.1 THA 172.98

ORBIT DETERMINATION ACCURACY
ST 3535.5 SR 1024.7 SS 3091.2
CRT -.8588 CRS .9071 CST -.9946
LSA 4777.1 MSA 533.7 SSA 13.7
EL1 3645.7 EL2 509.2 ALF 165.74

LAUNCH DATE OCT 4 1964 FLIGHT TIME 372.00 ARRIVAL DATE OCT 11 1965

HELIOCENTRIC CONIC DISTANCE 844.989 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.517 GAL -8.67 AZL 88.66 HCA 264.53 SMA 185.21 ECC .24244 INC 1.3380 V1 29.779
RP 215.88 LAP -1.33 LOP 275.33 VP 22.648 GAP -10.34 AZP 90.13 TAL 312.90 TAP 217.43 RCA 140.30 APO 230.11 V2 25.442
RC 287.127 GL 8.54 GP 6.86 ZAL 150.62 ZAP 56.03 ETS 184.27 ZAE 86.27 ETE 179.55 ZAC 88.74 ETC 259.85 CLP 55.75

PLANETOCENTRIC CONIC

C3 25.525 VHL 5.052 DLA 14.72 RAL 167.32 RAD 6568.0 VEL 12.120 PTH 2.17 VHP 3.766 DPA 19.15 RAP 156.43 ECC 1.4201

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 40 39	2749.24	-27.96	78.13	38.30	94.65	20 26 28	2149.2	-27.03	69.59
90.00	11 35 22	4441.99	7.77	185.56	31.16	62.68	12 49 24	3842.0	4.05	178.86
100.00	21 9 55	2461.37	-29.35	56.81	38.16	95.94	21 50 56	1861.4	-28.22	48.19
100.00	12 48 47	4205.09	9.00	167.49	30.49	61.37	13 58 52	3605.1	5.11	160.86
110.00	22 35 51	2192.46	-33.01	35.81	37.58	99.45	23 12 24	1592.5	-31.35	26.98
110.00	13 39 20	4046.77	12.18	153.58	28.60	57.81	14 46 47	3446.8	7.84	147.17

DIFFERENTIAL CORRECTIONS
TDE-2.3438 TRA 7.0715 TC3-5.6537 BAU 1.9441
RDE .8735 RRA -.6045 RC3 .7032 FAU .33435
FDE-6.5475 FRA16.0080 FC-11.3403 BSP 35462
BDE 2.5013 BRA 7.0973 BC3 5.6973 FSP 7220

MID-COURSE EXECUTION ACCURACY
SGT10414.1 SGR 1410.2 SG3 2005.4
RRT -.8559 RRF -.8799 RTF .9963
SGB10509.1 R23 .0445 R13 -.9967
SG110484.1 SG2 724.4 THA 173.36

ORBIT DETERMINATION ACCURACY
ST 3644.5 SR 1013.4 SS 3034.2
CRT -.8571 CRS .9058 CST -.9946
LSA 4819.8 MSA 534.1 SSA 13.6
EL1 3748.6 EL2 507.5 ALF 166.34

LAUNCH DATE OCT 4 1964 FLIGHT TIME 374.00 ARRIVAL DATE OCT 13 1965

HELIOCENTRIC CONIC DISTANCE 849.031 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.519 GAL -8.78 AZL 88.64 HCA 265.70 SMA 185.24 ECC .24369 INC 1.3615 V1 29.779
RP 215.54 LAP -1.36 LOP 276.50 VP 22.694 GAP -10.55 AZP 90.10 TAL 312.46 TAP 218.16 RCA 140.10 APO 230.39 V2 25.480
RC 288.329 GL 8.61 GP 6.73 ZAL 150.99 ZAP 54.71 ETS 184.41 ZAE 84.70 ETE 179.77 ZAC 88.59 ETC 259.88 CLP 54.43

PLANETOCENTRIC CONIC

C3 26.052 VHL 5.104 DLA 14.62 RAL 167.72 RAD 6568.1 VEL 12.142 PTH 2.18 VHP 3.838 DPA 19.09 RAP 156.23 ECC 1.4287

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 43 10	2750.73	-27.97	78.24	39.05	94.60	20 29 1	2150.7	-27.04	69.69
90.00	11 36 3	4450.60	8.04	186.05	31.86	62.76	12 50 14	3850.6	4.32	179.34
100.00	21 12 21	2463.09	-29.36	56.93	38.90	95.87	21 53 25	1863.1	-28.24	48.31
100.00	12 49 33	4213.47	9.27	167.96	31.20	61.45	13 59 47	3613.5	5.39	161.32
110.00	22 38 9	2194.67	-33.03	35.98	38.33	99.35	23 14 43	1594.7	-31.39	27.14
110.00	13 40 15	4054.66	12.47	154.01	29.29	57.91	14 47 50	3454.7	8.14	147.59

DIFFERENTIAL CORRECTIONS
TDE-2.4465 TRA 7.3263 TC3-5.6819 BAU 1.9928
RDE .8742 RRA -.5845 RC3 .6735 FAU .32020
FDE-6.3872 FRA15.4899 FC-10.6405 BSP 36340
BDE 2.5980 BRA 7.3496 BC3 5.7216 FSP 6928

MID-COURSE EXECUTION ACCURACY
SGT10649.8 SGR 1376.7 SG3 1917.0
RRT -.8488 RRF -.8737 RTF .9963
SGB10738.5 R23 .0456 R13 -.9966
SG110714.1 SG2 723.4 THA 173.71

ORBIT DETERMINATION ACCURACY
ST 3751.5 SR 1002.4 SS 2976.5
CRT -.8556 CRS .9046 CST -.9946
LSA 4863.4 MSA 534.1 SSA 13.4
EL1 3850.0 EL2 505.6 ALF 166.89

LAUNCH DATE OCT 4 1964 FLIGHT TIME 376.00 ARRIVAL DATE OCT 15 1965

HELIOCENTRIC CONIC DISTANCE 853.072 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.522 GAL -8.89 AZL 88.61 HCA 266.87 SMA 185.28 ECC .24501 INC 1.3852 V1 29.779
RP 215.21 LAP -1.38 LOP 277.67 VP 22.739 GAP -10.76 AZP 90.08 TAL 312.01 TAP 218.87 RCA 139.89 APO 230.68 V2 25.517
RC 289.516 GL 8.66 GP 6.60 ZAL 151.37 ZAP 53.43 ETS 184.55 ZAE 83.17 ETE 179.97 ZAC 88.44 ETC 259.90 CLP 53.15

PLANETOCENTRIC CONIC

C3 26.609 VHL 5.158 DLA 14.51 RAL 168.13 RAD 6568.1 VEL 12.165 PTH 2.18 VHP 3.913 DPA 19.01 RAP 156.07 ECC 1.4379

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 45 47	2752.10	-27.98	78.34	39.81	94.55	20 31 40	2152.1	-27.05	69.79
90.00	11 36 42	4459.73	8.32	186.57	32.58	62.84	12 51 2	3859.7	4.61	179.86
100.00	21 14 54	2464.72	-29.37	57.05	39.67	95.81	21 55 59	1864.7	-28.26	48.43
100.00	12 50 17	4222.35	9.56	168.46	31.91	61.54	14 0 39	3622.3	5.69	161.82
110.00	22 40 32	2196.81	-33.05	36.14	39.10	99.26	23 17 8	1596.8	-31.42	27.29
110.00	13 41 9	4063.02	12.77	154.47	30.01	58.02	14 48 52	3463.0	8.45	148.03

DIFFERENTIAL CORRECTIONS
TDE-2.5500 TRA 7.5838 TC3-5.6990 BAU 2.0403
RDE .8750 RRA -.5654 RC3 .6447 FAU .30616
FDE-6.2262 FRA14.9805 FC3-9.9607 BSP 37201
BDE 2.6959 BRA 7.6049 BC3 5.7353 FSP 6642

MID-COURSE EXECUTION ACCURACY
SGT10876.4 SGR 1344.5 SG3 1830.4
RRT -.8416 RRF -.8673 RTF .9962
SGB10959.2 R23 .0466 R13 -.9966
SG110935.4 SG2 722.2 THA 174.03

ORBIT DETERMINATION ACCURACY
ST 3855.7 SR 991.4 SS 2918.0
CRT -.8539 CRS .9034 CST -.9946
LSA 4907.0 MSA 533.9 SSA 13.3
EL1 3949.1 EL2 503.7 ALF 167.41

LAUNCH DATE OCT 4 1964 FLIGHT TIME 378.00 ARRIVAL DATE OCT 17 1965

HELIOCENTRIC CONIC DISTANCE 857.112 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.524 GAL -9.01 AZL 88.59 HCA 268.04 SMA 185.33 ECC .24640 INC 1.4087 V1 29.779
RP 214.88 LAP -1.41 LOP 278.84 VP 22.784 GAP -10.97 AZP 90.05 TAL 311.54 TAP 219.58 RCA 139.66 APO 230.99 V2 25.554
RC 290.691 GL 8.71 GP 6.47 ZAL 151.75 ZAP 52.19 ETS 184.68 ZAE 81.67 ETE 180.16 ZAC 88.31 ETC 259.91 CLP 51.91

PLANETOCENTRIC CONIC

C3 27.200 VHL 5.215 DLA 14.39 RAL 168.55 RAD 6568.1 VEL 12.189 PTH 2.19 VHP 3.990 DPA 18.92 RAP 155.95 ECC 1.4476

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 48 31	2753.36	-27.99	78.43	40.59	94.50	20 34 25	2153.4	-27.07	69.88
90.00	11 37 18	4469.37	8.62	187.12	33.31	62.92	12 51 47	3869.4	4.92	180.40
100.00	21 17 33	2466.24	-29.38	57.17	40.45	95.75	21 58 39	1866.2	-28.28	48.54
100.00	12 50 57	4231.71	9.86	168.99	32.65	61.64	14 1 29	3631.7	6.00	162.33
110.00	22 43 0	2198.90	-33.08	36.30	39.88	99.17	23 19 38	1598.9	-31.46	27.45
110.00	13 42 0	4071.83	13.08	154.96	30.75	58.13	14 49 52	3471.8	8.78	148.51

DIFFERENTIAL CORRECTIONS
TDE-2.6561 TRA 7.8432 TC3-5.7076 BAU 2.0876
RDE .8763 RRA -.5472 RC3 .6171 FAU .29251
FDE-6.0683 FRA14.4782 FC3-9.3103 BSP 38032
BDE 2.7969 BRA 7.8622 BC3 5.7409 FSP 6361

MID-COURSE EXECUTION ACCURACY
SGT11094.5 SGR 1313.9 SG3 1746.0
RRT -.8343 RRF -.8609 RTF .9961
SGB11172.0 R23 .0478 R13 -.9965
SG111148.8 SG2 720.8 THA 174.33

ORBIT DETERMINATION ACCURACY
ST 3958.3 SR 980.8 SS 2859.6
CRT -.8525 CRS .9024 CST -.9945
LSA 4952.0 MSA 533.4 SSA 13.2
EL1 4047.0 EL2 501.4 ALF 167.88

LAUNCH DATE OCT 4 1964 FLIGHT TIME 380.00 ARRIVAL DATE OCT 19 1965

HELIOCENTRIC CONIC DISTANCE 861.151 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.527 GAL -9.13 AZL 88.57 HCA 269.21 SMA 185.37 ECC .24785 INC 1.4323 V1 29.779
RP 214.56 LAP -1.43 LOP 280.02 VP 22.829 GAP -11.18 AZP 90.02 TAL 311.06 TAP 220.27 RCA 139.43 APO 231.32 V2 25.590
RC 291.851 GL 8.75 GP 6.35 ZAL 152.15 ZAP 50.99 ETS 184.80 ZAE 80.21 ETE 180.34 ZAC 88.18 ETC 259.91 CLP 50.71

PLANETOCENTRIC CONIC

C3 27.824 VHL 5.275 DLA 14.26 RAL 168.97 RAD 6568.1 VEL 12.215 PTH 2.19 VHP 4.071 DPA 18.81 RAP 155.88 ECC 1.4579

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 51 21	2754.51	-27.99	78.51	41.39	94.46	20 37 16	2154.5	-27.08	69.96
90.00	11 37 50	4479.52	8.93	187.70	34.07	63.02	12 52 30	3879.5	5.24	180.97
100.00	21 20 17	2467.68	-29.39	57.27	41.25	95.69	22 1 25	1867.7	-28.29	48.64
100.00	12 51 35	4241.57	10.18	169.55	33.41	61.74	14 2 17	3641.6	6.33	162.88
110.00	22 45 33	2200.94	-33.10	36.45	40.69	99.08	23 22 13	1600.9	-31.49	27.60
110.00	13 42 49	4081.08	13.42	155.47	31.50	58.26	14 50 50	3481.1	9.12	149.00

DIFFERENTIAL CORRECTIONS
TDE-2.7636 TRA 8.1054 TC3-5.7070 BAU 2.1342
RDE .8779 RRA -.5298 RC3 .5906 FAU .27913
FDE-5.9104 FRA13.9838 FC3-8.6850 BSP 38840
BDE 2.8997 BRA 8.1227 BC3 5.7374 FSP 6084

MID-COURSE EXECUTION ACCURACY
SGT11303.9 SGR 1284.6 SG3 1663.7
RRT -.8269 RRF -.8545 RTF .9960
SGB11376.7 R23 .0489 R13 -.9963
SG111353.9 SG2 719.2 THA 174.61

ORBIT DETERMINATION ACCURACY
ST 4058.4 SR 970.3 SS 2800.3
CRT -.8511 CRS .9015 CST -.9945
LSA 4997.0 MSA 532.6 SSA 13.1
EL1 4142.8 EL2 499.0 ALF 168.33

LAUNCH DATE OCT 4 1964 FLIGHT TIME 382.00 ARRIVAL DATE OCT 21 1965

HELIOCENTRIC CONIC DISTANCE 865.187 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.530 GAL -9.26 AZL 88.54 HCA 270.39 SMA 185.42 ECC .24938 INC 1.4561 V1 29.779
RP 214.24 LAP -1.46 LOP 281.20 VP 22.873 GAP -11.39 AZP 89.99 TAL 310.56 TAP 220.95 RCA 139.18 APO 231.66 V2 25.626
RC 292.998 GL 8.79 GP 6.23 ZAL 152.56 ZAP 49.83 ETS 184.91 ZAE 78.78 ETE 180.51 ZAC 88.06 ETC 259.91 CLP 49.54

PLANETOCENTRIC CONIC

C3 28.484 VHL 5.337 DLA 14.12 RAL 169.40 RAD 6568.1 VEL 12.242 PTH 2.20 VHP 4.154 DPA 18.69 RAP 155.85 ECC 1.4688

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 54 17	2755.56	-28.00	78.59	42.21	94.42	20 40 13	2155.6	-27.09	70.04
90.00	11 38 20	4490.16	9.26	188.31	34.85	63.12	12 53 10	3890.2	5.58	181.57
100.00	21 23 8	2469.04	-29.40	57.37	42.06	95.64	22 4 17	1869.0	-28.31	48.74
100.00	12 52 10	4251.89	10.51	170.14	34.19	61.86	14 3 2	3651.9	6.67	163.46
110.00	22 48 11	2202.93	-33.12	36.61	41.51	98.99	23 24 54	1602.9	-31.52	27.74
110.00	13 43 37	4090.79	13.76	156.01	32.28	58.40	14 51 48	3490.8	9.48	149.52

DIFFERENTIAL CORRECTIONS
TDE-2.8740 TRA 8.3707 TC3-5.6976 BAU 2.1803
RDE .8800 RRA -.5133 RC3 .5651 FAU .26607
FDE-5.7553 FRA13.4989 FC3-8.0868 BSP 39620
BDE 3.0057 BRA 8.3864 BC3 5.7256 FSP 5814

MID-COURSE EXECUTION ACCURACY
SGT11505.3 SGR 1256.7 SG3 1583.7
RRT -.8195 RRF -.8481 RTF .9959
SGB11573.8 R23 .0501 R13 -.9962
SG111551.5 SG2 717.3 THA 174.87

ORBIT DETERMINATION ACCURACY
ST 4157.1 SR 960.1 SS 2741.2
CRT -.8499 CRS .9008 CST -.9944
LSA 5043.3 MSA 531.4 SSA 13.0
EL1 4237.5 EL2 496.4 ALF 168.74

LAUNCH DATE OCT 4 1964 FLIGHT TIME 384.00 ARRIVAL DATE OCT 23 1965

HELIOCENTRIC CONIC DISTANCE 869.220 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.533 GAL -9.39 AZL 88.52 HCA 271.58 SMA 185.47 ECC .25098 INC 1.4798 V1 29.779
RP 213.93 LAP -1.48 LOP 282.38 VP 22.917 GAP -11.60 AZP 89.96 TAL 310.04 TAP 221.62 RCA 138.92 APO 232.02 V2 25.662
RC 294.131 GL 8.83 GP 6.11 ZAL 152.97 ZAP 48.70 ETS 185.02 ZAE 77.39 ETE 180.67 ZAC 87.96 ETC 259.90 CLP 48.41

PLANETOCENTRIC CONIC

C3 29.182 VHL 5.402 DLA 13.98 RAL 169.83 RAD 6568.2 VEL 12.270 PTH 2.21 VHP 4.240 DPA 18.57 RAP 155.85 ECC 1.4803

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 57 19	2756.52	-28.00	78.66	43.04	94.39	20 43 16	2156.5	-27.10	70.11
90.00	11 38 46	4501.30	9.60	188.95	35.65	63.23	12 53 48	3901.3	5.94	182.19
100.00	21 26 3	2470.33	-29.41	57.47	42.90	95.59	22 7 14	1870.3	-28.33	48.83
100.00	12 52 43	4262.73	10.86	170.75	34.99	61.98	14 3 46	3662.7	7.03	164.06
110.00	22 50 53	2204.89	-33.14	36.75	42.34	98.90	23 27 38	1604.9	-31.56	27.89
110.00	13 44 22	4100.93	14.12	156.57	33.08	58.54	14 52 43	3500.9	9.86	150.07

DIFFERENTIAL CORRECTIONS
TDE-2.9871 TRA 8.6396 TC3-5.6807 BAU 2.2263
RDE .8824 RRA -.4978 RC3 .5408 FAU .25336
FDE-5.6022 FRA13.0233 FC3-7.5162 BSP 40378
BDE 3.1147 BRA 8.6539 BC3 5.7064 FSP 5552

MID-COURSE EXECUTION ACCURACY
SGT11699.4 SGR 1230.2 SG3 1506.1
RRT -.8122 RRF -.8417 RTF .9958
SGB11763.9 R23 .0514 R13 -.9961
SG111742.1 SG2 715.1 THA 175.10

ORBIT DETERMINATION ACCURACY
ST 4254.0 SR 950.2 SS 2681.9
CRT -.8487 CRS .9002 CST -.9943
LSA 5090.3 MSA 529.9 SSA 13.0
EL1 4330.8 EL2 493.6 ALF 169.12

LAUNCH DATE OCT 4 1964 FLIGHT TIME 386.00 ARRIVAL DATE OCT 25 1965

HELIOCENTRIC CONIC DISTANCE 873.250 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.536 GAL -9.53 AZL 88.50 HCA 272.76 SMA 185.52 ECC .25266 INC 1.5037 V1 29.779
RP 213.62 LAP -1.50 LOP 283.57 VP 22.961 GAP -11.81 AZP 89.93 TAL 309.51 TAP 222.27 RCA 138.65 APO 232.40 V2 25.697
RC 295.251 GL 8.86 GP 5.99 ZAL 153.39 ZAP 47.61 ETS 185.13 ZAE 76.03 ETE 180.82 ZAC 87.86 ETC 259.88 CLP 47.32

PLANETOCENTRIC CONIC

C3 29.920 VHL 5.470 DLA 13.82 RAL 170.28 RAD 6568.2 VEL 12.300 PTH 2.22 VHP 4.329 DPA 18.42 RAP 155.90 ECC 1.4924

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 0 27	2757.40	-28.01	78.72	43.89	94.36	20 46 24	2157.4	-27.11	70.17
90.00	11 39 10	4512.93	9.96	189.62	36.47	63.36	12 54 23	3912.9	6.30	182.85
100.00	21 29 5	2471.55	-29.42	57.56	43.75	95.55	22 10 16	1871.6	-28.34	48.92
100.00	12 53 13	4274.02	11.22	171.40	35.81	62.11	14 4 27	3674.0	7.40	164.69
110.00	22 53 41	2206.82	-33.16	36.90	43.20	98.82	23 30 28	1606.8	-31.59	28.03
110.00	13 45 6	4111.52	14.50	157.16	33.90	58.70	14 53 38	3511.5	10.25	150.64

DIFFERENTIAL CORRECTIONS
TDE-3.1026 TRA 8.9124 TC3-5.6555 BAU 2.2717
RDE .8853 RRA -.4832 RC3 .5175 FAU .24100
FDE-5.4513 FRA12.5570 FC3-6.9734 BSP 41105
BDE 3.2264 BRA 8.9255 BC3 5.6792 FSP 5293

MID-COURSE EXECUTION ACCURACY
SGT11885.6 SGR 1205.1 SG3 1430.9
RRT -.8048 RRF -.8355 RTF .9956
SGB11946.5 R23 .0527 R13 -.9959
SG111925.2 SG2 712.8 THA 175.32

ORBIT DETERMINATION ACCURACY
ST 4349.0 SR 940.6 SS 2622.4
CRT -.8477 CRS .8998 CST -.9942
LSA 5137.8 MSA 528.2 SSA 12.9
EL1 4422.5 EL2 490.6 ALF 169.48

LAUNCH DATE OCT 4 1964 FLIGHT TIME 388.00 ARRIVAL DATE OCT 27 1965

HELIOCENTRIC CONIC DISTANCE 877.276 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.539 GAL -9.68 AZL 88.47 HCA 273.95 SMA 185.58 ECC .25443 INC 1.5277 V1 29.779
RP 213.31 LAP -1.52 LOP 284.76 VP 23.004 GAP -12.02 AZP 89.89 TAL 308.96 TAP 222.91 RCA 138.36 APO 232.79 V2 25.731
RC 296.356 GL 8.88 GP 5.88 ZAL 153.83 ZAP 46.55 ETS 185.22 ZAE 74.70 ETE 180.97 ZAC 87.77 ETC 259.86 CLP 46.26

PLANETOCENTRIC CONIC

C3 30.701 VHL 5.541 DLA 13.66 RAL 170.72 RAD 6568.2 VEL 12.332 PTH 2.22 VHP 4.420 DPA 18.27 RAP 155.98 ECC 1.5053

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 3 40	2758.21	-28.01	78.78	44.76	94.33	20 49 38	2158.2	-27.12	70.23
90.00	11 39 31	4525.05	10.33	190.32	37.30	63.49	12 54 56	3925.0	6.69	183.54
100.00	21 32 11	2472.72	-29.43	57.64	44.62	95.50	22 13 24	1872.7	-28.35	49.00
100.00	12 53 41	4285.78	11.59	172.07	36.64	62.25	14 5 7	3685.8	7.79	165.35
110.00	22 56 33	2208.72	-33.18	37.05	44.07	98.74	23 33 22	1608.7	-31.62	28.17
110.00	13 45 48	4122.54	14.89	157.78	34.73	58.87	14 54 31	3522.5	10.65	151.23

DIFFERENTIAL CORRECTIONS
TDE-3.2205 TRA 9.1901 TC3-5.6224 BAU 2.3166
RDE .8885 RRA -.4695 RC3 .4952 FAU .22894
FDE-5.3010 FRA12.1008 FC3-6.4559 BSP 41819
BDE 3.3408 BRA 9.2021 BC3 5.6442 FSP 5045

MID-COURSE EXECUTION ACCURACY
SGT12064.6 SGR 1181.1 SG3 1358.0
RRT -.7976 RRF -.8294 RTF .9954
SGB12122.2 R23 .0541 R13 -.9957
SG112101.4 SG2 710.3 THA 175.52

ORBIT DETERMINATION ACCURACY
ST 4442.2 SR 931.1 SS 2562.4
CRT -.8468 CRS .8995 CST -.9941
LSA 5185.4 MSA 526.3 SSA 12.8
EL1 4512.4 EL2 487.5 ALF 169.81

LAUNCH DATE OCT 4 1964 FLIGHT TIME 390.00 ARRIVAL DATE OCT 29 1965

HELIOCENTRIC CONIC DISTANCE 881.297 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.542 GAL -9.83 AZL 88.45 HCA 275.15 SMA 185.63 ECC .25627 INC 1.5518 V1 29.779
RP 213.01 LAP -1.55 LOP 285.95 VP 23.046 GAP -12.23 AZP 89.86 TAL 308.39 TAP 223.54 RCA 138.06 APO 233.21 V2 25.765
RC 297.448 GL 8.90 GP 5.78 ZAL 154.27 ZAP 45.52 ETS 185.32 ZAE 73.41 ETE 181.11 ZAC 87.69 ETC 259.83 CLP 45.23

PLANETOCENTRIC CONIC

C3 31.527 VHL 5.615 DLA 13.49 RAL 171.18 RAD 6568.3 VEL 12.365 PTH 2.23 VHP 4.515 DPA 18.11 RAP 156.10 ECC 1.5188

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 6 58	2758.96	-28.02	78.83	45.65	94.30	20 52 57	2159.0	-27.12	70.28
90.00	11 39 50	4537.64	10.71	191.05	38.16	63.63	12 55 28	3937.6	7.08	184.25
100.00	21 35 22	2473.83	-29.44	57.72	45.51	95.46	22 16 36	1873.8	-28.37	49.08
100.00	12 54 6	4298.00	11.98	172.77	37.50	62.41	14 5 44	3698.0	8.19	166.03
110.00	22 59 30	2210.61	-33.20	37.19	44.96	98.65	23 36 20	1610.6	-31.65	28.31
110.00	13 46 28	4133.99	15.29	158.42	35.59	59.05	14 55 22	3534.0	11.07	151.85

DIFFERENTIAL CORRECTIONS
TDE-3.3424 TRA 9.4716 TC3-5.5844 BAU 2.3622
RDE .8923 RRA -.4568 RC3 .4742 FAU .21737
FDE-5.1550 FRA11.6528 FC3-5.9690 BSP 42479
BDE 3.4594 BRA 9.4826 BC3 5.6045 FSP 4799

MID-COURSE EXECUTION ACCURACY
SGT12237.2 SGR 1158.6 SG3 1287.7
RRT -.7906 RRF -.8235 RTF .9952
SGB12291.9 R23 .0556 R13 -.9955
SG112271.5 SG2 707.5 THA 175.70

ORBIT DETERMINATION ACCURACY
ST 4534.2 SR 922.0 SS 2502.8
CRT -.8462 CRS .8994 CST -.9940
LSA 5234.3 MSA 524.0 SSA 12.7
EL1 4601.6 EL2 484.1 ALF 170.13

LAUNCH DATE OCT 4 1964 FLIGHT TIME 392.00 ARRIVAL DATE OCT 31 1965

HELIOCENTRIC CONIC DISTANCE 885.311 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.546 GAL -9.99 AZL 88.42 HCA 276.34 SMA 185.69 ECC .25820 INC 1.5761 V1 29.779
RP 212.72 LAP -1.57 LOP 287.15 VP 23.089 GAP -12.45 AZP 89.83 TAL 307.81 TAP 224.15 RCA 137.75 APO 233.64 V2 25.798
RC 298.526 GL 8.91 GP 5.67 ZAL 154.72 ZAP 44.52 ETS 185.40 ZAE 72.14 ETE 181.24 ZAC 87.62 ETC 259.80 CLP 44.24

PLANETOCENTRIC CONIC

C3 32.400 VHL 5.692 DLA 13.31 RAL 171.63 RAD 6568.3 VEL 12.400 PTH 2.24 VHP 4.612 DPA 17.94 RAP 156.26 ECC 1.5332

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 10 21	2759.65	-28.02	78.88	46.55	94.28	20 56 21	2159.7	-27.13	70.33
90.00	11 40 6	4550.70	11.10	191.81	39.04	63.78	12 55 57	3950.7	7.49	184.99
100.00	21 38 39	2474.91	-29.44	57.80	46.41	95.42	22 19 54	1874.9	-28.38	49.16
100.00	12 54 30	4310.67	12.38	173.50	38.38	62.57	14 6 20	3710.7	8.61	166.74
110.00	23 2 31	2212.49	-33.22	37.33	45.87	98.57	23 39 23	1612.5	-31.68	28.45
140.00	13 47 7	4145.86	15.70	159.09	36.48	59.24	14 56 13	3545.9	11.51	152.50

DIFFERENTIAL CORRECTIONS
TDE-3.4678 TRA 9.7584 TC3-5.5392 BAU 2.4074
RDE .8965 RRA -.4450 RC3 .4540 FAU .20610
FDE-5.0107 FRA11.2142 FC3-5.5069 BSP 43125
BDE 3.5818 BRA 9.7685 BC3 5.5577 FSP 4561

MID-COURSE EXECUTION ACCURACY
SGT12402.9 SGR 1137.2 SG3 1219.7
RRT -.7838 RRF -.8179 RTF .9950
SGB12455.0 R23 .0572 R13 -.9953
SG112435.0 SG2 704.5 THA 175.88

ORBIT DETERMINATION ACCURACY
ST 4624.9 SR 913.0 SS 2443.0
CRT -.8457 CRS .8995 CST -.9938
LSA 5283.9 MSA 521.5 SSA 12.7
EL1 4689.6 EL2 480.6 ALF 170.42

LAUNCH DATE OCT 4 1964 FLIGHT TIME 394.00 ARRIVAL DATE NOV 2 1965

HELIOCENTRIC CONIC DISTANCE 889.319 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.550 GAL -10.15 AZL 88.40 HCA 277.54 SMA 185.75 ECC .26022 INC 1.6005 V1 29.779
RP 212.43 LAP -1.59 LOP 288.35 VP 23.130 GAP -12.67 AZP 89.79 TAL 307.21 TAP 224.75 RCA 137.42 APO 234.09 V2 25.831
RC 299.592 GL 8.92 GP 5.57 ZAL 155.18 ZAP 43.56 ETS 185.49 ZAE 70.90 ETE 181.37 ZAC 87.56 ETC 259.75 CLP 43.27

PLANETOCENTRIC CONIC

C3 33.324 VHL 5.773 DLA 13.12 RAL 172.10 RAD 6568.3 VEL 12.438 PTH 2.25 VHP 4.713 DPA 17.76 RAP 156.45 ECC 1.5484

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 13 50	2760.30	-28.02	78.93	47.47	94.25	20 59 50	2160.3	-27.14	70.38
90.00	11 40 20	4564.22	11.51	192.59	39.94	63.95	12 56 24	3964.2	7.92	185.76
100.00	21 42 0	2475.95	-29.45	57.88	47.33	95.38	22 23 16	1876.0	-28.39	49.24
100.00	12 54 51	4323.80	12.79	174.26	39.28	62.75	14 6 54	3723.8	9.04	167.48
110.00	23 5 36	2214.36	-33.24	37.48	46.79	98.49	23 42 30	1614.4	-31.71	28.58
110.00	13 47 44	4158.16	16.13	159.79	37.38	59.45	14 57 2	3558.2	11.96	153.17

DIFFERENTIAL CORRECTIONS
TDE-3.5971 TRA10.0495 TC3-5.4898 BAU 2.4534
RDE .9012 RRA -.4340 RC3 .4350 FAU .19527
FDE-4.8694 FRA10.7837 FC3-5.0730 BSP 43714
BDE 3.7083 BRA10.0589 BC3 5.5070 FSP 4327

MID-COURSE EXECUTION ACCURACY
SGT12562.5 SGR 1117.1 SG3 1154.2
RRT -.7772 RRF -.8126 RTF .9948
SGB12612.1 R23 .0588 R13 -.9950
SG112592.5 SG2 701.3 THA 176.03

ORBIT DETERMINATION ACCURACY
ST 4714.2 SR 904.4 SS 2383.2
CRT -.8453 CRS .8998 CST -.9937
LSA 5334.0 MSA 518.7 SSA 12.6
EL1 4776.4 EL2 476.8 ALF 170.69

LAUNCH DATE OCT 4 1964 FLIGHT TIME 396.00 ARRIVAL DATE NOV 4 1965

HELIOCENTRIC CONIC DISTANCE 893.319 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.553 GAL -10.32 AZL 88.37 HCA 278.74 SMA 185.82 ECC .26234 INC 1.6252 V1 29.779
RP 212.15 LAP -1.61 LOP 289.55 VP 23.172 GAP -12.89 AZP 89.75 TAL 306.59 TAP 225.34 RCA 137.07 APO 234.56 V2 25.863
RC 300.645 GL 8.92 GP 5.47 ZAL 155.64 ZAP 42.63 ETS 185.57 ZAE 69.70 ETE 181.49 ZAC 87.51 ETC 259.71 CLP 42.34

PLANETOCENTRIC CONIC

C3 34.301 VHL 5.857 DLA 12.93 RAL 172.57 RAD 6568.4 VEL 12.477 PTH 2.26 VHP 4.816 DPA 17.56 RAP 156.67 ECC 1.5645

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 17 23	2760.91	-28.03	78.98	48.41	94.23	21 3 24	2160.9	-27.14	70.42
90.00	11 40 31	4578.20	11.93	193.41	40.86	64.13	12 56 49	3978.2	8.35	186.56
100.00	21 45 26	2476.97	-29.46	57.96	48.27	95.34	22 26 43	1877.0	-28.40	49.31
100.00	12 55 9	4337.37	13.21	175.05	40.21	62.94	14 7 27	3737.4	9.48	168.25
110.00	23 8 45	2216.23	-33.26	37.62	47.73	98.40	23 45 42	1616.2	-31.74	28.72
110.00	13 48 19	4170.88	16.57	160.51	38.30	59.67	14 57 50	3570.9	12.42	153.87

DIFFERENTIAL CORRECTIONS
TDE-3.7303 TRA10.3469 TC3-5.4342 BAU 2.4993
RDE .9064 RRA -.4241 RC3 .4168 FAU .18478
FDE-4.7301 FRA10.3626 FC3-4.6638 BSP 44289
BDE 3.8388 BRA10.3556 BC3 5.4502 FSP 4100

MID-COURSE EXECUTION ACCURACY
SGT12715.9 SGR 1098.1 SG3 1091.0
RRT -.7709 RRF -.8076 RTF .9945
SGB12763.2 R23 .0606 R13 -.9947
SG112744.1 SG2 697.8 THA 176.18

ORBIT DETERMINATION ACCURACY
ST 4802.2 SR 896.0 SS 2323.3
CRT -.8452 CRS .9003 CST -.9935
LSA 5384.8 MSA 515.6 SSA 12.5
EL1 4862.1 EL2 473.0 ALF 170.95

LAUNCH DATE OCT 4 1964 FLIGHT TIME 398.00 ARRIVAL DATE NOV 6 1965

HELIOCENTRIC CONIC DISTANCE 897.311 EARTH TO MARS

RL 149.63 LAL -.00 LOL 10.80 VL 32.557 GAL -10.50 AZL 88.35 HCA 279.95 SMA 185.88 ECC .26455 INC 1.6500 V1 29.779
RP 211.87 LAP -1.63 LOP 290.76 VP 23.212 GAP -13.11 AZP 89.71 TAL 305.96 TAP 225.91 RCA 136.71 APO 235.05 V2 25.895
RC 301.687 GL 8.92 GP 5.38 ZAL 156.11 ZAP 41.72 ETS 185.64 ZAE 68.52 ETE 181.60 ZAC 87.47 ETC 259.66 CLP 41.44

PLANETOCENTRIC CONIC

C3 35.336 VHL 5.944 DLA 12.73 RAL 173.04 RAD 6568.4 VEL 12.518 PTH 2.27 VHP 4.923 DPA 17.36 RAP 156.93 ECC 1.5815

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 21 1	2761.49	-28.03	79.02	49.36	94.21	21 7 3	2161.5	-27.15	70.46
90.00	11 40 40	4592.63	12.35	194.25	41.80	64.32	12 57 12	3992.6	8.80	187.38
100.00	21 48 56	2477.97	-29.46	58.03	49.23	95.30	22 30 14	1878.0	-28.42	49.38
100.00	12 55 26	4351.38	13.64	175.86	41.15	63.14	14 7 58	3751.4	9.93	169.04
110.00	23 11 59	2218.11	-33.27	37.76	48.69	98.32	23 48 57	1618.1	-31.77	28.86
110.00	13 48 53	4184.00	17.02	161.27	39.25	59.90	14 58 37	3584.0	12.89	154.59

DIFFERENTIAL CORRECTIONS
TDE-3.8688 TRA10.6500 TC3-5.3756 BAU 2.5465
RDE .9121 RRA -.4151 RC3 .3997 FAU .17473
FDE-4.5939 FRA 9.9493 FC3-4.2809 BSP 44796
BDE 3.9749 BRA10.6581 BC3 5.3904 FSP 3878

MID-COURSE EXECUTION ACCURACY
SGT12864.5 SGR 1080.2 SG3 1030.2
RRT -.7650 RRF -.8031 RTF .9942
SGB12909.8 R23 .0625 R13 -.9944
SG112891.1 SG2 694.2 THA 176.31

ORBIT DETERMINATION ACCURACY
ST 4889.7 SR 887.8 SS 2263.7
CRT -.8453 CRS .9011 CST -.9934
LSA 5436.8 MSA 512.3 SSA 12.4
EL1 4947.5 EL2 468.8 ALF 171.19

LAUNCH DATE OCT 5 1964 FLIGHT TIME 240.00 ARRIVAL DATE JUN 2 1965

HELIOCENTRIC CONIC DISTANCE 590.233 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 33.112 GAL -9.00 AZL 92.70 HCA 195.13 SMA 195.74 ECC .28054 INC 2.7003 V1 29.788
RP 239.88 LAP .70 LOP 206.90 VP 20.699 GAP 9.86 AZP 87.39 TAL 317.11 TAP 152.24 RCA 140.82 APO 250.65 V2 22.897
RC 168.857 GL -15.65 GP 14.66 ZAL 145.06 ZAP 151.16 ETS 150.35 ZAE 159.52 ETE 45.78 ZAC 102.39 ETC 255.87 CLP 154.88

PLANETOCENTRIC CONIC

C3 32.613 VHL 5.711 DLA -6.74 RAL 155.78 RAD 6568.3 VEL 12.409 PTH 2.24 VHP 6.068 DPA 13.83 RAP 188.42 ECC 1.5367

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 37 39	2124.25	-17.28	35.84	23.72	112.79	22 13 3	1524.3	-14.04	28.66
90.00	7 58 28	5189.41	25.98	232.51	27.84	78.32	9 24 57	4589.4	24.11	224.34
100.00	22 55 47	1872.22	-18.47	16.77	23.18	113.93	23 26 59	1272.2	-15.08	9.62
100.00	9 23 2	4916.67	27.25	212.14	27.53	77.21	10 44 58	4316.7	25.21	203.93
110.00	0 0 36	1681.58	-21.65	.69	21.57	117.13	0 28 37	1081.6	-17.84	353.63
110.00	10 38 38	4680.07	30.66	193.18	26.53	74.08	11 56 38	4080.1	28.17	184.87

DIFFERENTIAL CORRECTIONS
TDE 1.8856 TRA-4.3001 TC3 1.0774 BAU .5477
RDE .8321 RRA-1.2443 RC3 .6457 FAU .15453
FDE-3.6463 FRA 7.1139 FC3-4.1021 BSP 17743
BDE 2.0610 BRA 4.4765 BC3 1.2561 FSP 2514

MID-COURSE EXECUTION ACCURACY
SGT 4895.5 SGR 1679.6 SG3 805.8
RRT .9666 RRF -.9923 RTF -.9617
SGB 5175.6 R23 -.2192 R13 -.9678
SG1 5159.5 SG2 408.4 THA 18.47

ORBIT DETERMINATION ACCURACY
ST 2297.5 SR 916.4 SS 2227.4
CRT .9840 CRS .9941 CST .9974
LSA 3324.2 MSA 171.0 SSA 20.2
EL1 2468.9 EL2 151.9 ALF 21.51

LAUNCH DATE OCT 5 1964 FLIGHT TIME 242.00 ARRIVAL DATE JUN 4 1965

HELIOCENTRIC CONIC DISTANCE 593.728 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 33.082 GAL -8.89 AZL 92.44 HCA 196.07 SMA 195.16 ECC .27771 INC 2.4441 V1 29.788
RP 239.58 LAP .68 LOP 207.84 VP 20.685 GAP 9.41 AZP 87.65 TAL 317.29 TAP 153.36 RCA 140.96 APO 249.36 V2 22.928
RC 171.174 GL -14.38 GP 14.15 ZAL 145.34 ZAP 150.80 ETS 151.88 ZAE 160.20 ETE 46.03 ZAC 101.95 ETC 255.88 CLP 154.19

PLANETOCENTRIC CONIC

C3 31.486 VHL 5.611 DLA -5.48 RAL 156.04 RAD 6568.3 VEL 12.364 PTH 2.23 VHP 5.926 DPA 13.26 RAP 188.43 ECC 1.5182

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 29 1	2155.43	-18.09	37.77	23.62	112.16	22 4 56	1555.4	-14.93	30.52
90.00	8 9 12	5140.52	25.26	229.11	26.92	76.76	9 34 52	4540.5	23.19	221.05
100.00	22 47 46	1901.38	-19.27	18.57	23.10	113.31	23 19 28	1301.4	-15.95	11.35
100.00	9 33 7	4869.81	26.50	208.86	26.59	75.63	10 54 17	4269.8	24.26	200.78
110.00	23 50 5	1706.27	-22.40	2.20	21.54	116.52	24 18 32	1106.3	-18.66	355.07
110.00	10 47 18	4637.68	29.83	190.16	25.51	72.47	12 4 35	4037.7	27.14	182.00

DIFFERENTIAL CORRECTIONS
TDE 1.8458 TRA-4.2429 TC3 1.1176 BAU .5442
RDE .8029 RRA-1.1956 RC3 .6499 FAU .16029
FDE-3.6929 FRA 7.4058 FC3-4.4074 BSP 17827
BDE 2.0129 BRA 4.4081 BC3 1.2928 FSP 2665

MID-COURSE EXECUTION ACCURACY
SGT 4905.8 SGR 1645.7 SG3 848.3
RRT .9658 RRF -.9912 RTF -.9628
SGB 5174.5 R23 -.2120 R13 -.9685
SG1 5158.6 SG2 405.5 THA 18.07

ORBIT DETERMINATION ACCURACY
ST 2293.1 SR 898.9 SS 2257.3
CRT .9831 CRS .9926 CST .9979
LSA 3336.7 MSA 166.7 SSA 22.2
EL1 2458.2 EL2 153.6 ALF 21.16

LAUNCH DATE OCT 5 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUN 6 1965

HELIOCENTRIC CONIC DISTANCE 597.243 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 33.053 GAL -8.79 AZL 92.21 HCA 197.01 SMA 194.61 ECC .27498 INC 2.2145 V1 29.788
RP 239.26 LAP .65 LOP 208.79 VP 20.674 GAP 8.96 AZP 87.88 TAL 317.46 TAP 154.48 RCA 141.09 APO 248.12 V2 22.959
RC 173.485 GL -13.22 GP 13.70 ZAL 145.54 ZAP 150.38 ETS 153.31 ZAE 160.86 ETE 46.52 ZAC 101.56 ETC 255.88 CLP 153.48

PLANETOCENTRIC CONIC

C3 30.468 VHL 5.520 DLA -4.31 RAL 156.27 RAD 6568.2 VEL 12.322 PTH 2.22 VHP 5.790 DPA 12.76 RAP 188.45 ECC 1.5014

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 21 8	2183.65	-18.81	39.53	23.52	111.57	21 57 32	1583.7	-15.71	32.22
90.00	8 18 53	5095.79	24.53	226.04	26.09	75.39	9 43 49	4495.8	22.28	218.09
100.00	22 40 27	1927.78	-19.97	20.22	23.02	112.72	23 12 35	1327.8	-16.72	12.93
100.00	9 42 15	4826.89	25.74	205.90	25.73	74.25	11 2 42	4226.9	23.33	197.93
110.00	23 44 4	1728.67	-23.08	3.59	21.51	115.95	24 12 52	1128.7	-19.40	356.39
110.00	10 55 8	4598.77	29.00	187.44	24.59	71.05	12 11 47	3998.8	26.14	179.42

DIFFERENTIAL CORRECTIONS
TDE 1.8125 TRA-4.1799 TC3 1.1625 BAU .5440
RDE .7801 RRA-1.1519 RC3 .6573 FAU .16665
FDE-3.7534 FRA 7.6940 FC3-4.7353 BSP 17779
BDE 1.9733 BRA 4.3358 BC3 1.3354 FSP 2804

MID-COURSE EXECUTION ACCURACY
SGT 4911.1 SGR 1618.7 SG3 892.3
RRT .9651 RRF -.9902 RTF -.9639
SGB 5171.0 R23 -.2044 R13 -.9693
SG1 5155.2 SG2 403.7 THA 17.76

ORBIT DETERMINATION ACCURACY
ST 2290.2 SR 886.4 SS 2291.3
CRT .9823 CRS .9909 CST .9984
LSA 3354.6 MSA 163.6 SSA 24.0
EL1 2450.8 EL2 155.3 ALF 20.90

LAUNCH DATE OCT 5 1964 FLIGHT TIME 246.00 ARRIVAL DATE JUN 8 1965

HELIOCENTRIC CONIC DISTANCE 600.776 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 33.025 GAL -8.69 AZL 92.01 HCA 197.96 SMA 194.08 ECC .27235 INC 2.0079 V1 29.788
RP 238.95 LAP .62 LOP 209.74 VP 20.664 GAP 8.51 AZP 88.09 TAL 317.64 TAP 155.60 RCA 141.22 APO 246.94 V2 22.991
RC 175.790 GL -12.15 GP 13.30 ZAL 145.69 ZAP 149.89 ETS 154.62 ZAE 161.52 ETE 47.24 ZAC 101.22 ETC 255.89 CLP 152.74

PLANETOCENTRIC CONIC

C3 29.542 VHL 5.435 DLA -3.24 RAL 156.47 RAD 6568.2 VEL 12.285 PTH 2.21 VHP 5.659 DPA 12.32 RAP 188.46 ECC 1.4862

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 13 53	2209.40	-19.44	41.15	23.43	111.00	21 50 43	1609.4	-16.41	33.79
90.00	8 27 43	5054.56	23.79	223.24	25.34	74.17	9 51 58	4454.6	21.39	215.39
100.00	22 33 43	1951.89	-20.60	21.73	22.95	112.16	23 6 15	1351.9	-17.41	14.39
100.00	9 50 34	4787.31	24.98	203.20	24.96	73.03	11 10 22	4187.3	22.42	195.34
110.00	23 38 29	1749.12	-23.68	4.87	21.48	115.40	24 7 38	1149.1	-20.06	357.60
110.00	11 2 17	4562.84	28.18	184.96	23.75	69.79	12 18 20	3962.8	25.17	177.08

DIFFERENTIAL CORRECTIONS
TDE 1.7768 TRA-4.1190 TC3 1.2008 BAU .5421
RDE .7607 RRA-1.1145 RC3 .6648 FAU .17301
FDE-3.8150 FRA 7.9925 FC3-5.0701 BSP 17799
BDE 1.9328 BRA 4.2671 BC3 1.3726 FSP 2957

MID-COURSE EXECUTION ACCURACY
SGT 4911.8 SGR 1596.9 SG3 937.6
RRT .9642 RRF -.9890 RTF -.9648
SGB 5164.9 R23 -.1974 R13 -.9700
SG1 5149.1 SG2 403.8 THA 17.52

ORBIT DETERMINATION ACCURACY
ST 2283.0 SR 876.5 SS 2325.0
CRT .9813 CRS .9892 CST .9988
LSA 3370.3 MSA 162.6 SSA 25.7
EL1 2440.3 EL2 157.9 ALF 20.73

LAUNCH DATE OCT 5 1964 FLIGHT TIME 248.00 ARRIVAL DATE JUN 10 1965

HELIOCENTRIC CONIC DISTANCE 604.329 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 32.998 GAL -8.59 AZL 91.82 HCA 198.91 SMA 193.58 ECC .26981 INC 1.8210 V1 29.788
RP 238.63 LAP .59 LOP 210.69 VP 20.657 GAP 8.07 AZP 88.28 TAL 317.81 TAP 156.72 RCA 141.35 APO 245.81 V2 23.024
RC 178.086 GL -11.16 GP 12.95 ZAL 145.78 ZAP 149.35 ETS 155.85 ZAE 162.17 ETE 48.22 ZAC 100.92 ETC 255.89 CLP 151.98

PLANETOCENTRIC CONIC

C3 28.692 VHL 5.357 DLA -2.25 RAL 156.64 RAD 6568.2 VEL 12.250 PTH 2.20 VHP 5.532 DPA 11.92 RAP 188.48 ECC 1.4722

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 7 10	2233.05	-20.01	42.65	23.34	110.46	21 44 23	1633.1	-17.05	35.23
90.00	8 35 49	5016.31	23.06	220.68	24.65	73.09	9 59 26	4416.3	20.52	212.92
100.00	22 27 27	1974.03	-21.16	23.14	22.87	111.62	23 0 21	1374.0	-18.03	15.73
100.00	9 58 13	4750.56	24.23	200.73	24.25	71.93	11 17 23	4150.6	21.53	192.97
110.00	23 33 18	1767.91	-24.23	6.06	21.44	114.89	24 2 46	1167.9	-20.67	358.73
110.00	11 8 51	4529.44	27.37	182.70	23.00	68.68	12 24 21	3929.4	24.23	174.94

DIFFERENTIAL CORRECTIONS
TDE 1.7572 TRA-4.0418 TC3 1.2584 BAU .5480
RDE .7466 RRA-1.0801 RC3 .6763 FAU .18012
FDE-3.8928 FRA 8.2862 FC3-5.4347 BSP 17443
BDE 1.9092 BRA 4.1836 BC3 1.4286 FSP 3091

MID-COURSE EXECUTION ACCURACY
SGT 4906.1 SGR 1580.9 SG3 984.8
RRT .9644 RRF -.9878 RTF -.9666
SGB 5154.5 R23 -.1865 R13 -.9714
SG1 5139.0 SG2 399.2 THA 17.37

ORBIT DETERMINATION ACCURACY
ST 2284.5 SR 870.9 SS 2363.5
CRT .9811 CRS .9874 CST .9992
LSA 3396.7 MSA 159.1 SSA 27.3
EL1 2439.8 EL2 157.8 ALF 20.60

LAUNCH DATE OCT 5 1964 FLIGHT TIME 250.00 ARRIVAL DATE JUN 12 1965

HELIOCENTRIC CONIC DISTANCE 607.897 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 32.972 GAL -8.49 AZL 91.65 HCA 199.86 SMA 193.10 ECC .26738 INC 1.6509 V1 29.788
RP 238.31 LAP .56 LOP 211.64 VP 20.653 GAP 7.64 AZP 88.45 TAL 317.97 TAP 157.84 RCA 141.47 APO 244.73 V2 23.056
RC 180.373 GL -10.24 GP 12.64 ZAL 145.84 ZAP 148.76 ETS 156.99 ZAE 162.81 ETE 49.45 ZAC 100.65 ETC 255.90 CLP 151.19

PLANETOCENTRIC CONIC

C3 27.912 VHL 5.283 DLA -1.32 RAL 156.79 RAD 6568.1 VEL 12.218 PTH 2.20 VHP 5.410 DPA 11.57 RAP 188.49 ECC 1.4594

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 0 53	2254.94	-20.53	44.05	23.26	109.94	21 38 28	1654.9	-17.62	36.58
90.00	8 43 19	4980.65	22.33	218.32	24.02	72.12	10 6 20	4380.7	19.68	210.65
100.00	22 21 37	1994.53	-21.67	24.45	22.80	111.11	22 54 51	1394.5	-18.60	16.99
100.00	10 5 16	4716.30	23.48	198.46	23.60	70.95	11 23 52	4116.3	20.67	190.79
110.00	23 28 27	1785.31	-24.72	7.17	21.41	114.40	23 58 12	1185.3	-21.22	359.78
110.00	11 14 55	4498.29	26.58	180.62	22.31	67.67	12 29 54	3898.3	23.32	172.98

DIFFERENTIAL CORRECTIONS
TDE 1.7177 TRA-3.9827 TC3 1.2859 BAU .5438
RDE .7329 RRA-1.0524 RC3 .6857 FAU .18686
FDE-3.9623 FRA 8.6027 FC3-5.7960 BSP 17548
BDE 1.8676 BRA 4.1194 BC3 1.4573 FSP 3261

MID-COURSE EXECUTION ACCURACY
SGT 4897.1 SGR 1568.5 SG3 1033.4
RRT .9631 RRF -.9865 RTF -.9671
SGB 5142.2 R23 -.1811 R13 -.9718
SG1 5126.3 SG2 403.4 THA 17.25

ORBIT DETERMINATION ACCURACY
ST 2269.8 SR 865.8 SS 2398.7
CRT .9798 CRS .9854 CST .9994
LSA 3410.0 MSA 162.3 SSA 28.4
EL1 2423.9 EL2 162.0 ALF 20.59

LAUNCH DATE OCT 5 1964 FLIGHT TIME 252.00 ARRIVAL DATE JUN 14 1965

HELIOCENTRIC CONIC DISTANCE 611.480 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 32.947 GAL -8.40 AZL 91.50 HCA 200.82 SMA 192.64 ECC .26504 INC 1.4954 V1 29.788
RP 237.98 LAP .53 LOP 212.60 VP 20.651 GAP 7.21 AZP 88.60 TAL 318.14 TAP 158.95 RCA 141.59 APO 243.70 V2 23.089
RC 182.651 GL -9.39 GP 12.36 ZAL 145.87 ZAP 148.11 ETS 158.06 ZAE 163.45 ETE 50.95 ZAC 100.41 ETC 255.90 CLP 150.37

PLANETOCENTRIC CONIC

C3 27.190 VHL 5.214 DLA -.45 RAL 156.93 RAD 6568.1 VEL 12.189 PTH 2.19 VHP 5.291 DPA 11.26 RAP 188.49 ECC 1.4475

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 54 59	2275.31	-20.99	45.36	23.18	109.45	21 32 55	1675.3	-18.15	37.84
90.00	8 50 17	4947.25	21.62	216.13	23.43	71.25	10 12 44	4347.2	18.86	208.54
100.00	22 16 7	2013.60	-22.13	25.67	22.74	110.63	22 49 41	1413.6	-19.12	18.17
100.00	10 11 50	4684.19	22.76	196.35	23.00	70.07	11 29 54	4084.2	19.83	188.78
110.00	23 23 53	1801.48	-25.17	8.21	21.38	113.93	23 53 55	1201.5	-21.72	.76
110.00	11 20 33	4469.07	25.81	178.70	21.68	66.77	12 35 3	3869.1	22.44	171.16

DIFFERENTIAL CORRECTIONS
TDE 1.6786 TRA-3.9227 TC3 1.3105 BAU .5394
RDE .7216 RRA-1.0288 RC3 .6962 FAU .19382
FDE-4.0351 FRA 8.9306 FC3-6.1711 BSP 17647
BDE 1.8271 BRA 4.0553 BC3 1.4840 FSP 3441

MID-COURSE EXECUTION ACCURACY
SGT 4883.5 SGR 1560.1 SG3 1083.9
RRT .9618 RRF -.9852 RTF -.9675
SGB 5126.7 R23 -.1758 R13 -.9721
SG1 5110.4 SG2 408.2 THA 17.19

ORBIT DETERMINATION ACCURACY
ST 2252.9 SR 862.7 SS 2434.5
CRT .9786 CRS .9834 CST .9995
LSA 3423.2 MSA 166.3 SSA 29.3
EL1 2406.7 EL2 166.3 ALF 20.64

LAUNCH DATE OCT 5 1964 FLIGHT TIME 254.00 ARRIVAL DATE JUN 16 1965

HELIOCENTRIC CONIC DISTANCE 615.081 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 32.924 GAL -8.31 AZL 91.35 HCA 201.77 SMA 192.21 ECC .26279 INC 1.3522 V1 29.788
RP 237.65 LAP .50 LOP 213.56 VP 20.650 GAP 6.78 AZP 88.74 TAL 318.30 TAP 160.07 RCA 141.70 APO 242.72 V2 23.123
RC 184.919 GL -8.59 GP 12.12 ZAL 145.87 ZAP 147.42 ETS 159.05 ZAE 164.08 ETE 52.75 ZAC 100.19 ETC 255.91 CLP 149.53

PLANETOCENTRIC CONIC

C3 26.521 VHL 5.150 DLA .36 RAL 157.05 RAD 6568.1 VEL 12.161 PTH 2.18 VHP 5.175 DPA 10.99 RAP 188.49 ECC 1.4365

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 49 26	2294.36	-21.42	46.60	23.10	108.97	21 27 40	1694.4	-18.64	39.03
90.00	8 56 47	4915.81	20.91	214.09	22.90	70.46	10 18 43	4315.8	18.06	206.58
100.00	22 10 56	2031.43	-22.55	26.83	22.67	110.16	22 44 48	1431.4	-19.60	19.28
100.00	10 17 58	4653.97	22.04	194.39	22.45	69.28	11 35 32	4054.0	19.02	186.90
110.00	23 19 34	1816.60	-25.58	9.19	21.34	113.48	23 49 51	1216.6	-22.19	1.69
110.00	11 25 49	4441.57	25.06	176.91	21.10	65.95	12 39 51	3841.6	21.60	169.47

DIFFERENTIAL CORRECTIONS
TDE 1.6439 TRA-3.8559 TC3 1.3386 BAU .5371
RDE .7132 RRA-1.0076 RC3 .7090 FAU .20131
FDE-4.1184 FRA 9.2609 FC3-6.5716 BSP 17607
BDE 1.7920 BRA 3.9853 BC3 1.5148 FSP 3613

MID-COURSE EXECUTION ACCURACY
SGT 4863.2 SGR 1555.6 SG3 1136.3
RRT .9607 RRF -.9839 RTF -.9680
SGB 5105.9 R23 -.1700 R13 -.9726
SG1 5089.2 SG2 412.6 THA 17.20

ORBIT DETERMINATION ACCURACY
ST 2236.8 SR 862.1 SS 2473.1
CRT .9775 CRS .9815 CST .9996
LSA 3439.9 MSA 170.4 SSA 30.1
EL1 2391.2 EL2 170.0 ALF 20.75

LAUNCH DATE OCT 5 1964 FLIGHT TIME 256.00 ARRIVAL DATE JUN 18 1965

HELIOCENTRIC CONIC DISTANCE 618.696 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 32.901 GAL -8.23 AZL 91.22 HCA 202.73 SMA 191.79 ECC .26063 INC 1.2207 V1 29.788
RP 237.31 LAP .47 LOP 214.52 VP 20.652 GAP 6.37 AZP 88.87 TAL 318.46 TAP 161.19 RCA 141.81 APO 241.78 V2 23.157
RC 187.176 GL -7.83 GP 11.90 ZAL 145.85 ZAP 146.69 ETS 159.99 ZAE 164.69 ETE 54.87 ZAC 100.00 ETC 255.91 CLP 148.65

PLANETOCENTRIC CONIC

C3 25.898 VHL 5.089 DLA 1.13 RAL 157.15 RAD 6568.0 VEL 12.136 PTH 2.18 VHP 5.063 DPA 10.75 RAP 188.47 ECC 1.4262

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 44 9	2312.27	-21.81	47.77	23.02	108.52	21 22 42	1712.3	-19.08	40.16
90.00	9 2 54	4886.13	20.23	212.19	22.40	69.75	10 24 20	4286.1	17.29	204.74
100.00	22 6 1	2048.20	-22.94	27.92	22.60	109.71	22 40 10	1448.2	-20.05	20.32
100.00	10 23 43	4625.44	21.34	192.56	21.94	68.56	11 40 48	4025.4	18.24	185.14
110.00	23 15 29	1830.81	-25.97	10.12	21.30	113.05	23 45 59	1230.8	-22.62	2.56
110.00	11 30 45	4415.59	24.33	175.25	20.56	65.21	12 44 21	3815.6	20.78	167.90

DIFFERENTIAL CORRECTIONS
TDE 1.6100 TRA-3.7868 TC3 1.3646 BAU .5346
RDE .7064 RRA -.9899 RC3 .7227 FAU .20900
FDE-4.2044 FRA 9.6049 FC3-6.9865 BSP 17551
BDE 1.7582 BRA 3.9141 BC3 1.5441 FSP 3799

MID-COURSE EXECUTION ACCURACY
SGT 4837.3 SGR 1554.4 SG3 1190.8
RRT .9598 RRF -.9827 RTF -.9686
SGB 5080.9 R23 -.1638 R13 -.9732
SG1 5063.7 SG2 416.8 THA 17.26

ORBIT DETERMINATION ACCURACY
ST 2219.0 SR 863.1 SS 2512.2
CRT .9766 CRS .9794 CST .9997
LSA 3456.7 MSA 175.0 SSA 30.6
EL1 2374.6 EL2 173.3 ALF 20.92

LAUNCH DATE OCT 5 1964 FLIGHT TIME 258.00 ARRIVAL DATE JUN 20 1965

HELIOCENTRIC CONIC DISTANCE 622.326 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 32.879 GAL -8.15 AZL 91.10 HCA 203.70 SMA 191.40 ECC .25856 INC 1.0988 V1 29.788
RP 236.98 LAP .44 LOP 215.48 VP 20.656 GAP 5.95 AZP 88.99 TAL 318.61 TAP 162.31 RCA 141.91 APO 240.89 V2 23.191
RC 189.421 GL -7.12 GP 11.70 ZAL 145.81 ZAP 145.91 ETS 160.86 ZAE 165.28 ETE 57.35 ZAC 99.82 ETC 255.92 CLP 147.75

PLANETOCENTRIC CONIC

C3 25.316 VHL 5.032 DLA 1.86 RAL 157.25 RAD 6568.0 VEL 12.112 PTH 2.17 VHP 4.954 DPA 10.55 RAP 188.45 ECC 1.4167

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 39 9	2329.19	-22.17	48.87	22.94	108.08	21 17 58	1729.2	-19.50	41.22
90.00	9 8 40	4858.02	19.55	210.40	21.94	69.10	10 29 38	4258.0	16.54	203.02
100.00	22 1 21	2064.02	-23.30	28.96	22.53	109.27	22 35 45	1464.0	-20.46	21.32
100.00	10 29 8	4598.42	20.66	190.84	21.47	67.90	11 45 47	3998.4	17.48	183.49
110.00	23 11 35	1844.21	-26.32	11.00	21.26	112.64	23 42 19	1244.2	-23.02	3.40
110.00	11 35 24	4391.00	23.62	173.69	20.07	64.54	12 48 35	3791.0	20.00	166.43

DIFFERENTIAL CORRECTIONS
TDE 1.5740 TRA-3.7173 TC3 1.3842 BAU .5308
RDE .7010 RRA -.9751 RC3 .7372 FAU .21693
FDE-4.2932 FRA 9.9613 FC3-7.4179 BSP 17505
BDE 1.7231 BRA 3.8431 BC3 1.5683 FSP 3994

MID-COURSE EXECUTION ACCURACY
SGT 4805.1 SGR 1556.2 SG3 1247.3
RRT .9587 RRF -.9814 RTF -.9691
SGB 5050.8 R23 -.1585 R13 -.9736
SG1 5033.1 SG2 422.4 THA 17.38

ORBIT DETERMINATION ACCURACY
ST 2197.4 SR 865.3 SS 2551.7
CRT .9756 CRS .9774 CST .9998
LSA 3472.0 MSA 180.6 SSA 31.0
EL1 2355.0 EL2 177.1 ALF 21.14

LAUNCH DATE OCT 5 1964 FLIGHT TIME 260.00 ARRIVAL DATE JUN 22 1965

HELIOCENTRIC CONIC DISTANCE 625.974 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 32.858 GAL -8.07 AZL 90.99 HCA 204.66 SMA 191.02 ECC .25657 INC .9856 V1 29.788
RP 236.64 LAP .41 LOP 216.45 VP 20.662 GAP 5.54 AZP 89.10 TAL 318.76 TAP 163.42 RCA 142.01 APO 240.03 V2 23.226
RC 191.655 GL -6.45 GP 11.52 ZAL 145.75 ZAP 145.10 ETS 161.69 ZAE 165.85 ETE 60.22 ZAC 99.65 ETC 255.92 CLP 146.83

PLANETOCENTRIC CONIC

C3 24.774 VHL 4.977 DLA 2.55 RAL 157.33 RAD 6568.0 VEL 12.089 PTH 2.16 VHP 4.848 DPA 10.38 RAP 188.40 ECC 1.4077

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 34 21	2345.23	-22.51	49.93	22.87	107.65	21 13 27	1745.2	-19.89	42.24
90.00	9 14 7	4831.29	18.90	208.71	21.51	68.51	10 34 38	4231.3	15.81	201.40
100.00	21 56 53	2079.03	-23.63	29.95	22.46	108.86	22 31 32	1479.0	-20.84	22.27
100.00	10 34 16	4572.73	19.99	189.23	21.04	67.30	11 50 29	3972.7	16.75	181.94
110.00	23 7 51	1856.90	-26.65	11.84	21.21	112.24	23 38 48	1256.9	-23.40	4.19
110.00	11 39 47	4367.62	22.93	172.23	19.61	63.92	12 52 35	3767.6	19.23	165.04

DIFFERENTIAL CORRECTIONS
TDE 1.5564 TRA-3.6270 TC3 1.4305 BAU .5360
RDE .6993 RRA -.9601 RC3 .7568 FAU .22616
FDE-4.4078 FRA10.3047 FC3-7.9031 BSP 17003
BDE 1.7063 BRA 3.7519 BC3 1.6184 FSP 4152

MID-COURSE EXECUTION ACCURACY
SGT 4764.9 SGR 1561.9 SG3 1306.4
RRT .9592 RRF -.9801 RTF -.9704
SGB 5014.3 R23 -.1484 R13 -.9748
SG1 4996.6 SG2 421.1 THA 17.58

ORBIT DETERMINATION ACCURACY
ST 2187.2 SR 871.0 SS 2598.5
CRT .9760 CRS .9756 CST .9998
LSA 3501.4 MSA 184.7 SSA 30.9
EL1 2347.6 EL2 176.7 ALF 21.37

LAUNCH DATE OCT 5 1964 FLIGHT TIME 262.00 ARRIVAL DATE JUN 24 1965

HELIOCENTRIC CONIC DISTANCE 629.629 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 32.838 GAL -7.99 AZL 90.88 HCA 205.63 SMA 190.66 ECC .25467 INC .8799 V1 29.788
RP 236.29 LAP .38 LOP 217.42 VP 20.670 GAP 5.14 AZP 89.21 TAL 318.90 TAP 164.54 RCA 142.10 APO 239.21 V2 23.261
RC 193.877 GL -5.82 GP 11.37 ZAL 145.69 ZAP 144.24 ETS 162.47 ZAE 166.39 ETE 63.50 ZAC 99.50 ETC 255.93 CLP 145.87

PLANETOCENTRIC CONIC

C3 24.269 VHL 4.926 DLA 3.20 RAL 157.41 RAD 6568.0 VEL 12.068 PTH 2.16 VHP 4.745 DPA 10.23 RAP 188.35 ECC 1.3994

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 29 48	2360.50	-22.82	50.94	22.80	107.23	21 9 8	1760.5	-20.25	43.22
90.00	9 19 18	4805.90	18.26	207.12	21.11	67.97	10 39 24	4205.9	15.11	199.86
100.00	21 52 38	2093.31	-23.94	30.90	22.40	108.45	22 27 31	1493.3	-21.20	23.18
100.00	10 39 9	4548.32	19.34	187.70	20.63	66.76	11 54 57	3948.3	16.03	180.48
110.00	23 4 18	1868.98	-26.96	12.64	21.18	111.86	23 35 27	1269.0	-23.75	4.95
110.00	11 43 58	4345.42	22.26	170.86	19.19	63.36	12 56 23	3745.4	18.50	163.74

DIFFERENTIAL CORRECTIONS
TDE 1.5015 TRA-3.5710 TC3 1.4119 BAU .5218
RDE .6943 RRA -.9527 RC3 .7698 FAU .23378
FDE-4.4861 FRA10.7081 FC3-8.3392 BSP 17351
BDE 1.6543 BRA 3.6959 BC3 1.6081 FSP 4406

MID-COURSE EXECUTION ACCURACY
SGT 4721.0 SGR 1568.1 SG3 1367.0
RRT .9566 RRF -.9790 RTF -.9697
SGB 4974.6 R23 -.1490 R13 -.9742
SG1 4955.5 SG2 435.4 THA 17.77

ORBIT DETERMINATION ACCURACY
ST 2146.8 SR 873.8 SS 2634.1
CRT .9738 CRS .9734 CST .9998
LSA 3503.1 MSA 193.6 SSA 31.4
EL1 2310.4 EL2 184.6 ALF 21.77

LAUNCH DATE OCT 5 1964 FLIGHT TIME 264.00 ARRIVAL DATE JUN 26 1965

DISTANCE 633.301

HELIOCENTRIC CONIC

RL 149.58 LAL -.00 LOL 11.79 VL 32.819 GAL -7.92 AZL 90.78 HCA 206.60 SMA 190.32 ECC .25285 INC .7812 V1 29.788
RP 235.94 LAP .35 LOP 218.39 VP 20.679 GAP 4.75 AZP 89.30 TAL 319.05 TAP 165.65 RCA 142.20 APO 238.44 V2 23.297
RC 196.086 GL -5.21 GP 11.23 ZAL 145.61 ZAP 143.35 ETS 163.21 ZAE 166.88 ETE 67.24 ZAC 99.36 ETC 255.93 CLP 144.88

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 23.795 VHL 4.878 DLA 3.82 RAL 157.48 RAD 6568.0 VEL 12.049 PTH 2.15 VHP 4.645 DPA 10.11 RAP 188.27 ECC 1.3916

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 25 25	2375.09	-23.11	51.91	22.73	106.83	21 5 0	1775.1	-20.59	44.15
90.00	9 24 14	4781.64	17.63	205.62	20.75	67.48	10 43 56	4181.6	14.42	198.41
100.00	21 48 33	2106.95	-24.24	31.81	22.35	108.06	22 23 40	1506.9	-21.54	24.05
100.00	10 43 47	4525.02	18.71	186.26	20.26	66.26	11 59 12	3925.0	15.34	179.09
110.00	23 0 54	1880.51	-27.25	13.41	21.14	111.49	23 32 14	1280.5	-24.08	5.68
110.00	11 47 56	4324.23	21.60	169.56	18.79	62.84	13 0 0	3724.2	17.79	162.50

DIFFERENTIAL CORRECTIONS

TDE 1.4666 TRA-3.4918 TC3 1.4231 BAU .5175
RDE .6929 RRA -.9447 RC3 .7882 FAU .24281
FDE-4.5911 FRA11.0980 FC3-8.8340 BSP 17189
BDE 1.6221 BRA 3.6173 BC3 1.6268 FSP 4618

MID-COURSE EXECUTION ACCURACY

SGT 4668.1 SGR 1578.1 SG3 1430.3
RRT .9558 RRF -.9778 RTF -.9700
SGB 4927.6 R23 -.1440 R13 -.9746
SG1 4907.8 SG2 441.5 THA 18.06

ORBIT DETERMINATION ACCURACY

ST 2118.9 SR 879.9 SS 2677.1
CRT .9731 CRS .9714 CST .9998
LSA 3520.0 MSA 200.5 SSA 31.5
EL1 2286.7 EL2 187.7 ALF 22.16

LAUNCH DATE OCT 5 1964 FLIGHT TIME 266.00 ARRIVAL DATE JUN 28 1965

DISTANCE 636.986

HELIOCENTRIC CONIC

RL 149.58 LAL -.00 LOL 11.79 VL 32.801 GAL -7.85 AZL 90.69 HCA 207.58 SMA 189.99 ECC .25110 INC .6887 V1 29.788
RP 235.59 LAP .32 LOP 219.36 VP 20.691 GAP 4.35 AZP 89.39 TAL 319.18 TAP 166.76 RCA 142.28 APO 237.69 V2 23.333
RC 198.280 GL -4.64 GP 11.10 ZAL 145.52 ZAP 142.41 ETS 163.91 ZAE 167.31 ETE 71.45 ZAC 99.23 ETC 255.94 CLP 143.86

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 23.352 VHL 4.832 DLA 4.42 RAL 157.54 RAD 6567.9 VEL 12.030 PTH 2.15 VHP 4.547 DPA 10.02 RAP 188.18 ECC 1.3843

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 21 12	2389.07	-23.38	52.85	22.67	106.44	21 1 1	1789.1	-20.91	45.05
90.00	9 28 58	4758.46	17.02	204.19	20.41	67.02	10 48 16	4158.5	13.76	197.03
100.00	21 44 37	2120.02	-24.51	32.68	22.29	107.67	22 19 57	1520.0	-21.86	24.89
100.00	10 48 14	4502.75	18.10	184.90	19.91	65.79	12 3 16	3902.7	14.68	177.77
110.00	22 57 37	1891.54	-27.52	14.16	21.11	111.12	23 29 9	1291.5	-24.40	6.38
110.00	11 51 43	4303.99	20.97	168.33	18.43	62.36	13 3 27	3704.0	17.10	161.34

DIFFERENTIAL CORRECTIONS

TDE 1.4341 TRA-3.4070 TC3 1.4337 BAU .5138
RDE .6930 RRA -.9381 RC3 .8082 FAU .25236
FDE-4.7057 FRA11.4953 FC3-9.3561 BSP 16929
BDE 1.5928 BRA 3.5338 BC3 1.6458 FSP 4827

MID-COURSE EXECUTION ACCURACY

SGT 4607.3 SGR 1590.5 SG3 1495.9
RRT .9552 RRF -.9767 RTF -.9703
SGB 4874.1 R23 -.1388 R13 -.9750
SG1 4853.6 SG2 447.1 THA 18.41

ORBIT DETERMINATION ACCURACY

ST 2090.6 SR 887.5 SS 2722.4
CRT .9728 CRS .9696 CST .9997
LSA 3539.2 MSA 207.6 SSA 31.3
EL1 2263.2 EL2 189.9 ALF 22.61

LAUNCH DATE OCT 5 1964 FLIGHT TIME 268.00 ARRIVAL DATE JUN 30 1965

DISTANCE 640.683

HELIOCENTRIC CONIC

RL 149.58 LAL -.00 LOL 11.79 VL 32.784 GAL -7.79 AZL 90.60 HCA 208.55 SMA 189.68 ECC .24943 INC .6017 V1 29.788
RP 235.24 LAP .29 LOP 220.34 VP 20.704 GAP 3.97 AZP 89.47 TAL 319.31 TAP 167.87 RCA 142.37 APO 236.99 V2 23.369
RC 200.460 GL -4.09 GP 10.99 ZAL 145.43 ZAP 141.44 ETS 164.58 ZAE 167.66 ETE 76.14 ZAC 99.11 ETC 255.95 CLP 142.81

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 22.936 VHL 4.789 DLA 4.99 RAL 157.60 RAD 6567.9 VEL 12.013 PTH 2.14 VHP 4.452 DPA 9.95 RAP 188.06 ECC 1.3775

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 17 10	2402.51	-23.64	53.75	22.61	106.06	20 57 12	1802.5	-21.21	45.92
90.00	9 33 29	4736.27	16.42	202.84	20.09	66.60	10 52 26	4136.3	13.12	195.72
100.00	21 40 51	2132.57	-24.77	33.53	22.24	107.30	22 16 24	1532.6	-22.16	25.70
100.00	10 52 29	4481.45	17.50	183.60	19.59	65.37	12 7 11	3881.4	14.03	176.52
110.00	22 54 29	1902.14	-27.78	14.87	21.08	110.77	23 26 11	1302.1	-24.70	7.06
110.00	11 55 21	4284.65	20.35	167.17	18.10	61.93	13 6 45	3684.6	16.44	160.23

DIFFERENTIAL CORRECTIONS

TDE 1.3963 TRA-3.3239 TC3 1.4314 BAU .5071
RDE .6932 RRA -.9341 RC3 .8283 FAU .26200
FDE-4.8184 FRA11.9136 FC3-9.8892 BSP 16776
BDE 1.5589 BRA 3.4527 BC3 1.6538 FSP 5063

MID-COURSE EXECUTION ACCURACY

SGT 4539.2 SGR 1604.9 SG3 1563.9
RRT .9542 RRF -.9757 RTF -.9703
SGB 4814.5 R23 -.1352 R13 -.9752
SG1 4793.0 SG2 454.9 THA 18.82

ORBIT DETERMINATION ACCURACY

ST 2055.8 SR 895.4 SS 2766.8
CRT .9722 CRS .9677 CST .9996
LSA 3554.7 MSA 215.4 SSA 31.3
EL1 2234.0 EL2 193.0 ALF 23.13

LAUNCH DATE OCT 5 1964 FLIGHT TIME 270.00 ARRIVAL DATE JUL 2 1965

DISTANCE 644.392

HELIOCENTRIC CONIC

RL 149.58 LAL -.00 LOL 11.79 VL 32.767 GAL -7.72 AZL 90.52 HCA 209.53 SMA 189.38 ECC .24783 INC .5197 V1 29.788
RP 234.89 LAP .26 LOP 221.32 VP 20.718 GAP 3.58 AZP 89.55 TAL 319.44 TAP 168.97 RCA 142.45 APO 236.32 V2 23.405
RC 202.623 GL -3.56 GP 10.90 ZAL 145.34 ZAP 140.43 ETS 165.22 ZAE 167.93 ETE 81.29 ZAC 98.99 ETC 255.96 CLP 141.72

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 22.548 VHL 4.748 DLA 5.53 RAL 157.66 RAD 6567.9 VEL 11.997 PTH 2.14 VHP 4.360 DPA 9.90 RAP 187.93 ECC 1.3711

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 13 16	2415.46	-23.88	54.62	22.56	105.68	20 53 32	1815.5	-21.50	46.76
90.00	9 37 51	4715.02	15.85	201.54	19.80	66.22	10 56 26	4115.0	12.50	194.47
100.00	21 37 14	2144.66	-25.01	34.34	22.20	106.93	22 12 58	1544.7	-22.45	26.48
100.00	10 56 34	4461.04	16.91	182.36	19.30	64.98	12 10 55	3861.0	13.40	175.33
110.00	22 51 28	1912.34	-28.02	15.57	21.06	110.43	23 23 20	1312.3	-24.99	7.71
110.00	11 58 50	4266.13	19.76	166.06	17.79	61.52	13 9 56	3666.1	15.80	159.18

DIFFERENTIAL CORRECTIONS

TDE 1.3590 TRA-3.2363 TC3 1.4257 BAU .5003
RDE .6944 RRA -.9318 RC3 .8496 FAU .27205
FDE-4.9365 FRA12.3437 FC-10.4454 BSP 16551
BDE 1.5262 BRA 3.3678 BC3 1.6597 FSP 5300

MID-COURSE EXECUTION ACCURACY

SGT 4462.6 SGR 1621.4 SG3 1634.3
RRT .9533 RRF -.9748 RTF -.9703
SGB 4748.0 R23 -.1315 R13 -.9754
SG1 4725.5 SG2 462.3 THA 19.30

ORBIT DETERMINATION ACCURACY

ST 2018.9 SR 904.2 SS 2812.1
CRT .9718 CRS .9659 CST .9995
LSA 3570.8 MSA 223.4 SSA 31.1
EL1 2203.5 EL2 195.5 ALF 23.72

LAUNCH DATE OCT 5 1964 FLIGHT TIME 272.00 ARRIVAL DATE JUL 4 1965

HELIOCENTRIC CONIC DISTANCE 648.113 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 32.751 GAL -7.66 AZL 90.44 HCA 210.52 SMA 189.10 ECC .24631 INC .4428 V1 29.788
RP 234.53 LAP .22 LOP 222.30 VP 20.735 GAP 3.21 AZP 89.62 TAL 319.56 TAP 170.07 RCA 142.52 APO 235.67 V2 23.442
RC 204.770 GL -3.05 GP 10.81 ZAL 145.24 ZAP 139.38 ETS 165.83 ZAE 168.09 ETE 86.85 ZAC 98.88 ETC 255.97 CLP 140.60

PLANETOCENTRIC CONIC

C3 22.184 VHL 4.710 DLA 6.05 RAL 157.72 RAD 6567.9 VEL 11,982 PTH 2.14 VHP 4.271 DPA 9.88 RAP 187.77 ECC 1.3651

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 9 31	2427.96	-24.11	55.47	22.52	105.32	20 49 59	1828.0	-21.77	47.57
90.00	9 42 3	4694.63	15.28	200.31	19.54	65.87	11 0 17	4094.6	11.89	193.27
100.00	21 33 44	2156.33	-25.24	35.14	22.17	106.58	22 9 41	1556.3	-22.72	27.24
100.00	11 0 31	4441.48	16.35	181.19	19.03	64.62	12 14 32	3841.5	12.80	174.20
110.00	22 48 33	1922.19	-28.26	16.24	21.05	110.09	23 20 35	1322.2	-25.26	8.35
110.00	12 2 11	4248.39	19.18	165.01	17.50	61.15	13 12 59	3648.4	15.18	158.17

DIFFERENTIAL CORRECTIONS
TDE 1.3201 TRA-3.1460 TC3 1.4114 BAU .4919
RDE .6962 RRA -.9312 RC3 .8713 FAU .28228
FDE-5.0572 FRA12.7891 FC-11.0160 BSP 16320
BDE 1.4924 BRA 3.2809 BC3 1.6587 FSP 5551

MID-COURSE EXECUTION ACCURACY
SGT 4376.9 SGR 1639.6 SG3 1706.9
RRT .9524 RRF -.9739 RTF -.9701
SGB 4673.9 R23 -.1285 R13 -.9755
SG1 4650.2 SG2 470.4 THA 19.85

ORBIT DETERMINATION ACCURACY
ST 1978.2 SR 913.6 SS 2857.6
CRT .9714 CRS .9642 CST .9994
LSA 3586.0 MSA 231.6 SSA 30.9
EL1 2170.0 EL2 197.8 ALF 24.38

LAUNCH DATE OCT 5 1964 FLIGHT TIME 274.00 ARRIVAL DATE JUL 6 1965

HELIOCENTRIC CONIC DISTANCE 651.846 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 32.736 GAL -7.61 AZL 90.37 HCA 211.50 SMA 188.83 ECC .24486 INC .3697 V1 29.788
RP 234.17 LAP .19 LOP 223.29 VP 20.753 GAP 2.84 AZP 89.68 TAL 319.67 TAP 171.17 RCA 142.59 APO 235.07 V2 23.479
RC 206.900 GL -2.57 GP 10.74 ZAL 145.14 ZAP 138.29 ETS 166.42 ZAE 168.13 ETE 92.72 ZAC 98.77 ETC 255.99 CLP 139.44

PLANETOCENTRIC CONIC

C3 21.844 VHL 4.674 DLA 6.55 RAL 157.77 RAD 6567.9 VEL 11.968 PTH 2.13 VHP 4.184 DPA 9.88 RAP 187.58 ECC 1.3595

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 5 55	2440.06	-24.32	56.29	22.49	104.96	20 46 35	1840.1	-22.03	48.37
90.00	9 46 6	4675.05	14.73	199.14	19.30	65.54	11 4 1	4075.0	11.31	192.13
100.00	21 30 22	2167.63	-25.45	35.90	22.14	106.23	22 6 30	1567.6	-22.98	27.98
100.00	11 4 19	4422.71	15.80	180.07	18.78	64.29	12 18 2	3822.7	12.21	173.11
110.00	22 45 45	1931.71	-28.48	16.89	21.04	109.76	23 17 57	1331.7	-25.52	8.96
110.00	12 5 25	4231.39	18.62	164.01	17.25	60.80	13 15 57	3631.4	14.58	157.22

DIFFERENTIAL CORRECTIONS
TDE 1.2807 TRA-3.0517 TC3 1.3923 BAU .4832
RDE .6987 RRA -.9320 RC3 .8942 FAU .29294
FDE-5.1826 FRA13.2479 FC-11.6101 BSP 16053
BDE 1.4589 BRA 3.1908 BC3 1.6547 FSP 5808

MID-COURSE EXECUTION ACCURACY
SGT 4282.4 SGR 1659.8 SG3 1782.0
RRT .9515 RRF -.9731 RTF -.9698
SGB 4592.8 R23 -.1256 R13 -.9755
SG1 4567.8 SG2 478.6 THA 20.48

ORBIT DETERMINATION ACCURACY
ST 1934.6 SR 923.7 SS 2903.9
CRT .9711 CRS .9625 CST .9992
LSA 3601.4 MSA 240.0 SSA 30.7
EL1 2134.5 EL2 199.7 ALF 25.11

LAUNCH DATE OCT 5 1964 FLIGHT TIME 276.00 ARRIVAL DATE JUL 8 1965

HELIOCENTRIC CONIC DISTANCE 655.589 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 32.721 GAL -7.55 AZL 90.30 HCA 212.49 SMA 188.57 ECC .24348 INC .3003 V1 29.788
RP 233.80 LAP .16 LOP 224.28 VP 20.772 GAP 2.47 AZP 89.75 TAL 319.78 TAP 172.27 RCA 142.66 APO 234.49 V2 23.517
RC 209.011 GL -2.10 GP 10.67 ZAL 145.04 ZAP 137.15 ETS 166.99 ZAE 168.03 ETE 98.78 ZAC 98.66 ETC 256.00 CLP 138.25

PLANETOCENTRIC CONIC

C3 21.526 VHL 4.640 DLA 7.03 RAL 157.83 RAD 6567.9 VEL 11.954 PTH 2.13 VHP 4.100 DPA 9.91 RAP 187.37 ECC 1.3543

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 2 26	2451.79	-24.53	57.09	22.46	104.61	20 43 17	1851.8	-22.28	49.14
90.00	9 50 1	4656.25	14.20	198.01	19.08	65.24	11 7 37	4056.2	10.74	191.04
100.00	21 27 8	2178.58	-25.66	36.65	22.12	105.88	22 3 27	1578.6	-23.23	28.69
100.00	11 7 59	4404.69	15.26	179.00	18.56	63.98	12 21 24	3804.7	11.64	172.08
110.00	22 43 4	1940.94	-28.69	17.53	21.04	109.44	23 15 25	1340.9	-25.77	9.57
110.00	12 8 33	4215.09	18.07	163.06	17.01	60.48	13 18 48	3615.1	14.00	156.31

DIFFERENTIAL CORRECTIONS
TDE 1.2399 TRA-2.9535 TC3 1.3649 BAU .4733
RDE .7017 RRA -.9342 RC3 .9179 FAU .30394
FDE-5.3124 FRA13.7188 FC-12.2239 BSP 15773
BDE 1.4247 BRA 3.0977 BC3 1.6448 FSP 6074

MID-COURSE EXECUTION ACCURACY
SGT 4177.8 SGR 1681.5 SG3 1859.3
RRT .9505 RRF -.9724 RTF -.9693
SGB 4503.5 R23 -.1235 R13 -.9754
SG1 4477.0 SG2 487.6 THA 21.20

ORBIT DETERMINATION ACCURACY
ST 1887.1 SR 934.5 SS 2950.7
CRT .9710 CRS .9609 CST .9990
LSA 3616.4 MSA 248.5 SSA 30.5
EL1 2096.2 EL2 201.2 ALF 25.94

LAUNCH DATE OCT 5 1964 FLIGHT TIME 278.00 ARRIVAL DATE JUL 10 1965

HELIOCENTRIC CONIC DISTANCE 659.344 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 32.707 GAL -7.50 AZL 90.23 HCA 213.49 SMA 188.33 ECC .24217 INC .2334 V1 29.788
RP 233.44 LAP .13 LOP 225.27 VP 20.793 GAP 2.11 AZP 89.80 TAL 319.88 TAP 173.37 RCA 142.72 APO 233.94 V2 23.555
RC 211.104 GL -1.65 GP 10.61 ZAL 144.94 ZAP 135.98 ETS 167.53 ZAE 167.78 ETE 104.88 ZAC 98.55 ETC 256.02 CLP 137.02

PLANETOCENTRIC CONIC

C3 21.230 VHL 4.608 DLA 7.50 RAL 157.88 RAD 6567.9 VEL 11.942 PTH 2.13 VHP 4.019 DPA 9.95 RAP 187.14 ECC 1.3494

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 59 4	2463.18	-24.72	57.87	22.45	104.27	20 40 7	1863.2	-22.52	49.89
90.00	9 53 49	4638.18	13.68	196.94	18.88	64.96	11 11 7	4038.2	10.20	190.00
100.00	21 24 1	2189.21	-25.86	37.38	22.11	105.55	22 0 30	1589.2	-23.47	29.39
100.00	11 11 33	4387.38	14.74	177.97	18.35	63.70	12 24 41	3787.4	11.09	171.09
110.00	22 40 29	1949.90	-28.89	18.15	21.05	109.12	23 12 59	1349.9	-26.01	10.15
110.00	12 11 35	4199.45	17.55	162.16	16.80	60.18	13 21 34	3599.4	13.45	155.44

DIFFERENTIAL CORRECTIONS
TDE 1.1989 TRA-2.8507 TC3 1.3316 BAU .4630
RDE .7055 RRA -.9376 RC3 .9425 FAU .31534
FDE-5.4481 FRA14.2019 FC-12.8596 BSP 15437
BDE 1.3910 BRA 3.0009 BC3 1.6314 FSP 6343

MID-COURSE EXECUTION ACCURACY
SGT 4063.5 SGR 1705.0 SG3 1938.9
RRT .9495 RRF -.9718 RTF -.9686
SGB 4406.7 R23 -.1215 R13 -.9752
SG1 4378.7 SG2 496.5 THA 22.02

ORBIT DETERMINATION ACCURACY
ST 1836.9 SR 946.0 SS 2998.5
CRT .9710 CRS .9595 CST .9988
LSA 3632.3 MSA 257.1 SSA 30.2
EL1 2056.3 EL2 202.0 ALF 26.85

LAUNCH DATE OCT 5 1964 FLIGHT TIME 280.00 ARRIVAL DATE JUL 12 1965

HELIOCENTRIC CONIC DISTANCE 663.109 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 32.694 GAL -7.45 AZL 90.17 HCA 214.48 SMA 188.10 ECC .24092 INC .1717 V1 29.788
RP 233.07 LAP .10 LOP 226.27 VP 20.816 GAP 1.75 AZP 89.86 TAL 319.97 TAP 174.46 RCA 142.78 APO 233.41 V2 23.593
RC 213.179 GL -1.22 GP 10.56 ZAL 144.84 ZAP 134.77 ETS 168.06 ZAE 167.39 ETE 110.87 ZAC 98.45 ETC 256.04 CLP 135.76

PLANETOCENTRIC CONIC

C3 20.954 VHL 4.577 DLA 7.94 RAL 157.94 RAD 6567.9 VEL 11.930 PTH 2.12 VHP 3.940 DPA 10.02 RAP 186.87 ECC 1.3448

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 55 50	2474.25	-24.91	58.62	22.44	103.93	20 37 4	1874.2	-22.75	50.62
90.00	9 57 30	4620.82	13.18	195.91	18.70	64.71	11 14 31	4020.8	9.67	189.00
100.00	21 21 0	2199.54	-26.04	38.09	22.11	105.22	21 57 40	1599.5	-23.70	30.08
100.00	11 15 1	4370.76	14.24	177.00	18.17	63.44	12 27 51	3770.8	10.56	170.14
110.00	22 37 59	1958.62	-29.08	16.75	21.06	108.81	23 10 38	1358.6	-26.24	10.72
110.00	12 14 31	4184.45	17.04	161.29	16.61	59.91	13 24 15	3584.4	12.91	154.61

DIFFERENTIAL CORRECTIONS
TDE 1.1553 TRA-2.7445 TC3 1.2878 BAU .4512
RDE .7094 RRA -.9425 RC3 .9671 FAU .32682
FDE-5.5820 FRA14.7023 FC-13.5033 BSP 15102
BDE 1.3557 BRA 2.9018 BC3 1.6105 FSP 6630

MID-COURSE EXECUTION ACCURACY
SGT 3938.4 SGR 1729.5 SG3 2020.5
RRT .9483 RRF -.9712 RTF -.9677
SGB 4301.4 R23 -.1201 R13 -.9749
SG1 4271.6 SG2 506.1 THA 22.95

ORBIT DETERMINATION ACCURACY
ST 1781.8 SR 957.5 SS 3045.2
CRT .9711 CRS .9580 CST .9985
LSA 3646.1 MSA 265.9 SSA 29.9
EL1 2012.7 EL2 202.5 ALF 27.86

LAUNCH DATE OCT 5 1964 FLIGHT TIME 282.00 ARRIVAL DATE JUL 14 1965

HELIOCENTRIC CONIC DISTANCE 666.885 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 32.681 GAL -7.41 AZL 90.11 HCA 215.48 SMA 187.88 ECC .23974 INC .1121 V1 29.788
RP 232.70 LAP .07 LOP 227.27 VP 20.839 GAP 1.40 AZP 89.91 TAL 320.06 TAP 175.54 RCA 142.84 APO 232.92 V2 23.631
RC 215.236 GL -.80 GP 10.52 ZAL 144.75 ZAP 133.51 ETS 168.57 ZAE 166.84 ETE 116.62 ZAC 98.34 ETC 256.06 CLP 134.45

PLANETOCENTRIC CONIC

C3 20.697 VHL 4.549 DLA 8.37 RAL 158.00 RAD 6567.8 VEL 11.920 PTH 2.12 VHP 3.864 DPA 10.11 RAP 186.57 ECC 1.3406

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 52 43	2485.03	-25.08	59.37	22.45	103.60	20 34 8	1885.0	-22.96	51.34
90.00	10 1 5	4604.13	12.69	194.93	18.55	64.47	11 17 49	4004.1	9.15	188.04
100.00	21 18 7	2209.60	-26.22	38.79	22.12	104.89	21 54 56	1609.6	-23.92	30.74
100.00	11 18 22	4354.79	13.75	176.06	18.02	63.19	12 30 57	3754.8	10.04	169.23
110.00	22 35 36	1967.10	-29.27	19.34	21.09	108.51	23 8 23	1367.1	-26.46	11.28
110.00	12 17 22	4170.06	16.54	160.47	16.44	59.65	13 26 52	3570.1	12.39	153.82

DIFFERENTIAL CORRECTIONS
TDE 1.1109 TRA-2.6336 TC3 1.2362 BAU .4386
RDE .7139 RRA -.9484 RC3 .9924 FAU .33866
FDE-5.7216 FRA15.2129 FC-14.1658 BSP 14736
BDE 1.3205 BRA 2.7991 BC3 1.5852 FSP 6922

MID-COURSE EXECUTION ACCURACY
SGT 3802.8 SGR 1755.4 SG3 2104.1
RRT .9469 RRF -.9707 RTF -.9664
SGB 4188.4 R23 -.1194 R13 -.9745
SG1 4156.5 SG2 516.3 THA 24.00

ORBIT DETERMINATION ACCURACY
ST 1723.4 SR 969.7 SS 3092.8
CRT .9713 CRS .9566 CST .9982
LSA 3660.6 MSA 274.7 SSA 29.7
EL1 1967.1 EL2 202.2 ALF 28.99

LAUNCH DATE OCT 5 1964 FLIGHT TIME 284.00 ARRIVAL DATE JUL 16 1965

HELIOCENTRIC CONIC DISTANCE 670.670 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 32.669 GAL -7.37 AZL 90.06 HCA 216.48 SMA 187.67 ECC .23862 INC .0523 V1 29.788
RP 232.32 LAP .03 LOP 228.27 VP 20.864 GAP 1.06 AZP 89.96 TAL 320.14 TAP 176.62 RCA 142.89 APO 232.45 V2 23.670
RC 217.275 GL -.39 GP 10.48 ZAL 144.66 ZAP 132.22 ETS 169.07 ZAE 166.14 ETE 122.03 ZAC 98.23 ETC 256.08 CLP 133.10

PLANETOCENTRIC CONIC

C3 20.459 VHL 4.523 DLA 8.78 RAL 158.06 RAD 6567.8 VEL 11.910 PTH 2.12 VHP 3.791 DPA 10.22 RAP 186.25 ECC 1.3367

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 49 43	2495.53	-25.25	60.09	22.46	103.27	20 31 18	1895.5	-23.17	52.04
90.00	10 4 34	4588.09	12.22	193.99	18.41	64.26	11 21 2	3988.1	8.66	187.12
100.00	21 15 19	2219.40	-26.39	39.47	22.15	104.57	21 52 19	1619.4	-24.13	31.40
100.00	11 21 38	4339.45	13.28	175.17	17.88	62.97	12 33 58	3739.5	9.55	168.36
110.00	22 33 18	1975.36	-29.44	19.92	21.13	108.20	23 6 14	1375.4	-26.67	11.83
110.00	12 20 9	4156.25	16.07	159.68	16.29	59.41	13 29 25	3556.3	11.89	153.07

DIFFERENTIAL CORRECTIONS
TDE 1.0665 TRA-2.5164 TC3 1.1778 BAU .4259
RDE .7190 RRA -.9550 RC3 1.0187 FAU .35092
FDE-5.8678 FRA15.7300 FC-14.8494 BSP 14311
BDE 1.2862 BRA 2.6915 BC3 1.5572 FSP 7214

MID-COURSE EXECUTION ACCURACY
SGT 3655.6 SGR 1782.4 SG3 2189.5
RRT .9454 RRF -.9703 RTF -.9649
SGB 4067.0 R23 -.1188 R13 -.9740
SG1 4032.8 SG2 526.4 THA 25.21

ORBIT DETERMINATION ACCURACY
ST 1662.0 SR 982.4 SS 3141.3
CRT .9717 CRS .9553 CST .9979
LSA 3676.1 MSA 283.4 SSA 29.4
EL1 1920.2 EL2 200.8 ALF 30.24

LAUNCH DATE OCT 5 1964 FLIGHT TIME 286.00 ARRIVAL DATE JUL 18 1965

HELIOCENTRIC CONIC DISTANCE 674.466 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 32.658 GAL -7.33 AZL 90.00 HCA 217.49 SMA 187.47 ECC .23756 INC .0000 V1 29.788
RP 231.95 LAP .00 LOP 229.28 VP 20.891 GAP .72 AZP 90.00 TAL 320.21 TAP 177.70 RCA 142.94 APO 232.01 V2 23.709
RC 219.295 GL -.00 GP 10.44 ZAL 144.58 ZAP 130.88 ETS 169.56 ZAE 165.31 ETE 127.04 ZAC 98.11 ETC 256.11 CLP 131.72

PLANETOCENTRIC CONIC

C3 20.239 VHL 4.499 DLA 9.18 RAL 158.12 RAD 6567.8 VEL 11.900 PTH 2.11 VHP 3.720 DPA 10.35 RAP 185.89 ECC 1.3331

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 46 49	2505.78	-25.40	60.80	22.49	102.95	20 28 35	1905.8	-23.37	52.72
90.00	10 7 58	4572.68	11.76	193.09	18.30	64.06	11 24 11	3972.7	8.18	186.24
100.00	21 12 39	2228.96	-26.55	40.13	22.18	104.26	21 49 48	1629.0	-24.33	32.04
100.00	11 24 49	4324.73	12.82	174.31	17.76	62.76	12 36 54	3724.7	9.07	167.53
110.00	22 31 7	1983.43	-29.61	20.49	21.18	107.91	23 4 10	1383.4	-26.88	12.37
110.00	12 22 51	4143.03	15.61	158.93	16.17	59.19	13 31 54	3543.0	11.41	152.35

DIFFERENTIAL CORRECTIONS
TDE 1.0197 TRA-2.3950 TC3 1.1085 BAU .4122
RDE .7242 RRA -.9627 RC3 1.0448 FAU .36323
FDE-6.0128 FRA16.2612 FC-15.5375 BSP 13875
BDE 1.2507 BRA 2.5813 BC3 1.5233 FSP 7519

MID-COURSE EXECUTION ACCURACY
SGT 3496.9 SGR 1810.2 SG3 2276.4
RRT .9436 RRF -.9699 RTF -.9628
SGB 3937.7 R23 -.1189 R13 -.9733
SG1 3900.8 SG2 537.5 THA 26.58

ORBIT DETERMINATION ACCURACY
ST 1595.9 SR 995.2 SS 3188.7
CRT .9723 CRS .9541 CST .9974
LSA 3690.4 MSA 292.3 SSA 29.1
EL1 1870.2 EL2 198.6 ALF 31.63

LAUNCH DATE OCT 5 1964 FLIGHT TIME 288.00 ARRIVAL DATE JUL 20 1965

HELIOCENTRIC CONIC DISTANCE 678.271 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 32.647 GAL -7.29 AZL 89.95 HCA 218.50 SMA 187.28 ECC .23657 INC .0485 V1 29.788
RP 231.57 LAP -.03 LOP 230.29 VP 20.918 GAP .38 AZP 90.04 TAL 320.28 TAP 178.78 RCA 142.98 APO 231.59 V2 23.748
RC 221.297 GL .38 GP 10.42 ZAL 144.49 ZAP 129.49 ETS 170.04 ZAE 164.34 ETE 131.62 ZAC 97.99 ETC 256.14 CLP 130.29

PLANETOCENTRIC CONIC

C3 20.036 VHL 4.476 DLA 9.56 RAL 158.19 RAD 6567.8 VEL 11.892 PTH 2.11 VHP 3.652 DPA 10.49 RAP 185.50 ECC 1.3297

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 44 3	2515.78	-25.55	61.49	22.53	102.63	20 25 58	1915.8	-23.56	53.39
90.00	10 11 17	4557.88	11.32	192.22	18.21	63.87	11 27 15	3957.9	7.72	185.40
100.00	21 10 5	2238.28	-26.71	40.78	22.22	103.95	21 47 23	1638.3	-24.52	32.66
100.00	11 27 56	4310.61	12.38	173.50	17.66	62.57	12 39 46	3710.6	8.61	166.74
110.00	22 29 1	1991.30	-29.78	21.04	21.24	107.62	23 2 12	1391.3	-27.08	12.89
110.00	12 25 29	4130.36	15.16	158.22	16.06	58.99	13 34 20	3530.4	10.94	151.66

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .9722 TRA-2.2676 TC3 1.0307 BAU .3983 SGT 3326.2 SGR 1838.9 SG3 2364.6 ST 1526.1 SR 1008.5 SS 3237.1
RDE .7301 RRA -.9708 RC3 1.0716 FAU .37592 RRT .9413 RRF -.9696 RTF -.9602 CRT .9730 CRS .9530 CST .9969
FDE-6.1650 FRA16.7959 FC-16.2431 BSP 13402 SGB 3800.7 R23 -.1195 R13 -.9725 LSA 3705.9 MSA 300.9 SSA 28.8
BDE 1.2158 BRA 2.4666 BC3 1.4869 FSP 7822 SG1 3760.8 SG2 549.2 THA 28.15 EL1 1818.8 EL2 195.3 ALF 33.17

LAUNCH DATE OCT 5 1964 FLIGHT TIME 290.00 ARRIVAL DATE JUL 22 1965

HELIOCENTRIC CONIC DISTANCE 682.087 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 32.637 GAL -7.26 AZL 89.90 HCA 219.51 SMA 187.11 ECC .23563 INC .1018 V1 29.788
RP 231.20 LAP -.06 LOP 231.30 VP 20.947 GAP .05 AZP 90.08 TAL 320.34 TAP 179.85 RCA 143.02 APO 231.20 V2 23.788
RC 223.281 GL .74 GP 10.39 ZAL 144.42 ZAP 128.07 ETS 170.51 ZAE 163.25 ETE 135.77 ZAC 97.87 ETC 256.18 CLP 128.82

PLANETOCENTRIC CONIC

C3 19.850 VHL 4.455 DLA 9.92 RAL 158.26 RAD 6567.8 VEL 11.884 PTH 2.11 VHP 3.587 DPA 10.66 RAP 185.07 ECC 1.3267

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 41 23	2525.54	-25.70	62.17	22.58	102.32	20 23 28	1925.5	-23.74	54.05
90.00	10 14 31	4543.68	10.89	191.40	18.13	63.70	11 30 14	3943.7	7.27	184.59
100.00	21 7 37	2247.39	-26.85	41.42	22.28	103.65	21 45 5	1647.4	-24.71	33.27
100.00	11 30 57	4297.06	11.95	172.72	17.59	62.40	12 42 34	3697.1	8.16	165.98
110.00	22 27 0	1998.99	-29.93	21.59	21.31	107.33	23 0 19	1399.0	-27.27	13.41
110.00	12 28 4	4118.23	14.74	157.54	15.97	58.80	13 36 42	3518.2	10.50	151.00

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .9227 TRA-2.1348 TC3 .9426 BAU .3840 SGT 3143.4 SGR 1867.8 SG3 2453.7 ST 1451.8 SR 1021.5 SS 3283.7
RDE .7358 RRA -.9799 RC3 1.0978 FAU .38855 RRT .9384 RRF -.9693 RTF -.9568 CRT .9740 CRS .9519 CST .9963
FDE-6.3134 FRA17.3416 FC-16.9462 BSP 12905 SGB 3656.5 R23 -.1205 R13 -.9714 LSA 3719.9 MSA 309.8 SSA 28.5
BDE 1.1802 BRA 2.3489 BC3 1.4470 FSP 8138 SG1 3613.1 SG2 561.5 THA 29.94 EL1 1764.9 EL2 190.5 ALF 34.89

LAUNCH DATE OCT 5 1964 FLIGHT TIME 292.00 ARRIVAL DATE JUL 24 1965

HELIOCENTRIC CONIC DISTANCE 685.910 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 32.627 GAL -7.22 AZL 89.85 HCA 220.53 SMA 186.94 ECC .23476 INC .1498 V1 29.788
RP 230.82 LAP -.10 LOP 232.31 VP 20.977 GAP -.28 AZP 90.11 TAL 320.39 TAP 180.91 RCA 143.05 APO 230.82 V2 23.827
RC 225.247 GL 1.10 GP 10.37 ZAL 144.35 ZAP 126.60 ETS 170.97 ZAE 162.05 ETE 139.51 ZAC 97.74 ETC 256.21 CLP 127.31

PLANETOCENTRIC CONIC

C3 19.680 VHL 4.436 DLA 10.28 RAL 158.34 RAD 6567.8 VEL 11.877 PTH 2.11 VHP 3.525 DPA 10.85 RAP 184.61 ECC 1.3239

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 38 50	2535.07	-25.84	62.84	22.64	102.01	20 21 5	1935.1	-23.92	54.69
90.00	10 17 40	4530.07	10.48	190.61	18.08	63.54	11 33 10	3930.1	6.84	183.82
100.00	21 5 16	2256.28	-27.00	42.04	22.35	103.35	21 42 53	1656.3	-24.89	33.87
100.00	11 33 55	4284.09	11.54	171.97	17.53	62.23	12 45 19	3684.1	7.74	165.25
110.00	22 25 6	2006.50	-30.09	22.12	21.40	107.05	22 58 32	1406.5	-27.46	13.91
110.00	12 30 35	4106.63	14.33	156.89	15.91	58.63	13 39 2	3506.6	10.07	150.37

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .8720 TRA-1.9961 TC3 .8449 BAU .3700 SGT 2948.7 SGR 1897.3 SG3 2543.5 ST 1373.5 SR 1034.9 SS 3330.8
RDE .7420 RRA -.9892 RC3 1.1244 FAU .40143 RRT .9347 RRF -.9691 RTF -.9524 CRT .9751 CRS .9509 CST .9955
FDE-6.4670 FRA17.8893 FC-17.6588 BSP 12369 SGB 3506.3 R23 -.1222 R13 -.9702 LSA 3734.9 MSA 318.5 SSA 28.2
BDE 1.1450 BRA 2.2277 BC3 1.4064 FSP 8450 SG1 3458.9 SG2 574.9 THA 32.01 EL1 1709.9 EL2 184.3 ALF 36.80

LAUNCH DATE OCT 5 1964 FLIGHT TIME 294.00 ARRIVAL DATE JUL 26 1965

HELIOCENTRIC CONIC DISTANCE 689.743 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 32.618 GAL -7.20 AZL 89.80 HCA 221.55 SMA 186.78 ECC .23394 INC .1968 V1 29.788
RP 230.43 LAP -.13 LOP 233.33 VP 21.008 GAP -.60 AZP 90.15 TAL 320.43 TAP 181.97 RCA 143.08 APO 230.48 V2 23.867
RC 227.193 GL 1.44 GP 10.35 ZAL 144.29 ZAP 125.09 ETS 171.42 ZAE 160.75 ETE 142.87 ZAC 97.61 ETC 256.25 CLP 125.75

PLANETOCENTRIC CONIC

C3 19.526 VHL 4.419 DLA 10.62 RAL 158.42 RAD 6567.8 VEL 11.870 PTH 2.11 VHP 3.466 DPA 11.05 RAP 184.12 ECC 1.3213

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 36 23	2544.38	-25.97	63.49	22.72	101.71	20 18 48	1944.4	-24.09	55.32
90.00	10 20 45	4517.03	10.09	189.86	18.05	63.40	11 36 2	3917.0	6.43	183.08
100.00	21 3 2	2264.97	-27.13	42.65	22.44	103.06	21 40 46	1665.0	-25.06	34.46
100.00	11 36 48	4271.67	11.15	171.26	17.49	62.08	12 48 0	3671.7	7.33	164.56
110.00	22 23 16	2013.85	-30.23	22.64	21.50	106.77	22 56 50	1413.8	-27.64	14.41
110.00	12 33 3	4095.56	13.93	156.27	15.86	58.47	13 41 18	3495.6	9.66	149.78

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .8199 TRA-1.8508 TC3 .7368 BAU .3566 SGT 2741.5 SGR 1926.6 SG3 2633.3 ST 1291.2 SR 1048.3 SS 3376.9
RDE .7484 RRA -.9989 RC3 1.1505 FAU .41430 RRT .9298 RRF -.9688 RTF -.9465 CRT .9766 CRS .9499 CST .9945
FDE-6.6207 FRA18.4381 FC-18.3691 BSP 11816 SGB 3350.7 R23 -.1243 R13 -.9688 LSA 3749.8 MSA 327.2 SSA 27.9
BDE 1.1101 BRA 2.1032 BC3 1.3661 FSP 8770 SG1 3298.5 SG2 589.3 THA 34.41 EL1 1653.8 EL2 176.1 ALF 38.93

LAUNCH DATE OCT 5 1964 FLIGHT TIME 296.00 ARRIVAL DATE JUL 28 1965

DISTANCE 693.586

HELIOCENTRIC CONIC

RL 149.58 LAL -.00 LOL 11.79 VL 32.609 GAL -7.17 AZL 89.76 HCA 222.57 SMA 186.63 ECC .23318 INC .2412 V1 29.788
RP 230.05 LAP -.16 LOP 234.35 VP 21.040 GAP -.92 AZP 90.18 TAL 320.46 TAP 183.03 RCA 143.11 APO 230.15 V2 23.907
RC 229.120 GL 1.78 GP 10.33 ZAL 144.23 ZAP 123.53 ETS 171.87 ZAE 159.36 ETE 145.90 ZAC 97.46 ETC 256.30 CLP 124.16

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 19.387 VHL 4.403 DLA 10.94 RAL 158.50 RAD 6567.8 VEL 11.865 PTH 2.10 VHP 3.409 DPA 11.27 RAP 183.59 ECC 1.3191

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 34 4	2553.48	-26.09	64.12	22.81	101.42	20 16 37	1953.5	-24.25	55.94
90.00	10 23 46	4504.55	9.70	189.14	18.03	63.27	11 38 51	3904.5	6.04	182.38
100.00	21 0 53	2273.46	-27.26	43.25	22.53	102.77	21 38 47	1673.5	-25.23	35.04
100.00	11 39 38	4259.80	10.77	170.59	17.47	61.95	12 50 38	3659.8	6.93	163.90
110.00	22 21 33	2021.03	-30.37	23.15	21.61	106.50	22 55 14	1421.0	-27.81	14.89
110.00	12 35 27	4084.99	13.56	155.68	15.84	58.32	13 43 32	3485.0	9.27	149.21

DIFFERENTIAL CORRECTIONS

TDE .7692 TRA-1.6966 TC3 .6253 BAU .3457
RDE .7558 RRA-1.0076 RC3 1.1781 FAU .42791
FDE-6.7902 FRA18.9689 FC-19.1086 BSP 11163
BDE 1.0784 BRA 1.9733 BC3 1.3338 FSP 9053

MID-COURSE EXECUTION ACCURACY

SGT 2522.2 SGR 1956.3 SG3 2723.0
RRT .9239 RRF -.9686 RTF -.9390
SGB 3192.0 R23 -.1257 R13 -.9673
SG1 3134.6 SG2 602.2 THA 37.23

ORBIT DETERMINATION ACCURACY

ST 1207.2 SR 1062.5 SS 3425.2
CRT .9787 CRS .9493 CST .9931
LSA 3768.9 MSA 335.8 SSA 27.4
EL1 1599.7 EL2 164.6 ALF 41.27

LAUNCH DATE OCT 5 1964 FLIGHT TIME 298.00 ARRIVAL DATE JUL 30 1965

DISTANCE 697.436

HELIOCENTRIC CONIC

RL 149.58 LAL -.00 LOL 11.79 VL 32.601 GAL -7.15 AZL 89.72 HCA 225.59 SMA 186.49 ECC .23247 INC .2848 V1 29.788
RP 229.67 LAP -.20 LOP 235.38 VP 21.073 GAP -1.23 AZP 90.21 TAL 320.48 TAP 184.08 RCA 143.14 APO 229.84 V2 23.948
RC 231.027 GL 2.10 GP 10.31 ZAL 144.19 ZAP 121.93 ETS 172.31 ZAE 157.87 ETE 148.62 ZAC 97.32 ETC 256.35 CLP 122.52

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 19.263 VHL 4.389 DLA 11.25 RAL 158.60 RAD 6567.8 VEL 11.859 PTH 2.10 VHP 3.356 DPA 11.51 RAP 183.02 ECC 1.3170

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 31 51	2562.36	-26.21	64.75	22.92	101.13	20 14 33	1962.4	-24.41	56.54
90.00	10 26 43	4492.64	9.34	188.46	18.04	63.15	11 41 36	3892.6	5.66	181.71
100.00	20 58 51	2281.75	-27.38	43.83	22.64	102.48	21 36 53	1681.7	-25.39	35.60
100.00	11 42 24	4248.47	10.40	169.94	17.48	61.82	12 53 13	3648.5	6.56	163.27
110.00	22 19 56	2028.06	-30.51	23.66	21.73	106.23	22 53 44	1428.1	-27.98	15.37
110.00	12 37 49	4074.93	13.20	155.13	15.83	58.18	13 45 44	3474.9	8.89	148.67

DIFFERENTIAL CORRECTIONS

TDE .7125 TRA-1.5399 TC3 .4935 BAU .3347
RDE .7621 RRA-1.0178 RC3 1.2023 FAU .44041
FDE-6.9381 FRA19.5182 FC-19.7933 BSP 10603
BDE 1.0433 BRA 1.8458 BC3 1.2997 FSP 9381

MID-COURSE EXECUTION ACCURACY

SGT 2292.1 SGR 1984.7 SG3 2811.4
RRT .9143 RRF -.9684 RTF -.9278
SGB 3031.9 R23 -.1288 R13 -.9655
SG1 2967.7 SG2 620.8 THA 40.51

ORBIT DETERMINATION ACCURACY

ST 1115.0 SR 1075.2 SS 3468.0
CRT .9806 CRS .9483 CST .9915
LSA 3782.5 MSA 344.4 SSA 27.2
EL1 1541.5 EL2 152.3 ALF 43.94

LAUNCH DATE OCT 5 1964 FLIGHT TIME 300.00 ARRIVAL DATE AUG 1 1965

DISTANCE 701.296

HELIOCENTRIC CONIC

RL 149.58 LAL -.00 LOL 11.79 VL 32.593 GAL -7.13 AZL 89.67 HCA 224.62 SMA 186.36 ECC .23182 INC .3264 V1 29.788
RP 229.28 LAP -.23 LOP 236.41 VP 21.107 GAP -1.54 AZP 90.23 TAL 320.50 TAP 185.12 RCA 143.15 APO 229.56 V2 23.988
RC 232.913 GL 2.42 GP 10.29 ZAL 144.15 ZAP 120.29 ETS 172.75 ZAE 156.31 ETE 151.07 ZAC 97.16 ETC 256.40 CLP 120.84

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 19.154 VHL 4.377 DLA 11.55 RAL 158.70 RAD 6567.8 VEL 11.855 PTH 2.10 VHP 3.306 DPA 11.76 RAP 182.42 ECC 1.3152

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 29 45	2571.03	-26.32	65.36	23.04	100.84	20 12 36	1971.0	-24.56	57.13
90.00	10 29 37	4481.27	8.99	187.80	18.06	63.03	11 44 18	3881.3	5.30	181.07
100.00	20 56 56	2289.85	-27.50	44.41	22.77	102.20	21 35 6	1689.8	-25.54	36.15
100.00	11 45 7	4237.69	10.06	169.33	17.50	61.70	12 55 44	3637.7	6.20	162.67
110.00	22 18 24	2034.93	-30.64	24.15	21.87	105.96	22 52 19	1434.9	-28.14	15.84
110.00	12 40 8	4065.37	12.85	154.60	15.84	58.05	13 47 53	3465.4	8.54	148.16

DIFFERENTIAL CORRECTIONS

TDE .6566 TRA-1.3742 TC3 .3572 BAU .3274
RDE .7693 RRA-1.0268 RC3 1.2276 FAU .45350
FDE-7.0989 FRA20.0439 FC-20.4978 BSP 9974
BDE 1.0114 BRA 1.7155 BC3 1.2785 FSP 9674

MID-COURSE EXECUTION ACCURACY

SGT 2051.5 SGR 2012.9 SG3 2898.8
RRT .9012 RRF -.9683 RTF -.9121
SGB 2874.1 R23 -.1306 R13 -.9637
SG1 2802.2 SG2 638.8 THA 44.40

ORBIT DETERMINATION ACCURACY

ST 1021.0 SR 1088.5 SS 3512.3
CRT .9833 CRS .9477 CST .9892
LSA 3799.8 MSA 352.8 SSA 26.8
EL1 1486.2 EL2 136.1 ALF 46.86

LAUNCH DATE OCT 5 1964 FLIGHT TIME 302.00 ARRIVAL DATE AUG 3 1965

DISTANCE 705.163

HELIOCENTRIC CONIC

RL 149.58 LAL -.00 LOL 11.79 VL 32.585 GAL -7.11 AZL 89.63 HCA 225.66 SMA 186.23 ECC .23122 INC .3670 V1 29.788
RP 228.89 LAP -.26 LOP 237.44 VP 21.142 GAP -1.84 AZP 90.26 TAL 320.50 TAP 186.16 RCA 143.17 APO 229.29 V2 24.029
RC 234.778 GL 2.72 GP 10.26 ZAL 144.12 ZAP 118.61 ETS 173.19 ZAE 154.67 ETE 153.28 ZAC 96.99 ETC 256.46 CLP 119.12

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 19.059 VHL 4.366 DLA 11.84 RAL 158.80 RAD 6567.8 VEL 11.851 PTH 2.10 VHP 3.259 DPA 12.03 RAP 181.79 ECC 1.3137

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 27 46	2579.50	-26.43	65.95	23.18	100.56	20 10 45	1979.5	-24.70	57.71
90.00	10 32 26	4470.46	8.65	187.19	18.11	62.93	11 46 56	3870.5	4.96	180.46
100.00	20 55 8	2297.76	-27.61	44.97	22.91	101.93	21 33 25	1697.8	-25.69	36.69
100.00	11 47 46	4227.43	9.72	168.75	17.54	61.59	12 58 13	3627.4	5.86	162.10
110.00	22 16 58	2041.65	-30.76	24.63	22.02	105.70	22 51 0	1441.6	-28.30	16.30
110.00	12 42 24	4056.31	12.52	154.10	15.87	57.93	13 50 0	3456.3	8.20	147.68

DIFFERENTIAL CORRECTIONS

TDE .5977 TRA-1.2030 TC3 .2077 BAU .3231
RDE .7762 RRA-1.0360 RC3 1.2509 FAU .46601
FDE-7.2516 FRA20.5659 FC-21.1680 BSP 9378
BDE .9797 BRA 1.5876 BC3 1.2680 FSP 9976

MID-COURSE EXECUTION ACCURACY

SGT 1803.0 SGR 2039.7 SG3 2983.9
RRT .8805 RRF -.9680 RTF -.8882
SGB 2722.4 R23 -.1317 R13 -.9620
SG1 2641.2 SG2 659.9 THA 49.00

ORBIT DETERMINATION ACCURACY

ST 921.8 SR 1101.1 SS 3553.8
CRT .9862 CRS .9469 CST .9861
LSA 3815.8 MSA 361.0 SSA 26.5
EL1 1431.2 EL2 117.3 ALF 50.14

LAUNCH DATE OCT 5 1964 FLIGHT TIME 304.00 ARRIVAL DATE AUG 5 1965

HELIOCENTRIC CONIC DISTANCE 709.039 EARTH TO MARS

RL	149.58	LAL	-.00	LOL	11.79	VL	32.579	GAL	-7.10	AZL	89.59	HCA	226.69	SMA	186.11	ECC	.23068	INC	.4062
RP	228.51	LAP	-.30	LOP	238.48	VP	21.178	GAP	-2.14	AZP	90.28	TAL	320.50	TAP	187.19	RCA	143.18	APO	229.04
RC	236.623	GL	3.02	GP	10.24	ZAL	144.10	ZAP	116.89	ETS	173.62	ZAE	152.97	ETE	155.29	ZAC	96.82	ETC	256.53

V1 29.788 V2 24.070 CLP 117.36

PLANETOCENTRIC CONIC

C3	18.978	VHL	4.356	DLA	12.12	RAL	158.91	RAD	6567.8	VEL	11.847	PTH	2.10	VHP	3.215	DPA	12.31	RAP	181.12

ECC 1.3123

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 25 54	2587.77	-26.53	66.54	23.32	100.28	20 9 2	1987.8	-24.84	58.28
90.00	10 35 12	4460.19	8.34	186.60	18.17	62.84	11 49 32	3860.2	4.63	179.88
100.00	20 53 26	2305.48	-27.72	45.52	23.07	101.66	21 31 51	1705.5	-25.83	37.22
100.00	11 50 21	4217.71	9.41	168.20	17.60	61.50	13 0 39	3617.7	5.53	161.56
110.00	22 15 38	2048.21	-30.88	25.11	22.19	105.44	22 49 47	1448.2	-28.45	16.75
110.00	12 44 38	4047.73	12.21	153.63	15.93	57.82	13 52 5	3447.7	7.88	147.22

DIFFERENTIAL CORRECTIONS

TDE	.5369	TRA	-1.0253	TC3	.0476	BAU	.3231
RDE	.7829	RRA	-1.0446	RC3	1.2726	FAU	.47809
FDE	-7.3984	FRA	21.0731	FC	-21.8094	BSP	8802
BDE	.9493	BRA	1.4637	BC3	1.2735	FSP	10274

MID-COURSE EXECUTION ACCURACY

SGT	1550.0	SGR	2065.0	SG3	3066.1		
RRT	.8470	RRF	-.9678	RTF	-.8500		
SGB	2582.0	R23	-.1302	R13	-.9607		
SG1	2489.9	SG2	683.3	THA	54.47		

ORBIT DETERMINATION ACCURACY

ST	818.4	SR	1113.1	SS	3592.7
CRT	.9896	CRS	.9461	CST	.9815
LSA	3831.4	MSA	369.2	SSA	26.2
EL1	1378.3	EL2	95.0	ALF	53.76

LAUNCH DATE OCT 5 1964 FLIGHT TIME 306.00 ARRIVAL DATE AUG 7 1965

HELIOCENTRIC CONIC DISTANCE 712.923 EARTH TO MARS

RL	149.58	LAL	-.00	LOL	11.79	VL	32.572	GAL	-7.09	AZL	89.56	HCA	227.73	SMA	186.00	ECC	.23018	INC	.4441
RP	228.12	LAP	-.33	LOP	239.52	VP	21.215	GAP	-2.44	AZP	90.30	TAL	320.49	TAP	188.22	RCA	143.19	APO	228.82
RC	238.446	GL	3.30	GP	10.21	ZAL	144.09	ZAP	115.13	ETS	174.05	ZAE	151.20	ETE	157.12	ZAC	96.63	ETC	256.60

V1 29.788 V2 24.111 CLP 115.57

PLANETOCENTRIC CONIC

C3	18.911	VHL	4.349	DLA	12.38	RAL	159.03	RAD	6567.8	VEL	11.845	PTH	2.10	VHP	3.174	DPA	12.60	RAP	180.42

ECC 1.3112

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 24 9	2595.82	-26.63	67.11	23.49	100.01	20 7 25	1995.8	-24.97	58.83
90.00	10 37 54	4450.46	8.03	186.05	18.25	62.76	11 52 4	3850.5	4.32	179.34
100.00	20 51 50	2313.01	-27.82	46.05	23.24	101.39	21 30 23	1713.0	-25.97	37.74
100.00	11 52 53	4208.51	9.11	167.68	17.68	61.41	13 3 2	3608.5	5.22	161.05
110.00	22 14 25	2054.63	-31.00	25.57	22.38	105.19	22 48 39	1454.6	-28.60	17.19
110.00	12 46 48	4039.65	11.92	153.19	16.00	57.72	13 54 8	3439.6	7.58	146.79

DIFFERENTIAL CORRECTIONS

TDE	.4745	TRA	-.8405	TC3	-.1221	BAU	.3284
RDE	.7898	RRA	-1.0522	RC3	1.2932	FAU	.48995
FDE	-7.5462	FRA	21.5557	FC	-22.4296	BSP	8259
BDE	.9214	BRA	1.3467	BC3	1.2990	FSP	10551

MID-COURSE EXECUTION ACCURACY

SGT	1299.1	SGR	2088.6	SG3	3144.8		
RRT	.7888	RRF	-.9676	RTF	-.7848		
SGB	2459.7	R23	-.1243	R13	-.9602		
SG1	2355.6	SG2	708.0	THA	61.00		

ORBIT DETERMINATION ACCURACY

ST	711.8	SR	1124.8	SS	3630.6
CRT	.9934	CRS	.9455	CST	.9743
LSA	3848.3	MSA	377.2	SSA	25.8
EL1	1329.3	EL2	69.1	ALF	57.75

LAUNCH DATE OCT 5 1964 FLIGHT TIME 308.00 ARRIVAL DATE AUG 9 1965

HELIOCENTRIC CONIC DISTANCE 716.813 EARTH TO MARS

RL	149.58	LAL	-.00	LOL	11.79	VL	32.566	GAL	-7.08	AZL	89.52	HCA	228.77	SMA	185.90	ECC	.22974	INC	.4808
RP	227.73	LAP	-.36	LOP	240.56	VP	21.252	GAP	-2.73	AZP	90.32	TAL	320.46	TAP	189.24	RCA	143.19	APO	228.61
RC	240.248	GL	3.58	GP	10.18	ZAL	144.09	ZAP	113.34	ETS	174.47	ZAE	149.37	ETE	158.79	ZAC	96.44	ETC	256.67

V1 29.788 V2 24.152 CLP 113.73

PLANETOCENTRIC CONIC

C3	18.858	VHL	4.343	DLA	12.63	RAL	159.16	RAD	6567.8	VEL	11.842	PTH	2.10	VHP	3.136	DPA	12.90	RAP	179.69

ECC 1.3104

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 22 31	2603.67	-26.72	67.66	23.67	99.75	20 5 55	2003.7	-25.10	59.37
90.00	10 40 32	4441.29	7.75	185.52	18.36	62.68	11 54 34	3841.3	4.02	178.82
100.00	20 50 22	2320.35	-27.92	46.58	23.42	101.13	21 29 3	1720.3	-26.10	38.25
100.00	11 55 23	4199.84	8.83	167.19	17.77	61.32	13 5 22	3599.8	4.93	160.57
110.00	22 13 17	2060.90	-31.11	26.03	22.57	104.94	22 47 38	1460.9	-28.74	17.62
110.00	12 48 57	4032.06	11.64	152.77	16.09	57.63	13 56 9	3432.1	7.29	146.39

DIFFERENTIAL CORRECTIONS

TDE	.4052	TRA	-.6530	TC3	-.3124	BAU	.3388
RDE	.7940	RRA	-1.0616	RC3	1.3068	FAU	.49918
FDE	-7.6425	FRA	22.0631	FC	-22.9167	BSP	7888
BDE	.8914	BRA	1.2463	BC3	1.3437	FSP	10912

MID-COURSE EXECUTION ACCURACY

SGT	1067.2	SGR	2108.6	SG3	3218.6		
RRT	.6752	RRF	-.9672	RTF	-.6622		
SGB	2363.2	R23	-.1108	R13	-.9609		
SG1	2244.6	SG2	739.5	THA	68.71		

ORBIT DETERMINATION ACCURACY

ST	596.6	SR	1133.2	SS	3657.1
CRT	.9966	CRS	.9441	CST	.9632
LSA	3855.6	MSA	385.0	SSA	25.8
EL1	1279.9	EL2	43.6	ALF	62.28

LAUNCH DATE OCT 5 1964 FLIGHT TIME 310.00 ARRIVAL DATE AUG 11 1965

HELIOCENTRIC CONIC DISTANCE 720.714 EARTH TO MARS

RL	149.58	LAL	-.00	LOL	11.79	VL	32.560	GAL	-7.08	AZL	89.48	HCA	229.82	SMA	185.80	ECC	.22935	INC	.5167
RP	227.34	LAP	-.39	LOP	241.61	VP	21.290	GAP	-3.02	AZP	90.33	TAL	320.43	TAP	190.25	RCA	143.19	APO	228.42
RC	242.030	GL	3.85	GP	10.15	ZAL	144.09	ZAP	111.51	ETS	174.89	ZAE	147.49	ETE	160.32	ZAC	96.24	ETC	256.75

V1 29.788 V2 24.193 CLP 111.87

PLANETOCENTRIC CONIC

C3	18.818	VHL	4.338	DLA	12.87	RAL	159.29	RAD	6567.8	VEL	11.841	PTH	2.10	VHP	3.102	DPA	13.22	RAP	178.92

ECC 1.3097

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 21 0	2611.32	-26.80	68.21	23.87	99.49	20 4 32	2011.3	-25.22	59.90
90.00	10 43 8	4432.63	7.48	185.03	18.48	62.61	11 57 0	3832.6	3.75	178.34
100.00	20 49 1	2327.51	-28.01	47.09	23.62	100.88	21 27 48	1727.5	-26.23	38.74
100.00	11 57 48	4191.68	8.56	166.73	17.89	61.25	13 7 40	3591.7	4.66	160.12
110.00	22 12 15	2067.02	-31.21	26.47	22.79	104.70	22 46 42	1467.0	-28.88	18.05
110.00	12 51 3	4024.93	11.38	152.39	16.20	57.55	13 58 8	3424.9	7.02	146.01

DIFFERENTIAL CORRECTIONS

TDE	.3419	TRA	-.4530	TC3	-.4950	BAU	.3561
RDE	.8017	RRA	-1.0659	RC3	1.3259	FAU	.51080
FDE	-7.7987	FRA	22.4707	FC	-23.5002	BSP	7451
BDE	.8716	BRA	1.1582	BC3	1.4153	FSP	11117

MID-COURSE EXECUTION ACCURACY

SGT	874.7	SGR	2128.4	SG3	3288.5		
RRT	.4676	RRF	-.9669	RTF	-.4380		
SGB	2301.1	R23	-.0898	R13	-.9628		
SG1	2172.9	SG2	757.3	THA	77.59		

ORBIT DETERMINATION ACCURACY

ST	487.8	SR	1144.6	SS	3693.5
CRT	.9984	CRS	.9437	CST	.9409
LSA	3877.6	MSA	392.7	SSA	25.3
EL1	1244.0	EL2	25.4	ALF	66.94

LAUNCH DATE OCT 5 1964 FLIGHT TIME 312.00 ARRIVAL DATE AUG 13 1965

HELIOCENTRIC CONIC DISTANCE 724.621 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 32.555 GAL -7.08 AZL 89.45 HCA 230.87 SMA 185.71 ECC .22901 INC .5516 V1 29.788
RP 226.95 LAP -.43 LOP 242.66 VP 21.329 GAP -3.30 AZP 90.35 TAL 320.39 TAP 191.26 RCA 143.18 APO 228.24 V2 24.235
RC 243.792 GL 4.12 GP 10.11 ZAL 144.11 ZAP 109.64 ETS 175.31 ZAE 145.56 ETE 161.73 ZAC 96.02 ETC 256.84 CLP 109.97

PLANETOCENTRIC CONIC

C3 18.791 VHL 4.335 DLA 13.10 RAL 159.44 RAD 6567.8 VEL 11.839 PTH 2.10 VHP 3.071 DPA 13.54 RAP 178.13 ECC 1.3093

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 19 37	2618.77	-26.89	68.74	24.08	99.24	20 3 16	2018.8	-25.33	60.41
90.00	10 45 39	4424.52	7.22	184.57	18.61	62.55	11 59 24	3824.5	3.49	177.88
100.00	20 47 46	2334.48	-28.10	47.59	23.84	100.63	21 26 40	1734.5	-26.35	39.22
100.00	12 0 11	4184.04	8.31	166.30	18.03	61.18	13 9 55	3584.0	4.40	159.70
110.00	22 11 20	2073.00	-31.32	26.91	23.02	104.46	22 45 53	1473.0	-29.01	18.46
110.00	12 53 7	4018.28	11.14	152.03	16.32	57.47	14 0 5	3418.3	6.77	145.66

DIFFERENTIAL CORRECTIONS
TDE .2752 TRA -.2481 TC3 -.6897 BAU .3789
RDE .8084 RRA-1.0697 RC3 1.3413 FAU .52112
FDE-7.9343 FRA22.8583 FC-24.0089 BSP 7185
BDE .8540 BRA 1.0981 BC3 1.5083 FSP 11328

MID-COURSE EXECUTION ACCURACY
SGT 776.7 SGR 2145.1 SG3 3352.3
RRT .1092 RRF -.9665 RTF -.0601
SGB 2281.3 R23 -.0615 R13 -.9656
SG1 2147.0 SG2 771.3 THA 87.40

ORBIT DETERMINATION ACCURACY
ST 377.9 SR 1154.4 SS 3724.5
CRT .9903 CRS .9431 CST .8943
LSA 3896.9 MSA 400.3 SSA 24.9
EL1 1213.7 EL2 50.1 ALF 72.01

LAUNCH DATE OCT 5 1964 FLIGHT TIME 314.00 ARRIVAL DATE AUG 15 1965

HELIOCENTRIC CONIC DISTANCE 728.536 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 32.550 GAL -7.08 AZL 89.41 HCA 231.93 SMA 185.63 ECC .22842 INC .5855 V1 29.788
RP 226.56 LAP -.46 LOP 243.71 VP 21.369 GAP -3.58 AZP 90.36 TAL 320.33 TAP 192.26 RCA 143.17 APO 228.09 V2 24.277
RC 245.534 GL 4.37 GP 10.07 ZAL 144.14 ZAP 107.75 ETS 175.73 ZAE 143.58 ETE 163.04 ZAC 95.80 ETC 256.93 CLP 108.04

PLANETOCENTRIC CONIC

C3 18.778 VHL 4.333 DLA 13.31 RAL 159.59 RAD 6567.8 VEL 11.839 PTH 2.10 VHP 3.044 DPA 13.86 RAP 177.30 ECC 1.3090

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 18 21	2626.01	-26.96	69.25	24.31	98.99	20 2 7	2026.0	-25.45	60.91
90.00	10 48 7	4416.95	6.98	184.14	18.77	62.49	12 1 44	3816.9	3.24	177.46
100.00	20 46 38	2341.26	-28.19	48.07	24.07	100.39	21 25 40	1741.3	-26.46	39.70
100.00	12 2 31	4176.92	8.08	165.90	18.18	61.12	13 12 8	3576.9	4.16	159.30
110.00	22 10 31	2078.83	-31.41	27.33	23.26	104.23	22 45 9	1478.8	-29.14	18.87
110.00	12 55 8	4012.12	10.92	151.69	16.47	57.40	14 2 0	3412.1	6.54	145.33

DIFFERENTIAL CORRECTIONS
TDE .2062 TRA -.0376 TC3 -.8940 BAU .4072
RDE .8147 RRA-1.0724 RC3 1.3537 FAU .53037
FDE-8.0584 FRA23.2153 FC-24.4526 BSP 7101
BDE .8404 BRA 1.0730 BC3 1.6223 FSP 11532

MID-COURSE EXECUTION ACCURACY
SGT 823.0 SGR 2158.7 SG3 3409.9
RRT -.3045 RRF -.9660 RTF .3665
SGB 2310.2 R23 -.0299 R13 -.9685
SG1 2175.3 SG2 777.9 THA 97.60

ORBIT DETERMINATION ACCURACY
ST 274.0 SR 1163.1 SS 3751.9
CRT .9399 CRS .9425 CST .7764
LSA 3916.3 MSA 407.7 SSA 24.5
EL1 1191.4 EL2 91.4 ALF 77.44

LAUNCH DATE OCT 5 1964 FLIGHT TIME 316.00 ARRIVAL DATE AUG 17 1965

HELIOCENTRIC CONIC DISTANCE 732.458 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 32.546 GAL -7.08 AZL 89.38 HCA 232.98 SMA 185.55 ECC .22848 INC .6187 V1 29.788
RP 226.17 LAP -.49 LOP 244.77 VP 21.410 GAP -3.85 AZP 90.37 TAL 320.27 TAP 193.25 RCA 143.16 APO 227.95 V2 24.318
RC 247.256 GL 4.62 GP 10.02 ZAL 144.18 ZAP 105.83 ETS 176.14 ZAE 141.57 ETE 164.24 ZAC 95.57 ETC 257.02 CLP 106.08

PLANETOCENTRIC CONIC

C3 18.778 VHL 4.333 DLA 13.51 RAL 159.75 RAD 6567.8 VEL 11.839 PTH 2.10 VHP 3.020 DPA 14.19 RAP 176.46 ECC 1.3090

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 17 12	2633.03	-27.04	69.75	24.55	98.75	20 1 5	2033.0	-25.55	61.40
90.00	10 50 32	4409.92	6.76	183.74	18.95	62.44	12 4 2	3809.9	3.02	177.06
100.00	20 45 38	2347.85	-28.27	48.55	24.32	100.15	21 24 46	1747.9	-26.58	40.15
100.00	12 4 47	4170.33	7.86	165.54	18.35	61.07	13 14 18	3570.3	3.94	158.94
110.00	22 9 48	2084.51	-31.51	27.75	23.52	104.00	22 44 32	1484.5	-29.26	19.26
110.00	12 57 7	4006.44	10.71	151.38	16.64	57.34	14 3 53	3406.4	6.33	145.03

DIFFERENTIAL CORRECTIONS
TDE .1349 TRA .1784 TC3-1.1066 BAU .4407
RDE .8202 RRA-1.0737 RC3 1.3626 FAU .53842
FDE-8.1635 FRA23.5360 FC-24.8235 BSP 7217
BDE .8313 BRA 1.0884 BC3 1.7554 FSP 11724

MID-COURSE EXECUTION ACCURACY
SGT 1005.2 SGR 2168.6 SG3 3460.0
RRT -.5933 RRF -.9655 RTF .6576
SGB 2390.2 R23 -.0008 R13 -.9712
SG1 2260.7 SG2 776.2 THA 107.51

ORBIT DETERMINATION ACCURACY
ST 194.8 SR 1170.2 SS 3773.8
CRT .7044 CRS .9417 CST .4288
LSA 3934.0 MSA 415.1 SSA 24.1
EL1 1178.3 EL2 137.3 ALF 83.22

LAUNCH DATE OCT 5 1964 FLIGHT TIME 318.00 ARRIVAL DATE AUG 19 1965

HELIOCENTRIC CONIC DISTANCE 736.387 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 32.541 GAL -7.09 AZL 89.35 HCA 234.05 SMA 185.48 ECC .22829 INC .6509 V1 29.788
RP 225.78 LAP -.53 LOP 245.83 VP 21.451 GAP -4.12 AZP 90.38 TAL 320.19 TAP 194.24 RCA 143.14 APO 227.83 V2 24.360
RC 248.959 GL 4.86 GP 9.97 ZAL 144.23 ZAP 103.89 ETS 176.55 ZAE 139.51 ETE 165.36 ZAC 95.33 ETC 257.13 CLP 104.11

PLANETOCENTRIC CONIC

C3 18.791 VHL 4.335 DLA 13.71 RAL 159.91 RAD 6567.8 VEL 11.839 PTH 2.10 VHP 3.000 DPA 14.52 RAP 175.59 ECC 1.3092

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 16 12	2639.85	-27.11	70.24	24.81	98.51	20 0 11	2039.9	-25.65	61.88
90.00	10 52 53	4403.43	6.56	183.38	19.14	62.39	12 6 16	3803.4	2.81	176.70
100.00	20 44 45	2354.25	-28.34	49.01	24.59	99.92	21 23 59	1754.3	-26.68	40.60
100.00	12 7 1	4164.26	7.66	165.20	18.55	61.02	13 16 25	3564.3	3.74	158.61
110.00	22 9 11	2090.05	-31.60	28.16	23.80	103.77	22 44 1	1490.0	-29.38	19.65
110.00	12 59 4	4001.23	10.52	151.10	16.82	57.29	14 5 45	3401.2	6.13	144.76

DIFFERENTIAL CORRECTIONS
TDE .0818 TRA .3996 TC3-1.3248 BAU .4786
RDE .8257 RRA-1.0731 RC3 1.3692 FAU .54560
FDE-8.2642 FRA23.8065 FC-25.1369 BSP 7528
BDE .8280 BRA 1.1450 BC3 1.9052 FSP 11884

MID-COURSE EXECUTION ACCURACY
SGT 1273.4 SGR 2175.2 SG3 3502.4
RRT -.7466 RRF -.9648 RTF .8088
SGB 2520.5 R23 .0208 R13 -.9737
SG1 2400.8 SG2 767.5 THA 116.53

ORBIT DETERMINATION ACCURACY
ST 185.6 SR 1176.6 SS 3793.4
CRT .0753 CRS .9409 CST -.2634
LSA 3953.4 MSA 422.0 SSA 23.7
EL1 1176.6 EL2 185.1 ALF 89.30

LAUNCH DATE OCT 5 1964 FLIGHT TIME 328.00 ARRIVAL DATE AUG 29 1965

HELIOCENTRIC CONIC DISTANCE 756.134 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 32.525 GAL -7.17 AZL 89.20 HCA 239.41 SMA 185.21 ECC .22804 INC .8020 V1 29.788
RP 223.82 LAP -.69 LOP 251.19 VP 21.664 GAP -5.42 AZP 90.41 TAL 319.65 TAP 199.06 RCA 142.98 APO 227.45 V2 24.569
RC 257.180 GL 5.94 GP 9.60 ZAL 144.66 ZAP 93.96 ETS 178.50 ZAE 128.87 ETE 169.97 ZAC 94.02 ETC 257.70 CLP 94.02

PLANETOCENTRIC CONIC

C3 19.056 VHL 4.365 DLA 14.49 RAL 160.88 RAD 6567.8 VEL 11.851 PTH 2.10 VHP 2.953 DPA 16.12 RAP 171.04 ECC 1.3136

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 13 3	2670.72	-27.40	72.45	26.37	97.44	19 57 34	2070.7	-26.09	64.03
90.00	11 3 46	4379.16	5.79	182.01	20.40	62.23	12 16 45	3779.2	2.03	175.35
100.00	20 42 10	2383.37	-28.67	51.11	26.16	98.86	21 21 53	1783.4	-27.14	42.64
100.00	12 17 21	4141.75	6.91	163.94	19.79	60.85	13 26 22	3541.7	2.98	157.37
110.00	22 7 46	2115.51	-32.00	30.04	25.43	102.73	22 43 2	1515.5	-29.91	21.44
110.00	13 8 14	3982.37	9.82	150.08	18.02	57.09	14 14 36	3382.4	5.42	143.76

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.3260 TRA 1.5710 TC3-2.4745 BAU .7185 SGT 3063.7 SGR 2150.4 SG3 3582.3 ST 771.7 SR 1188.9 SS 3827.7
RDE .8458 RRA-1.0422 RC3 1.3530 FAU .56240 RRT -.9162 RRF -.9598 RTF .9721 CRT -.8155 CRS .9361 CST -.9666
FDE-8.5538 FRA24.4139 FC-25.5504 BSP 11466 SGB 3743.1 R23 .0428 R13 -.9864 LSA 4056.2 MSA 455.2 SSA 21.6
BDE .9065 BRA 1.8853 BC3 2.8203 FSP 12272 SG1 3673.5 SG2 718.6 THA 145.76 EL1 1362.8 EL2 389.7 ALF 120.67

LAUNCH DATE OCT 5 1964 FLIGHT TIME 330.00 ARRIVAL DATE AUG 31 1965

HELIOCENTRIC CONIC DISTANCE 760.102 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 32.523 GAL -7.19 AZL 89.17 HCA 240.49 SMA 185.17 ECC .22813 INC .8304 V1 29.788
RP 223.44 LAP -.72 LOP 252.28 VP 21.708 GAP -5.67 AZP 90.41 TAL 319.51 TAP 200.00 RCA 142.93 APO 227.42 V2 24.611
RC 258.763 GL 6.14 GP 9.50 ZAL 144.78 ZAP 91.96 ETS 178.88 ZAE 126.71 ETE 170.72 ZAC 93.74 ETC 257.82 CLP 91.99

PLANETOCENTRIC CONIC

C3 19.150 VHL 4.376 DLA 14.62 RAL 161.11 RAD 6567.8 VEL 11.855 PTH 2.10 VHP 2.954 DPA 16.42 RAP 170.12 ECC 1.3152

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 12 50	2676.25	-27.45	72.85	26.73	97.25	19 57 26	2076.2	-26.16	64.42
90.00	11 5 46	4375.95	5.69	181.83	20.71	62.21	12 18 42	3775.9	1.92	175.17
100.00	20 42 1	2388.60	-28.72	51.49	26.53	98.66	21 21 50	1788.6	-27.22	43.01
100.00	12 19 15	4138.82	6.82	163.78	20.09	60.83	13 28 14	3538.8	2.88	157.21
110.00	22 7 49	2120.16	-32.07	30.38	25.80	102.53	22 43 9	1520.2	-30.01	21.77
110.00	13 9 57	3980.03	9.73	149.96	18.32	57.07	14 16 17	3380.0	5.33	143.64

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.4076 TRA 1.8147 TC3-2.7074 BAU .7734 SGT 3453.8 SGR 2133.9 SG3 3570.2 ST 912.4 SR 1187.6 SS 3822.2
RDE .8485 RRA-1.0301 RC3 1.3405 FAU .56186 RRT -.9220 RRF -.9584 RTF .9784 CRT -.8337 CRS .9350 CST -.9752
FDE-8.5699 FRA24.3698 FC-25.4015 BSP 12547 SGB 4059.8 R23 .0412 R13 -.9883 LSA 4079.0 MSA 461.3 SSA 21.1
BDE .9413 BRA 2.0866 BC3 3.0211 FSP 12252 SG1 3996.6 SG2 713.9 THA 149.24 EL1 1438.7 EL2 415.9 ALF 126.13

LAUNCH DATE OCT 5 1964 FLIGHT TIME 332.00 ARRIVAL DATE SEP 2 1965

HELIOCENTRIC CONIC DISTANCE 764.073 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 32.521 GAL -7.22 AZL 89.14 HCA 241.58 SMA 185.14 ECC .22827 INC .8583 V1 29.788
RP 223.05 LAP -.75 LOP 253.36 VP 21.753 GAP -5.92 AZP 90.41 TAL 319.35 TAP 200.93 RCA 142.88 APO 227.40 V2 24.653
RC 260.326 GL 6.32 GP 9.40 ZAL 144.91 ZAP 89.97 ETS 179.24 ZAE 124.54 ETE 171.44 ZAC 93.46 ETC 257.95 CLP 89.97

PLANETOCENTRIC CONIC

C3 19.258 VHL 4.388 DLA 14.73 RAL 161.34 RAD 6567.8 VEL 11.859 PTH 2.10 VHP 2.960 DPA 16.71 RAP 169.20 ECC 1.3169

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 12 45	2681.53	-27.49	73.23	27.11	97.06	19 57 26	2081.5	-26.23	64.79
90.00	11 7 42	4373.33	5.60	181.68	21.03	62.20	12 20 35	3773.3	1.84	175.02
100.00	20 42 1	2393.63	-28.77	51.86	26.91	98.48	21 21 55	1793.6	-27.30	43.36
100.00	12 21 7	4136.46	6.74	163.64	20.41	60.81	13 30 3	3536.5	2.80	157.08
110.00	22 7 59	2124.66	-32.13	30.71	26.20	102.35	22 43 23	1524.7	-30.10	22.09
110.00	13 11 38	3978.20	9.67	149.86	18.63	57.05	14 17 56	3378.2	5.26	143.54

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.4884 TRA 2.0659 TC3-2.9352 BAU .8280 SGT 3849.9 SGR 2109.5 SG3 3546.3 ST 1054.8 SR 1179.6 SS 3793.2
RDE .8457 RRA-1.0212 RC3 1.3141 FAU .55501 RRT -.9260 RRF -.9566 RTF .9824 CRT -.8461 CRS .9321 CST -.9815
FDE-8.4654 FRA24.3771 FC-24.9508 BSP 13812 SGB 4390.0 R23 .0398 R13 -.9895 LSA 4083.3 MSA 467.6 SSA 21.1
BDE .9766 BRA 2.3046 BC3 3.2160 FSP 12414 SG1 4332.6 SG2 707.8 THA 152.29 EL1 1521.2 EL2 436.0 ALF 131.23

LAUNCH DATE OCT 5 1964 FLIGHT TIME 334.00 ARRIVAL DATE SEP 4 1965

HELIOCENTRIC CONIC DISTANCE 768.055 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 32.519 GAL -7.26 AZL 89.11 HCA 242.67 SMA 185.11 ECC .22846 INC .8858 V1 29.788
RP 222.66 LAP -.79 LOP 254.46 VP 21.798 GAP -6.16 AZP 90.41 TAL 319.19 TAP 201.86 RCA 142.82 APO 227.40 V2 24.695
RC 261.869 GL 6.51 GP 9.29 ZAL 145.06 ZAP 87.98 ETS 179.59 ZAE 122.37 ETE 172.11 ZAC 93.18 ETC 258.08 CLP 87.95

PLANETOCENTRIC CONIC

C3 19.379 VHL 4.402 DLA 14.83 RAL 161.58 RAD 6567.8 VEL 11.864 PTH 2.10 VHP 2.968 DPA 16.98 RAP 168.29 ECC 1.3189

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 12 47	2686.62	-27.54	73.60	27.51	96.88	19 57 33	2086.6	-26.30	65.15
90.00	11 9 34	4371.21	5.54	181.56	21.38	62.19	12 22 26	3771.2	1.77	174.90
100.00	20 42 7	2398.48	-28.82	52.21	27.31	98.30	21 22 6	1798.5	-27.37	43.71
100.00	12 22 55	4134.58	6.68	163.54	20.75	60.80	13 31 49	3534.6	2.73	156.97
110.00	22 8 15	2129.02	-32.19	31.04	26.61	102.16	22 43 44	1529.0	-30.19	22.40
110.00	13 13 17	3976.81	9.61	149.78	18.97	57.04	14 19 34	3376.8	5.20	143.47

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.5720 TRA 2.3114 TC3-3.1630 BAU .8860 SGT 4241.9 SGR 2087.7 SG3 3516.8 ST 1197.1 SR 1178.4 SS 3788.1
RDE .8498 RRA-1.0032 RC3 1.3003 FAU .55384 RRT -.9276 RRF -.9549 RTF .9858 CRT -.8540 CRS .9315 CST -.9846
FDE-8.4989 FRA24.1804 FC-24.7421 BSP 14936 SGB 4727.9 R23 .0382 R13 -.9910 LSA 4116.6 MSA 473.3 SSA 20.5
BDE 1.0244 BRA 2.5197 BC3 3.4198 FSP 12234 SG1 4674.6 SG2 707.5 THA 154.84 EL1 1617.3 EL2 453.8 ALF 135.53

LAUNCH DATE OCT 5 1964 FLIGHT TIME 320.00 ARRIVAL DATE AUG 21 1965

HELIOCENTRIC CONIC DISTANCE 740.323 EARTH TO MARS

RL	149.58	LAL	-.00	LOL	11.79	VL	32.538	GAL	-7.10	AZL	89.32	HCA	235.11	SMA	185.42	ECC	.22814	INC	.6825	V1	29.788
RP	225.38	LAP	-.56	LOP	246.90	VP	21.492	GAP	-4.39	AZP	90.39	TAL	320.11	TAP	195.22	RCA	143.12	APO	227.72	V2	24.402
RC	250.643	GL	5.09	GP	9.91	ZAL	144.29	ZAP	101.93	ETS	176.95	ZAE	137.43	ETE	166.41	ZAC	95.08	ETC	257.23	CLP	102.11

PLANETOCENTRIC CONIC

C3	18.817	VHL	4.338	DLA	13.89	RAL	160.09	RAD	6567.8	VEL	11.841	PTH	2.10	VHP	2.983	DPA	14.85	RAP	174.70	ECC	1.3097

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 15 18	2646.46	-27.17	70.71	25.09	98.29	19 59 25	2046.5	-25.75	62.34
90.00	10 55 11	4397.48	6.37	183.04	19.36	62.35	12 8 28	3797.5	2.62	176.37
100.00	20 43 59	2360.46	-28.42	49.46	24.87	99.69	21 23 20	1760.5	-26.78	41.03
100.00	12 9 11	4158.71	7.48	164.89	18.76	60.97	13 18 30	3558.7	3.55	158.30
110.00	22 8 41	2095.43	-31.69	28.55	24.09	103.55	22 43 37	1495.4	-29.50	20.03
110.00	13 0 58	3996.50	10.34	150.85	17.02	57.24	14 7 35	3396.5	5.95	144.51

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY			ORBIT DETERMINATION ACCURACY		
TDE	-.0129	TRA	.6258	TC3	-1.5490	BAU	.5206	SGT 1591.0 SGR 2178.0 SG3 3536.6	ST	259.2	SR 1181.5 SS 3808.3
RDE	.8306	RRA	-1.0709	RC3	1.3722	FAU	.55145	RRT -.8251 RRF -.9641 RTF .8847	CRT	-.4303	CRS .9401 CST -.7105
FDE	-8.3482	FRA	24.0344	FC	-25.3713	BSP	8033	SGB 2697.2 R23 .0344 R13 -.9763	LSA	3972.6	MSA 429.0 SSA 23.3
BDE	.8307	BRA	1.2403	BC3	2.0694	FSP	12023	SG1 2589.1 SG2 756.2 THA 124.42	EL1	1186.9	EL2 232.9 ALF 95.61

LAUNCH DATE OCT 5 1964 FLIGHT TIME 322.00 ARRIVAL DATE AUG 23 1965

HELIOCENTRIC CONIC DISTANCE 744.266 EARTH TO MARS

RL	149.58	LAL	-.00	LOL	11.79	VL	32.534	GAL	-7.11	AZL	89.29	HCA	236.18	SMA	185.36	ECC	.22804	INC	.7132	V1	29.788
RP	224.99	LAP	-.59	LOP	247.96	VP	21.535	GAP	-4.65	AZP	90.40	TAL	320.01	TAP	196.19	RCA	143.09	APO	227.63	V2	24.444
RC	252.307	GL	5.31	GP	9.84	ZAL	144.37	ZAP	99.95	ETS	177.35	ZAE	135.32	ETE	167.39	ZAC	94.83	ETC	257.34	CLP	100.10

PLANETOCENTRIC CONIC

C3	18.857	VHL	4.342	DLA	14.06	RAL	160.27	RAD	6567.8	VEL	11.842	PTH	2.10	VHP	2.970	DPA	15.17	RAP	173.80	ECC	1.3103

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 14 33	2652.85	-27.24	71.17	25.38	98.06	19 58 46	2052.8	-25.84	62.78
90.00	10 57 25	4392.08	6.20	182.74	19.59	62.31	12 10 37	3792.1	2.44	176.07
100.00	20 43 21	2366.48	-28.48	49.89	25.17	99.48	21 22 47	1766.5	-26.88	41.45
100.00	12 11 18	4153.68	7.31	164.60	18.99	60.93	13 20 32	3553.7	3.38	158.02
110.00	22 8 18	2100.68	-31.77	28.94	24.40	103.34	22 43 18	1500.7	-29.61	20.40
110.00	13 2 50	3992.25	10.18	150.62	17.24	57.19	14 9 23	3392.3	5.79	144.28

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY			ORBIT DETERMINATION ACCURACY		
TDE	-.0891	TRA	.8565	TC3	-1.7771	BAU	.5660	SGT 1937.2 SGR 2177.1 SG3 3561.9	ST	371.6	SR 1185.4 SS 3819.8
RDE	.8352	RRA	-1.0665	RC3	1.3724	FAU	.55624	RRT -.8676 RRF -.9632 RTF .9253	CRT	-.6432	CRS .9392 CST -.8660
FDE	-8.4231	FRA	24.2072	FC	-25.5375	BSP	8704	SGB 2914.2 R23 .0412 R13 -.9790	LSA	3993.0	MSA 435.7 SSA 22.9
BDE	.8400	BRA	1.3679	BC3	2.2453	FSP	12127	SG1 2817.5 SG2 744.3 THA 131.16	EL1	1210.6	EL2 278.6 ALF 102.05

LAUNCH DATE OCT 5 1964 FLIGHT TIME 324.00 ARRIVAL DATE AUG 25 1965

HELIOCENTRIC CONIC DISTANCE 748.215 EARTH TO MARS

RL	149.58	LAL	-.00	LOL	11.79	VL	32.531	GAL	-7.13	AZL	89.26	HCA	237.25	SMA	185.31	ECC	.22800	INC	.7434	V1	29.788
RP	224.60	LAP	-.63	LOP	249.04	VP	21.577	GAP	-4.91	AZP	90.40	TAL	319.90	TAP	197.15	RCA	143.06	APO	227.55	V2	24.486
RC	253.951	GL	5.53	GP	9.77	ZAL	144.45	ZAP	97.96	ETS	177.74	ZAE	133.18	ETE	168.30	ZAC	94.56	ETC	257.46	CLP	98.08

PLANETOCENTRIC CONIC

C3	18.910	VHL	4.349	DLA	14.21	RAL	160.47	RAD	6567.8	VEL	11.844	PTH	2.10	VHP	2.961	DPA	15.50	RAP	172.89	ECC	1.3112

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 13 55	2659.02	-27.29	71.61	25.69	97.85	19 58 14	2059.0	-25.93	63.21
90.00	10 59 35	4387.23	6.05	182.46	19.84	62.28	12 12 43	3787.2	2.29	175.80
100.00	20 42 49	2372.31	-28.55	50.31	25.48	99.26	21 22 22	1772.3	-26.97	41.86
100.00	12 13 22	4149.18	7.16	164.35	19.24	60.90	13 22 31	3549.2	3.23	157.78
110.00	22 8 0	2105.77	-31.85	29.31	24.73	103.13	22 43 6	1505.8	-29.71	20.75
110.00	13 4 40	3988.48	10.05	150.41	17.48	57.15	14 11 9	3388.5	5.65	144.08

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY			ORBIT DETERMINATION ACCURACY		
TDE	-.1667	TRA	1.0914	TC3	-2.0079	BAU	.6144	SGT 2301.8 SGR 2172.1 SG3 3578.1	ST	499.1	SR 1187.7 SS 3826.3
RDE	.8391	RRA	-1.0605	RC3	1.3691	FAU	.55959	RRT -.8921 RRF -.9622 RTF .9486	CRT	-.7376	CRS .9382 CST -.9250
FDE	-8.4796	FRA	24.3316	FC	-25.6194	BSP	9522	SGB 3164.8 R23 .0438 R13 -.9817	LSA	4013.0	MSA 442.4 SSA 22.5
BDE	.8555	BRA	1.5217	BC3	2.4302	FSP	12211	SG1 3078.6 SG2 733.7 THA 136.86	EL1	1247.7	EL2 320.8 ALF 108.48

LAUNCH DATE OCT 5 1964 FLIGHT TIME 326.00 ARRIVAL DATE AUG 27 1965

HELIOCENTRIC CONIC DISTANCE 752.171 EARTH TO MARS

RL	149.58	LAL	-.00	LOL	11.79	VL	32.528	GAL	-7.15	AZL	89.23	HCA	238.33	SMA	185.26	ECC	.22799	INC	.7730	V1	29.788
RP	224.21	LAP	-.66	LOP	250.11	VP	21.620	GAP	-5.17	AZP	90.41	TAL	319.78	TAP	198.11	RCA	143.02	APO	227.49	V2	24.527
RC	255.576	GL	5.74	GP	9.69	ZAL	144.55	ZAP	95.96	ETS	178.13	ZAE	131.04	ETE	169.16	ZAC	94.30	ETC	257.58	CLP	96.05

PLANETOCENTRIC CONIC

C3	18.976	VHL	4.356	DLA	14.36	RAL	160.67	RAD	6567.8	VEL	11.847	PTH	2.10	VHP	2.955	DPA	15.81	RAP	171.97	ECC	1.3123

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 13 25	2664.98	-27.35	72.04	26.02	97.64	19 57 50	2065.0	-26.01	63.63
90.00	11 1 42	4382.92	5.91	182.22	20.11	62.26	12 14 45	3782.9	2.15	175.56
100.00	20 42 26	2377.93	-28.61	50.72	25.81	99.06	21 22 4	1777.9	-27.06	42.26
100.00	12 15 23	4145.20	7.03	164.13	19.50	60.87	13 24 28	3545.2	3.09	157.56
110.00	22 7 50	2110.71	-31.92	29.68	25.07	102.92	22 43 1	1510.7	-29.82	21.10
110.00	13 6 28	3985.18	9.92	150.23	17.74	57.12	14 12 53	3385.2	5.52	143.91

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY			ORBIT DETERMINATION ACCURACY		
TDE	-.2457	TRA	1.3297	TC3	-2.2410	BAU	.6654	SGT 2678.7 SGR 2163.3 SG3 3585.0	ST	633.4	SR 1189.1 SS 3829.6
RDE	.8428	RRA	-1.0522	RC3	1.3630	FAU	.56181	RRT -.9070 RRF -.9611 RTF .9629	CRT	-.7867	CRS .9372 CST -.9521
FDE	-8.5266	FRA	24.3976	FC	-25.6315	BSP	10445	SGB 3443.2 R23 .0439 R13 -.9842	LSA	4034.7	MSA 448.9 SSA 22.0
BDE	.8779	BRA	1.6956	BC3	2.6230	FSP	12251	SG1 3366.0 SG2 725.2 THA 141.68	EL1	1298.8	EL2 358.0 ALF 114.74

LAUNCH DATE OCT 5 1964 FLIGHT TIME 336.00 ARRIVAL DATE SEP 6 1965

HELIOCENTRIC CONIC DISTANCE 772.043 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 32.518 GAL -7.29 AZL 89.09 HCA 243.77 SMA 185.09 ECC .22870 INC .9128 V1 29.788
RP 222.28 LAP -.82 LOP 255.55 VP 21.843 GAP -6.40 AZP 90.40 TAL 319.01 TAP 202.78 RCA 142.76 APO 227.42 V2 24.737
RC 263.392 GL 6.68 GP 9.18 ZAL 145.22 ZAP 86.00 ETS 179.93 ZAE 120.21 ETE 172.75 ZAC 92.90 ETC 258.21 CLP 85.95

PLANETOCENTRIC CONIC

C3 19.515 VHL 4.418 DLA 14.92 RAL 161.83 RAD 6567.8 VEL 11.870 PTH 2.11 VHP 2.981 DPA 17.24 RAP 167.38 ECC 1.3212

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 12 57	2691.49	-27.57	73.95	27.92	96.71	19 57 48	2091.5	-26.36	65.49
90.00	11 11 23	4369.66	5.49	181.47	21.74	62.18	12 24 13	3769.7	1.72	174.82
100.00	20 42 22	2403.13	-28.87	52.55	27.73	98.13	21 22 25	1803.1	-27.44	44.03
100.00	12 24 40	4133.24	6.63	163.47	21.11	60.79	13 33 33	3533.2	2.69	156.90
110.00	22 8 37	2133.24	-32.25	31.35	27.03	101.99	22 44 10	1533.2	-30.27	22.70
110.00	13 14 54	3975.90	9.58	149.74	19.32	57.03	14 21 9	3375.9	5.17	143.42

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.6572 TRA 2.5579 TC3-3.3871 BAU .9449 SGT 4633.6 SGR 2062.1 SG3 3478.4 ST 1340.0 SR 1175.3 SS 3776.3
RDE .8527 RRA -.9845 RC3 1.2820 FAU .55061 RRT -.9283 RRF -.9530 RTF .9883 CRT -.8598 CRS .9307 CST -.9869
FDE-8.5021 FRA23.9509 FC-24.4265 BSP 16092 SGB 5071.7 R23 .0370 R13 -.9922 LSA 4148.2 MSA 478.7 SSA 19.8
BDE 1.0766 BRA 2.7400 BC3 3.6216 FSP 12059 SG1 5022.1 SG2 707.7 THA 157.07 EL1 1720.0 EL2 467.6 ALF 139.35

LAUNCH DATE OCT 5 1964 FLIGHT TIME 338.00 ARRIVAL DATE SEP 8 1965

HELIOCENTRIC CONIC DISTANCE 776.035 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 32.517 GAL -7.33 AZL 89.06 HCA 244.87 SMA 185.07 ECC .22898 INC .9394 V1 29.788
RP 221.89 LAP -.85 LOP 256.65 VP 21.888 GAP -6.64 AZP 90.40 TAL 318.82 TAP 203.68 RCA 142.69 APO 227.44 V2 24.779
RC 264.895 GL 6.85 GP 9.06 ZAL 145.38 ZAP 84.05 ETS 180.27 ZAE 118.06 ETE 173.35 ZAC 92.61 ETC 258.33 CLP 83.97

PLANETOCENTRIC CONIC

C3 19.666 VHL 4.435 DLA 15.00 RAL 162.08 RAD 6567.8 VEL 11.876 PTH 2.11 VHP 2.996 DPA 17.49 RAP 166.50 ECC 1.3236

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 13 16	2696.13	-27.61	74.28	28.35	96.55	19 58 12	2096.1	-26.42	65.82
90.00	11 13 9	4368.66	5.46	181.42	22.12	62.17	12 25 57	3768.7	1.69	174.76
100.00	20 42 44	2407.59	-28.91	52.87	28.17	97.96	21 22 51	1807.6	-27.50	44.35
100.00	12 26 21	4132.44	6.61	163.42	21.49	60.78	13 35 14	3532.4	2.66	156.85
110.00	22 9 7	2137.31	-32.31	31.66	27.48	101.81	22 44 44	1537.3	-30.35	22.99
110.00	13 16 28	3975.48	9.56	149.71	19.69	57.02	14 22 43	3375.5	5.15	143.40

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.7430 TRA 2.8081 TC3-3.6056 BAU 1.0041 SGT 5023.6 SGR 2033.0 SG3 3431.5 ST 1482.8 SR 1170.3 SS 3757.5
RDE .8543 RRA -.9652 RC3 1.2595 FAU .54529 RRT -.9280 RRF -.9509 RTF .9901 CRT -.8638 CRS .9295 CST -.9886
FDE-8.4735 FRA23.6921 FC-24.0047 BSP 17283 SGB 5419.4 R23 .0361 R13 -.9932 LSA 4177.6 MSA 484.1 SSA 19.3
BDE 1.1322 BRA 2.9675 BC3 3.8193 FSP 11888 SG1 5372.9 SG2 708.1 THA 159.03 EL1 1827.4 EL2 478.4 ALF 142.73

LAUNCH DATE OCT 5 1964 FLIGHT TIME 340.00 ARRIVAL DATE SEP 10 1965

HELIOCENTRIC CONIC DISTANCE 780.033 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 32.516 GAL -7.37 AZL 89.03 HCA 245.97 SMA 185.05 ECC .22931 INC .9656 V1 29.788
RP 221.51 LAP -.88 LOP 257.75 VP 21.934 GAP -6.87 AZP 90.39 TAL 318.61 TAP 204.58 RCA 142.62 APO 227.48 V2 24.820
RC 266.379 GL 7.01 GP 8.94 ZAL 145.57 ZAP 82.11 ETS 180.59 ZAE 115.92 ETE 173.91 ZAC 92.33 ETC 258.46 CLP 82.01

PLANETOCENTRIC CONIC

C3 19.832 VHL 4.453 DLA 15.07 RAL 162.35 RAD 6567.8 VEL 11.883 PTH 2.11 VHP 3.016 DPA 17.72 RAP 165.64 ECC 1.3264

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 13 42	2700.55	-27.64	74.60	28.80	96.39	19 58 43	2100.5	-26.47	66.13
90.00	11 14 50	4368.23	5.44	181.39	22.51	62.17	12 27 38	3768.2	1.68	174.74
100.00	20 43 14	2411.85	-28.95	53.18	28.62	97.80	21 23 25	1811.8	-27.57	44.65
100.00	12 28 0	4132.17	6.60	163.41	21.88	60.78	13 36 52	3532.2	2.65	156.84
110.00	22 9 43	2141.24	-32.37	31.95	27.94	101.65	22 45 24	1541.2	-30.42	23.27
110.00	13 18 0	3975.54	9.57	149.72	20.07	57.03	14 24 15	3375.5	5.16	143.40

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.8292 TRA 3.0546 TC3-3.8173 BAU 1.0636 SGT 5409.5 SGR 2000.8 SG3 3376.5 ST 1624.6 SR 1163.8 SS 3733.2
RDE .8552 RRA -.9448 RC3 1.2339 FAU .53844 RRT -.9271 RRF -.9486 RTF .9915 CRT -.8665 CRS .9282 CST -.9900
FDE-8.4226 FRA23.3933 FC-23.5051 BSP 18491 SGB 5767.6 R23 .0356 R13 -.9939 LSA 4206.1 MSA 489.2 SSA 18.8
BDE 1.1912 BRA 3.1974 BC3 4.0117 FSP 11710 SG1 5723.9 SG2 708.9 THA 160.77 EL1 1938.2 EL2 486.9 ALF 145.71

LAUNCH DATE OCT 5 1964 FLIGHT TIME 342.00 ARRIVAL DATE SEP 12 1965

HELIOCENTRIC CONIC DISTANCE 784.035 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 32.515 GAL -7.42 AZL 89.01 HCA 247.08 SMA 185.04 ECC .22969 INC .9915 V1 29.788
RP 221.13 LAP -.91 LOP 258.86 VP 21.980 GAP -7.10 AZP 90.39 TAL 318.40 TAP 205.47 RCA 142.54 APO 227.54 V2 24.862
RC 267.844 GL 7.16 GP 8.81 ZAL 145.76 ZAP 80.20 ETS 180.90 ZAE 113.81 ETE 174.44 ZAC 92.05 ETC 258.58 CLP 80.08

PLANETOCENTRIC CONIC

C3 20.013 VHL 4.474 DLA 15.13 RAL 162.63 RAD 6567.8 VEL 11.891 PTH 2.11 VHP 3.039 DPA 17.93 RAP 164.80 ECC 1.3294

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 14 17	2704.75	-27.68	74.90	29.27	96.24	19 59 22	2104.7	-26.52	66.43
90.00	11 16 28	4368.36	5.45	181.40	22.93	62.17	12 29 16	3768.4	1.68	174.74
100.00	20 43 51	2415.91	-28.98	53.48	29.09	97.65	21 24 7	1815.9	-27.62	44.94
100.00	12 29 35	4132.43	6.60	163.42	22.30	60.78	13 38 27	3532.4	2.66	156.85
110.00	22 10 26	2145.03	-32.42	32.23	28.42	101.49	22 46 11	1545.0	-30.50	23.54
110.00	13 19 30	3976.08	9.59	149.75	20.48	57.03	14 25 46	3376.1	5.18	143.43

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.9162 TRA 3.3035 TC3-4.0213 BAU 1.1233 SGT 5790.6 SGR 1966.4 SG3 3314.7 ST 1765.6 SR 1156.5 SS 3705.7
RDE .8558 RRA -.9234 RC3 1.2062 FAU .53038 RRT -.9255 RRF -.9460 RTF .9925 CRT -.8683 CRS .9267 CST -.9910
FDE-8.3584 FRA23.0578 FC-22.9435 BSP 19702 SGB 6115.4 R23 .0352 R13 -.9945 LSA 4235.8 MSA 494.2 SSA 18.3
BDE 1.2537 BRA 3.4301 BC3 4.1983 FSP 11508 SG1 6074.0 SG2 710.1 THA 162.30 EL1 2052.1 EL2 493.7 ALF 148.33

LAUNCH DATE OCT 5 1964 FLIGHT TIME 344.00 ARRIVAL DATE SEP 14 1965

HELIOCENTRIC CONIC DISTANCE 788.043 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 32.514 GAL -7.46 AZL 88.98 HCA 248.19 SMA 185.03 ECC .23011 INC 1.0170 V1 29.788
RP 220.75 LAP -.94 LOP 259.97 VP 22.026 GAP -7.33 AZP 90.38 TAL 318.17 TAP 206.35 RCA 142.45 APO 227.61 V2 24.903
RC 269.292 GL 7.31 GP 8.68 ZAL 145.97 ZAP 78.31 ETS 181.20 ZAE 111.72 ETE 174.95 ZAC 91.78 ETC 258.70 CLP 78.18

PLANETOCENTRIC CONIC

C3 20.210 VHL 4.496 DLA 15.17 RAL 162.92 RAD 6567.8 VEL 11.899 PTH 2.11 VHP 3.065 DPA 18.12 RAP 163.98 ECC 1.3326

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 15 0	2708.73	-27.71	75.19	29.75	96.10	20 0 9	2108.7	-26.57	66.71
90.00	11 18 1	4369.05	5.47	181.44	23.36	62.17	12 30 51	3769.0	1.70	174.78
100.00	20 44 36	2419.79	-29.02	53.76	29.58	97.51	21 24 56	1819.8	-27.68	45.21
100.00	12 31 7	4133.23	6.63	163.47	22.73	60.79	13 40 0	3533.2	2.69	156.90
110.00	22 11 15	2148.67	-32.47	32.51	28.91	101.33	22 47 4	1548.7	-30.57	23.81
110.00	13 20 57	3977.11	9.62	149.80	20.91	57.04	14 27 14	3377.1	5.22	143.48

DIFFERENTIAL CORRECTIONS
TDE-1.0037 TRA 3.5524 TC3-4.2162 BAU 1.1827
RDE .8559 RRA -.9012 RC3 1.1762 FAU .52105
FDE-8.2798 FRA22.6877 FC-22.3201 BSP 20911
BDE 1.3191 BRA 3.6649 BC3 4.3772 FSP 11288

MID-COURSE EXECUTION ACCURACY
SGT 6165.4 SGR 1930.0 SG3 3246.2
RRT -.9234 RRF -.9431 RTF .9934
SGB 6460.4 R23 .0351 R13 -.9950
SG1 6421.1 SG2 711.4 THA 163.67

ORBIT DETERMINATION ACCURACY
ST 1905.2 SR 1148.3 SS 3674.4
CRT -.8692 CRS .9252 CST -.9918
LSA 4266.2 MSA 499.0 SSA 17.9
EL1 2167.8 EL2 499.0 ALF 150.64

LAUNCH DATE OCT 5 1964 FLIGHT TIME 346.00 ARRIVAL DATE SEP 16 1965

HELIOCENTRIC CONIC DISTANCE 792.055 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 32.514 GAL -7.52 AZL 88.96 HCA 249.30 SMA 185.03 ECC .23059 INC 1.0422 V1 29.788
RP 220.37 LAP -.97 LOP 261.08 VP 22.072 GAP -7.56 AZP 90.37 TAL 317.93 TAP 207.23 RCA 142.36 APO 227.69 V2 24.945
RC 270.721 GL 7.46 GP 8.54 ZAL 146.18 ZAP 76.46 ETS 181.49 ZAE 109.65 ETE 175.42 ZAC 91.50 ETC 258.82 CLP 76.30

PLANETOCENTRIC CONIC

C3 20.424 VHL 4.519 DLA 15.21 RAL 163.21 RAD 6567.8 VEL 11.908 PTH 2.12 VHP 3.095 DPA 18.29 RAP 163.20 ECC 1.3361

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 15 52	2712.50	-27.73	75.47	30.26	95.97	20 1 4	2112.5	-26.62	66.98
90.00	11 19 32	4370.30	5.51	181.51	23.82	62.18	12 32 22	3770.3	1.74	174.85
100.00	20 45 29	2423.47	-29.05	54.03	30.08	97.37	21 25 53	1823.5	-27.73	45.48
100.00	12 32 35	4134.56	6.68	163.54	23.18	60.80	13 41 30	3534.6	2.73	156.97
110.00	22 12 11	2152.18	-32.51	32.77	29.42	101.18	22 48 4	1552.2	-30.63	24.06
110.00	13 22 22	3978.61	9.68	149.88	21.35	57.06	14 28 41	3378.6	5.27	143.56

DIFFERENTIAL CORRECTIONS
TDE-1.0920 TRA 3.8005 TC3-4.4021 BAU 1.2420
RDE .8558 RRA -.8782 RC3 1.1448 FAU .51079
FDE-8.1886 FRA22.2841 FC-21.6519 BSP 22108
BDE 1.3874 BRA 3.9007 BC3 4.5486 FSP 11052

MID-COURSE EXECUTION ACCURACY
SGT 6533.0 SGR 1891.9 SG3 3172.1
RRT -.9208 RRF -.9401 RTF .9941
SGB 6801.4 R23 .0352 R13 -.9955
SG1 6764.0 SG2 712.8 THA 164.90

ORBIT DETERMINATION ACCURACY
ST 2043.3 SR 1139.3 SS 3639.7
CRT -.8696 CRS .9236 CST -.9924
LSA 4297.3 MSA 503.4 SSA 17.4
EL1 2284.7 EL2 503.0 ALF 152.70

LAUNCH DATE OCT 5 1964 FLIGHT TIME 348.00 ARRIVAL DATE SEP 18 1965

HELIOCENTRIC CONIC DISTANCE 796.071 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 32.514 GAL -7.57 AZL 88.93 HCA 250.42 SMA 185.02 ECC .23111 INC 1.0671 V1 29.788
RP 220.00 LAP -1.01 LOP 262.20 VP 22.119 GAP -7.78 AZP 90.36 TAL 317.67 TAP 208.09 RCA 142.26 APO 227.79 V2 24.986
RC 272.134 GL 7.59 GP 8.40 ZAL 146.41 ZAP 74.63 ETS 181.76 ZAE 107.61 ETE 175.87 ZAC 91.24 ETC 258.93 CLP 74.46

PLANETOCENTRIC CONIC

C3 20.654 VHL 4.545 DLA 15.23 RAL 163.52 RAD 6567.8 VEL 11.918 PTH 2.12 VHP 3.128 DPA 18.45 RAP 162.46 ECC 1.3399

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 16 51	2716.06	-27.76	75.72	30.78	95.84	20 2 7	2116.1	-26.66	67.23
90.00	11 20 58	4372.11	5.57	181.61	24.29	62.19	12 33 50	3772.1	1.80	174.95
100.00	20 46 30	2426.97	-29.08	54.29	30.61	97.24	21 26 57	1827.0	-27.78	45.73
100.00	12 34 0	4136.43	6.74	163.64	23.65	60.81	13 42 57	3536.4	2.80	157.07
110.00	22 13 14	2155.56	-32.56	33.02	29.95	101.04	22 49 10	1555.6	-30.69	24.30
110.00	13 23 45	3980.60	9.75	149.99	21.81	57.07	14 30 6	3380.6	5.35	143.67

DIFFERENTIAL CORRECTIONS
TDE-1.1808 TRA 4.0481 TC3-4.5780 BAU 1.3009
RDE .8555 RRA -.8547 RC3 1.1122 FAU .49967
FDE-8.0871 FRA21.8525 FC-20.9440 BSP 23285
BDE 1.4581 BRA 4.1374 BC3 4.7112 FSP 10793

MID-COURSE EXECUTION ACCURACY
SGT 6892.6 SGR 1852.6 SG3 3093.1
RRT -.9177 RRF -.9367 RTF .9946
SGB 7137.3 R23 .0354 R13 -.9958
SG1 7101.4 SG2 714.3 THA 166.00

ORBIT DETERMINATION ACCURACY
ST 2179.3 SR 1129.8 SS 3602.3
CRT -.8695 CRS .9220 CST -.9929
LSA 4329.5 MSA 507.6 SSA 17.0
EL1 2402.0 EL2 506.2 ALF 154.52

LAUNCH DATE OCT 5 1964 FLIGHT TIME 350.00 ARRIVAL DATE SEP 20 1965

HELIOCENTRIC CONIC DISTANCE 800.088 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 32.514 GAL -7.63 AZL 88.91 HCA 251.54 SMA 185.03 ECC .23168 INC 1.0918 V1 29.788
RP 219.62 LAP -1.04 LOP 263.32 VP 22.165 GAP -8.00 AZP 90.35 TAL 317.40 TAP 208.94 RCA 142.16 APO 227.89 V2 25.027
RC 273.529 GL 7.72 GP 8.26 ZAL 146.66 ZAP 72.85 ETS 182.03 ZAE 105.61 ETE 176.29 ZAC 90.98 ETC 259.04 CLP 72.66

PLANETOCENTRIC CONIC

C3 20.903 VHL 4.572 DLA 15.24 RAL 163.83 RAD 6567.8 VEL 11.928 PTH 2.12 VHP 3.165 DPA 18.58 RAP 161.75 ECC 1.3440

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 17 59	2719.39	-27.78	75.96	31.32	95.72	20 3 19	2119.4	-26.70	67.46
90.00	11 22 20	4374.51	5.64	181.74	24.78	62.21	12 35 15	3774.5	1.88	175.09
100.00	20 47 38	2430.27	-29.11	54.53	31.15	97.11	21 28 9	1830.3	-27.82	45.96
100.00	12 35 22	4138.86	6.82	163.78	24.13	60.83	13 44 21	3538.9	2.88	157.21
110.00	22 14 24	2158.80	-32.60	33.27	30.50	100.90	22 50 23	1558.8	-30.75	24.53
110.00	13 25 6	3983.10	9.85	150.12	22.29	57.10	14 31 29	3383.1	5.44	143.80

DIFFERENTIAL CORRECTIONS
TDE-1.2583 TRA 4.3109 TC3-4.7211 BAU 1.3527
RDE .8503 RRA -.8351 RC3 1.0692 FAU .48298
FDE-7.8746 FRA21.4888 FC-20.0038 BSP 24795
BDE 1.5186 BRA 4.3910 BC3 4.8407 FSP 10726

MID-COURSE EXECUTION ACCURACY
SGT 7244.0 SGR 1807.7 SG3 3006.7
RRT -.9144 RRF -.9327 RTF .9949
SGB 7466.2 R23 .0346 R13 -.9959
SG1 7432.1 SG2 713.2 THA 167.02

ORBIT DETERMINATION ACCURACY
ST 2307.7 SR 1114.5 SS 3541.8
CRT -.8673 CRS .9182 CST -.9935
LSA 4341.6 MSA 512.1 SSA 17.0
EL1 2511.5 EL2 509.7 ALF 156.23

LAUNCH DATE OCT 5 1964 FLIGHT TIME 352.00 ARRIVAL DATE SEP 22 1965

HELIOCENTRIC CONIC DISTANCE 804.117 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 32.515 GAL -7.69 AZL 88.88 HCA 252.67 SMA 185.03 ECC .23231 INC 1.1162 V1 29.788
RP 219.25 LAP -1.07 LOP 264.45 VP 22.212 GAP -8.22 AZP 90.33 TAL 317.12 TAP 209.78 RCA 142.05 APO 228.02 V2 25.067
RC 274.906 GL 7.84 GP 8.12 ZAL 146.91 ZAP 71.09 ETS 182.28 ZAE 103.63 ETE 176.69 ZAC 90.72 ETC 259.14 CLP 70.89

PLANETOCENTRIC CONIC

C3 21.168 VHL 4.601 DLA 15.25 RAL 164.15 RAD 6567.9 VEL 11.939 PTH 2.12 VHP 3.204 DPA 18.70 RAP 161.07 ECC 1.3484

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 19 14	2722.55	-27.80	76.19	31.87	95.61	20 14 37	2122.5	-26.73	67.69
90.00	11 23 39	4377.40	5.73	181.91	25.28	62.22	12 36 37	3777.4	1.97	175.25
100.00	20 48 53	2433.41	-29.14	54.76	31.70	96.99	21 29 27	1833.4	-27.86	46.19
100.00	12 36 41	4141.77	6.91	163.94	24.64	60.85	13 45 43	3541.8	2.98	157.37
110.00	22 15 39	2161.93	-32.64	33.50	31.07	100.77	22 51 41	1561.9	-30.81	24.76
110.00	13 26 24	3986.02	9.95	150.28	22.79	57.13	14 32 50	3386.0	5.55	143.95

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.3607 TRA 4.5412 TC3-4.8977 BAU 1.4172 SGT 7585.6 SGR 1771.8 SG3 2923.2 ST 2445.8 SR 1109.5 SS 3520.4
RDE .8546 RRA -.8065 RC3 1.0442 FAU .47520 RRT -.9103 RRF -.9293 RTF .9954 CRT -.8684 CRS .9187 CST -.9936
FDE-7.8595 FRA20.9190 FC-19.4351 BSP 25588 SGB 7789.7 R23 .0362 R13 -.9963 LSA 4397.8 MSA 515.1 SSA 16.2
BDE 1.6068 BRA 4.6122 BC3 5.0078 FSP 10239 SG1 7756.7 SG2 717.1 THA 167.89 EL1 2636.8 EL2 510.3 ALF 157.62

LAUNCH DATE OCT 5 1964 FLIGHT TIME 354.00 ARRIVAL DATE SEP 24 1965

HELIOCENTRIC CONIC DISTANCE 808.145 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 32.515 GAL -7.76 AZL 88.86 HCA 253.80 SMA 185.04 ECC .23298 INC 1.1405 V1 29.788
RP 218.89 LAP -1.10 LOP 265.58 VP 22.258 GAP -8.44 AZP 90.32 TAL 316.82 TAP 210.62 RCA 141.93 APO 228.16 V2 25.108
RC 276.266 GL 7.96 GP 7.98 ZAL 147.17 ZAP 69.38 ETS 182.52 ZAE 101.69 ETE 177.06 ZAC 90.48 ETC 259.24 CLP 69.17

PLANETOCENTRIC CONIC

C3 21.452 VHL 4.632 DLA 15.24 RAL 164.48 RAD 6567.9 VEL 11.951 PTH 2.13 VHP 3.247 DPA 18.80 RAP 160.44 ECC 1.3530

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 20 37	2725.48	-27.82	76.40	32.45	95.50	20 6 3	2125.5	-26.77	67.90
90.00	11 24 54	4380.89	5.84	182.10	25.80	62.24	12 37 55	3780.9	2.08	175.44
100.00	20 50 16	2436.37	-29.16	54.97	32.28	96.88	21 30 53	1836.4	-27.90	46.40
100.00	12 37 56	4145.23	7.03	164.13	25.16	60.87	13 47 2	3545.2	3.09	157.56
110.00	22 17 2	2164.92	-32.68	33.73	31.65	100.64	22 53 7	1564.9	-30.87	24.98
110.00	13 27 40	3989.45	10.08	150.46	23.31	57.16	14 34 10	3389.4	5.68	144.13

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.4507 TRA 4.7878 TC3-5.0402 BAU 1.4742 SGT 7918.4 SGR 1730.8 SG3 2833.8 ST 2575.2 SR 1098.6 SS 3475.1
RDE .8538 RRA -.7823 RC3 1.0093 FAU .46203 RRT -.9060 RRF -.9251 RTF .9956 CRT -.8672 CRS .9169 CST -.9938
FDE-7.7294 FRA20.4284 FC-18.6459 BSP 26715 SGB 8105.4 R23 .0367 R13 -.9964 LSA 4432.3 MSA 518.6 SSA 15.9
BDE 1.6833 BRA 4.8513 BC3 5.1402 FSP 9949 SG1 8073.5 SG2 718.4 THA 168.71 EL1 2752.6 EL2 511.7 ALF 158.93

LAUNCH DATE OCT 5 1964 FLIGHT TIME 356.00 ARRIVAL DATE SEP 26 1965

HELIOCENTRIC CONIC DISTANCE 812.177 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 32.516 GAL -7.83 AZL 88.84 HCA 254.93 SMA 185.06 ECC .23371 INC 1.1645 V1 29.788
RP 218.52 LAP -1.12 LOP 266.71 VP 22.305 GAP -8.66 AZP 90.30 TAL 316.51 TAP 211.44 RCA 141.81 APO 228.31 V2 25.148
RC 277.609 GL 8.07 GP 7.83 ZAL 147.45 ZAP 67.70 ETS 182.75 ZAE 99.78 ETE 177.41 ZAC 90.24 ETC 259.33 CLP 67.48

PLANETOCENTRIC CONIC

C3 21.756 VHL 4.664 DLA 15.22 RAL 164.82 RAD 6567.9 VEL 11.964 PTH 2.13 VHP 3.293 DPA 18.88 RAP 159.84 ECC 1.3580

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 22 9	2728.23	-27.84	76.60	33.04	95.41	20 7 37	2128.2	-26.80	68.09
90.00	11 26 5	4384.93	5.97	182.33	26.35	62.27	12 39 10	3784.9	2.21	175.67
100.00	20 51 47	2439.16	-29.18	55.18	32.87	96.78	21 32 26	1839.2	-27.94	46.60
100.00	12 39 8	4149.23	7.16	164.36	25.70	60.90	13 48 18	3549.2	3.23	157.78
110.00	22 18 31	2167.80	-32.71	33.94	32.25	100.52	22 54 38	1567.8	-30.92	25.18
110.00	13 28 54	3993.35	10.23	150.68	23.84	57.20	14 35 27	3393.4	5.83	144.34

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.5426 TRA 5.0323 TC3-5.1719 BAU 1.5307 SGT 8240.7 SGR 1690.1 SG3 2742.4 ST 2702.8 SR 1087.9 SS 3429.3
RDE .8534 RRA -.7580 RC3 .9745 FAU .44852 RRT -.9014 RRF -.9207 RTF .9959 CRT -.8661 CRS .9153 CST -.9940
FDE-7.5997 FRA19.9200 FC-17.8483 BSP 27801 SGB 8412.2 R23 .0374 R13 -.9966 LSA 4469.5 MSA 521.5 SSA 15.5
BDE 1.7629 BRA 5.0890 BC3 5.2629 FSP 9645 SG1 8381.4 SG2 719.6 THA 169.45 EL1 2868.1 EL2 512.4 ALF 160.12

LAUNCH DATE OCT 5 1964 FLIGHT TIME 358.00 ARRIVAL DATE SEP 28 1965

HELIOCENTRIC CONIC DISTANCE 816.212 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 32.517 GAL -7.90 AZL 88.81 HCA 256.07 SMA 185.07 ECC .23449 INC 1.1883 V1 29.788
RP 218.16 LAP -1.15 LOP 267.85 VP 22.352 GAP -8.87 AZP 90.29 TAL 316.19 TAP 212.26 RCA 141.68 APO 228.47 V2 25.188
RC 278.933 GL 8.17 GP 7.69 ZAL 147.74 ZAP 66.07 ETS 182.97 ZAE 97.91 ETE 177.75 ZAC 90.01 ETC 259.41 CLP 65.84

PLANETOCENTRIC CONIC

C3 22.080 VHL 4.699 DLA 15.19 RAL 165.17 RAD 6567.9 VEL 11.977 PTH 2.13 VHP 3.342 DPA 18.94 RAP 159.30 ECC 1.3634

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 23 48	2730.78	-27.85	76.79	33.65	95.31	20 9 18	2130.8	-26.83	68.27
90.00	11 27 13	4389.52	6.12	182.59	26.91	62.30	12 40 22	3789.5	2.36	175.92
100.00	20 53 25	2441.78	-29.20	55.37	33.48	96.68	21 34 6	1841.8	-27.97	46.78
100.00	12 40 17	4153.75	7.31	164.61	26.26	60.94	13 49 31	3553.8	3.38	158.03
110.00	22 20 6	2170.56	-32.75	34.15	32.86	100.40	22 56 16	1570.6	-30.97	25.38
110.00	13 30 6	3997.74	10.39	150.91	24.40	57.25	14 36 43	3397.7	6.00	144.57

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.6350 TRA 5.2774 TC3-5.2916 BAU 1.5864 SGT 8553.8 SGR 1649.5 SG3 2649.5 ST 2828.2 SR 1076.8 SS 3381.3
RDE .8529 RRA -.7340 RC3 .9394 FAU .43457 RRT -.8964 RRF -.9161 RTF .9960 CRT -.8648 CRS .9137 CST -.9942
FDE-7.4621 FRA19.4050 FC-17.0394 BSP 28872 SGB 8711.4 R23 .0381 R13 -.9967 LSA 4507.3 MSA 524.2 SSA 15.2
BDE 1.8441 BRA 5.3282 BC3 5.3743 FSP 9341 SG1 8681.6 SG2 720.5 THA 170.12 EL1 2982.5 EL2 512.7 ALF 161.20

LAUNCH DATE OCT 5 1964 FLIGHT TIME 360.00 ARRIVAL DATE SEP 30 1965

HELIOCENTRIC CONIC DISTANCE 820.250 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 32.518 GAL -7.98 AZL 88.79 HCA 257.21 SMA 185.09 ECC .23532 INC 1.2120 V1 29.788
RP 217.80 LAP -1.18 LOP 268.99 VP 22.398 GAP -9.08 AZP 90.27 TAL 315.85 TAP 213.06 RCA 141.54 APO 228.65 V2 25.228
RC 280.240 GL 8.27 GP 7.55 ZAL 148.04 ZAP 64.47 ETS 183.18 ZAE 96.08 ETE 178.06 ZAC 89.79 ETC 259.49 CLP 64.23

PLANETOCENTRIC CONIC

C3 22.424 VHL 4.735 DLA 15.15 RAL 165.53 RAD 6567.9 VEL 11.992 PTH 2.14 VHP 3.394 DPA 18.98 RAP 158.79 ECC 1.3690

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 25 34	2733.14	-27.87	76.96	34.27	95.23	20 11 7	2133.1	-26.85	68.44
90.00	11 28 17	4394.67	6.28	182.88	27.49	62.33	12 41 31	3794.7	2.53	176.21
100.00	20 55 9	2444.24	-29.22	55.55	34.11	96.59	21 35 54	1844.2	-28.00	46.96
100.00	12 41 23	4158.81	7.48	164.89	26.84	60.97	13 50 42	3558.8	3.55	158.31
110.00	22 21 47	2173.21	-32.78	34.35	33.50	100.28	22 58 0	1573.2	-31.02	25.58
110.00	13 31 15	4002.60	10.57	151.18	24.97	57.30	14 37 57	3402.6	6.18	144.83

DIFFERENTIAL CORRECTIONS
TDE-1.7279 TRA 5.5219 TC3-5.3986 BAU 1.6410
RDE .8524 RRA -.7102 RC3 .9046 FAU .42036
FDE-7.3195 FRA18.8816 FC-16.2288 BSP 29905
BDE 1.9267 BRA 5.5674 BC3 5.4739 FSP 9028

MID-COURSE EXECUTION ACCURACY
SGT 8855.8 SGR 1609.4 SG3 2555.6
RRT -.8910 RRF -.9111 RTF .9962
SGB 9000.9 R23 .0388 R13 -.9968
SG1 8971.9 SG2 721.3 THA 170.74

ORBIT DETERMINATION ACCURACY
ST 2950.7 SR 1065.7 SS 3331.5
CRT -.8633 CRS .9121 CST -.9943
LSA 4545.7 MSA 526.5 SSA 14.9
EL1 3095.1 EL2 512.7 ALF 162.18

LAUNCH DATE OCT 5 1964 FLIGHT TIME 362.00 ARRIVAL DATE OCT 2 1965

HELIOCENTRIC CONIC DISTANCE 824.291 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 32.519 GAL -8.06 AZL 88.76 HCA 258.35 SMA 185.11 ECC .23621 INC 1.2356 V1 29.788
RP 217.44 LAP -1.21 LOP 270.14 VP 22.445 GAP -9.30 AZP 90.25 TAL 315.50 TAP 213.85 RCA 141.39 APO 228.84 V2 25.268
RC 281.529 GL 8.36 GP 7.40 ZAL 148.35 ZAP 62.92 ETS 183.37 ZAE 94.29 ETE 178.35 ZAC 89.58 ETC 259.56 CLP 62.67

PLANETOCENTRIC CONIC

C3 22.791 VHL 4.774 DLA 15.11 RAL 165.89 RAD 6567.9 VEL 12.007 PTH 2.14 VHP 3.449 DPA 19.01 RAP 158.33 ECC 1.3751

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 27 29	2735.33	-27.88	77.12	34.92	95.15	20 13 4	2135.3	-26.88	68.60
90.00	11 29 17	4400.36	6.46	183.20	28.08	62.37	12 42 37	3800.4	2.71	176.53
100.00	20 57 1	2446.54	-29.24	55.72	34.76	96.50	21 37 48	1846.5	-28.03	47.12
100.00	12 42 25	4164.38	7.66	165.20	27.43	61.02	13 51 49	3564.4	3.74	158.61
110.00	22 23 34	2175.75	-32.81	34.55	34.15	100.17	22 59 50	1575.7	-31.06	25.76
110.00	13 32 22	4007.94	10.76	151.46	25.56	57.36	14 39 10	3407.9	6.38	145.11

DIFFERENTIAL CORRECTIONS
TDE-1.8215 TRA 5.7672 TC3-5.4938 BAU 1.6948
RDE .8520 RRA -.6869 RC3 .8700 FAU .40589
FDE-7.1722 FRA18.3557 FC-15.4179 BSP 30929
BDE 2.0109 BRA 5.8079 BC3 5.5623 FSP 8719

MID-COURSE EXECUTION ACCURACY
SGT 9148.4 SGR 1569.9 SG3 2461.2
RRT -.8853 RRF -.9059 RTF .9962
SGB 9282.1 R23 .0397 R13 -.9968
SG1 9254.0 SG2 721.9 THA 171.31

ORBIT DETERMINATION ACCURACY
ST 3070.8 SR 1054.4 SS 3280.1
CRT -.8617 CRS .9104 CST -.9944
LSA 4584.9 MSA 528.6 SSA 14.6
EL1 3206.1 EL2 512.4 ALF 163.07

LAUNCH DATE OCT 5 1964 FLIGHT TIME 364.00 ARRIVAL DATE OCT 4 1965

HELIOCENTRIC CONIC DISTANCE 828.333 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 32.521 GAL -8.15 AZL 88.74 HCA 259.50 SMA 185.14 ECC .23716 INC 1.2590 V1 29.788
RP 217.09 LAP -1.24 LOP 271.28 VP 22.491 GAP -9.51 AZP 90.23 TAL 315.13 TAP 214.63 RCA 141.23 APO 229.05 V2 25.307
RC 282.801 GL 8.45 GP 7.26 ZAL 148.67 ZAP 61.41 ETS 183.56 ZAE 92.53 ETE 178.63 ZAC 89.37 ETC 259.62 CLP 61.15

PLANETOCENTRIC CONIC

C3 23.180 VHL 4.815 DLA 15.05 RAL 166.26 RAD 6567.9 VEL 12.023 PTH 2.15 VHP 3.507 DPA 19.02 RAP 157.91 ECC 1.3815

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 29 30	2737.34	-27.89	77.26	35.58	95.08	20 15 7	2137.3	-26.90	68.74
90.00	11 30 14	4406.60	6.66	183.56	28.70	62.41	12 43 40	3806.6	2.91	176.88
100.00	20 59 0	2448.69	-29.26	55.88	35.42	96.42	21 39 49	1848.7	-28.06	47.28
100.00	12 43 24	4170.48	7.86	165.54	28.04	61.07	13 52 55	3570.5	3.94	158.95
110.00	22 25 28	2178.19	-32.84	34.73	34.82	100.07	23 1 46	1578.2	-31.10	25.94
110.00	13 33 27	4013.74	10.97	151.78	26.17	57.42	14 40 20	3413.7	6.60	145.42

DIFFERENTIAL CORRECTIONS
TDE-1.9165 TRA 6.0125 TC3-5.5774 BAU 1.7477
RDE .8518 RRA -.6641 RC3 .8360 FAU .39138
FDE-7.0232 FRA17.8288 FC-14.6173 BSP 31916
BDE 2.0973 BRA 6.0491 BC3 5.6397 FSP 8406

MID-COURSE EXECUTION ACCURACY
SGT 9430.9 SGR 1531.5 SG3 2367.2
RRT -.8792 RRF -.9005 RTF .9963
SGB 9554.4 R23 .0405 R13 -.9968
SG1 9527.1 SG2 722.2 THA 171.83

ORBIT DETERMINATION ACCURACY
ST 3188.8 SR 1043.3 SS 3227.8
CRT -.8602 CRS .9089 CST -.9945
LSA 4625.4 MSA 530.3 SSA 14.4
EL1 3315.9 EL2 511.7 ALF 163.89

LAUNCH DATE OCT 5 1964 FLIGHT TIME 366.00 ARRIVAL DATE OCT 6 1965

HELIOCENTRIC CONIC DISTANCE 832.377 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 32.523 GAL -8.24 AZL 88.72 HCA 260.65 SMA 185.17 ECC .23816 INC 1.2823 V1 29.788
RP 216.74 LAP -1.27 LOP 272.44 VP 22.537 GAP -9.72 AZP 90.21 TAL 314.75 TAP 215.40 RCA 141.07 APO 229.27 V2 25.346
RC 284.057 GL 8.53 GP 7.12 ZAL 149.01 ZAP 59.94 ETS 183.73 ZAE 90.82 ETE 178.89 ZAC 89.18 ETC 259.68 CLP 59.68

PLANETOCENTRIC CONIC

C3 23.593 VHL 4.857 DLA 14.98 RAL 166.64 RAD 6568.0 VEL 12.040 PTH 2.15 VHP 3.568 DPA 19.01 RAP 157.54 ECC 1.3883

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 31 39	2739.19	-27.91	77.40	36.26	95.01	20 17 18	2139.2	-26.92	68.87
90.00	11 31 7	4413.38	6.87	183.94	29.33	62.46	12 44 40	3813.4	3.13	177.26
100.00	21 1 6	2450.70	-29.27	56.02	36.11	96.34	21 41 57	1850.7	-28.09	47.42
100.00	12 44 20	4177.09	8.08	165.91	28.68	61.12	13 53 58	3577.1	4.17	159.31
110.00	22 27 27	2180.54	-32.87	34.91	35.50	99.97	23 3 47	1580.5	-31.14	26.11
110.00	13 34 29	4020.02	11.20	152.12	26.80	57.49	14 41 29	3420.0	6.84	145.75

DIFFERENTIAL CORRECTIONS
TDE-2.0129 TRA 6.2584 TC3-5.6493 BAU 1.7998
RDE .8519 RRA -.6419 RC3 .8028 FAU .37685
FDE-6.8736 FRA17.3015 FC-13.8279 BSP 32882
BDE 2.1858 BRA 6.2913 BC3 5.7061 FSP 8097

MID-COURSE EXECUTION ACCURACY
SGT 9703.4 SGR 1494.1 SG3 2273.7
RRT -.8729 RRF -.8948 RTF .9964
SGB 9817.7 R23 .0414 R13 -.9968
SG1 9791.1 SG2 722.3 THA 172.30

ORBIT DETERMINATION ACCURACY
ST 3304.7 SR 1032.3 SS 3174.8
CRT -.8586 CRS .9074 CST -.9945
LSA 4667.2 MSA 531.6 SSA 14.2
EL1 3424.3 EL2 510.8 ALF 164.64

LAUNCH DATE OCT 5 1964 FLIGHT TIME 368.00 ARRIVAL DATE OCT 8 1965

HELIOCENTRIC CONIC DISTANCE 836.423 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 32.525 GAL -8.34 AZL 88.69 HCA 261.81 SMA 185.20 ECC .23922 INC 1.3056 V1 29.788
RP 216.39 LAP -1.29 LOP 273.59 VP 22.583 GAP -9.92 AZP 90.19 TAL 314.36 TAP 216.16 RCA 140.90 APO 229.50 V2 25.385
RC 285.296 GL 8.60 GP 6.99 ZAL 149.35 ZAP 58.51 ETS 183.90 ZAE 89.14 ETE 179.14 ZAC 89.00 ETC 259.72 CLP 58.24

PLANETOCENTRIC CONIC

C3 24.032 VHL 4.902 DLA 14.90 RAL 167.03 RAD 6568.0 VEL 12.059 PTH 2.16 VHP 3.632 DPA 18.99 RAP 157.22 ECC 1.3955

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 33 55	2740.88	-27.92	77.52	36.96	94.95	20 19 36	2140.9	-26.94	68.99
90.00	11 31 56	4420.70	7.10	184.35	29.98	62.52	12 45 37	3820.7	3.36	177.67
100.00	21 3 19	2452.58	-29.29	56.16	36.80	96.27	21 44 11	1852.6	-28.11	47.56
100.00	12 45 13	4184.22	8.32	166.31	29.33	61.18	13 54 58	3584.2	4.41	159.71
110.00	22 29 32	2182.80	-32.89	35.08	36.21	99.87	23 5 55	1582.8	-31.18	26.27
110.00	13 35 29	4026.77	11.45	152.49	27.44	57.57	14 42 36	3426.8	7.09	146.11

DIFFERENTIAL CORRECTIONS
TDE-2.1095 TRA 6.5058 TC3-5.7083 BAU 1.8506
RDE .8520 RRA -.6204 RC3 .7700 FAU .36222
FDE-6.7186 FRA16.7786 FC-13.0489 BSP 33828
BDE 2.2751 BRA 6.5353 BC3 5.7600 FSP 7792

MID-COURSE EXECUTION ACCURACY
SGT 9965.5 SGR 1457.6 SG3 2180.9
RRT -.8663 RRF -.8889 RTF .9964
SGB10071.5 R23 .0423 R13 -.9968
SG110045.6 SG2 722.2 THA 172.74

ORBIT DETERMINATION ACCURACY
ST 3417.5 SR 1021.2 SS 3119.9
CRT -.8569 CRS .9059 CST -.9945
LSA 4708.7 MSA 532.7 SSA 14.0
EL1 3530.2 EL2 509.6 ALF 165.33

LAUNCH DATE OCT 5 1964 FLIGHT TIME 370.00 ARRIVAL DATE OCT 10 1965

HELIOCENTRIC CONIC DISTANCE 840.470 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 32.527 GAL -8.44 AZL 88.67 HCA 262.97 SMA 185.23 ECC .24034 INC 1.3288 V1 29.788
RP 216.05 LAP -1.32 LOP 274.75 VP 22.629 GAP -10.13 AZP 90.16 TAL 313.95 TAP 216.91 RCA 140.71 APO 229.75 V2 25.423
RC 286.520 GL 8.67 GP 6.85 ZAL 149.71 ZAP 57.12 ETS 184.05 ZAE 87.50 ETE 179.37 ZAC 88.82 ETC 259.76 CLP 56.85

PLANETOCENTRIC CONIC

C3 24.496 VHL 4.949 DLA 14.81 RAL 167.42 RAD 6568.0 VEL 12.078 PTH 2.16 VHP 3.698 DPA 18.95 RAP 156.94 ECC 1.4031

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 36 18	2742.42	-27.93	77.63	37.67	94.90	20 22 0	2142.4	-26.95	69.10
90.00	11 32 42	4428.55	7.35	184.80	30.65	62.58	12 46 31	3828.5	3.62	178.11
100.00	21 5 38	2454.33	-29.30	56.29	37.52	96.20	21 46 32	1854.3	-28.13	47.68
100.00	12 46 3	4191.87	8.57	166.74	30.00	61.25	13 55 55	3591.9	4.66	160.13
110.00	22 31 43	2184.97	-32.92	35.24	36.93	99.77	23 8 8	1585.0	-31.22	26.43
110.00	13 36 28	4033.99	11.71	152.88	28.11	57.66	14 43 42	3434.0	7.36	146.49

DIFFERENTIAL CORRECTIONS
TDE-2.2077 TRA 6.7545 TC3-5.7560 BAU 1.9004
RDE .8524 RRA -.5996 RC3 .7381 FAU .34769
FDE-6.5639 FRA16.2597 FC-12.2880 BSP 34752
BDE 2.3665 BRA 6.7811 BC3 5.8031 FSP 7491

MID-COURSE EXECUTION ACCURACY
SGT10218.1 SGR 1422.4 SG3 2089.3
RRT -.8595 RRF -.8828 RTF .9964
SGB10316.7 R23 .0433 R13 -.9968
SG110291.4 SG2 721.8 THA 173.14

ORBIT DETERMINATION ACCURACY
ST 3528.2 SR 1010.3 SS 3064.5
CRT -.8552 CRS .9045 CST -.9945
LSA 4751.4 MSA 533.4 SSA 13.8
EL1 3634.6 EL2 508.3 ALF 165.96

LAUNCH DATE OCT 5 1964 FLIGHT TIME 372.00 ARRIVAL DATE OCT 12 1965

HELIOCENTRIC CONIC DISTANCE 844.517 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 32.529 GAL -8.54 AZL 88.65 HCA 264.13 SMA 185.27 ECC .24152 INC 1.3520 V1 29.788
RP 215.71 LAP -1.34 LOP 275.92 VP 22.675 GAP -10.34 AZP 90.14 TAL 313.52 TAP 217.65 RCA 140.52 APO 230.02 V2 25.461
RC 287.729 GL 8.73 GP 6.72 ZAL 150.07 ZAP 55.77 ETS 184.20 ZAE 85.90 ETE 179.59 ZAC 88.66 ETC 259.79 CLP 55.50

PLANETOCENTRIC CONIC

C3 24.988 VHL 4.999 DLA 14.71 RAL 167.83 RAD 6568.0 VEL 12.098 PTH 2.17 VHP 3.767 DPA 18.90 RAP 156.70 ECC 1.4112

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 38 48	2743.81	-27.93	77.73	38.41	94.85	20 24 32	2143.8	-26.97	69.20
90.00	11 33 25	4436.93	7.61	185.28	31.34	62.64	12 47 22	3836.9	3.88	178.58
100.00	21 8 4	2455.95	-29.31	56.41	38.26	96.14	21 48 59	1856.0	-28.15	47.80
100.00	12 46 50	4200.02	8.83	167.20	30.69	61.33	13 56 51	3600.0	4.94	160.58
110.00	22 34 0	2187.07	-32.94	35.40	37.67	99.68	23 10 27	1587.1	-31.26	26.58
110.00	13 37 24	4041.67	11.99	153.30	28.80	57.75	14 44 45	3441.7	7.65	146.90

DIFFERENTIAL CORRECTIONS
TDE-2.3073 TRA 7.0046 TC3-5.7935 BAU 1.9498
RDE .8531 RRA -.5796 RC3 .7073 FAU .33336
FDE-6.4087 FRA15.7461 FC-11.5499 BSP 35650
BDE 2.4600 BRA 7.0286 BC3 5.8365 FSP 7194

MID-COURSE EXECUTION ACCURACY
SGT10461.6 SGR 1388.5 SG3 1999.3
RRT -.8525 RRF -.8766 RTF .9963
SGB10553.4 R23 .0443 R13 -.9967
SG110528.7 SG2 721.2 THA 173.51

ORBIT DETERMINATION ACCURACY
ST 3636.7 SR 999.5 SS 3008.3
CRT -.8536 CRS .9032 CST -.9945
LSA 4794.8 MSA 533.8 SSA 13.7
EL1 3737.4 EL2 506.7 ALF 166.54

LAUNCH DATE OCT 5 1964 FLIGHT TIME 374.00 ARRIVAL DATE OCT 14 1965

HELIOCENTRIC CONIC DISTANCE 848.565 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 32.531 GAL -8.65 AZL 88.62 HCA 265.30 SMA 185.31 ECC .24277 INC 1.3751 V1 29.788
RP 215.38 LAP -1.37 LOP 277.08 VP 22.720 GAP -10.54 AZP 90.11 TAL 313.08 TAP 218.38 RCA 140.32 APO 230.30 V2 25.498
RC 288.924 GL 8.79 GP 6.59 ZAL 150.45 ZAP 54.46 ETS 184.34 ZAE 84.33 ETE 179.80 ZAC 88.51 ETC 259.82 CLP 54.19

PLANETOCENTRIC CONIC

C3 25.508 VHL 5.051 DLA 14.60 RAL 168.24 RAD 6568.0 VEL 12.120 PTH 2.17 VHP 3.840 DPA 18.83 RAP 156.51 ECC 1.4198

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 41 24	2745.07	-27.94	77.83	39.16	94.80	20 27 10	2145.1	-26.98	69.29
90.00	11 34 4	4445.83	7.89	185.78	32.05	62.72	12 48 10	3845.8	4.17	179.08
100.00	21 10 35	2457.47	-29.32	56.52	39.01	96.08	21 51 33	1857.5	-28.17	47.91
100.00	12 47 35	4208.67	9.12	167.69	31.39	61.41	13 57 43	3608.7	5.23	161.06
110.00	22 36 22	2189.10	-32.97	35.55	38.42	99.59	23 12 51	1589.1	-31.29	26.73
110.00	13 38 18	4049.80	12.29	153.75	29.50	57.85	14 45 48	3449.8	7.96	147.33

DIFFERENTIAL CORRECTIONS
TDE-2.4087 TRA 7.2566 TC3-5.8200 BAU 1.9981
RDE .8541 RRA -.5603 RC3 .6773 FAU .31920
FDE-6.2544 FRA15.2309 FC-10.8334 BSP 36517
BDE 2.5556 BRA 7.2782 BC3 5.8593 FSP 6901

MID-COURSE EXECUTION ACCURACY
SGT10695.7 SGR 1355.9 SG3 1911.1
RRT -.8453 RRF -.8702 RTF .9963
SGB10781.3 R23 .0453 R13 -.9966
SG110757.2 SG2 720.4 THA 173.86

ORBIT DETERMINATION ACCURACY
ST 3743.1 SR 989.0 SS 2951.8
CRT -.8520 CRS .9020 CST -.9945
LSA 4839.1 MSA 533.9 SSA 13.5
EL1 3838.5 EL2 504.9 ALF 167.09

LAUNCH DATE OCT 5 1964 FLIGHT TIME 376.00 ARRIVAL DATE OCT 16 1965

HELIOCENTRIC CONIC DISTANCE 852.611 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 32.533 GAL -8.76 AZL 88.60 HCA 266.47 SMA 185.35 ECC .24408 INC 1.3982 V1 29.788
RP 215.05 LAP -1.40 LOP 278.25 VP 22.765 GAP -10.75 AZP 90.09 TAL 312.62 TAP 219.09 RCA 140.11 APO 230.59 V2 25.535
RC 290.105 GL 8.84 GP 6.46 ZAL 150.84 ZAP 53.19 ETS 184.47 ZAE 82.81 ETE 180.00 ZAC 88.37 ETC 259.84 CLP 52.92

PLANETOCENTRIC CONIC

C3 26.059 VHL 5.105 DLA 14.49 RAL 168.65 RAD 6568.1 VEL 12.142 PTH 2.18 VHP 3.914 DPA 18.75 RAP 156.36 ECC 1.4289

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 44 8	2746.21	-27.95	77.91	39.93	94.76	20 29 54	2146.2	-26.99	69.37
90.00	11 34 41	4455.26	8.18	186.32	32.78	62.80	12 48 56	3855.3	4.47	179.60
100.00	21 13 13	2458.87	-29.33	56.62	39.78	96.03	21 54 12	1858.9	-28.19	48.01
100.00	12 48 16	4217.82	9.41	168.20	32.12	61.50	13 58 34	3617.8	5.53	161.56
110.00	22 38 49	2191.06	-32.99	35.70	39.19	99.51	23 15 20	1591.1	-31.33	26.87
110.00	13 39 10	4058.40	12.60	154.22	30.23	57.96	14 46 48	3458.4	8.28	147.79

DIFFERENTIAL CORRECTIONS
TDE-2.5111 TRA 7.5118 TC3-5.8352 BAU 2.0454
RDE .8553 RRA -.5420 RC3 .6484 FAU .30520
FDE-6.0985 FRA14.7410 FC-10.1394 BSP 37381
BDE 2.6528 BRA 7.5313 BC3 5.8711 FSP 6617

MID-COURSE EXECUTION ACCURACY
SGT10920.9 SGR 1324.6 SG3 1824.7
RRT -.8379 RRF -.8637 RTF .9962
SGB11000.9 R23 .0463 R13 -.9966
SG110977.4 SG2 719.3 THA 174.17

ORBIT DETERMINATION ACCURACY
ST 3847.1 SR 978.6 SS 2894.2
CRT -.8505 CRS .9009 CST -.9945
LSA 4883.6 MSA 533.6 SSA 13.4
EL1 3937.6 EL2 502.9 ALF 167.59

LAUNCH DATE OCT 5 1964 FLIGHT TIME 378.00 ARRIVAL DATE OCT 18 1965

HELIOCENTRIC CONIC DISTANCE 856.657 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 32.536 GAL -8.88 AZL 88.58 HCA 267.64 SMA 185.39 ECC .24546 INC 1.4213 V1 29.788
RP 214.72 LAP -1.42 LOP 279.43 VP 22.810 GAP -10.96 AZP 90.06 TAL 312.15 TAP 219.79 RCA 139.89 APO 230.90 V2 25.572
RC 291.272 GL 8.89 GP 6.34 ZAL 151.23 ZAP 51.96 ETS 184.60 ZAE 81.32 ETE 180.18 ZAC 88.23 ETC 259.85 CLP 51.69

PLANETOCENTRIC CONIC

C3 26.641 VHL 5.162 DLA 14.36 RAL 169.08 RAD 6568.1 VEL 12.166 PTH 2.18 VHP 3.992 DPA 18.65 RAP 156.26 ECC 1.4385

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 46 57	2747.23	-27.95	77.98	40.71	94.72	20 32 44	2147.2	-27.00	69.44
90.00	11 35 14	4465.19	8.49	186.89	33.53	62.88	12 49 39	3865.2	4.79	180.16
100.00	21 15 57	2460.19	-29.34	56.72	40.56	95.98	21 56 58	1860.2	-28.20	48.10
100.00	12 48 54	4227.47	9.73	168.75	32.87	61.59	13 59 22	3627.5	5.86	162.10
110.00	22 41 22	2192.97	-33.01	35.85	39.98	99.43	23 17 55	1593.0	-31.36	27.01
110.00	13 40 0	4067.46	12.93	154.72	30.97	58.08	14 47 47	3467.5	8.62	148.27

DIFFERENTIAL CORRECTIONS
TDE-2.6161 TRA 7.7689 TC3-5.8426 BAU 2.0927
RDE .8570 RRA -.5245 RC3 .6207 FAU .29160
FDE-5.9458 FRA14.2492 FC3-9.4759 BSP 38193
BDE 2.7529 BRA 7.7866 BC3 5.8755 FSP 6334

MID-COURSE EXECUTION ACCURACY
SGT11138.1 SGR 1294.9 SG3 1740.6
RRT -.8304 RRF -.8571 RTF .9961
SGB11213.1 R23 .0475 R13 -.9964
SG111190.1 SG2 718.0 THA 174.46

ORBIT DETERMINATION ACCURACY
ST 3949.5 SR 968.5 SS 2836.7
CRT -.8491 CRS .8999 CST -.9944
LSA 4929.4 MSA 533.1 SSA 13.3
EL1 4035.6 EL2 500.7 ALF 168.05

LAUNCH DATE OCT 5 1964 FLIGHT TIME 380.00 ARRIVAL DATE OCT 20 1965

HELIOCENTRIC CONIC DISTANCE 860.702 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 32.539 GAL -9.00 AZL 88.56 HCA 268.82 SMA 185.44 ECC .24690 INC 1.4445 V1 29.788
RP 214.40 LAP -1.44 LOP 280.61 VP 22.855 GAP -11.16 AZP 90.03 TAL 311.66 TAP 220.48 RCA 139.65 APO 231.23 V2 25.608
RC 292.426 GL 8.93 GP 6.21 ZAL 151.64 ZAP 50.77 ETS 184.72 ZAE 79.86 ETE 180.36 ZAC 88.11 ETC 259.85 CLP 50.49

PLANETOCENTRIC CONIC

C3 27.258 VHL 5.221 DLA 14.22 RAL 169.51 RAD 6568.1 VEL 12.192 PTH 2.19 VHP 4.072 DPA 18.55 RAP 156.19 ECC 1.4486

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 49 53	2748.15	-27.96	78.05	41.52	94.69	20 35 41	2148.1	-27.01	69.51
90.00	11 35 44	4475.64	8.81	187.48	34.29	62.98	12 50 19	3875.6	5.12	180.75
100.00	21 18 47	2461.41	-29.35	56.81	41.37	95.93	21 59 49	1861.4	-28.22	48.19
100.00	12 49 30	4237.61	10.05	169.32	33.63	61.70	14 0 8	3637.6	6.19	162.66
110.00	22 43 59	2194.82	-33.03	35.99	40.79	99.34	23 20 34	1594.8	-31.39	27.15
110.00	13 40 47	4076.96	13.27	155.24	31.74	58.20	14 48 44	3477.0	8.97	148.78

DIFFERENTIAL CORRECTIONS
TDE-2.7230 TRA 8.0293 TC3-5.8391 BAU 2.1388
RDE .8590 RRA -.5078 RC3 .5939 FAU .27821
FDE-5.7945 FRA13.7666 FC3-8.8364 BSP 39004
BDE 2.8553 BRA 8.0453 BC3 5.8692 FSP 6060

MID-COURSE EXECUTION ACCURACY
SGT11346.3 SGR 1266.5 SG3 1658.5
RRT -.8229 RRF -.8506 RTF .9960
SGB11416.7 R23 .0486 R13 -.9963
SG111394.2 SG2 716.5 THA 174.73

ORBIT DETERMINATION ACCURACY
ST 4049.8 SR 958.6 SS 2778.9
CRT -.8478 CRS .8991 CST -.9944
LSA 4975.8 MSA 532.3 SSA 13.2
EL1 4131.8 EL2 498.3 ALF 168.48

LAUNCH DATE OCT 5 1964 FLIGHT TIME 382.00 ARRIVAL DATE OCT 22 1965

HELIOCENTRIC CONIC DISTANCE 864.744 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 32.542 GAL -9.13 AZL 88.53 HCA 270.00 SMA 185.49 ECC .24842 INC 1.4677 V1 29.788
RP 214.08 LAP -1.47 LOP 281.79 VP 22.899 GAP -11.37 AZP 90.00 TAL 311.16 TAP 221.16 RCA 139.41 APO 231.57 V2 25.644
RC 293.566 GL 8.96 GP 6.09 ZAL 152.05 ZAP 49.61 ETS 184.83 ZAE 78.44 ETE 180.52 ZAC 88.00 ETC 259.84 CLP 49.33

PLANETOCENTRIC CONIC

C3 27.909 VHL 5.283 DLA 14.08 RAL 169.94 RAD 6568.1 VEL 12.218 PTH 2.20 VHP 4.155 DPA 18.43 RAP 156.17 ECC 1.4593

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 52 54	2748.97	-27.96	78.11	42.34	94.66	20 38 43	2149.0	-27.02	69.57
90.00	11 36 11	4486.58	9.15	188.11	35.08	63.09	12 50 57	3886.6	5.47	181.37
100.00	21 21 43	2462.55	-29.36	56.89	42.19	95.89	22 2 45	1862.6	-28.23	48.27
100.00	12 50 3	4248.22	10.40	169.93	34.42	61.82	14 0 51	3648.2	6.55	163.25
110.00	22 46 42	2196.64	-33.05	36.13	41.62	99.27	23 23 19	1596.6	-31.42	27.28
110.00	13 41 33	4086.91	13.62	155.79	32.52	58.34	14 49 40	3486.9	9.34	149.31

DIFFERENTIAL CORRECTIONS
TDE-2.8316 TRA 8.2929 TC3-5.8273 BAU 2.1846
RDE .8613 RRA -.4921 RC3 .5683 FAU .26517
FDE-5.6426 FRA13.2926 FC3-8.2253 BSP 39786
BDE 2.9597 BRA 8.3075 BC3 5.8549 FSP 5792

MID-COURSE EXECUTION ACCURACY
SGT11546.5 SGR 1239.3 SG3 1578.8
RRT -.8154 RRF -.8440 RTF .9959
SGB11612.8 R23 .0498 R13 -.9962
SG111590.8 SG2 714.8 THA 174.98

ORBIT DETERMINATION ACCURACY
ST 4147.7 SR 948.8 SS 2720.1
CRT -.8465 CRS .8983 CST -.9943
LSA 5022.0 MSA 531.2 SSA 13.1
EL1 4225.9 EL2 495.8 ALF 168.89

LAUNCH DATE OCT 5 1964 FLIGHT TIME 384.00 ARRIVAL DATE OCT 24 1965

HELIOCENTRIC CONIC DISTANCE 868.784 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 32.545 GAL -9.27 AZL 88.51 HCA 271.18 SMA 185.54 ECC .25002 INC 1.4910 V1 29.788
RP 213.77 LAP -1.49 LOP 282.97 VP 22.943 GAP -11.58 AZP 89.97 TAL 310.64 TAP 221.82 RCA 139.15 APO 231.93 V2 25.679
RC 294.693 GL 8.99 GP 5.98 ZAL 152.48 ZAP 48.49 ETS 184.93 ZAE 77.05 ETE 180.68 ZAC 87.89 ETC 259.83 CLP 48.21

PLANETOCENTRIC CONIC

C3 28.598 VHL 5.348 DLA 13.93 RAL 170.38 RAD 6568.1 VEL 12.246 PTH 2.20 VHP 4.241 DPA 18.30 RAP 156.18 ECC 1.4707

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 56 1	2749.70	-27.97	78.16	43.18	94.63	20 41 51	2149.7	-27.03	69.62
90.00	11 36 35	4498.02	9.50	188.77	35.88	63.20	12 51 33	3898.0	5.83	182.01
100.00	21 24 44	2463.62	-29.37	56.97	43.03	95.85	22 5 47	1863.6	-28.25	48.35
100.00	12 50 34	4259.34	10.75	170.56	35.22	61.94	14 1 33	3659.3	6.92	163.87
110.00	22 49 29	2198.41	-33.07	36.26	42.46	99.19	23 26 8	1598.4	-31.45	27.41
110.00	13 42 17	4097.30	13.99	156.37	33.32	58.49	14 50 35	3497.3	9.72	149.87

DIFFERENTIAL CORRECTIONS
TDE-2.9435 TRA 8.5607 TC3-5.8069 BAU 2.2299
RDE .8641 RRA -.4772 RC3 .5438 FAU .25246
FDE-5.4946 FRA12.8279 FC3-7.6424 BSP 40541
BDE 3.0677 BRA 8.5740 BC3 5.8323 FSP 5531

MID-COURSE EXECUTION ACCURACY
SGT11739.5 SGR 1213.7 SG3 1501.4
RRT -.8079 RRF -.8375 RTF .9958
SGB11802.1 R23 .0511 R13 -.9960
SG111780.5 SG2 712.8 THA 175.21

ORBIT DETERMINATION ACCURACY
ST 4244.7 SR 939.4 SS 2661.8
CRT -.8454 CRS .8978 CST -.9942
LSA 5069.9 MSA 529.8 SSA 13.0
EL1 4319.3 EL2 493.0 ALF 169.26

LAUNCH DATE OCT 5 1964 FLIGHT TIME 386.00 ARRIVAL DATE OCT 26 1965

HELIOCENTRIC CONIC DISTANCE 872.820 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 32.548 GAL -9.41 AZL 88.49 HCA 272.37 SMA 185.59 ECC .25169 INC 1.5144 V1 29.788
RP 213.46 LAP -1.51 LOP 284.16 VP 22.986 GAP -11.79 AZP 89.94 TAL 310.10 TAP 222.47 RCA 138.88 APO 232.30 V2 25.714
RC 295.805 GL 9.02 GP 5.87 ZAL 152.91 ZAP 47.40 ETS 185.03 ZAE 75.70 ETE 180.83 ZAC 87.80 ETC 259.81 CLP 47.12

PLANETOCENTRIC CONIC

C3 29.327 VHL 5.415 DLA 13.76 RAL 170.83 RAD 6568.2 VEL 12.276 PTH 2.21 VHP 4.330 DPA 18.16 RAP 156.24 ECC 1.4826

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 59 14	2750.35	-27.97	78.21	44.03	94.61	20 45 5	2150.3	-27.04	69.67
90.00	11 36 56	4509.95	9.87	189.45	36.71	63.32	12 52 6	3910.0	6.21	182.68
100.00	21 27 50	2464.63	-29.37	57.05	43.89	95.81	22 8 55	1864.6	-28.26	48.42
100.00	12 51 2	4270.91	11.12	171.22	36.05	62.07	14 2 13	3670.9	7.30	164.52
110.00	22 52 21	2200.16	-33.09	36.39	43.32	99.11	23 29 2	1600.2	-31.48	27.54
110.00	13 43 0	4108.14	14.38	156.97	34.15	58.65	14 51 28	3508.1	10.12	150.46

DIFFERENTIAL CORRECTIONS
TDE-3.0580 TRA 8.8320 TC3-5.7796 BAU 2.2752
RDE .8673 RRA -.4632 RC3 .5205 FAU .24013
FDE-5.3482 FRA12.3720 FC3-7.0886 BSP 41265
BDE 3.1787 BRA 8.8442 BC3 5.8030 FSP 5274

MID-COURSE EXECUTION ACCURACY
SGT11925.2 SGR 1189.3 SG3 1426.5
RRT -.8004 RRF -.8312 RTF .9956
SGB11984.4 R23 .0524 R13 -.9959
SG111963.3 SG2 710.6 THA 175.42

ORBIT DETERMINATION ACCURACY
ST 4339.7 SR 930.2 SS 2603.2
CRT -.8445 CRS .8974 CST -.9941
LSA 5118.2 MSA 528.1 SSA 13.0
EL1 4411.2 EL2 490.1 ALF 169.61

LAUNCH DATE OCT 5 1964 FLIGHT TIME 388.00 ARRIVAL DATE OCT 28 1965

HELIOCENTRIC CONIC DISTANCE 876.852 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 32.551 GAL -9.55 AZL 88.46 HCA 273.56 SMA 185.65 ECC .25344 INC 1.5379 V1 29.788
RP 213.16 LAP -1.53 LOP 285.35 VP 23.029 GAP -12.00 AZP 89.90 TAL 309.55 TAP 223.11 RCA 138.60 APO 232.70 V2 25.748
RC 296.904 GL 9.03 GP 5.76 ZAL 153.35 ZAP 46.35 ETS 185.13 ZAE 74.38 ETE 180.97 ZAC 87.72 ETC 259.79 CLP 46.07

PLANETOCENTRIC CONIC

C3 30.097 VHL 5.486 DLA 13.59 RAL 171.28 RAD 6568.2 VEL 12.307 PTH 2.22 VHP 4.422 DPA 18.00 RAP 156.33 ECC 1.4953

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 2 33	2750.93	-27.97	78.25	44.91	94.59	20 48 24	2150.9	-27.04	69.71
90.00	11 37 15	4522.37	10.25	190.17	37.55	63.46	12 52 37	3922.4	6.60	183.38
100.00	21 31 2	2465.58	-29.38	57.12	44.76	95.77	22 12 7	1865.6	-28.27	48.49
100.00	12 51 27	4282.95	11.50	171.91	36.90	62.22	14 2 50	3683.0	7.70	165.19
110.00	22 55 18	2201.88	-33.11	36.53	44.20	99.04	23 32 0	1601.9	-31.51	27.67
110.00	13 43 40	4119.41	14.78	157.60	35.00	58.82	14 52 20	3519.4	10.54	151.06

DIFFERENTIAL CORRECTIONS
TDE-3.1751 TRA 9.1081 TC3-5.7444 BAU 2.3201
RDE .8709 RRA -.4502 RC3 .4981 FAU .22813
FDE-5.2032 FRA11.9255 FC3-6.5621 BSP 41964
BDE 3.2923 BRA 9.1193 BC3 5.7660 FSP 5025

MID-COURSE EXECUTION ACCURACY
SGT12103.6 SGR 1166.2 SG3 1353.9
RRT -.7931 RRF -.8250 RTF .9954
SGB12159.7 R23 .0538 R13 -.9957
SG112139.0 SG2 708.2 THA 175.62

ORBIT DETERMINATION ACCURACY
ST 4433.0 SR 921.2 SS 2544.2
CRT -.8437 CRS .8971 CST -.9940
LSA 5166.8 MSA 526.1 SSA 12.9
EL1 4501.4 EL2 487.0 ALF 169.94

LAUNCH DATE OCT 5 1964 FLIGHT TIME 390.00 ARRIVAL DATE OCT 30 1965

HELIOCENTRIC CONIC DISTANCE 880.879 EARTH TO MARS

RL 149.58 LAL -.00 LOL 11.79 VL 32.554 GAL -9.70 AZL 88.44 HCA 274.76 SMA 185.70 ECC .25527 INC 1.5615 V1 29.788
RP 212.87 LAP -1.56 LOP 286.55 VP 23.071 GAP -12.21 AZP 89.87 TAL 308.98 TAP 223.73 RCA 138.30 APO 233.11 V2 25.782
RC 297.989 GL 9.05 GP 5.65 ZAL 153.81 ZAP 45.33 ETS 185.22 ZAE 73.09 ETE 181.11 ZAC 87.64 ETC 259.76 CLP 45.05

PLANETOCENTRIC CONIC

C3 30.912 VHL 5.560 DLA 13.41 RAL 171.74 RAD 6568.2 VEL 12.340 PTH 2.23 VHP 4.516 DPA 17.84 RAP 156.46 ECC 1.5087

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 5 57	2751.45	-27.98	78.29	45.80	94.57	20 51 48	2151.4	-27.05	69.75
90.00	11 37 31	4535.26	10.64	190.91	38.42	63.60	12 53 6	3935.3	7.01	184.11
100.00	21 34 18	2466.48	-29.39	57.18	45.65	95.74	22 15 25	1866.5	-28.28	48.55
100.00	12 51 50	4295.45	11.90	172.63	37.76	62.38	14 3 26	3695.5	8.11	165.89
110.00	22 58 19	2203.59	-33.13	36.66	45.09	98.96	23 35 3	1603.6	-31.53	27.79
110.00	13 44 19	4131.11	15.19	158.26	35.86	59.00	14 53 10	3531.1	10.97	151.70

DIFFERENTIAL CORRECTIONS
TDE-3.2964 TRA 9.3880 TC3-5.7031 BAU 2.3651
RDE .8750 RRA -.4380 RC3 .4769 FAU .21656
FDE-5.0621 FRA11.4871 FC3-6.0650 BSP 42633
BDE 3.4105 BRA 9.3982 BC3 5.7230 FSP 4781

MID-COURSE EXECUTION ACCURACY
SGT12275.0 SGR 1144.4 SG3 1283.8
RRT -.7860 RRF -.8190 RTF .9952
SGB12328.3 R23 .0553 R13 -.9955
SG112308.0 SG2 705.6 THA 175.80

ORBIT DETERMINATION ACCURACY
ST 4525.3 SR 912.5 SS 2485.6
CRT -.8431 CRS .8971 CST -.9939
LSA 5216.8 MSA 523.9 SSA 12.8
EL1 4591.0 EL2 483.7 ALF 170.24

LAUNCH DATE OCT 5 1964 FLIGHT TIME 392.00 ARRIVAL DATE NOV 1 1965

HELIOCENTRIC CONIC DISTANCE 884.900 EARTH TO MARS

RL	149.58	LAL	-.00	LOL	11.79	VL	32.558	GAL	-9.86	AZL	88.41	HCA	275.96	SMA	185.76	ECC	.25719	INC	1.5852	V1	29.788
RP	212.57	LAP	-1.58	LOP	287.75	VP	23.113	GAP	-12.42	AZP	89.84	TAL	308.39	TAP	224.35	RCA	137.99	APO	233.54	V2	25.815
RC	299.061	GL	9.06	GP	5.55	ZAL	154.26	ZAP	44.34	ETS	185.30	ZAE	71.82	ETE	181.24	ZAC	87.58	ETC	259.72	CLP	44.06

PLANETOCENTRIC CONIC

C3	31.774	VHL	5.637	DLA	13.23	RAL	172.21	RAD	6568.3	VEL	12.375	PTH	2.23	VHP	4.613	DPA	17.67	RAP	156.62	ECC	1.5229

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 9 25	2751.92	-27.98	78.32	46.71	94.55	20 55 17	2151.9	-27.05	69.78
90.00	11 37 45	4548.61	11.04	191.69	39.31	63.76	12 53 33	3948.6	7.43	184.87
100.00	21 37 40	2467.35	-29.39	57.25	46.56	95.71	22 18 47	1867.3	-28.29	48.62
100.00	12 52 11	4308.41	12.31	173.37	38.65	62.54	14 4 0	3708.4	8.53	166.62
110.00	23 1 25	2205.29	-33.14	36.79	46.00	98.89	23 38 10	1605.3	-31.56	27.92
110.00	13 44 56	4143.24	15.61	158.94	36.75	59.20	14 53 59	3543.2	11.41	152.36

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-3.4212	TRA	9.6731	TC3	-5.6559	BAU	2.4104	SGT	12440.4	SGR	1123.8	SG3	1216.2	ST	4616.3	SR	904.0	SS	2426.9
RDE	.8795	RRA	-.4268	RC3	.4568	FAU	.20538	RRT	-.7791	RRF	-.8134	RTF	.9950	CRT	-.8427	CRS	.8973	CST	-.9938
FDE	-4.9232	FRA	11.0577	FC3	-5.5959	BSP	43261	SGB	12491.1	R23	.0569	R13	-.9952	LSA	5267.4	MSA	521.4	SSA	12.8
BDE	3.5324	BRA	9.6825	BC3	5.6743	FSP	4543	SG1	12471.3	SG2	702.7	THA	175.96	EL1	4679.5	EL2	480.2	ALF	170.53

LAUNCH DATE OCT 5 1964 FLIGHT TIME 394.00 ARRIVAL DATE NOV 3 1965

HELIOCENTRIC CONIC DISTANCE 888.915 EARTH TO MARS

RL	149.58	LAL	-.00	LOL	11.79	VL	32.562	GAL	-10.03	AZL	88.39	HCA	277.16	SMA	185.83	ECC	.25920	INC	1.6091	V1	29.788
RP	212.29	LAP	-1.60	LOP	288.95	VP	23.155	GAP	-12.64	AZP	89.80	TAL	307.78	TAP	224.94	RCA	137.66	APO	233.99	V2	25.847
RC	300.120	GL	9.06	GP	5.45	ZAL	154.73	ZAP	43.38	ETS	185.38	ZAE	70.59	ETE	181.36	ZAC	87.52	ETC	259.68	CLP	43.11

PLANETOCENTRIC CONIC

C3	32.686	VHL	5.717	DLA	13.03	RAL	172.68	RAD	6568.3	VEL	12.412	PTH	2.24	VHP	4.713	DPA	17.48	RAP	156.82	ECC	1.5379

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 12 59	2752.34	-27.98	78.35	47.63	94.54	20 58 52	2152.3	-27.06	69.81
90.00	11 37 56	4562.43	11.46	192.49	40.21	63.93	12 53 58	3962.4	7.86	185.66
100.00	21 41 6	2468.18	-29.40	57.31	47.49	95.68	22 22 14	1868.2	-28.30	48.68
100.00	12 52 30	4321.82	12.73	174.15	39.56	62.72	14 4 32	3721.8	8.97	167.37
110.00	23 4 34	2206.98	-33.16	36.91	46.93	98.81	23 41 21	1607.0	-31.59	28.04
110.00	13 45 31	4155.79	16.05	159.65	37.67	59.41	14 54 47	3555.8	11.87	153.04

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-3.5486	TRA	9.9641	TC3	-5.6024	BAU	2.4556	SGT	12599.2	SGR	1104.3	SG3	1150.9	ST	4705.3	SR	895.7	SS	2367.5
RDE	.8844	RRA	-.4164	RC3	.4376	FAU	.19453	RRT	-.7725	RRF	-.8080	RTF	.9948	CRT	-.8423	CRS	.8976	CST	-.9936
FDE	-4.7846	FRA	10.6373	FC3	-5.1524	BSP	43870	SGB	12647.5	R23	.0585	R13	-.9950	LSA	5317.7	MSA	518.7	SSA	12.7
BDE	3.6572	BRA	9.9728	BC3	5.6195	FSP	4312	SG1	12628.2	SG2	699.6	THA	176.11	EL1	4766.0	EL2	476.6	ALF	170.80

LAUNCH DATE OCT 5 1964 FLIGHT TIME 396.00 ARRIVAL DATE NOV 5 1965

HELIOCENTRIC CONIC DISTANCE 892.922 EARTH TO MARS

RL	149.58	LAL	-.00	LOL	11.79	VL	32.565	GAL	-10.20	AZL	88.37	HCA	278.36	SMA	185.89	ECC	.26130	INC	1.6332	V1	29.788
RP	212.01	LAP	-1.62	LOP	290.15	VP	23.195	GAP	-12.86	AZP	89.76	TAL	307.16	TAP	225.52	RCA	137.32	APO	234.46	V2	25.879
RC	301.167	GL	9.06	GP	5.35	ZAL	155.21	ZAP	42.45	ETS	185.46	ZAE	69.39	ETE	181.48	ZAC	87.47	ETC	259.63	CLP	42.18

PLANETOCENTRIC CONIC

C3	33.650	VHL	5.801	DLA	12.83	RAL	173.15	RAD	6568.3	VEL	12.451	PTH	2.25	VHP	4.817	DPA	17.29	RAP	157.05	ECC	1.5538

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 16 38	2752.73	-27.98	78.38	48.58	94.52	21 2 30	2152.7	-27.06	69.84
90.00	11 38 5	4576.71	11.88	193.32	41.14	64.11	12 54 21	3976.7	8.30	186.47
100.00	21 44 36	2469.00	-29.40	57.37	48.43	95.64	22 25 45	1869.0	-28.31	48.74
100.00	12 52 47	4335.68	13.16	174.95	40.49	62.92	14 5 3	3735.7	9.42	168.15
110.00	23 7 48	2208.68	-33.18	37.04	47.87	98.74	23 44 37	1608.7	-31.62	28.17
110.00	13 46 5	4168.75	16.50	160.39	38.60	59.63	14 55 34	3568.8	12.34	153.75

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-3.6817	TRA	10.2599	TC3	-5.5447	BAU	2.5015	SGT	12752.5	SGR	1085.9	SG3	1088.0	ST	4794.0	SR	887.7	SS	2308.7
RDE	.8899	RRA	-.4070	RC3	.4194	FAU	.18409	RRT	-.7662	RRF	-.8030	RTF	.9945	CRT	-.8423	CRS	.8982	CST	-.9935
FDE	-4.6502	FRA	10.2247	FC3	-4.7361	BSP	44429	SGB	12798.6	R23	.0603	R13	-.9947	LSA	5369.8	MSA	515.6	SSA	12.6
BDE	3.7877	BRA	10.2680	BC3	5.5605	FSP	4086	SG1	12779.7	SG2	696.3	THA	176.26	EL1	4852.5	EL2	472.7	ALF	171.05

LAUNCH DATE OCT 5 1964 FLIGHT TIME 398.00 ARRIVAL DATE NOV 7 1965

HELIOCENTRIC CONIC DISTANCE 896.921 EARTH TO MARS

RL	149.58	LAL	-.00	LOL	11.79	VL	32.569	GAL	-10.37	AZL	88.34	HCA	279.57	SMA	185.95	ECC	.26350	INC	1.6576	V1	29.788
RP	211.73	LAP	-1.63	LOP	291.36	VP	23.236	GAP	-13.08	AZP	89.72	TAL	306.52	TAP	226.09	RCA	136.96	APO	234.95	V2	25.911
RC	302.203	GL	9.06	GP	5.26	ZAL	155.69	ZAP	41.55	ETS	185.53	ZAE	68.21	ETE	181.59	ZAC	87.43	ETC	259.58	CLP	41.28

PLANETOCENTRIC CONIC

C3	34.671	VHL	5.888	DLA	12.62	RAL	173.63	RAD	6568.4	VEL	12.492	PTH	2.26	VHP	4.923	DPA	17.09	RAP	157.31	ECC	1.5706

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 20 21	2753.10	-27.98	78.41	49.54	94.51	21 6 14	2153.1	-27.06	69.86
90.00	11 38 11	4591.43	12.32	194.18	42.09	64.30	12 54 43	3991.4	8.76	187.31
100.00	21 48 11	2469.79	-29.41	57.43	49.39	95.61	22 29 21	1869.8	-28.32	48.79
100.00	12 53 2	4349.96	13.60	175.78	41.44	63.12	14 5 32	3750.0	9.89	168.96
110.00	23 11 5	2210.39	-33.20	37.17	48.84	98.66	23 47 56	1610.4	-31.65	28.29
110.00	13 46 37	4182.13	16.96	161.16	39.55	59.86	14 56 19	3582.1	12.82	154.49

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-3.8187	TRA	10.5619	TC3	-5.4818	BAU	2.5478	SGT	12899.6	SGR	1068.7	SG3	1027.4	ST	4881.3	SR	880.0	SS	2249.7
RDE	.8959	RRA	-.3985	RC3	.4021	FAU	.17402	RRT	-.7603	RRF	-.7984	RTF	.9942	CRT	-.8424	CRS	.8990	CST	-.9933
FDE	-4.5176	FRA	9.8203	FC3	-4.3453	BSP	44962	SGB	12943.8	R23	.0622	R13	-.9944	LSA	5422.2	MSA	512.3	SSA	12.5
BDE	3.9223	BRA	10.5694	BC3	5.4966	FSP	3867	SG1	12925.3	SG2	692.8	THA	176.39	EL1	4937.8	EL2	468.7	ALF	171.29

LAUNCH DATE OCT 6 1964 FLIGHT TIME 240.00 ARRIVAL DATE JUN 3 1965

HELIOCENTRIC CONIC DISTANCE 589.471 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 33.117 GAL -8.83 AZL 92.74 HCA 194.61 SMA 195.68 ECC .27898 INC 2.7377 V1 29.796
RP 239.73 LAP .69 LOP 207.37 VP 20.712 GAP 9.74 AZP 87.35 TAL 317.80 TAP 152.42 RCA 141.09 APO 250.27 V2 22.912
RC 170.016 GL -16.08 GP 14.90 ZAL 144.33 ZAP 150.96 ETS 150.06 ZAE 159.33 ETE 46.24 ZAC 102.70 ETC 255.83 CLP 154.78

PLANETOCENTRIC CONIC

C3 31.835 VHL 5.642 DLA -7.27 RAL 155.93 RAD 6568.3 VEL 12.378 PTH 2.23 VHP 6.044 DPA 13.89 RAP 188.87 ECC 1.5239

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 38 22	2101.51	-16.67	34.45	23.39	113.22	22 13 23	1501.5	-13.39	27.31
90.00	7 51 5	5199.99	26.12	233.25	27.76	78.66	9 17 45	4600.0	24.30	225.06
100.00	22 56 13	1850.34	-17.86	15.43	22.85	114.37	23 27 3	1250.3	-14.42	8.33
100.00	9 15 55	4926.40	27.39	212.83	27.46	77.54	10 38 1	4326.4	25.40	204.60
110.00	0 0 26	1661.58	-21.02	359.47	21.21	117.60	0 28 8	1061.6	-17.16	352.47
110.00	10 32 7	4687.92	30.80	193.75	26.49	74.39	11 50 15	4087.9	28.35	185.41

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.8721 TRA-4.2135 TC3 1.1134 BAU .5540 SGT 4878.3 SGR 1706.7 SG3 809.5 ST 2300.0 SR 928.7 SS 2242.5
RDE .8334 RRA-1.2426 RC3 .6740 FAU .15498 RRT .9670 RRF -.9929 RTF -.9616 CRT .9849 CRS .9949 CST .9972
FDE-3.6576 FRA 7.0005 FC3-4.2146 BSP 17753 SGB 5168.2 R23 -.2213 R13 -.9680 LSA 3339.4 MSA 171.0 SSA 19.4
BDE 2.0492 BRA 4.3929 BC3 1.3016 FSP 2534 SG1 5151.8 SG2 411.6 THA 18.82 EL1 2475.9 EL2 149.5 ALF 21.77

LAUNCH DATE OCT 6 1964 FLIGHT TIME 242.00 ARRIVAL DATE JUN 5 1965

HELIOCENTRIC CONIC DISTANCE 592.971 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 33.087 GAL -8.72 AZL 92.47 HCA 195.56 SMA 195.11 ECC .27617 INC 2.4695 V1 29.796
RP 239.42 LAP .66 LOP 208.32 VP 20.698 GAP 9.28 AZP 87.62 TAL 317.99 TAP 153.54 RCA 141.22 APO 248.99 V2 22.943
RC 172.331 GL -14.73 GP 14.35 ZAL 144.62 ZAP 150.63 ETS 151.65 ZAE 160.04 ETE 46.47 ZAC 102.23 ETC 255.84 CLP 154.10

PLANETOCENTRIC CONIC

C3 30.703 VHL 5.541 DLA -5.93 RAL 156.22 RAD 6568.2 VEL 12.332 PTH 2.22 VHP 5.902 DPA 13.29 RAP 188.86 ECC 1.5053

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 29 11	2134.96	-17.56	36.50	23.29	112.58	22 4 46	1535.0	-14.35	29.30
90.00	8 2 32	5148.34	25.38	229.65	26.81	77.01	9 28 20	4548.3	23.34	221.58
100.00	22 47 43	1881.61	-18.73	17.35	22.76	113.73	23 19 5	1281.6	-15.36	10.17
100.00	9 26 41	4876.92	26.62	209.36	26.48	75.87	10 47 58	4276.9	24.41	201.25
110.00	23 49 32	1688.08	-21.85	1.09	21.19	116.97	24 17 40	1088.1	-18.06	354.01
110.00	10 41 21	4643.21	29.94	190.55	25.42	72.68	11 58 44	4043.2	27.28	182.37

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.8336 TRA-4.1535 TC3 1.1607 BAU .5520 SGT 4888.1 SGR 1669.3 SG3 852.8 ST 2296.6 SR 909.2 SS 2273.1
RDE .8024 RRA-1.1904 RC3 .6792 FAU .16117 RRT .9663 RRF -.9920 RTF -.9627 CRT .9841 CRS .9934 CST .9978
FDE-3.7059 FRA 7.2862 FC3-4.5446 BSP 17741 SGB 5165.3 R23 -.2142 R13 -.9687 LSA 3352.7 MSA 165.7 SSA 21.5
BDE 2.0015 BRA 4.3207 BC3 1.3448 FSP 2674 SG1 5149.2 SG2 407.7 THA 18.38 EL1 2465.4 EL2 150.6 ALF 21.37

LAUNCH DATE OCT 6 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUN 7 1965

HELIOCENTRIC CONIC DISTANCE 596.491 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 33.058 GAL -8.62 AZL 92.23 HCA 196.50 SMA 194.56 ECC .27346 INC 2.2307 V1 29.796
RP 239.11 LAP .63 LOP 209.26 VP 20.687 GAP 8.83 AZP 87.86 TAL 318.16 TAP 154.66 RCA 141.35 APO 247.76 V2 22.975
RC 174.639 GL -13.50 GP 13.87 ZAL 144.84 ZAP 150.22 ETS 153.12 ZAE 160.74 ETE 46.94 ZAC 101.81 ETC 255.85 CLP 153.39

PLANETOCENTRIC CONIC

C3 29.686 VHL 5.449 DLA -4.70 RAL 156.46 RAD 6568.2 VEL 12.291 PTH 2.21 VHP 5.765 DPA 12.76 RAP 188.86 ECC 1.4886

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 20 52	2165.10	-18.34	38.37	23.20	111.96	21 56 57	1565.1	-15.20	31.10
90.00	8 12 49	5101.30	24.62	226.41	25.96	75.55	9 37 50	4501.3	22.40	218.45
100.00	22 40 0	1909.83	-19.49	19.09	22.69	113.12	23 11 49	1309.8	-16.20	11.85
100.00	9 36 22	4831.80	25.83	206.24	25.60	74.41	10 56 54	4231.8	23.44	198.25
110.00	23 43 10	1712.03	-22.58	2.56	21.17	116.37	24 11 42	1112.0	-18.85	355.41
110.00	10 49 41	4602.37	29.08	187.69	24.47	71.18	12 6 23	4002.4	26.23	179.66

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.7959 TRA-4.0931 TC3 1.2047 BAU .5501 SGT 4893.1 SGR 1638.7 SG3 897.4 ST 2290.6 SR 893.8 SS 2304.5
RDE .7766 RRA-1.1453 RC3 .6855 FAU .16751 RRT .9656 RRF -.9909 RTF -.9638 CRT .9832 CRS .9918 CST .9983
FDE-3.7588 FRA 7.5772 FC3-4.8850 BSP 17739 SGB 5160.2 R23 -.2071 R13 -.9694 LSA 3365.9 MSA 162.1 SSA 23.4
BDE 1.9566 BRA 4.2504 BC3 1.3861 FSP 2820 SG1 5144.2 SG2 405.5 THA 18.04 EL1 2454.1 EL2 152.3 ALF 21.07

LAUNCH DATE OCT 6 1964 FLIGHT TIME 246.00 ARRIVAL DATE JUN 9 1965

HELIOCENTRIC CONIC DISTANCE 600.029 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 33.030 GAL -8.52 AZL 92.02 HCA 197.45 SMA 194.04 ECC .27085 INC 2.0166 V1 29.796
RP 238.79 LAP .60 LOP 210.21 VP 20.678 GAP 8.39 AZP 88.08 TAL 318.34 TAP 155.79 RCA 141.48 APO 246.59 V2 23.007
RC 176.939 GL -12.38 GP 13.45 ZAL 145.00 ZAP 149.75 ETS 154.48 ZAE 161.42 ETE 47.65 ZAC 101.44 ETC 255.86 CLP 152.64

PLANETOCENTRIC CONIC

C3 28.765 VHL 5.363 DLA -3.57 RAL 156.68 RAD 6568.2 VEL 12.253 PTH 2.20 VHP 5.634 DPA 12.29 RAP 188.86 ECC 1.4734

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 13 14	2192.51	-19.03	40.09	23.12	111.38	21 49 46	1592.5	-15.96	32.76
90.00	8 22 9	5058.11	23.86	223.48	25.19	74.28	9 46 27	4458.1	21.47	215.62
100.00	22 32 54	1935.50	-20.17	20.70	22.63	112.54	23 5 10	1335.5	-16.94	13.40
100.00	9 45 10	4790.36	25.04	203.41	24.81	73.12	11 5 0	4190.4	22.49	195.54
110.00	23 37 19	1733.84	-23.23	3.92	21.15	115.81	24 6 13	1133.8	-19.57	356.69
110.00	10 57 14	4564.78	28.22	185.09	23.61	69.86	12 13 19	3964.8	25.22	177.21

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.7586 TRA-4.0326 TC3 1.2456 BAU .5481 SGT 4893.4 SGR 1614.1 SG3 943.4 ST 2282.1 SR 881.8 SS 2336.6
RDE .7552 RRA-1.1063 RC3 .6928 FAU .17401 RRT .9647 RRF -.9898 RTF -.9647 CRT .9822 CRS .9901 CST .9987
FDE-3.8164 FRA 7.8745 FC3-5.2371 BSP 17745 SGB 5152.8 R23 -.2001 R13 -.9701 LSA 3379.2 MSA 160.4 SSA 25.2
BDE 1.9139 BRA 4.1816 BC3 1.4253 FSP 2975 SG1 5136.8 SG2 404.9 THA 17.77 EL1 2441.7 EL2 154.7 ALF 20.87

LAUNCH DATE OCT 6 1964 FLIGHT TIME 248.00 ARRIVAL DATE JUN 11 1965

HELIOCENTRIC CONIC DISTANCE 603.586 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 33.003 GAL -8.42 AZL 91.82 HCA 198.40 SMA 193.54 ECC .26834 INC 1.8235 V1 29.796
RP 238.47 LAP .58 LOP 211.16 VP 20.672 GAP 7.95 AZP 88.27 TAL 318.51 TAP 156.91 RCA 141.60 APO 245.47 V2 23.040
RC 179.231 GL -11.34 GP 13.07 ZAL 145.10 ZAP 149.21 ETS 155.74 ZAE 162.10 ETE 48.62 ZAC 101.12 ETC 255.86 CLP 151.88

PLANETOCENTRIC CONIC

C3 27.923 VHL 5.284 DLA -2.53 RAL 156.86 RAD 6568.1 VEL 12.219 PTH 2.20 VHP 5.507 DPA 11.88 RAP 188.87 ECC 1.4595

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 6 11	2217.61	-19.64	41.67	23.04	110.82	21 43 8	1617.6	-16.64	34.29
90.00	8 30 41	5018.19	23.09	220.80	24.48	73.14	9 54 20	4418.2	20.57	213.04
100.00	22 26 21	1959.01	-20.78	22.18	22.56	111.99	22 59 0	1359.0	-17.61	14.82
100.00	9 53 13	4752.02	24.26	200.83	24.08	71.98	11 12 25	4152.0	21.57	193.07
110.00	23 31 53	1753.83	-23.82	5.17	21.13	115.28	24 1 7	1153.8	-20.22	357.88
110.00	11 4 9	4529.97	27.38	182.73	22.84	68.69	12 19 39	3930.0	24.24	174.98

DIFFERENTIAL CORRECTIONS
TDE 1.7363 TRA-3.9569 TC3 1.3036 BAU .5530
RDE .7392 RRA-1.0707 RC3 .7037 FAU .18114
FDE-3.8884 FRA 8.1685 FC3-5.6161 BSP 17418
BDE 1.8871 BRA 4.0992 BC3 1.4814 FSP 3115

MID-COURSE EXECUTION ACCURACY
SGT 4887.2 SGR 1595.5 SG3 991.2
RRT .9649 RRF -.9886 RTF -.9665
SGB 5141.1 R23 -.1894 R13 -.9715
SG1 5125.5 SG2 399.7 THA 17.59

ORBIT DETERMINATION ACCURACY
ST 2281.6 SR 874.3 SS 2373.2
CRT .9820 CRS .9884 CST .9991
LSA 3402.5 MSA 156.4 SSA 27.0
EL1 2438.5 EL2 154.5 ALF 20.71

LAUNCH DATE OCT 6 1964 FLIGHT TIME 250.00 ARRIVAL DATE JUN 13 1965

HELIOCENTRIC CONIC DISTANCE 607.158 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 32.978 GAL -8.33 AZL 91.65 HCA 199.35 SMA 193.06 ECC .26593 INC 1.6480 V1 29.796
RP 238.14 LAP .55 LOP 212.12 VP 20.668 GAP 7.52 AZP 88.44 TAL 318.68 TAP 158.04 RCA 141.72 APO 244.40 V2 23.073
RC 181.513 GL -10.38 GP 12.74 ZAL 145.16 ZAP 148.62 ETS 156.91 ZAE 162.76 ETE 49.85 ZAC 100.83 ETC 255.87 CLP 151.08

PLANETOCENTRIC CONIC

C3 27.153 VHL 5.211 DLA -1.55 RAL 157.03 RAD 6568.1 VEL 12.187 PTH 2.19 VHP 5.384 DPA 11.51 RAP 188.87 ECC 1.4469

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 59 37	2240.78	-20.20	43.15	22.96	110.28	21 36 58	1640.8	-17.25	35.71
90.00	8 38 33	4981.10	22.34	218.35	23.84	72.13	10 1 34	4381.1	19.69	210.68
100.00	22 20 15	1980.71	-21.32	23.56	22.50	111.46	22 53 15	1380.7	-18.22	16.14
100.00	10 0 37	4716.39	23.49	198.47	23.43	70.96	11 19 14	4116.4	20.67	190.80
110.00	23 26 50	1772.28	-24.35	6.34	21.10	114.77	23 56 22	1172.3	-20.81	358.99
110.00	11 10 31	4497.59	26.56	180.57	22.14	67.65	12 25 29	3897.6	23.30	172.93

DIFFERENTIAL CORRECTIONS
TDE 1.6956 TRA-3.8988 TC3 1.3325 BAU .5486
RDE .7243 RRA-1.0417 RC3 .7130 FAU .18805
FDE-3.9549 FRA 8.4828 FC3-5.9957 BSP 17515
BDE 1.8438 BRA 4.0356 BC3 1.5113 FSP 3284

MID-COURSE EXECUTION ACCURACY
SGT 4878.1 SGR 1580.9 SG3 1040.5
RRT .9635 RRF -.9874 RTF -.9669
SGB 5127.9 R23 -.1842 R13 -.9718
SG1 5112.0 SG2 403.7 THA 17.45

ORBIT DETERMINATION ACCURACY
ST 2265.6 SR 867.7 SS 2407.2
CRT .9807 CRS .9865 CST .9993
LSA 3413.8 MSA 159.2 SSA 28.2
EL1 2420.9 EL2 158.6 ALF 20.68

LAUNCH DATE OCT 6 1964 FLIGHT TIME 252.00 ARRIVAL DATE JUN 15 1965

HELIOCENTRIC CONIC DISTANCE 610.746 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 32.953 GAL -8.24 AZL 91.49 HCA 200.31 SMA 192.61 ECC .26361 INC 1.4882 V1 29.796
RP 237.81 LAP .52 LOP 213.08 VP 20.666 GAP 7.09 AZP 88.60 TAL 318.85 TAP 159.16 RCA 141.84 APO 243.38 V2 23.106
RC 183.786 GL -9.48 GP 12.45 ZAL 145.19 ZAP 147.98 ETS 158.01 ZAE 163.42 ETE 51.36 ZAC 100.57 ETC 255.88 CLP 150.26

PLANETOCENTRIC CONIC

C3 26.442 VHL 5.142 DLA -.65 RAL 157.17 RAD 6568.1 VEL 12.158 PTH 2.18 VHP 5.265 DPA 11.19 RAP 188.86 ECC 1.4352

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 53 29	2262.27	-20.70	44.52	22.89	109.77	21 31 11	1662.3	-17.82	37.04
90.00	8 45 51	4946.43	21.60	216.08	23.25	71.23	10 8 17	4346.4	18.84	208.49
100.00	22 14 31	2000.86	-21.82	24.85	22.44	110.95	22 47 52	1400.9	-18.78	17.38
100.00	10 7 29	4683.08	22.73	196.28	22.82	70.05	11 25 32	4083.1	19.80	188.71
110.00	23 22 4	1789.40	-24.83	7.44	21.08	114.28	23 51 54	1189.4	-21.34	.02
110.00	11 16 25	4467.31	25.76	178.58	21.50	66.72	12 30 53	3867.3	22.39	171.05

DIFFERENTIAL CORRECTIONS
TDE 1.6568 TRA-3.8378 TC3 1.3603 BAU .5447
RDE .7119 RRA-1.0169 RC3 .7235 FAU .19515
FDE-4.0249 FRA 8.8070 FC3-6.3894 BSP 17576
BDE 1.8033 BRA 3.9702 BC3 1.5408 FSP 3464

MID-COURSE EXECUTION ACCURACY
SGT 4863.4 SGR 1570.6 SG3 1091.5
RRT .9624 RRF -.9861 RTF -.9674
SGB 5110.7 R23 -.1785 R13 -.9722
SG1 5094.4 SG2 407.5 THA 17.38

ORBIT DETERMINATION ACCURACY
ST 2248.5 SR 863.3 SS 2441.9
CRT .9796 CRS .9845 CST .9995
LSA 3425.8 MSA 162.5 SSA 29.2
EL1 2403.0 EL2 162.5 ALF 20.71

LAUNCH DATE OCT 6 1964 FLIGHT TIME 254.00 ARRIVAL DATE JUN 17 1965

HELIOCENTRIC CONIC DISTANCE 614.351 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 32.930 GAL -8.15 AZL 91.34 HCA 201.27 SMA 192.18 ECC .26138 INC 1.3418 V1 29.796
RP 237.48 LAP .49 LOP 214.04 VP 20.667 GAP 6.67 AZP 88.75 TAL 319.01 TAP 160.28 RCA 141.95 APO 242.41 V2 23.140
RC 186.049 GL -8.65 GP 12.19 ZAL 145.19 ZAP 147.29 ETS 159.03 ZAE 164.06 ETE 53.17 ZAC 100.34 ETC 255.88 CLP 149.41

PLANETOCENTRIC CONIC

C3 25.785 VHL 5.078 DLA .20 RAL 157.30 RAD 6568.0 VEL 12.131 PTH 2.17 VHP 5.149 DPA 10.90 RAP 188.85 ECC 1.4244

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 47 42	2282.34	-21.15	45.82	22.82	109.28	21 25 44	1682.3	-18.33	38.28
90.00	8 52 38	4913.90	20.87	213.97	22.71	70.42	10 14 32	4313.9	18.01	206.46
100.00	22 9 8	2019.66	-22.27	26.07	22.38	110.47	22 42 47	1419.7	-19.29	18.54
100.00	10 13 53	4651.82	21.99	194.25	22.27	69.22	11 31 25	4051.8	18.97	186.76
110.00	23 17 35	1805.37	-25.28	8.46	21.05	113.82	23 47 41	1205.4	-21.84	1.00
110.00	11 21 55	4438.87	24.99	176.74	20.92	65.88	12 35 54	3838.9	21.51	169.31

DIFFERENTIAL CORRECTIONS
TDE 1.6197 TRA-3.7734 TC3 1.3872 BAU .5413
RDE .7021 RRA -.9952 RC3 .7356 FAU .20262
FDE-4.1013 FRA 9.1390 FC3-6.8030 BSP 17575
BDE 1.7653 BRA 3.9024 BC3 1.5701 FSP 3647

MID-COURSE EXECUTION ACCURACY
SGT 4842.8 SGR 1564.2 SG3 1144.6
RRT .9612 RRF -.9849 RTF -.9679
SGB 5089.1 R23 -.1728 R13 -.9726
SG1 5072.4 SG2 411.7 THA 17.37

ORBIT DETERMINATION ACCURACY
ST 2230.1 SR 861.2 SS 2478.2
CRT .9784 CRS .9825 CST .9996
LSA 3439.2 MSA 166.5 SSA 30.0
EL1 2384.8 EL2 166.3 ALF 20.80

LAUNCH DATE OCT 6 1964 FLIGHT TIME 256.00 ARRIVAL DATE JUN 19 1965

HELIOCENTRIC CONIC DISTANCE 617.971 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 32.907 GAL -8.06 AZL 91.21 HCA 202.23 SMA 191.77 ECC .25924 INC 1.2073 V1 29.796
RP 237.15 LAP .46 LOP 215.00 VP 20.669 GAP 6.26 AZP 88.88 TAL 319.17 TAP 161.40 RCA 142.05 APO 241.48 V2 23.174
RC 188.300 GL -7.86 GP 11.95 ZAL 145.17 ZAP 146.56 ETS 159.98 ZAE 164.69 ETE 55.32 ZAC 100.13 ETC 255.89 CLP 148.53

PLANETOCENTRIC CONIC

C3 25.175 VHL 5.017 DLA 1.00 RAL 157.41 RAD 6568.0 VEL 12.106 PTH 2.17 VHP 5.037 DPA 10.66 RAP 188.82 ECC 1.4143

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 42 14	2301.16	-21.57	47.04	22.75	108.80	21 20 35	1701.2	-18.81	39.46
90.00	8 59 0	4883.25	20.16	212.00	22.21	69.68	10 20 23	4283.2	17.21	204.57
100.00	22 4 2	2037.29	-22.69	27.21	22.33	110.00	22 37 59	1437.3	-19.76	19.64
100.00	10 19 53	4622.36	21.27	192.36	21.76	68.48	11 36 55	4022.4	18.15	184.95
110.00	23 13 21	1820.34	-25.69	9.44	21.02	113.37	23 43 41	1220.3	-22.30	1.92
110.00	11 27 3	4412.07	24.23	175.02	20.38	65.12	12 40 35	3812.1	20.67	167.69

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.5829 TRA-3.7068 TC3 1.4108 BAU .5375 SGT 4816.1 SGR 1561.2 SG3 1199.5 ST 2209.6 SR 860.7 SS 2515.1
RDE .6941 RRA -.9768 RC3 .7486 FAU .21030 RRT .9602 RRF -.9836 RTF -.9684 CRT .9774 CRS .9804 CST .9997
FDE-4.1809 FRA 9.4824 FC3-7.2321 BSP 17548 SGB 5062.8 R23 -.1671 R13 -.9731 LSA 3452.3 MSA 171.3 SSA 30.7
BDE 1.7284 BRA 3.8333 BC3 1.5971 FSP 3839 SG1 5045.6 SG2 416.3 THA 17.41 EL1 2365.2 EL2 170.0 ALF 20.96

LAUNCH DATE OCT 6 1964 FLIGHT TIME 258.00 ARRIVAL DATE JUN 21 1965

HELIOCENTRIC CONIC DISTANCE 621.605 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 32.886 GAL -7.98 AZL 91.08 HCA 203.19 SMA 191.37 ECC .25719 INC 1.0824 V1 29.796
RP 236.81 LAP .43 LOP 215.96 VP 20.673 GAP 5.84 AZP 89.00 TAL 319.33 TAP 162.52 RCA 142.15 APO 240.59 V2 23.209
RC 190.540 GL -7.13 GP 11.74 ZAL 145.12 ZAP 145.78 ETS 160.88 ZAE 165.29 ETE 57.84 ZAC 99.94 ETC 255.89 CLP 147.63

PLANETOCENTRIC CONIC

C3 24.607 VHL 4.961 DLA 1.75 RAL 157.51 RAD 6568.0 VEL 12.082 PTH 2.16 VHP 4.928 DPA 10.44 RAP 188.79 ECC 1.4050

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 37 2	2318.91	-21.96	48.20	22.68	108.34	21 15 41	1718.9	-19.25	40.58
90.00	9 4 59	4854.27	19.46	210.16	21.75	69.02	10 25 53	4254.3	16.44	202.79
100.00	21 59 11	2053.90	-23.07	28.30	22.27	109.55	22 33 25	1453.9	-20.19	20.68
100.00	10 25 31	4594.51	20.56	190.60	21.29	67.81	11 42 5	3994.5	17.37	183.25
110.00	23 9 18	1834.44	-26.06	10.36	20.99	112.94	23 39 53	1234.4	-22.73	2.79
110.00	11 31 53	4386.74	23.49	173.42	19.89	64.43	12 45 0	3786.7	19.86	166.17

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.5500 TRA-3.6344 TC3 1.4370 BAU .5354 SGT 4782.9 SGR 1561.9 SG3 1256.8 ST 2189.6 SR 862.6 SS 2555.5
RDE .6887 RRA -.9604 RC3 .7643 FAU .21865 RRT .9593 RRF -.9823 RTF -.9690 CRT .9766 CRS .9784 CST .9998
FDE-4.2729 FRA 9.8287 FC3-7.6928 BSP 17413 SGB 5031.4 R23 -.1612 R13 -.9736 LSA 3469.4 MSA 176.3 SSA 31.1
BDE 1.6961 BRA 3.7591 BC3 1.6276 FSP 4023 SG1 5013.8 SG2 420.8 THA 17.52 EL1 2347.0 EL2 173.2 ALF 21.16

LAUNCH DATE OCT 6 1964 FLIGHT TIME 260.00 ARRIVAL DATE JUN 23 1965

HELIOCENTRIC CONIC DISTANCE 625.257 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 32.865 GAL -7.91 AZL 90.97 HCA 204.16 SMA 191.00 ECC .25522 INC .9672 V1 29.796
RP 236.46 LAP .40 LOP 216.93 VP 20.680 GAP 5.44 AZP 89.12 TAL 319.48 TAP 163.64 RCA 142.25 APO 239.74 V2 23.244
RC 192.768 GL -6.43 GP 11.56 ZAL 145.06 ZAP 144.96 ETS 161.72 ZAE 165.87 ETE 60.75 ZAC 99.76 ETC 255.90 CLP 146.69

PLANETOCENTRIC CONIC

C3 24.076 VHL 4.907 DLA 2.47 RAL 157.60 RAD 6568.0 VEL 12.060 PTH 2.16 VHP 4.822 DPA 10.26 RAP 188.73 ECC 1.3962

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 32 5	2335.71	-22.31	49.30	22.61	107.90	21 11 1	1735.7	-19.66	41.64
90.00	9 10 38	4826.77	18.78	208.43	21.32	68.41	10 31 5	4226.8	15.69	201.12
100.00	21 54 35	2069.63	-23.43	29.33	22.21	109.12	22 29 4	1469.6	-20.60	21.67
100.00	10 30 50	4568.09	19.87	188.94	20.85	67.20	11 46 58	3968.1	16.61	181.66
110.00	23 5 27	1847.77	-26.41	11.24	20.96	112.53	23 36 15	1247.8	-23.13	3.62
110.00	11 36 26	4362.71	22.78	171.92	19.43	63.80	12 49 9	3762.7	19.07	164.75

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.5298 TRA-3.5469 TC3 1.4809 BAU .5393 SGT 4742.2 SGR 1566.2 SG3 1316.5 ST 2177.0 SR 867.2 SS 2600.5
RDE .6861 RRA -.9451 RC3 .7836 FAU .22790 RRT .9596 RRF -.9811 RTF -.9703 CRT .9768 CRS .9766 CST .9998
FDE-4.3817 FRA10.1714 FC3-8.1949 BSP 16947 SGB 4994.1 R23 -.1515 R13 -.9747 LSA 3495.8 MSA 180.5 SSA 31.1
BDE 1.6766 BRA 3.6706 BC3 1.6754 FSP 4186 SG1 4976.4 SG2 419.8 THA 17.72 EL1 2337.0 EL2 173.2 ALF 21.38

LAUNCH DATE OCT 6 1964 FLIGHT TIME 262.00 ARRIVAL DATE JUN 25 1965

HELIOCENTRIC CONIC DISTANCE 628.919 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 32.845 GAL -7.83 AZL 90.86 HCA 205.13 SMA 190.64 ECC .25334 INC .8598 V1 29.796
RP 236.12 LAP .37 LOP 217.90 VP 20.688 GAP 5.04 AZP 89.22 TAL 319.63 TAP 164.76 RCA 142.34 APO 238.94 V2 23.279
RC 194.983 GL -5.77 GP 11.39 ZAL 144.99 ZAP 144.10 ETS 162.51 ZAE 166.41 ETE 64.09 ZAC 99.60 ETC 255.91 CLP 145.73

PLANETOCENTRIC CONIC

C3 23.582 VHL 4.856 DLA 3.14 RAL 157.68 RAD 6568.0 VEL 12.040 PTH 2.15 VHP 4.719 DPA 10.11 RAP 188.67 ECC 1.3881

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 27 22	2351.67	-22.64	50.36	22.55	107.47	21 6 33	1751.7	-20.04	42.65
90.00	9 16 0	4800.66	18.12	206.80	20.93	67.86	10 36 1	4200.7	14.96	199.55
100.00	21 50 10	2084.57	-23.76	30.32	22.16	108.70	22 24 55	1484.6	-20.98	22.62
100.00	10 35 53	4542.99	19.20	187.37	20.45	66.64	11 51 36	3943.0	15.88	180.16
110.00	23 1 47	1860.43	-26.74	12.07	20.93	112.13	23 32 48	1260.4	-23.50	4.41
110.00	11 40 45	4339.89	22.09	170.52	19.01	63.22	12 53 5	3739.9	18.32	163.41

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.4961 TRA-3.4699 TC3 1.4993 BAU .5360 SGT 4695.5 SGR 1572.7 SG3 1378.2 ST 2152.0 SR 871.8 SS 2642.7
RDE .6833 RRA -.9338 RC3 .8014 FAU .23689 RRT .9589 RRF -.9799 RTF -.9707 CRT .9761 CRS .9747 CST .9998
FDE-4.4831 FRA10.5407 FC3-8.6966 BSP 16775 SGB 4951.9 R23 -.1460 R13 -.9751 LSA 3512.7 MSA 187.2 SSA 31.1
BDE 1.6448 BRA 3.5934 BC3 1.7000 FSP 4385 SG1 4933.6 SG2 424.9 THA 17.94 EL1 2315.2 EL2 176.0 ALF 21.71

LAUNCH DATE OCT 6 1964 FLIGHT TIME 264.00 ARRIVAL DATE JUN 27 1965

HELIOCENTRIC CONIC DISTANCE 632.592 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 32.826 GAL -7.76 AZL 90.76 HCA 206.10 SMA 190.30 ECC .25153 INC .7599 V1 29.796
RP 235.77 LAP .33 LOP 218.87 VP 20.698 GAP 4.64 AZP 89.32 TAL 319.77 TAP 165.87 RCA 142.43 APO 238.17 V2 23.315
RC 197.185 GL -5.15 GP 11.24 ZAL 144.91 ZAP 143.21 ETS 163.27 ZAE 166.91 ETE 67.89 ZAC 99.45 ETC 255.91 CLP 144.73

PLANETOCENTRIC CONIC

C3 23.122 VHL 4.809 DLA 3.79 RAL 157.75 RAD 6567.9 VEL 12.021 PTH 2.15 VHP 4.620 DPA 9.98 RAP 188.59 ECC 1.3805

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 22 51	2366.90	-22.95	51.37	22.50	107.06	21 2 18	1766.9	-20.40	43.62
90.00	9 21 7	4775.81	17.48	205.26	20.56	67.36	10 40 43	4175.8	14.26	198.06
100.00	21 45 58	2098.81	-24.06	31.27	22.11	108.29	22 20 57	1498.8	-21.34	23.53
100.00	10 40 41	4519.13	18.55	185.90	20.08	66.13	11 56 0	3919.1	15.17	178.74
110.00	22 58 17	1872.50	-27.05	12.88	20.90	111.75	23 29 29	1272.5	-23.85	5.17
110.00	11 44 52	4318.21	21.42	169.19	18.62	62.70	12 56 50	3718.2	17.59	162.15

DIFFERENTIAL CORRECTIONS
TDE 1.4397 TRA-3.4126 TC3 1.4739 BAU .5206
RDE .6784 RRA -.9283 RC3 .8148 FAU .24474
FDE-4.5567 FRA10.9584 FC3-9.1636 BSP 17112
BDE 1.5916 BRA 3.5366 BC3 1.6841 FSP 4660

MID-COURSE EXECUTION ACCURACY
SGT 4643.2 SGR 1580.0 SG3 1441.6
RRT .9562 RRF -.9787 RTF -.9698
SGB 4904.6 R23 -.1468 R13 -.9746
SG1 4884.9 SG2 439.5 THA 18.18

ORBIT DETERMINATION ACCURACY
ST 2107.0 SR 874.4 SS 2676.3
CRT .9739 CRS .9723 CST .9998
LSA 3511.0 MSA 196.3 SSA 31.6
EL1 2273.8 EL2 183.9 ALF 22.16

LAUNCH DATE OCT 6 1964 FLIGHT TIME 266.00 ARRIVAL DATE JUN 29 1965

HELIOCENTRIC CONIC DISTANCE 636.281 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 32.808 GAL -7.69 AZL 90.67 HCA 207.08 SMA 189.97 ECC .24981 INC .6662 V1 29.796
RP 235.42 LAP .30 LOP 219.85 VP 20.710 GAP 4.25 AZP 89.41 TAL 319.91 TAP 166.99 RCA 142.52 APO 237.43 V2 23.351
RC 199.372 GL -4.55 GP 11.11 ZAL 144.82 ZAP 142.27 ETS 163.98 ZAE 167.34 ETE 72.18 ZAC 99.31 ETC 255.92 CLP 143.70

PLANETOCENTRIC CONIC

C3 22.690 VHL 4.763 DLA 4.40 RAL 157.82 RAD 6567.9 VEL 12.003 PTH 2.14 VHP 4.522 DPA 9.88 RAP 188.48 ECC 1.3734

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 18 32	2381.47	-23.24	52.34	22.44	106.65	20 58 13	1781.5	-20.74	44.56
90.00	9 25 59	4752.07	16.85	203.80	20.23	66.90	10 45 11	4152.1	13.58	196.65
100.00	21 41 56	2112.44	-24.35	32.18	22.06	107.89	22 17 8	1512.4	-21.68	24.40
100.00	10 45 16	4496.33	17.92	184.50	19.74	65.66	12 0 12	3896.3	14.48	177.40
110.00	22 54 55	1884.03	-27.34	13.65	20.88	111.37	23 26 19	1284.0	-24.19	5.90
110.00	11 48 46	4297.50	20.76	167.94	18.26	62.22	13 0 24	3697.5	16.88	160.96

DIFFERENTIAL CORRECTIONS
TDE 1.4042 TRA-3.3316 TC3 1.4793 BAU .5152
RDE .6776 RRA -.9215 RC3 .8343 FAU .25424
FDE-4.6641 FRA11.3563 FC3-9.7003 BSP 16915
BDE 1.5591 BRA 3.4567 BC3 1.6984 FSP 4881

MID-COURSE EXECUTION ACCURACY
SGT 4581.8 SGR 1591.2 SG3 1507.8
RRT .9553 RRF -.9776 RTF -.9700
SGB 4850.2 R23 -.1423 R13 -.9749
SG1 4829.7 SG2 446.2 THA 18.52

ORBIT DETERMINATION ACCURACY
ST 2075.6 SR 881.0 SS 2719.5
CRT .9733 CRS .9704 CST .9997
LSA 3526.7 MSA 203.7 SSA 31.6
EL1 2247.1 EL2 186.8 ALF 22.61

LAUNCH DATE OCT 6 1964 FLIGHT TIME 268.00 ARRIVAL DATE JUL 1 1965

HELIOCENTRIC CONIC DISTANCE 639.982 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 32.791 GAL -7.63 AZL 90.58 HCA 208.06 SMA 189.67 ECC .24815 INC .5784 V1 29.796
RP 235.06 LAP .27 LOP 220.83 VP 20.723 GAP 3.87 AZP 89.49 TAL 320.04 TAP 168.10 RCA 142.60 APO 236.73 V2 23.387
RC 201.544 GL -3.99 GP 10.99 ZAL 144.72 ZAP 141.29 ETS 164.66 ZAE 167.69 ETE 76.95 ZAC 99.18 ETC 255.93 CLP 142.64

PLANETOCENTRIC CONIC

C3 22.286 VHL 4.721 DLA 4.98 RAL 157.88 RAD 6567.9 VEL 11.986 PTH 2.14 VHP 4.428 DPA 9.81 RAP 188.36 ECC 1.3668

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 14 22	2395.45	-23.51	53.27	22.39	106.26	20 54 17	1795.4	-21.05	45.46
90.00	9 30 39	4729.37	16.24	202.41	19.92	66.48	10 49 29	4129.4	12.92	195.31
100.00	21 38 3	2125.51	-24.62	33.05	22.02	107.51	22 13 29	1525.5	-21.99	25.24
100.00	10 49 39	4474.54	17.30	183.18	19.42	65.24	12 4 13	3874.5	13.82	176.12
110.00	22 51 41	1895.09	-27.61	14.40	20.86	111.01	23 23 16	1295.1	-24.50	6.61
110.00	11 52 31	4277.73	20.13	166.75	17.93	61.77	13 3 49	3677.7	16.20	159.83

DIFFERENTIAL CORRECTIONS
TDE 1.3695 TRA-3.2457 TC3 1.4825 BAU .5099
RDE .6778 RRA -.9164 RC3 .8553 FAU .26419
FDE-4.7770 FRA11.7648 FC-10.2625 BSP 16669
BDE 1.5281 BRA 3.3726 BC3 1.7115 FSP 5108

MID-COURSE EXECUTION ACCURACY
SGT 4511.9 SGR 1604.8 SG3 1576.5
RRT .9547 RRF -.9766 RTF -.9702
SGB 4788.8 R23 -.1376 R13 -.9752
SG1 4767.4 SG2 452.2 THA 18.93

ORBIT DETERMINATION ACCURACY
ST 2042.5 SR 888.5 SS 2763.7
CRT .9729 CRS .9685 CST .9996
LSA 3543.1 MSA 211.3 SSA 31.4
EL1 2219.3 EL2 189.0 ALF 23.12

LAUNCH DATE OCT 6 1964 FLIGHT TIME 270.00 ARRIVAL DATE JUL 3 1965

HELIOCENTRIC CONIC DISTANCE 643.695 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 32.774 GAL -7.56 AZL 90.50 HCA 209.04 SMA 189.37 ECC .24658 INC .4956 V1 29.796
RP 234.71 LAP .24 LOP 221.81 VP 20.738 GAP 3.49 AZP 89.57 TAL 320.17 TAP 169.21 RCA 142.68 APO 236.07 V2 23.424
RC 203.699 GL -3.44 GP 10.89 ZAL 144.62 ZAP 140.27 ETS 165.30 ZAE 167.96 ETE 82.19 ZAC 99.05 ETC 255.94 CLP 141.55

PLANETOCENTRIC CONIC

C3 21.909 VHL 4.681 DLA 5.54 RAL 157.94 RAD 6567.9 VEL 11.970 PTH 2.13 VHP 4.336 DPA 9.76 RAP 188.21 ECC 1.3606

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 10 22	2408.90	-23.76	54.18	22.35	105.87	20 50 31	1808.9	-21.36	46.33
90.00	9 35 8	4707.65	15.64	201.10	19.63	66.09	10 53 36	4107.7	12.28	194.03
100.00	21 34 20	2138.08	-24.88	33.90	21.99	107.13	22 9 58	1538.1	-22.29	26.05
100.00	10 53 51	4453.70	16.70	181.92	19.13	64.84	12 8 5	3853.7	13.17	174.91
110.00	22 48 35	1905.72	-27.87	15.12	20.85	110.65	23 20 20	1305.7	-24.80	7.29
110.00	11 56 6	4258.83	19.52	165.63	17.63	61.36	13 7 5	3658.8	15.55	158.76

DIFFERENTIAL CORRECTIONS
TDE 1.3298 TRA-3.1611 TC3 1.4717 BAU .5017
RDE .6783 RRA -.9137 RC3 .8762 FAU .27420
FDE-4.8882 FRA12.1942 FC-10.8348 BSP 16484
BDE 1.4928 BRA 3.2905 BC3 1.7128 FSP 5354

MID-COURSE EXECUTION ACCURACY
SGT 4434.1 SGR 1620.2 SG3 1647.5
RRT .9535 RRF -.9756 RTF -.9700
SGB 4720.8 R23 -.1346 R13 -.9753
SG1 4698.3 SG2 460.7 THA 19.40

ORBIT DETERMINATION ACCURACY
ST 2002.9 SR 896.5 SS 2807.0
CRT .9723 CRS .9666 CST .9995
LSA 3556.1 MSA 219.5 SSA 31.3
EL1 2186.0 EL2 192.1 ALF 23.71

LAUNCH DATE OCT 6 1964 FLIGHT TIME 272.00 ARRIVAL DATE JUL 5 1965

HELIOCENTRIC CONIC DISTANCE 647.420 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 32.758 GAL -7.51 AZL 90.42 HCA 210.02 SMA 189.09 ECC .24507 INC .4175 V1 29.796
RP 234.35 LAP .21 LOP 222.80 VP 20.755 GAP 3.11 AZP 89.64 TAL 320.29 TAP 170.31 RCA 142.75 APO 235.43 V2 23.461
RC 205.837 GL -2.92 GP 10.79 ZAL 144.52 ZAP 139.21 ETS 165.92 ZAE 168.11 ETE 87.83 ZAC 98.93 ETC 255.95 CLP 140.42

PLANETOCENTRIC CONIC

C3 21.556 VHL 4.643 DLA 6.08 RAL 158.00 RAD 6567.9 VEL 11.956 PTH 2.13 VHP 4.247 DPA 9.74 RAP 188.05 ECC 1.3548

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 6 31	2421.87	-24.00	55.05	22.32	105.50	20 46 53	1821.9	-21.64	47.18
90.00	9 39 27	4686.84	15.06	199.84	19.37	65.74	10 57 34	4086.8	11.66	192.82
100.00	21 30 45	2150.20	-25.12	34.72	21.96	106.76	22 6 35	1550.2	-22.58	26.84
100.00	10 57 54	4433.74	16.12	180.72	18.86	64.48	12 11 48	3833.7	12.55	173.75
110.00	22 45 36	1915.96	-28.11	15.81	20.84	110.30	23 17 32	1316.0	-25.09	7.94
110.00	11 59 33	4240.74	18.93	164.56	17.35	60.99	13 10 14	3640.7	14.91	157.74

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.2927 TRA-3.0699 TC3 1.4601 BAU .4941 SGT 4347.2 SGR 1637.7 SG3 1720.8 ST 1962.9 SR 905.6 SS 2852.4
RDE .6800 RRA -.9121 RC3 .8988 FAU .28477 RRT .9527 RRF -.9747 RTF -.9699 CRT .9720 CRS .9648 CST .9994
FDE-5.0089 FRA12.6301 FC-11.4367 BSP 16208 SGB 4645.4 R23 -.1310 R13 -.9754 LSA 3571.6 MSA 227.7 SSA 31.0
BDE 1.4606 BRA 3.2025 BC3 1.7145 FSP 5600 SG1 4621.8 SG2 468.0 THA 19.96 EL1 2153.0 EL2 194.0 ALF 24.36

LAUNCH DATE OCT 6 1964 FLIGHT TIME 274.00 ARRIVAL DATE JUL 7 1965

HELIOCENTRIC CONIC DISTANCE 651.156 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 32.743 GAL -7.45 AZL 90.34 HCA 211.01 SMA 188.82 ECC .24364 INC .3441 V1 29.796
RP 233.98 LAP .18 LOP 223.79 VP 20.774 GAP 2.74 AZP 89.71 TAL 320.40 TAP 171.42 RCA 142.82 APO 234.83 V2 23.498
RC 207.958 GL -2.43 GP 10.71 ZAL 144.41 ZAP 138.11 ETS 166.51 ZAE 168.13 ETE 93.77 ZAC 98.82 ETC 255.97 CLP 139.26

PLANETOCENTRIC CONIC

C3 21.227 VHL 4.607 DLA 6.59 RAL 158.06 RAD 6567.9 VEL 11.942 PTH 2.13 VHP 4.161 DPA 9.73 RAP 187.85 ECC 1.3493

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 2 49	2434.41	-24.22	55.90	22.29	105.13	20 43 23	1834.4	-21.91	48.00
90.00	9 43 36	4666.89	14.50	198.65	19.14	65.41	11 1 23	4066.9	11.06	191.66
100.00	21 27 18	2161.92	-25.34	35.52	21.94	106.40	22 3 20	1561.9	-22.85	27.60
100.00	11 1 49	4414.61	15.56	179.58	18.62	64.15	12 15 23	3814.6	11.95	172.65
110.00	22 42 44	1925.86	-28.34	16.49	20.84	109.96	23 14 49	1325.9	-25.36	8.58
110.00	12 2 52	4223.43	-18.35	163.55	17.09	60.64	13 13 16	3623.4	14.30	156.77

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.2524 TRA-2.9773 TC3 1.4380 BAU .4847 SGT 4251.3 SGR 1656.9 SG3 1796.5 ST 1917.7 SR 915.0 SS 2897.2
RDE .6819 RRA -.9125 RC3 .9216 FAU .29552 RRT .9517 RRF -.9739 RTF -.9695 CRT .9717 CRS .9631 CST .9992
FDE-5.1291 FRA13.0852 FC-12.0526 BSP 15954 SGB 4562.8 R23 -.1284 R13 -.9754 LSA 3584.9 MSA 236.3 SSA 30.8
BDE 1.4260 BRA 3.1140 BC3 1.7080 FSP 5862 SG1 4537.8 SG2 476.6 THA 20.59 EL1 2115.7 EL2 196.1 ALF 25.10

LAUNCH DATE OCT 6 1964 FLIGHT TIME 276.00 ARRIVAL DATE JUL 9 1965

HELIOCENTRIC CONIC DISTANCE 654.904 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 32.729 GAL -7.40 AZL 90.27 HCA 212.00 SMA 188.57 ECC .24227 INC .2739 V1 29.796
RP 233.62 LAP .15 LOP 224.78 VP 20.793 GAP 2.38 AZP 89.77 TAL 320.51 TAP 172.51 RCA 142.88 APO 234.26 V2 23.536
RC 210.060 GL -1.95 GP 10.64 ZAL 144.31 ZAP 136.97 ETS 167.09 ZAE 168.01 ETE 99.88 ZAC 98.70 ETC 255.98 CLP 138.06

PLANETOCENTRIC CONIC

C3 20.919 VHL 4.574 DLA 7.09 RAL 158.12 RAD 6567.8 VEL 11.929 PTH 2.12 VHP 4.077 DPA 9.76 RAP 187.63 ECC 1.3443

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 59 15	2446.54	-24.44	56.73	22.27	104.77	20 40 1	1846.5	-22.17	48.79
90.00	9 47 38	4647.74	13.96	197.51	18.92	65.11	11 5 5	4047.7	10.49	190.55
100.00	21 23 59	2173.25	-25.56	36.29	21.93	106.05	22 0 12	1573.3	-23.11	28.34
100.00	11 5 35	4396.26	15.01	178.50	18.40	63.84	12 18 51	3796.3	11.37	171.59
110.00	22 39 58	1935.43	-28.56	17.15	20.85	109.63	23 12 14	1335.4	-25.62	9.21
110.00	12 6 5	4206.84	17.79	162.58	16.86	60.32	13 16 11	3606.8	13.71	155.85

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.2118 TRA-2.8802 TC3 1.4091 BAU .4746 SGT 4145.5 SGR 1677.8 SG3 1874.5 ST 1869.7 SR 925.2 SS 2942.9
RDE .6846 RRA -.9140 RC3 .9455 FAU .30664 RRT .9506 RRF -.9731 RTF -.9690 CRT .9715 CRS .9614 CST .9990
FDE-5.2549 FRA13.5511 FC-12.6901 BSP 15654 SGB 4472.1 R23 -.1262 R13 -.9752 LSA 3598.9 MSA 244.9 SSA 30.6
BDE 1.3918 BRA 3.0218 BC3 1.6969 FSP 6128 SG1 4445.7 SG2 485.5 THA 21.31 EL1 2076.7 EL2 197.6 ALF 25.93

LAUNCH DATE OCT 6 1964 FLIGHT TIME 278.00 ARRIVAL DATE JUL 11 1965

HELIOCENTRIC CONIC DISTANCE 658.662 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 32.715 GAL -7.35 AZL 90.21 HCA 213.00 SMA 188.33 ECC .24098 INC .2081 V1 29.796
RP 233.25 LAP .11 LOP 225.77 VP 20.815 GAP 2.02 AZP 89.83 TAL 320.61 TAP 173.61 RCA 142.95 APO 233.71 V2 23.574
RC 212.144 GL -1.49 GP 10.58 ZAL 144.21 ZAP 135.79 ETS 167.64 ZAE 167.74 ETE 106.01 ZAC 98.59 ETC 256.00 CLP 136.82

PLANETOCENTRIC CONIC

C3 20.633 VHL 4.542 DLA 7.56 RAL 158.17 RAD 6567.8 VEL 11.917 PTH 2.12 VHP 3.996 DPA 9.80 RAP 187.39 ECC 1.3396

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 55 49	2458.31	-24.64	57.53	22.26	104.41	20 36 47	1858.3	-22.42	49.57
90.00	9 51 31	4629.35	13.43	196.42	18.73	64.83	11 8 40	4029.4	9.93	189.49
100.00	21 20 47	2184.24	-25.76	37.04	21.93	105.71	21 57 11	1584.2	-23.36	29.07
100.00	11 9 14	4378.66	14.48	177.46	18.21	63.56	12 22 12	3778.7	10.81	170.59
110.00	22 37 19	1944.71	-28.77	17.79	20.86	109.31	23 9 44	1344.7	-25.87	9.81
110.00	12 9 11	4190.95	17.26	161.67	16.66	60.02	13 19 2	3590.9	13.14	154.97

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.1700 TRA-2.7793 TC3 1.3715 BAU .4633 SGT 4029.5 SGR 1700.2 SG3 1954.7 ST 1817.9 SR 935.9 SS 2988.8
RDE .6878 RRA -.9170 RC3 .9698 FAU .31800 RRT .9495 RRF -.9725 RTF -.9682 CRT .9714 CRS .9598 CST .9988
FDE-5.3830 FRA14.0321 FC-13.3430 BSP 15338 SGB 4373.5 R23 -.1244 R13 -.9750 LSA 3612.2 MSA 253.8 SSA 30.3
BDE 1.3572 BRA 2.9267 BC3 1.6797 FSP 6408 SG1 4345.4 SG2 494.7 THA 22.13 EL1 2035.0 EL2 198.6 ALF 26.85

LAUNCH DATE OCT 6 1964 FLIGHT TIME 280.00 ARRIVAL DATE JUL 13 1965

HELIOCENTRIC CONIC DISTANCE 662.432 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 32.702 GAL -7.30 AZL 90.15 HCA 214.00 SMA 188.10 ECC .23975 INC .1447 V1 29.796
RP 232.88 LAP .08 LOP 226.77 VP 20.838 GAP 1.67 AZP 89.88 TAL 320.71 TAP 174.70 RCA 143.00 APO 233.20 V2 23.612
RC 214.210 GL -1.04 GP 10.52 ZAL 144.11 ZAP 134.57 ETS 168.17 ZAE 167.32 ETE 112.00 ZAC 98.47 ETC 256.02 CLP 135.54

PLANETOCENTRIC CONIC

C3 20.366 VHL 4.513 DLA 8.01 RAL 158.23 RAD 6567.8 VEL 11.906 PTH 2.12 VHP 3.918 DPA 9.87 RAP 187.11 ECC 1.3352

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 52 30	2469.74	-24.83	58.32	22.26	104.07	20 33 40	1869.7	-22.65	50.32
90.00	9 55 17	4611.70	12.91	195.37	18.56	64.58	11 12 9	4011.7	9.39	188.47
100.00	21 17 43	2194.92	-25.96	37.77	21.94	105.37	21 54 17	1594.9	-23.60	29.77
100.00	11 12 46	4361.76	13.96	176.47	18.03	63.30	12 25 28	3761.8	10.27	169.63
110.00	22 34 47	1953.73	-28.97	18.41	20.88	108.99	23 7 21	1353.7	-26.11	10.40
110.00	12 12 11	4175.71	16.74	160.79	16.47	59.75	13 21 47	3575.7	12.59	154.13

DIFFERENTIAL CORRECTIONS
TDE 1.1275 TRA-2.6736 TC3 1.3267 BAU .4515
RDE .6916 RRA -.9210 RC3 .9950 FAU .32975
FDE-5.5162 FRA14.5226 FC-14.0174 BSP 14981
BDE 1.3227 BRA 2.8278 BC3 1.6584 FSP 6692

MID-COURSE EXECUTION ACCURACY
SGT 3903.0 SGR 1724.0 SG3 2036.9
RRT .9482 RRF -.9719 RTF -.9672
SGB 4266.8 R23 -.1230 R13 -.9747
SG1 4236.8 SG2 504.3 THA 23.07

ORBIT DETERMINATION ACCURACY
ST 1763.0 SR 947.2 SS 3035.3
CRT .9715 CRS .9583 CST .9985
LSA 3626.0 MSA 262.6 SSA 30.1
EL1 1991.4 EL2 198.9 ALF 27.86

LAUNCH DATE OCT 6 1964 FLIGHT TIME 282.00 ARRIVAL DATE JUL 15 1965

HELIOCENTRIC CONIC DISTANCE 666.211 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 32.689 GAL -7.25 AZL 90.09 HCA 215.00 SMA 187.88 ECC .23858 INC .0836 V1 29.796
RP 232.51 LAP .05 LOP 227.77 VP 20.862 GAP 1.32 AZP 89.93 TAL 320.80 TAP 175.79 RCA 143.06 APO 232.71 V2 23.650
RC 216.258 GL -.62 GP 10.47 ZAL 144.01 ZAP 133.31 ETS 168.68 ZAE 166.75 ETE 117.73 ZAC 98.36 ETC 256.04 CLP 134.23

PLANETOCENTRIC CONIC

C3 20.118 VHL 4.485 DLA 8.45 RAL 158.29 RAD 6567.8 VEL 11.895 PTH 2.11 VHP 3.842 DPA 9.95 RAP 186.81 ECC 1.3311

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 49 19	2480.86	-25.01	59.08	22.27	103.73	20 30 40	1880.9	-22.88	51.06
90.00	9 58 57	4594.75	12.42	194.38	18.41	64.35	11 15 32	3994.8	8.86	187.50
100.00	21 14 45	2205.29	-26.14	38.49	21.95	105.03	21 51 30	1605.3	-23.83	30.46
100.00	11 16 12	4345.55	13.46	175.52	17.88	63.06	12 28 37	3745.6	9.74	168.71
110.00	22 32 20	1962.49	-29.17	19.02	20.92	108.67	23 5 3	1362.5	-26.34	10.98
110.00	12 15 6	4161.12	16.23	159.96	16.31	59.50	13 24 27	3561.1	12.06	153.33

DIFFERENTIAL CORRECTIONS
TDE 1.0839 TRA-2.5633 TC3 1.2732 BAU .4389
RDE .6959 RRA -.9261 RC3 1.0209 FAU .34180
FDE-5.6535 FRA15.0243 FC-14.7086 BSP 14590
BDE 1.2880 BRA 2.7254 BC3 1.6320 FSP 6981

MID-COURSE EXECUTION ACCURACY
SGT 3765.6 SGR 1749.0 SG3 2121.1
RRT .9468 RRF -.9713 RTF -.9659
SGB 4151.9 R23 -.1221 R13 -.9743
SG1 4119.9 SG2 514.5 THA 24.14

ORBIT DETERMINATION ACCURACY
ST 1704.2 SR 959.0 SS 3082.2
CRT .9717 CRS .9568 CST .9982
LSA 3639.9 MSA 271.4 SSA 29.8
EL1 1945.4 EL2 198.6 ALF 29.00

LAUNCH DATE OCT 6 1964 FLIGHT TIME 284.00 ARRIVAL DATE JUL 17 1965

HELIOCENTRIC CONIC DISTANCE 670.000 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 32.677 GAL -7.21 AZL 90.03 HCA 216.00 SMA 187.68 ECC .23748 INC .0252 V1 29.796
RP 232.14 LAP .02 LOP 228.77 VP 20.887 GAP .97 AZP 89.98 TAL 320.88 TAP 176.88 RCA 143.11 APO 232.25 V2 23.689
RC 218.287 GL -.20 GP 10.43 ZAL 143.91 ZAP 132.00 ETS 169.19 ZAE 166.02 ETE 123.11 ZAC 98.24 ETC 256.07 CLP 132.87

PLANETOCENTRIC CONIC

C3 19.889 VHL 4.460 DLA 8.87 RAL 158.35 RAD 6567.8 VEL 11.886 PTH 2.11 VHP 3.770 DPA 10.06 RAP 186.47 ECC 1.3273

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 46 15	2491.67	-25.19	59.82	22.30	103.39	20 27 47	1891.7	-23.09	51.78
90.00	10 2 31	4578.48	11.94	193.42	18.28	64.13	11 18 49	3978.5	8.36	186.57
100.00	21 11 55	2215.38	-26.32	39.19	21.98	104.71	21 48 50	1615.4	-24.04	31.13
100.00	11 19 32	4330.00	12.98	174.62	17.75	62.84	12 31 42	3730.0	9.24	167.83
110.00	22 30 0	1971.01	-29.35	19.62	20.96	108.36	23 2 51	1371.0	-26.56	11.54
110.00	12 17 56	4147.13	15.75	159.16	16.17	59.26	13 27 3	3547.1	11.56	152.57

DIFFERENTIAL CORRECTIONS
TDE 1.0385 TRA-2.4486 TC3 1.2096 BAU .4253
RDE .7003 RRA -.9323 RC3 1.0468 FAU .35400
FDE-5.7906 FRA15.5400 FC-15.4090 BSP 14190
BDE 1.2526 BRA 2.6201 BC3 1.5996 FSP 7284

MID-COURSE EXECUTION ACCURACY
SGT 3616.8 SGR 1775.1 SG3 2207.1
RRT .9451 RRF -.9708 RTF -.9643
SGB 4028.9 R23 -.1218 R13 -.9737
SG1 3994.5 SG2 525.2 THA 25.35

ORBIT DETERMINATION ACCURACY
ST 1641.2 SR 970.9 SS 3128.4
CRT .9720 CRS .9554 CST .9978
LSA 3652.9 MSA 280.4 SSA 29.5
EL1 1896.6 EL2 197.5 ALF 30.26

LAUNCH DATE OCT 6 1964 FLIGHT TIME 286.00 ARRIVAL DATE JUL 19 1965

HELIOCENTRIC CONIC DISTANCE 673.800 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 32.666 GAL -7.17 AZL 89.97 HCA 217.01 SMA 187.48 ECC .23644 INC .0242 V1 29.796
RP 231.76 LAP -.02 LOP 229.78 VP 20.914 GAP .63 AZP 90.02 TAL 320.95 TAP 177.96 RCA 143.15 APO 231.81 V2 23.728
RC 220.299 GL .19 GP 10.39 ZAL 143.82 ZAP 130.65 ETS 169.68 ZAE 165.16 ETE 128.06 ZAC 98.12 ETC 256.10 CLP 131.47

PLANETOCENTRIC CONIC

C3 19.677 VHL 4.436 DLA 9.27 RAL 158.42 RAD 6567.8 VEL 11.877 PTH 2.11 VHP 3.699 DPA 10.19 RAP 186.10 ECC 1.3238

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 43 18	2502.20	-25.35	60.55	22.33	103.06	20 25 0	1902.2	-23.30	52.48
90.00	10 5 59	4562.85	11.47	192.51	18.18	63.93	11 22 2	3962.9	7.87	185.68
100.00	21 9 11	2225.21	-26.49	39.87	22.02	104.38	21 46 16	1625.2	-24.25	31.79
100.00	11 22 47	4315.08	12.52	173.76	17.64	62.63	12 34 42	3715.1	8.75	166.99
110.00	22 27 46	1979.32	-29.53	20.20	21.02	108.06	23 0 45	1379.3	-26.78	12.09
110.00	12 20 42	4133.74	15.28	158.41	16.05	59.04	13 29 36	3533.7	11.07	151.84

DIFFERENTIAL CORRECTIONS
TDE .9923 TRA-2.3283 TC3 1.1371 BAU .4113
RDE .7053 RRA -.9393 RC3 1.0733 FAU .36651
FDE-5.9326 FRA16.0630 FC-16.1256 BSP 13744
BDE 1.2174 BRA 2.5106 BC3 1.5636 FSP .7589

MID-COURSE EXECUTION ACCURACY
SGT 3456.3 SGR 1802.1 SG3 2294.6
RRT .9431 RRF -.9704 RTF -.9621
SGB 3897.9 R23 -.1220 R13 -.9730
SG1 3860.8 SG2 536.6 THA 26.74

ORBIT DETERMINATION ACCURACY
ST 1574.6 SR 983.2 SS 3175.1
CRT .9725 CRS .9541 CST .9973
LSA 3666.5 MSA 289.4 SSA 29.2
EL1 1846.1 EL2 195.3 ALF 31.66

LAUNCH DATE OCT 6 1964 FLIGHT TIME 288.00 ARRIVAL DATE JUL 21 1965

HELIOCENTRIC CONIC DISTANCE 677.609 EARTH TO MARS

RL	149.54	LAL	-.00	LOL	12.77	VL	32.655	GAL	-7.14	AZL	89.92	HCA	218.02	SMA	187.29	ECC	.23546	INC	.0769
RP	231.38	LAP	-.05	LOP	230.79	VP	20.942	GAP	.30	AZP	90.06	TAL	321.01	TAP	179.03	RCA	143.19	APO	231.39
RC	222.292	GL	.58	GP	10.36	ZAL	143.74	ZAP	129.26	ETS	170.16	ZAE	164.17	ETE	132.58	ZAC	97.99	ETC	256.13

V1	29.796	V2	23.768	CLP	130.04														

PLANETOCENTRIC CONIC

C3	19.482	VHL	4.414	DLA	9.66	RAL	158.49	RAD	6567.8	VEL	11.869	PTH	2.11	VHP	3.632	DPA	10.33	RAP	185.70

ECC	1.3206																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 40 29	2512.47	-25.51	61.26	22.38	102.74	20 22 21	1912.5	-23.50	53.17
90.00	10 9 22	4547.87	11.02	191.64	18.09	63.75	11 25 10	3947.9	7.40	184.83
100.00	21 6 34	2234.79	-26.65	40.54	22.07	104.07	21 43 49	1634.8	-24.45	32.43
100.00	11 25 57	4300.78	12.07	172.93	17.55	62.44	12 37 38	3700.8	8.28	166.19
110.00	22 25 37	1987.41	-29.70	20.77	21.09	107.76	22 58 45	1387.4	-26.98	12.63
110.00	12 23 23	4120.92	14.83	157.69	15.95	58.84	13 32 4	3520.9	10.60	151.15

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.9452	TRA	-2.2023	TC3	1.0555	BAU	.3971	SGT	3283.8	SGR	1829.8	SG3	2383.2	ST	1504.3	SR	995.8	SS	3221.7
RDE	.7106	RRA	-.9468	RC3	1.1000	FAU	.37923	RRT	.9406	RRF	-.9700	RTF	-.9593	CRT	.9733	CRS	.9529	CST	.9968
FDE	-6.0775	FRA	16.5912	FC	-16.8523	BSP	13252	SGB	3759.1	R23	-.1226	R13	-.9721	LSA	3680.2	MSA	298.3	SSA	28.9
BDE	1.1825	BRA	2.3972	BC3	1.5245	FSP	7895	SG1	3718.9	SG2	548.4	THA	28.33	EL1	1793.8	EL2	191.8	ALF	33.22

LAUNCH DATE OCT 6 1964 FLIGHT TIME 290.00 ARRIVAL DATE JUL 23 1965

HELIOCENTRIC CONIC DISTANCE 681.427 EARTH TO MARS

RL	149.54	LAL	-.00	LOL	12.77	VL	32.645	GAL	-7.10	AZL	89.87	HCA	219.03	SMA	187.12	ECC	.23454	INC	.1295
RP	231.01	LAP	-.08	LOP	231.81	VP	20.971	GAP	-.03	AZP	90.10	TAL	321.07	TAP	180.10	RCA	143.23	APO	231.01
RC	224.266	GL	.95	GP	10.33	ZAL	143.66	ZAP	127.82	ETS	170.63	ZAE	163.06	ETE	136.67	ZAC	97.86	ETC	256.16

V1	29.796	V2	23.807	CLP	128.56														

PLANETOCENTRIC CONIC

C3	19.303	VHL	4.394	DLA	10.03	RAL	158.56	RAD	6567.8	VEL	11.861	PTH	2.10	VHP	3.568	DPA	10.50	RAP	185.27

ECC	1.3177																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 37 46	2522.48	-25.65	61.96	22.43	102.42	20 19 48	1922.5	-23.69	53.84
90.00	10 12 39	4533.50	10.59	190.81	18.02	63.58	11 28 13	3933.5	6.95	184.01
100.00	21 4 4	2244.14	-26.80	41.19	22.14	103.76	21 41 28	1644.1	-24.64	33.05
100.00	11 29 2	4287.08	11.64	172.14	17.48	62.27	12 40 29	3687.1	7.83	165.42
110.00	22 23 35	1995.31	-29.86	21.32	21.17	107.47	22 56 50	1395.3	-27.18	13.16
110.00	12 26 1	4108.66	14.40	157.00	15.87	58.66	13 34 29	3508.7	10.14	150.48

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8960	TRA	-2.0714	TC3	.9625	BAU	.3824	SGT	3099.4	SGR	1857.9	SG3	2472.9	ST	1429.4	SR	1008.4	SS	3267.4
RDE	.7161	RRA	-.9552	RC3	1.1264	FAU	.39199	RRT	.9375	RRF	-.9697	RTF	-.9558	CRT	.9742	CRS	.9517	CST	.9961
FDE	-6.2214	FRA	17.1308	FC	-17.5801	BSP	12757	SGB	3613.6	R23	-.1239	R13	-.9711	LSA	3693.4	MSA	307.3	SSA	28.6
BDE	1.1470	BRA	2.2810	BC3	1.4816	FSP	8216	SG1	3569.7	SG2	561.4	THA	30.16	EL1	1739.3	EL2	187.2	ALF	34.96

LAUNCH DATE OCT 6 1964 FLIGHT TIME 292.00 ARRIVAL DATE JUL 25 1965

HELIOCENTRIC CONIC DISTANCE 685.255 EARTH TO MARS

RL	149.54	LAL	-.00	LOL	12.77	VL	32.636	GAL	-7.07	AZL	89.82	HCA	220.05	SMA	186.95	ECC	.23367	INC	.1767
RP	230.62	LAP	-.11	LOP	232.82	VP	21.001	GAP	-.36	AZP	90.14	TAL	321.12	TAP	181.17	RCA	143.27	APO	230.64
RC	226.222	GL	1.31	GP	10.30	ZAL	143.59	ZAP	126.34	ETS	171.09	ZAE	161.84	ETE	140.35	ZAC	97.73	ETC	256.20

V1	29.796	V2	23.847	CLP	127.04														

PLANETOCENTRIC CONIC

C3	19.141	VHL	4.375	DLA	10.39	RAL	158.64	RAD	6567.8	VEL	11.854	PTH	2.10	VHP	3.506	DPA	10.69	RAP	184.80

ECC	1.3150																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 35 10	2532.24	-25.79	62.64	22.50	102.11	20 17 23	1932.2	-23.87	54.50
90.00	10 15 52	4519.73	10.17	190.01	17.98	63.43	11 31 12	3919.7	6.52	183.24
100.00	21 1 41	2253.25	-26.95	41.83	22.21	103.45	21 39 14	1653.2	-24.83	33.67
100.00	11 32 3	4273.96	11.22	171.39	17.42	62.11	12 43 17	3674.0	7.40	164.69
110.00	22 21 39	2003.02	-30.02	21.87	21.26	107.18	22 55 2	1403.0	-27.37	13.68
110.00	12 28 34	4096.95	13.98	156.35	15.81	58.49	13 36 51	3497.0	9.71	149.85

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8463	TRA	-1.9336	TC3	.8612	BAU	.3683	SGT	2902.5	SGR	1886.4	SG3	2562.9	ST	1351.1	SR	1021.5	SS	3313.7
RDE	.7221	RRA	-.9635	RC3	1.1533	FAU	.40507	RRT	.9335	RRF	-.9694	RTF	-.9511	CRT	.9754	CRS	.9506	CST	.9953
FDE	-6.3724	FRA	17.6658	FC	-18.3216	BSP	12204	SGB	3461.6	R23	-.1256	R13	-.9698	LSA	3708.0	MSA	316.0	SSA	28.3
BDE	1.1125	BRA	2.1604	BC3	1.4394	FSP	8525	SG1	3413.6	SG2	574.9	THA	32.27	EL1	1684.1	EL2	180.8	ALF	36.90

LAUNCH DATE OCT 6 1964 FLIGHT TIME 294.00 ARRIVAL DATE JUL 27 1965

HELIOCENTRIC CONIC DISTANCE 689.092 EARTH TO MARS

RL	149.54	LAL	-.00	LOL	12.77	VL	32.626	GAL	-7.05	AZL	89.78	HCA	221.07	SMA	186.80	ECC	.23287	INC	.2232
RP	230.24	LAP	-.15	LOP	233.84	VP	21.032	GAP	-.68	AZP	90.17	TAL	321.16	TAP	182.23	RCA	143.30	APO	230.29
RC	228.159	GL	1.66	GP	10.27	ZAL	143.53	ZAP	124.82	ETS	171.54	ZAE	160.51	ETE	143.66	ZAC	97.59	ETC	256.24

V1	29.796	V2	23.887	CLP	125.47														

PLANETOCENTRIC CONIC

C3	18.993	VHL	4.358	DLA	10.73	RAL	158.72	RAD	6567.8	VEL	11.848	PTH	2.10	VHP	3.447	DPA	10.89	RAP	184.29

ECC	1.3126																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 32 42	2541.76	-25.93	63.30	22.59	101.80	20 15 4	1941.8	-24.04	55.14
90.00	10 19 1	4506.56	9.77	189.26	17.95	63.29	11 34 7	3906.6	6.10	182.49
100.00	20 59 24	2262.13	-27.09	42.45	22.30	103.15	21 37 6	1662.1	-25.01	34.27
100.00	11 34 59	4261.43	10.82	170.68	17.39	61.96	12 46 1	3661.4	6.99	163.99
110.00	22 19 49	2010.54	-30.17	22.40	21.36	106.90	22 53 19	1410.5	-27.56	14.18
110.00	12 31 5	4085.78	13.58	155.73	15.77	58.33	13 39 11	3485.8	9.30	149.25

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.7948	TRA	-1.7904	TC3	.7478	BAU	.3546	SGT	2693.8	SGR	1914.9	SG3	2653.0	ST	1268.4	SR	1034.4	SS	3359.0
RDE	.7282	RRA	-.9724	RC3	1.1795	FAU	.41804	RRT	.9282	RRF	-.9692	RTF	-.9448	CRT	.9768	CRS	.9496	CST	.9943
FDE	-6.5222	FRA	18.2062	FC	-19.0548	BSP	11645	SGB	3305.0	R23	-.1279	R13	-.9683	LSA	3722.3	MSA	324.8	SSA	28.0
BDE	1.0780	BRA	2.0375	BC3	1.3965	FSP	8843	SG1	3251.9	SG2	590.1	THA	34.73	EL1	1627.6	EL2	172.6	ALF	39.06

LAUNCH DATE OCT 6 1964 FLIGHT TIME 296.00 ARRIVAL DATE JUL 29 1965

HELIOCENTRIC CONIC DISTANCE 692.939 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 32.618 GAL -7.02 AZL 89.73 HCA 222.09 SMA 186.65 ECC .23212 INC .2682 V1 29.796
RP 229.86 LAP -.18 LOP 234.87 VP 21.064 GAP -.99 AZP 90.20 TAL 321.19 TAP 183.29 RCA 143.32 APO 229.97 V2 23.927
RC 230.076 GL 2.00 GP 10.25 ZAL 143.47 ZAP 123.25 ETS 171.99 ZAE 159.10 ETE 146.63 ZAC 97.44 ETC 256.28 CLP 123.87

PLANETOCENTRIC CONIC

C3 18.860 VHL 4.343 DLA 11.06 RAL 158.81 RAD 6567.8 VEL 11.842 PTH 2.10 VHP 3.391 DPA 11.11 RAP 183.76 ECC 1.3104

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 30 20	2551.06	-26.06	63.95	22.69	101.50	20 12 51	1951.1	-24.21	55.77
90.00	10 22 4	4493.97	9.38	188.53	17.94	63.16	11 36 58	3894.0	5.70	181.78
100.00	20 57 14	2270.81	-27.22	43.06	22.41	102.86	21 35 5	1670.8	-25.18	34.86
100.00	11 37 52	4249.44	10.43	170.00	17.38	61.83	12 48 41	3649.4	6.59	163.32
110.00	22 18 3	2017.89	-30.31	22.93	21.48	106.62	22 51 41	1417.9	-27.74	14.68
110.00	12 33 32	4075.13	13.20	155.14	15.75	58.18	13 41 27	3475.1	8.90	148.68

DIFFERENTIAL CORRECTIONS
TDE .7447 TRA-1.6382 TC3 .6308 BAU .3434
RDE .7352 RRA -.9806 RC3 1.2069 FAU .43164
FDE-6.6841 FRA18.7302 FC-19.8135 BSP 10992
BDE 1.0465 BRA 1.9092 BC3 1.3618 FSP 9131

MID-COURSE EXECUTION ACCURACY
SGT 2472.9 SGR 1943.6 SG3 2743.0
RRT .9218 RRF -.9689 RTF -.9367
SGB 3145.3 R23 -.1294 R13 -.9668
SG1 3086.8 SG2 603.6 THA 37.61

ORBIT DETERMINATION ACCURACY
ST 1184.1 SR 1047.9 SS 3405.8
CRT .9790 CRS .9488 CST .9928
LSA 3740.0 MSA 333.7 SSA 27.5
EL1 1573.0 EL2 160.9 ALF 41.43

LAUNCH DATE OCT 6 1964 FLIGHT TIME 298.00 ARRIVAL DATE JUL 31 1965

HELIOCENTRIC CONIC DISTANCE 696.793 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 32.610 GAL -7.00 AZL 89.69 HCA 223.12 SMA 186.51 ECC .23143 INC .3113 V1 29.796
RP 229.47 LAP -.21 LOP 235.89 VP 21.098 GAP -1.30 AZP 90.23 TAL 321.22 TAP 184.34 RCA 143.35 APO 229.67 V2 23.968
RC 231.973 GL 2.33 GP 10.22 ZAL 143.42 ZAP 121.65 ETS 172.43 ZAE 157.60 ETE 149.30 ZAC 97.28 ETC 256.33 CLP 122.22

PLANETOCENTRIC CONIC

C3 18.743 VHL 4.329 DLA 11.38 RAL 158.90 RAD 6567.8 VEL 11.837 PTH 2.10 VHP 3.339 DPA 11.35 RAP 183.18 ECC 1.3085

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 28 6	2560.12	-26.18	64.59	22.80	101.20	20 10 46	1960.1	-24.37	56.39
90.00	10 25 4	4481.96	9.01	187.84	17.95	63.04	11 39 46	3882.0	5.32	181.10
100.00	20 55 11	2279.26	-27.35	43.66	22.52	102.57	21 33 10	1679.3	-25.34	35.43
100.00	11 40 40	4238.04	10.07	169.35	17.39	61.71	12 51 18	3638.0	6.21	162.69
110.00	22 16 25	2025.06	-30.45	23.44	21.61	106.34	22 50 10	1425.1	-27.91	15.17
110.00	12 35 56	4065.01	12.84	154.58	15.75	58.04	13 43 41	3465.0	8.52	148.14

DIFFERENTIAL CORRECTIONS
TDE .6887 TRA-1.4833 TC3 .4938 BAU .3324
RDE .7413 RRA -.9900 RC3 1.2313 FAU .44432
FDE-6.8282 FRA19.2694 FC-20.5236 BSP 10420
BDE 1.0118 BRA 1.7833 BC3 1.3267 FSP 9455

MID-COURSE EXECUTION ACCURACY
SGT 2241.3 SGR 1971.1 SG3 2831.7
RRT .9114 RRF -.9687 RTF -.9247
SGB 2984.7 R23 -.1323 R13 -.9650
SG1 2919.0 SG2 623.0 THA 40.98

ORBIT DETERMINATION ACCURACY
ST 1091.7 SR 1060.3 SS 3447.8
CRT .9809 CRS .9478 CST .9911
LSA 3753.0 MSA 342.2 SSA 27.3
EL1 1514.6 EL2 148.5 ALF 44.15

LAUNCH DATE OCT 6 1964 FLIGHT TIME 300.00 ARRIVAL DATE AUG 2 1965

HELIOCENTRIC CONIC DISTANCE 700.657 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 32.602 GAL -6.98 AZL 89.65 HCA 224.15 SMA 186.38 ECC .23079 INC .3529 V1 29.796
RP 229.09 LAP -.25 LOP 236.93 VP 21.132 GAP -1.61 AZP 90.25 TAL 321.23 TAP 185.38 RCA 143.36 APO 229.39 V2 24.009
RC 233.848 GL 2.65 GP 10.20 ZAL 143.38 ZAP 120.00 ETS 172.87 ZAE 156.01 ETE 151.70 ZAC 97.12 ETC 256.39 CLP 120.53

PLANETOCENTRIC CONIC

C3 18.639 VHL 4.317 DLA 11.68 RAL 159.01 RAD 6567.8 VEL 11.833 PTH 2.10 VHP 3.289 DPA 11.60 RAP 182.57 ECC 1.3067

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 25 58	2568.95	-26.29	65.21	22.92	100.91	20 8 47	1969.0	-24.52	56.99
90.00	10 28 0	4470.51	8.66	187.19	17.98	62.93	11 42 30	3870.5	4.96	180.46
100.00	20 53 14	2287.52	-27.47	44.24	22.65	102.28	21 31 22	1687.5	-25.50	35.99
100.00	11 43 25	4227.18	9.72	168.73	17.42	61.59	12 53 52	3627.2	5.85	162.08
110.00	22 14 52	2032.06	-30.58	23.94	21.75	106.07	22 48 45	1432.1	-28.08	15.64
110.00	12 38 16	4055.40	12.49	154.05	15.77	57.92	13 45 52	3455.4	8.17	147.63

DIFFERENTIAL CORRECTIONS
TDE .6336 TRA-1.3197 TC3 .3512 BAU .3251
RDE .7481 RRA -.9982 RC3 1.2564 FAU .45739
FDE-6.9828 FRA19.7846 FC-21.2449 BSP 9791
BDE .9803 BRA 1.6547 BC3 1.3045 FSP 9750

MID-COURSE EXECUTION ACCURACY
SGT 1999.4 SGR 1998.1 SG3 2918.8
RRT .8969 RRF -.9684 RTF -.9076
SGB 2826.6 R23 -.1340 R13 -.9632
SG1 2752.8 SG2 641.8 THA 44.98

ORBIT DETERMINATION ACCURACY
ST 997.5 SR 1073.0 SS 3490.6
CRT .9836 CRS .9470 CST .9886
LSA 3769.3 MSA 350.8 SSA 26.9
EL1 1459.1 EL2 132.1 ALF 47.12

LAUNCH DATE OCT 6 1964 FLIGHT TIME 302.00 ARRIVAL DATE AUG 4 1965

HELIOCENTRIC CONIC DISTANCE 704.528 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 32.595 GAL -6.97 AZL 89.61 HCA 225.19 SMA 186.25 ECC .23020 INC .3934 V1 29.796
RP 228.70 LAP -.28 LOP 237.96 VP 21.167 GAP -1.91 AZP 90.28 TAL 321.23 TAP 186.42 RCA 143.38 APO 229.13 V2 24.049
RC 235.703 GL 2.96 GP 10.17 ZAL 143.35 ZAP 118.31 ETS 173.30 ZAE 154.36 ETE 153.88 ZAC 96.95 ETC 256.45 CLP 118.80

PLANETOCENTRIC CONIC

C3 18.549 VHL 4.307 DLA 11.97 RAL 159.11 RAD 6567.8 VEL 11.829 PTH 2.10 VHP 3.242 DPA 11.87 RAP 181.93 ECC 1.3053

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 23 58	2577.57	-26.40	65.82	23.07	100.62	20 6 56	1977.6	-24.67	57.58
90.00	10 30 52	4459.63	8.32	186.57	18.04	62.84	11 45 11	3859.6	4.61	179.85
100.00	20 51 25	2295.56	-27.58	44.81	22.80	102.00	21 29 40	1695.6	-25.65	36.54
100.00	11 46 6	4216.87	9.38	168.15	17.47	61.49	12 56 23	3616.9	5.50	161.51
110.00	22 13 26	2038.90	-30.71	24.44	21.91	105.81	22 47 25	1438.9	-28.24	16.11
110.00	12 40 34	4046.30	12.16	153.55	15.81	57.80	13 48 1	3446.3	7.82	147.14

DIFFERENTIAL CORRECTIONS
TDE .5757 TRA-1.1509 TC3 .1950 BAU .3209
RDE .7545 RRA-1.0067 RC3 1.2791 FAU .46981
FDE-7.1278 FRA20.2997 FC-21.9273 BSP 9194
BDE .9490 BRA 1.5291 BC3 1.2939 FSP 10055

MID-COURSE EXECUTION ACCURACY
SGT 1750.6 SGR 2023.8 SG3 3003.9
RRT .8740 RRF -.9682 RTF -.8814
SGB 2675.9 R23 -.1347 R13 -.9615
SG1 2592.2 SG2 664.0 THA 49.73

ORBIT DETERMINATION ACCURACY
ST 898.4 SR 1085.0 SS 3530.6
CRT .9867 CRS .9462 CST .9852
LSA 3784.2 MSA 359.3 SSA 26.6
EL1 1404.1 EL2 113.0 ALF 50.45

LAUNCH DATE OCT 6 1964 FLIGHT TIME 304.00 ARRIVAL DATE AUG 6 1965

HELIOCENTRIC CONIC DISTANCE 708.408 EARTH TO MARS

RL	149.54	LAL	-.00	LOL	12.77	VL	32.588	GAL	-6.95	AZL	89.57	HCA	226.22	SMA	186.14	ECC	.22967	INC	.4321
RP	228.31	LAP	-.31	LOP	239.00	VP	21.203	GAP	-2.21	AZP	90.30	TAL	321.23	TAP	187.45	RCA	143.39	APO	228.89
RC	237.537	GL	3.26	GP	10.15	ZAL	143.33	ZAP	116.58	ETS	173.73	ZAE	152.64	ETE	155.85	ZAC	96.76	ETC	256.51

V1 29.796 V2 24.090 CLP 117.03

PLANETOCENTRIC CONIC

C3	18.473	VHL	4.298	DLA	12.25	RAL	159.23	RAD	6567.7	VEL	11.826	PTH	2.09	VHP	3.199	DPA	12.15	RAP	181.25

ECC 1.3040

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 22 5	2585.96	-26.51	66.41	23.22	100.34	20 5 11	1986.0	-24.81	58.15
90.00	10 33 39	4449.32	8.00	185.98	18.11	62.75	11 47 49	3849.3	4.28	179.27
100.00	20 49 42	2303.40	-27.69	45.37	22.96	101.73	21 28 6	1703.4	-25.80	37.08
100.00	11 48 44	4207.10	9.06	167.60	17.53	61.39	12 58 51	3607.1	5.18	160.97
110.00	22 12 6	2045.57	-30.83	24.92	22.09	105.55	22 46 12	1445.6	-28.39	16.57
110.00	12 42 49	4037.70	11.85	153.08	15.87	57.70	13 50 7	3437.7	7.50	146.69

DIFFERENTIAL CORRECTIONS

TDE	.5158	TRA	-.9752	TC3	.0284	BAU	.3214
RDE	.7610	RRA	-1.0144	RC3	1.3009	FAU	.48201
FDE	-7.2710	FRA	20.7942	FC	-22.5893	BSP	8619
BDE	.9193	BRA	1.4072	BC3	1.3012	FSP	10348

MID-COURSE EXECUTION ACCURACY

SGT	1497.8	SGR	2048.0	SG3	3085.9		
RRT	.8364	RRF	-.9679	RTF	-.8389		
SGB	2537.3	R23	-.1322	R13	-.9603		
SG1	2442.1	SG2	688.4	THA	55.41		

ORBIT DETERMINATION ACCURACY

ST	795.1	SR	1096.6	SS	3568.8
CRT	.9901	CRS	.9454	CST	.9802
LSA	3799.4	MSA	367.5	SSA	26.3
EL1	1351.5	EL2	90.4	ALF	54.14

LAUNCH DATE OCT 6 1964 FLIGHT TIME 306.00 ARRIVAL DATE AUG 8 1965

HELIOCENTRIC CONIC DISTANCE 712.296 EARTH TO MARS

RL	149.54	LAL	-.00	LOL	12.77	VL	32.581	GAL	-6.94	AZL	89.53	HCA	227.27	SMA	186.03	ECC	.22919	INC	.4700
RP	227.92	LAP	-.35	LOP	240.04	VP	21.240	GAP	-2.50	AZP	90.32	TAL	321.21	TAP	188.48	RCA	143.39	APO	228.66
RC	239.350	GL	3.55	GP	10.12	ZAL	143.32	ZAP	114.81	ETS	174.16	ZAE	150.85	ETE	157.64	ZAC	96.57	ETC	256.58

V1 29.796 V2 24.132 CLP 115.23

PLANETOCENTRIC CONIC

C3	18.411	VHL	4.291	DLA	12.52	RAL	159.35	RAD	6567.7	VEL	11.823	PTH	2.09	VHP	3.159	DPA	12.44	RAP	180.54

ECC 1.3030

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 20 20	2594.13	-26.61	66.99	23.39	100.07	20 3 34	1994.1	-24.94	58.71
90.00	10 36 23	4439.56	7.69	185.42	18.20	62.66	11 50 23	3839.6	3.97	178.72
100.00	20 48 7	2311.04	-27.80	45.91	23.14	101.46	21 26 38	1711.0	-25.93	37.61
100.00	11 51 18	4197.88	8.76	167.08	17.62	61.31	13 1 16	3597.9	4.87	160.46
110.00	22 10 52	2052.08	-30.95	25.39	22.28	105.29	22 45 4	1452.1	-28.54	17.01
110.00	12 45 2	4029.60	11.55	152.64	15.95	57.60	13 52 11	3429.6	7.20	146.26

DIFFERENTIAL CORRECTIONS

TDE	.4546	TRA	-.7930	TC3	-.1479	BAU	.3272
RDE	.7674	RRA	-1.0214	RC3	1.3210	FAU	.49376
FDE	-7.4101	FRA	21.2683	FC	-23.2186	BSP	8086
BDE	.8919	BRA	1.2931	BC3	1.3292	FSP	10629

MID-COURSE EXECUTION ACCURACY

SGT	1249.5	SGR	2070.4	SG3	3164.2		
RRT	.7706	RRF	-.9676	RTF	-.7656		
SGB	2418.3	R23	-.1247	R13	-.9600		
SG1	2310.6	SG2	713.5	THA	62.18		

ORBIT DETERMINATION ACCURACY

ST	688.7	SR	1107.6	SS	3604.8
CRT	.9940	CRS	.9445	CST	.9723
LSA	3815.0	MSA	375.6	SSA	25.9
EL1	1302.7	EL2	64.3	ALF	58.19

LAUNCH DATE OCT 6 1964 FLIGHT TIME 308.00 ARRIVAL DATE AUG 10 1965

HELIOCENTRIC CONIC DISTANCE 716.190 EARTH TO MARS

RL	149.54	LAL	-.00	LOL	12.77	VL	32.575	GAL	-6.94	AZL	89.49	HCA	228.31	SMA	185.93	ECC	.22876	INC	.5064
RP	227.53	LAP	-.38	LOP	241.08	VP	21.278	GAP	-2.79	AZP	90.34	TAL	321.19	TAP	189.50	RCA	143.40	APO	228.46
RC	241.142	GL	3.83	GP	10.08	ZAL	143.32	ZAP	113.00	ETS	174.58	ZAE	149.01	ETE	159.28	ZAC	96.38	ETC	256.66

V1 29.796 V2 24.173 CLP 113.39

PLANETOCENTRIC CONIC

C3	18.362	VHL	4.285	DLA	12.77	RAL	159.48	RAD	6567.7	VEL	11.821	PTH	2.09	VHP	3.122	DPA	12.74	RAP	179.80

ECC 1.3022

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 18 42	2602.07	-26.70	67.55	23.58	99.80	20 2 4	2002.1	-25.07	59.26
90.00	10 39 4	4430.37	7.40	184.90	18.30	62.59	11 52 54	3830.4	3.67	178.21
100.00	20 46 38	2318.47	-27.90	46.44	23.33	101.20	21 25 17	1718.5	-26.07	38.12
100.00	11 53 49	4189.21	8.48	166.59	17.73	61.23	13 3 38	3589.2	4.57	159.98
110.00	22 9 45	2058.43	-31.06	25.85	22.48	105.04	22 44 3	1458.4	-28.69	17.45
110.00	12 47 12	4022.01	11.28	152.23	16.04	57.52	13 54 14	3422.0	6.91	145.85

DIFFERENTIAL CORRECTIONS

TDE	.3865	TRA	-.6081	TC3	-.3456	BAU	.3383
RDE	.7714	RRA	-1.0299	RC3	1.3340	FAU	.50296
FDE	-7.5024	FRA	21.7647	FC	-23.7138	BSP	7722
BDE	.8629	BRA	1.1961	BC3	1.3781	FSP	10986

MID-COURSE EXECUTION ACCURACY

SGT	1024.7	SGR	2089.2	SG3	3237.5		
RRT	.6408	RRF	-.9672	RTF	-.6262		
SGB	2327.0	R23	-.1086	R13	-.9611		
SG1	2204.3	SG2	745.6	THA	70.19		

ORBIT DETERMINATION ACCURACY

ST	574.2	SR	1115.6	SS	3630.6
CRT	.9971	CRS	.9431	CST	.9598
LSA	3822.1	MSA	383.5	SSA	25.9
EL1	1254.1	EL2	39.1	ALF	62.80

LAUNCH DATE OCT 6 1964 FLIGHT TIME 310.00 ARRIVAL DATE AUG 12 1965

HELIOCENTRIC CONIC DISTANCE 720.094 EARTH TO MARS

RL	149.54	LAL	-.00	LOL	12.77	VL	32.570	GAL	-6.93	AZL	89.46	HCA	229.36	SMA	185.83	ECC	.22837	INC	.5421
RP	227.14	LAP	-.41	LOP	242.13	VP	21.317	GAP	-3.08	AZP	90.35	TAL	321.16	TAP	190.52	RCA	143.39	APO	228.27
RC	242.914	GL	4.10	GP	10.05	ZAL	143.33	ZAP	111.16	ETS	175.00	ZAE	147.11	ETE	160.78	ZAC	96.17	ETC	256.74

V1 29.796 V2 24.214 CLP 111.51

PLANETOCENTRIC CONIC

C3	18.325	VHL	4.281	DLA	13.01	RAL	159.62	RAD	6567.7	VEL	11.820	PTH	2.09	VHP	3.089	DPA	13.05	RAP	179.03

ECC 1.3016

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 17 11	2609.81	-26.79	68.10	23.78	99.54	20 0 41	2009.8	-25.20	59.79
90.00	10 41 40	4421.71	7.13	184.41	18.43	62.52	11 55 22	3821.7	3.40	177.72
100.00	20 45 17	2325.70	-27.99	46.96	23.54	100.94	21 24 3	1725.7	-26.20	38.62
100.00	11 56 16	4181.04	8.21	166.14	17.85	61.16	13 5 57	3581.0	4.30	159.53
110.00	22 8 43	2064.62	-31.17	26.30	22.70	104.80	22 43 8	1464.6	-28.83	17.88
110.00	12 49 19	4014.89	11.02	151.84	16.16	57.43	13 56 14	3414.9	6.64	145.48

DIFFERENTIAL CORRECTIONS

TDE	.3245	TRA	-.4109	TC3	-.5353	BAU	.3564
RDE	.7787	RRA	-1.0336	RC3	1.3526	FAU	.51450
FDE	-7.6509	FRA	22.1625	FC	-24.3060	BSP	7313
BDE	.8436	BRA	1.1123	BC3	1.4547	FSP	11193

MID-COURSE EXECUTION ACCURACY

SGT	847.0	SGR	2107.9	SG3	3306.7		
RRT	.4052	RRF	- 9668	RTF	-.3731		
SGB	2271.7	R23	-.0847	R13	-.9633		
SG1	2139.8	SG2	762.8	THA	79.39		

ORBIT DETERMINATION ACCURACY

ST	466.4	SR	1126.4	SS	3665.5
CRT	.9980	CRS	.9426	CST	.9344
LSA	3843.0	MSA	391.4	SSA	25.4
EL1	1218.9	EL2	26.9	ALF	67.54

LAUNCH DATE OCT 6 1964 FLIGHT TIME 312.00 ARRIVAL DATE AUG 14 1965

HELIOCENTRIC CONIC DISTANCE 724.006 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 32.565 GAL -6.93 AZL 89.42 HCA 230.41 SMA 185.74 ECC .22804 INC .5765 V1 29.796
RP 226.75 LAP -.44 LOP 243.18 VP 21.356 GAP -3.36 AZP 90.37 TAL 321.11 TAP 191.52 RCA 143.39 APO 228.10 V2 24.256
RC 244.666 GL 4.36 GP 10.00 ZAL 143.35 ZAP 109.29 ETS 175.42 ZAE 145.17 ETE 162.16 ZAC 95.95 ETC 256.82 CLP 109.60

PLANETOCENTRIC CONIC

C3 18.302 VHL 4.278 DLA 13.23 RAL 159.76 RAD 6567.7 VEL 11.819 PTH 2.09 VHP 3.059 DPA 13.37 RAP 178.23 ECC 1.3012

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 15 48	2617.32	-26.87	68.63	24.00	99.29	19 59 25	2017.3	-25.31	60.31
90.00	10 44 13	4413.61	6.88	183.95	18.58	62.46	11 57 47	3813.6	3.14	177.27
100.00	20 44 3	2332.74	-28.08	47.46	23.76	100.69	21 22 55	1732.7	-26.32	39.10
100.00	11 58 40	4173.42	7.96	165.71	17.99	61.09	13 8 13	3573.4	4.04	159.11
110.00	22 7 48	2070.65	-31.28	26.74	22.94	104.55	22 42 19	1470.6	-28.96	18.30
110.00	12 51 24	4008.27	10.77	151.48	16.29	57.36	13 58 12	3408.3	6.39	145.13

DIFFERENTIAL CORRECTIONS
TDE .2593 TRA -.2088 TC3 -.7367 BAU .3801
RDE .7854 RRA-1.0366 RC3 1.3678 FAU .52488
FDE-7.7851 FRA22.5378 FC-24.8276 BSP 7071
BDE .8270 BRA 1.0574 BC3 1.5536 FSP 11393

MID-COURSE EXECUTION ACCURACY
SGT 774.8 SGR 2123.7 SG3 3370.1
RRT .0226 RRF -.9664 RTF .0286
SGB 2260.6 R23 -.0538 R13 -.9662
SG1 2123.8 SG2 774.6 THA 89.46

ORBIT DETERMINATION ACCURACY
ST 358.3 SR 1136.0 SS 3696.4
CRT .9863 CRS .9420 CST .8800
LSA 3863.0 MSA 399.1 SSA 25.0
EL1 1189.8 EL2 56.4 ALF 72.68

LAUNCH DATE OCT 6 1964 FLIGHT TIME 314.00 ARRIVAL DATE AUG 16 1965

HELIOCENTRIC CONIC DISTANCE 727.925 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 32.560 GAL -6.93 AZL 89.39 HCA 231.47 SMA 185.66 ECC .22776 INC .6102 V1 29.796
RP 226.36 LAP -.48 LOP 244.24 VP 21.396 GAP -3.63 AZP 90.38 TAL 321.05 TAP 192.52 RCA 143.38 APO 227.95 V2 24.297
RC 246.398 GL 4.62 GP 9.96 ZAL 143.38 ZAP 107.39 ETS 175.83 ZAE 143.18 ETE 163.44 ZAC 95.72 ETC 256.91 CLP 107.67

PLANETOCENTRIC CONIC

C3 18.292 VHL 4.277 DLA 13.45 RAL 159.92 RAD 6567.7 VEL 11.818 PTH 2.09 VHP 3.032 DPA 13.69 RAP 177.40 ECC 1.3010

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 14 33	2624.60	-26.95	69.15	24.23	99.04	19 58 17	2024.6	-25.42	60.82
90.00	10 46 43	4406.06	6.64	183.53	18.74	62.41	12 0 9	3806.1	2.89	176.85
100.00	20 42 56	2339.56	-28.17	47.95	24.00	100.45	21 21 55	1739.6	-26.44	39.58
100.00	12 1 1	4166.33	7.73	165.31	18.15	61.03	13 10 27	3566.3	3.81	158.72
110.00	22 7 0	2076.52	-31.38	27.16	23.19	104.32	22 41 36	1476.5	-29.09	18.71
110.00	12 53 26	4002.14	10.55	151.15	16.45	57.30	14 0 8	3402.1	6.16	144.80

DIFFERENTIAL CORRECTIONS
TDE .1914 TRA -.0015 TC3 -.9484 BAU .4094
RDE .7911 RRA-1.0387 RC3 1.3793 FAU .53396
FDE-7.8991 FRA22.8847 FC-25.2709 BSP 7030
BDE .8140 BRA 1.0387 BC3 1.6739 FSP 11600

MID-COURSE EXECUTION ACCURACY
SGT 850.8 SGR 2135.9 SG3 3426.6
RRT -.3756 RRF -.9659 RTF .4374
SGB 2299.1 R23 -.0205 R13 -.9690
SG1 2163.3 SG2 778.5 THA 99.79

ORBIT DETERMINATION ACCURACY
ST 257.5 SR 1144.0 SS 3721.6
CRT .9202 CRS .9412 CST .7388
LSA 3880.7 MSA 406.6 SSA 24.6
EL1 1168.5 EL2 98.7 ALF 78.21

LAUNCH DATE OCT 6 1964 FLIGHT TIME 316.00 ARRIVAL DATE AUG 18 1965

HELIOCENTRIC CONIC DISTANCE 731.851 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 32.555 GAL -6.94 AZL 89.36 HCA 232.53 SMA 185.59 ECC .22753 INC .6431 V1 29.796
RP 225.97 LAP -.51 LOP 245.30 VP 21.436 GAP -3.91 AZP 90.39 TAL 320.99 TAP 193.52 RCA 143.36 APO 227.81 V2 24.339
RC 248.110 GL 4.87 GP 9.90 ZAL 143.43 ZAP 105.47 ETS 176.24 ZAE 141.15 ETE 164.62 ZAC 95.49 ETC 257.01 CLP 105.71

PLANETOCENTRIC CONIC

C3 18.295 VHL 4.277 DLA 13.65 RAL 160.08 RAD 6567.7 VEL 11.819 PTH 2.09 VHP 3.009 DPA 14.02 RAP 176.55 ECC 1.3011

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 13 25	2631.67	-27.02	69.66	24.48	98.80	19 57 17	2031.7	-25.53	61.31
90.00	10 49 8	4399.07	6.42	183.13	18.93	62.36	12 2 27	3799.1	2.67	176.46
100.00	20 41 56	2346.19	-28.25	48.43	24.25	100.21	21 21 2	1746.2	-26.55	40.04
100.00	12 3 18	4159.78	7.51	164.95	18.33	60.98	13 12 38	3559.8	3.58	158.36
110.00	22 6 18	2082.23	-31.47	27.58	23.45	104.09	22 41 0	1482.2	-29.22	19.10
110.00	12 55 26	3996.51	10.34	150.85	16.62	57.24	14 2 3	3396.5	5.95	144.51

DIFFERENTIAL CORRECTIONS
TDE .1218 TRA .2114 TC3-1.1672 BAU .4436
RDE .7967 RRA-1.0392 RC3 1.3879 FAU .54203
FDE-8.0049 FRA23.1909 FC-25.6491 BSP 7185
BDE .8060 BRA 1.0605 BC3 1.8135 FSP 11780

MID-COURSE EXECUTION ACCURACY
SGT 1052.9 SGR 2144.9 SG3 3475.8
RRT -.6327 RRF -.9652 RTF .6959
SGB 2389.4 R23 .0079 R13 -.9715
SG1 2260.7 SG2 773.6 THA 109.65

ORBIT DETERMINATION ACCURACY
ST 187.5 SR 1151.0 SS 3743.8
CRT .6277 CRS .9404 CST .3301
LSA 3899.3 MSA 414.0 SSA 24.2
EL1 1157.1 EL2 145.2 ALF 84.07

LAUNCH DATE OCT 6 1964 FLIGHT TIME 318.00 ARRIVAL DATE AUG 20 1965

HELIOCENTRIC CONIC DISTANCE 735.784 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 32.551 GAL -6.95 AZL 89.32 HCA 233.59 SMA 185.52 ECC .22734 INC .6751 V1 29.796
RP 225.58 LAP -.54 LOP 246.36 VP 21.478 GAP -4.18 AZP 90.40 TAL 320.91 TAP 194.50 RCA 143.34 APO 227.69 V2 24.381
RC 249.803 GL 5.11 GP 9.85 ZAL 143.48 ZAP 103.52 ETS 176.64 ZAE 139.08 ETE 165.72 ZAC 95.24 ETC 257.11 CLP 103.73

PLANETOCENTRIC CONIC

C3 18.311 VHL 4.279 DLA 13.84 RAL 160.25 RAD 6567.7 VEL 11.819 PTH 2.09 VHP 2.989 DPA 14.34 RAP 175.68 ECC 1.3014

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 12 25	2638.50	-27.09	70.14	24.75	98.56	19 56 24	2038.5	-25.63	61.78
90.00	10 51 30	4392.64	6.22	182.77	19.13	62.32	12 4 43	3792.6	2.46	176.10
100.00	20 41 4	2352.61	-28.32	48.89	24.52	99.98	21 20 17	1752.6	-26.65	40.49
100.00	12 5 32	4153.77	7.31	164.61	18.53	60.94	13 14 46	3553.8	3.38	158.03
110.00	22 5 42	2087.78	-31.56	27.99	23.73	103.86	22 40 30	1487.8	-29.34	19.49
110.00	12 57 24	3991.36	10.15	150.57	16.81	57.18	14 3 55	3391.4	5.76	144.23

DIFFERENTIAL CORRECTIONS
TDE .0503 TRA .4293 TC3-1.3932 BAU .4823
RDE .8017 RRA-1.0382 RC3 1.3932 FAU .54887
FDE-8.0960 FRA23.4561 FC-25.9502 BSP 7545
BDE .8033 BRA 1.1235 BC3 1.9703 FSP 11941

MID-COURSE EXECUTION ACCURACY
SGT 1332.9 SGR 2150.3 SG3 3517.0
RRT -.7665 RRF -.9645 RTF .8275
SGB 2529.9 R23 .0282 R13 -.9739
SG1 2412.1 SG2 763.2 THA 118.53

ORBIT DETERMINATION ACCURACY
ST 193.3 SR 1156.8 SS 3761.6
CRT -.0234 CRS .9395 CST -.3612
LSA 3917.6 MSA 421.1 SSA 23.8
EL1 1156.8 EL2 193.2 ALF 90.23

LAUNCH DATE OCT 6 1964 FLIGHT TIME 320.00 ARRIVAL DATE AUG 22 1965

HELIOCENTRIC CONIC DISTANCE 739.724 EARTH TO MARS

RL	149.54	LAL	-.00	LOL	12.77	VL	32.548	GAL	-6.96	AZL	89.29	HCA	234.66	SMA	185.45	ECC	.22721	INC	.7063
RP	225.19	LAP	-.58	LOP	247.43	VP	21.519	GAP	-4.44	AZP	90.41	TAL	320.82	TAP	195.48	RCA	143.32	APO	227.59
RC	251.477	GL	5.34	GP	9.78	ZAL	143.55	ZAP	101.55	ETS	177.04	ZAE	136.99	ETE	166.74	ZAC	94.99	ETC	257.22

V1	29.796	V2	24.423	CLP	101.73														

PLANETOCENTRIC CONIC

C3	18.340	VHL	4.282	DLA	14.02	RAL	160.43	RAD	6567.7	VEL	11.820	PTH	2.09	VHP	2.973	DPA	14.67	RAP	174.79

ECC	1.3018																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 11 33	2645.12	-27.16	70.62	25.03	98.33	19 55 38	2045.1	-25.73	62.24
90.00	10 53 49	4386.76	6.03	182.44	19.35	62.28	12 6 55	3786.8	2.27	175.77
100.00	20 40 20	2358.83	-28.40	49.34	24.81	99.75	21 19 39	1758.8	-26.76	40.92
100.00	12 7 43	4148.28	7.13	164.30	18.75	60.89	13 16 52	3548.3	3.20	157.73
110.00	22 5 14	2093.18	-31.65	28.39	24.03	103.64	22 40 7	1493.2	-29.45	19.87
110.00	12 59 19	3986.70	9.98	150.32	17.02	57.14	14 5 45	3386.7	5.58	143.99

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0226	TRA	.6521	TC3	-1.6243	BAU	.5250	SGT	1656.8	SGR	2152.0	SG3	3549.8	ST	274.6	SR	1161.4	SS	3775.8
RDE	.8064	RRA	-1.0354	RC3	1.3954	FAU	.55458	RRT	-.8356	RRF	-.9637	RTF	.8943	CRT	-.4690	CRS	.9386	CST	-.7432
FDE	-8.1763	FRA	23.6724	FC	-26.1792	BSP	8093	SGB	2715.9	R23	.0399	R13	-.9765	LSA	3936.6	MSA	428.2	SSA	23.4
BDE	.8067	BRA	1.2236	BC3	2.1414	FSP	12075	SG1	2610.2	SG2	750.4	THA	126.22	EL1	1168.8	EL2	241.0	ALF	96.61

LAUNCH DATE OCT 6 1964 FLIGHT TIME 322.00 ARRIVAL DATE AUG 24 1965

HELIOCENTRIC CONIC DISTANCE 743.671 EARTH TO MARS

RL	149.54	LAL	-.00	LOL	12.77	VL	32.544	GAL	-6.97	AZL	89.26	HCA	235.73	SMA	185.40	ECC	.22712	INC	.7368
RP	224.80	LAP	-.61	LOP	248.50	VP	21.562	GAP	-4.70	AZP	90.42	TAL	320.72	TAP	196.45	RCA	143.29	APO	227.50
RC	253.132	GL	5.56	GP	9.71	ZAL	143.62	ZAP	99.57	ETS	177.43	ZAE	134.87	ETE	167.70	ZAC	94.73	ETC	257.33

V1	29.796	V2	24.465	CLP	99.71														

PLANETOCENTRIC CONIC

C3	18.381	VHL	4.287	DLA	14.19	RAL	160.62	RAD	6567.7	VEL	11.822	PTH	2.09	VHP	2.961	DPA	15.00	RAP	173.88

ECC	1.3025																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 10 50	2651.50	-27.22	71.07	25.33	98.11	19 55 1	2051.5	-25.82	62.69
90.00	10 56 3	4381.44	5.86	182.14	19.59	62.25	12 9 5	3781.4	2.10	175.47
100.00	20 39 43	2364.84	-28.46	49.77	25.12	99.54	21 19 8	1764.8	-26.85	41.34
100.00	12 9 51	4143.34	6.97	164.03	18.99	60.86	13 18 54	3543.3	3.03	157.45
110.00	22 4 52	2098.41	-31.73	28.77	24.35	103.43	22 39 50	1498.4	-29.56	20.24
110.00	13 1 12	3982.52	9.83	150.09	17.25	57.09	14 7 34	3382.5	5.42	143.77

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0971	TRA	.8791	TC3	-1.8596	BAU	.5712	SGT	2006.9	SGR	2150.0	SG3	3573.9	ST	388.9	SR	1164.7	SS	3785.7
RDE	.8107	RRA	-1.0307	RC3	1.3947	FAU	.55914	RRT	-.8735	RRF	-.9628	RTF	.9306	CRT	-.6562	CRS	.9376	CST	-.8766
FDE	-8.2430	FRA	23.8379	FC	-26.3346	BSP	8802	SGB	2941.1	R23	.0453	R13	-.9792	LSA	3956.0	MSA	435.0	SSA	23.0
BDE	.8165	BRA	1.3547	BC3	2.3245	FSP	12177	SG1	2847.1	SG2	737.7	THA	132.74	EL1	1194.1	EL2	286.3	ALF	103.13

LAUNCH DATE OCT 6 1964 FLIGHT TIME 324.00 ARRIVAL DATE AUG 26 1965

HELIOCENTRIC CONIC DISTANCE 747.625 EARTH TO MARS

RL	149.54	LAL	-.00	LOL	12.77	VL	32.541	GAL	-6.99	AZL	89.23	HCA	236.80	SMA	185.34	ECC	.22708	INC	.7666
RP	224.41	LAP	-.64	LOP	249.58	VP	21.604	GAP	-4.96	AZP	90.42	TAL	320.61	TAP	197.42	RCA	143.26	APO	227.43
RC	254.766	GL	5.78	GP	9.63	ZAL	143.71	ZAP	97.58	ETS	177.82	ZAE	132.73	ETE	168.60	ZAC	94.46	ETC	257.44

V1	29.796	V2	24.506	CLP	97.69														

PLANETOCENTRIC CONIC

C3	18.436	VHL	4.294	DLA	14.34	RAL	160.82	RAD	6567.7	VEL	11.824	PTH	2.09	VHP	2.952	DPA	15.32	RAP	172.97

ECC	1.3034																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 10 14	2657.65	-27.28	71.51	25.65	97.90	19 54 31	2057.7	-25.91	63.12
90.00	10 58 14	4376.68	5.71	181.87	19.85	62.22	12 11 11	3776.7	1.95	175.21
100.00	20 39 14	2370.64	-28.53	50.19	25.44	99.32	21 18 44	1770.6	-26.95	41.75
100.00	12 11 55	4138.93	6.82	163.78	19.24	60.83	13 20 54	3538.9	2.88	157.21
110.00	22 4 36	2103.49	-31.81	29.15	24.68	103.22	22 39 40	1503.5	-29.67	20.59
110.00	13 3 2	3978.84	9.69	149.89	17.50	57.06	14 9 21	3378.8	5.28	143.58

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1731	TRA	1.1101	TC3	-2.0976	BAU	.6203	SGT	2374.0	SGR	2144.2	SG3	3588.8	ST	516.4	SR	1167.0	SS	3792.3
RDE	.8146	RRA	-1.0242	RC3	1.3904	FAU	.56232	RRT	-.8956	RRF	-.9618	RTF	.9517	CRT	-.7420	CRS	.9365	CST	-.9293
FDE	-8.2985	FRA	23.9534	FC	-26.4058	BSP	9646	SGB	3198.9	R23	.0467	R13	-.9819	LSA	3976.7	MSA	441.7	SSA	22.6
BDE	.8328	BRA	1.5104	BC3	2.5166	FSP	12249	SG1	3115.2	SG2	726.8	THA	138.25	EL1	1233.4	EL2	327.6	ALF	109.62

LAUNCH DATE OCT 6 1964 FLIGHT TIME 326.00 ARRIVAL DATE AUG 28 1965

HELIOCENTRIC CONIC DISTANCE 751.585 EARTH TO MARS

RL	149.54	LAL	-.00	LOL	12.77	VL	32.538	GAL	-7.01	AZL	89.20	HCA	237.88	SMA	185.30	ECC	.22708	INC	.7958
RP	224.02	LAP	-.67	LOP	250.65	VP	21.648	GAP	-5.21	AZP	90.42	TAL	320.49	TAP	198.37	RCA	143.22	APO	227.37
RC	256.380	GL	5.99	GP	9.55	ZAL	143.81	ZAP	95.58	ETS	178.20	ZAE	130.58	ETE	169.44	ZAC	94.19	ETC	257.56

V1	29.796	V2	24.548	CLP	95.66														

PLANETOCENTRIC CONIC

C3	18.504	VHL	4.302	DLA	14.49	RAL	161.03	RAD	6567.7	VEL	11.827	PTH	2.09	VHP	2.947	DPA	15.63	RAP	172.05

ECC	1.3045																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 9 46	2663.57	-27.34	71.94	25.99	97.69	19 54 10	2063.6	-25.99	63.53
90.00	11 0 21	4372.48	5.58	181.63	20.13	62.19	12 13 14	3772.5	1.81	174.97
100.00	20 38 52	2376.23	-28.59	50.59	25.78	99.12	21 18 28	1776.2	-27.03	42.14
100.00	12 13 56	4135.05	6.69	163.57	19.52	60.80	13 22 52	3535.1	2.75	157.00
110.00	22 4 28	2108.41	-31.89	29.51	25.03	103.02	22 39 36	1508.4	-29.77	20.94
110.00	13 4 50	3975.64	9.57	149.72	17.77	57.03	14 11 6	3375.6	5.16	143.41

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2502	TRA	1.3445	TC3	-2.3368	BAU	.6717	SGT	2752.1	SGR	2134.3	SG3	3593.9	ST	650.1	SR	1168.0	SS	3794.2
RDE	.8180	RRA	-1.0157	RC3	1.3830	FAU	.56417	RRT	-.9091	RRF	-.9606	RTF	.9649	CRT	-.7874	CRS	.9354	CST	-.9540
FDE	-8.3392	FRA	24.0115	FC	-26.3960	BSP	10600	SGB	3482.7	R23	.0459	R13	-.9844	LSA	3997.6	MSA	448.3	SSA	22.1
BDE	.8554	BRA	1.6850	BC3	2.7154	FSP	12288	SG1	3407.9	SG2	718.2	THA	142.89	EL1	1286.2	EL2	363.9	ALF	115.89

LAUNCH DATE OCT 6 1964 FLIGHT TIME 328.00 ARRIVAL DATE AUG 30 1965

HELIOCENTRIC CONIC DISTANCE 755.552 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 32.536 GAL -7.03 AZL 89.18 HCA 238.96 SMA 185.25 ECC .22713 INC .8246 V1 29.796
RP 223.63 LAP -.71 LOP 251.73 VP 21.692 GAP -5.46 AZP 90.43 TAL 320.36 TAP 199.32 RCA 143.18 APO 227.33 V2 24.590
RC 257.974 GL 6.19 GP 9.46 ZAL 143.93 ZAP 93.57 ETS 178.58 ZAE 128.41 ETE 170.23 ZAC 93.91 ETC 257.68 CLP 93.62

PLANETOCENTRIC CONIC

C3 18.585 VHL 4.311 DLA 14.62 RAL 161.25 RAD 6567.8 VEL 11.831 PTH 2.10 VHP 2.946 DPA 15.94 RAP 171.12 ECC 1.3059

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 9 27	2669.26	-27.39	72.35	26.34	97.49	19 53 56	2069.3	-26.07	63.93
90.00	11 2 25	4368.84	5.46	181.43	20.42	62.17	12 15 14	3768.8	1.70	174.77
100.00	20 38 38	2381.62	-28.65	50.98	26.13	98.92	21 18 20	1781.6	-27.12	42.52
100.00	12 15 54	4131.72	6.58	163.38	19.81	60.78	13 24 46	3531.7	2.64	156.81
110.00	22 4 26	2113.17	-31.96	29.86	25.39	102.82	22 39 39	1513.2	-29.87	21.28
110.00	13 6 36	3972.93	9.47	149.58	18.05	57.00	14 12 49	3372.9	5.06	143.26

DIFFERENTIAL CORRECTIONS
TDE -.3286 TRA 1.5821 TC3-2.5768 BAU .7254
RDE .8210 RRA-1.0055 RC3 1.3722 FAU .56464
FDE-8.3653 FRA24.0213 FC-26.3024 BSP 11642
BDE .8843 BRA 1.8746 BC3 2.9194 FSP 12302

MID-COURSE EXECUTION ACCURACY
SGT 3138.3 SGR 2120.8 SG3 3590.0
RRT -.9174 RRF -.9592 RTF .9734
SGB 3787.7 R23 .0442 R13 -.9866
SG1 3720.3 SG2 711.8 THA 146.83

ORBIT DETERMINATION ACCURACY
ST 787.5 SR 1167.7 SS 3792.3
CRT -.8145 CRS .9343 CST -.9675
LSA 4019.7 MSA 454.7 SSA 21.7
EL1 1352.1 EL2 394.6 ALF 121.80

LAUNCH DATE OCT 6 1964 FLIGHT TIME 330.00 ARRIVAL DATE SEP 1 1965

HELIOCENTRIC CONIC DISTANCE 759.525 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 32.533 GAL -7.06 AZL 89.15 HCA 240.05 SMA 185.22 ECC .22723 INC .8526 V1 29.796
RP 223.24 LAP -.74 LOP 252.82 VP 21.736 GAP -5.71 AZP 90.43 TAL 320.21 TAP 200.26 RCA 143.13 APO 227.30 V2 24.632
RC 259.547 GL 6.38 GP 9.36 ZAL 144.05 ZAP 91.57 ETS 178.94 ZAE 126.24 ETE 170.97 ZAC 93.63 ETC 257.81 CLP 91.59

PLANETOCENTRIC CONIC

C3 18.679 VHL 4.322 DLA 14.74 RAL 161.47 RAD 6567.8 VEL 11.835 PTH 2.10 VHP 2.948 DPA 16.23 RAP 170.20 ECC 1.3074

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 9 16	2674.72	-27.44	72.74	26.71	97.30	19 53 50	2074.7	-26.14	64.31
90.00	11 4 24	4365.76	5.36	181.25	20.74	62.15	12 17 10	3765.8	1.60	174.60
100.00	20 38 32	2386.80	-28.70	51.36	26.50	98.73	21 18 19	1786.8	-27.20	42.88
100.00	12 17 49	4128.92	6.49	163.23	20.12	60.76	13 26 38	3528.9	2.54	156.66
110.00	22 4 31	2117.77	-32.03	30.20	25.78	102.63	22 39 49	1517.8	-29.96	21.60
110.00	13 8 19	3970.71	9.39	149.46	18.35	56.98	14 14 30	3370.7	4.97	143.15

DIFFERENTIAL CORRECTIONS
TDE -.4082 TRA 1.8215 TC3-2.8153 BAU .7806
RDE .8237 RRA -.9932 RC3 1.3587 FAU .56389
FDE-8.3791 FRA23.9701 FC-26.1347 BSP 12737
BDE .9193 BRA 2,0747 BC3 3.1260 FSP 12270

MID-COURSE EXECUTION ACCURACY
SGT 3528.4 SGR 2103.6 SG3 3576.4
RRT -.9227 RRF -.9577 RTF .9793
SGB 4107.9 R23 .0421 R13 -.9884
SG1 4046.5 SG2 707.3 THA 150.18

ORBIT DETERMINATION ACCURACY
ST 927.0 SR 1166.4 SS 3786.2
CRT -.8319 CRS .9331 CST -.9756
LSA 4042.6 MSA 460.8 SSA 21.2
EL1 1429.5 EL2 419.7 ALF 127.22

LAUNCH DATE OCT 6 1964 FLIGHT TIME 332.00 ARRIVAL DATE SEP 3 1965

HELIOCENTRIC CONIC DISTANCE 763.500 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 32.531 GAL -7.09 AZL 89.12 HCA 241.14 SMA 185.18 ECC .22738 INC .8802 V1 29.796
RP 222.85 LAP -.77 LOP 253.91 VP 21.780 GAP -5.96 AZP 90.43 TAL 320.05 TAP 201.19 RCA 143.08 APO 227.29 V2 24.674
RC 261.100 GL 6.57 GP 9.26 ZAL 144.19 ZAP 89.58 ETS 179.30 ZAE 124.07 ETE 171.67 ZAC 93.35 ETC 257.93 CLP 89.57

PLANETOCENTRIC CONIC

C3 18.788 VHL 4.335 DLA 14.85 RAL 161.71 RAD 6567.8 VEL 11.839 PTH 2.10 VHP 2.953 DPA 16.51 RAP 169.28 ECC 1.3092

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 9 13	2679.93	-27.48	73.12	27.09	97.12	19 53 53	2079.9	-26.21	64.68
90.00	11 6 20	4363.28	5.29	181.11	21.07	62.14	12 19 4	3763.3	1.52	174.46
100.00	20 38 35	2391.75	-28.75	51.72	26.89	98.55	21 18 27	1791.8	-27.27	43.23
100.00	12 19 40	4126.69	6.41	163.10	20.45	60.74	13 28 27	3526.7	2.47	156.54
110.00	22 4 44	2122.21	-32.10	30.53	26.18	102.45	22 40 6	1522.2	-30.05	21.92
110.00	13 10 0	3969.00	9.32	149.37	18.68	56.96	14 16 9	3369.0	4.91	143.06

DIFFERENTIAL CORRECTIONS
TDE -.4866 TRA 2.0689 TC3-3.0481 BAU .8354
RDE .8207 RRA -.9844 RC3 1.3306 FAU .55653
FDE-8.2682 FRA23.9768 FC-25.6444 BSP 14025
BDE .9541 BRA 2.2911 BC3 3.3258 FSP 12438

MID-COURSE EXECUTION ACCURACY
SGT 3924.4 SGR 2078.3 SG3 3550.6
RRT -.9262 RRF -.9558 RTF .9831
SGB 4440.7 R23 .0404 R13 -.9896
SG1 4385.0 SG2 701.3 THA 153.13

ORBIT DETERMINATION ACCURACY
ST 1067.9 SR 1158.1 SS 3756.0
CRT -.8436 CRS .9300 CST -.9818
LSA 4046.1 MSA 467.2 SSA 21.2
EL1 1512.9 EL2 439.0 ALF 132.25

LAUNCH DATE OCT 6 1964 FLIGHT TIME 334.00 ARRIVAL DATE SEP 5 1965

HELIOCENTRIC CONIC DISTANCE 767.487 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 32.530 GAL -7.12 AZL 89.09 HCA 242.23 SMA 185.16 ECC .22757 INC .9074 V1 29.796
RP 222.47 LAP -.80 LOP 255.00 VP 21.825 GAP -6.20 AZP 90.42 TAL 319.88 TAP 202.12 RCA 143.02 APO 227.29 V2 24.716
RC 262.633 GL 6.75 GP 9.15 ZAL 144.34 ZAP 87.59 ETS 179.64 ZAE 121.90 ETE 172.33 ZAC 93.07 ETC 258.06 CLP 87.56

PLANETOCENTRIC CONIC

C3 18.910 VHL 4.349 DLA 14.95 RAL 161.96 RAD 6567.8 VEL 11.844 PTH 2.10 VHP 2.963 DPA 16.79 RAP 168.37 ECC 1.3112

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 9 19	2684.93	-27.52	73.47	27.50	96.94	19 54 4	2084.9	-26.27	65.03
90.00	11 8 12	4361.32	5.22	181.00	21.42	62.13	12 20 54	3761.3	1.45	174.35
100.00	20 38 45	2396.52	-28.80	52.07	27.30	98.37	21 18 41	1796.5	-27.34	43.57
100.00	12 21 28	4124.97	6.36	163.01	20.80	60.73	13 30 13	3525.0	2.41	156.44
110.00	22 5 2	2126.50	-32.16	30.85	26.59	102.27	22 40 29	1526.5	-30.14	22.22
110.00	13 11 39	3967.75	9.28	149.30	19.02	56.95	14 17 47	3367.7	4.86	142.99

DIFFERENTIAL CORRECTIONS
TDE -.5686 TRA 2.3102 TC3-3.2814 BAU .8938
RDE .8248 RRA -.9664 RC3 1.3160 FAU .55523
FDE-8.3014 FRA23.7761 FC-25.4201 BSP 15152
BDE 1.0018 BRA 2.5042 BC3 3.5355 FSP 12247

MID-COURSE EXECUTION ACCURACY
SGT 4316.4 SGR 2056.2 SG3 3519.9
RRT -.9276 RRF -.9541 RTF .9863
SGB 4781.1 R23 .0385 R13 -.9911
SG1 4729.4 SG2 701.2 THA 155.59

ORBIT DETERMINATION ACCURACY
ST 1209.1 SR 1157.0 SS 3750.8
CRT -.8513 CRS .9294 CST -.9847
LSA 4079.9 MSA 472.9 SSA 20.5
EL1 1610.2 EL2 455.9 ALF 136.48

LAUNCH DATE OCT 6 1964 FLIGHT TIME 336.00 ARRIVAL DATE SEP 7 1965

HELIOCENTRIC CONIC DISTANCE 771.479 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 32.528 GAL -7.15 AZL 89.07 HCA 243.33 SMA 185.13 ECC .22781 INC .9340 V1 29.796
RP 222.08 LAP -.83 LOP 256.10 VP 21.870 GAP -6.43 AZP 90.42 TAL 319.70 TAP 203.03 RCA 142.96 APO 227.31 V2 24.758
RC 264.145 GL 6.92 GP 9.03 ZAL 144.51 ZAP 85.62 ETS 179.98 ZAE 119.74 ETE 172.95 ZAC 92.78 ETC 258.18 CLP 85.57

PLANETOCENTRIC CONIC

C3 19.046 VHL 4.364 DLA 15.03 RAL 162.21 RAD 6567.8 VEL 11.850 PTH 2.10 VHP 2.976 DPA 17.04 RAP 167.47 ECC 1.3134

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 9 32	2689.69	-27.56	73.82	27.92	96.78	19 54 22	2089.7	-26.33	65.37
90.00	11 10 1	4359.94	5.18	180.92	21.79	62.12	12 22 40	3759.9	1.41	174.27
100.00	20 39 2	2401.08	-28.85	52.40	27.72	98.20	21 19 3	1801.1	-27.41	43.89
100.00	12 23 12	4123.78	6.32	162.94	21.17	60.72	13 31 56	3523.8	2.37	156.38
110.00	22 5 28	2130.64	-32.22	31.16	27.02	102.09	22 40 59	1530.6	-30.22	22.52
110.00	13 13 15	3966.98	9.25	149.26	19.38	56.94	14 19 22	3367.0	4.83	142.95

DIFFERENTIAL CORRECTIONS
TDE -.6515 TRA 2.5527 TC3-3.5106 BAU .9529
RDE .8277 RRA -.9479 RC3 1.2965 FAU .55166
FDE-8.3017 FRA23.5460 FC-25.0764 BSP 16317
BDE 1.0533 BRA 2.7230 BC3 3.7423 FSP 12066

MID-COURSE EXECUTION ACCURACY
SGT 4707.7 SGR 2030.2 SG3 3480.1
RRT -.9279 RRF -.9521 RTF .9886
SGB 5126.8 R23 .0373 R13 -.9923
SG1 5078.5 SG2 701.7 THA 157.74

ORBIT DETERMINATION ACCURACY
ST 1350.5 SR 1153.8 SS 3738.5
CRT -.8567 CRS .9285 CST -.9869
LSA 4111.2 MSA 478.5 SSA 19.9
EL1 1713.2 EL2 469.1 ALF 140.23

LAUNCH DATE OCT 6 1964 FLIGHT TIME 338.00 ARRIVAL DATE SEP 9 1965

HELIOCENTRIC CONIC DISTANCE 775.476 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 32.527 GAL -7.19 AZL 89.04 HCA 244.43 SMA 185.11 ECC .22809 INC .9603 V1 29.796
RP 221.70 LAP -.87 LOP 257.20 VP 21.916 GAP -6.67 AZP 90.41 TAL 319.51 TAP 203.94 RCA 142.89 APO 227.34 V2 24.799
RC 265.639 GL 7.09 GP 8.91 ZAL 144.68 ZAP 83.67 ETS 180.31 ZAE 117.59 ETE 173.54 ZAC 92.50 ETC 258.31 CLP 83.59

PLANETOCENTRIC CONIC

C3 19.196 VHL 4.381 DLA 15.11 RAL 162.48 RAD 6567.8 VEL 11.857 PTH 2.10 VHP 2.992 DPA 17.28 RAP 166.59 ECC 1.3159

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 9 55	2694.22	-27.60	74.14	28.35	96.62	19 54 49	2094.2	-26.39	65.68
90.00	11 11 45	4359.12	5.15	180.88	22.18	62.12	12 24 24	3759.1	1.38	174.23
100.00	20 39 28	2405.42	-28.89	52.71	28.17	98.04	21 19 33	1805.4	-27.47	44.20
100.00	12 24 53	4123.15	6.30	162.90	21.55	60.72	13 33 36	3523.1	2.35	156.34
110.00	22 6 0	2134.62	-32.27	31.46	27.47	101.93	22 41 35	1534.6	-30.30	22.80
110.00	13 14 49	3966.71	9.24	149.24	19.75	56.94	14 20 56	3366.7	4.82	142.94

DIFFERENTIAL CORRECTIONS
TDE -.7353 TRA 2.7965 TC3-3.7338 BAU 1.0124
RDE .8294 RRA -.9287 RC3 1.2733 FAU .54626
FDE-8.2731 FRA23.2835 FC-24.6365 BSP 17512
BDE 1.1084 BRA 2.9466 BC3 3.9449 FSP 11891

MID-COURSE EXECUTION ACCURACY
SGT 5096.8 SGR 2000.9 SG3 3431.9
RRT -.9274 RRF -.9499 RTF .9904
SGB 5475.5 R23 .0363 R13 -.9932
SG1 5430.3 SG2 702.3 THA 159.64

ORBIT DETERMINATION ACCURACY
ST 1491.8 SR 1148.9 SS 3719.5
CRT -.8606 CRS .9273 CST -.9886
LSA 4140.8 MSA 483.8 SSA 19.4
EL1 1820.9 EL2 479.3 ALF 143.53

LAUNCH DATE OCT 6 1964 FLIGHT TIME 340.00 ARRIVAL DATE SEP 11 1965

HELIOCENTRIC CONIC DISTANCE 779.478 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 32.526 GAL -7.24 AZL 89.01 HCA 245.54 SMA 185.10 ECC .22843 INC .9861 V1 29.796
RP 221.32 LAP -.90 LOP 258.31 VP 21.962 GAP -6.90 AZP 90.41 TAL 319.30 TAP 204.84 RCA 142.82 APO 227.38 V2 24.841
RC 267.114 GL 7.25 GP 8.79 ZAL 144.87 ZAP 81.73 ETS 180.62 ZAE 115.45 ETE 174.09 ZAC 92.22 ETC 258.43 CLP 81.63

PLANETOCENTRIC CONIC

C3 19.361 VHL 4.400 DLA 15.17 RAL 162.75 RAD 6567.8 VEL 11.863 PTH 2.10 VHP 3.012 DPA 17.51 RAP 165.74 ECC 1.3186

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 10 25	2698.51	-27.63	74.45	28.81	96.46	19 55 24	2098.5	-26.45	65.99
90.00	11 13 25	4358.88	5.15	180.86	22.58	62.12	12 26 4	3758.9	1.37	174.21
100.00	20 40 1	2409.56	-28.93	53.02	28.62	97.89	21 20 11	1809.6	-27.53	44.49
100.00	12 26 31	4123.06	6.29	162.90	21.95	60.72	13 35 14	3523.1	2.34	156.34
110.00	22 6 40	2138.46	-32.33	31.74	27.94	101.77	22 42 18	1538.5	-30.37	23.07
110.00	13 16 21	3966.93	9.25	149.25	20.15	56.94	14 22 28	3366.9	4.83	142.95

DIFFERENTIAL CORRECTIONS
TDE -.8196 TRA 3.0409 TC3-3.9496 BAU 1.0720
RDE .8304 RRA -.9087 RC3 1.2466 FAU .53911
FDE-8.2229 FRA22.9880 FC-24.1062 BSP 18720
BDE 1.1667 BRA 3.1737 BC3 4.1416 FSP 11703

MID-COURSE EXECUTION ACCURACY
SGT 5481.9 SGR 1968.7 SG3 3375.8
RRT -.9263 RRF -.9474 RTF .9917
SGB 5824.6 R23 .0357 R13 -.9940
SG1 5782.0 SG2 703.3 THA 161.31

ORBIT DETERMINATION ACCURACY
ST 1632.4 SR 1142.6 SS 3695.6
CRT -.8632 CRS .9258 CST -.9899
LSA 4169.9 MSA 489.0 SSA 18.9
EL1 1932.0 EL2 487.3 ALF 146.44

LAUNCH DATE OCT 6 1964 FLIGHT TIME 342.00 ARRIVAL DATE SEP 13 1965

HELIOCENTRIC CONIC DISTANCE 783.485 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 32.526 GAL -7.28 AZL 88.99 HCA 246.64 SMA 185.09 ECC .22881 INC 1.0116 V1 29.796
RP 220.94 LAP -.93 LOP 259.41 VP 22.008 GAP -7.13 AZP 90.40 TAL 319.08 TAP 205.73 RCA 142.74 APO 227.44 V2 24.883
RC 268.570 GL 7.40 GP 8.66 ZAL 145.07 ZAP 79.83 ETS 180.93 ZAE 113.34 ETE 174.61 ZAC 91.94 ETC 258.56 CLP 79.71

PLANETOCENTRIC CONIC

C3 19.542 VHL 4.421 DLA 15.22 RAL 163.03 RAD 6567.8 VEL 11.871 PTH 2.11 VHP 3.036 DPA 17.71 RAP 164.91 ECC 1.3216

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 11 4	2702.57	-27.66	74.75	29.28	96.32	19 56 7	2102.6	-26.50	66.27
90.00	11 15 2	4359.21	5.16	180.88	23.00	62.12	12 27 41	3759.2	1.38	174.23
100.00	20 40 42	2413.50	-28.96	53.30	29.10	97.74	21 20 56	1813.5	-27.59	44.77
100.00	12 28 5	4123.51	6.31	162.92	22.37	60.72	13 36 48	3523.5	2.36	156.36
110.00	22 7 26	2142.14	-32.38	32.02	28.42	101.61	22 43 8	1542.1	-30.44	23.34
110.00	13 17 50	3967.64	9.27	149.29	20.56	56.95	14 23 58	3367.6	4.86	142.99

DIFFERENTIAL CORRECTIONS
TDE -.9049 TRA 3.2853 TC3-4.1576 BAU 1.1318
RDE .8312 RRA -.8876 RC3 1.2180 FAU .53089
FDE-8.1619 FRA22.6526 FC-23.5195 BSP 19928
BDE 1.2287 BRA 3.4031 BC3 4.3323 FSP 11497

MID-COURSE EXECUTION ACCURACY
SGT 5861.8 SGR 1934.4 SG3 3312.8
RRT -.9245 RRF -.9447 RTF .9927
SGB 6172.7 R23 .0353 R13 -.9946
SG1 6132.4 SG2 704.6 THA 162.80

ORBIT DETERMINATION ACCURACY
ST 1772.1 SR 1135.6 SS 3668.6
CRT -.8649 CRS .9244 CST -.9909
LSA 4200.5 MSA 493.9 SSA 18.4
EL1 2046.0 EL2 493.6 ALF 149.00

LAUNCH DATE OCT 6 1964 FLIGHT TIME 344.00 ARRIVAL DATE SEP 15 1965

HELIOCENTRIC CONIC DISTANCE 787.497 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 32.525 GAL -7.33 AZL 88.96 HCA 247.76 SMA 185.08 ECC .22924 INC 1.0367 V1 29.796
RP 220.56 LAP -.96 LOP 260.53 VP 22.054 GAP -7.36 AZP 90.39 TAL 318.85 TAP 206.61 RCA 142.65 APO 227.51 V2 24.924
RC 270.009 GL 7.55 GP 8.52 ZAL 145.28 ZAP 77.94 ETS 181.22 ZAE 111.25 ETE 175.10 ZAC 91.66 ETC 258.67 CLP 77.81

PLANETOCENTRIC CONIC

C3 19.738 VHL 4.443 DLA 15.26 RAL 163.33 RAD 6567.8 VEL 11.879 PTH 2.11 VHP 3.063 DPA 17.90 RAP 164.10 ECC 1.3248

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 11 52	2706.41	-27.69	75.02	29.77	96.18	19 56 58	2106.4	-26.54	66.55
90.00	11 16 35	4360.11	5.18	180.93	23.45	62.12	12 29 15	3760.1	1.41	174.28
100.00	20 41 32	2417.24	-29.00	53.57	29.59	97.60	21 21 49	1817.2	-27.64	45.03
100.00	12 29 36	4124.51	6.34	162.98	22.81	60.73	13 38 20	3524.5	2.39	156.42
110.00	22 8 19	2145.67	-32.43	32.28	28.92	101.46	22 44 5	1545.7	-30.51	23.59
110.00	13 19 17	3968.84	9.32	149.36	21.00	56.96	14 25 26	3368.8	4.90	143.05

DIFFERENTIAL CORRECTIONS
TDE -.9898 TRA 3.5304 TC3-4.3553 BAU 1.1912
RDE .8313 RRA -.8661 RC3 1.1870 FAU .52126
FDE-8.0799 FRA22.2891 FC-22.8637 BSP 21143
BDE 1.2926 BRA 3.6351 BC3 4.5142 FSP 11277

MID-COURSE EXECUTION ACCURACY
SGT 6235.3 SGR 1897.9 SG3 3243.3
RRT -.9222 RRF -.9417 RTF .9935
SGB 6517.8 R23 .0351 R13 -.9951
SG1 6479.4 SG2 706.1 THA 164.13

ORBIT DETERMINATION ACCURACY
ST 1909.9 SR 1127.4 SS 3636.5
CRT -.8657 CRS .9227 CST -.9917
LSA 4230.1 MSA 498.8 SSA 18.0
EL1 2161.0 EL2 498.8 ALF 151.26

LAUNCH DATE OCT 6 1964 FLIGHT TIME 346.00 ARRIVAL DATE SEP 17 1965

HELIOCENTRIC CONIC DISTANCE 791.513 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 32.525 GAL -7.38 AZL 88.94 HCA 248.87 SMA 185.08 ECC .22971 INC 1.0616 V1 29.796
RP 220.18 LAP -.99 LOP 261.64 VP 22.100 GAP -7.58 AZP 90.38 TAL 318.60 TAP 207.48 RCA 142.56 APO 227.59 V2 24.965
RC 271.430 GL 7.69 GP 8.39 ZAL 145.51 ZAP 76.10 ETS 181.50 ZAE 109.19 ETE 175.56 ZAC 91.39 ETC 258.79 CLP 75.94

PLANETOCENTRIC CONIC

C3 19.949 VHL 4.466 DLA 15.29 RAL 163.63 RAD 6567.8 VEL 11.888 PTH 2.11 VHP 3.093 DPA 18.07 RAP 163.33 ECC 1.3283

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 12 47	2710.02	-27.71	75.29	30.28	96.06	19 57 57	2110.0	-26.59	66.80
90.00	11 18 3	4361.58	5.23	181.02	23.91	62.13	12 30 45	3761.6	1.46	174.36
100.00	20 42 29	2420.78	-29.03	53.83	30.11	97.47	21 22 49	1820.8	-27.69	45.29
100.00	12 31 3	4126.05	6.39	163.07	23.27	60.74	13 39 49	3526.1	2.44	156.50
110.00	22 9 19	2149.06	-32.47	32.54	29.44	101.32	22 45 8	1549.1	-30.57	23.83
110.00	13 20 42	3970.53	9.38	149.45	21.45	56.98	14 26 52	3370.5	4.97	143.14

DIFFERENTIAL CORRECTIONS
TDE-1.0761 TRA 3.7746 TC3-4.5437 BAU 1.2503
RDE .8314 RRA -.8436 RC3 1.1547 FAU .51080
FDE-7.9915 FRA21.8901 FC-22.1668 BSP 22341
BDE 1.3599 BRA 3.8677 BC3 4.6881 FSP 11035

MID-COURSE EXECUTION ACCURACY
SGT 6601.3 SGR 1860.1 SG3 3168.3
RRT -.9195 RRF -.9385 RTF .9942
SGB 6858.4 R23 .0351 R13 -.9955
SG1 6821.8 SG2 707.7 THA 165.31

ORBIT DETERMINATION ACCURACY
ST 2046.5 SR 1118.8 SS 3602.4
CRT -.8660 CRS .9211 CST -.9923
LSA 4261.9 MSA 503.3 SSA 17.5
EL1 2277.6 EL2 502.7 ALF 153.26

LAUNCH DATE OCT 6 1964 FLIGHT TIME 348.00 ARRIVAL DATE SEP 19 1965

HELIOCENTRIC CONIC DISTANCE 795.535 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 32.525 GAL -7.44 AZL 88.91 HCA 249.99 SMA 185.08 ECC .23024 INC 1.0861 V1 29.796
RP 219.81 LAP -1.02 LOP 262.76 VP 22.146 GAP -7.80 AZP 90.37 TAL 318.34 TAP 208.34 RCA 142.47 APO 227.69 V2 25.006
RC 272.833 GL 7.82 GP 8.25 ZAL 145.75 ZAP 74.28 ETS 181.77 ZAE 107.16 ETE 176.00 ZAC 91.12 ETC 258.90 CLP 74.11

PLANETOCENTRIC CONIC

C3 20.178 VHL 4.492 DLA 15.31 RAL 163.94 RAD 6567.8 VEL 11.898 PTH 2.11 VHP 3.127 DPA 18.22 RAP 162.59 ECC 1.3321

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 13 51	2713.41	-27.74	75.53	30.81	95.93	19 59 5	2113.4	-26.63	67.04
90.00	11 19 28	4363.62	5.30	181.13	24.38	62.14	12 32 12	3763.6	1.53	174.48
100.00	20 43 34	2424.12	-29.06	54.08	30.63	97.34	21 23 58	1824.1	-27.74	45.52
100.00	12 32 27	4128.14	6.46	163.18	23.74	60.75	13 41 15	3528.1	2.52	156.62
110.00	22 10 26	2152.31	-32.52	32.78	29.98	101.18	22 46 18	1552.3	-30.63	24.07
110.00	13 22 4	3972.71	9.46	149.56	21.92	57.00	14 28 17	3372.7	5.05	143.25

DIFFERENTIAL CORRECTIONS
TDE-1.1631 TRA 4.0181 TC3-4.7223 BAU 1.3093
RDE .8314 RRA -.8206 RC3 1.1213 FAU .49952
FDE-7.8929 FRA21.4649 FC-21.4319 BSP 23513
BDE 1.4296 BRA 4.1010 BC3 4.8536 FSP 10773

MID-COURSE EXECUTION ACCURACY
SGT 6959.6 SGR 1821.3 SG3 3088.6
RRT -.9162 RRF -.9351 RTF .9947
SGB 7193.9 R23 .0353 R13 -.9958
SG1 7158.9 SG2 709.3 THA 166.38

ORBIT DETERMINATION ACCURACY
ST 2181.3 SR 1109.7 SS 3565.5
CRT -.8659 CRS .9194 CST -.9928
LSA 4294.7 MSA 507.4 SSA 17.1
EL1 2394.6 EL2 505.6 ALF 155.04

LAUNCH DATE OCT 6 1964 FLIGHT TIME 350.00 ARRIVAL DATE SEP 21 1965

HELIOCENTRIC CONIC DISTANCE 799.557 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 32.525 GAL -7.50 AZL 88.89 HCA 251.12 SMA 185.08 ECC .23081 INC 1.1104 V1 29.796
RP 219.44 LAP -1.05 LOP 263.89 VP 22.193 GAP -8.02 AZP 90.36 TAL 318.07 TAP 209.19 RCA 142.36 APO 227.80 V2 25.047
RC 274.220 GL 7.95 GP 8.11 ZAL 146.00 ZAP 72.50 ETS 182.03 ZAE 105.15 ETE 176.41 ZAC 90.86 ETC 259.01 CLP 72.32

PLANETOCENTRIC CONIC

C3 20.424 VHL 4.519 DLA 15.32 RAL 164.26 RAD 6567.8 VEL 11.908 PTH 2.12 VHP 3.163 DPA 18.35 RAP 161.89 ECC 1.3361

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 15 4	2716.56	-27.76	75.76	31.35	95.82	20 0 21	2116.6	-26.66	67.26
90.00	11 20 49	4366.25	5.38	181.28	24.88	62.16	12 33 35	3766.2	1.61	174.63
100.00	20 44 47	2427.25	-29.08	54.31	31.18	97.23	21 25 14	1827.3	-27.78	45.75
100.00	12 33 47	4130.78	6.55	163.33	24.24	60.77	13 42 38	3530.8	2.60	156.76
110.00	22 11 40	2155.41	-32.56	33.01	30.53	101.05	22 47 35	1555.4	-30.69	24.29
110.00	13 23 24	3975.39	9.56	149.71	22.41	57.02	14 29 39	3375.4	5.15	143.39

DIFFERENTIAL CORRECTIONS
TDE-1.2412 TRA 4.2737 TC3-4.8714 BAU 1.3624
RDE .8275 RRA -.8007 RC3 1.0796 FAU .48373
FDE-7.7057 FRA21.0870 FC-20.5043 BSP 24950
BDE 1.4917 BRA 4.3481 BC3 4.9896 FSP 10658

MID-COURSE EXECUTION ACCURACY
SGT 7309.1 SGR 1777.8 SG3 3002.0
RRT -.9127 RRF -.9310 RTF .9950
SGB 7522.2 R23 .0347 R13 -.9960
SG1 7488.8 SG2 708.9 THA 167.37

ORBIT DETERMINATION ACCURACY
ST 2309.5 SR 1096.0 SS 3509.9
CRT -.8639 CRS .9159 CST -.9934
LSA 4311.8 MSA 511.8 SSA 17.0
EL1 2505.3 EL2 508.8 ALF 156.69

LAUNCH DATE OCT 6 1964 FLIGHT TIME 352.00 ARRIVAL DATE SEP 23 1965

HELIOCENTRIC CONIC DISTANCE 803.590 EARTH TO MARS

RL	149.54	LAL	-.00	LOL	12.77	VL	32.526	GAL	-7.56	AZL	88.87	HCA	252.24	SMA	185.09	ECC	.23144	INC	1.1344
RP	219.07	LAP	-1.08	LOP	265.01	VP	22.239	GAP	-8.24	AZP	90.35	TAL	317.79	TAP	210.03	RCA	142.25	APO	227.92
RC	275.589	GL	8.07	GP	7.96	ZAL	146.26	ZAP	70.75	ETS	182.27	ZAE	103.18	ETE	176.80	ZAC	90.61	ETC	259.11

V1	29.796	V2	25.088	CLP	70.56														

PLANETOCENTRIC CONIC

C3	20.687	VHL	4.548	DLA	15.32	RAL	164.59	RAD	6567.8	VEL	11.919	PTH	2.12	VHP	3.204	DPA	18.47	RAP	161.22

ECC	1.3405																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 16 24	2719.53	-27.78	75.97	31.92	95.72	20 1 43	2119.5	-26.70	67.47
90.00	11 22 6	4369.40	5.48	181.46	25.39	62.18	12 34 55	3769.4	1.71	174.80
100.00	20 46 6	2430.23	-29.11	54.52	31.75	97.11	21 26 37	1830.2	-27.82	45.96
100.00	12 35 5	4133.93	6.65	163.50	24.75	60.79	13 43 59	3533.9	2.71	156.94
110.00	22 12 59	2158.40	-32.60	33.24	31.10	100.92	22 48 57	1558.4	-30.75	24.51
110.00	13 24 41	3978.52	9.68	149.88	22.91	57.05	14 31 0	3378.5	5.27	143.56

DIFFERENTIAL CORRECTIONS

TDE	-1.3387	TRA	4.5043	TC3	-5.0450	BAU	1.4253
RDE	.8309	RRA	-.7739	RC3	1.0518	FAU	.47470
FDE	-7.6690	FRA	20.5482	FC	-19.8659	BSP	25819
BDE	1.5756	BRA	4.5703	BC3	5.1535	FSP	10216

MID-COURSE EXECUTION ACCURACY

SGT	7649.6	SGR	1741.4	SG3	2917.5		
RRT	-.9085	RRF	-.9273	RTF	.9954		
SGB	7845.3	R23	.0360	R13	-.9963		
SG1	7812.8	SG2	712.5	THA	168.22		

ORBIT DETERMINATION ACCURACY

ST	2445.0	SR	1090.1	SS	3484.2		
CRT	-.8646	CRS	.9160	CST	-.9935		
LSA	4363.5	MSA	515.0	SSA	16.3		
EL1	2628.0	EL2	509.6	ALF	158.05		

LAUNCH DATE OCT 6 1964 FLIGHT TIME 354.00 ARRIVAL DATE SEP 25 1965

HELIOCENTRIC CONIC DISTANCE 807.623 EARTH TO MARS

RL	149.54	LAL	-.00	LOL	12.77	VL	32.526	GAL	-7.63	AZL	88.84	HCA	253.38	SMA	185.10	ECC	.23211	INC	1.1583
RP	218.70	LAP	-1.11	LOP	266.15	VP	22.286	GAP	-8.46	AZP	90.33	TAL	317.49	TAP	210.86	RCA	142.14	APO	228.06
RC	276.940	GL	8.18	GP	7.82	ZAL	146.53	ZAP	69.04	ETS	182.51	ZAE	101.25	ETE	177.17	ZAC	90.37	ETC	259.20

V1	29.796	V2	25.128	CLP	68.84														

PLANETOCENTRIC CONIC

C3	20.968	VHL	4.579	DLA	15.30	RAL	164.92	RAD	6567.9	VEL	11.931	PTH	2.12	VHP	3.247	DPA	18.56	RAP	160.60

ECC	1.3451																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 17 52	2722.27	-27.80	76.17	32.49	95.62	20 3 15	2122.3	-26.73	67.67
90.00	11 23 19	4373.13	5.60	181.67	25.92	62.20	12 36 12	3773.1	1.83	175.01
100.00	20 47 34	2433.01	-29.13	54.73	32.33	97.01	21 28 7	1833.0	-27.86	46.16
100.00	12 36 18	4137.63	6.78	163.71	25.28	60.82	13 45 16	3537.6	2.84	157.14
110.00	22 14 26	2161.24	-32.63	33.45	31.69	100.80	22 50 27	1561.2	-30.80	24.71
110.00	13 25 56	3982.16	9.81	150.07	23.43	57.09	14 32 19	3382.2	5.41	143.75

DIFFERENTIAL CORRECTIONS

TDE	-1.4274	TRA	4.7466	TC3	-5.1890	BAU	1.4823
RDE	.8305	RRA	-.7503	RC3	1.0164	FAU	.46142
FDE	-7.5446	FRA	20.0646	FC	-19.0509	BSP	26943
BDE	1.6514	BRA	4.8056	BC3	5.2876	FSP	9924

MID-COURSE EXECUTION ACCURACY

SGT	7980.4	SGR	1701.1	SG3	2827.5		
RRT	-.9040	RRF	-.9230	RTF	.9957		
SGB	8159.7	R23	.0366	R13	-.9965		
SG1	8128.4	SG2	713.9	THA	169.01		

ORBIT DETERMINATION ACCURACY

ST	2573.4	SR	1079.8	SS	3439.9		
CRT	-.8635	CRS	.9142	CST	-.9938		
LSA	4399.1	MSA	518.3	SSA	16.0		
EL1	2743.6	EL2	510.8	ALF	159.34		

LAUNCH DATE OCT 6 1964 FLIGHT TIME 356.00 ARRIVAL DATE SEP 27 1965

HELIOCENTRIC CONIC DISTANCE 811.660 EARTH TO MARS

RL	149.54	LAL	-.00	LOL	12.77	VL	32.527	GAL	-7.70	AZL	88.82	HCA	254.51	SMA	185.11	ECC	.23284	INC	1.1819
RP	218.34	LAP	-1.14	LOP	267.28	VP	22.333	GAP	-8.67	AZP	90.32	TAL	317.17	TAP	211.68	RCA	142.01	APO	228.21
RC	278.273	GL	8.29	GP	7.68	ZAL	146.82	ZAP	67.38	ETS	182.73	ZAE	99.35	ETE	177.51	ZAC	90.13	ETC	259.29

V1	29.796	V2	25.168	CLP	67.16														

PLANETOCENTRIC CONIC

C3	21.269	VHL	4.612	DLA	15.28	RAL	165.27	RAD	6567.9	VEL	11.944	PTH	2.13	VHP	3.293	DPA	18.64	RAP	160.02

ECC	1.3500																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 19 29	2724.81	-27.82	76.36	33.09	95.53	20 4 54	2124.8	-26.76	67.85
90.00	11 24 28	4377.43	5.73	181.91	26.47	62.22	12 37 26	3777.4	1.97	175.25
100.00	20 49 10	2435.61	-29.15	54.92	32.93	96.91	21 29 45	1835.6	-27.89	46.34
100.00	12 37 29	4141.87	6.92	163.95	25.83	60.85	13 46 31	3541.9	2.98	157.37
110.00	22 15 59	2163.96	-32.67	33.66	32.29	100.68	22 52 3	1564.0	-30.85	24.91
110.00	13 27 9	3986.28	9.96	150.29	23.98	57.13	14 33 35	3386.3	5.56	143.97

DIFFERENTIAL CORRECTIONS

TDE	-1.5173	TRA	4.9883	TC3	-5.3212	BAU	1.5385
RDE	.8303	RRA	-.7269	RC3	.9809	FAU	.44778
FDE	-7.4180	FRA	19.5675	FC	-18.2267	BSP	28020
BDE	1.7296	BRA	5.0410	BC3	5.4108	FSP	9618

MID-COURSE EXECUTION ACCURACY

SGT	8301.5	SGR	1661.0	SG3	2735.8		
RRT	-.8992	RRF	-.9185	RTF	.9959		
SGB	8466.1	R23	.0372	R13	-.9966		
SG1	8435.8	SG2	715.2	THA	169.73		

ORBIT DETERMINATION ACCURACY

ST	2699.9	SR	1069.4	SS	3394.6		
CRT	-.8623	CRS	.9126	CST	-.9940		
LSA	4436.8	MSA	521.3	SSA	15.6		
EL1	2858.6	EL2	511.5	ALF	160.49		

LAUNCH DATE OCT 6 1964 FLIGHT TIME 358.00 ARRIVAL DATE SEP 29 1965

HELIOCENTRIC CONIC DISTANCE 815.700 EARTH TO MARS

RL	149.54	LAL	-.00	LOL	12.77	VL	32.528	GAL	-7.77	AZL	88.79	HCA	255.65	SMA	185.13	ECC	.23362	INC	1.2053
RP	217.98	LAP	-1.17	LOP	268.42	VP	22.379	GAP	-8.88	AZP	90.30	TAL	316.84	TAP	212.49	RCA	141.88	APO	228.38
RC	279.589	GL	8.39	GP	7.54	ZAL	147.11	ZAP	65.75	ETS	182.94	ZAE	97.48	ETE	177.83	ZAC	89.90	ETC	259.37

V1	29.796	V2	25.208	CLP	65.52														

PLANETOCENTRIC CONIC

C3	21.589	VHL	4.646	DLA	15.24	RAL	165.62	RAD	6567.9	VEL	11.957	PTH	2.13	VHP	3.343	DPA	18.70	RAP	159.48

ECC	1.3553																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 21 13	2727.15	-27.83	76.53	33.71	95.44	20 6 40	2127.2	-26.79	68.02
90.00	11 25 34	4382.29	5.89	182.18	27.04	62.25	12 38 36	3782.3	2.13	175.52
100.00	20 50 52	2438.03	-29.17	55.10	33.54	96.82	21 31 30	1838.0	-27.92	46.52
100.00	12 38 36	4146.65	7.08	164.21	26.39	60.88	13 47 42	3546.6	3.14	157.64
110.00	22 17 38	2166.56	-32.70	33.85	32.92	100.57	22 53 45	1566.6	-30.90	25.09
110.00	13 28 19	3990.88	10.13	150.54	24.54	57.18	14 34 50	3390.9	5.74	144.21

DIFFERENTIAL CORRECTIONS

TDE	-1.6079	TRA	5.2295	TC3	-5.4415	BAU	1.5941
RDE	.8301	RRA	-.7035	RC3	.9455	FAU	.43379
FDE	-7.2846	FRA	19.0607	FC	-17.3952	BSP	29083
BDE	1.8095	BRA	5.2766	BC3	5.5230	FSP	9309

MID-COURSE EXECUTION ACCURACY

SGT	8612.4	SGR	1621.2	SG3	2642.6		
RRT	-.8940	RRF	-.9136	RTF	.9961		
SGB	8763.7	R23	.0379	R13	-.9967		
SG1	8734.3	SG2	716.3	THA	170.38		

ORBIT DETERMINATION ACCURACY

ST	2823.9	SR	1058.9	SS	3347.2		
CRT	-.8609	CRS	.9109	CST	-.9941		
LSA	4474.9	MSA	524.0	SSA	15.3		
EL1	2972.2	EL2	511.8	ALF	161.54		

LAUNCH DATE OCT 6 1964 FLIGHT TIME 360.00 ARRIVAL DATE OCT 1 1965

HELIOCENTRIC CONIC DISTANCE 819.743 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 32.529 GAL -7.85 AZL 88.77 HCA 256.79 SMA 185.15 ECC .23445 INC 1.2286 V1 29.796
RP 217.62 LAP -1.20 LOP 269.56 VP 22.426 GAP -9.09 AZP 90.28 TAL 316.50 TAP 213.29 RCA 141.74 APO 228.56 V2 25.248
RC 280.887 GL 8.48 GP 7.39 ZAL 147.42 ZAP 64.16 ETS 183.14 ZAE 95.66 ETE 178.14 ZAC 89.68 ETC 259.45 CLP 63.93

PLANETOCENTRIC CONIC

C3 21.930 VHL 4.683 DLA 15.20 RAL 165.99 RAD 6567.9 VEL 11.971 PTH 2.13 VHP 3.395 DPA 18.74 RAP 158.99 ECC 1.3609

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 23 5	2729.30	-27.85	76.68	34.34	95.37	20 8 34	2129.3	-26.81	68.17
90.00	11 26 36	4387.71	6.06	182.49	27.63	62.29	12 39 43	3787.7	2.30	175.82
100.00	20 52 42	2440.29	-29.19	55.26	34.18	96.73	21 33 23	1840.3	-27.95	46.68
100.00	12 39 40	4151.96	7.25	164.51	26.98	60.92	13 48 52	3552.0	3.32	157.93
110.00	22 19 24	2169.05	-32.73	34.04	33.55	100.46	22 55 33	1569.0	-30.94	25.27
110.00	13 29 28	3995.96	10.32	150.82	25.12	57.23	14 36 3	3396.0	5.93	144.48

DIFFERENTIAL CORRECTIONS
TDE-1.6995 TRA 5.4712 TC3-5.5485 BAU 1.6485
RDE .8300 RRA -.6806 RC3 .9101 FAU .41944
FDE-7.1484 FRA18.5491 FC-16.5583 BSP 30120
BDE 1.8914 BRA 5.5134 BC3 5.6226 FSP 8999

MID-COURSE EXECUTION ACCURACY
SGT 8913.2 SGR 1581.9 SG3 2548.5
RRT -.8884 RRF -.9085 RTF .9962
SGB 9052.5 R23 .0387 R13 -.9967
SG1 9024.0 SG2 717.2 THA 170.98

ORBIT DETERMINATION ACCURACY
ST 2945.9 SR 1048.3 SS 3298.8
CRT -.8595 CRS .9093 CST -.9942
LSA 4514.7 MSA 526.3 SSA 15.0
EL1 3084.7 EL2 511.8 ALF 162.50

LAUNCH DATE OCT 6 1964 FLIGHT TIME 362.00 ARRIVAL DATE OCT 3 1965

HELIOCENTRIC CONIC DISTANCE 823.789 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 32.531 GAL -7.94 AZL 88.75 HCA 257.94 SMA 185.17 ECC .23533 INC 1.2517 V1 29.796
RP 217.27 LAP -1.22 LOP 270.71 VP 22.472 GAP -9.30 AZP 90.26 TAL 316.15 TAP 214.08 RCA 141.60 APO 228.75 V2 25.287
RC 282.167 GL 8.57 GP 7.25 ZAL 147.75 ZAP 62.62 ETS 183.33 ZAE 93.87 ETE 178.43 ZAC 89.47 ETC 259.51 CLP 62.38

PLANETOCENTRIC CONIC

C3 22.293 VHL 4.722 DLA 15.14 RAL 166.36 RAD 6567.9 VEL 11.986 PTH 2.14 VHP 3.450 DPA 18.76 RAP 158.54 ECC 1.3669

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 25 5	2731.27	-27.86	76.82	34.99	95.30	20 10 36	2131.3	-26.83	68.31
90.00	11 27 34	4393.68	6.25	182.83	28.23	62.33	12 40 47	3793.7	2.50	176.16
100.00	20 54 39	2442.39	-29.21	55.41	34.83	96.66	21 35 22	1842.4	-27.98	46.83
100.00	12 40 40	4157.79	7.45	164.83	27.58	60.97	13 49 58	3557.8	3.52	158.25
110.00	22 21 16	2171.42	-32.76	34.22	34.21	100.36	22 57 27	1571.4	-30.98	25.45
110.00	13 30 33	4001.53	10.53	151.12	25.72	57.29	14 37 15	3401.5	6.14	144.77

DIFFERENTIAL CORRECTIONS
TDE-1.7918 TRA 5.7128 TC3-5.6438 BAU 1.7021
RDE .8300 RRA -.6581 RC3 .8752 FAU .40501
FDE-7.0067 FRA18.0325 FC-15.7286 BSP 31131
BDE 1.9747 BRA 5.7506 BC3 5.7113 FSP 8686

MID-COURSE EXECUTION ACCURACY
SGT 9203.8 SGR 1543.4 SG3 2454.1
RRT -.8825 RRF -.9032 RTF .9963
SGB 9332.3 R23 .0394 R13 -.9968
SG1 9304.7 SG2 717.9 THA 171.53

ORBIT DETERMINATION ACCURACY
ST 3065.2 SR 1037.7 SS 3248.4
CRT -.8579 CRS .9076 CST -.9943
LSA 4554.7 MSA 528.4 SSA 14.7
EL1 3195.4 EL2 511.4 ALF 163.37

LAUNCH DATE OCT 6 1964 FLIGHT TIME 364.00 ARRIVAL DATE OCT 5 1965

HELIOCENTRIC CONIC DISTANCE 827.837 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 32.532 GAL -8.02 AZL 88.73 HCA 259.09 SMA 185.20 ECC .23627 INC 1.2747 V1 29.796
RP 216.91 LAP -1.25 LOP 271.86 VP 22.518 GAP -9.51 AZP 90.24 TAL 315.78 TAP 214.86 RCA 141.44 APO 228.96 V2 25.327
RC 283.431 GL 8.66 GP 7.11 ZAL 148.08 ZAP 61.11 ETS 183.51 ZAE 92.12 ETE 178.70 ZAC 89.28 ETC 259.57 CLP 60.87

PLANETOCENTRIC CONIC

C3 22.677 VHL 4.762 DLA 15.08 RAL 166.74 RAD 6567.9 VEL 12.002 PTH 2.14 VHP 3.508 DPA 18.77 RAP 158.14 ECC 1.3732

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 27 12	2733.05	-27.87	76.95	35.66	95.23	20 12 45	2133.1	-26.85	68.43
90.00	11 28 28	4400.21	6.46	183.19	28.85	62.37	12 41 48	3800.2	2.71	176.52
100.00	20 56 44	2444.34	-29.22	55.56	35.50	96.58	21 37 28	1844.3	-28.01	46.97
100.00	12 41 37	4164.16	7.66	165.19	28.20	61.02	13 51 1	3564.2	3.73	158.60
110.00	22 23 14	2173.69	-32.79	34.39	34.88	100.26	22 59 27	1573.7	-31.02	25.61
110.00	13 31 37	4007.57	10.75	151.44	26.33	57.35	14 38 24	3407.6	6.37	145.09

DIFFERENTIAL CORRECTIONS
TDE-1.8855 TRA 5.9550 TC3-5.7269 BAU 1.7549
RDE .8302 RRA -.6361 RC3 .8409 FAU .39044
FDE-6.8630 FRA17.5161 FC-14.9055 BSP 32106
BDE 2.0602 BRA 5.9889 BC3 5.7883 FSP 8373

MID-COURSE EXECUTION ACCURACY
SGT 9484.5 SGR 1505.8 SG3 2360.0
RRT -.8763 RRF -.8976 RTF .9963
SGB 9603.3 R23 .0403 R13 -.9968
SG1 9576.4 SG2 718.4 THA 172.03

ORBIT DETERMINATION ACCURACY
ST 3182.5 SR 1027.1 SS 3197.1
CRT -.8564 CRS .9061 CST -.9944
LSA 4596.1 MSA 529.9 SSA 14.5
EL1 3305.0 EL2 510.7 ALF 164.16

LAUNCH DATE OCT 6 1964 FLIGHT TIME 366.00 ARRIVAL DATE OCT 7 1965

HELIOCENTRIC CONIC DISTANCE 831.886 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 32.534 GAL -8.11 AZL 88.70 HCA 260.24 SMA 185.23 ECC .23727 INC 1.2976 V1 29.796
RP 216.57 LAP -1.28 LOP 273.01 VP 22.564 GAP -9.72 AZP 90.22 TAL 315.39 TAP 215.63 RCA 141.28 APO 229.18 V2 25.365
RC 284.679 GL 8.73 GP 6.98 ZAL 148.42 ZAP 59.65 ETS 183.68 ZAE 90.41 ETE 178.95 ZAC 89.09 ETC 259.63 CLP 59.40

PLANETOCENTRIC CONIC

C3 23.086 VHL 4.805 DLA 15.00 RAL 167.13 RAD 6567.9 VEL 12.019 PTH 2.15 VHP 3.569 DPA 18.76 RAP 157.78 ECC 1.3799

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 29 27	2734.67	-27.88	77.07	36.35	95.17	20 15 1	2134.7	-26.87	68.55
90.00	11 29 19	4407.28	6.68	183.59	29.50	62.42	12 42 46	3807.3	2.93	176.92
100.00	20 58 55	2446.13	-29.24	55.69	36.19	96.51	21 39 41	1846.1	-28.03	47.09
100.00	12 42 31	4171.04	7.88	165.58	28.84	61.07	13 52 2	3571.0	3.96	158.98
110.00	22 25 18	2175.86	-32.81	34.55	35.58	100.17	23 1 33	1575.9	-31.06	25.77
110.00	13 32 38	4014.08	10.99	151.80	26.97	57.43	14 39 32	3414.1	6.61	145.43

DIFFERENTIAL CORRECTIONS
TDE-1.9802 TRA 6.1982 TC3-5.7976 BAU 1.8066
RDE .8306 RRA -.6147 RC3 .8072 FAU .37582
FDE-6.7179 FRA17.0008 FC-14.0937 BSP 33066
BDE 2.1474 BRA 6.2286 BC3 5.8536 FSP 8064

MID-COURSE EXECUTION ACCURACY
SGT 9755.3 SGR 1469.2 SG3 2266.4
RRT -.8698 RRF -.8917 RTF .9964
SGB 9865.3 R23 .0412 R13 -.9968
SG1 9839.1 SG2 718.7 THA 172.50

ORBIT DETERMINATION ACCURACY
ST 3297.5 SR 1016.6 SS 3144.9
CRT -.8548 CRS .9046 CST -.9944
LSA 4638.4 MSA 531.3 SSA 14.3
EL1 3412.8 EL2 509.8 ALF 164.89

LAUNCH DATE OCT 6 1964 FLIGHT TIME 368.00 ARRIVAL DATE OCT 9 1965

HELIOCENTRIC CONIC DISTANCE 835.938 EARTH TO MARS

RL	149.54	LAL	-.00	LOL	12.77	VL	32.536	GAL	-8.21	AZL	88.68	HCA	261.40	SMA	185.26	ECC	.23833	INC	1.3204	V1	29.796
RP	216.22	LAP	-1.31	LOP	274.17	VP	22.610	GAP	-9.92	AZP	90.20	TAL	314.99	TAP	216.39	RCA	141.11	APO	229.41	V2	25.404
RC	285.910	GL	8.80	GP	6.84	ZAL	148.77	ZAP	58.23	ETS	183.84	ZAE	88.74	ETE	179.19	ZAC	88.91	ETC	259.67	CLP	57.98

PLANETOCENTRIC CONIC

C3	23.519	VHL	4.850	DLA	14.91	RAL	167.52	RAD	6568.0	VEL	12.037	PTH	2.15	VHP	3.633	DPA	18.74	RAP	157.46	ECC	1.3871

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 31 48	2736.13	-27.89	77.18	37.05	95.12	20 17 25	2136.1	-26.89	68.65
90.00	11 30 6	4414.89	6.92	184.03	30.16	62.47	12 43 41	3814.9	3.18	177.34
100.00	21 1 13	2447.79	-29.25	55.81	36.89	96.45	21 42 1	1847.8	-28.05	47.21
100.00	12 43 22	4178.45	8.13	165.99	29.50	61.13	13 53 1	3578.5	4.21	159.39
110.00	22 27 28	2177.94	-32.84	34.71	36.28	100.08	23 3 45	1577.9	-31.10	25.92
110.00	13 33 37	4021.07	11.24	152.18	27.63	57.50	14 40 38	3421.1	6.88	145.80

DIFFERENTIAL CORRECTIONS

TDE-2.0756	TRA 6.4430	TC3-5.8557	BAU 1.8572				
RDE .8311	RRA -.5940	RC3 .7741	FAU .36117				
FDE-6.5685	FRA16.4903	FC-13.2951	BSP 34013				
BDE 2.2358	BRA 6.4703	BC3 5.9066	FSP 7761				

MID-COURSE EXECUTION ACCURACY

SGT10016.2	SGR 1433.7	SG3 2173.8			
RRT -.8631	RRF -.8856	RTF .9964			
SGB10118.3	R23 .0421	R13 -.9968			
SG110092.7	SG2 718.7	THA 172.92			

ORBIT DETERMINATION ACCURACY

ST 3409.9	SR 1006.1	SS 3091.1			
CRT -.8531	CRS .9031	CST -.9945			
LSA 4680.9	MSA 532.4	SSA 14.1			
EL1 3518.6	EL2 508.7	ALF 165.56			

LAUNCH DATE OCT 6 1964 FLIGHT TIME 370.00 ARRIVAL DATE OCT 11 1965

HELIOCENTRIC CONIC DISTANCE 839.990 EARTH TO MARS

RL	149.54	LAL	-.00	LOL	12.77	VL	32.538	GAL	-8.31	AZL	88.66	HCA	262.56	SMA	185.30	ECC	.23945	INC	1.3432	V1	29.796
RP	215.88	LAP	-1.33	LOP	275.33	VP	22.656	GAP	-10.13	AZP	90.17	TAL	314.57	TAP	217.14	RCA	140.93	APO	229.66	V2	25.442
RC	287.127	GL	8.87	GP	6.71	ZAL	149.14	ZAP	56.85	ETS	183.99	ZAE	87.11	ETE	179.42	ZAC	88.74	ETC	259.71	CLP	56.59

PLANETOCENTRIC CONIC

C3	23.977	VHL	4.897	DLA	14.82	RAL	167.92	RAD	6568.0	VEL	12.056	PTH	2.15	VHP	3.700	DPA	18.69	RAP	157.19	ECC	1.3946

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 34 17	2737.43	-27.90	77.27	37.77	95.08	20 19 55	2137.4	-26.90	68.75
90.00	11 30 49	4423.04	7.17	184.49	30.83	62.53	12 44 32	3823.0	3.44	177.80
100.00	21 3 37	2449.32	-29.26	55.92	37.61	96.39	21 44 27	1849.3	-28.07	47.32
100.00	12 44 10	4186.37	8.39	166.43	30.18	61.20	13 53 57	3586.4	4.48	159.83
110.00	22 29 43	2179.93	-32.86	34.86	37.01	99.99	23 6 3	1579.9	-31.13	26.06
110.00	13 34 34	4028.53	11.52	152.58	28.30	57.59	14 41 42	3428.5	7.16	146.20

DIFFERENTIAL CORRECTIONS

TDE-2.1718	TRA 6.6897	TC3-5.9018	BAU 1.9067				
RDE .8318	RRA -.5741	RC3 .7420	FAU .34664				
FDE-6.4178	FRA15.9839	FC-12.5160	BSP 34935				
BDE 2.3256	BRA 6.7142	BC3 5.9483	FSP 7461				

MID-COURSE EXECUTION ACCURACY

SGT10267.5	SGR 1399.4	SG3 2082.4			
RRT -.8560	RRF -.8794	RTF .9964			
SGB10362.5	R23 .0430	R13 -.9968			
SG110337.5	SG2 718.5	THA 173.31			

ORBIT DETERMINATION ACCURACY

ST 3519.7	SR 995.6	SS 3036.4			
CRT -.8514	CRS .9017	CST -.9945			
LSA 4723.8	MSA 533.2	SSA 13.9			
EL1 3622.4	EL2 507.4	ALF 166.18			

LAUNCH DATE OCT 6 1964 FLIGHT TIME 372.00 ARRIVAL DATE OCT 13 1965

HELIOCENTRIC CONIC DISTANCE 844.042 EARTH TO MARS

RL	149.54	LAL	-.00	LOL	12.77	VL	32.540	GAL	-8.41	AZL	88.63	HCA	263.73	SMA	185.33	ECC	.24062	INC	1.3659	V1	29.796
RP	215.54	LAP	-1.36	LOP	276.50	VP	22.701	GAP	-10.33	AZP	90.15	TAL	314.14	TAP	217.87	RCA	140.74	APO	229.93	V2	25.480
RC	288.329	GL	8.93	GP	6.57	ZAL	149.52	ZAP	55.51	ETS	184.14	ZAE	85.52	ETE	179.63	ZAC	88.58	ETC	259.74	CLP	55.25

PLANETOCENTRIC CONIC

C3	24.463	VHL	4.946	DLA	14.71	RAL	168.33	RAD	6568.0	VEL	12.076	PTH	2.16	VHP	3.769	DPA	18.64	RAP	156.97	ECC	1.4026

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 36 53	2738.58	-27.90	77.35	38.51	95.03	20 22 31	2138.6	-26.91	68.83
90.00	11 31 30	4431.72	7.45	184.98	31.53	62.60	12 45 21	3831.7	3.72	178.28
100.00	21 6 8	2450.73	-29.27	56.03	38.35	96.34	21 46 59	1850.7	-28.09	47.42
100.00	12 44 55	4194.80	8.66	166.91	30.88	61.28	13 54 50	3594.8	4.76	160.29
110.00	22 32 4	2181.84	-32.88	35.01	37.75	99.91	23 8 26	1581.8	-31.17	26.20
110.00	13 35 28	4036.45	11.80	153.01	28.99	57.68	14 42 45	3436.5	7.46	146.62

DIFFERENTIAL CORRECTIONS

TDE-2.2706	TRA 6.9369	TC3-5.9379	BAU 1.9558				
RDE .8329	RRA -.5548	RC3 .7110	FAU .33234				
FDE-6.2695	FRA15.4811	FC-11.7616	BSP 35820				
BDE 2.4185	BRA 6.9591	BC3 5.9803	FSP 7162				

MID-COURSE EXECUTION ACCURACY

SGT10509.4	SGR 1366.4	SG3 1992.6			
RRT -.8488	RRF -.8730	RTF .9963			
SGB10597.8	R23 .0440	R13 -.9967			
SG110573.5	SG2 718.0	THA 173.67			

ORBIT DETERMINATION ACCURACY

ST 3627.9	SR 985.5	SS 2981.6			
CRT -.8499	CRS .9005	CST -.9945			
LSA 4768.4	MSA 533.5	SSA 13.8			
EL1 3725.2	EL2 505.8	ALF 166.75			

LAUNCH DATE OCT 6 1964 FLIGHT TIME 374.00 ARRIVAL DATE OCT 15 1965

HELIOCENTRIC CONIC DISTANCE 848.095 EARTH TO MARS

RL	149.54	LAL	-.00	LOL	12.77	VL	32.543	GAL	-8.52	AZL	88.61	HCA	264.90	SMA	185.37	ECC	.24186	INC	1.3886	V1	29.796
RP	215.21	LAP	-1.38	LOP	277.67	VP	22.747	GAP	-10.54	AZP	90.12	TAL	313.70	TAP	218.59	RCA	140.54	APO	230.21	V2	25.517
RC	289.516	GL	8.98	GP	6.45	ZAL	149.90	ZAP	54.21	ETS	184.27	ZAE	83.96	ETE	179.83	ZAC	88.43	ETC	259.76	CLP	53.95

PLANETOCENTRIC CONIC

C3	24.977	VHL	4.998	DLA	14.60	RAL	168.75	RAD	6568.0	VEL	12.098	PTH	2.17	VHP	3.842	DPA	18.57	RAP	156.79	ECC	1.4111

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 39 35	2739.60	-27.91	77.43	39.27	95.00	20 25 15	2139.6	-26.92	68.90
90.00	11 32 7	4440.92	7.73	185.50	32.25	62.68	12 46 7	3840.9	4.01	178.80
100.00	21 8 46	2452.01	-29.28	56.12	39.11	96.29	21 49 38	1852.0	-28.10	47.52
100.00	12 45 37	4203.74	8.95	167.41	31.59	61.36	13 55 41	3603.7	5.06	160.79
110.00	22 34 31	2183.68	-32.91	35.14	38.51	99.83	23 10 55	1583.7	-31.20	26.34
110.00	13 36 21	4044.84	12.11	153.47	29.71	57.79	14 43 46	3444.8	7.77	147.07

DIFFERENTIAL CORRECTIONS

TDE-2.3702	TRA 7.1874	TC3-5.9619	BAU 2.0037				
RDE .8342	RRA -.5364	RC3 .6808	FAU .31812				
FDE-6.1187	FRA14.9871	FC-11.0265	BSP 36698				
BDE 2.5127	BRA 7.2074	BC3 6.0006	FSP 6873				

MID-COURSE EXECUTION ACCURACY

SGT10742.2	SGR 1334.7	SG3 1904.6			
RRT -.8414	RRF -.8664	RTF .9963			
SGB10824.8	R23 .0450	R13 -.9966			
SG110801.0	SG2 717.3	THA 174.00			

ORBIT DETERMINATION ACCURACY

ST 3733.7	SR 975.4	SS 2925.6			
CRT -.8483	CRS .8992	CST -.9944			
LSA 4813.1	MSA 533.6	SSA 13.6			
EL1 3825.9	EL2 504.1	ALF 167.28			

LAUNCH DATE OCT 6 1964 FLIGHT TIME 376.00 ARRIVAL DATE OCT 17 1965

HELIOCENTRIC CONIC DISTANCE 852.148 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 32.545 GAL -8.63 AZL 88.59 HCA 266.07 SMA 185.42 ECC .24317 INC 1.4112 V1 29.796
RP 214.88 LAP -1.41 LOP 278.84 VP 22.792 GAP -10.74 AZP 90.10 TAL 313.24 TAP 219.30 RCA 140.33 APO 230.50 V2 25.554
RC 290.691 GL 9.03 GP 6.32 ZAL 150.30 ZAP 52.95 ETS 184.40 ZAE 82.44 ETE 180.03 ZAC 88.29 ETC 259.78 CLP 52.68

PLANETOCENTRIC CONIC

C3 25.521 VHL 5.052 DLA 14.47 RAL 169.17 RAD 6568.0 VEL 12.120 PTH 2.17 VHP 3.917 DPA 18.49 RAP 156.65 ECC 1.4200

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 42 24	2740.50	-27.91	77.49	40.04	94.97	20 28 5	2140.5	-26.93	68.96
90.00	11 32 40	4450.65	8.04	186.06	32.98	62.76	12 46 51	3850.7	4.32	179.35
100.00	21 11 29	2453.20	-29.29	56.21	39.89	96.25	21 52 22	1853.2	-28.12	47.60
100.00	12 46 16	4213.18	9.26	167.94	32.33	61.45	13 56 29	3613.2	5.38	161.31
110.00	22 37 3	2185.46	-32.93	35.28	39.29	99.75	23 13 29	1585.5	-31.23	26.47
110.00	13 37 11	4053.69	12.43	153.96	30.44	57.90	14 44 45	3453.7	8.10	147.54

DIFFERENTIAL CORRECTIONS
TDE-2.4716 TRA 7.4404 TC3-5.9758 BAU 2.0509
RDE .8358 RRA -.5188 RC3 .6517 FAU .30418
FDE-5.9693 FRA14.4995 FC-10.3188 BSP 37546
BDE 2.6091 BRA 7.4585 BC3 6.0112 FSP 6588

MID-COURSE EXECUTION ACCURACY
SGT10966.5 SGR 1304.4 SG3 1818.5
RRT -.8339 RRF -.8597 RTF .9962
SGB11043.8 R23 .0461 R13 -.9965
SG111020.6 SG2 716.4 THA 174.31

ORBIT DETERMINATION ACCURACY
ST 3837.5 SR 965.5 SS 2869.2
CRT -.8468 CRS .8981 CST -.9944
LSA 4858.7 MSA 533.4 SSA 13.5
EL1 3925.2 EL2 502.2 ALF 167.77

LAUNCH DATE OCT 6 1964 FLIGHT TIME 378.00 ARRIVAL DATE OCT 19 1965

HELIOCENTRIC CONIC DISTANCE 856.200 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 32.548 GAL -8.75 AZL 88.57 HCA 267.24 SMA 185.46 ECC .24454 INC 1.4339 V1 29.796
RP 214.56 LAP -1.43 LOP 280.02 VP 22.836 GAP -10.95 AZP 90.07 TAL 312.76 TAP 220.00 RCA 140.11 APO 230.81 V2 25.590
RC 291.851 GL 9.07 GP 6.20 ZAL 150.70 ZAP 51.72 ETS 184.52 ZAE 80.96 ETE 180.21 ZAC 88.16 ETC 259.78 CLP 51.46

PLANETOCENTRIC CONIC

C3 26.096 VHL 5.108 DLA 14.34 RAL 169.60 RAD 6568.1 VEL 12.144 PTH 2.18 VHP 3.994 DPA 18.39 RAP 156.55 ECC 1.4295

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 45 19	2741.28	-27.92	77.55	40.83	94.94	20 31 1	2141.3	-26.94	69.02
90.00	11 33 11	4460.89	8.36	186.64	33.73	62.85	12 47 32	3860.9	4.65	179.92
100.00	21 14 19	2454.28	-29.30	56.29	40.68	96.20	21 55 13	1854.3	-28.13	47.68
100.00	12 46 52	4223.12	9.58	168.50	33.08	61.55	13 57 15	3623.1	5.71	161.86
110.00	22 39 41	2187.18	-32.95	35.41	40.09	99.68	23 16 8	1587.2	-31.26	26.59
110.00	13 38 0	4062.99	12.77	154.47	31.19	58.02	14 45 43	3463.0	8.45	148.03

DIFFERENTIAL CORRECTIONS
TDE-2.5755 TRA 7.6954 TC3-5.9798 BAU 2.0975
RDE .8379 RRA -.5019 RC3 .6238 FAU .29055
FDE-5.8221 FRA14.0190 FC3-9.6390 BSP 38364
BDE 2.7083 BRA 7.7117 BC3 6.0122 FSP 6307

MID-COURSE EXECUTION ACCURACY
SGT11181.8 SGR 1275.5 SG3 1734.5
RRT -.8263 RRF -.8530 RTF .9961
SGB11254.3 R23 .0472 R13 -.9964
SG111231.5 SG2 715.3 THA 174.59

ORBIT DETERMINATION ACCURACY
ST 3939.6 SR 956.0 SS 2812.8
CRT -.8454 CRS .8972 CST -.9944
LSA 4905.3 MSA 532.9 SSA 13.4
EL1 4023.0 EL2 500.0 ALF 168.22

LAUNCH DATE OCT 6 1964 FLIGHT TIME 380.00 ARRIVAL DATE OCT 21 1965

HELIOCENTRIC CONIC DISTANCE 860.250 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 32.551 GAL -8.88 AZL 88.54 HCA 268.42 SMA 185.51 ECC .24598 INC 1.4566 V1 29.796
RP 214.24 LAP -1.46 LOP 281.20 VP 22.880 GAP -11.15 AZP 90.04 TAL 312.27 TAP 220.69 RCA 139.88 APO 231.14 V2 25.626
RC 292.998 GL 9.10 GP 6.08 ZAL 151.12 ZAP 50.54 ETS 184.63 ZAE 79.51 ETE 180.38 ZAC 88.04 ETC 259.78 CLP 50.27

PLANETOCENTRIC CONIC

C3 26.704 VHL 5.168 DLA 14.19 RAL 170.04 RAD 6568.1 VEL 12.169 PTH 2.18 VHP 4.075 DPA 18.28 RAP 156.50 ECC 1.4395

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 48 21	2741.95	-27.92	77.60	41.64	94.91	20 34 3	2142.0	-26.95	69.07
90.00	11 33 38	4471.64	8.69	187.25	34.51	62.94	12 48 10	3871.6	4.99	180.52
100.00	21 17 14	2455.28	-29.31	56.36	41.49	96.17	21 58 9	1855.3	-28.14	47.75
100.00	12 47 26	4233.54	9.92	169.09	33.85	61.66	13 57 59	3633.5	6.06	162.44
110.00	22 42 23	2188.84	-32.96	35.54	40.90	99.61	23 18 52	1588.8	-31.29	26.71
110.00	13 38 46	4072.75	13.12	155.01	31.96	58.15	14 46 39	3472.7	8.81	148.55

DIFFERENTIAL CORRECTIONS
TDE-2.6816 TRA 7.9537 TC3-5.9755 BAU 2.1439
RDE .8402 RRA -.4860 RC3 .5970 FAU .27725
FDE-5.6757 FRA13.5473 FC3-8.9884 BSP 39166
BDE 2.8102 BRA 7.9686 BC3 6.0052 FSP 6034

MID-COURSE EXECUTION ACCURACY
SGT11389.6 SGR 1248.0 SG3 1652.8
RRT -.8186 RRF -.8464 RTF .9960
SGB11457.8 R23 .0483 R13 -.9963
SG111435.5 SG2 713.9 THA 174.85

ORBIT DETERMINATION ACCURACY
ST 4040.0 SR 946.6 SS 2755.9
CRT -.8442 CRS .8964 CST -.9943
LSA 4952.7 MSA 532.0 SSA 13.3
EL1 4119.4 EL2 497.6 ALF 168.64

LAUNCH DATE OCT 6 1964 FLIGHT TIME 382.00 ARRIVAL DATE OCT 23 1965

HELIOCENTRIC CONIC DISTANCE 864.298 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 32.554 GAL -9.01 AZL 88.52 HCA 269.61 SMA 185.56 ECC .24749 INC 1.4793 V1 29.796
RP 213.93 LAP -1.48 LOP 282.38 VP 22.924 GAP -11.36 AZP 90.01 TAL 311.76 TAP 221.36 RCA 139.63 APO 231.48 V2 25.662
RC 294.131 GL 9.13 GP 5.96 ZAL 151.55 ZAP 49.39 ETS 184.74 ZAE 78.09 ETE 180.54 ZAC 87.93 ETC 259.78 CLP 49.12

PLANETOCENTRIC CONIC

C3 27.347 VHL 5.229 DLA 14.04 RAL 170.48 RAD 6568.1 VEL 12.195 PTH 2.19 VHP 4.158 DPA 18.16 RAP 156.48 ECC 1.4501

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 51 28	2742.53	-27.93	77.64	42.47	94.89	20 37 11	2142.5	-26.95	69.11
90.00	11 34 3	4482.90	9.04	187.90	35.30	63.05	12 48 46	3882.9	5.35	181.16
100.00	21 20 15	2456.20	-29.31	56.43	42.32	96.13	22 1 11	1856.2	-28.16	47.82
100.00	12 47 57	4244.45	10.27	169.71	34.65	61.77	13 58 41	3644.5	6.42	163.04
110.00	22 45 11	2190.46	-32.98	35.66	41.73	99.54	23 21 41	1590.5	-31.32	26.83
110.00	13 39 30	4082.95	13.48	155.57	32.76	58.29	14 47 33	3483.0	9.19	149.10

DIFFERENTIAL CORRECTIONS
TDE-2.7894 TRA 8.2160 TC3-5.9607 BAU 2.1893
RDE .8429 RRA -.4709 RC3 .5713 FAU .26422
FDE-5.5300 FRA13.0846 FC3-8.3642 BSP 39937
BDE 2.9140 BRA 8.2295 BC3 5.9880 FSP 5766

MID-COURSE EXECUTION ACCURACY
SGT11589.0 SGR 1221.8 SG3 1573.4
RRT -.8110 RRF -.8397 RTF .9959
SGB11653.2 R23 .0495 R13 -.9962
SG111631.4 SG2 712.3 THA 175.09

ORBIT DETERMINATION ACCURACY
ST 4138.1 SR 937.4 SS 2698.5
CRT -.8430 CRS .8957 CST -.9942
LSA 5000.3 MSA 531.0 SSA 13.2
EL1 4214.0 EL2 495.2 ALF 169.04

LAUNCH DATE OCT 6 1964 FLIGHT TIME 384.00 ARRIVAL DATE OCT 25 1965

HELIOCENTRIC CONIC DISTANCE 868.344 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 32.557 GAL -9.14 AZL 88.50 HCA 270.79 SMA 185.61 ECC .24908 INC 1.5021 V1 29.796
RP 213.62 LAP -1.50 LOP 283.57 VP 22.968 GAP -11.56 AZP 89.98 TAL 311.23 TAP 222.03 RCA 139.38 APO 231.84 V2 25.697
RC 295.251 GL 9.16 GP 5.85 ZAL 151.98 ZAP 48.27 ETS 184.84 ZAE 76.71 ETE 180.69 ZAC 87.83 ETC 259.76 CLP 48.01

PLANETOCENTRIC CONIC

C3 28.028 VHL 5.294 DLA 13.88 RAL 170.93 RAD 6568.1 VEL 12.223 PTH 2.20 VHP 4.244 DPA 18.03 RAP 156.51 ECC 1.4613

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 54 41	2743.01	-27.93	77.68	43.31	94.87	20 40 24	2143.0	-26.96	69.14
90.00	11 34 24	4494.65	9.40	188.57	36.11	63.17	12 49 19	3894.6	5.73	181.82
100.00	21 23 22	2457.04	-29.32	56.49	43.16	96.10	22 4 19	1857.0	-28.17	47.88
100.00	12 48 25	4255.86	10.64	170.36	35.46	61.90	13 59 21	3655.9	6.80	163.68
110.00	22 48 3	2192.05	-33.00	35.78	42.57	99.47	23 24 35	1592.1	-31.34	26.95
110.00	13 40 13	4093.61	13.86	156.16	33.57	58.44	14 48 27	3493.6	9.59	149.67

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-2.9005 TRA 8.4812 TC3-5.9382 BAU 2.2345 SGT11780.6 SGR 1196.9 SG3 1496.3 ST 4235.0 SR 928.4 SS 2641.2
RDE .8460 RRA -.4567 RC3 .5467 FAU .25155 RRT -.8033 RRF -.8331 RTF .9958 CRT -.8420 CRS .8953 CST -.9941
FDE-5.3872 FRA12.6298 FC3-7.7700 BSP 40678 SGB11841.2 R23 .0508 R13 -.9960 LSA 5049.0 MSA 529.5 SSA 13.2
BDE 3.0214 BRA 8.4935 BC3 5.9634 FSP 5504 SG111819.9 SG2 710.4 THA 175.32 EL1 4307.5 EL2 492.4 ALF 169.40

LAUNCH DATE OCT 6 1964 FLIGHT TIME 386.00 ARRIVAL DATE OCT 27 1965

HELIOCENTRIC CONIC DISTANCE 872.386 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 32.560 GAL -9.28 AZL 88.47 HCA 271.98 SMA 185.66 ECC .25074 INC 1.5250 V1 29.796
RP 213.31 LAP -1.52 LOP 284.76 VP 23.011 GAP -11.77 AZP 89.95 TAL 310.69 TAP 222.67 RCA 139.11 APO 232.21 V2 25.731
RC 296.356 GL 9.18 GP 5.74 ZAL 152.42 ZAP 47.19 ETS 184.94 ZAE 75.36 ETE 180.84 ZAC 87.74 ETC 259.75 CLP 46.92

PLANETOCENTRIC CONIC

C3 28.747 VHL 5.362 DLA 13.71 RAL 171.38 RAD 6568.2 VEL 12.252 PTH 2.20 VHP 4.332 DPA 17.89 RAP 156.57 ECC 1.4731

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 58 0	2743.42	-27.93	77.71	44.18	94.86	20 43 43	2143.4	-26.96	69.17
90.00	11 34 43	4506.88	9.78	189.27	36.95	63.29	12 49 50	3906.9	6.11	182.51
100.00	21 26 33	2457.82	-29.33	56.55	44.02	96.07	22 7 31	1857.8	-28.18	47.93
100.00	12 48 51	4267.72	11.02	171.04	36.29	62.04	13 59 58	3667.7	7.19	164.34
110.00	22 51 0	2193.61	-33.02	35.90	43.44	99.40	23 27 33	1593.6	-31.37	27.06
110.00	13 40 54	4104.70	14.26	156.78	34.40	58.60	14 49 18	3504.7	10.00	150.27

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-3.0140 TRA 8.7510 TC3-5.9081 BAU 2.2795 SGT11965.2 SGR 1173.4 SG3 1421.6 ST 4330.0 SR 919.7 SS 2583.6
RDE .8495 RRA -.4433 RC3 .5233 FAU .23925 RRT -.7958 RRF -.8266 RTF .9956 CRT -.8411 CRS .8949 CST -.9941
FDE-5.2458 FRA12.1841 FC3-7.2053 BSP 41400 SGB12022.6 R23 .0521 R13 -.9958 LSA 5098.1 MSA 527.9 SSA 13.1
BDE 3.1314 BRA 8.7622 BC3 5.9312 FSP 5250 SG112001.7 SG2 708.4 THA 175.52 EL1 4399.5 EL2 489.6 ALF 169.74

LAUNCH DATE OCT 6 1964 FLIGHT TIME 388.00 ARRIVAL DATE OCT 29 1965

HELIOCENTRIC CONIC DISTANCE 876.425 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 32.563 GAL -9.43 AZL 88.45 HCA 273.17 SMA 185.72 ECC .25248 INC 1.5479 V1 29.796
RP 213.01 LAP -1.55 LOP 285.95 VP 23.054 GAP -11.98 AZP 89.91 TAL 310.14 TAP 223.31 RCA 138.83 APO 232.61 V2 25.765
RC 297.448 GL 9.19 GP 5.63 ZAL 152.88 ZAP 46.15 ETS 185.03 ZAE 74.05 ETE 180.98 ZAC 87.66 ETC 259.72 CLP 45.88

PLANETOCENTRIC CONIC

C3 29.507 VHL 5.432 DLA 13.53 RAL 171.84 RAD 6568.2 VEL 12.283 PTH 2.21 VHP 4.424 DPA 17.73 RAP 156.67 ECC 1.4856

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 1 24	2743.77	-27.93	77.73	45.05	94.85	20 47 8	2143.8	-26.97	69.20
90.00	11 34 59	4519.60	10.16	190.01	37.80	63.43	12 50 19	3919.6	6.52	183.23
100.00	21 29 50	2458.55	-29.33	56.60	44.90	96.04	22 10 49	1858.6	-28.18	47.98
100.00	12 49 14	4280.05	11.41	171.74	37.15	62.18	14 0 34	3680.1	7.60	165.03
110.00	22 54 1	2195.14	-33.03	36.01	44.32	99.33	23 30 36	1595.1	-31.39	27.17
110.00	13 41 32	4116.22	14.67	157.42	35.26	58.77	14 50 9	3516.2	10.42	150.89

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-3.1304 TRA 9.0255 TC3-5.8702 BAU 2.3241 SGT12142.9 SGR 1151.1 SG3 1349.4 ST 4423.5 SR 911.2 SS 2525.6
RDE .8534 RRA -.4309 RC3 .5009 FAU .22731 RRT -.7884 RRF -.8204 RTF .9954 CRT -.8404 CRS .8948 CST -.9939
FDE-5.1058 FRA11.7478 FC3-6.6693 BSP 42101 SGB12197.3 R23 .0555 R13 -.9957 LSA 5147.8 MSA 526.0 SSA 13.0
BDE 3.2446 BRA 9.0358 BC3 5.8916 FSP 5002 SG112176.9 SG2 706.1 THA 175.71 EL1 4490.1 EL2 486.5 ALF 170.06

LAUNCH DATE OCT 6 1964 FLIGHT TIME 390.00 ARRIVAL DATE OCT 31 1965

HELIOCENTRIC CONIC DISTANCE 880.458 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 32.567 GAL -9.58 AZL 88.43 HCA 274.37 SMA 185.78 ECC .25430 INC 1.5710 V1 29.796
RP 212.72 LAP -1.57 LOP 287.15 VP 23.096 GAP -12.19 AZP 89.88 TAL 309.56 TAP 223.93 RCA 138.53 APO 233.02 V2 25.798
RC 298.526 GL 9.20 GP 5.52 ZAL 153.34 ZAP 45.13 ETS 185.11 ZAE 72.76 ETE 181.11 ZAC 87.59 ETC 259.69 CLP 44.86

PLANETOCENTRIC CONIC

C3 30.311 VHL 5.506 DLA 13.34 RAL 172.31 RAD 6568.2 VEL 12.316 PTH 2.22 VHP 4.518 DPA 17.57 RAP 156.81 ECC 1.4988

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 4 53	2744.05	-27.93	77.75	45.95	94.84	20 50 37	2144.1	-26.97	69.22
90.00	11 35 13	4532.80	10.56	190.77	38.67	63.57	12 50 45	3932.8	6.93	183.97
100.00	21 33 12	2459.24	-29.34	56.65	45.80	96.02	22 14 11	1859.2	-28.19	48.03
100.00	12 49 35	4292.85	11.82	172.48	38.02	62.34	14 1 8	3692.8	8.02	165.74
110.00	22 57 7	2196.66	-33.05	36.13	45.22	99.26	23 33 44	1596.7	-31.42	27.28
110.00	13 42 9	4128.18	15.09	158.09	36.13	58.96	14 50 58	3528.2	10.86	151.54

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-3.2498 TRA 9.3048 TC3-5.8252 BAU 2.3686 SGT12313.6 SGR 1129.9 SG3 1279.6 ST 4515.4 SR 902.9 SS 2467.5
RDE .8578 RRA -.4194 RC3 .4795 FAU .21572 RRT -.7812 RRF -.8143 RTF .9952 CRT -.8398 CRS .8947 CST -.9938
FDE-4.9677 FRA11.3202 FC3-6.1612 BSP 42774 SGB12365.3 R23 .0549 R13 -.9954 LSA 5197.9 MSA 523.8 SSA 12.9
BDE 3.3611 BRA 9.3143 BC3 5.8450 FSP 4761 SG112345.3 SG2 703.6 THA 175.89 EL1 4579.4 EL2 483.3 ALF 170.36

LAUNCH DATE OCT 6 1964 FLIGHT TIME 392.00 ARRIVAL DATE NOV 2 1965

HELIOCENTRIC CONIC DISTANCE 884.486 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 32.570 GAL -9.73 AZL 88.41 HCA 275.57 SMA 185.84 ECC .25621 INC 1.5942 V1 29.796
RP 212.43 LAP -1.59 LOP 288.35 VP 23.137 GAP -12.40 AZP 89.85 TAL 308.97 TAP 224.54 RCA 138.22 APO 233.45 V2 25.831
RC 299.592 GL 9.21 GP 5.42 ZAL 153.81 ZAP 44.15 ETS 185.19 ZAE 71.50 ETE 181.23 ZAC 87.52 ETC 259.65 CLP 43.88

PLANETOCENTRIC CONIC

C3 31.162 VHL 5.582 DLA 13.15 RAL 172.78 RAD 6568.2 VEL 12.350 PTH 2.23 VHP 4.615 DPA 17.39 RAP 156.98 ECC 1.5128

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 8 27	2744.29	-27.94	77.77	46.86	94.83	20 54 12	2144.3	-26.97	69.23
90.00	11 35 24	4546.46	10.98	191.56	39.57	63.73	12 51 10	3946.5	7.36	184.75
100.00	21 36 39	2459.89	-29.34	56.70	46.71	95.99	22 17 38	1859.9	-28.20	48.08
100.00	12 49 54	4306.09	12.24	173.24	38.92	62.51	14 1 40	3706.1	8.46	166.49
110.00	23 0 17	2198.18	-33.07	36.24	46.13	99.20	23 36 55	1598.2	-31.45	27.40
110.00	13 42 45	4140.57	15.52	158.79	37.03	59.15	14 51 45	3540.6	11.32	152.21

DIFFERENTIAL CORRECTIONS
TDE-3.3736 TRA 9.5885 TC3-5.7749 BAU 2.4134
RDE .8626 RRA -.4087 RC3 .4593 FAU .20457
FDE-4.8330 FRA10.9001 FC3-5.6832 BSP 43406
BDE 3.4821 BRA 9.5972 BC3 5.7931 FSP 4525

MID-COURSE EXECUTION ACCURACY
SGT12477.9 SGR 1110.1 SG3 1212.2
RRT -.7743 RRF -.8086 RTF .9950
SGB12527.2 R23 .0565 R13 -.9952
SG112507.5 SG2 700.9 THA 176.05

ORBIT DETERMINATION ACCURACY
ST 4606.5 SR 894.8 SS 2409.6
CRT -.8395 CRS .8950 CST -.9937
LSA 5249.3 MSA 521.3 SSA 12.9
EL1 4668.0 EL2 479.9 ALF 170.64

LAUNCH DATE OCT 6 1964 FLIGHT TIME 394.00 ARRIVAL DATE NOV 4 1965

HELIOCENTRIC CONIC DISTANCE 888.507 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 32.574 GAL -9.90 AZL 88.38 HCA 276.77 SMA 185.90 ECC .25821 INC 1.6176 V1 29.796
RP 212.15 LAP -1.61 LOP 289.55 VP 23.178 GAP -12.61 AZP 89.81 TAL 308.36 TAP 225.13 RCA 137.90 APO 233.90 V2 25.863
RC 300.645 GL 9.21 GP 5.33 ZAL 154.28 ZAP 43.20 ETS 185.27 ZAE 70.28 ETE 181.35 ZAC 87.47 ETC 259.61 CLP 42.93

PLANETOCENTRIC CONIC

C3 32.062 VHL 5.662 DLA 12.95 RAL 173.25 RAD 6568.3 VEL 12.387 PTH 2.24 VHP 4.715 DPA 17.21 RAP 157.18 ECC 1.5277

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 12 7	2744.48	-27.94	77.78	47.79	94.82	20 57 51	2144.5	-26.98	69.25
90.00	11 35 32	4560.58	11.40	192.38	40.48	63.90	12 51 33	3960.6	7.80	185.55
100.00	21 40 10	2460.51	-29.34	56.74	47.64	95.97	22 21 10	1860.5	-28.21	48.12
100.00	12 50 10	4319.79	12.66	174.03	39.83	62.70	14 2 10	3719.8	8.91	167.26
110.00	23 3 31	2199.69	-33.08	36.36	47.06	99.13	23 40 11	1599.7	-31.47	27.51
110.00	13 43 18	4153.37	15.97	159.52	37.95	59.37	14 52 32	3553.4	11.78	152.91

DIFFERENTIAL CORRECTIONS
TDE-3.5012 TRA 9.8777 TC3-5.7188 BAU 2.4585
RDE .8679 RRA -.3988 RC3 .4400 FAU .19379
FDE-4.7003 FRA10.4881 FC3-5.2326 BSP 44007
BDE 3.6072 BRA 9.8858 BC3 5.7357 FSP 4295

MID-COURSE EXECUTION ACCURACY
SGT12636.3 SGR 1091.3 SG3 1147.3
RRT -.7676 RRF -.8032 RTF .9947
SGB12683.3 R23 .0582 R13 -.9950
SG112664.1 SG2 697.9 THA 176.20

ORBIT DETERMINATION ACCURACY
ST 4696.3 SR 887.0 SS 2351.6
CRT -.8393 CRS .8954 CST -.9935
LSA 5301.2 MSA 518.5 SSA 12.8
EL1 4755.6 EL2 476.3 ALF 170.90

LAUNCH DATE OCT 6 1964 FLIGHT TIME 396.00 ARRIVAL DATE NOV 6 1965

HELIOCENTRIC CONIC DISTANCE 892.521 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 32.578 GAL -10.07 AZL 88.36 HCA 277.98 SMA 185.96 ECC .26029 INC 1.6412 V1 29.796
RP 211.87 LAP -1.63 LOP 290.76 VP 23.219 GAP -12.83 AZP 89.77 TAL 307.73 TAP 225.71 RCA 137.56 APO 234.37 V2 25.895
RC 301.687 GL 9.20 GP 5.23 ZAL 154.77 ZAP 42.28 ETS 185.34 ZAE 69.08 ETE 181.47 ZAC 87.43 ETC 259.56 CLP 42.01

PLANETOCENTRIC CONIC

C3 33.014 VHL 5.746 DLA 12.73 RAL 173.73 RAD 6568.3 VEL 12.425 PTH 2.25 VHP 4.818 DPA 17.01 RAP 157.42 ECC 1.5433

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 15 50	2744.65	-27.94	77.79	48.74	94.82	21 1 35	2144.6	-26.98	69.26
90.00	11 35 39	4575.16	11.84	193.23	41.42	64.09	12 51 54	3975.2	8.26	186.38
100.00	21 43 45	2461.11	-29.35	56.79	48.59	95.94	22 24 47	1861.1	-28.22	48.17
100.00	12 50 25	4333.93	13.10	174.85	40.77	62.89	14 2 39	3733.9	9.37	168.05
110.00	23 6 49	2201.21	-33.10	36.47	48.01	99.07	23 43 30	1601.2	-31.50	27.62
110.00	13 43 51	4166.59	16.42	160.27	38.89	59.59	14 53 17	3566.6	12.26	153.63

DIFFERENTIAL CORRECTIONS
TDE-3.6324 TRA10.1727 TC3-5.6569 BAU 2.5037
RDE .8736 RRA -.3899 RC3 .4217 FAU .18335
FDE-4.5694 FRA10.0846 FC3-4.8081 BSP 44576
BDE 3.7360 BRA10.1802 BC3 5.6726 FSP 4071

MID-COURSE EXECUTION ACCURACY
SGT12788.2 SGR 1073.6 SG3 1084.6
RRT -.7613 RRF -.7982 RTF .9945
SGB12833.1 R23 .0600 R13 -.9947
SG112814.3 SG2 694.7 THA 176.33

ORBIT DETERMINATION ACCURACY
ST 4784.6 SR 879.4 SS 2293.4
CRT -.8393 CRS .8961 CST -.9934
LSA 5353.5 MSA 515.6 SSA 12.7
EL1 4841.8 EL2 472.5 ALF 171.15

LAUNCH DATE OCT 6 1964 FLIGHT TIME 398.00 ARRIVAL DATE NOV 8 1965

HELIOCENTRIC CONIC DISTANCE 896.527 EARTH TO MARS

RL 149.54 LAL -.00 LOL 12.77 VL 32.581 GAL -10.25 AZL 88.34 HCA 279.19 SMA 186.03 ECC .26248 INC 1.6649 V1 29.796
RP 211.60 LAP -1.64 LOP 291.97 VP 23.259 GAP -13.05 AZP 89.73 TAL 307.09 TAP 226.28 RCA 137.20 APO 234.86 V2 25.926
RC 302.717 GL 9.19 GP 5.14 ZAL 155.26 ZAP 41.38 ETS 185.41 ZAE 67.91 ETE 181.58 ZAC 87.39 ETC 259.51 CLP 41.12

PLANETOCENTRIC CONIC

C3 34.021 VHL 5.833 DLA 12.52 RAL 174.22 RAD 6568.3 VEL 12.466 PTH 2.25 VHP 4.924 DPA 16.81 RAP 157.69 ECC 1.5599

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 19 39	2744.79	-27.94	77.81	49.71	94.81	21 5 23	2144.8	-26.98	69.27
90.00	11 35 43	4590.18	12.28	194.11	42.38	64.28	12 52 13	3990.2	8.72	187.24
100.00	21 47 25	2461.70	-29.35	56.83	49.56	95.92	22 28 27	1861.7	-28.22	48.21
100.00	12 50 37	4348.50	13.56	175.69	41.73	63.10	14 3 6	3748.5	9.84	168.88
110.00	23 10 11	2202.74	-33.12	36.59	48.98	99.00	23 46 54	1602.7	-31.52	27.73
110.00	13 44 21	4180.22	16.89	161.05	39.86	59.83	14 54 1	3580.2	12.76	154.38

DIFFERENTIAL CORRECTIONS
TDE-3.7692 TRA10.4731 TC3-5.5930 BAU 2.5505
RDE .8798 RRA -.3819 RC3 .4045 FAU .17339
FDE-4.4413 FRA 9.6883 FC3-4.4122 BSP 45091
BDE 3.8706 BRA10.4801 BC3 5.6076 FSP 3852

MID-COURSE EXECUTION ACCURACY
SGT12935.7 SGR 1057.0 SG3 1024.3
RRT -.7554 RRF -.7936 RTF .9942
SGB12978.8 R23 .0618 R13 -.9944
SG112960.4 SG2 691.3 THA 176.46

ORBIT DETERMINATION ACCURACY
ST 4872.6 SR 872.0 SS 2235.3
CRT -.8395 CRS .8969 CST -.9932
LSA 5407.1 MSA 512.3 SSA 12.6
EL1 4927.8 EL2 468.5 ALF 171.38

LAUNCH DATE OCT 7 1964 FLIGHT TIME 240.00 ARRIVAL DATE JUN 4 1965

HELIOCENTRIC CONIC DISTANCE 588.705 EARTH TO MARS

RL 149.50 LAL -.00 LOL 13.76 VL 33.122 GAL -8.65 AZL 92.78 HCA 194.10 SMA 195.62 ECC .27743 INC 2.7776 V1 29.805
RP 239.58 LAP .68 LOP 207.84 VP 20.724 GAP 9.61 AZP 87.31 TAL 318.51 TAP 152.60 RCA 141.35 APO 249.89 V2 22.928
RC 171.174 GL -16.54 GP 15.15 ZAL 143.57 ZAP 150.76 ETS 149.76 ZAE 159.14 ETE 46.75 ZAC 103.03 ETC 255.79 CLP 154.69

PLANETOCENTRIC CONIC

C3 31.077 VHL 5.575 DLA -7.81 RAL 156.06 RAD 6568.2 VEL 12.347 PTH 2.23 VHP 6.021 DPA 13.96 RAP 189.32 ECC 1.5115

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 39 8	2078.16	-16.04	33.02	23.05	113.65	22 13 46	1478.2	-12.71	25.93
90.00	7 43 27	5211.22	26.27	234.04	27.67	79.03	9 10 18	4611.2	24.49	225.82
100.00	22 56 43	1827.88	-17.22	14.07	22.50	114.81	23 27 11	1227.9	-13.74	7.01
100.00	9 8 33	4936.73	27.54	213.56	27.38	77.90	10 30 50	4336.7	25.60	205.30
110.00	0 0 18	1641.09	-20.37	358.24	20.85	118.06	0 27 39	1041.1	-16.46	351.30
110.00	10 25 23	4696.29	30.95	194.35	26.42	74.72	11 43 39	4096.3	28.55	185.98

DIFFERENTIAL CORRECTIONS
TDE 1.8601 TRA-4.1257 TC3 1.1516 BAU .5609
RDE .8362 RRA-1.2403 RC3 .7046 FAU .15557
FDE-3.6734 FRA 6.8821 FC3-4.3339 BSP 17745
BDE 2.0394 BRA 4.3081 BC3 1.3501 FSP 2550

MID-COURSE EXECUTION ACCURACY
SGT 4860.2 SGR 1735.3 SG3 813.2
RRT .9674 RRF -.9936 RTF -.9615
SGB 5160.7 R23 -.2235 R13 -.9681
SG1 5144.0 SG2 415.5 THA 19.18

ORBIT DETERMINATION ACCURACY
ST 2303.3 SR 942.5 SS 2259.5
CRT .9857 CRS .9956 CST .9970
LSA 3356.9 MSA 171.5 SSA 18.5
EL1 2484.3 EL2 147.4 ALF 22.05

LAUNCH DATE OCT 7 1964 FLIGHT TIME 242.00 ARRIVAL DATE JUN 6 1965

HELIOCENTRIC CONIC DISTANCE 592.210 EARTH TO MARS

RL 149.50 LAL -.00 LOL 13.76 VL 33.092 GAL -8.55 AZL 92.50 HCA 195.04 SMA 195.05 ECC .27464 INC 2.4968 V1 29.805
RP 239.26 LAP .65 LOP 208.79 VP 20.711 GAP 9.16 AZP 87.59 TAL 318.69 TAP 153.73 RCA 141.48 APO 248.62 V2 22.959
RC 173.485 GL -15.10 GP 14.56 ZAL 143.89 ZAP 150.45 ETS 151.41 ZAE 159.89 ETE 46.94 ZAC 102.51 ETC 255.80 CLP 154.00

PLANETOCENTRIC CONIC

C3 29.937 VHL 5.471 DLA -6.39 RAL 156.37 RAD 6568.2 VEL 12.301 PTH 2.22 VHP 5.878 DPA 13.32 RAP 189.29 ECC 1.4927

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 29 22	2114.08	-17.01	35.22	22.95	112.98	22 4 36	1514.1	-13.75	28.06
90.00	7 55 41	5156.54	25.51	230.22	26.68	77.26	9 21 37	4556.5	23.50	222.13
100.00	22 47 40	1861.47	-18.17	16.11	22.42	114.15	23 18 42	1261.5	-14.76	8.98
100.00	9 20 3	4884.38	26.74	209.88	26.36	76.12	10 41 28	4284.4	24.57	201.75
110.00	23 48 58	1669.56	-21.27	359.96	20.83	117.41	24 16 48	1069.6	-17.43	352.93
110.00	10 35 15	4649.06	30.06	190.97	25.31	72.90	11 52 44	4049.1	27.42	182.77

DIFFERENTIAL CORRECTIONS
TDE 1.8185 TRA-4.0663 TC3 1.2016 BAU .5585
RDE .8017 RRA-1.1858 RC3 .7092 FAU .16189
FDE-3.7155 FRA 7.1691 FC3-4.6815 BSP 17720
BDE 1.9874 BRA 4.2357 BC3 1.3953 FSP 2691

MID-COURSE EXECUTION ACCURACY
SGT 4869.7 SGR 1693.6 SG3 857.3
RRT .9667 RRF -.9927 RTF -.9626
SGB 5155.8 R23 -.2165 R13 -.9689
SG1 5139.5 SG2 410.6 THA 18.71

ORBIT DETERMINATION ACCURACY
ST 2297.9 SR 919.7 SS 2287.9
CRT .9849 CRS .9942 CST .9977
LSA 3366.4 MSA 165.2 SSA 20.7
EL1 2470.6 EL2 148.0 ALF 21.60

LAUNCH DATE OCT 7 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUN 8 1965

HELIOCENTRIC CONIC DISTANCE 595.735 EARTH TO MARS

RL 149.50 LAL -.00 LOL 13.76 VL 33.063 GAL -8.44 AZL 92.25 HCA 195.99 SMA 194.51 ECC .27195 INC 2.2482 V1 29.805
RP 238.95 LAP .62 LOP 209.74 VP 20.701 GAP 8.71 AZP 87.84 TAL 318.87 TAP 154.86 RCA 141.61 APO 247.40 V2 22.991
RC 175.790 GL -13.80 GP 14.05 ZAL 144.12 ZAP 150.06 ETS 152.93 ZAE 160.62 ETE 47.38 ZAC 102.06 ETC 255.82 CLP 153.28

PLANETOCENTRIC CONIC

C3 28.920 VHL 5.378 DLA -5.09 RAL 156.63 RAD 6568.2 VEL 12.259 PTH 2.21 VHP 5.740 DPA 12.76 RAP 189.28 ECC 1.4759

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 20 33	2146.31	-17.86	37.20	22.86	112.35	21 56 20	1546.3	-14.67	29.98
90.00	8 6 37	5106.99	24.72	226.80	25.80	75.73	9 31 44	4507.0	22.51	218.83
100.00	22 39 30	1891.65	-19.00	17.97	22.35	113.52	23 11 2	1291.6	-15.66	10.77
100.00	9 30 21	4836.89	25.92	206.59	25.45	74.57	10 50 58	4236.9	23.55	198.59
110.00	23 42 15	1695.20	-22.07	1.52	20.81	116.79	24 10 30	1095.2	-18.29	354.42
110.00	10 44 6	4606.11	29.16	187.95	24.33	71.31	12 0 52	4006.1	26.33	179.91

DIFFERENTIAL CORRECTIONS
TDE 1.7769 TRA-4.0082 TC3 1.2453 BAU .5551
RDE .7728 RRA-1.1392 RC3 .7143 FAU .16820
FDE-3.7609 FRA 7.4631 FC3-5.0353 BSP 17751
BDE 1.9377 BRA 4.1670 BC3 1.4356 FSP 2846

MID-COURSE EXECUTION ACCURACY
SGT 4874.4 SGR 1659.2 SG3 902.5
RRT .9659 RRF -.9917 RTF -.9636
SGB 5149.1 R23 -.2097 R13 -.9695
SG1 5132.9 SG2 407.8 THA 18.32

ORBIT DETERMINATION ACCURACY
ST 2289.1 SR 901.2 SS 2316.5
CRT .9840 CRS .9927 CST .9982
LSA 3375.2 MSA 161.1 SSA 22.8
EL1 2455.6 EL2 149.6 ALF 21.26

LAUNCH DATE OCT 7 1964 FLIGHT TIME 246.00 ARRIVAL DATE JUN 10 1965

HELIOCENTRIC CONIC DISTANCE 599.277 EARTH TO MARS

RL 149.50 LAL -.00 LOL 13.76 VL 33.035 GAL -8.35 AZL 92.03 HCA 196.94 SMA 193.99 ECC .26936 INC 2.0260 V1 29.805
RP 238.63 LAP .59 LOP 210.69 VP 20.692 GAP 8.27 AZP 88.06 TAL 319.05 TAP 155.99 RCA 141.73 APO 246.24 V2 23.024
RC 178.086 GL -12.61 GP 13.60 ZAL 144.29 ZAP 149.59 ETS 154.33 ZAE 161.33 ETE 48.08 ZAC 101.67 ETC 255.83 CLP 152.54

PLANETOCENTRIC CONIC

C3 28.003 VHL 5.292 DLA -3.90 RAL 156.86 RAD 6568.1 VEL 12.222 PTH 2.20 VHP 5.608 DPA 12.27 RAP 189.26 ECC 1.4609

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 12 31	2175.51	-18.60	39.02	22.79	111.74	21 48 47	1575.5	-15.49	31.73
90.00	8 16 30	5061.70	23.92	223.72	25.01	74.38	9 40 52	4461.7	21.55	215.86
100.00	22 32 2	1919.00	-19.74	19.67	22.29	112.92	23 4 1	1319.0	-16.46	12.40
100.00	9 39 40	4793.45	25.10	203.62	24.63	73.21	10 59 33	4193.4	22.56	195.74
110.00	23 36 6	1718.47	-22.77	2.96	20.80	116.21	24 4 44	1118.5	-19.07	355.78
110.00	10 52 6	4566.74	28.27	185.23	23.45	69.93	12 8 13	3966.7	25.27	177.33

DIFFERENTIAL CORRECTIONS
TDE 1.7388 TRA-3.9475 TC3 1.2899 BAU .5533
RDE .7494 RRA-1.0984 RC3 .7214 FAU .17486
FDE-3.8142 FRA 7.7598 FC3-5.4059 BSP 17728
BDE 1.8935 BRA 4.0975 BC3 1.4779 FSP 3002

MID-COURSE EXECUTION ACCURACY
SGT 4874.6 SGR 1631.7 SG3 949.3
RRT .9652 RRF -.9906 RTF -.9647
SGB 5140.4 R23 -.2026 R13 -.9702
SG1 5124.3 SG2 406.0 THA 18.02

ORBIT DETERMINATION ACCURACY
ST 2279.9 SR 887.0 SS 2347.2
CRT .9831 CRS .9910 CST .9986
LSA 3386.5 MSA 158.4 SSA 24.7
EL1 2441.7 EL2 151.5 ALF 21.02

LAUNCH DATE OCT 7 1964 FLIGHT TIME 248.00 ARRIVAL DATE JUN 12 1965

HELIOCENTRIC CONIC DISTANCE 602.839 EARTH TO MARS

RL 149.50 LAL -.00 LOL 13.76 VL 33.009 GAL -8.25 AZL 91.83 HCA 197.89 SMA 193.49 ECC .26688 INC 1.8260 V1 29.805
RP 238.31 LAP .56 LOP 211.64 VP 20.687 GAP 7.84 AZP 88.26 TAL 319.23 TAP 157.12 RCA 141.86 APO 245.13 V2 23.056
RC 180.373 GL -11.52 GP 13.20 ZAL 144.40 ZAP 149.07 ETS 155.63 ZAE 162.03 ETE 49.04 ZAC 101.32 ETC 255.84 CLP 151.77

PLANETOCENTRIC CONIC

C3 27.169 VHL 5.212 DLA -2.80 RAL 157.06 RAD 6568.1 VEL 12.188 PTH 2.19 VHP 5.480 DPA 11.84 RAP 189.25 ECC 1.4471

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 5 7	2202.17	-19.27	40.70	22.72	111.16	21 41 49	1602.2	-16.22	33.35
90.00	8 25 30	5019.99	23.13	220.92	24.29	73.19	9 49 10	4420.0	20.61	213.16
100.00	22 25 9	1943.99	-20.39	21.23	22.24	112.34	22 57 33	1344.0	-17.18	13.91
100.00	9 48 9	4753.41	24.29	200.92	23.90	72.02	11 7 22	4153.4	21.60	193.16
110.00	23 30 24	1739.74	-23.41	4.28	20.79	115.65	23 59 24	1139.7	-19.76	357.04
110.00	10 59 23	4530.42	27.40	182.76	22.66	68.71	12 14 54	3930.4	24.25	175.00

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.7158 TRA-3.8715 TC3 1.3517 BAU .5584 SGT 4868.0 SGR 1610.6 SG3 997.8 ST 2278.8 SR 877.9 SS 2383.1
RDE .7320 RRA-1.0609 RC3 .7326 FAU .18225 RRT .9654 RRF -.9894 RTF -.9664 CRT .9829 CRS .9893 CST .9991
FDE-3.8846 FRA 8.0496 FC3-5.8075 BSP 17368 SGB 5127.5 R23 -.1920 R13 -.9716 LSA 3408.6 MSA 153.6 SSA 26.6
BDE 1.8654 BRA 4.0143 BC3 1.5375 FSP 3138 SG1 5111.8 SG2 400.2 THA 17.83 EL1 2437.3 EL2 151.1 ALF 20.82

LAUNCH DATE OCT 7 1964 FLIGHT TIME 250.00 ARRIVAL DATE JUN 14 1965

HELIOCENTRIC CONIC DISTANCE 606.416 EARTH TO MARS

RL 149.50 LAL -.00 LOL 13.76 VL 32.983 GAL -8.16 AZL 91.65 HCA 198.84 SMA 193.02 ECC .26449 INC 1.6454 V1 29.805
RP 237.98 LAP .53 LOP 212.60 VP 20.683 GAP 7.40 AZP 88.44 TAL 319.40 TAP 158.24 RCA 141.97 APO 244.07 V2 23.089
RC 182.651 GL -10.51 GP 12.85 ZAL 144.47 ZAP 148.48 ETS 156.84 ZAE 162.71 ETE 50.27 ZAC 101.01 ETC 255.84 CLP 150.97

PLANETOCENTRIC CONIC

C3 26.408 VHL 5.139 DLA -1.79 RAL 157.24 RAD 6568.1 VEL 12.157 PTH 2.18 VHP 5.357 DPA 11.45 RAP 189.24 ECC 1.4346

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 58 15	2226.69	-19.86	42.25	22.65	110.61	21 35 22	1626.7	-16.88	34.84
90.00	8 33 46	4981.36	22.35	218.36	23.64	72.14	9 56 47	4381.4	19.70	210.69
100.00	22 18 46	1966.98	-20.98	22.69	22.19	111.80	22 51 33	1367.0	-17.84	15.30
100.00	9 55 56	4716.31	23.48	198.46	23.23	70.96	11 14 32	4116.3	20.67	190.79
110.00	23 25 6	1759.32	-23.98	5.52	20.78	115.13	23 54 26	1159.3	-20.39	358.21
110.00	11 6 5	4496.74	26.54	180.52	21.95	67.62	12 21 2	3896.7	23.27	172.88

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.6724 TRA-3.8152 TC3 1.3796 BAU .5528 SGT 4858.0 SGR 1593.3 SG3 1047.6 ST 2260.3 SR 869.2 SS 2414.4
RDE .7152 RRA-1.0311 RC3 .7409 FAU .18911 RRT .9640 RRF -.9882 RTF -.9668 CRT .9816 CRS .9874 CST .9993
FDE-3.9436 FRA 8.3652 FC3-6.1998 BSP 17494 SGB 5112.6 R23 -.1870 R13 -.9718 LSA 3415.9 MSA 156.1 SSA 28.0
BDE 1.8189 BRA 3.9521 BC3 1.5659 FSP 3316 SG1 5096.6 SG2 403.8 THA 17.66 EL1 2416.6 EL2 155.2 ALF 20.77

LAUNCH DATE OCT 7 1964 FLIGHT TIME 252.00 ARRIVAL DATE JUN 16 1965

HELIOCENTRIC CONIC DISTANCE 610.009 EARTH TO MARS

RL 149.50 LAL -.00 LOL 13.76 VL 32.959 GAL -8.07 AZL 91.48 HCA 199.80 SMA 192.57 ECC .26219 INC 1.4810 V1 29.805
RP 237.65 LAP .50 LOP 213.56 VP 20.682 GAP 6.98 AZP 88.61 TAL 319.57 TAP 159.37 RCA 142.08 APO 243.06 V2 23.123
RC 184.919 GL -9.58 GP 12.53 ZAL 144.50 ZAP 147.84 ETS 157.96 ZAE 163.39 ETE 51.79 ZAC 100.73 ETC 255.85 CLP 150.14

PLANETOCENTRIC CONIC

C3 25.708 VHL 5.070 DLA -.84 RAL 157.39 RAD 6568.0 VEL 12.128 PTH 2.17 VHP 5.238 DPA 11.11 RAP 189.22 ECC 1.4231

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 51 51	2249.40	-20.40	43.70	22.59	110.08	21 29 20	1649.4	-17.48	36.24
90.00	8 41 24	4945.37	21.58	216.01	23.05	71.20	10 3 49	4345.4	18.81	208.42
100.00	22 12 48	1988.26	-21.51	24.05	22.14	111.27	22 45 56	1388.3	-18.43	16.61
100.00	10 3 8	4681.74	22.70	196.19	22.62	70.01	11 21 9	4081.7	19.77	188.62
110.00	23 20 9	1777.44	-24.50	6.67	20.77	114.62	23 49 47	1177.4	-20.97	359.30
110.00	11 12 16	4465.32	25.71	178.45	21.31	66.66	12 26 41	3865.3	22.33	170.93

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.6329 TRA-3.7545 TC3 1.4095 BAU .5490 SGT 4842.7 SGR 1580.9 SG3 1099.3 ST 2242.1 SR 863.5 SS 2448.0
RDE .7018 RRA-1.0050 RC3 .7513 FAU .19639 RRT .9628 RRF -.9870 RTF -.9673 CRT .9804 CRS .9855 CST .9995
FDE-4.0107 FRA 8.6865 FC3-6.6134 BSP 17531 SGB 5094.3 R23 -.1813 R13 -.9722 LSA 3426.2 MSA 159.1 SSA 29.1
BDE 1.7773 BRA 3.8867 BC3 1.5973 FSP 3495 SG1 5078.0 SG2 407.1 THA 17.57 EL1 2397.3 EL2 159.0 ALF 20.78

LAUNCH DATE OCT 7 1964 FLIGHT TIME 254.00 ARRIVAL DATE JUN 18 1965

HELIOCENTRIC CONIC DISTANCE 613.617 EARTH TO MARS

RL 149.50 LAL -.00 LOL 13.76 VL 32.936 GAL -7.98 AZL 91.33 HCA 200.76 SMA 192.14 ECC .25998 INC 1.3309 V1 29.805
RP 237.31 LAP .47 LOP 214.52 VP 20.683 GAP 6.56 AZP 88.76 TAL 319.74 TAP 160.50 RCA 142.19 APO 242.10 V2 23.157
RC 187.176 GL -8.70 GP 12.25 ZAL 144.49 ZAP 147.15 ETS 159.01 ZAE 164.05 ETE 53.63 ZAC 100.48 ETC 255.86 CLP 149.29

PLANETOCENTRIC CONIC

C3 25.062 VHL 5.006 DLA .05 RAL 157.53 RAD 6568.0 VEL 12.101 PTH 2.17 VHP 5.123 DPA 10.82 RAP 189.20 ECC 1.4125

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 45 50	2270.53	-20.89	45.06	22.53	109.57	21 23 41	1670.5	-18.03	37.55
90.00	8 48 29	4911.68	20.82	213.82	22.50	70.36	10 10 21	4311.7	17.95	206.32
100.00	22 7 12	2008.08	-22.00	25.32	22.09	110.77	22 40 40	1408.1	-18.97	17.83
100.00	10 9 49	4649.36	21.93	194.10	22.06	69.16	11 27 18	4049.4	18.90	186.61
110.00	23 15 30	1794.31	-24.97	7.75	20.75	114.14	23 45 24	1194.3	-21.50	.32
110.00	11 18 0	4435.90	24.90	176.55	20.72	65.79	12 31 56	3835.9	21.42	169.13

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.5948 TRA-3.6906 TC3 1.4369 BAU .5451 SGT 4821.1 SGR 1572.6 SG3 1152.9 ST 2222.4 SR 860.0 SS 2482.7
RDE .6909 RRA -.9824 RC3 .7631 FAU .20394 RRT .9617 RRF -.9857 RTF -.9678 CRT .9793 CRS .9835 CST .9996
FDE-4.0830 FRA 9.0161 FC3-7.0448 BSP 17529 SGB 5071.1 R23 -.1756 R13 -.9727 LSA 3437.4 MSA 162.8 SSA 30.0
BDE 1.7381 BRA 3.8192 BC3 1.6270 FSP 3681 SG1 5054.4 SG2 411.0 THA 17.54 EL1 2377.5 EL2 162.7 ALF 20.86

LAUNCH DATE OCT 7 1964 FLIGHT TIME 256.00 ARRIVAL DATE JUN 20 1965

HELIOCENTRIC CONIC DISTANCE 617.242 EARTH TO MARS

RL 149.50 LAL -.00 LOL 13.76 VL 32.913 GAL -7.90 AZL 91.19 HCA 201.72 SMA 191.73 ECC .25786 INC 1.1929 V1 29.805
RP 236.98 LAP .44 LOP 215.48 VP 20.686 GAP 6.14 AZP 88.89 TAL 319.90 TAP 161.62 RCA 142.29 APO 241.18 V2 23.191
RC 189.421 GL -7.89 GP 12.00 ZAL 144.47 ZAP 146.42 ETS 159.98 ZAE 164.69 ETE 55.80 ZAC 100.26 ETC 255.86 CLP 148.40

PLANETOCENTRIC CONIC

C3 24.464 VHL 4.946 DLA .88 RAL 157.65 RAD 6568.0 VEL 12.077 PTH 2.16 VHP 5.011 DPA 10.56 RAP 189.16 ECC 1.4026

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 40 10	2290.32	-21.33	46.34	22.47	109.08	21 18 20	1690.3	-18.53	38.78
90.00	8 55 7	4880.01	20.08	211.79	22.00	69.61	10 16 27	4280.0	17.13	204.37
100.00	22 1 54	2026.63	-22.44	26.52	22.04	110.29	22 35 41	1426.6	-19.47	18.98
100.00	10 16 3	4618.93	21.18	192.15	21.55	68.40	11 33 2	4018.9	18.06	184.74
110.00	23 11 5	1810.09	-25.41	8.77	20.73	113.68	23 41 15	1210.1	-21.99	1.29
110.00	11 23 22	4408.24	24.12	174.78	20.18	65.01	12 36 50	3808.2	20.55	167.46

DIFFERENTIAL CORRECTIONS
TDE 1.5596 TRA-3.6224 TC3 1.4653 BAU .5424
RDE .6826 RRA -.9625 RC3 .7769 FAU .21198
FDE-4.1639 FRA 9.3514 FC3-7.5016 BSP 17440
BDE 1.7025 BRA 3.7481 BC3 1.6585 FSP 3864

MID-COURSE EXECUTION ACCURACY
SGT 4793.4 SGR 1568.2 SG3 1208.7
RRT .9608 RRF -.9845 RTF -.9684
SGB 5043.5 R23 -.1697 R13 -.9731
SG1 5026.4 SG2 414.9 THA 17.57

ORBIT DETERMINATION ACCURACY
ST 2202.5 SR 858.9 SS 2519.9
CRT .9784 CRS .9814 CST .9997
LSA 3451.1 MSA 167.1 SSA 30.7
EL1 2358.2 EL2 166.0 ALF 20.99

LAUNCH DATE OCT 7 1964 FLIGHT TIME 258.00 ARRIVAL DATE JUN 22 1965

HELIOCENTRIC CONIC DISTANCE 620.880 EARTH TO MARS

RL 149.50 LAL -.00 LOL 13.76 VL 32.892 GAL -7.82 AZL 91.07 HCA 202.69 SMA 191.34 ECC .25583 INC 1.0659 V1 29.805
RP 236.64 LAP .41 LOP 216.45 VP 20.690 GAP 5.73 AZP 89.02 TAL 320.06 TAP 162.74 RCA 142.39 APO 240.30 V2 23.226
RC 191.655 GL -7.12 GP 11.78 ZAL 144.42 ZAP 145.64 ETS 160.90 ZAE 165.31 ETE 58.35 ZAC 100.05 ETC 255.87 CLP 147.49

PLANETOCENTRIC CONIC

C3 23.909 VHL 4.890 DLA 1.66 RAL 157.75 RAD 6568.0 VEL 12.054 PTH 2.15 VHP 4.902 DPA 10.33 RAP 189.12 ECC 1.3935

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 34 47	2308.94	-21.74	47.55	22.41	108.60	21 13 16	1708.9	-19.00	39.95
90.00	9 1 20	4850.13	19.36	209.90	21.54	68.92	10 22 10	4250.1	16.33	202.54
100.00	21 56 54	2044.08	-22.85	27.65	21.99	109.82	22 30 58	1444.1	-19.94	20.07
100.00	10 21 55	4590.22	20.45	190.33	21.08	67.71	11 38 25	3990.2	17.25	183.00
110.00	23 6 55	1824.92	-25.81	9.74	20.71	113.23	23 37 20	1224.9	-22.44	2.20
110.00	11 28 23	4382.14	23.36	173.14	19.69	64.30	12 41 25	3782.1	19.71	165.90

DIFFERENTIAL CORRECTIONS
TDE 1.5239 TRA-3.5530 TC3 1.4890 BAU .5390
RDE .6758 RRA -.9459 RC3 .7917 FAU .22023
FDE-4.2471 FRA 9.7003 FC3-7.9745 BSP 17354
BDE 1.6670 BRA 3.6768 BC3 1.6863 FSP 4062

MID-COURSE EXECUTION ACCURACY
SGT 4759.9 SGR 1567.2 SG3 1266.6
RRT .9598 RRF -.9832 RTF -.9689
SGB 5011.3 R23 -.1638 R13 -.9736
SG1 4993.7 SG2 419.2 THA 17.67

ORBIT DETERMINATION ACCURACY
ST 2179.8 SR 859.3 SS 2557.4
CRT .9774 CRS .9794 CST .9998
LSA 3464.1 MSA 172.2 SSA 31.2
EL1 2337.0 EL2 169.4 ALF 21.19

LAUNCH DATE OCT 7 1964 FLIGHT TIME 260.00 ARRIVAL DATE JUN 24 1965

HELIOCENTRIC CONIC DISTANCE 624.536 EARTH TO MARS

RL 149.50 LAL -.00 LOL 13.76 VL 32.871 GAL -7.74 AZL 90.95 HCA 203.66 SMA 190.97 ECC .25388 INC .9484 V1 29.805
RP 236.29 LAP .38 LOP 217.42 VP 20.697 GAP 5.33 AZP 89.13 TAL 320.21 TAP 163.87 RCA 142.49 APO 239.46 V2 23.261
RC 193.877 GL -6.40 GP 11.59 ZAL 144.35 ZAP 144.82 ETS 161.76 ZAE 165.90 ETE 61.32 ZAC 99.86 ETC 255.88 CLP 146.55

PLANETOCENTRIC CONIC

C3 23.391 VHL 4.836 DLA 2.40 RAL 157.85 RAD 6567.9 VEL 12.032 PTH 2.15 VHP 4.796 DPA 10.14 RAP 189.06 ECC 1.3850

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 29 40	2326.53	-22.12	48.70	22.35	108.15	21 8 26	1726.5	-19.43	41.06
90.00	9 7 12	4821.83	18.66	208.12	21.11	68.31	10 27 34	4221.8	15.55	200.82
100.00	21 52 7	2060.55	-23.22	28.73	21.95	109.37	22 26 28	1460.6	-20.37	21.10
100.00	10 27 26	4563.04	19.74	188.62	20.65	67.08	11 43 29	3963.0	16.46	181.36
110.00	23 2 56	1838.93	-26.18	10.65	20.69	112.81	23 33 35	1238.9	-22.86	3.07
110.00	11 33 7	4357.43	22.62	171.60	19.23	63.66	12 45 44	3757.4	18.90	164.44

DIFFERENTIAL CORRECTIONS
TDE 1.5032 TRA-3.4661 TC3 1.5338 BAU .5426
RDE .6726 RRA -.9297 RC3 .8111 FAU .22965
FDE-4.3535 FRA10.0386 FC3-8.4994 BSP 16881
BDE 1.6468 BRA 3.5886 BC3 1.7351 FSP 4224

MID-COURSE EXECUTION ACCURACY
SGT 4718.4 SGR 1570.2 SG3 1326.9
RRT .9601 RRF -.9820 RTF -.9701
SGB 4972.8 R23 -.1543 R13 -.9747
SG1 4955.2 SG2 418.1 THA 17.85

ORBIT DETERMINATION ACCURACY
ST 2166.4 SR 863.1 SS 2601.5
CRT .9776 CRS .9775 CST .9998
LSA 3489.1 MSA 176.3 SSA 31.2
EL1 2325.8 EL2 169.3 ALF 21.40

LAUNCH DATE OCT 7 1964 FLIGHT TIME 262.00 ARRIVAL DATE JUN 26 1965

HELIOCENTRIC CONIC DISTANCE 628.202 EARTH TO MARS

RL 149.50 LAL -.00 LOL 13.76 VL 32.852 GAL -7.67 AZL 90.84 HCA 204.63 SMA 190.62 ECC .25202 INC .8392 V1 29.805
RP 235.94 LAP .35 LOP 218.39 VP 20.706 GAP 4.93 AZP 89.24 TAL 320.36 TAP 164.99 RCA 142.58 APO 238.66 V2 23.297
RC 196.086 GL -5.72 GP 11.41 ZAL 144.28 ZAP 143.96 ETS 162.57 ZAE 166.45 ETE 64.72 ZAC 99.69 ETC 255.89 CLP 145.58

PLANETOCENTRIC CONIC

C3 22.910 VHL 4.786 DLA 3.10 RAL 157.93 RAD 6567.9 VEL 12.012 PTH 2.14 VHP 4.694 DPA 9.98 RAP 188.98 ECC 1.3770

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 24 47	2343.22	-22.47	49.80	22.30	107.70	21 3 51	1743.2	-19.84	42.11
90.00	9 12 45	4795.00	17.98	206.45	20.72	67.75	10 32 40	4195.0	14.80	199.21
100.00	21 47 35	2076.18	-23.57	29.76	21.90	108.94	22 22 11	1476.2	-20.77	22.09
100.00	10 32 39	4537.27	19.05	187.02	20.25	66.52	11 48 17	3937.3	15.71	179.82
110.00	22 59 8	1852.20	-26.53	11.53	20.67	112.39	23 30 1	1252.2	-23.26	3.90
110.00	11 37 35	4334.02	21.91	170.16	18.81	63.08	12 49 49	3734.0	18.12	163.07

DIFFERENTIAL CORRECTIONS
TDE 1.4639 TRA-3.3949 TC3 1.5439 BAU .5366
RDE .6685 RRA -.9184 RC3 .8279 FAU .23847
FDE-4.4439 FRA10.4114 FC3-9.0116 BSP 16817
BDE 1.6093 BRA 3.5170 BC3 1.7518 FSP 4438

MID-COURSE EXECUTION ACCURACY
SGT 4671.1 SGR 1575.0 SG3 1389.1
RRT .9589 RRF -.9808 RTF -.9703
SGB 4929.4 R23 -.1501 R13 -.9749
SG1 4911.1 SG2 425.1 THA 18.06

ORBIT DETERMINATION ACCURACY
ST 2136.3 SR 866.0 SS 2640.2
CRT .9765 CRS .9754 CST .9998
LSA 3500.0 MSA 183.5 SSA 31.4
EL1 2298.6 EL2 173.4 ALF 21.73

LAUNCH DATE OCT 7 1964 FLIGHT TIME 264.00 ARRIVAL DATE JUN 28 1965

HELIOCENTRIC CONIC DISTANCE 631.880 EARTH TO MARS

RL	149.50	LAL	-.00	LOL	13.76	VL	32.833	GAL	-7.60	AZL	90.74	HCA	205.60	SMA	190.28	ECC	.25023	INC	.7376	V1	29.805
RP	235.59	LAP	.32	LOP	219.36	VP	20.716	GAP	4.54	AZP	89.33	TAL	320.50	TAP	166.11	RCA	142.67	APO	237.89	V2	23.333
RC	198.280	GL	-5.07	GP	11.25	ZAL	144.19	ZAP	143.05	ETS	163.33	ZAE	166.94	ETE	68.59	ZAC	99.53	ETC	255.89	CLP	144.57

PLANETOCENTRIC CONIC

C3	22.461	VHL	4.739	DLA	3.76	RAL	158.01	RAD	6567.9	VEL	11.993	PTH	2.14	VHP	4.594	DPA	9.85	RAP	188.89	ECC	1.3697

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 20 8	2359.11	-22.79	50.85	22.25	107.27	20 59 27	1759.1	-20.21	43.13
90.00	9 18 2	4769.50	17.31	204.87	20.36	67.24	10 37 32	4169.5	14.08	197.69
100.00	21 43 14	2091.06	-23.90	30.75	21.86	108.51	22 18 6	1491.1	-21.15	23.03
100.00	10 37 37	4512.78	18.38	185.51	19.88	66.00	11 52 50	3912.8	14.98	178.37
110.00	22 55 31	1864.82	-26.85	12.37	20.65	111.99	23 26 36	1264.8	-23.63	4.69
110.00	11 41 49	4311.78	21.22	168.80	18.43	62.55	12 53 41	3711.8	17.37	161.78

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.4153	TRA	-3.3307	TC3	1.5312	BAU	.5249	SGT	4617.1	SGR	1581.7	SG3	1453.3	ST	2096.4	SR	869.0	SS	2676.1
RDE	.6643	RRA	-.9110	RC3	.8431	FAU	.24695	RRT	.9569	RRF	-.9796	RTF	-.9698	CRT	.9749	CRS	.9732	CST	.9998
FDE	-4.5257	FRA	10.8130	FC3	-9.5181	BSP	16963	SGB	4880.5	R23	-.1488	R13	-.9747	LSA	3503.4	MSA	191.9	SSA	31.7
BDE	1.5634	BRA	3.4530	BC3	1.7480	FSP	4693	SG1	4860.9	SG2	436.5	THA	18.30	EL1	2262.3	EL2	179.4	ALF	22.15

LAUNCH DATE OCT 7 1964 FLIGHT TIME 266.00 ARRIVAL DATE JUN 30 1965

HELIOCENTRIC CONIC DISTANCE 635.572 EARTH TO MARS

RL	149.50	LAL	-.00	LOL	13.76	VL	32.815	GAL	-7.53	AZL	90.64	HCA	206.58	SMA	189.96	ECC	.24852	INC	.6427	V1	29.805
RP	235.24	LAP	.29	LOP	220.34	VP	20.729	GAP	4.15	AZP	89.42	TAL	320.64	TAP	167.22	RCA	142.75	APO	237.17	V2	23.369
RC	200.460	GL	-4.46	GP	11.11	ZAL	144.09	ZAP	142.11	ETS	164.05	ZAE	167.38	ETE	72.96	ZAC	99.38	ETC	255.90	CLP	143.54

PLANETOCENTRIC CONIC

C3	22.042	VHL	4.695	DLA	4.39	RAL	158.08	RAD	6567.9	VEL	11.976	PTH	2.13	VHP	4.497	DPA	9.75	RAP	188.78	ECC	1.3628

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 15 41	2374.29	-23.10	51.86	22.20	106.85	20 55 15	1774.3	-20.57	44.10
90.00	9 23 4	4745.19	16.66	203.38	20.03	66.77	10 42 9	4145.2	13.38	196.24
100.00	21 39 5	2105.27	-24.20	31.70	21.83	108.10	22 14 10	1505.3	-21.50	23.94
100.00	10 42 21	4489.44	17.72	184.08	19.54	65.53	11 57 10	3889.4	14.27	176.99
110.00	22 52 3	1876.87	-27.16	13.17	20.64	111.60	23 23 20	1276.9	-23.98	5.45
110.00	11 45 52	4290.60	20.54	167.52	18.07	62.06	12 57 22	3690.6	16.65	160.57

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.3781	TRA	-3.2512	TC3	1.5346	BAU	.5187	SGT	4554.2	SGR	1591.7	SG3	1520.2	ST	2062.9	SR	874.5	SS	2717.2
RDE	.6627	RRA	-.9038	RC3	.8625	FAU	.25652	RRT	.9559	RRF	-.9785	RTF	-.9699	CRT	.9741	CRS	.9712	CST	.9997
FDE	-4.6266	FRA	11.2085	FC	-10.0752	BSP	16788	SGB	4824.3	R23	-.1445	R13	-.9749	LSA	3516.0	MSA	199.4	SSA	31.7
BDE	1.5291	BRA	3.3745	BC3	1.7604	FSP	4920	SG1	4803.9	SG2	443.3	THA	18.64	EL1	2233.1	EL2	182.6	ALF	22.60

LAUNCH DATE OCT 7 1964 FLIGHT TIME 268.00 ARRIVAL DATE JUL 2 1965

HELIOCENTRIC CONIC DISTANCE 639.278 EARTH TO MARS

RL	149.50	LAL	-.00	LOL	13.76	VL	32.798	GAL	-7.47	AZL	90.55	HCA	207.56	SMA	189.65	ECC	.24689	INC	.5544	V1	29.805
RP	234.89	LAP	.26	LOP	221.32	VP	20.743	GAP	3.77	AZP	89.51	TAL	320.78	TAP	168.34	RCA	142.83	APO	236.48	V2	23.405
RC	202.623	GL	-3.88	GP	10.98	ZAL	143.99	ZAP	141.13	ETS	164.74	ZAE	167.73	ETE	77.82	ZAC	99.24	ETC	255.91	CLP	142.47

PLANETOCENTRIC CONIC

C3	21.650	VHL	4.653	DLA	5.00	RAL	158.15	RAD	6567.9	VEL	11.959	PTH	2.13	VHP	4.403	DPA	9.67	RAP	188.64	ECC	1.3563

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 11 24	2388.83	-23.38	52.83	22.16	106.45	20 51 13	1788.8	-20.90	45.03
90.00	9 27 53	4721.97	16.04	201.97	19.73	66.35	10 46 35	4122.0	12.70	194.87
100.00	21 35 6	2118.87	-24.48	32.61	21.79	107.71	22 10 25	1518.9	-21.83	24.81
100.00	10 46 52	4467.16	17.09	182.73	19.23	65.10	12 1 19	3867.2	13.59	175.69
110.00	22 48 44	1888.41	-27.44	13.95	20.63	111.23	23 20 12	1288.4	-24.31	6.18
110.00	11 49 43	4270.39	19.90	166.31	17.75	61.61	13 0 53	3670.4	15.95	159.42

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.3407	TRA	-3.1687	TC3	1.5330	BAU	.5120	SGT	4483.6	SGR	1604.0	SG3	1589.4	ST	2026.8	SR	880.9	SS	2758.6
RDE	.6619	RRA	-.8986	RC3	.8827	FAU	.26636	RRT	.9550	RRF	-.9774	RTF	-.9700	CRT	.9735	CRS	.9692	CST	.9996
FDE	-4.7303	FRA	11.6186	FC	-10.6512	BSP	16584	SGB	4761.8	R23	-.1402	R13	-.9751	LSA	3528.4	MSA	207.4	SSA	31.5
BDE	1.4952	BRA	3.2937	BC3	1.7690	FSP	5160	SG1	4740.5	SG2	450.0	THA	19.04	EL1	2202.2	EL2	185.3	ALF	23.11

LAUNCH DATE OCT 7 1964 FLIGHT TIME 270.00 ARRIVAL DATE JUL 4 1965

HELIOCENTRIC CONIC DISTANCE 642.995 EARTH TO MARS

RL	149.50	LAL	-.00	LOL	13.76	VL	32.781	GAL	-7.41	AZL	90.47	HCA	208.54	SMA	189.36	ECC	.24533	INC	.4706	V1	29.805
RP	234.53	LAP	.22	LOP	222.30	VP	20.758	GAP	3.39	AZP	89.59	TAL	320.90	TAP	169.45	RCA	142.90	APO	235.82	V2	23.442
RC	204.770	GL	-3.32	GP	10.87	ZAL	143.89	ZAP	140.10	ETS	165.39	ZAE	167.98	ETE	83.14	ZAC	99.11	ETC	255.92	CLP	141.37

PLANETOCENTRIC CONIC

C3	21.284	VHL	4.613	DLA	5.57	RAL	158.21	RAD	6567.9	VEL	11.944	PTH	2.13	VHP	4.312	DPA	9.62	RAP	188.49	ECC	1.3503

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 7 17	2402.80	-23.65	53.77	22.13	106.05	20 47 20	1802.8	-21.22	45.94
90.00	9 32 29	4699.78	15.42	200.62	19.45	65.96	10 50 49	4099.8	12.05	193.57
100.00	21 31 16	2131.94	-24.75	33.49	21.77	107.32	22 6 48	1531.9	-22.15	25.66
100.00	10 51 12	4445.87	16.47	181.45	18.94	64.70	12 5 18	3845.9	12.93	174.45
110.00	22 45 33	1899.48	-27.72	14.69	20.62	110.86	23 17 12	1299.5	-24.63	6.89
110.00	11 53 25	4251.09	19.27	165.17	17.45	61.20	13 4 16	3651.1	15.28	158.33

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.3028	TRA	-3.0832	TC3	1.5240	BAU	.5042	SGT	4404.2	SGR	1618.5	SG3	1661.1	ST	1988.0	SR	888.6	SS	2802.0
RDE	.6624	RRA	-.8948	RC3	.9042	FAU	.27665	RRT	.9540	RRF	-.9764	RTF	-.9699	CRT	.9730	CRS	.9673	CST	.9995
FDE	-4.8421	FRA	12.0382	FC	-11.2529	BSP	16358	SGB	4692.2	R23	-.1368	R13	-.9752	LSA	3541.9	MSA	215.5	SSA	31.4
BDE	1.4616	BRA	3.2104	BC3	1.7720	FSP	5401	SG1	4669.8	SG2	457.8	THA	19.51	EL1	2169.4	EL2	188.0	ALF	23.69

LAUNCH DATE OCT 7 1964 FLIGHT TIME 272.00 ARRIVAL DATE JUL 6 1965

HELIOCENTRIC CONIC DISTANCE 646.723 EARTH TO MARS

RL 149.50 LAL -.00 LOL 13.76 VL 32.766 GAL -7.35 AZL 90.39 HCA 209.53 SMA 189.08 ECC .24385 INC .3922 V1 29.805
RP 234.17 LAP .19 LOP 223.29 VP 20.776 GAP 3.02 AZP 89.66 TAL 321.03 TAP 170.56 RCA 142.98 APO 235.19 V2 23.479
RC 206.900 GL -2.78 GP 10.77 ZAL 143.78 ZAP 139.03 ETS 166.02 ZAE 168.12 ETE 88.86 ZAC 98.98 ETC 255.94 CLP 140.23

PLANETOCENTRIC CONIC

C3 20.942 VHL 4.576 DLA 6.12 RAL 158.27 RAD 6567.9 VEL 11.930 PTH 2.12 VHP 4.223 DPA 9.59 RAP 188.31 ECC 1.3447

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 3 20	2416.26	-23.90	54.68	22.10	105.66	20 43 37	1816.3	-21.52	46.81
90.00	9 36 55	4678.54	14.83	199.35	19.19	65.60	10 54 54	4078.5	11.41	192.33
100.00	21 27 35	2144.53	-25.00	34.34	21.75	106.94	22 3 20	1544.5	-22.45	26.47
100.00	10 55 21	4425.51	15.88	180.23	18.68	64.34	12 9 7	3825.5	12.30	173.27
110.00	22 42 29	1910.13	-27.97	15.42	20.62	110.50	23 14 19	1310.1	-24.92	7.57
110.00	11 56 57	4232.67	18.66	164.09	17.17	60.83	13 7 30	3632.7	14.63	157.29

DIFFERENTIAL CORRECTIONS
TDE 1.2630 TRA-2.9956 TC3 1.5071 BAU .4953
RDE .6632 RRA -.8931 RC3 .9262 FAU .28716
FDE-4.9531 FRA12.4760 FC-11.8709 BSP 16128
BDE 1.4265 BRA 3.1259 BC3 1.7690 FSP 5659

MID-COURSE EXECUTION ACCURACY
SGT 4316.5 SGR 1634.9 SG3 1735.1
RRT .9529 RRF -.9755 RTF -.9696
SGB 4615.7 R23 -.1339 R13 -.9753
SG1 4592.1 SG2 466.1 THA 20.06

ORBIT DETERMINATION ACCURACY
ST 1944.9 SR 896.6 SS 2844.6
CRT .9725 CRS .9653 CST .9994
LSA 3553.5 MSA 224.1 SSA 31.2
EL1 2133.1 EL2 190.5 ALF 24.35

LAUNCH DATE OCT 7 1964 FLIGHT TIME 274.00 ARRIVAL DATE JUL 8 1965

HELIOCENTRIC CONIC DISTANCE 650.464 EARTH TO MARS

RL 149.50 LAL -.00 LOL 13.76 VL 32.751 GAL -7.29 AZL 90.32 HCA 210.52 SMA 188.82 ECC .24243 INC .3177 V1 29.805
RP 233.80 LAP .16 LOP 224.28 VP 20.794 GAP 2.65 AZP 89.73 TAL 321.14 TAP 171.66 RCA 143.04 APO 234.59 V2 23.517
RC 209.011 GL -2.27 GP 10.69 ZAL 143.67 ZAP 137.93 ETS 166.62 ZAE 168.13 ETE 94.87 ZAC 98.85 ETC 255.95 CLP 139.06

PLANETOCENTRIC CONIC

C3 20.625 VHL 4.541 DLA 6.65 RAL 158.33 RAD 6567.8 VEL 11.917 PTH 2.12 VHP 4.137 DPA 9.59 RAP 188.11 ECC 1.3394

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 59 33	2429.25	-24.13	55.55	22.08	105.28	20 40 2	1829.2	-21.80	47.66
90.00	9 41 11	4658.20	14.26	198.13	18.96	65.27	10 58 50	4058.2	10.80	191.15
100.00	21 24 3	2156.67	-25.24	35.16	21.74	106.57	22 0 0	1556.7	-22.73	27.26
100.00	10 59 22	4406.01	15.30	179.07	18.45	64.00	12 12 48	3806.0	11.68	172.15
110.00	22 39 33	1920.41	-28.21	16.12	20.63	110.15	23 11 33	1320.4	-25.21	8.23
110.00	12 0 22	4215.03	18.07	163.06	16.93	60.48	13 10 37	3615.0	14.00	156.31

DIFFERENTIAL CORRECTIONS
TDE 1.2239 TRA-2.9029 TC3 1.4845 BAU .4859
RDE .6650 RRA -.8926 RC3 .9496 FAU .29813
FDE-5.0725 FRA12.9224 FC-12.3151 BSP 15850
BDE 1.3929 BRA 3.0370 BC3 1.7622 FSP 5919

MID-COURSE EXECUTION ACCURACY
SGT 4218.8 SGR 1653.2 SG3 1811.5
RRT .9519 RRF -.9746 RTF -.9692
SGB 4531.2 R23 -.1312 R13 -.9752
SG1 4506.3 SG2 474.5 THA 20.70

ORBIT DETERMINATION ACCURACY
ST 1900.0 SR 905.7 SS 2889.1
CRT .9722 CRS .9635 CST .9992
LSA 3566.8 MSA 232.7 SSA 31.0
EL1 2096.0 EL2 192.4 ALF 25.09

LAUNCH DATE OCT 7 1964 FLIGHT TIME 276.00 ARRIVAL DATE JUL 10 1965

HELIOCENTRIC CONIC DISTANCE 654.215 EARTH TO MARS

RL 149.50 LAL -.00 LOL 13.76 VL 32.736 GAL -7.24 AZL 90.25 HCA 211.51 SMA 188.57 ECC .24108 INC .2476 V1 29.805
RP 233.44 LAP .13 LOP 225.27 VP 20.815 GAP 2.29 AZP 89.79 TAL 321.25 TAP 172.76 RCA 143.11 APO 234.03 V2 23.555
RC 211.104 GL -1.78 GP 10.61 ZAL 143.56 ZAP 136.78 ETS 167.19 ZAE 167.99 ETE 101.03 ZAC 98.73 ETC 255.97 CLP 137.85

PLANETOCENTRIC CONIC

C3 20.326 VHL 4.508 DLA 7.15 RAL 158.39 RAD 6567.8 VEL 11.904 PTH 2.12 VHP 4.054 DPA 9.60 RAP 187.88 ECC 1.3345

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 55 53	2441.81	-24.36	56.41	22.07	104.91	20 36 35	1841.8	-22.07	48.48
90.00	9 45 19	4638.70	13.70	196.97	18.75	64.97	11 2 37	4038.7	10.21	190.03
100.00	21 20 39	2168.40	-25.47	35.96	21.73	106.20	21 56 48	1568.4	-23.00	28.03
100.00	11 3 14	4387.33	14.74	177.97	18.24	63.70	12 16 21	3787.3	11.09	171.08
110.00	22 36 43	1930.34	-28.45	16.80	20.65	109.81	23 8 54	1330.3	-25.48	8.87
110.00	12 3 39	4198.16	17.50	162.08	16.70	60.16	13 13 37	3598.2	13.40	155.37

DIFFERENTIAL CORRECTIONS
TDE 1.1832 TRA-2.8069 TC3 1.4534 BAU .4754
RDE .6673 RRA -.8936 RC3 .9736 FAU .30937
FDE-5.1937 FRA13.3836 FC-13.1771 BSP 15542
BDE 1.3584 BRA 2.9457 BC3 1.7493 FSP 6189

MID-COURSE EXECUTION ACCURACY
SGT 4111.4 SGR 1673.2 SG3 1890.2
RRT .9507 RRF -.9738 RTF -.9687
SGB 4438.9 R23 -.1289 R13 -.9751
SG1 4412.5 SG2 483.4 THA 21.42

ORBIT DETERMINATION ACCURACY
ST 1851.0 SR 915.3 SS 2933.6
CRT .9719 CRS .9618 CST .9990
LSA 3579.1 MSA 241.5 SSA 30.7
EL1 2055.8 EL2 193.9 ALF 25.92

LAUNCH DATE OCT 7 1964 FLIGHT TIME 278.00 ARRIVAL DATE JUL 12 1965

HELIOCENTRIC CONIC DISTANCE 657.978 EARTH TO MARS

RL 149.50 LAL -.00 LOL 13.76 VL 32.723 GAL -7.19 AZL 90.18 HCA 212.51 SMA 188.33 ECC .23980 INC .1806 V1 29.805
RP 233.07 LAP .10 LOP 226.27 VP 20.836 GAP 1.93 AZP 89.85 TAL 321.35 TAP 173.86 RCA 143.17 APO 233.49 V2 23.593
RC 213.179 GL -1.31 GP 10.54 ZAL 143.45 ZAP 135.59 ETS 167.75 ZAE 167.70 ETE 107.19 ZAC 98.61 ETC 255.99 CLP 136.60

PLANETOCENTRIC CONIC

C3 20.049 VHL 4.478 DLA 7.64 RAL 158.45 RAD 6567.8 VEL 11.892 PTH 2.11 VHP 3.974 DPA 9.65 RAP 187.63 ECC 1.3300

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 52 22	2453.97	-24.57	57.24	22.07	104.55	20 33 16	1854.0	-22.33	49.28
90.00	9 49 18	4619.99	13.16	195.86	18.57	64.70	11 6 18	4020.0	9.64	188.95
100.00	21 17 23	2179.77	-25.68	36.73	21.74	105.85	21 53 43	1579.8	-23.26	28.77
100.00	11 6 58	4369.43	14.20	176.92	18.05	63.42	12 19 48	3769.4	10.51	170.06
110.00	22 34 1	1939.95	-28.67	17.46	20.67	109.47	23 6 21	1340.0	-25.74	9.50
110.00	12 6 50	4182.01	16.95	161.15	16.50	59.86	13 16 32	3582.0	12.82	154.48

DIFFERENTIAL CORRECTIONS
TDE 1.1422 TRA-2.7064 TC3 1.4152 BAU .4642
RDE .6703 RRA -.8957 RC3 .9985 FAU .32100
FDE-5.3200 FRA13.8550 FC-13.8613 BSP 15200
BDE 1.3244 BRA 2.8508 BC3 1.7320 FSP 6464

MID-COURSE EXECUTION ACCURACY
SGT 3993.9 SGR 1694.8 SG3 1971.0
RRT .9495 RRF -.9731 RTF -.9679
SGB 4338.6 R23 -.1270 R13 -.9749
SG1 4310.6 SG2 492.5 THA 22.25

ORBIT DETERMINATION ACCURACY
ST 1799.0 SR 925.6 SS 2978.7
CRT .9718 CRS .9601 CST .9987
LSA 3592.0 MSA 250.4 SSA 30.5
EL1 2013.8 EL2 194.8 ALF 26.84

LAUNCH DATE OCT 7 1964 FLIGHT TIME 280.00 ARRIVAL DATE JUL 14 1965

HELIOCENTRIC CONIC DISTANCE 661.750 EARTH TO MARS

RL 149.50 LAL -.00 LOL 13.76 VL 32.710 GAL -7.14 AZL 90.12 HCA 213.51 SMA 188.10 ECC .23859 INC .1166 V1 29.805
RP 232.70 LAP .07 LOP 227.27 VP 20.859 GAP 1.58 AZP 89.90 TAL 321.45 TAP 174.96 RCA 143.22 APO 232.98 V2 23.631
RC 215.236 GL -.86 GP 10.48 ZAL 143.35 ZAP 134.36 ETS 168.28 ZAE 167.25 ETE 113.18 ZAC 98.49 ETC 256.01 CLP 135.32

PLANETOCENTRIC CONIC

C3 19.791 VHL 4.449 DLA 8.10 RAL 158.51 RAD 6567.8 VEL 11.882 PTH 2.11 VHP 3.896 DPA 9.71 RAP 187.34 ECC 1.3257

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 48 59	2465.76	-24.76	58.04	22.08	104.19	20 30 5	1865.8	-22.57	50.06
90.00	9 53 10	4602.05	12.63	194.81	18.40	64.45	11 9 52	4002.1	9.09	187.92
100.00	21 14 15	2190.78	-25.88	37.49	21.75	105.50	21 50 45	1590.8	-23.51	29.50
100.00	11 10 35	4352.26	13.67	175.91	17.88	63.16	12 23 8	3752.3	9.96	169.09
110.00	22 31 25	1949.27	-28.88	18.10	20.70	109.14	23 3 54	1349.3	-25.99	10.11
110.00	12 9 54	4166.54	16.42	160.27	16.32	59.59	13 19 21	3566.5	12.26	153.63

DIFFERENTIAL CORRECTIONS
TDE 1.0989 TRA-2.6027 TC3 1.3658 BAU .4516
RDE .6735 RRA -.8993 RC3 1.0236 FAU .33279
FDE-5.4466 FRA14.3425 FC-14.5572 BSP 14858
BDE 1.2889 BRA 2.7537 BC3 1.7068 FSP 6755

MID-COURSE EXECUTION ACCURACY
SGT 3865.7 SGR 1717.7 SG3 2053.9
RRT .9481 RRF -.9725 RTF -.9668
SGB 4230.1 R23 -.1260 R13 -.9745
SG1 4200.1 SG2 502.8 THA 23.20

ORBIT DETERMINATION ACCURACY
ST 1742.4 SR 936.2 SS 3023.5
CRT .9718 CRS .9585 CST .9985
LSA 3603.6 MSA 259.4 SSA 30.2
EL1 1968.3 EL2 195.5 ALF 27.87

LAUNCH DATE OCT 7 1964 FLIGHT TIME 282.00 ARRIVAL DATE JUL 16 1965

HELIOCENTRIC CONIC DISTANCE 665.534 EARTH TO MARS

RL 149.50 LAL -.00 LOL 13.76 VL 32.697 GAL -7.10 AZL 90.06 HCA 214.51 SMA 187.89 ECC .23744 INC .0551 V1 29.805
RP 232.32 LAP .03 LOP 228.27 VP 20.884 GAP 1.23 AZP 89.95 TAL 321.54 TAP 176.05 RCA 143.27 APO 232.50 V2 23.670
RC 217.275 GL -.42 GP 10.42 ZAL 143.24 ZAP 133.09 ETS 168.80 ZAE 166.65 ETE 118.89 ZAC 98.36 ETC 256.03 CLP 133.99

PLANETOCENTRIC CONIC

C3 19.553 VHL 4.422 DLA 8.55 RAL 158.57 RAD 6567.8 VEL 11.872 PTH 2.11 VHP 3.821 DPA 9.80 RAP 187.03 ECC 1.3218

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 45 44	2477.21	-24.95	58.83	22.10	103.84	20 27 1	1877.2	-22.81	50.82
90.00	9 56 54	4584.84	12.12	193.80	18.26	64.21	11 13 19	3984.8	8.56	186.93
100.00	21 11 13	2201.48	-26.08	38.23	21.77	105.16	21 47 55	1601.5	-23.74	30.21
100.00	11 14 6	4335.81	13.16	174.96	17.73	62.92	12 26 22	3735.8	9.43	168.16
110.00	22 28 56	1958.32	-29.08	18.73	20.74	108.82	23 1 34	1358.3	-26.23	10.70
110.00	12 12 53	4151.74	15.91	159.43	16.17	59.34	13 22 5	3551.7	11.72	152.82

DIFFERENTIAL CORRECTIONS
TDE 1.0554 TRA-2.4937 TC3 1.3089 BAU .4386
RDE .6774 RRA -.9037 RC3 1.0495 FAU .34496
FDE-5.5785 FRA14.8387 FC-15.2737 BSP 14463
BDE 1.2541 BRA 2.6524 BC3 1.6777 FSP 7048

MID-COURSE EXECUTION ACCURACY
SGT 3726.5 SGR 1741.9 SG3 2138.7
RRT .9465 RRF -.9719 RTF -.9654
SGB 4113.5 R23 -.1252 R13 -.9740
SG1 4081.4 SG2 513.1 THA 24.27

ORBIT DETERMINATION ACCURACY
ST 1683.0 SR 947.3 SS 3069.0
CRT .9719 CRS .9569 CST .9981
LSA 3616.0 MSA 268.4 SSA 29.9
EL1 1921.4 EL2 195.2 ALF 29.01

LAUNCH DATE OCT 7 1964 FLIGHT TIME 284.00 ARRIVAL DATE JUL 18 1965

HELIOCENTRIC CONIC DISTANCE 669.327 EARTH TO MARS

RL 149.50 LAL -.00 LOL 13.76 VL 32.686 GAL -7.06 AZL 90.00 HCA 215.52 SMA 187.68 ECC .23635 INC .0000 V1 29.805
RP 231.95 LAP .00 LOP 229.28 VP 20.910 GAP .89 AZP 90.00 TAL 321.62 TAP 177.13 RCA 143.32 APO 232.04 V2 23.709
RC 219.295 GL -.00 GP 10.37 ZAL 143.15 ZAP 131.77 ETS 169.31 ZAE 165.90 ETE 124.22 ZAC 98.24 ETC 256.05 CLP 132.63

PLANETOCENTRIC CONIC

C3 19.332 VHL 4.397 DLA 8.97 RAL 158.63 RAD 6567.8 VEL 11.862 PTH 2.10 VHP 3.748 DPA 9.90 RAP 186.68 ECC 1.3182

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 42 36	2488.34	-25.13	59.59	22.13	103.49	20 24 5	1888.3	-23.03	51.56
90.00	10 0 33	4568.33	11.63	192.83	18.14	64.00	11 16 41	3968.3	8.04	185.99
100.00	21 8 20	2211.87	-26.26	38.94	21.81	104.82	21 45 11	1611.9	-23.97	30.90
100.00	11 17 30	4320.03	12.67	174.04	17.61	62.70	12 29 30	3720.0	8.91	167.27
110.00	22 26 32	1967.11	-29.27	19.34	20.79	108.51	22 59 20	1367.1	-26.46	11.28
110.00	12 15 47	4137.56	15.42	158.62	16.03	59.11	13 24 44	3537.6	11.21	152.05

DIFFERENTIAL CORRECTIONS
TDE 1.0111 TRA-2.3797 TC3 1.2430 BAU .4249
RDE .6817 RRA -.9091 RC3 1.0757 FAU .35733
FDE-5.7129 FRA15.3450 FC-16.0022 BSP 14032
BDE 1.2194 BRA 2.5475 BC3 1.6439 FSP 7349

MID-COURSE EXECUTION ACCURACY
SGT 3575.9 SGR 1767.0 SG3 2225.1
RRT .9448 RRF -.9714 RTF -.9637
SGB 3988.7 R23 -.1248 R13 -.9735
SG1 3954.2 SG2 523.7 THA 25.51

ORBIT DETERMINATION ACCURACY
ST 1619.9 SR 958.8 SS 3114.5
CRT .9723 CRS .9555 CST .9977
LSA 3628.4 MSA 277.5 SSA 29.6
EL1 1872.4 EL2 193.9 ALF 30.28

LAUNCH DATE OCT 7 1964 FLIGHT TIME 286.00 ARRIVAL DATE JUL 20 1965

HELIOCENTRIC CONIC DISTANCE 673.131 EARTH TO MARS

RL 149.50 LAL -.00 LOL 13.76 VL 32.674 GAL -7.02 AZL 89.95 HCA 216.53 SMA 187.49 ECC .23533 INC .0542 V1 29.805
RP 231.57 LAP -.03 LOP 230.29 VP 20.937 GAP .55 AZP 90.04 TAL 321.69 TAP 178.22 RCA 143.37 APO 231.61 V2 23.748
RC 221.297 GL .40 GP 10.33 ZAL 143.05 ZAP 130.41 ETS 169.80 ZAE 165.01 ETE 129.12 ZAC 98.11 ETC 256.08 CLP 131.22

PLANETOCENTRIC CONIC

C3 19.128 VHL 4.374 DLA 9.38 RAL 158.70 RAD 6567.8 VEL 11.854 PTH 2.10 VHP 3.679 DPA 10.03 RAP 186.30 ECC 1.3148

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 39 36	2499.17	-25.30	60.34	22.17	103.16	20 21 15	1899.2	-23.24	52.28
90.00	10 4 5	4552.50	11.16	191.91	18.04	63.81	11 19 57	3952.5	7.55	185.09
100.00	21 5 33	2221.98	-26.43	39.65	21.86	104.49	21 42 35	1622.0	-24.18	31.57
100.00	11 20 49	4304.92	12.20	173.17	17.50	62.50	12 32 34	3704.9	8.42	166.42
110.00	22 24 16	1975.66	-29.45	19.94	20.85	108.19	22 57 11	1375.7	-26.68	11.85
110.00	12 18 36	4124.01	14.94	157.86	15.92	58.89	13 27 20	3524.0	10.71	151.31

DIFFERENTIAL CORRECTIONS
TDE .9651 TRA-2.2609 TC3 1.1666 BAU .4104
RDE .6862 RRA -.9154 RC3 1.1022 FAU .36990
FDE-5.8484 FRA15.8617 FC-16.7418 BSP 13584
BDE 1.1842 BRA 2.4392 BC3 1.6049 FSP 7660

MID-COURSE EXECUTION ACCURACY
SGT 3413.6 SGR 1793.1 SG3 2313.1
RRT .9426 RRF -.9709 RTF -.9614
SGB 3855.8 R23 -.1250 R13 -.9727
SG1 3818.5 SG2 535.2 THA 26.91

ORBIT DETERMINATION ACCURACY
ST 1552.6 SR 970.5 SS 3159.5
CRT .9728 CRS .9540 CST .9972
LSA 3640.3 MSA 286.7 SSA 29.3
EL1 1820.9 EL2 191.7 ALF 31.70

LAUNCH DATE OCT 7 1964 FLIGHT TIME 288.00 ARRIVAL DATE JUL 22 1965

HELIOCENTRIC CONIC DISTANCE 676.943 EARTH TO MARS

RL	149.50	LAL	-.00	LOL	13.76	VL	32.664	GAL	-6.99	AZL	89.89	HCA	217.54	SMA	187.30	ECC	.23436	INC	.1063
RP	231.20	LAP	-.06	LOP	231.30	VP	20.965	GAP	.22	AZP	90.08	TAL	321.76	TAP	179.29	RCA	143.41	APO	231.20
RC	223.281	GL	.79	GP	10.29	ZAL	142.97	ZAP	129.01	ETS	170.28	ZAE	163.99	ETE	133.58	ZAC	97.98	ETC	256.11

V1	29.805	V2	23.788	CLP	129.77														

PLANETOCENTRIC CONIC

C3	18.941	VHL	4.352	DLA	9.78	RAL	158.77	RAD	6567.8	VEL	11.846	PTH	2.10	VHP	3.612	DPA	10.17	RAP	185.89

ECC	1.3117																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 36 43	2509.71	-25.46	61.07	22.22	102.82	20 18 33	1909.7	-23.44	52.98
90.00	10 7 31	4537.32	10.70	191.03	17.96	63.63	11 23 9	3937.3	7.07	184.23
100.00	21 2 53	2231.82	-26.60	40.33	21.91	104.17	21 40 5	1631.8	-24.39	32.23
100.00	11 24 3	4290.44	11.74	172.34	17.42	62.31	12 35 33	3690.4	7.94	165.61
110.00	22 22 5	1983.98	-29.63	20.53	20.93	107.89	22 55 9	1384.0	-26.90	12.40
110.00	12 21 20	4111.05	14.48	157.13	15.83	58.69	13 29 51	3511.0	10.23	150.61

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.9182	TRA	-2.1368	TC3	1.0805	BAU	.3957	SGT	3239.5	SGR	1820.0	SG3	2402.4	ST	1481.7	SR	982.7	SS	3205.1
RDE	.6912	RRA	-.9224	RC3	1.1290	FAU	.38276	RRT	.9400	RRF	-.9705	RTF	-.9585	CRT	.9735	CRS	.9527	CST	.9966
FDE	-5.9885	FRA	16.3846	FC	-17.4948	BSP	13092	SGB	3715.8	R23	-.1258	R13	-.9718	LSA	3653.2	MSA	295.7	SSA	29.0
BDE	1.1493	BRA	2.3274	BC3	1.5627	FSP	7968	SG1	3675.2	SG2	547.5	THA	28.53	EL1	1767.9	EL2	188.3	ALF	33.27

LAUNCH DATE OCT 7 1964 FLIGHT TIME 290.00 ARRIVAL DATE JUL 24 1965

HELIOCENTRIC CONIC DISTANCE 680.766 EARTH TO MARS

RL	149.50	LAL	-.00	LOL	13.76	VL	32.654	GAL	-6.95	AZL	89.84	HCA	218.55	SMA	187.13	ECC	.23346	INC	.1561
RP	230.82	LAP	-.10	LOP	232.31	VP	20.994	GAP	-.11	AZP	90.12	TAL	321.81	TAP	180.37	RCA	143.44	APO	230.82
RC	225.247	GL	1.17	GP	10.26	ZAL	142.89	ZAP	127.57	ETS	170.75	ZAE	162.86	ETE	137.61	ZAC	97.85	ETC	256.15

V1	29.805	V2	23.827	CLP	128.28														

PLANETOCENTRIC CONIC

C3	18.770	VHL	4.332	DLA	10.16	RAL	158.85	RAD	6567.8	VEL	11.839	PTH	2.10	VHP	3.548	DPA	10.34	RAP	185.45

ECC	1.3089																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 33 58	2519.97	-25.62	61.78	22.28	102.50	20 15 58	1920.0	-23.64	53.67
90.00	10 10 53	4522.78	10.26	190.19	17.90	63.46	11 26 16	3922.8	6.62	183.41
100.00	21 0 20	2241.40	-26.76	41.00	21.98	103.85	21 37 42	1641.4	-24.59	32.87
100.00	11 27 11	4276.59	11.30	171.54	17.35	62.14	12 38 28	3676.6	7.49	164.83
110.00	22 20 1	1992.09	-29.79	21.10	21.01	107.59	22 53 13	1392.1	-27.10	12.94
110.00	12 24 1	4098.66	14.04	156.44	15.75	58.51	13 32 19	3498.7	9.77	149.94

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8702	TRA	-2.0068	TC3	.9840	BAU	.3809	SGT	3053.1	SGR	1847.2	SG3	2492.4	ST	1406.9	SR	994.9	SS	3250.3
RDE	.6965	RRA	-.9298	RC3	1.1559	FAU	.39574	RRT	.9366	RRF	-.9701	RTF	-.9547	CRT	.9745	CRS	.9515	CST	.9959
FDE	-6.1306	FRA	16.9110	FC	-18.2534	BSP	12573	SGB	3568.4	R23	-.1272	R13	-.9707	LSA	3666.0	MSA	304.8	SSA	28.7
BDE	1.1146	BRA	2.2117	BC3	1.5180	FSP	8282	SG1	3524.1	SG2	560.7	THA	30.39	EL1	1713.4	EL2	183.5	ALF	35.03

LAUNCH DATE OCT 7 1964 FLIGHT TIME 292.00 ARRIVAL DATE JUL 26 1965

HELIOCENTRIC CONIC DISTANCE 684.598 EARTH TO MARS

RL	149.50	LAL	-.00	LOL	13.76	VL	32.644	GAL	-6.92	AZL	89.79	HCA	219.57	SMA	186.97	ECC	.23261	INC	.2049
RP	230.43	LAP	-.13	LOP	233.33	VP	21.025	GAP	-.43	AZP	90.16	TAL	321.86	TAP	181.43	RCA	143.48	APO	230.46
RC	227.193	GL	1.54	GP	10.23	ZAL	142.81	ZAP	126.08	ETS	171.21	ZAE	161.61	ETE	141.22	ZAC	97.70	ETC	256.18

V1	29.805	V2	23.867	CLP	126.75														

PLANETOCENTRIC CONIC

C3	18.614	VHL	4.314	DLA	10.52	RAL	158.93	RAD	6567.8	VEL	11.832	PTH	2.10	VHP	3.487	DPA	10.52	RAP	184.97

ECC	1.3063																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 31 20	2529.96	-25.76	62.48	22.36	102.18	20 13 30	1930.0	-23.83	54.35
90.00	10 14 9	4508.87	9.84	189.39	17.86	63.31	11 29 18	3908.9	6.18	182.62
100.00	20 57 55	2250.73	-26.91	41.65	22.07	103.54	21 35 26	1650.7	-24.78	33.50
100.00	11 30 15	4263.34	10.88	170.79	17.31	61.99	12 41 19	3663.3	7.05	164.09
110.00	22 18 3	1999.99	-29.96	21.66	21.11	107.29	22 51 23	1400.0	-27.30	13.47
110.00	12 26 37	4086.85	13.62	155.79	15.70	58.34	13 34 44	3486.8	9.34	149.31

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8202	TRA	-1.8714	TC3	.8758	BAU	.3661	SGT	2854.3	SGR	1874.5	SG3	2582.7	ST	1327.4	SR	1007.1	SS	3294.2
RDE	.7019	RRA	-.9378	RC3	1.1821	FAU	.40866	RRT	.9323	RRF	-.9698	RTF	-.9497	CRT	.9756	CRS	.9502	CST	.9950
FDE	-6.2708	FRA	17.4449	FC	-19.0069	BSP	12034	SGB	3414.8	R23	-.1291	R13	-.9694	LSA	3678.1	MSA	313.8	SSA	28.4
BDE	1.0795	BRA	2.0933	BC3	1.4711	FSP	8606	SG1	3366.1	SG2	575.0	THA	32.54	EL1	1656.7	EL2	177.2	ALF	37.00

LAUNCH DATE OCT 7 1964 FLIGHT TIME 294.00 ARRIVAL DATE JUL 28 1965

HELIOCENTRIC CONIC DISTANCE 688.438 EARTH TO MARS

RL	149.50	LAL	-.00	LOL	13.76	VL	32.635	GAL	-6.90	AZL	89.75	HCA	220.59	SMA	186.81	ECC	.23182	INC	.2508
RP	230.05	LAP	-.16	LOP	234.35	VP	21.056	GAP	-.75	AZP	90.19	TAL	321.90	TAP	182.50	RCA	143.50	APO	230.12
RC	229.120	GL	1.89	GP	10.20	ZAL	142.75	ZAP	124.54	ETS	171.67	ZAE	160.27	ETE	144.47	ZAC	97.56	ETC	256.22

V1	29.805	V2	23.907	CLP	125.18														

PLANETOCENTRIC CONIC

C3	18.473	VHL	4.298	DLA	10.87	RAL	159.01	RAD	6567.7	VEL	11.826	PTH	2.09	VHP	3.429	DPA	10.73	RAP	184.46

ECC	1.3040																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 28 49	2539.70	-25.90	63.16	22.45	101.86	20 11 9	1939.7	-24.00	55.00
90.00	10 17 20	4495.57	9.43	188.62	17.84	63.18	11 32 16	3895.6	5.75	181.87
100.00	20 55 36	2259.82	-27.05	42.29	22.16	103.23	21 33 16	1659.8	-24.96	34.11
100.00	11 33 15	4250.67	10.47	170.07	17.29	61.84	12 44 5	3650.7	6.63	163.39
110.00	22 16 11	2007.68	-30.11	22.20	21.22	107.00	22 49 38	1407.7	-27.49	13.99
110.00	12 29 10	4075.58	13.22	155.16	15.67	58.19	13 37 5	3475.6	8.92	148.71

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.7694	TRA	-1.7300	TC3	.7575	BAU	.3522	SGT	2643.9	SGR	1902.0	SG3	2673.2	ST	1244.4	SR	1019.5	SS	3338.2
RDE	.7077	RRA	-.9460	RC3	1.2084	FAU	.42177	RRT	.9265	RRF	-.9694	RTF	-.9430	CRT	.9771	CRS	.9491	CST	.9939
FDE	-6.4150	FRA	17.9761	FC	-19.7664	BSP	11461	SGB	3257.0	R23	-.1314	R13	-.9678	LSA	3691.4	MSA	322.7	SSA	28.1
BDE	1.0453	BRA	1.9717	BC3	1.4262	FSP	8921	SG1	3203.0	SG2	590.8	THA	35.05	EL1	1599.8	EL2	168.9	ALF	39.20

LAUNCH DATE OCT 7 1964 FLIGHT TIME 296.00 ARRIVAL DATE JUL 30 1965

DISTANCE 692.289

HELIOCENTRIC CONIC

RL	149.50	LAL	-.00	LOL	13.76	VL	32.627	GAL	-6.87	AZL	89.70	HCA	221.62	SMA	186.66	ECC	.23108	INC	.2960	V1	29.805
RP	229.67	LAP	-.20	LOP	235.38	VP	21.089	GAP	-1.07	AZP	90.22	TAL	321.93	TAP	183.55	RCA	143.53	APO	229.80	V2	23.948
RC	231.027	GL	2.24	GP	10.17	ZAL	142.69	ZAP	122.97	ETS	172.12	ZAE	158.83	ETE	147.38	ZAC	97.40	ETC	256.27	CLP	123.56

EARTH TO MARS

PLANETOCENTRIC CONIC

C3	18.347	VHL	4.283	DLA	11.20	RAL	159.10	RAD	6567.7	VEL	11.821	PTH	2.09	VHP	3.374	DPA	10.95	RAP	183.91	ECC	1.3019

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 26 26	2549.19	-26.03	63.82	22.55	101.56	20 8 55	1949.2	-24.18	55.65
90.00	10 20 27	4482.87	9.04	187.90	17.84	63.05	11 35 10	3882.9	5.35	181.16
100.00	20 53 24	2268.67	-27.19	42.91	22.27	102.93	21 31 13	1668.7	-25.14	34.71
100.00	11 36 10	4238.61	10.09	169.38	17.28	61.71	12 46 49	3638.6	6.23	162.72
110.00	22 14 25	2015.19	-30.26	22.74	21.35	106.72	22 48 0	1415.2	-27.67	14.50
110.00	12 31 39	4064.86	12.83	154.57	15.66	58.04	13 39 24	3464.9	8.52	148.13

DIFFERENTIAL CORRECTIONS

TDE	.7198	TRA	-1.5797	TC3	.6346	BAU	.3407
RDE	.7143	RRA	-.9534	RC3	1.2358	FAU	.43547
FDE	-6.5715	FRA	18.4908	FC	-20.5490	BSP	10809
BDE	1.0141	BRA	1.8451	BC3	1.3892	FSP	9212

MID-COURSE EXECUTION ACCURACY

SGT	2421.4	SGR	1929.8	SG3	2763.4		
RRT	.9194	RRF	-.9692	RTF	-.9342		
SGB	3096.3	R23	-.1331	R13	-.9662		
SG1	3036.6	SG2	605.2	THA	38.01		

ORBIT DETERMINATION ACCURACY

ST	1159.7	SR	1032.5	SS	3383.7
CRT	.9792	CRS	.9482	CST	.9924
LSA	3708.1	MSA	331.7	SSA	27.7
EL1	1544.8	EL2	157.2	ALF	41.61

LAUNCH DATE OCT 7 1964 FLIGHT TIME 298.00 ARRIVAL DATE AUG 1 1965

DISTANCE 696.147

HELIOCENTRIC CONIC

RL	149.50	LAL	-.00	LOL	13.76	VL	32.618	GAL	-6.85	AZL	89.66	HCA	222.65	SMA	186.53	ECC	.23040	INC	.3385	V1	29.805
RP	229.28	LAP	-.23	LOP	236.41	VP	21.122	GAP	-1.38	AZP	90.25	TAL	321.96	TAP	184.60	RCA	143.55	APO	229.50	V2	23.988
RC	232.913	GL	2.57	GP	10.14	ZAL	142.64	ZAP	121.35	ETS	172.56	ZAE	157.30	ETE	150.00	ZAC	97.24	ETC	256.32	CLP	121.90

EARTH TO MARS

PLANETOCENTRIC CONIC

C3	18.235	VHL	4.270	DLA	11.52	RAL	159.20	RAD	6567.7	VEL	11.816	PTH	2.09	VHP	3.321	DPA	11.18	RAP	183.33	ECC	1.3001

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 24 10	2558.42	-26.16	64.47	22.67	101.26	20 6 48	1958.4	-24.34	56.27
90.00	10 23 30	4470.77	8.66	187.20	17.86	62.94	11 38 1	3870.8	4.97	180.48
100.00	20 51 20	2277.30	-27.32	43.52	22.40	102.63	21 29 17	1677.3	-25.30	35.30
100.00	11 39 1	4227.12	9.71	168.73	17.30	61.59	12 49 28	3627.1	5.84	162.08
110.00	22 12 45	2022.51	-30.40	23.26	21.48	106.44	22 46 28	1422.5	-27.85	14.99
110.00	12 34 5	4054.67	12.47	154.01	15.66	57.91	13 41 40	3454.7	8.14	147.59

DIFFERENTIAL CORRECTIONS

TDE	.6650	TRA	-1.4264	TC3	.4919	BAU	.3298
RDE	.7201	RRA	-.9618	RC3	1.2603	FAU	.44825
FDE	-6.7118	FRA	19.0182	FC	-21.2818	BSP	10228
BDE	.9802	BRA	1.7204	BC3	1.3529	FSP	9535

MID-COURSE EXECUTION ACCURACY

SGT	2188.2	SGR	1956.2	SG3	2852.1		
RRT	.9081	RRF	-.9689	RTF	-.9212		
SGB	2935.1	R23	-.1360	R13	-.9644		
SG1	2867.8	SG2	625.2	THA	41.47		

ORBIT DETERMINATION ACCURACY

ST	1067.6	SR	1044.4	SS	3424.9
CRT	.9813	CRS	.9472	CST	.9905
LSA	3720.7	MSA	340.4	SSA	27.4
EL1	1486.5	EL2	144.5	ALF	44.36

LAUNCH DATE OCT 7 1964 FLIGHT TIME 300.00 ARRIVAL DATE AUG 3 1965

DISTANCE 700.014

HELIOCENTRIC CONIC

RL	149.50	LAL	-.00	LOL	13.76	VL	32.611	GAL	-6.84	AZL	89.62	HCA	223.68	SMA	186.40	ECC	.22977	INC	.3798	V1	29.805
RP	228.89	LAP	-.26	LOP	237.44	VP	21.157	GAP	-1.68	AZP	90.27	TAL	321.97	TAP	185.65	RCA	143.57	APO	229.23	V2	24.029
RC	234.778	GL	2.89	GP	10.11	ZAL	142.60	ZAP	119.69	ETS	172.99	ZAE	155.70	ETE	152.35	ZAC	97.07	ETC	256.38	CLP	120.21

EARTH TO MARS

PLANETOCENTRIC CONIC

C3	18.136	VHL	4.259	DLA	11.83	RAL	159.30	RAD	6567.7	VEL	11.812	PTH	2.09	VHP	3.272	DPA	11.44	RAP	182.71	ECC	1.2985

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 22 1	2567.42	-26.27	65.10	22.80	100.96	20 4 48	1967.4	-24.50	56.89
90.00	10 26 28	4459.25	8.31	186.55	17.90	62.83	11 40 47	3859.2	4.60	179.83
100.00	20 49 22	2285.70	-27.44	44.11	22.53	102.34	21 27 28	1685.7	-25.46	35.87
100.00	11 41 48	4216.20	9.36	168.11	17.33	61.48	12 52 4	3616.2	5.48	161.47
110.00	22 11 12	2029.64	-30.54	23.77	21.63	106.17	22 45 2	1429.6	-28.02	15.48
110.00	12 36 28	4045.02	12.12	153.48	15.69	57.79	13 43 53	3445.0	7.78	147.08

DIFFERENTIAL CORRECTIONS

TDE	.6105	TRA	-1.2655	TC3	.3426	BAU	.3224
RDE	.7265	RRA	-.9695	RC3	1.2848	FAU	.46125
FDE	-6.8592	FRA	19.5281	FC	-22.0176	BSP	9600
BDE	.9490	BRA	1.5942	BC3	1.3297	FSP	9832

MID-COURSE EXECUTION ACCURACY

SGT	1945.6	SGR	1982.2	SG3	2939.4		
RRT	.8921	RRF	-.9686	RTF	-.9026		
SGB	2777.5	R23	-.1375	R13	-.9626		
SG1	2701.5	SG2	645.1	THA	45.60		

ORBIT DETERMINATION ACCURACY

ST	973.2	SR	1056.6	SS	3466.4
CRT	.9840	CRS	.9463	CST	.9879
LSA	3735.9	MSA	349.0	SSA	27.0
EL1	1430.7	EL2	128.0	ALF	47.39

LAUNCH DATE OCT 7 1964 FLIGHT TIME 302.00 ARRIVAL DATE AUG 5 1965

DISTANCE 703.890

HELIOCENTRIC CONIC

RL	149.50	LAL	-.00	LOL	13.76	VL	32.604	GAL	-6.82	AZL	89.58	HCA	224.72	SMA	186.27	ECC	.22920	INC	.4201	V1	29.805
RP	228.51	LAP	-.30	LOP	238.48	VP	21.192	GAP	-1.98	AZP	90.30	TAL	321.97	TAP	186.69	RCA	143.58	APO	228.97	V2	24.070
RC	236.623	GL	3.20	GP	10.08	ZAL	142.57	ZAP	117.99	ETS	173.43	ZAE	154.03	ETE	154.48	ZAC	96.89	ETC	256.43	CLP	118.47

EARTH TO MARS

PLANETOCENTRIC CONIC

C3	18.052	VHL	4.249	DLA	12.12	RAL	159.41	RAD	6567.7	VEL	11.808	PTH	2.09	VHP	3.226	DPA	11.70	RAP	182.06	ECC	1.2971

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 20 0	2576.17	-26.39	65.72	22.95	100.67	20 2 56	1976.2	-24.65	57.48
90.00	10 29 22	4448.31	7.97	185.92	17.95	62.74	11 43 30	3848.3	4.25	179.21
100.00	20 47 32	2293.88	-27.56	44.69	22.69	102.06	21 25 46	1693.9	-25.62	36.43
100.00	11 44 31	4205.84	9.02	167.53	17.39	61.38	12 54 37	3605.8	5.13	160.90
110.00	22 9 45	2036.60	-30.67	24.27	21.80	105.90	22 43 42	1436.6	-28.18	15.95
110.00	12 38 47	4035.88	11.78	152.98	15.74	57.68	13 46 3	3435.9	7.43	146.59

DIFFERENTIAL CORRECTIONS

TDE	.5536	TRA	-1.0985	TC3	.1806	BAU	.3186
RDE	.7327	RRA	-.9770	RC3	1.3078	FAU	.47385
FDE	-6.9993	FRA	20.0279	FC	-22.7251	BSP	8999
BDE	.9183	BRA	1.4701	BC3	1.3202	FSP	10133

MID-COURSE EXECUTION ACCURACY

SGT	1696.1	SGR	2006.7	SG3	3024.1		
RRT	.8667	RRF	-.9683	RTF	-.8737		
SGB	2627.5	R23	-.1375	R13	-.9610		
SG1	2541.1	SG2	668.1	THA	50.52		

ORBIT DETERMINATION ACCURACY

ST	874.1	SR	1068.1	SS	3505.1
CRT	.9871	CRS	.9453	CST	.9841
LSA	3749.9	MSA	357.6	SSA	26.7
EL1	1375.9	EL2	108.5	ALF	50.78

LAUNCH DATE OCT 7 1964 FLIGHT TIME 304.00 ARRIVAL DATE AUG 7 1965

HELIOCENTRIC CONIC DISTANCE 707.774 EARTH TO MARS

RL 149.50 LAL -.00 LOL 13.76 VL 32.597 GAL -6.81 AZL 89.54 HCA 225.76 SMA 186.16 ECC .22868 INC .4586 V1 29.805
RP 228.12 LAP -.33 LOP 239.52 VP 21.229 GAP -2.28 AZP 90.32 TAL 321.97 TAP 187.72 RCA 143.59 APO 228.73 V2 24.111
RC 238.446 GL 3.50 GP 10.05 ZAL 142.55 ZAP 116.25 ETS 173.85 ZAE 152.29 ETE 156.41 ZAC 96.70 ETC 256.50 CLP 116.69

PLANETOCENTRIC CONIC

C3 17.981 VHL 4.240 DLA 12.40 RAL 159.53 RAD 6567.7 VEL 11.805 PTH 2.09 VHP 3.184 DPA 11.98 RAP 181.37 ECC 1.2959

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 18 6	2584.69	-26.49	66.32	23.11	100.39	20 1 11	1984.7	-24.79	58.07
90.00	10 32 12	4437.95	7.64	185.33	18.03	62.65	11 46 10	3837.9	3.92	178.63
100.00	20 45 49	2301.83	-27.67	45.26	22.85	101.78	21 24 10	1701.8	-25.77	36.97
100.00	11 47 11	4196.04	8.70	166.98	17.46	61.29	12 57 7	3596.0	4.80	160.36
110.00	22 8 25	2043.37	-30.79	24.76	21.98	105.63	22 42 28	1443.4	-28.34	16.42
110.00	12 41 4	4027.26	11.47	152.51	15.80	57.58	13 48 12	3427.3	7.11	146.13

DIFFERENTIAL CORRECTIONS
TDE .4950 TRA -.9252 TC3 .0070 BAU .3194
RDE .7388 RRA -.9841 RC3 1.3288 FAU .48593
FDE-7.1361 FRA20.5147 FC-23.3967 BSP 8428
BDE .8893 BRA 1.3508 BC3 1.3289 FSP 10426

MID-COURSE EXECUTION ACCURACY
SGT 1444.3 SGR 2029.8 SG3 3105.8
RRT .8245 RRF -.9679 RTF -.8263
SGB 2491.2 R23 -.1340 R13 -.9599
SG1 2392.8 SG2 693.2 THA 56.41

ORBIT DETERMINATION ACCURACY
ST 771.3 SR 1079.1 SS 3542.1
CRT .9907 CRS .9444 CST .9786
LSA 3764.5 MSA 366.0 SSA 26.4
EL1 1323.7 EL2 85.5 ALF 54.53

LAUNCH DATE OCT 7 1964 FLIGHT TIME 306.00 ARRIVAL DATE AUG 9 1965

HELIOCENTRIC CONIC DISTANCE 711.666 EARTH TO MARS

RL 149.50 LAL -.00 LOL 13.76 VL 32.591 GAL -6.80 AZL 89.50 HCA 226.80 SMA 186.05 ECC .22821 INC .4961 V1 29.805
RP 227.73 LAP -.36 LOP 240.56 VP 21.266 GAP -2.57 AZP 90.34 TAL 321.95 TAP 188.75 RCA 143.59 APO 228.51 V2 24.152
RC 240.248 GL 3.80 GP 10.01 ZAL 142.54 ZAP 114.47 ETS 174.28 ZAE 150.49 ETE 158.17 ZAC 96.51 ETC 256.57 CLP 114.87

PLANETOCENTRIC CONIC

C3 17.923 VHL 4.234 DLA 12.67 RAL 159.66 RAD 6567.7 VEL 11.803 PTH 2.09 VHP 3.144 DPA 12.27 RAP 180.65 ECC 1.2950

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 16 20	2592.97	-26.59	66.91	23.29	100.11	19 59 33	1993.0	-24.92	58.63
90.00	10 34 58	4428.16	7.34	184.78	18.13	62.57	11 48 46	3828.2	3.60	178.09
100.00	20 44 13	2309.57	-27.78	45.81	23.04	101.51	21 22 42	1709.6	-25.91	37.51
100.00	11 49 47	4186.79	8.40	166.46	17.55	61.21	12 59 34	3586.8	4.49	159.85
110.00	22 7 11	2049.97	-30.91	25.23	22.18	105.38	22 41 21	1450.0	-28.49	16.87
110.00	12 43 18	4019.16	11.17	152.07	15.89	57.48	13 50 17	3419.2	6.81	145.70

DIFFERENTIAL CORRECTIONS
TDE .4348 TRA -.7456 TC3 -.1762 BAU .3259
RDE .7449 RRA -.9903 RC3 1.3488 FAU .49776
FDE-7.2703 FRA20.9783 FC-24.0439 BSP 7904
BDE .8626 BRA 1.2396 BC3 1.3602 FSP 10705

MID-COURSE EXECUTION ACCURACY
SGT 1199.2 SGR 2051.3 SG3 3184.0
RRT .7494 RRF -.9676 RTF -.7433
SGB 2376.1 R23 -.1246 R13 -.9599
SG1 2264.7 SG2 719.2 THA 63.46

ORBIT DETERMINATION ACCURACY
ST 665.3 SR 1089.7 SS 3577.2
CRT .9946 CRS .9435 CST .9698
LSA 3779.7 MSA 374.3 SSA 26.0
EL1 1275.4 EL2 59.2 ALF 58.66

LAUNCH DATE OCT 7 1964 FLIGHT TIME 308.00 ARRIVAL DATE AUG 11 1965

HELIOCENTRIC CONIC DISTANCE 715.563 EARTH TO MARS

RL 149.50 LAL -.00 LOL 13.76 VL 32.585 GAL -6.79 AZL 89.47 HCA 227.85 SMA 185.95 ECC .22779 INC .5326 V1 29.805
RP 227.34 LAP -.39 LOP 241.61 VP 21.304 GAP -2.85 AZP 90.36 TAL 321.92 TAP 189.77 RCA 143.60 APO 228.31 V2 24.193
RC 242.030 GL 4.08 GP 9.97 ZAL 142.54 ZAP 112.66 ETS 174.70 ZAE 148.63 ETE 159.77 ZAC 96.30 ETC 256.64 CLP 113.03

PLANETOCENTRIC CONIC

C3 17.878 VHL 4.228 DLA 12.92 RAL 159.79 RAD 6567.7 VEL 11.801 PTH 2.09 VHP 3.108 DPA 12.57 RAP 179.90 ECC 1.2942

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 14 42	2601.01	-26.69	67.48	23.48	99.84	19 58 3	2001.0	-25.06	59.19
90.00	10 37 40	4418.97	7.05	184.26	18.25	62.50	11 51 19	3819.0	3.31	177.57
100.00	20 42 44	2317.09	-27.88	46.34	23.23	101.25	21 21 22	1717.1	-26.04	38.02
100.00	11 52 19	4178.12	8.12	165.97	17.67	61.13	13 1 57	3578.1	4.20	159.37
110.00	22 6 3	2056.39	-31.03	25.70	22.39	105.12	22 40 20	1456.4	-28.64	17.31
110.00	12 45 29	4011.58	10.90	151.66	15.99	57.40	13 52 21	3411.6	6.52	145.30

DIFFERENTIAL CORRECTIONS
TDE .3678 TRA -.5633 TC3 -.3821 BAU .3378
RDE .7484 RRA -.9983 RC3 1.3606 FAU .50664
FDE-7.3507 FRA21.4686 FC-24.5340 BSP 7564
BDE .8340 BRA 1.1463 BC3 1.4133 FSP 11073

MID-COURSE EXECUTION ACCURACY
SGT 982.9 SGR 2068.6 SG3 3256.4
RRT .6004 RRF -.9671 RTF -.5840
SGB 2290.2 R23 -.1055 R13 -.9614
SG1 2163.4 SG2 751.6 THA 71.81

ORBIT DETERMINATION ACCURACY
ST 551.1 SR 1096.9 SS 3600.6
CRT .9975 CRS .9418 CST .9557
LSA 3784.7 MSA 382.4 SSA 26.0
EL1 1227.1 EL2 34.8 ALF 63.36

LAUNCH DATE OCT 7 1964 FLIGHT TIME 310.00 ARRIVAL DATE AUG 13 1965

HELIOCENTRIC CONIC DISTANCE 719.472 EARTH TO MARS

RL 149.50 LAL -.00 LOL 13.76 VL 32.579 GAL -6.79 AZL 89.43 HCA 228.90 SMA 185.86 ECC .22742 INC .5679 V1 29.805
RP 226.95 LAP -.43 LOP 242.66 VP 21.343 GAP -3.14 AZP 90.37 TAL 321.89 TAP 190.78 RCA 143.59 APO 228.13 V2 24.235
RC 243.792 GL 4.35 GP 9.93 ZAL 142.55 ZAP 110.81 ETS 175.11 ZAE 146.72 ETE 161.24 ZAC 96.09 ETC 256.72 CLP 111.14

PLANETOCENTRIC CONIC

C3 17.846 VHL 4.224 DLA 13.16 RAL 159.93 RAD 6567.7 VEL 11.799 PTH 2.09 VHP 3.075 DPA 12.88 RAP 179.12 ECC 1.2937

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 13 12	2608.82	-26.78	68.03	23.69	99.57	19 56 40	2008.8	-25.18	59.73
90.00	10 40 18	4410.31	6.77	183.77	18.38	62.44	11 53 48	3810.3	3.03	177.09
100.00	20 41 23	2324.40	-27.97	46.87	23.45	100.99	21 20 8	1724.4	-26.17	38.53
100.00	11 54 48	4169.96	7.85	165.51	17.80	61.06	13 4 18	3570.0	3.93	158.92
110.00	22 5 2	2062.64	-31.14	26.15	22.61	104.87	22 39 25	1462.6	-28.78	17.74
110.00	12 47 38	4004.48	10.63	151.28	16.12	57.32	13 54 22	3404.5	6.25	144.93

DIFFERENTIAL CORRECTIONS
TDE .3075 TRA -.3686 TC3 -.5778 BAU .3568
RDE .7557 RRA-1.0010 RC3 1.3793 FAU .51836
FDE-7.5000 FRA21.8492 FC-25.1471 BSP 7167
BDE .8159 BRA 1.0667 BC3 1.4954 FSP 11261

MID-COURSE EXECUTION ACCURACY
SGT 822.1 SGR 2086.3 SG3 3325.1
RRT .3350 RRF -.9667 RTF -.3002
SGB 2242.4 R23 -.0787 R13 -.9638
SG1 2107.2 SG2 766.9 THA 81.32

ORBIT DETERMINATION ACCURACY
ST 444.8 SR 1107.6 SS 3635.7
CRT .9974 CRS .9414 CST .9265
LSA 3806.6 MSA 390.3 SSA 25.5
EL1 1193.2 EL2 30.0 ALF 68.16

LAUNCH DATE OCT 7 1964 FLIGHT TIME 312.00 ARRIVAL DATE AUG 15 1965

HELIOCENTRIC CONIC DISTANCE 723.388 EARTH TO MARS

RL 149.50 LAL -.00 LOL 13.76 VL 32.574 GAL -6.79 AZL 89.40 HCA 229.95 SMA 185.77 ECC .22709 INC .6021 V1 29.805
RP 226.56 LAP -.46 LOP 243.71 VP 21.382 GAP -3.42 AZP 90.39 TAL 321.84 TAP 191.79 RCA 143.59 APO 227.96 V2 24.277
RC 245.534 GL 4.62 GP 9.89 ZAL 142.57 ZAP 100.93 ETS 175.53 ZAE 144.76 ETE 162.59 ZAC 95.87 ETC 256.81 CLP 109.23

PLANETOCENTRIC CONIC

C3 17.826 VHL 4.222 DLA 13.39 RAL 160.08 RAD 6567.7 VEL 11.799 PTH 2.09 VHP 3.046 DPA 13.20 RAP 178.32 ECC 1.2934

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 11 49	2616.39	-26.86	68.57	23.92	99.32	19 55 25	2016.4	-25.30	60.25
90.00	10 42 52	4402.23	6.52	183.31	18.53	62.38	11 56 15	3802.2	2.77	176.63
100.00	20 40 9	2331.48	-28.07	47.37	23.68	100.74	21 19 1	1731.5	-26.30	39.02
100.00	11 57 13	4162.36	7.60	165.09	17.95	61.00	13 6 35	3562.4	3.67	158.50
110.00	22 4 8	2068.72	-31.24	26.60	22.85	104.63	22 38 37	1468.7	-28.92	18.16
110.00	12 49 44	3997.89	10.39	150.92	16.26	57.25	13 56 22	3397.9	6.00	144.58

DIFFERENTIAL CORRECTIONS
TDE .2434 TRA -.1696 TC3 -.7874 BAU .3814
RDE .7619 RRA-1.0035 RC3 1.3934 FAU .52846
FDE-7.6240 FRA22.2176 FC-25.6652 BSP 6969
BDE .7998 BRA 1.0178 BC3 1.6005 FSP 11471

MID-COURSE EXECUTION ACCURACY
SGT 779.2 SGR 2100.7 SG3 3387.5
RRT -.0670 RRF -.9662 RTF .1198
SGB 2240.6 R23 -.0449 R13 -.9668
SG1 2101.5 SG2 777.2 THA 91.65

ORBIT DETERMINATION ACCURACY
ST 338.4 SR 1116.5 SS 3664.6
CRT .9808 CRS .9406 CST .8624
LSA 3825.0 MSA 398.1 SSA 25.1
EL1 1164.9 EL2 63.3 ALF 73.39

LAUNCH DATE OCT 7 1964 FLIGHT TIME 314.00 ARRIVAL DATE AUG 17 1965

HELIOCENTRIC CONIC DISTANCE 727.311 EARTH TO MARS

RL 149.50 LAL -.00 LOL 13.76 VL 32.570 GAL -6.79 AZL 89.36 HCA 231.01 SMA 185.69 ECC .22682 INC .6354 V1 29.805
RP 226.17 LAP -.49 LOP 244.77 VP 21.422 GAP -3.69 AZP 90.40 TAL 321.78 TAP 192.79 RCA 143.57 APO 227.81 V2 24.318
RC 247.256 GL 4.88 GP 9.84 ZAL 142.61 ZAP 107.02 ETS 175.94 ZAE 142.76 ETE 163.84 ZAC 95.63 ETC 256.90 CLP 107.29

PLANETOCENTRIC CONIC

C3 17.819 VHL 4.221 DLA 13.60 RAL 160.24 RAD 6567.7 VEL 11.798 PTH 2.09 VHP 3.020 DPA 13.52 RAP 177.48 ECC 1.2933

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 10 34	2623.72	-26.94	69.09	24.16	99.07	19 54 18	2023.7	-25.41	60.76
90.00	10 45 23	4394.72	6.28	182.88	18.71	62.33	11 58 38	3794.7	2.53	176.22
100.00	20 39 3	2338.35	-28.15	47.86	23.92	100.49	21 18 2	1738.4	-26.41	39.49
100.00	11 59 35	4155.31	7.36	164.70	18.12	60.95	13 8 50	3555.3	3.43	158.11
110.00	22 3 20	2074.63	-31.34	27.03	23.11	104.40	22 37 55	1474.6	-29.05	18.57
110.00	12 51 47	3991.80	10.17	150.59	16.42	57.19	13 58 19	3391.8	5.77	144.26

DIFFERENTIAL CORRECTIONS
TDE .1772 TRA .0348 TC3-1.0065 BAU .4116
RDE .7675 RRA-1.0048 RC3 1.4043 FAU .53748
FDE-7.7352 FRA22.5498 FC-26.1130 BSP 6964
BDE .7877 BRA 1.0054 BC3 1.7278 FSP 11666

MID-COURSE EXECUTION ACCURACY
SGT 884.5 SGR 2111.8 SG3 3442.9
RRT -.4417 RRF -.9656 RTF .5033
SGB 2289.5 R23 -.0108 R13 -.9694
SG1 2153.2 SG2 778.3 THA 102.08

ORBIT DETERMINATION ACCURACY
ST 242.3 SR 1124.2 SS 3689.2
CRT .8941 CRS .9398 CST .6920
LSA 3842.8 MSA 405.7 SSA 24.7
EL1 1145.0 EL2 106.6 ALF 79.00

LAUNCH DATE OCT 7 1964 FLIGHT TIME 316.00 ARRIVAL DATE AUG 19 1965

HELIOCENTRIC CONIC DISTANCE 731.241 EARTH TO MARS

RL 149.50 LAL -.00 LOL 13.76 VL 32.565 GAL -6.80 AZL 89.33 HCA 232.07 SMA 185.62 ECC .22660 INC .6679 V1 29.805
RP 225.78 LAP -.53 LOP 245.83 VP 21.463 GAP -3.96 AZP 90.41 TAL 321.71 TAP 193.79 RCA 143.56 APO 227.68 V2 24.360
RC 248.959 GL 5.12 GP 9.78 ZAL 142.65 ZAP 105.09 ETS 176.34 ZAE 140.72 ETE 165.00 ZAC 95.39 ETC 257.00 CLP 105.32

PLANETOCENTRIC CONIC

C3 17.825 VHL 4.222 DLA 13.80 RAL 160.41 RAD 6567.7 VEL 11.799 PTH 2.09 VHP 2.998 DPA 13.84 RAP 176.63 ECC 1.2934

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 9 28	2630.81	-27.02	69.60	24.41	98.82	19 53 18	2030.8	-25.52	61.25
90.00	10 47 49	4387.78	6.06	182.49	18.90	62.29	12 0 57	3787.8	2.31	175.83
100.00	20 38 5	2345.01	-28.23	48.34	24.18	100.25	21 17 10	1745.0	-26.53	39.96
100.00	12 1 53	4148.82	7.15	164.33	18.31	60.90	13 11 2	3548.8	3.21	157.76
110.00	22 2 39	2080.37	-31.44	27.45	23.38	104.16	22 37 20	1480.4	-29.17	18.97
110.00	12 53 48	3986.22	9.96	150.29	16.60	57.13	14 0 14	3386.2	5.56	143.96

DIFFERENTIAL CORRECTIONS
TDE .1089 TRA .2441 TC3-1.2336 BAU .4468
RDE .7727 RRA-1.0048 RC3 1.4120 FAU .54533
FDE-7.8328 FRA22.8490 FC-26.4862 BSP 7168
BDE .7803 BRA 1.0341 BC3 1.8749 FSP 11847

MID-COURSE EXECUTION ACCURACY
SGT 1106.0 SGR 2119.6 SG3 3491.1
RRT -.6680 RRF -.9650 RTF .7299
SGB 2390.8 R23 .0173 R13 -.9716
SG1 2263.2 SG2 770.8 THA 111.88

ORBIT DETERMINATION ACCURACY
ST 182.4 SR 1130.6 SS 3709.9
CRT .5367 CRS .9389 CST .2178
LSA 3860.6 MSA 413.1 SSA 24.3
EL1 1134.9 EL2 153.3 ALF 84.96

LAUNCH DATE OCT 7 1964 FLIGHT TIME 318.00 ARRIVAL DATE AUG 21 1965

HELIOCENTRIC CONIC DISTANCE 735.178 EARTH TO MARS

RL 149.50 LAL -.00 LOL 13.76 VL 32.561 GAL -6.81 AZL 89.30 HCA 233.14 SMA 185.55 ECC .22642 INC .6996 V1 29.805
RP 225.38 LAP -.56 LOP 246.90 VP 21.504 GAP -4.23 AZP 90.42 TAL 321.63 TAP 194.77 RCA 143.54 APO 227.56 V2 24.402
RC 250.643 GL 5.36 GP 9.72 ZAL 142.71 ZAP 103.14 ETS 176.74 ZAE 138.64 ETE 166.08 ZAC 95.14 ETC 257.10 CLP 103.33

PLANETOCENTRIC CONIC

C3 17.843 VHL 4.224 DLA 13.99 RAL 160.58 RAD 6567.7 VEL 11.799 PTH 2.09 VHP 2.979 DPA 14.17 RAP 175.75 ECC 1.2937

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 8 29	2637.66	-27.09	70.08	24.69	98.59	19 52 27	2037.7	-25.62	61.72
90.00	10 50 12	4381.41	5.86	182.13	19.11	62.25	12 3 14	3781.4	2.10	175.47
100.00	20 37 14	2351.44	-28.31	48.81	24.46	100.02	21 16 25	1751.4	-26.64	40.40
100.00	12 4 8	4142.86	6.95	164.00	18.51	60.85	13 13 11	3542.9	3.01	157.43
110.00	22 2 5	2085.93	-31.53	27.85	23.67	103.94	22 36 51	1485.9	-29.30	19.36
110.00	12 55 46	3981.14	9.77	150.02	16.80	57.08	14 2 7	3381.1	5.37	143.70

DIFFERENTIAL CORRECTIONS
TDE .0392 TRA .4589 TC3-1.4663 BAU .4863
RDE .7775 RRA-1.0033 RC3 1.4165 FAU .55205
FDE-7.9199 FRA23.1026 FC-26.7849 BSP 7575
BDE .7785 BRA 1.1032 BC3 2.0387 FSP 12003

MID-COURSE EXECUTION ACCURACY
SGT 1396.0 SGR 2123.9 SG3 3531.2
RRT -.7844 RRF -.9642 RTF .8444
SGB 2541.6 R23 .0355 R13 -.9739
SG1 2426.0 SG2 758.0 THA 120.58

ORBIT DETERMINATION ACCURACY
ST 203.1 SR 1136.0 SS 3727.0
CRT -.1134 CRS .9379 CST -.4480
LSA 3878.8 MSA 420.5 SSA 23.9
EL1 1136.3 EL2 201.7 ALF 91.20

LAUNCH DATE OCT 7 1964 FLIGHT TIME 320.00 ARRIVAL DATE AUG 23 1965

HELIOCENTRIC CONIC DISTANCE 739.122 EARTH TO MARS

RL 149.50 LAL -.00 LOL 13.76 VL 32.557 GAL -6.82 AZL 89.27 HCA 234.21 SMA 185.49 ECC .22629 INC .7305 V1 29.805
RP 224.99 LAP -.59 LOP 247.96 VP 21.546 GAP -4.49 AZP 90.43 TAL 321.54 TAP 195.75 RCA 143.51 APO 227.46 V2 24.444
RC 252.307 GL 5.60 GP 9.65 ZAL 142.78 ZAP 101.16 ETS 177.13 ZAE 136.54 ETE 167.08 ZAC 94.89 ETC 257.21 CLP 101.33

PLANETOCENTRIC CONIC

C3 17.874 VHL 4.228 DLA 14.17 RAL 160.77 RAD 6567.7 VEL 11.801 PTH 2.09 VHP 2.963 DPA 14.49 RAP 174.86 ECC 1.2942

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 7 39	2644.27	-27.15	70.56	24.97	98.36	19 51 43	2044.3	-25.72	62.18
90.00	10 52 31	4375.61	5.68	181.81	19.34	62.21	12 5 27	3775.6	1.91	175.15
100.00	20 36 31	2357.65	-28.38	49.25	24.75	99.80	21 15 49	1757.7	-26.74	40.84
100.00	12 6 20	4137.46	6.77	163.70	18.74	60.82	13 15 17	3537.5	2.83	157.13
110.00	22 1 38	2091.32	-31.62	28.25	23.97	103.72	22 36 29	1491.3	-29.41	19.74
110.00	12 57 42	3976.55	9.60	149.77	17.02	57.04	14 3 59	3376.5	5.20	143.45

DIFFERENTIAL CORRECTIONS
TDE -.0319 TRA .6781 TC3-1.7046 BAU .5298
RDE .7821 RRA -.9999 RC3 1.4179 FAU .55763
FDE-7.9958 FRA23.3087 FC-27.0085 BSP 8165
BDE .7827 BRA 1.2082 BC3 2.2172 FSP 12128

MID-COURSE EXECUTION ACCURACY
SGT 1725.6 SGR 2124.6 SG3 3562.8
RRT -.8452 RRF -.9633 RTF .9032
SGB 2737.1 R23 .0453 R13 -.9766
SG1 2634.1 SG2 744.0 THA 128.04

ORBIT DETERMINATION ACCURACY
ST 290.9 SR 1140.4 SS 3740.3
CRT -.5024 CRS .9369 CST -.7714
LSA 3897.7 MSA 427.6 SSA 23.5
EL1 1150.1 EL2 249.3 ALF 97.66

LAUNCH DATE OCT 7 1964 FLIGHT TIME 322.00 ARRIVAL DATE AUG 25 1965

HELIOCENTRIC CONIC DISTANCE 743.074 EARTH TO MARS

RL 149.50 LAL -.00 LOL 13.76 VL 32.554 GAL -6.83 AZL 89.24 HCA 235.28 SMA 185.43 ECC .22621 INC .7608 V1 29.805
RP 224.60 LAP -.63 LOP 249.04 VP 21.589 GAP -4.75 AZP 90.43 TAL 321.44 TAP 196.72 RCA 143.49 APO 227.38 V2 24.486
RC 253.951 GL 5.82 GP 9.58 ZAL 142.86 ZAP 99.18 ETS 177.52 ZAE 134.41 ETE 168.02 ZAC 94.62 ETC 257.32 CLP 99.31

PLANETOCENTRIC CONIC

C3 17.918 VHL 4.233 DLA 14.33 RAL 160.96 RAD 6567.7 VEL 11.803 PTH 2.09 VHP 2.952 DPA 14.82 RAP 173.95 ECC 1.2949

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 6 57	2650.64	-27.21	71.01	25.28	98.14	19 51 7	2050.6	-25.81	62.63
90.00	10 54 46	4370.38	5.51	181.51	19.59	62.18	12 7 36	3770.4	1.74	174.86
100.00	20 35 56	2363.64	-28.45	49.68	25.06	99.58	21 15 20	1763.6	-26.83	41.26
100.00	12 8 28	4132.60	6.61	163.43	18.98	60.78	13 17 20	3532.6	2.67	156.86
110.00	22 1 18	2096.55	-31.70	28.63	24.30	103.51	22 36 14	1496.5	-29.52	20.11
110.00	12 59 35	3972.46	9.45	149.55	17.25	57.00	14 5 48	3372.5	5.04	143.24

DIFFERENTIAL CORRECTIONS
TDE -.1047 TRA .9017 TC3-1.9469 BAU .5767
RDE .7861 RRA -.9948 RC3 1.4159 FAU .56187
FDE-8.0566 FRA23.4652 FC-27.1477 BSP 8914
BDE .7930 BRA 1.3427 BC3 2.4073 FSP 12226

MID-COURSE EXECUTION ACCURACY
SGT 2079.4 SGR 2121.4 SG3 3585.1
RRT -.8790 RRF -.9623 RTF .9356
SGB 2970.6 R23 .0491 R13 -.9793
SG1 2879.3 SG2 730.6 THA 134.35

ORBIT DETERMINATION ACCURACY
ST 406.6 SR 1143.3 SS 3749.1
CRT -.6670 CRS .9358 CST -.8859
LSA 3916.5 MSA 434.6 SSA 23.1
EL1 1177.3 EL2 294.2 ALF 104.26

LAUNCH DATE OCT 7 1964 FLIGHT TIME 324.00 ARRIVAL DATE AUG 27 1965

HELIOCENTRIC CONIC DISTANCE 747.032 EARTH TO MARS

RL 149.50 LAL -.00 LOL 13.76 VL 32.551 GAL -6.85 AZL 89.21 HCA 236.36 SMA 185.38 ECC .22618 INC .7903 V1 29.805
RP 224.21 LAP -.66 LOP 250.11 VP 21.632 GAP -5.01 AZP 90.44 TAL 321.33 TAP 197.69 RCA 143.45 APO 227.31 V2 24.527
RC 255.576 GL 6.04 GP 9.49 ZAL 142.96 ZAP 97.18 ETS 177.90 ZAE 132.27 ETE 168.90 ZAC 94.35 ETC 257.43 CLP 97.28

PLANETOCENTRIC CONIC

C3 17.974 VHL 4.240 DLA 14.49 RAL 161.16 RAD 6567.7 VEL 11.805 PTH 2.09 VHP 2.944 DPA 15.13 RAP 173.03 ECC 1.2958

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 6 23	2656.76	-27.27	71.45	25.60	97.93	19 50 40	2056.8	-25.89	63.05
90.00	10 56 57	4365.72	5.36	181.25	19.85	62.15	12 9 43	3765.7	1.59	174.60
100.00	20 35 29	2369.42	-28.52	50.10	25.39	99.37	21 14 58	1769.4	-26.93	41.66
100.00	12 10 32	4128.29	6.47	163.19	19.25	60.75	13 19 21	3528.3	2.52	156.63
110.00	22 1 4	2101.60	-31.78	29.01	24.63	103.30	22 36 6	1501.6	-29.63	20.46
110.00	13 1 26	3968.87	9.32	149.36	17.51	56.96	14 7 35	3368.9	4.90	143.05

DIFFERENTIAL CORRECTIONS
TDE -.1789 TRA 1.1287 TC3-2.1916 BAU .6263
RDE .7898 RRA -.9880 RC3 1.4107 FAU .56488
FDE-8.1078 FRA23.5714 FC-27.2074 BSP 9790
BDE .8099 BRA 1.5000 BC3 2.6064 FSP 12293

MID-COURSE EXECUTION ACCURACY
SGT 2448.3 SGR 2114.7 SG3 3598.6
RRT -.8988 RRF -.9612 RTF .9547
SGB 3235.1 R23 .0492 R13 -.9820
SG1 3154.1 SG2 719.4 THA 139.64

ORBIT DETERMINATION ACCURACY
ST 533.8 SR 1145.3 SS 3754.8
CRT -.7452 CRS .9346 CST -.9330
LSA 3937.0 MSA 441.2 SSA 22.7
EL1 1218.5 EL2 334.6 ALF 110.79

LAUNCH DATE OCT 7 1964 FLIGHT TIME 326.00 ARRIVAL DATE AUG 29 1965

HELIOCENTRIC CONIC DISTANCE 750.996 EARTH TO MARS

RL 149.50 LAL -.00 LOL 13.76 VL 32.548 GAL -6.87 AZL 89.18 HCA 237.44 SMA 185.34 ECC .22619 INC .8191 V1 29.805
RP 223.82 LAP -.69 LOP 251.19 VP 21.675 GAP -5.26 AZP 90.44 TAL 321.21 TAP 198.64 RCA 143.41 APO 227.26 V2 24.569
RC 257.180 GL 6.24 GP 9.41 ZAL 143.06 ZAP 95.18 ETS 178.28 ZAE 130.10 ETE 169.72 ZAC 94.08 ETC 257.55 CLP 95.25

PLANETOCENTRIC CONIC

C3 18.044 VHL 4.248 DLA 14.63 RAL 161.38 RAD 6567.7 VEL 11.808 PTH 2.09 VHP 2.939 DPA 15.45 RAP 172.11 ECC 1.2970

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 5 58	2662.63	-27.33	71.87	25.95	97.72	19 50 20	2062.6	-25.98	63.47
90.00	10 59 4	4361.63	5.23	181.02	20.14	62.13	12 11 46	3761.6	1.46	174.37
100.00	20 35 10	2374.97	-28.58	50.50	25.74	99.17	21 14 45	1775.0	-27.01	42.05
100.00	12 12 34	4124.53	6.34	162.98	19.53	60.73	13 21 18	3524.5	2.39	156.42
110.00	22 0 58	2106.48	-31.86	29.37	24.99	103.10	22 36 5	1506.5	-29.73	20.80
110.00	13 3 14	3965.78	9.20	149.19	17.78	56.93	14 9 20	3365.8	4.79	142.89

DIFFERENTIAL CORRECTIONS
TDE -.2539 TRA 1.3595 TC3-2.4379 BAU .6784
RDE .7931 RRA -.9792 RC3 1.4021 FAU .56643
FDE-8.1441 FRA23.6240 FC-27.1777 BSP 10770
BDE .8328 BRA 1.6754 BC3 2.8123 FSP 12328

MID-COURSE EXECUTION ACCURACY
SGT 2828.1 SGR 2104.0 SG3 3602.3
RRT -.9109 RRF -.9600 RTF .9668
SGB 3524.9 R23 .0477 R13 -.9845
SG1 3452.5 SG2 711.0 THA 144.12

ORBIT DETERMINATION ACCURACY
ST 666.7 SR 1146.1 SS 3756.0
CRT -.7873 CRS .9334 CST -.9556
LSA 3957.8 MSA 447.9 SSA 22.3
EL1 1273.2 EL2 370.0 ALF 117.08

LAUNCH DATE OCT 7 1964 FLIGHT TIME 328.00 ARRIVAL DATE AUG 31 1965

HELIOCENTRIC CONIC DISTANCE 754.967 EARTH TO MARS

RL 149.50 LAL -.00 LOL 13.76 VL 32.546 GAL -6.89 AZL 89.15 HCA 238.52 SMA 185.29 ECC .22625 INC .8475 V1 29.805
RP 223.44 LAP -.72 LOP 252.28 VP 21.719 GAP -5.51 AZP 90.44 TAL 321.07 TAP 199.59 RCA 143.37 APO 227.22 V2 24.611
RC 258.763 GL 6.45 GP 9.31 ZAL 143.18 ZAP 93.17 ETS 178.65 ZAE 127.93 ETE 170.49 ZAC 93.80 ETC 257.67 CLP 93.22

PLANETOCENTRIC CONIC

C3 18.126 VHL 4.257 DLA 14.76 RAL 161.60 RAD 6567.7 VEL 11.811 PTH 2.09 VHP 2.938 DPA 15.75 RAP 171.19 ECC 1.2983

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 5 41	2668.26	-27.38	72.28	26.30	97.53	19 50 9	2068.3	-26.05	63.86
90.00	11 1 8	4358.12	5.12	180.82	20.44	62.11	12 13 46	3758.1	1.35	174.17
100.00	20 34 58	2380.30	-28.63	50.89	26.10	98.97	21 14 39	1780.3	-27.10	42.42
100.00	12 14 31	4121.32	6.24	162.80	19.83	60.71	13 23 13	3521.3	2.28	156.24
110.00	22 0 59	2111.20	-31.93	29.72	25.36	102.90	22 36 10	1511.2	-29.83	21.14
110.00	13 5 0	3963.19	9.11	149.05	18.07	56.91	14 11 4	3363.2	4.69	142.75

DIFFERENTIAL CORRECTIONS
TDE -.3304 TRA 1.5928 TC3-2.6840 BAU .7325
RDE .7960 RRA -.9687 RC3 1.3904 FAU .56672
FDE-8.1669 FRA23.6246 FC-27.0684 BSP 11829
BDE .8619 BRA 1.8643 BC3 3.0228 FSP 12329

MID-COURSE EXECUTION ACCURACY
SGT 3214.7 SGR 2089.7 SG3 3596.8
RRT -.9185 RRF -.9585 RTF .9747
SGB 3834.2 R23 .0454 R13 -.9867
SG1 3768.9 SG2 704.7 THA 147.90

ORBIT DETERMINATION ACCURACY
ST 802.9 SR 1145.6 SS 3753.3
CRT -.8129 CRS .9322 CST -.9683
LSA 3979.6 MSA 454.3 SSA 21.8
EL1 1340.7 EL2 399.6 ALF 122.97

LAUNCH DATE OCT 7 1964 FLIGHT TIME 330.00 ARRIVAL DATE SEP 2 1965

HELIOCENTRIC CONIC DISTANCE 758.945 EARTH TO MARS

RL 149.50 LAL -.00 LOL 13.76 VL 32.544 GAL -6.92 AZL 89.12 HCA 239.61 SMA 185.26 ECC .22635 INC .8752 V1 29.805
RP 223.05 LAP -.75 LOP 253.36 VP 21.763 GAP -5.75 AZP 90.44 TAL 320.92 TAP 200.53 RCA 143.32 APO 227.19 V2 24.653
RC 260.326 GL 6.64 GP 9.21 ZAL 143.31 ZAP 91.17 ETS 179.01 ZAE 125.76 ETE 171.22 ZAC 93.52 ETC 257.79 CLP 91.19

PLANETOCENTRIC CONIC

C3 18.221 VHL 4.269 DLA 14.87 RAL 161.83 RAD 6567.7 VEL 11.815 PTH 2.09 VHP 2.941 DPA 16.04 RAP 170.26 ECC 1.2999

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 5 33	2673.65	-27.43	72.66	26.68	97.34	19 50 6	2073.6	-26.13	64.24
90.00	11 3 7	4355.19	5.03	180.66	20.76	62.10	12 15 42	3755.2	1.25	174.01
100.00	20 34 55	2385.41	-28.69	51.26	26.47	98.78	21 14 41	1785.4	-27.18	42.78
100.00	12 16 26	4118.66	6.15	162.66	20.15	60.69	13 25 4	3518.7	2.19	156.10
110.00	22 1 6	2115.74	-32.00	30.05	25.75	102.72	22 36 22	1515.7	-29.92	21.46
110.00	13 6 44	3961.09	9.03	148.94	18.39	56.89	14 12 45	3361.1	4.61	142.64

DIFFERENTIAL CORRECTIONS
TDE -.4079 TRA 1.8285 TC3-2.9288 BAU .7882
RDE .7986 RRA -.9564 RC3 1.3756 FAU .56565
FDE-8.1777 FRA23.5699 FC-26.8760 BSP 12945
BDE .8968 BRA 2.0635 BC3 3.2358 FSP 12298

MID-COURSE EXECUTION ACCURACY
SGT 3605.6 SGR 2071.8 SG3 3581.6
RRT -.9232 RRF -.9570 RTF .9802
SGB 4158.4 R23 .0430 R13 -.9886
SG1 4099.0 SG2 700.5 THA 151.13

ORBIT DETERMINATION ACCURACY
ST 941.1 SR 1144.2 SS 3746.8
CRT -.8294 CRS .9309 CST -.9759
LSA 4002.6 MSA 460.6 SSA 21.3
EL1 1419.6 EL2 423.8 ALF 128.33

LAUNCH DATE OCT 7 1964 FLIGHT TIME 332.00 ARRIVAL DATE SEP 4 1965

HELIOCENTRIC CONIC DISTANCE 762.924 EARTH TO MARS

RL 149.50 LAL -.00 LOL 13.76 VL 32.542 GAL -6.95 AZL 89.10 HCA 240.70 SMA 185.23 ECC .22650 INC .9024 V1 29.805
RP 222.66 LAP -.79 LOP 254.46 VP 21.808 GAP -5.99 AZP 90.44 TAL 320.76 TAP 201.46 RCA 143.27 APO 227.18 V2 24.695
RC 261.869 GL 6.82 GP 9.11 ZAL 143.46 ZAP 89.18 ETS 179.35 ZAE 123.59 ETE 171.90 ZAC 93.23 ETC 257.92 CLP 89.17

PLANETOCENTRIC CONIC

C3 18.330 VHL 4.281 DLA 14.98 RAL 162.08 RAD 6567.7 VEL 11.820 PTH 2.09 VHP 2.948 DPA 16.32 RAP 169.35 ECC 1.3017

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 5 34	2678.77	-27.47	73.03	27.07	97.16	19 50 12	2078.8	-26.19	64.60
90.00	11 5 3	4352.87	4.95	180.53	21.10	62.08	12 17 35	3752.9	1.18	173.88
100.00	20 35 1	2390.28	-28.74	51.61	26.87	98.60	21 14 51	1790.3	-27.25	43.13
100.00	12 18 16	4116.59	6.08	162.54	20.49	60.68	13 26 53	3516.6	2.12	155.98
110.00	22 1 22	2120.11	-32.07	30.38	26.15	102.53	22 36 42	1520.1	-30.01	21.77
110.00	13 8 25	3959.52	8.97	148.86	18.72	56.88	14 14 24	3359.5	4.55	142.56

DIFFERENTIAL CORRECTIONS
TDE -.4840 TRA 2.0721 TC3-3.1663 BAU .8432
RDE .7956 RRA -.9476 RC3 1.3462 FAU .55797
FDE-8.0619 FRA23.5747 FC-26.3528 BSP 14248
BDE .9313 BRA 2.2785 BC3 3.4406 FSP 12459

MID-COURSE EXECUTION ACCURACY
SGT 4001.3 SGR 2045.9 SG3 3554.2
RRT -.9263 RRF -.9550 RTF .9837
SGB 4494.0 R23 .0408 R13 -.9897
SG1 4440.0 SG2 694.5 THA 153.97

ORBIT DETERMINATION ACCURACY
ST 1080.6 SR 1135.7 SS 3715.6
CRT -.8405 CRS .9275 CST -.9819
LSA 4005.6 MSA 467.1 SSA 21.3
EL1 1504.1 EL2 442.1 ALF 133.31

LAUNCH DATE OCT 7 1964 FLIGHT TIME 334.00 ARRIVAL DATE SEP 6 1965

HELIOCENTRIC CONIC DISTANCE 766.915 EARTH TO MARS

RL 149.50 LAL -.00 LOL 13.76 VL 32.540 GAL -6.98 AZL 89.07 HCA 241.79 SMA 185.20 ECC .22670 INC .9291 V1 29.805
RP 222.28 LAP -.82 LOP 255.55 VP 21.853 GAP -6.23 AZP 90.44 TAL 320.59 TAP 202.38 RCA 143.22 APO 227.18 V2 24.737
RC 263.392 GL 7.00 GP 8.99 ZAL 143.61 ZAP 87.20 ETS 179.70 ZAE 121.41 ETE 172.55 ZAC 92.95 ETC 258.04 CLP 87.16

PLANETOCENTRIC CONIC

C3 18.452 VHL 4.296 DLA 15.07 RAL 162.33 RAD 6567.7 VEL 11.825 PTH 2.09 VHP 2.958 DPA 16.59 RAP 168.44 ECC 1.3037

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 5 42	2683.66	-27.51	73.38	27.48	96.99	19 50 26	2083.7	-26.26	64.94
90.00	11 6 54	4351.07	4.90	180.43	21.46	62.07	12 19 25	3751.1	1.12	173.78
100.00	20 35 14	2394.95	-28.79	51.95	27.28	98.43	21 15 9	1795.0	-27.32	43.46
100.00	12 20 4	4115.02	6.03	162.45	20.84	60.67	13 28 39	3515.0	2.07	155.90
110.00	22 1 43	2124.33	-32.13	30.69	26.57	102.36	22 37 8	1524.3	-30.09	22.07
110.00	13 10 3	3958.41	8.93	148.80	19.06	56.87	14 16 2	3358.4	4.51	142.50

DIFFERENTIAL CORRECTIONS
TDE -.5639 TRA 2.3088 TC3-3.4057 BAU .9020
RDE .7998 RRA -.9297 RC3 1.3308 FAU .55654
FDE-8.0956 FRA23.3693 FC-26.1117 BSP 15384
BDE .9786 BRA 2.4889 BC3 3.6565 FSP 12262

MID-COURSE EXECUTION ACCURACY
SGT 4392.9 SGR 2023.4 SG3 3522.2
RRT -.9274 RRF -.9531 RTF .9867
SGB 4836.6 R23 .0389 R13 -.9912
SG1 4786.4 SG2 694.8 THA 156.34

ORBIT DETERMINATION ACCURACY
ST 1220.2 SR 1134.7 SS 3710.6
CRT -.8479 CRS .9270 CST -.9847
LSA 4039.9 MSA 472.8 SSA 20.6
EL1 1602.0 EL2 458.2 ALF 137.45

LAUNCH DATE OCT 7 1964 FLIGHT TIME 336.00 ARRIVAL DATE SEP 8 1965

HELIOCENTRIC CONIC DISTANCE 770.912 EARTH TO MARS

RL	149.50	LAL	-.00	LOL	13.76	VL	32.539	GAL	-7.02	AZL	89.04	HCA	242.89	SMA	185.18	ECC	.22694	INC	.9554
RP	221.89	LAP	-.85	LOP	256.65	VP	21.898	GAP	-6.47	AZP	90.44	TAL	320.40	TAP	203.29	RCA	143.15	APO	227.20
RC	264.895	GL	7.18	GP	8.88	ZAL	143.78	ZAP	85.23	ETS	180.03	ZAE	119.25	ETE	173.16	ZAC	92.66	ETC	258.16

V1 29.805 V2 24.779 CLP 85.17

PLANETOCENTRIC CONIC

C3	18.588	VHL	4.311	DLA	15.15	RAL	162.59	RAD	6567.8	VEL	11.831	PTH	2.10	VHP	2.971	DPA	16.84	RAP	167.55

ECC 1.3059

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 5 59	2688.31	-27.55	73.72	27.91	96.82	19 50 48	2088.3	-26.32	65.27
90.00	11 8 41	4349.87	4.86	180.36	21.84	62.07	12 21 11	3749.9	1.08	173.71
100.00	20 35 35	2399.41	-28.83	52.28	27.71	98.27	21 15 34	1799.4	-27.39	43.77
100.00	12 21 47	4114.01	5.99	162.40	21.21	60.66	13 30 21	3514.0	2.04	155.84
110.00	22 2 12	2128.38	-32.19	30.99	27.01	102.19	22 37 40	1528.4	-30.17	22.36
110.00	13 11 39	3957.80	8.91	148.76	19.43	56.86	14 17 37	3357.8	4.48	142.47

DIFFERENTIAL CORRECTIONS

TDE	-.6450	TRA	2.5470	TC3	-3.6398	BAU	.9613
RDE	.8026	RRA	-.9113	RC3	1.3103	FAU	.55274
FDE	-8.0948	FRA	23.1368	FC	-25.7440	BSP	16552
BDE	1.0297	BRA	2.7051	BC3	3.8685	FSP	12074

MID-COURSE EXECUTION ACCURACY

SGT	4783.6	SGR	1997.2	SG3	3481.0		
RRT	-.9275	RRF	-.9510	RTF	.9890		
SGB	5183.8	R23	.0374	R13	-.9924		
SG1	5136.9	SG2	695.5	THA	158.42		

ORBIT DETERMINATION ACCURACY

ST	1360.3	SR	1131.6	SS	3698.0
CRT	-.8533	CRS	.9260	CST	-.9869
LSA	4071.4	MSA	478.3	SSA	20.0
EL1	1705.8	EL2	470.6	ALF	141.12

LAUNCH DATE OCT 7 1964 FLIGHT TIME 338.00 ARRIVAL DATE SEP 10 1965

HELIOCENTRIC CONIC DISTANCE 774.913 EARTH TO MARS

RL	149.50	LAL	-.00	LOL	13.76	VL	32.538	GAL	-7.06	AZL	89.02	HCA	244.00	SMA	185.16	ECC	.22723	INC	.9813
RP	221.51	LAP	-.88	LOP	257.75	VP	21.943	GAP	-6.70	AZP	90.43	TAL	320.20	TAP	204.20	RCA	143.09	APO	227.23
RC	266.379	GL	7.34	GP	8.75	ZAL	143.96	ZAP	83.27	ETS	180.35	ZAE	117.10	ETE	173.73	ZAC	92.37	ETC	258.29

V1 29.805 V2 24.820 CLP 83.19

PLANETOCENTRIC CONIC

C3	18.738	VHL	4.329	DLA	15.22	RAL	162.86	RAD	6567.8	VEL	11.837	PTH	2.10	VHP	2.988	DPA	17.08	RAP	166.68

ECC 1.3084

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 6 26	2692.71	-27.58	74.04	28.35	96.67	19 51 18	2092.7	-26.37	65.58
90.00	11 10 25	4349.24	4.84	180.32	22.23	62.07	12 22 54	3749.2	1.06	173.68
100.00	20 36 4	2403.64	-28.87	52.58	28.16	98.11	21 16 7	1803.6	-27.45	44.07
100.00	12 23 28	4113.55	5.98	162.37	21.61	60.66	13 32 1	3513.6	2.02	155.82
110.00	22 2 48	2132.26	-32.24	31.28	27.47	102.03	22 38 20	1532.3	-30.25	22.63
110.00	13 13 13	3957.69	8.90	148.76	19.82	56.86	14 19 11	3357.7	4.48	142.46

DIFFERENTIAL CORRECTIONS

TDE	-.7267	TRA	2.7867	TC3	-3.8674	BAU	1.0210
RDE	.8045	RRA	-.8924	RC3	1.2859	FAU	.54699
FDE	-8.0674	FRA	22.8751	FC	-25.2723	BSP	17751
BDE	1.0841	BRA	2.9261	BC3	4.0756	FSP	11891

MID-COURSE EXECUTION ACCURACY

SGT	5171.9	SGR	1967.7	SG3	3431.5		
RRT	-.9267	RRF	-.9487	RTF	.9906		
SGB	5533.6	R23	.0365	R13	-.9933		
SG1	5489.6	SG2	696.5	THA	160.25		

ORBIT DETERMINATION ACCURACY

ST	1500.1	SR	1126.9	SS	3679.4
CRT	-.8570	CRS	.9247	CST	-.9885
LSA	4101.7	MSA	483.8	SSA	19.5
EL1	1813.7	EL2	480.3	ALF	144.35

LAUNCH DATE OCT 7 1964 FLIGHT TIME 340.00 ARRIVAL DATE SEP 12 1965

HELIOCENTRIC CONIC DISTANCE 778.920 EARTH TO MARS

RL	149.50	LAL	-.00	LOL	13.76	VL	32.537	GAL	-7.10	AZL	88.99	HCA	245.10	SMA	185.15	ECC	.22757	INC	1.0068
RP	221.13	LAP	-.91	LOP	258.86	VP	21.989	GAP	-6.93	AZP	90.42	TAL	319.99	TAP	205.10	RCA	143.01	APO	227.28
RC	267.844	GL	7.50	GP	8.63	ZAL	144.16	ZAP	81.35	ETS	180.65	ZAE	114.97	ETE	174.27	ZAC	92.09	ETC	258.41

V1 29.805 V2 24.862 CLP 81.25

PLANETOCENTRIC CONIC

C3	18.902	VHL	4.348	DLA	15.28	RAL	163.14	RAD	6567.8	VEL	11.844	PTH	2.10	VHP	3.009	DPA	17.30	RAP	165.83

ECC 1.3111

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 7 0	2696.87	-27.62	74.34	28.81	96.52	19 51 57	2096.9	-26.43	65.87
90.00	11 12 4	4349.20	4.84	180.32	22.64	62.07	12 24 33	3749.2	1.06	173.67
100.00	20 36 41	2407.65	-28.91	52.88	28.63	97.96	21 16 49	1807.7	-27.51	44.35
100.00	12 25 4	4113.65	5.98	162.38	22.02	60.66	13 33 38	3513.7	2.02	155.82
110.00	22 3 30	2135.99	-32.29	31.56	27.94	101.87	22 39 6	1536.0	-30.32	22.90
110.00	13 14 44	3958.08	8.92	148.78	20.22	56.86	14 20 42	3358.1	4.49	142.48

DIFFERENTIAL CORRECTIONS

TDE	-.8087	TRA	3.0272	TC3	-4.0870	BAU	1.0806
RDE	.8055	RRA	-.8728	RC3	1.2582	FAU	.53960
FDE	-8.0150	FRA	22.5816	FC	-24.7139	BSP	18966
BDE	1.1414	BRA	3.1505	BC3	4.2763	FSP	11701

MID-COURSE EXECUTION ACCURACY

SGT	5556.0	SGR	1935.4	SG3	3374.1		
RRT	-.9254	RRF	-.9461	RTF	.9919		
SGB	5883.4	R23	.0357	R13	-.9940		
SG1	5841.9	SG2	697.6	THA	161.87		

ORBIT DETERMINATION ACCURACY

ST	1659.1	SR	1120.7	SS	3654.9
CRT	-.8594	CRS	.9232	CST	-.9898
LSA	4130.5	MSA	489.0	SSA	19.0
EL1	1924.7	EL2	487.9	ALF	147.19

LAUNCH DATE OCT 7 1964 FLIGHT TIME 342.00 ARRIVAL DATE SEP 14 1965

HELIOCENTRIC CONIC DISTANCE 782.932 EARTH TO MARS

RL	149.50	LAL	-.00	LOL	13.76	VL	32.536	GAL	-7.15	AZL	88.97	HCA	246.21	SMA	185.14	ECC	.22795	INC	1.0319
RP	220.75	LAP	-.94	LOP	259.97	VP	22.035	GAP	-7.16	AZP	90.42	TAL	319.77	TAP	205.98	RCA	142.93	APO	227.34
RC	269.292	GL	7.65	GP	8.50	ZAL	144.37	ZAP	79.44	ETS	180.95	ZAE	112.86	ETE	174.78	ZAC	91.81	ETC	258.53

V1 29.805 V2 24.903 CLP 79.32

PLANETOCENTRIC CONIC

C3	19.082	VHL	4.368	DLA	15.33	RAL	163.43	RAD	6567.8	VEL	11.852	PTH	2.10	VHP	3.033	DPA	17.50	RAP	165.00

ECC 1.3140

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 7 43	2700.78	-27.65	74.62	29.29	96.38	19 52 44	2100.8	-26.47	66.15
90.00	11 13 39	4349.74	4.85	180.35	23.07	62.07	12 26 9	3749.7	1.08	173.70
100.00	20 37 26	2411.45	-28.94	53.15	29.11	97.82	21 17 38	1811.5	-27.56	44.62
100.00	12 26 38	4114.31	6.00	162.41	22.44	60.66	13 35 12	3514.3	2.05	155.86
110.00	22 4 20	2139.56	-32.34	31.82	28.43	101.72	22 40 0	1539.6	-30.39	23.15
110.00	13 16 13	3958.96	8.95	148.83	20.64	56.87	14 22 12	3359.0	4.53	142.53

DIFFERENTIAL CORRECTIONS

TDE	-.8918	TRA	3.2675	TC3	-4.2987	BAU	1.1405
RDE	.8064	RRA	-.8521	RC3	1.2287	FAU	.53116
FDE	-7.9548	FRA	22.2479	FC	-24.0985	BSP	20171
BDE	1.2024	BRA	3.3768	BC3	4.4708	FSP	11486

MID-COURSE EXECUTION ACCURACY

SGT	5934.7	SGR	1901.1	SG3	3310.0		
RRT	-.9235	RRF	-.9433	RTF	.9929		
SGB	6231.8	R23	.0353	R13	-.9946		
SG1	6192.4	SG2	699.1	THA	163.30		

ORBIT DETERMINATION ACCURACY

ST	1777.2	SR	1113.9	SS	3628.0
CRT	-.8610	CRS	.9217	CST	-.9908
LSA	4161.4	MSA	494.0	SSA	18.5
EL1	2038.4	EL2	493.9	ALF	149.68

LAUNCH DATE OCT 7 1964 FLIGHT TIME 344.00 ARRIVAL DATE SEP 16 1965

HELIOCENTRIC CONIC DISTANCE 786.948 EARTH TO MARS

RL 149.50 LAL -.00 LOL 13.76 VL 32.536 GAL -7.20 AZL 88.94 HCA 247.33 SMA 185.13 ECC .22838 INC 1.0566 V1 29.805
RP 220.37 LAP -.97 LOP 261.08 VP 22.081 GAP -7.38 AZP 90.41 TAL 319.53 TAP 206.86 RCA 142.85 APO 227.41 V2 24.945
RC 270.721 GL 7.79 GP 8.36 ZAL 144.59 ZAP 77.57 ETS 181.24 ZAE 110.78 ETE 175.26 ZAC 91.54 ETC 258.65 CLP 77.43

PLANETOCENTRIC CONIC

C3 19.276 VHL 4.390 DLA 15.36 RAL 163.73 RAD 6567.8 VEL 11.860 PTH 2.10 VHP 3.061 DPA 17.68 RAP 164.21 ECC 1.3172

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 8 35	2704.46	-27.67	74.88	29.79	96.25	19 53 40	2104.5	-26.52	66.41
90.00	11 15 11	4350.86	4.89	180.41	23.52	62.07	12 27 42	3750.9	1.12	173.77
100.00	20 38 20	2415.04	-28.98	53.41	29.61	97.68	21 18 35	1815.0	-27.61	44.88
100.00	12 28 7	4115.51	6.04	162.48	22.89	60.67	13 36 43	3515.5	2.09	155.92
110.00	22 5 17	2142.97	-32.39	32.08	28.94	101.58	22 41 0	1543.0	-30.46	23.40
110.00	13 17 39	3960.35	9.00	148.90	21.08	56.88	14 23 40	3360.3	4.58	142.60

DIFFERENTIAL CORRECTIONS
TDE -.9754 TRA 3.5079 TC3-4.5003 BAU 1.2001
RDE .8070 RRA -.8309 RC3 1.1972 FAU .52151
FDE-7.8792 FRA21.8841 FC-23.4217 BSP 21376
BDE 1.2659 BRA 3.6050 BC3 4.6568 FSP 11255

MID-COURSE EXECUTION ACCURACY
SGT 6306.7 SGR 1865.1 SG3 3239.6
RRT -.9210 RRF -.9402 RTF .9936
SGB 6576.7 R23 .0351 R13 -.9951
SG1 6539.3 SG2 700.8 THA 164.58

ORBIT DETERMINATION ACCURACY
ST 1913.9 SR 1106.2 SS 3597.2
CRT -.8618 CRS .9200 CST -.9916
LSA 4192.5 MSA 498.7 SSA 18.1
EL1 2153.6 EL2 498.6 ALF 151.88

LAUNCH DATE OCT 7 1964 FLIGHT TIME 346.00 ARRIVAL DATE SEP 18 1965

HELIOCENTRIC CONIC DISTANCE 790.970 EARTH TO MARS

RL 149.50 LAL -.00 LOL 13.76 VL 32.536 GAL -7.25 AZL 88.92 HCA 248.44 SMA 185.13 ECC .22886 INC 1.0811 V1 29.805
RP 220.00 LAP -1.01 LOP 262.20 VP 22.128 GAP -7.61 AZP 90.40 TAL 319.28 TAP 207.73 RCA 142.76 APO 227.50 V2 24.986
RC 272.134 GL 7.93 GP 8.23 ZAL 144.82 ZAP 75.72 ETS 181.51 ZAE 108.72 ETE 175.71 ZAC 91.27 ETC 258.76 CLP 75.57

PLANETOCENTRIC CONIC

C3 19.487 VHL 4.414 DLA 15.39 RAL 164.03 RAD 6567.8 VEL 11.869 PTH 2.11 VHP 3.091 DPA 17.85 RAP 163.44 ECC 1.3207

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 9 36	2707.89	-27.70	75.13	30.31	96.13	19 54 44	2107.9	-26.56	66.65
90.00	11 16 38	4352.56	4.94	180.51	23.99	62.08	12 29 10	3752.6	1.17	173.86
100.00	20 39 21	2418.42	-29.01	53.66	30.13	97.56	21 19 40	1818.4	-27.66	45.12
100.00	12 29 33	4117.27	6.10	162.58	23.36	60.68	13 38 11	3517.3	2.15	156.02
110.00	22 6 21	2146.23	-32.43	32.32	29.46	101.44	22 42 7	1546.2	-30.52	23.63
110.00	13 19 3	3962.23	9.07	149.00	21.54	56.90	14 25 5	3362.2	4.65	142.70

DIFFERENTIAL CORRECTIONS
TDE-1.0595 TRA 3.7485 TC3-4.6913 BAU 1.2592
RDE .8072 RRA -.8091 RC3 1.1638 FAU .51073
FDE-7.7910 FRA21.4934 FC-22.6901 BSP 22575
BDE 1.3320 BRA 3.8348 BC3 4.8335 FSP 11012

MID-COURSE EXECUTION ACCURACY
SGT 6671.6 SGR 1827.5 SG3 3163.6
RRT -.9180 RRF -.9369 RTF .9943
SGB 6917.4 R23 .0350 R13 -.9955
SG1 6881.6 SG2 702.5 THA 165.73

ORBIT DETERMINATION ACCURACY
ST 2049.0 SR 1097.9 SS 3563.2
CRT -.8621 CRS .9183 CST -.9922
LSA 4224.5 MSA 503.2 SSA 17.6
EL1 2269.7 EL2 502.3 ALF 153.83

LAUNCH DATE OCT 7 1964 FLIGHT TIME 348.00 ARRIVAL DATE SEP 20 1965

HELIOCENTRIC CONIC DISTANCE 794.996 EARTH TO MARS

RL 149.50 LAL -.00 LOL 13.76 VL 32.536 GAL -7.31 AZL 88.89 HCA 249.57 SMA 185.13 ECC .22939 INC 1.1052 V1 29.805
RP 219.62 LAP -1.04 LOP 263.32 VP 22.174 GAP -7.83 AZP 90.39 TAL 319.02 TAP 208.59 RCA 142.66 APO 227.59 V2 25.027
RC 273.529 GL 8.06 GP 8.09 ZAL 145.07 ZAP 73.91 ETS 181.78 ZAE 106.69 ETE 176.13 ZAC 91.00 ETC 258.87 CLP 73.75

PLANETOCENTRIC CONIC

C3 19.714 VHL 4.440 DLA 15.40 RAL 164.35 RAD 6567.8 VEL 11.878 PTH 2.11 VHP 3.126 DPA 18.00 RAP 162.71 ECC 1.3244

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 10 45	2711.10	-27.72	75.36	30.84	96.02	19 55 56	2111.1	-26.60	66.88
90.00	11 18 1	4354.84	5.02	180.64	24.47	62.09	12 30 36	3754.8	1.24	173.99
100.00	20 40 31	2421.59	-29.04	53.89	30.66	97.44	21 20 53	1821.6	-27.70	45.34
100.00	12 30 56	4119.58	6.18	162.71	23.84	60.69	13 39 35	3519.6	2.23	156.15
110.00	22 7 32	2149.34	-32.48	32.56	30.00	101.31	22 43 21	1549.3	-30.58	23.85
110.00	13 20 24	3964.60	9.16	149.13	22.02	56.92	14 26 29	3364.6	4.74	142.83

DIFFERENTIAL CORRECTIONS
TDE-1.1440 TRA 3.9886 TC3-4.8711 BAU 1.3178
RDE .8072 RRA -.7868 RC3 1.1294 FAU .49913
FDE-7.6923 FRA21.0755 FC-21.9197 BSP 23760
BDE 1.4001 BRA 4.0654 BC3 5.0003 FSP 10754

MID-COURSE EXECUTION ACCURACY
SGT 7028.0 SGR 1788.9 SG3 3082.9
RRT -.9146 RRF -.9333 RTF .9948
SGB 7252.1 R23 .0352 R13 -.9958
SG1 7217.8 SG2 704.3 THA 166.77

ORBIT DETERMINATION ACCURACY
ST 2182.1 SR 1089.0 SS 3526.1
CRT -.8618 CRS .9165 CST -.9927
LSA 4257.1 MSA 507.5 SSA 17.2
EL1 2385.8 EL2 505.3 ALF 155.56

LAUNCH DATE OCT 7 1964 FLIGHT TIME 350.00 ARRIVAL DATE SEP 22 1965

HELIOCENTRIC CONIC DISTANCE 799.023 EARTH TO MARS

RL 149.50 LAL -.00 LOL 13.76 VL 32.536 GAL -7.37 AZL 88.87 HCA 250.69 SMA 185.13 ECC .22996 INC 1.1290 V1 29.805
RP 219.25 LAP -1.07 LOP 264.45 VP 22.220 GAP -8.04 AZP 90.37 TAL 318.74 TAP 209.44 RCA 142.56 APO 227.71 V2 25.067
RC 274.906 GL 8.18 GP 7.95 ZAL 145.33 ZAP 72.14 ETS 182.03 ZAE 104.69 ETE 176.53 ZAC 90.74 ETC 258.97 CLP 71.96

PLANETOCENTRIC CONIC

C3 19.957 VHL 4.467 DLA 15.40 RAL 164.68 RAD 6567.8 VEL 11.889 PTH 2.11 VHP 3.163 DPA 18.13 RAP 162.02 ECC 1.3284

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 12 2	2714.07	-27.74	75.58	31.39	95.91	19 57 16	2114.1	-26.63	67.09
90.00	11 19 20	4357.72	5.11	180.80	24.98	62.11	12 31 58	3757.7	1.34	174.15
100.00	20 41 49	2424.55	-29.06	54.11	31.22	97.33	21 22 13	1824.6	-27.74	45.55
100.00	12 32 15	4122.46	6.27	162.87	24.34	60.71	13 40 57	3522.5	2.32	156.31
110.00	22 8 50	2152.30	-32.52	32.78	30.56	101.18	22 44 42	1552.3	-30.63	24.07
110.00	13 21 43	3967.48	9.27	149.28	22.51	56.95	14 27 51	3367.5	4.85	142.98

DIFFERENTIAL CORRECTIONS
TDE-1.2222 TRA 4.2375 TC3-5.0259 BAU 1.3721
RDE .8045 RRA -.7667 RC3 1.0888 FAU .48409
FDE-7.5267 FRA20.6884 FC-20.9996 BSP 25122
BDE 1.4633 BRA 4.3063 BC3 5.1425 FSP 10595

MID-COURSE EXECUTION ACCURACY
SGT 7375.7 SGR 1746.8 SG3 2996.4
RRT -.9109 RRF -.9291 RTF .9951
SGB 7579.7 R23 .0347 R13 -.9960
SG1 7546.9 SG2 704.6 THA 167.72

ORBIT DETERMINATION ACCURACY
ST 2309.9 SR 1076.7 SS 3474.7
CRT -.8601 CRS .9133 CST -.9932
LSA 4278.6 MSA 511.8 SSA 17.0
EL1 2497.3 EL2 508.1 ALF 157.16

LAUNCH DATE OCT 7 1964 FLIGHT TIME 352.00 ARRIVAL DATE SEP 24 1965

HELIOCENTRIC CONIC DISTANCE 803.060 EARTH TO MARS

RL	149.50	LAL	-.00	LOL	13.76	VL	32.537	GAL	-7.43	AZL	88.85	HCA	251.82	SMA	185.14	ECC	.23059	INC	1.1527	V1	29.805
RP	218.89	LAP	-1.10	LOP	265.58	VP	22.267	GAP	-8.26	AZP	90.36	TAL	318.45	TAP	210.28	RCA	142.45	APO	227.83	V2	25.108
RC	276.266	GL	8.30	GP	7.81	ZAL	145.60	ZAP	70.40	ETS	182.26	ZAE	102.73	ETE	176.91	ZAC	90.49	ETC	259.07	CLP	70.21

PLANETOCENTRIC CONIC

C3	20.218	VHL	4.496	DLA	15.39	RAL	165.01	RAD	6567.8	VEL	11.900	PTH	2.11	VHP	3.203	DPA	18.24	RAP	161.37	ECC	1.3327

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 13 27	2716.83	-27.76	75.78	31.96	95.81	19 58 44	2116.8	-26.67	67.28
90.00	11 20 35	4361.13	5.22	180.99	25.50	62.13	12 33 16	3761.1	1.45	174.34
100.00	20 43 13	2427.34	-29.09	54.31	31.78	97.22	21 23 41	1827.3	-27.78	45.75
100.00	12 33 30	4125.85	6.39	163.05	24.86	60.74	13 42 16	3525.8	2.44	156.49
110.00	22 10 13	2155.13	-32.55	32.99	31.14	101.06	22 46 9	1555.1	-30.69	24.27
110.00	13 23 0	3970.83	9.39	149.46	23.03	56.98	14 29 11	3370.8	4.98	143.15

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-1.3161	TRA	4.4668	TC3	-5.1977	BAU	1.4337	SGT	7714.5	SGR	1710.2	SG3	2910.7	ST	2443.2	SR	1070.3	SS	3446.3
RDE	.8074	RRA	-.7414	RC3	1.0587	FAU	.47406	RRT	-.9065	RRF	-.9252	RTF	.9955	CRT	-.8604	CRS	.9130	CST	-.9934
FDE	-7.4766	FRA	20.1734	FC	-20.2997	BSP	26052	SGB	7901.8	R23	.0359	R13	-.9963	LSA	4327.4	MSA	515.0	SSA	16.4
BDE	1.5440	BRA	4.5279	BC3	5.3044	FSP	10189	SG1	7870.0	SG2	707.8	THA	168.54	EL1	2618.3	EL2	509.0	ALF	158.49

LAUNCH DATE OCT 7 1964 FLIGHT TIME 354.00 ARRIVAL DATE SEP 26 1965

HELIOCENTRIC CONIC DISTANCE 807.099 EARTH TO MARS

RL	149.50	LAL	-.00	LOL	13.76	VL	32.538	GAL	-7.50	AZL	88.82	HCA	252.96	SMA	185.15	ECC	.23126	INC	1.1761	V1	29.805
RP	218.52	LAP	-1.12	LOP	266.71	VP	22.313	GAP	-8.47	AZP	90.34	TAL	318.15	TAP	211.11	RCA	142.34	APO	227.97	V2	25.148
RC	277.609	GL	8.41	GP	7.66	ZAL	145.88	ZAP	68.70	ETS	182.49	ZAE	100.80	ETE	177.27	ZAC	90.25	ETC	259.16	CLP	68.50

PLANETOCENTRIC CONIC

C3	20.496	VHL	4.527	DLA	15.37	RAL	165.36	RAD	6567.8	VEL	11.911	PTH	2.12	VHP	3.247	DPA	18.33	RAP	160.76	ECC	1.3373

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 15 1	2719.37	-27.78	75.96	32.54	95.72	20 0 21	2119.4	-26.70	67.46
90.00	11 21 46	4365.13	5.34	181.22	26.04	62.15	12 34 32	3765.1	1.58	174.56
100.00	20 44 46	2429.93	-29.11	54.50	32.37	97.13	21 25 16	1829.9	-27.82	45.94
100.00	12 34 43	4129.80	6.52	163.27	25.40	60.76	13 43 32	3529.8	2.57	156.71
110.00	22 11 44	2157.81	-32.59	33.19	31.73	100.94	22 47 42	1557.8	-30.74	24.46
110.00	13 24 14	3974.68	9.53	149.67	23.56	57.02	14 30 28	3374.7	5.12	143.36

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-1.4034	TRA	4.7049	TC3	-5.3431	BAU	1.4907	SGT	8043.4	SGR	1670.6	SG3	2820.3	ST	2570.5	SR	1060.6	SS	3403.2
RDE	.8074	RRA	-.7185	RC3	1.0227	FAU	.46072	RRT	-.9019	RRF	-.9208	RTF	.9957	CRT	-.8594	CRS	.9113	CST	-.9937
FDE	-7.3582	FRA	19.6968	FC	-19.4601	BSP	27153	SGB	8215.0	R23	.0364	R13	-.9965	LSA	4364.1	MSA	518.2	SSA	16.1
BDE	1.6191	BRA	4.7595	BC3	5.4401	FSP	9889	SG1	8184.3	SG2	709.3	THA	169.31	EL1	2733.6	EL2	510.0	ALF	159.74

LAUNCH DATE OCT 7 1964 FLIGHT TIME 356.00 ARRIVAL DATE SEP 28 1965

HELIOCENTRIC CONIC DISTANCE 811.141 EARTH TO MARS

RL	149.50	LAL	-.00	LOL	13.76	VL	32.538	GAL	-7.57	AZL	88.80	HCA	254.09	SMA	185.17	ECC	.23199	INC	1.1993	V1	29.805
RP	218.16	LAP	-1.15	LOP	267.85	VP	22.360	GAP	-8.68	AZP	90.33	TAL	317.83	TAP	211.93	RCA	142.21	APO	228.13	V2	25.188
RC	278.933	GL	8.51	GP	7.52	ZAL	146.17	ZAP	67.04	ETS	182.71	ZAE	98.90	ETE	177.60	ZAC	90.02	ETC	259.25	CLP	66.83

PLANETOCENTRIC CONIC

C3	20.794	VHL	4.560	DLA	15.34	RAL	165.71	RAD	6567.8	VEL	11.924	PTH	2.12	VHP	3.294	DPA	18.40	RAP	160.19	ECC	1.3422

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 16 43	2721.69	-27.80	76.13	33.15	95.64	20 2 5	2121.7	-26.72	67.63
90.00	11 22 54	4369.70	5.49	181.47	26.60	62.18	12 35 43	3769.7	1.72	174.82
100.00	20 46 27	2432.33	-29.13	54.68	32.98	97.03	21 26 59	1832.3	-27.85	46.11
100.00	12 35 51	4134.30	6.67	163.52	25.95	60.79	13 44 45	3534.3	2.72	156.96
110.00	22 13 22	2160.37	-32.62	33.39	32.34	100.83	22 49 22	1560.4	-30.78	24.65
110.00	13 25 25	3979.02	9.70	149.90	24.11	57.06	14 31 44	3379.0	5.29	143.58

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-1.4911	TRA	4.9437	TC3	-5.4753	BAU	1.5466	SGT	8362.7	SGR	1631.2	SG3	2728.2	ST	2695.6	SR	1050.7	SS	3358.1
RDE	.8074	RRA	-.6958	RC3	.9866	FAU	.44692	RRT	-.8968	RRF	-.9160	RTF	.9959	CRT	-.8581	CRS	.9095	CST	-.9939
FDE	-7.2334	FRA	19.2104	FC	-18.6072	BSP	28246	SGB	8520.3	R23	.0370	R13	-.9966	LSA	4401.7	MSA	521.3	SSA	15.7
BDE	1.6956	BRA	4.9925	BC3	5.5635	FSP	9586	SG1	8490.6	SG2	710.8	THA	170.01	EL1	2847.7	EL2	510.7	ALF	160.87

LAUNCH DATE OCT 7 1964 FLIGHT TIME 358.00 ARRIVAL DATE SEP 30 1965

HELIOCENTRIC CONIC DISTANCE 815.186 EARTH TO MARS

RL	149.50	LAL	-.00	LOL	13.76	VL	32.540	GAL	-7.64	AZL	88.78	HCA	255.23	SMA	185.19	ECC	.23276	INC	1.2223	V1	29.805
RP	217.80	LAP	-1.18	LOP	268.99	VP	22.406	GAP	-8.90	AZP	90.31	TAL	317.50	TAP	212.73	RCA	142.08	APO	228.29	V2	25.228
RC	280.240	GL	8.61	GP	7.38	ZAL	146.48	ZAP	65.42	ETS	182.91	ZAE	97.05	ETE	177.92	ZAC	89.79	ETC	259.33	CLP	65.20

PLANETOCENTRIC CONIC

C3	21.111	VHL	4.595	DLA	15.30	RAL	166.07	RAD	6567.9	VEL	11.937	PTH	2.12	VHP	3.344	DPA	18.46	RAP	159.66	ECC	1.3474

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 18 33	2723.81	-27.81	76.28	33.77	95.56	20 3 57	2123.8	-26.75	67.78
90.00	11 23 57	4374.84	5.65	181.76	27.17	62.21	12 36 52	3774.8	1.89	175.11
100.00	20 48 15	2434.55	-29.15	54.84	33.60	96.95	21 28 49	1834.6	-27.88	46.27
100.00	12 36 56	4139.34	6.83	163.81	26.53	60.83	13 45 56	3539.3	2.89	157.23
110.00	22 15 6	2162.80	-32.65	33.57	32.97	100.73	22 51 8	1562.8	-30.83	24.82
110.00	13 26 35	3983.85	9.87	150.16	24.68	57.11	14 32 58	3383.9	5.47	143.84

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-1.5802	TRA	5.1819	TC3	-5.5956	BAU	1.6019	SGT	8672.1	SGR	1592.2	SG3	2634.8	ST	2818.9	SR	1040.7	SS	3312.0
RDE	.8076	RRA	-.6734	RC3	.9507	FAU	.43282	RRT	-.8914	RRF	-.9110	RTF	.9961	CRT	-.8567	CRS	.9079	CST	-.9940
FDE	-7.1059	FRA	18.7148	FC	-17.7497	BSP	29302	SGB	8817.0	R23	.0377	R13	-.9967	LSA	4441.2	MSA	523.9	SSA	15.4
BDE	1.7746	BRA	5.2255	BC3	5.6758	FSP	9276	SG1	8788.2	SG2	712.0	THA	170.64	EL1	2961.1	EL2	510.9	ALF	161.89

LAUNCH DATE OCT 7 1964 FLIGHT TIME 360.00 ARRIVAL DATE OCT 2 1965

HELIOCENTRIC CONIC DISTANCE 819.234 EARTH TO MARS

RL 149.50 LAL -.00 LOL 13.76 VL 32.541 GAL -7.72 AZL 88.75 HCA 256.38 SMA 185.21 ECC .23359 INC 1.2452 V1 29.805
RP 217.44 LAP -1.21 LOP 270.14 VP 22.453 GAP -9.10 AZP 90.29 TAL 317.15 TAP 213.53 RCA 141.95 APO 228.47 V2 25.268
RC 281.529 GL 8.70 GP 7.24 ZAL 146.80 ZAP 63.85 ETS 183.11 ZAE 95.23 ETE 178.22 ZAC 89.58 ETC 259.40 CLP 63.62

PLANETOCENTRIC CONIC

C3 21.448 VHL 4.631 DLA 15.25 RAL 166.44 RAD 6567.9 VEL 11.951 PTH 2.13 VHP 3.396 DPA 18.50 RAP 159.18 ECC 1.3530

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 20 31	2725.73	-27.82	76.42	34.41	95.49	20 5 56	2125.7	-26.77	67.91
90.00	11 24 56	4380.55	5.83	182.08	27.76	62.24	12 37 57	3780.5	2.07	175.42
100.00	20 50 10	2436.60	-29.16	54.99	34.24	96.87	21 30 47	1836.6	-27.90	46.41
100.00	12 37 58	4144.91	7.02	164.12	27.12	60.87	13 47 3	3544.9	3.08	157.54
110.00	22 16 56	2165.11	-32.68	33.74	33.61	100.63	22 53 1	1565.1	-30.87	24.99
110.00	13 27 41	3989.17	10.07	150.45	25.27	57.16	14 34 11	3389.2	5.67	144.12

DIFFERENTIAL CORRECTIONS
TDE-1.6701 TRA 5.4201 TC3-5.7035 BAU 1.6563
RDE .8078 RRA -.6512 RC3 .9150 FAU .41850
FDE-6.9741 FRA18.2129 FC-16.8927 BSP 30328
BDE 1.8553 BRA 5.4590 BC3 5.7765 FSP 8963

MID-COURSE EXECUTION ACCURACY
SGT 8971.2 SGR 1553.9 SG3 2540.7
RRT -.8857 RRF -.9058 RTF .9962
SGB 9104.8 R23 .0384 R13 -.9967
SG1 9076.8 SG2 713.1 THA 171.22

ORBIT DETERMINATION ACCURACY
ST 2939.7 SR 1030.7 SS 3264.3
CRT -.8553 CRS .9062 CST -.9941
LSA 4481.4 MSA 526.2 SSA 15.1
EL1 3073.0 EL2 510.9 ALF 162.82

LAUNCH DATE OCT 7 1964 FLIGHT TIME 362.00 ARRIVAL DATE OCT 4 1965

HELIOCENTRIC CONIC DISTANCE 823.284 EARTH TO MARS

RL 149.50 LAL -.00 LOL 13.76 VL 32.542 GAL -7.81 AZL 88.73 HCA 257.53 SMA 185.23 ECC .23448 INC 1.2679 V1 29.805
RP 217.09 LAP -1.24 LOP 271.28 VP 22.499 GAP -9.31 AZP 90.27 TAL 316.79 TAP 214.32 RCA 141.80 APO 228.67 V2 25.307
RC 282.801 GL 8.79 GP 7.10 ZAL 147.13 ZAP 62.31 ETS 183.29 ZAE 93.45 ETE 178.50 ZAC 89.37 ETC 259.47 CLP 62.08

PLANETOCENTRIC CONIC

C3 21.806 VHL 4.670 DLA 15.18 RAL 166.82 RAD 6567.9 VEL 11.966 PTH 2.13 VHP 3.452 DPA 18.52 RAP 158.74 ECC 1.3589

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 22 36	2727.46	-27.83	76.55	35.06	95.43	20 8 4	2127.5	-26.79	68.04
90.00	11 25 52	4386.81	6.03	182.44	28.38	62.28	12 38 59	3786.8	2.27	175.77
100.00	20 52 13	2438.48	-29.18	55.13	34.90	96.80	21 32 51	1838.5	-27.93	46.55
100.00	12 38 57	4151.02	7.22	164.46	27.73	60.91	13 48 8	3551.0	3.29	157.88
110.00	22 18 53	2167.30	-32.71	33.91	34.27	100.54	22 55 0	1567.3	-30.91	25.15
110.00	13 28 46	3994.97	10.28	150.76	25.87	57.22	14 35 21	3395.0	5.89	144.42

DIFFERENTIAL CORRECTIONS
TDE-1.7606 TRA 5.6590 TC3-5.7976 BAU 1.7095
RDE .8081 RRA -.6295 RC3 .8796 FAU .40390
FDE-6.8364 FRA17.7090 FC-16.0354 BSP 31339
BDE 1.9372 BRA 5.6939 BC3 5.8639 FSP 8654

MID-COURSE EXECUTION ACCURACY
SGT 9259.9 SGR 1516.1 SG3 2446.1
RRT -.8796 RRF -.9002 RTF .9963
SGB 9383.2 R23 .0392 R13 -.9968
SG1 9356.0 SG2 713.9 THA 171.76

ORBIT DETERMINATION ACCURACY
ST 3058.0 SR 1020.5 SS 3214.6
CRT -.8537 CRS .9046 CST -.9942
LSA 4521.9 MSA 528.3 SSA 14.9
EL1 3183.1 EL2 510.5 ALF 163.67

LAUNCH DATE OCT 7 1964 FLIGHT TIME 364.00 ARRIVAL DATE OCT 6 1965

HELIOCENTRIC CONIC DISTANCE 827.337 EARTH TO MARS

RL 149.50 LAL -.00 LOL 13.76 VL 32.544 GAL -7.89 AZL 88.71 HCA 258.68 SMA 185.26 ECC .23541 INC 1.2904 V1 29.805
RP 216.74 LAP -1.27 LOP 272.44 VP 22.545 GAP -9.52 AZP 90.25 TAL 316.42 TAP 215.10 RCA 141.65 APO 228.87 V2 25.346
RC 284.057 GL 8.87 GP 6.96 ZAL 147.47 ZAP 60.81 ETS 183.47 ZAE 91.71 ETE 178.76 ZAC 89.17 ETC 259.52 CLP 60.58

PLANETOCENTRIC CONIC

C3 22.187 VHL 4.710 DLA 15.11 RAL 167.21 RAD 6567.9 VEL 11.982 PTH 2.14 VHP 3.510 DPA 18.52 RAP 158.35 ECC 1.3651

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 24 49	2729.01	-27.84	76.66	35.74	95.38	20 10 18	2129.0	-26.81	68.15
90.00	11 26 44	4393.63	6.25	182.82	29.01	62.33	12 39 58	3793.6	2.49	176.15
100.00	20 54 22	2440.21	-29.19	55.25	35.58	96.74	21 35 3	1840.2	-27.95	46.67
100.00	12 39 52	4157.66	7.44	164.83	28.36	60.97	13 49 10	3557.7	3.51	158.24
110.00	22 20 56	2169.39	-32.73	34.06	34.95	100.45	22 57 5	1569.4	-30.95	25.30
110.00	13 29 48	4001.25	10.52	151.10	26.50	57.29	14 36 29	3401.2	6.13	144.76

DIFFERENTIAL CORRECTIONS
TDE-1.8527 TRA 5.8985 TC3-5.8801 BAU 1.7620
RDE .8087 RRA -.6083 RC3 .8450 FAU .38931
FDE-6.6990 FRA17.2041 FC-15.1912 BSP 32311
BDE 2.0215 BRA 5.9298 BC3 5.9405 FSP 8339

MID-COURSE EXECUTION ACCURACY
SGT 9539.2 SGR 1479.5 SG3 2352.0
RRT -.8732 RRF -.8944 RTF .9964
SGB 9653.3 R23 .0401 R13 -.9968
SG1 9626.8 SG2 714.6 THA 172.24

ORBIT DETERMINATION ACCURACY
ST 3174.5 SR 1010.5 SS 3164.6
CRT -.8521 CRS .9030 CST -.9943
LSA 4564.2 MSA 529.9 SSA 14.6
EL1 3292.2 EL2 509.9 ALF 164.44

LAUNCH DATE OCT 7 1964 FLIGHT TIME 366.00 ARRIVAL DATE OCT 8 1965

HELIOCENTRIC CONIC DISTANCE 831.392 EARTH TO MARS

RL 149.50 LAL -.00 LOL 13.76 VL 32.546 GAL -7.98 AZL 88.69 HCA 259.83 SMA 185.29 ECC .23641 INC 1.3129 V1 29.805
RP 216.39 LAP -1.29 LOP 273.59 VP 22.591 GAP -9.72 AZP 90.23 TAL 316.03 TAP 215.86 RCA 141.49 APO 229.09 V2 25.385
RC 285.296 GL 8.94 GP 6.82 ZAL 147.82 ZAP 59.36 ETS 183.63 ZAE 90.01 ETE 179.01 ZAC 88.99 ETC 259.58 CLP 59.12

PLANETOCENTRIC CONIC

C3 22.590 VHL 4.753 DLA 15.03 RAL 167.60 RAD 6567.9 VEL 11.999 PTH 2.14 VHP 3.572 DPA 18.51 RAP 158.00 ECC 1.3718

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 27 10	2730.39	-27.85	76.76	36.43	95.33	20 12 40	2130.4	-26.82	68.24
90.00	11 27 32	4401.00	6.48	183.24	29.66	62.37	12 40 53	3801.0	2.73	176.57
100.00	20 56 39	2441.78	-29.20	55.37	36.27	96.68	21 37 21	1841.8	-27.97	46.78
100.00	12 40 44	4164.83	7.68	165.23	29.01	61.02	13 50 9	3564.8	3.75	158.64
110.00	22 23 4	2171.37	-32.76	34.21	35.65	100.36	22 59 16	1571.4	-30.98	25.44
110.00	13 30 48	4008.01	10.76	151.47	27.14	57.36	14 37 36	3408.0	6.38	145.11

DIFFERENTIAL CORRECTIONS
TDE-1.9457 TRA 6.1391 TC3-5.9495 BAU 1.8134
RDE .8094 RRA -.5878 RC3 .8110 FAU .37465
FDE-6.5571 FRA16.7013 FC-14.3580 BSP 33276
BDE 2.1073 BRA 6.1671 BC3 6.0045 FSP 8033

MID-COURSE EXECUTION ACCURACY
SGT 9808.3 SGR 1443.8 SG3 2258.5
RRT -.8665 RRF -.8884 RTF .9964
SGB 9913.9 R23 .0409 R13 -.9968
SG1 9888.1 SG2 715.0 THA 172.69

ORBIT DETERMINATION ACCURACY
ST 3288.6 SR 1000.5 SS 3112.9
CRT -.8505 CRS .9015 CST -.9943
LSA 4606.9 MSA 531.2 SSA 14.4
EL1 3399.5 EL2 509.0 ALF 165.15

LAUNCH DATE OCT 7 1964 FLIGHT TIME 368.00 ARRIVAL DATE OCT 10 1965

HELIOCENTRIC CONIC DISTANCE 835.449 EARTH TO MARS
RL 149.50 LAL -.00 LOL 13.76 VL 32.548 GAL -8.08 AZL 88.66 HCA 260.99 SMA 185.32 ECC .23746 INC 1.3353 V1 29.805
RP 216.05 LAP -1.32 LOP 274.75 VP 22.637 GAP -9.93 AZP 90.21 TAL 315.62 TAP 216.62 RCA 141.32 APO 229.33 V2 25.423
RC 286.520 GL 9.01 GP 6.69 ZAL 148.19 ZAP 57.95 ETS 183.79 ZAE 88.34 ETE 179.24 ZAC 88.81 ETC 259.62 CLP 57.70
PLANETOCENTRIC CONIC
C3 23.018 VHL 4.798 DLA 14.93 RAL 168.00 RAD 6567.9 VEL 12.016 PTH 2.14 VHP 3.636 DPA 18.48 RAP 157.70 ECC 1.3788

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 29 37	2731.60	-27.86	76.85	37.14	95.28	20 15 9	2131.6	-26.84	68.33
90.00	11 28 17	4408.91	6.73	183.69	30.32	62.43	12 41 46	3808.9	2.99	177.01
100.00	20 59 3	2443.22	-29.22	55.47	36.98	96.62	21 39 46	1843.2	-27.99	46.89
100.00	12 41 33	4172.52	7.93	165.66	29.67	61.08	13 51 5	3572.5	4.01	159.06
110.00	22 25 19	2173.26	-32.78	34.36	36.36	100.28	23 1 32	1573.3	-31.02	25.58
110.00	13 31 45	4015.24	11.03	151.86	27.80	57.44	14 38 41	3415.2	6.66	145.50

DIFFERENTIAL CORRECTIONS
TDE-2.0396 TRA 6.3813 TC3-6.0064 BAU 1.8637
RDE .8103 RRA -.5679 RC3 .7778 FAU .36003
FDE-6.4137 FRA16.2019 FC-13.5415 BSP 34213
BDE 2.1946 BRA 6.4065 BC3 6.0566 FSP 7728

MID-COURSE EXECUTION ACCURACY
SGT10067.6 SGR 1409.2 SG3 2166.1
RRT -.8595 RRF -.8821 RTF .9964
SGB10165.8 R23 .0418 R13 -.9968
SG110140.6 SG2 715.1 THA 173.11

ORBIT DETERMINATION ACCURACY
ST 3400.2 SR 990.5 SS 3060.2
CRT -.8489 CRS .9000 CST -.9944
LSA 4650.2 MSA 532.3 SSA 14.2
EL1 3504.9 EL2 507.9 ALF 165.81

LAUNCH DATE OCT 7 1964 FLIGHT TIME 370.00 ARRIVAL DATE OCT 12 1965

HELIOCENTRIC CONIC DISTANCE 839.506 EARTH TO MARS
RL 149.50 LAL -.00 LOL 13.76 VL 32.550 GAL -8.18 AZL 88.64 HCA 262.16 SMA 185.36 ECC .23857 INC 1.3576 V1 29.805
RP 215.71 LAP -1.34 LOP 275.92 VP 22.682 GAP -10.13 AZP 90.19 TAL 315.21 TAP 217.36 RCA 141.14 APO 229.58 V2 25.461
RC 287.729 GL 9.07 GP 6.56 ZAL 148.56 ZAP 56.58 ETS 183.93 ZAE 86.72 ETE 179.46 ZAC 88.64 ETC 259.65 CLP 56.33
PLANETOCENTRIC CONIC
C3 23.471 VHL 4.845 DLA 14.83 RAL 168.41 RAD 6568.0 VEL 12.035 PTH 2.15 VHP 3.702 DPA 18.44 RAP 157.44 ECC 1.3863

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 32 12	2732.65	-27.87	76.92	37.87	95.25	20 17 45	2132.6	-26.85	68.41
90.00	11 28 58	4417.37	7.00	184.17	31.01	62.49	12 42 35	3817.4	3.26	177.48
100.00	21 1 33	2444.51	-29.23	55.57	37.71	96.57	21 42 17	1844.5	-28.01	46.98
100.00	12 42 18	4180.73	8.20	166.12	30.36	61.15	13 51 59	3580.7	4.29	159.51
110.00	22 27 40	2175.06	-32.80	34.49	37.09	100.20	23 3 55	1575.1	-31.05	25.71
110.00	13 32 41	4022.95	11.31	152.28	28.49	57.53	14 39 44	3422.9	6.95	145.90

DIFFERENTIAL CORRECTIONS
TDE-2.1355 TRA 6.6248 TC3-6.0519 BAU 1.9133
RDE .8114 RRA -.5487 RC3 .7455 FAU .34553
FDE-6.2711 FRA15.7056 FC-12.7453 BSP 35112
BDE 2.2844 BRA 6.6475 BC3 6.0977 FSP 7424

MID-COURSE EXECUTION ACCURACY
SGT10317.6 SGR 1376.0 SG3 2074.9
RRT -.8523 RRF -.8757 RTF .9964
SGB10408.9 R23 .0428 R13 -.9967
SG110384.3 SG2 715.1 THA 173.48

ORBIT DETERMINATION ACCURACY
ST 3510.2 SR 980.8 SS 3007.2
CRT -.8473 CRS .8987 CST -.9944
LSA 4694.9 MSA 533.0 SSA 14.0
EL1 3609.2 EL2 506.6 ALF 166.41

LAUNCH DATE OCT 7 1964 FLIGHT TIME 372.00 ARRIVAL DATE OCT 14 1965

HELIOCENTRIC CONIC DISTANCE 843.565 EARTH TO MARS
RL 149.50 LAL -.00 LOL 13.76 VL 32.552 GAL -8.29 AZL 88.62 HCA 263.32 SMA 185.40 ECC .23975 INC 1.3798 V1 29.805
RP 215.38 LAP -1.37 LOP 277.08 VP 22.728 GAP -10.33 AZP 90.16 TAL 314.77 TAP 218.09 RCA 140.95 APO 229.84 V2 25.498
RC 288.924 GL 9.12 GP 6.43 ZAL 148.95 ZAP 55.24 ETS 184.07 ZAE 85.13 ETE 179.67 ZAC 88.49 ETC 259.68 CLP 54.99
PLANETOCENTRIC CONIC
C3 23.950 VHL 4.894 DLA 14.72 RAL 168.83 RAD 6568.0 VEL 12.055 PTH 2.15 VHP 3.772 DPA 18.38 RAP 157.23 ECC 1.3942

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 34 54	2733.55	-27.87	76.99	38.61	95.21	20 20 27	2133.6	-26.86	68.47
90.00	11 29 36	4426.36	7.28	184.68	31.71	62.56	12 43 22	3826.4	3.55	177.98
100.00	21 4 9	2445.68	-29.23	55.66	38.45	96.53	21 44 55	1845.7	-28.02	47.06
100.00	12 43 1	4189.46	8.49	166.61	31.06	61.23	13 52 50	3589.5	4.58	160.00
110.00	22 30 6	2176.78	-32.82	34.62	37.84	100.13	23 6 23	1576.8	-31.08	25.84
110.00	13 33 34	4031.13	11.61	152.72	29.19	57.62	14 40 45	3431.1	7.26	146.34

DIFFERENTIAL CORRECTIONS
TDE-2.2325 TRA 6.8705 TC3-6.0855 BAU 1.9619
RDE .8129 RRA -.5302 RC3 .7141 FAU .33116
FDE-6.1270 FRA15.2159 FC-11.9706 BSP 36003
BDE 2.3759 BRA 6.8909 BC3 6.1272 FSP 7130

MID-COURSE EXECUTION ACCURACY
SGT10558.1 SGR 1343.9 SG3 1985.3
RRT -.8449 RRF -.8691 RTF .9963
SGB10643.3 R23 .0437 R13 -.9967
SG110619.2 SG2 714.8 THA 173.83

ORBIT DETERMINATION ACCURACY
ST 3617.8 SR 971.2 SS 2953.2
CRT -.8458 CRS .8975 CST -.9944
LSA 4740.0 MSA 533.4 SSA 13.9
EL1 3711.7 EL2 505.1 ALF 166.96

LAUNCH DATE OCT 7 1964 FLIGHT TIME 374.00 ARRIVAL DATE OCT 16 1965

HELIOCENTRIC CONIC DISTANCE 847.623 EARTH TO MARS
RL 149.50 LAL -.00 LOL 13.76 VL 32.554 GAL -8.39 AZL 88.60 HCA 264.49 SMA 185.44 ECC .24098 INC 1.4020 V1 29.805
RP 215.05 LAP -1.40 LOP 278.25 VP 22.773 GAP -10.53 AZP 90.13 TAL 314.32 TAP 218.81 RCA 140.75 APO 230.12 V2 25.535
RC 290.105 GL 9.17 GP 6.30 ZAL 149.35 ZAP 53.95 ETS 184.20 ZAE 83.58 ETE 179.87 ZAC 88.34 ETC 259.70 CLP 53.70
PLANETOCENTRIC CONIC
C3 24.458 VHL 4.945 DLA 14.59 RAL 169.25 RAD 6568.0 VEL 12.076 PTH 2.16 VHP 3.844 DPA 18.31 RAP 157.06 ECC 1.4025

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 37 42	2734.32	-27.88	77.05	39.37	95.19	20 23 16	2134.3	-26.87	68.52
90.00	11 30 10	4435.87	7.58	185.22	32.44	62.63	12 44 6	3835.9	3.85	178.52
100.00	21 6 53	2446.74	-29.24	55.73	39.22	96.49	21 47 39	1846.7	-28.04	47.14
100.00	12 43 41	4198.69	8.79	167.13	31.78	61.31	13 53 39	3598.7	4.89	160.51
110.00	22 32 38	2178.43	-32.84	34.75	38.60	100.06	23 8 56	1578.4	-31.11	25.95
110.00	13 34 25	4039.77	11.92	153.20	29.91	57.72	14 41 44	3439.8	7.58	146.80

DIFFERENTIAL CORRECTIONS
TDE-2.3309 TRA 7.1182 TC3-6.1083 BAU 2.0098
RDE .8145 RRA -.5125 RC3 .6839 FAU .31703
FDE-5.9823 FRA14.7320 FC-11.2220 BSP 36870
BDE 2.4691 BRA 7.1366 BC3 6.1465 FSP 6839

MID-COURSE EXECUTION ACCURACY
SGT10789.5 SGR 1313.2 SG3 1897.4
RRT -.8373 RRF -.8624 RTF .9963
SGB10869.1 R23 .0448 R13 -.9966
SG110845.6 SG2 714.2 THA 174.16

ORBIT DETERMINATION ACCURACY
ST 3723.0 SR 961.7 SS 2898.3
CRT -.8442 CRS .8963 CST -.9943
LSA 4785.5 MSA 533.6 SSA 13.7
EL1 3812.1 EL2 503.4 ALF 167.48

LAUNCH DATE OCT 7 1964 FLIGHT TIME 376.00 ARRIVAL DATE OCT 18 1965

HELIOCENTRIC CONIC DISTANCE 851.681 EARTH TO MARS

RL 149.50 LAL -.00 LOL 13.76 VL 32.557 GAL -8.51 AZL 88.58 HCA 265.67 SMA 185.48 ECC .24228 INC 1.4242 V1 29.805
RP 214.72 LAP -1.42 LOP 279.43 VP 22.818 GAP -10.74 AZP 90.11 TAL 313.85 TAP 219.52 RCA 140.54 APO 230.42 V2 25.572
RC 291.272 GL 9.21 GP 6.18 ZAL 149.75 ZAP 52.70 ETS 184.32 ZAE 82.07 ETE 180.05 ZAC 88.21 ETC 259.72 CLP 52.44

PLANETOCENTRIC CONIC

C3 24.995 VHL 4.999 DLA 14.46 RAL 169.68 RAD 6568.0 VEL 12.098 PTH 2.17 VHP 3.919 DPA 18.23 RAP 156.93 ECC 1.4113

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 40 37	2734.96	-27.88	77.09	40.15	95.16	20 26 12	2135.0	-26.87	68.57
90.00	11 30 41	4445.92	7.89	185.79	33.18	62.72	12 44 47	3845.9	4.17	179.08
100.00	21 9 42	2447.69	-29.25	55.80	40.00	96.45	21 50 29	1847.7	-28.05	47.21
100.00	12 44 17	4208.42	9.11	167.67	32.53	61.41	13 54 26	3608.4	5.22	161.04
110.00	22 35 15	2180.00	-32.86	34.87	39.39	99.99	23 11 35	1580.0	-31.14	26.07
110.00	13 35 14	4048.87	12.26	153.69	30.65	57.84	14 42 42	3448.9	7.92	147.28

DIFFERENTIAL CORRECTIONS
TDE-2.4320 TRA 7.3685 TC3-6.1206 BAU 2.0569
RDE .8166 RRA -.4956 RC3 .6547 FAU .30312
FDE-5.8399 FRA14.2559 FC-10.4992 BSP 37704
BDE 2.5654 BRA 7.3852 BC3 6.1555 FSP 6554

MID-COURSE EXECUTION ACCURACY
SGT11012.5 SGR 1283.9 SG3 1811.7
RRT -.8296 RRF -.8556 RTF .9962
SGB11087.1 R23 .0458 R13 -.9965
SG111064.1 SG2 713.5 THA 174.45

ORBIT DETERMINATION ACCURACY
ST 3827.1 SR 952.4 SS 2843.5
CRT -.8429 CRS .8953 CST -.9943
LSA 4832.7 MSA 533.3 SSA 13.6
EL1 3911.8 EL2 501.4 ALF 167.95

LAUNCH DATE OCT 7 1964 FLIGHT TIME 378.00 ARRIVAL DATE OCT 20 1965

HELIOCENTRIC CONIC DISTANCE 855.739 EARTH TO MARS

RL 149.50 LAL -.00 LOL 13.76 VL 32.560 GAL -8.63 AZL 88.55 HCA 266.85 SMA 185.53 ECC .24364 INC 1.4464 V1 29.805
RP 214.40 LAP -1.44 LOP 280.61 VP 22.862 GAP -10.94 AZP 90.08 TAL 313.37 TAP 220.22 RCA 140.32 APO 230.73 V2 25.608
RC 292.426 GL 9.25 GP 6.06 ZAL 150.17 ZAP 51.48 ETS 184.44 ZAE 80.59 ETE 180.23 ZAC 88.08 ETC 259.72 CLP 51.23

PLANETOCENTRIC CONIC

C3 25.563 VHL 5.056 DLA 14.32 RAL 170.12 RAD 6568.0 VEL 12.122 PTH 2.17 VHP 3.997 DPA 18.13 RAP 156.84 ECC 1.4207

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 43 38	2735.49	-27.88	77.13	40.95	95.15	20 29 14	2135.5	-26.88	68.61
90.00	11 31 9	4456.47	8.22	186.39	33.94	62.81	12 45 25	3856.5	4.51	179.67
100.00	21 12 37	2448.54	-29.26	55.87	40.79	96.42	21 53 25	1848.5	-28.06	47.27
100.00	12 44 51	4218.66	9.44	168.25	33.29	61.51	13 55 10	3618.7	5.56	161.61
110.00	22 37 57	2181.52	-32.88	34.98	40.19	99.92	23 14 19	1581.5	-31.16	26.18
110.00	13 36 0	4058.44	12.60	154.22	31.41	57.96	14 43 39	3458.4	8.28	147.79

DIFFERENTIAL CORRECTIONS
TDE-2.5338 TRA 7.6225 TC3-6.1217 BAU 2.1030
RDE .8188 RRA -.4796 RC3 .6266 FAU .28947
FDE-5.6955 FRA13.7880 FC3-9.8035 BSP 38543
BDE 2.6628 BRA 7.6375 BC3 6.1537 FSP 6279

MID-COURSE EXECUTION ACCURACY
SGT11226.7 SGR 1255.8 SG3 1727.9
RRT -.8219 RRF -.8487 RTF .9961
SGB11296.7 R23 .0469 R13 -.9964
SG111274.3 SG2 712.4 THA 174.73

ORBIT DETERMINATION ACCURACY
ST 3928.4 SR 943.2 SS 2787.5
CRT -.8415 CRS .8943 CST -.9943
LSA 4879.3 MSA 532.8 SSA 13.5
EL1 4009.1 EL2 499.4 ALF 168.39

LAUNCH DATE OCT 7 1964 FLIGHT TIME 380.00 ARRIVAL DATE OCT 22 1965

HELIOCENTRIC CONIC DISTANCE 859.795 EARTH TO MARS

RL 149.50 LAL -.00 LOL 13.76 VL 32.562 GAL -8.75 AZL 88.53 HCA 268.03 SMA 185.57 ECC .24508 INC 1.4686 V1 29.805
RP 214.08 LAP -1.47 LOP 281.79 VP 22.906 GAP -11.14 AZP 90.05 TAL 312.88 TAP 220.90 RCA 140.09 APO 231.05 V2 25.644
RC 293.566 GL 9.28 GP 5.94 ZAL 150.59 ZAP 50.30 ETS 184.55 ZAE 79.15 ETE 180.39 ZAC 87.96 ETC 259.72 CLP 50.05

PLANETOCENTRIC CONIC

C3 26.163 VHL 5.115 DLA 14.16 RAL 170.56 RAD 6568.1 VEL 12.147 PTH 2.18 VHP 4.077 DPA 18.02 RAP 156.80 ECC 1.4306

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 46 46	2735.91	-27.89	77.16	41.77	95.13	20 32 22	2135.9	-26.88	68.64
90.00	11 31 34	4467.54	8.56	187.02	34.72	62.91	12 46 1	3867.5	4.86	180.29
100.00	21 15 38	2449.30	-29.26	55.92	41.61	96.39	21 56 27	1849.3	-28.07	47.32
100.00	12 45 22	4229.38	9.79	168.86	34.07	61.61	13 55 52	3629.4	5.92	162.21
110.00	22 40 45	2182.99	-32.90	35.09	41.00	99.86	23 17 8	1583.0	-31.19	26.29
110.00	13 36 45	4068.45	12.96	154.77	32.19	58.09	14 44 33	3468.5	8.65	148.32

DIFFERENTIAL CORRECTIONS
TDE-2.6388 TRA 7.8787 TC3-6.1142 BAU 2.1489
RDE .8215 RRA -.4643 RC3 .5997 FAU .27616
FDE-5.5547 FRA13.3271 FC3-9.1380 BSP 39325
BDE 2.7637 BRA 7.8924 BC3 6.1436 FSP 6005

MID-COURSE EXECUTION ACCURACY
SGT11432.8 SGR 1229.2 SG3 1646.5
RRT -.8140 RRF -.8418 RTF .9960
SGB11498.6 R23 .0480 R13 -.9963
SG111476.6 SG2 711.2 THA 174.98

ORBIT DETERMINATION ACCURACY
ST 4028.5 SR 934.4 SS 2731.7
CRT -.8403 CRS .8936 CST -.9942
LSA 4927.5 MSA 531.9 SSA 13.4
EL1 4105.4 EL2 497.1 ALF 168.80

LAUNCH DATE OCT 7 1964 FLIGHT TIME 382.00 ARRIVAL DATE OCT 24 1965

HELIOCENTRIC CONIC DISTANCE 863.849 EARTH TO MARS

RL 149.50 LAL -.00 LOL 13.76 VL 32.565 GAL -8.88 AZL 88.51 HCA 269.21 SMA 185.62 ECC .24658 INC 1.4908 V1 29.805
RP 213.77 LAP -1.49 LOP 282.97 VP 22.950 GAP -11.35 AZP 90.02 TAL 312.36 TAP 221.57 RCA 139.85 APO 231.40 V2 25.679
RC 294.693 GL 9.31 GP 5.82 ZAL 151.03 ZAP 49.16 ETS 184.65 ZAE 77.74 ETE 180.55 ZAC 87.86 ETC 259.71 CLP 48.90

PLANETOCENTRIC CONIC

C3 26.798 VHL 5.177 DLA 14.00 RAL 171.01 RAD 6568.1 VEL 12.173 PTH 2.18 VHP 4.160 DPA 17.90 RAP 156.79 ECC 1.4410

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 49 59	2736.23	-27.89	77.18	42.60	95.12	20 35 35	2136.2	-26.89	68.66
90.00	11 31 55	4479.11	8.92	187.68	35.52	63.01	12 46 34	3879.1	5.23	180.94
100.00	21 18 44	2449.98	-29.27	55.97	42.44	96.37	21 59 34	1850.0	-28.08	47.37
100.00	12 45 51	4240.59	10.15	169.49	34.87	61.73	13 56 31	3640.6	6.29	162.83
110.00	22 43 37	2184.42	-32.91	35.20	41.84	99.80	23 20 1	1584.4	-31.21	26.39
110.00	13 37 28	4078.92	13.34	155.35	32.99	58.23	14 45 27	3478.9	9.04	148.88

DIFFERENTIAL CORRECTIONS
TDE-2.7460 TRA 8.1386 TC3-6.0977 BAU 2.1943
RDE .8246 RRA -.4499 RC3 .5739 FAU .26320
FDE-5.4145 FRA12.8748 FC3-8.5027 BSP 40097
BDE 2.8671 BRA 8.1510 BC3 6.1246 FSP 5740

MID-COURSE EXECUTION ACCURACY
SGT11631.0 SGR 1203.9 SG3 1567.4
RRT -.8063 RRF -.8350 RTF .9959
SGB11693.2 R23 .0492 R13 -.9962
SG111671.6 SG2 709.7 THA 175.21

ORBIT DETERMINATION ACCURACY
ST 4126.7 SR 925.7 SS 2675.4
CRT -.8392 CRS .8930 CST -.9941
LSA 4976.2 MSA 530.8 SSA 13.4
EL1 4200.3 EL2 494.6 ALF 169.19

LAUNCH DATE OCT 7 1964 FLIGHT TIME 384.00 ARRIVAL DATE OCT 26 1965

HELIOCENTRIC CONIC DISTANCE 867.901 EARTH TO MARS

RL	149.50	LAL	-.00	LOL	13.76	VL	32.569	GAL	-9.01	AZL	88.49	HCA	270.40	SMA	185.68	ECC	.24816	INC	1.5131	V1	29.805
RP	213.46	LAP	-1.51	LOP	284.16	VP	22.993	GAP	-11.55	AZP	89.99	TAL	311.83	TAP	222.23	RCA	139.60	APO	231.75	V2	25.714
RC	295.805	GL	9.33	GP	5.71	ZAL	151.48	ZAP	48.05	ETS	184.75	ZAE	76.37	ETE	180.70	ZAC	87.76	ETC	259.70	CLP	47.80

PLANETOCENTRIC CONIC

C3	27.470	VHL	5.241	DLA	13.83	RAL	171.47	RAD	6568.1	VEL	12.200	PTH	2.19	VHP	4.246	DPA	17.76	RAP	156.83	ECC	1.4521

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 53 18	2736.47	-27.89	77.20	43.45	95.11	20 38 54	2136.5	-26.89	68.68
90.00	11 32 14	4491.17	9.29	188.37	36.34	63.13	12 47 5	3891.2	5.62	181.62
100.00	21 21 57	2450.59	-29.27	56.02	43.29	96.34	22 2 47	1850.6	-28.09	47.41
100.00	12 46 17	4252.25	10.53	170.16	35.69	61.86	13 57 9	3652.3	6.68	163.48
110.00	22 46 34	2185.80	-32.93	35.30	42.69	99.74	23 23 0	1585.8	-31.24	26.49
110.00	13 38 9	4089.83	13.73	155.95	33.81	58.38	14 46 18	3489.8	9.45	149.47

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-2.8557	TRA	8.4030	TC3	-6.0714	BAU	2.2388	SGT	11821.6	SGR	1179.9
RDE	.8280	RRA	-.4364	RC3	.5492	FAU	.25052	RRT	-.7985	RRF	-.8283
FDE	-5.2764	FRA	12.4312	FC3	-7.8955	BSP	40848	SGB	11880.4	R23	.0505
BDE	2.9733	BRA	8.4143	BC3	6.0962	FSP	5480	SG1	11859.2	SG2	708.0

SG3	1490.6	ST	4223.4	SR	917.2	SS	2619.0
RTF	.9958	CRT	-.8383	CRS	.8925	CST	-.9941
R13	-.9960	LSA	5025.7	MSA	529.5	SSA	13.3
THA	175.43	EL1	4293.8	EL2	492.0	ALF	169.54

LAUNCH DATE OCT 7 1964 FLIGHT TIME 386.00 ARRIVAL DATE OCT 28 1965

HELIOCENTRIC CONIC DISTANCE 871.949 EARTH TO MARS

RL	149.50	LAL	-.00	LOL	13.76	VL	32.572	GAL	-9.15	AZL	88.46	HCA	271.59	SMA	185.73	ECC	.24981	INC	1.5355	V1	29.805
RP	213.16	LAP	-1.53	LOP	285.35	VP	23.036	GAP	-11.75	AZP	89.96	TAL	311.29	TAP	222.88	RCA	139.33	APO	232.13	V2	25.748
RC	296.904	GL	9.34	GP	5.60	ZAL	151.93	ZAP	46.98	ETS	184.84	ZAE	75.02	ETE	180.84	ZAC	87.68	ETC	259.68	CLP	46.72

PLANETOCENTRIC CONIC

C3	28.180	VHL	5.308	DLA	13.66	RAL	171.93	RAD	6568.1	VEL	12.229	PTH	2.20	VHP	4.335	DPA	17.62	RAP	156.90	ECC	1.4638

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 56 42	2736.63	-27.89	77.21	44.32	95.10	20 42 19	2136.6	-26.89	68.69
90.00	11 32 30	4503.73	9.68	189.09	37.18	63.26	12 47 34	3903.7	6.01	182.33
100.00	21 25 14	2451.14	-29.28	56.06	44.16	96.32	22 6 5	1851.1	-28.09	47.45
100.00	12 46 40	4264.45	10.92	170.85	36.53	62.00	13 57 45	3664.4	7.09	164.16
110.00	22 49 36	2187.17	-32.95	35.41	43.56	99.68	23 26 3	1587.2	-31.26	26.59
110.00	13 38 48	4101.19	14.13	156.58	34.65	58.55	14 47 9	3501.2	9.87	150.08

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-2.9684	TRA	8.6712	TC3	-6.0390	BAU	2.2837	SGT	12005.6	SGR	1157.2
RDE	.8318	RRA	-.4236	RC3	.5257	FAU	.23829	RRT	-.7909	RRF	-.8218
FDE	-5.1401	FRA	11.9958	FC3	-7.3208	BSP	41559	SGB	12061.2	R23	.0518
BDE	3.0827	BRA	8.6815	BC3	6.0618	FSP	5226	SG1	12040.6	SG2	706.1

SG3	1416.3	ST	4318.6	SR	909.0	SS	2562.4
RTF	.9956	CRT	-.8375	CRS	.8922	CST	-.9940
R13	-.9958	LSA	5075.8	MSA	527.8	SSA	13.2
THA	175.63	EL1	4386.0	EL2	489.1	ALF	169.88

LAUNCH DATE OCT 7 1964 FLIGHT TIME 388.00 ARRIVAL DATE OCT 30 1965

HELIOCENTRIC CONIC DISTANCE 875.994 EARTH TO MARS

RL	149.50	LAL	-.00	LOL	13.76	VL	32.575	GAL	-9.30	AZL	88.44	HCA	272.79	SMA	185.79	ECC	.25154	INC	1.5579	V1	29.805
RP	212.87	LAP	-1.56	LOP	286.55	VP	23.078	GAP	-11.96	AZP	89.92	TAL	310.72	TAP	223.51	RCA	139.05	APO	232.52	V2	25.782
RC	297.989	GL	9.35	GP	5.50	ZAL	152.39	ZAP	45.94	ETS	184.93	ZAE	73.71	ETE	180.98	ZAC	87.60	ETC	259.65	CLP	45.68

PLANETOCENTRIC CONIC

C3	28.930	VHL	5.379	DLA	13.47	RAL	172.40	RAD	6568.2	VEL	12.260	PTH	2.21	VHP	4.426	DPA	17.46	RAP	157.01	ECC	1.4761

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 0 12	2736.73	-27.89	77.22	45.20	95.10	20 45 49	2136.7	-26.89	68.70
90.00	11 32 44	4516.76	10.08	189.84	38.05	63.40	12 48 1	3916.8	6.43	183.07
100.00	21 28 36	2451.64	-29.28	56.09	45.04	96.30	22 9 28	1851.6	-28.10	47.49
100.00	12 47 1	4277.08	11.32	171.57	37.40	62.15	13 58 18	3677.1	7.50	164.86
110.00	22 52 42	2188.51	-32.96	35.51	44.44	99.62	23 29 10	1588.5	-31.28	26.69
110.00	13 39 25	4112.98	14.55	157.24	35.51	58.72	14 47 58	3513.0	10.30	150.72

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-3.0842	TRA	8.9438	TC3	-5.9982	BAU	2.3281	SGT	12182.1	SGR	1135.7
RDE	.8361	RRA	-.4118	RC3	.5033	FAU	.22638	RRT	-.7834	RRF	-.8155
FDE	-5.0061	FRA	11.5691	FC3	-6.7745	BSP	42253	SGB	12235.0	R23	.0532
BDE	3.1956	BRA	8.9533	BC3	6.0193	FSP	4979	SG1	12214.7	SG2	704.0

SG3	1344.4	ST	4412.4	SR	901.0	SS	2505.8
RTF	.9954	CRT	-.8368	CRS	.8922	CST	-.9939
R13	-.9956	LSA	5126.8	MSA	525.9	SSA	13.1
THA	175.81	EL1	4477.2	EL2	486.1	ALF	170.19

LAUNCH DATE OCT 7 1964 FLIGHT TIME 390.00 ARRIVAL DATE NOV 1 1965

HELIOCENTRIC CONIC DISTANCE 880.033 EARTH TO MARS

RL	149.50	LAL	-.00	LOL	13.76	VL	32.579	GAL	-9.45	AZL	88.42	HCA	273.98	SMA	185.85	ECC	.25335	INC	1.5805	V1	29.805
RP	212.57	LAP	-1.58	LOP	287.75	VP	23.120	GAP	-12.17	AZP	89.89	TAL	310.15	TAP	224.13	RCA	138.76	APO	232.93	V2	25.815
RC	299.061	GL	9.36	GP	5.40	ZAL	152.86	ZAP	44.93	ETS	185.01	ZAE	72.43	ETE	181.11	ZAC	87.53	ETC	259.62	CLP	44.68

PLANETOCENTRIC CONIC

C3	29.724	VHL	5.452	DLA	13.27	RAL	172.87	RAD	6568.2	VEL	12.292	PTH	2.21	VHP	4.520	DPA	17.30	RAP	157.15	ECC	1.4892

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 3 47	2736.77	-27.89	77.22	46.10	95.10	20 49 24	2136.8	-26.89	68.70
90.00	11 32 55	4530.27	10.49	190.62	38.93	63.55	12 48 25	3930.3	6.85	183.83
100.00	21 32 3	2452.10	-29.28	56.13	45.94	96.29	22 12 55	1852.1	-28.10	47.52
100.00	12 47 20	4290.17	11.73	172.32	38.28	62.31	13 58 50	3690.2	7.94	165.59
110.00	22 55 52	2189.83	-32.98	35.61	45.34	99.56	23 32 22	1589.8	-31.30	26.79
110.00	13 40 0	4125.20	14.98	157.93	36.40	58.91	14 48 45	3525.2	10.75	151.38

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-3.2028	TRA	9.2215	TC3	-5.9500	BAU	2.3722	SGT	12351.7	SGR	1115.3
RDE	.8407	RRA	-.4008	RC3	.4818	FAU	.21484	RRT	-.7761	RRF	-.8093
FDE	-4.8726	FRA	11.1506	FC3	-6.2574	BSP	42921	SGB	12402.0	R23	.0546
BDE	3.3113	BRA	9.2302	BC3	5.9695	FSP	4739	SG1	12382.1	SG2	701.6

SG3	1274.9	ST	4504.4	SR	893.1	SS	2448.6
RTF	.9952	CRT	-.8363	CRS	.8922	CST	-.9937
R13	-.9954	LSA	5177.7	MSA	523.7	SSA	13.0
THA	175.98	EL1	4566.7	EL2	483.0	ALF	170.48

LAUNCH DATE OCT 7 1964 FLIGHT TIME 392.00 ARRIVAL DATE NOV 3 1965

HELIOCENTRIC CONIC DISTANCE 884.068 EARTH TO MARS

RL 149.50 LAL -.00 LOL 13.76 VL 32.582 GAL -9.61 AZL 88.40 HCA 275.18 SMA 185.91 ECC .25525 INC 1.6031 V1 29.805
RP 212.29 LAP -1.60 LOP 288.95 VP 23.161 GAP -12.38 AZP 89.86 TAL 309.55 TAP 224.73 RCA 138.46 APO 233.36 V2 25.847
RC 300.120 GL 9.36 GP 5.30 ZAL 153.34 ZAP 43.96 ETS 185.09 ZAE 71.18 ETE 181.23 ZAC 87.47 ETC 259.58 CLP 43.70

PLANETOCENTRIC CONIC

C3 30.563 VHL 5.528 DLA 13.07 RAL 173.34 RAD 6568.2 VEL 12.326 PTH 2.22 VHP 4.617 DPA 17.12 RAP 157.33 ECC 1.5030

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 7 27	2736.76	-27.89	77.22	47.02	95.10	20 53 4	2136.8	-26.89	68.70
90.00	11 33 3	4544.24	10.91	191.43	39.83	63.71	12 48 47	3944.2	7.29	184.62
100.00	21 35 35	2452.53	-29.29	56.16	46.86	96.27	22 16 28	1852.5	-28.11	47.55
100.00	12 47 36	4303.71	12.16	173.10	39.18	62.48	13 59 20	3703.7	8.38	166.35
110.00	22 59 7	2191.16	-32.99	35.71	46.26	99.50	23 35 38	1591.2	-31.33	26.88
110.00	13 40 34	4137.84	15.42	158.64	37.30	59.11	14 49 32	3537.8	11.22	152.06

DIFFERENTIAL CORRECTIONS
TDE-3.3254 TRA 9.5047 TC3-5.8965 BAU 2.4167
RDE .8458 RRA -.3907 RC3 .4615 FAU .20370
FDE-4.7420 FRA10.7407 FC3-5.7701 BSP 43554
BDE 3.4312 BRA 9.5128 BC3 5.9146 FSP 4504

MID-COURSE EXECUTION ACCURACY
SGT12515.9 SGR 1096.2 SG3 1207.9
RRT -.7691 RRF -.8035 RTF .9950
SGB12563.8 RZ3 .0562 R13 -.9952
SG112544.4 SG2 699.0 THA 176.13

ORBIT DETERMINATION ACCURACY
ST 4595.6 SR 885.5 SS 2391.5
CRT -.8360 CRS .8925 CST -.9936
LSA 5229.8 MSA 521.3 SSA 13.0
EL1 4655.5 EL2 479.6 ALF 170.75

LAUNCH DATE OCT 7 1964 FLIGHT TIME 394.00 ARRIVAL DATE NOV 5 1965

HELIOCENTRIC CONIC DISTANCE 888.096 EARTH TO MARS

RL 149.50 LAL -.00 LOL 13.76 VL 32.586 GAL -9.77 AZL 88.37 HCA 276.39 SMA 185.97 ECC .25723 INC 1.6260 V1 29.805
RP 212.01 LAP -1.62 LOP 290.15 VP 23.202 GAP -12.59 AZP 89.82 TAL 308.93 TAP 225.32 RCA 138.13 APO 233.81 V2 25.879
RC 301.167 GL 9.35 GP 5.20 ZAL 153.83 ZAP 43.01 ETS 185.16 ZAE 69.96 ETE 181.35 ZAC 87.42 ETC 259.54 CLP 42.76

PLANETOCENTRIC CONIC

C3 31.451 VHL 5.608 DLA 12.86 RAL 173.83 RAD 6568.3 VEL 12.362 PTH 2.23 VHP 4.717 DPA 16.93 RAP 157.55 ECC 1.5176

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 11 12	2736.72	-27.89	77.22	47.96	95.10	20 56 49	2136.7	-26.89	68.70
90.00	11 35 9	4558.67	11.34	192.27	40.75	63.88	12 49 8	3958.7	7.74	185.44
100.00	21 39 12	2452.93	-29.29	56.19	47.80	96.26	22 20 5	1852.9	-28.11	47.58
100.00	12 47 51	4317.70	12.60	173.91	40.11	62.67	13 59 48	3717.7	8.84	167.14
110.00	23 2 26	2192.48	-33.01	35.81	47.20	99.45	23 38 58	1592.5	-31.35	26.98
110.00	13 41 6	4150.91	15.88	159.38	38.23	59.32	14 50 17	3550.9	11.69	152.77

DIFFERENTIAL CORRECTIONS
TDE-3.4524 TRA 9.7917 TC3-5.8379 BAU 2.4617
RDE .8514 RRA -.3814 RC3 .4423 FAU .19299
FDE-4.6143 FRA10.3376 FC3-5.3122 BSP 44134
BDE 3.5559 BRA 9.7991 BC3 5.8546 FSP 4275

MID-COURSE EXECUTION ACCURACY
SGT12673.1 SGR 1078.1 SG3 1143.2
RRT -.7624 RRF -.7981 RTF .9947
SGB12718.8 RZ3 .0578 R13 -.9949
SG112699.8 SG2 696.2 THA 176.28

ORBIT DETERMINATION ACCURACY
ST 4685.7 SR 878.2 SS 2334.6
CRT -.8360 CRS .8931 CST -.9935
LSA 5282.8 MSA 518.5 SSA 12.9
EL1 4743.5 EL2 476.0 ALF 171.00

LAUNCH DATE OCT 7 1964 FLIGHT TIME 396.00 ARRIVAL DATE NOV 7 1965

HELIOCENTRIC CONIC DISTANCE 892.116 EARTH TO MARS

RL 149.50 LAL -.00 LOL 13.76 VL 32.590 GAL -9.94 AZL 88.35 HCA 277.60 SMA 186.04 ECC .25931 INC 1.6490 V1 29.805
RP 211.73 LAP -1.63 LOP 291.36 VP 23.242 GAP -12.80 AZP 89.78 TAL 308.30 TAP 225.90 RCA 137.80 APO 234.28 V2 25.911
RC 302.203 GL 9.34 GP 5.11 ZAL 154.33 ZAP 42.09 ETS 185.23 ZAE 68.77 ETE 181.46 ZAC 87.38 ETC 259.49 CLP 41.84

PLANETOCENTRIC CONIC

C3 32.391 VHL 5.691 DLA 12.64 RAL 174.31 RAD 6568.3 VEL 12.400 PTH 2.24 VHP 4.819 DPA 16.74 RAP 157.79 ECC 1.5331

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 15 1	2736.66	-27.89	77.21	48.91	95.10	21 0 38	2136.7	-26.89	68.69
90.00	11 33 13	4573.55	11.79	193.14	41.70	64.07	12 49 27	3973.6	8.21	186.29
100.00	21 42 53	2453.31	-29.29	56.22	48.75	96.24	22 23 46	1853.3	-28.12	47.61
100.00	12 48 3	4332.13	13.05	174.74	41.05	62.87	14 0 15	3732.1	9.31	167.95
110.00	23 5 48	2193.82	-33.02	35.91	48.15	99.39	23 42 22	1593.8	-31.37	27.08
110.00	13 41 36	4184.39	16.35	160.14	39.18	59.55	14 51 1	3564.4	12.18	153.51

DIFFERENTIAL CORRECTIONS
TDE-3.5826 TRA10.0861 TC3-5.7728 BAU 2.5066
RDE .8573 RRA -.3730 RC3 .4239 FAU .18258
FDE-4.4870 FRA 9.9435 FC3-4.8799 BSP 44717
BDE 3.6838 BRA10.0930 BC3 5.7884 FSP 4054

MID-COURSE EXECUTION ACCURACY
SGT12824.8 SGR 1061.1 SG3 1080.9
RRT -.7561 RRF -.7930 RTF .9944
SGB12868.6 RZ3 .0596 R13 -.9946
SG112850.0 SG2 693.1 THA 176.41

ORBIT DETERMINATION ACCURACY
ST 4774.2 SR 870.9 SS 2277.1
CRT -.8361 CRS .8937 CST -.9933
LSA 5335.8 MSA 515.6 SSA 12.8
EL1 4830.0 EL2 472.3 ALF 171.24

LAUNCH DATE OCT 7 1964 FLIGHT TIME 398.00 ARRIVAL DATE NOV 9 1965

HELIOCENTRIC CONIC DISTANCE 896.129 EARTH TO MARS

RL 149.50 LAL -.00 LOL 13.76 VL 32.594 GAL -10.12 AZL 88.33 HCA 278.81 SMA 186.10 ECC .26147 INC 1.6721 V1 29.805
RP 211.47 LAP -1.65 LOP 292.57 VP 23.282 GAP -13.02 AZP 89.74 TAL 307.66 TAP 226.46 RCA 137.44 APO 234.76 V2 25.941
RC 303.228 GL 9.33 GP 5.02 ZAL 154.83 ZAP 41.21 ETS 185.29 ZAE 67.60 ETE 181.56 ZAC 87.35 ETC 259.43 CLP 40.95

PLANETOCENTRIC CONIC

C3 33.385 VHL 5.778 DLA 12.41 RAL 174.81 RAD 6568.3 VEL 12.440 PTH 2.25 VHP 4.925 DPA 16.53 RAP 158.07 ECC 1.5494

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 18 55	2736.57	-27.89	77.21	49.88	95.11	21 4 31	2136.6	-26.89	68.68
90.00	11 33 15	4588.87	12.24	194.03	42.67	64.27	12 49 44	3988.9	8.68	187.16
100.00	21 46 38	2453.69	-29.30	56.24	49.72	96.23	22 27 31	1853.7	-28.12	47.64
100.00	12 48 13	4346.99	13.51	175.61	42.02	63.08	14 0 40	3747.0	9.79	168.79
110.00	23 9 15	2195.17	-33.04	36.02	49.12	99.33	23 45 50	1595.2	-31.39	27.17
110.00	13 42 5	4178.28	16.82	160.94	40.15	59.80	14 51 44	3578.3	12.69	154.27

DIFFERENTIAL CORRECTIONS
TDE-3.7179 TRA10.3860 TC3-5.7037 BAU 2.5522
RDE .8638 RRA -.3655 RC3 .4065 FAU .17256
FDE-4.3625 FRA 9.5560 FC3-4.4749 BSP 45240
BDE 3.8170 BRA10.3925 BC3 5.7181 FSP 3837

MID-COURSE EXECUTION ACCURACY
SGT12970.9 SGR 1045.1 SG3 1020.8
RRT -.7501 RRF -.7885 RTF .9941
SGB13013.0 RZ3 .0615 R13 -.9943
SG112994.7 SG2 689.9 THA 176.53

ORBIT DETERMINATION ACCURACY
ST 4862.1 SR 863.9 SS 2219.8
CRT -.8364 CRS .8947 CST -.9931
LSA 5389.9 MSA 512.4 SSA 12.8
EL1 4916.0 EL2 468.4 ALF 171.47

LAUNCH DATE OCT 8 1964 FLIGHT TIME 240.00 ARRIVAL DATE JUN 5 1965

HELIOCENTRIC CONIC DISTANCE 587.936 EARTH TO MARS

RL 149.46 LAL -.00 LOL 14.75 VL 33.126 GAL -8.48 AZL 92.82 HCA 193.58 SMA 195.56 ECC .27588 INC 2.8204 V1 29.814
RP 239.42 LAP .66 LOP 208.32 VP 20.736 GAP 9.49 AZP 87.26 TAL 319.21 TAP 152.80 RCA 141.61 APO 249.51 V2 22.943
RC 172.331 GL -17.02 GP 15.41 ZAL 142.79 ZAP 150.54 ETS 149.46 ZAE 158.94 ETE 47.28 ZAC 103.36 ETC 255.75 CLP 154.58

PLANETOCENTRIC CONIC

C3 30.339 VHL 5.508 DLA -8.37 RAL 156.15 RAD 6568.2 VEL 12.317 PTH 2.22 VHP 5.998 DPA 14.04 RAP 189.76 ECC 1.4993

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 39 59	2054.12	-15.38	31.57	22.70	114.07	22 14 13	1454.1	-12.00	24.52
90.00	7 35 31	5223.19	26.42	234.88	27.56	79.43	9 2 34	4623.2	24.70	226.64
100.00	22 57 16	1804.79	-16.56	12.67	22.13	115.25	23 27 21	1204.8	-13.02	5.67
100.00	9 0 55	4947.76	27.70	214.35	27.28	78.28	10 25 23	4347.8	25.80	206.06
110.00	0 0 12	1620.06	-19.69	356.99	20.46	118.52	0 27 12	1020.1	-15.73	350.11
110.00	10 18 24	4705.25	31.11	195.00	26.35	75.07	11 36 50	4105.2	28.75	186.60

DIFFERENTIAL CORRECTIONS
TDE 1.8479 TRA-4.0380 TC3 1.1902 BAU .5677
RDE .8397 RRA-1.2383 RC3 .7366 FAU .15611
FDE-3.6892 FRA 6.7631 FC3-4.4546 BSP 17741
BDE 2.0297 BRA 4.2236 BC3 1.3997 FSP 2567

MID-COURSE EXECUTION ACCURACY
SGT 4841.4 SGR 1765.4 SG3 816.8
RRT .9677 RRF -.9942 RTF -.9614
SGB 5153.2 R23 -.2253 R13 -.9683
SG1 5136.1 SG2 419.7 THA 19.57

ORBIT DETERMINATION ACCURACY
ST 2306.2 SR 957.2 SS 2276.6
CRT .9864 CRS .9962 CST .9968
LSA 3374.5 MSA 172.2 SSA 17.6
EL1 2492.7 EL2 145.4 ALF 22.34

LAUNCH DATE OCT 8 1964 FLIGHT TIME 242.00 ARRIVAL DATE JUN 7 1965

HELIOCENTRIC CONIC DISTANCE 591.445 EARTH TO MARS

RL 149.46 LAL -.00 LOL 14.75 VL 33.096 GAL -8.37 AZL 92.53 HCA 194.53 SMA 194.99 ECC .27311 INC 2.5263 V1 29.814
RP 239.11 LAP .63 LOP 209.26 VP 20.724 GAP 9.04 AZP 87.55 TAL 319.40 TAP 153.93 RCA 141.74 APO 248.25 V2 22.975
RC 174.639 GL -15.49 GP 14.78 ZAL 143.13 ZAP 150.26 ETS 151.17 ZAE 159.73 ETE 47.44 ZAC 102.80 ETC 255.77 CLP 153.89

PLANETOCENTRIC CONIC

C3 29.189 VHL 5.403 DLA -6.86 RAL 156.49 RAD 6568.2 VEL 12.270 PTH 2.21 VHP 5.853 DPA 13.37 RAP 189.72 ECC 1.4804

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 29 34	2092.76	-16.44	33.91	22.59	113.39	22 4 27	1492.8	-13.13	26.79
90.00	7 48 37	5165.18	25.63	230.82	26.54	77.54	9 14 42	4565.2	23.66	222.71
100.00	22 47 38	1840.92	-17.60	14.86	22.05	114.56	23 18 19	1240.9	-14.14	7.77
100.00	9 13 14	4892.26	26.87	210.43	26.22	76.38	10 34 46	4292.3	24.73	202.28
110.00	23 48 24	1650.69	-20.68	358.82	20.45	117.85	24 15 54	1050.7	-16.79	351.85
110.00	10 28 58	4655.25	30.18	191.41	25.19	73.13	11 46 33	4055.3	27.58	183.18

DIFFERENTIAL CORRECTIONS
TDE 1.8031 TRA-3.9798 TC3 1.2423 BAU .5643
RDE .8014 RRA-1.1814 RC3 .7404 FAU .16250
FDE-3.7246 FRA 7.0526 FC3-4.8198 BSP 17719
BDE 1.9732 BRA 4.1515 BC3 1.4462 FSP 2714

MID-COURSE EXECUTION ACCURACY
SGT 4850.8 SGR 1719.0 SG3 861.7
RRT .9671 RRF -.9933 RTF -.9625
SGB 5146.3 R23 -.2186 R13 -.9690
SG1 5129.7 SG2 413.7 THA 19.05

ORBIT DETERMINATION ACCURACY
ST 2298.8 SR 930.7 SS 2302.7
CRT .9857 CRS .9949 CST .9975
LSA 3380.1 MSA 165.0 SSA 19.9
EL1 2475.8 EL2 145.6 ALF 21.84

LAUNCH DATE OCT 8 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUN 9 1965

HELIOCENTRIC CONIC DISTANCE 594.974 EARTH TO MARS

RL 149.46 LAL -.00 LOL 14.75 VL 33.068 GAL -8.27 AZL 92.27 HCA 195.48 SMA 194.45 ECC .27045 INC 2.2666 V1 29.814
RP 238.79 LAP .60 LOP 210.21 VP 20.714 GAP 8.59 AZP 87.82 TAL 319.59 TAP 155.06 RCA 141.86 APO 247.04 V2 23.007
RC 176.939 GL -14.11 GP 14.23 ZAL 143.39 ZAP 149.88 ETS 152.74 ZAE 160.49 ETE 47.86 ZAC 102.32 ETC 255.78 CLP 153.17

PLANETOCENTRIC CONIC

C3 28.169 VHL 5.307 DLA -5.49 RAL 156.78 RAD 6568.1 VEL 12.229 PTH 2.20 VHP 5.715 DPA 12.78 RAP 189.68 ECC 1.4636

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 20 14	2127.28	-17.36	36.03	22.51	112.73	21 55 41	1527.3	-14.13	28.84
90.00	8 0 16	5112.90	24.82	227.21	25.63	75.91	9 25 29	4512.9	22.64	219.22
100.00	22 38 59	1873.23	-18.50	16.83	21.99	113.91	23 10 12	1273.2	-15.11	9.68
100.00	9 24 12	4842.17	26.02	206.95	25.28	74.74	10 44 55	4242.2	23.67	198.94
110.00	23 41 17	1678.16	-21.54	.48	20.44	117.21	24 9 15	1078.2	-17.72	353.43
110.00	10 38 23	4610.01	29.24	188.22	24.17	71.45	11 55 13	4010.0	26.43	180.16

DIFFERENTIAL CORRECTIONS
TDE 1.7604 TRA-3.9211 TC3 1.2908 BAU .5613
RDE .7700 RRA-1.1323 RC3 .7454 FAU .16906
FDE-3.7665 FRA 7.3443 FC3-5.1958 BSP 17710
BDE 1.9214 BRA 4.0813 BC3 1.4906 FSP 2867

MID-COURSE EXECUTION ACCURACY
SGT 4855.1 SGR 1680.8 SG3 907.8
RRT .9664 RRF -.9924 RTF -.9636
SGB 5137.8 R23 -.2118 R13 -.9697
SG1 5121.4 SG2 409.8 THA 18.62

ORBIT DETERMINATION ACCURACY
ST 2289.2 SR 909.6 SS 2330.0
CRT .9849 CRS .9935 CST .9981
LSA 3386.8 MSA 159.9 SSA 22.1
EL1 2458.9 EL2 146.8 ALF 21.45

LAUNCH DATE OCT 8 1964 FLIGHT TIME 246.00 ARRIVAL DATE JUN 11 1965

HELIOCENTRIC CONIC DISTANCE 598.522 EARTH TO MARS

RL 149.46 LAL -.00 LOL 14.75 VL 33.040 GAL -8.17 AZL 92.04 HCA 196.43 SMA 193.94 ECC .26789 INC 2.0357 V1 29.814
RP 238.47 LAP .58 LOP 211.16 VP 20.706 GAP 8.15 AZP 88.05 TAL 319.77 TAP 156.19 RCA 141.98 APO 245.89 V2 23.040
RC 179.231 GL -12.86 GP 13.75 ZAL 143.57 ZAP 149.43 ETS 154.19 ZAE 161.24 ETE 48.54 ZAC 101.89 ETC 255.80 CLP 152.43

PLANETOCENTRIC CONIC

C3 27.255 VHL 5.221 DLA -4.23 RAL 157.03 RAD 6568.1 VEL 12.191 PTH 2.19 VHP 5.582 DPA 12.26 RAP 189.66 ECC 1.4486

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 11 45	2158.41	-18.17	37.96	22.44	112.10	21 47 43	1558.4	-15.01	30.70
90.00	8 10 45	5065.34	23.99	223.97	24.82	74.49	9 35 10	4465.3	21.63	216.09
100.00	22 31 6	1902.41	-19.29	18.63	21.94	113.28	23 2 49	1302.4	-15.98	11.41
100.00	9 34 4	4796.57	25.16	203.83	24.44	73.31	10 54 1	4196.6	22.64	195.94
110.00	23 34 48	1703.01	-22.31	2.00	20.45	116.60	24 3 11	1103.0	-18.55	354.88
110.00	10 46 52	4568.73	28.32	185.36	23.27	70.00	12 3 1	3968.7	25.33	177.46

DIFFERENTIAL CORRECTIONS
TDE 1.7199 TRA-3.8614 TC3 1.3369 BAU .5589
RDE .7443 RRA-1.0898 RC3 .7519 FAU .17584
FDE-3.8148 FRA 7.6408 FC3-5.5853 BSP 17695
BDE 1.8740 BRA 4.0122 BC3 1.5338 FSP 3025

MID-COURSE EXECUTION ACCURACY
SGT 4854.7 SGR 1649.8 SG3 955.3
RRT .9656 RRF -.9913 RTF -.9646
SGB 5127.4 R23 -.2050 R13 -.9703
SG1 5111.2 SG2 407.5 THA 18.29

ORBIT DETERMINATION ACCURACY
ST 2278.1 SR 892.9 SS 2358.8
CRT .9840 CRS .9919 CST .9985
LSA 3394.9 MSA 156.6 SSA 24.1
EL1 2442.3 EL2 148.5 ALF 21.17

LAUNCH DATE OCT 8 1964 FLIGHT TIME 248.00 ARRIVAL DATE JUN 13 1965

HELIOCENTRIC CONIC DISTANCE 602.088 EARTH TO MARS

RL 149.46 LAL -.00 LOL 14.75 VL 33.014 GAL -8.08 AZL 91.83 HCA 197.38 SMA 193.45 ECC .26542 INC 1.8286 V1 29.814
RP 238.14 LAP .55 LOP 212.12 VP 20.701 GAP 7.72 AZP 88.25 TAL 319.95 TAP 157.33 RCA 142.10 APO 244.79 V2 23.073
RC 181.513 GL -11.71 GP 13.32 ZAL 143.68 ZAP 148.91 ETS 155.53 ZAE 161.96 ETE 49.49 ZAC 101.52 ETC 255.81 CLP 151.65

PLANETOCENTRIC CONIC

C3 26.428 VHL 5.141 DLA -3.08 RAL 157.25 RAD 6568.1 VEL 12.157 PTH 2.18 VHP 5.454 DPA 11.80 RAP 189.63 ECC 1.4349

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 3 58	2186.74	-18.88	39.73	22.38	111.50	21 40 25	1586.7	-15.80	32.41
90.00	8 20 15	5021.71	23.16	221.04	24.08	73.24	9 43 56	4421.7	20.65	213.27
100.00	22 23 53	1928.97	-20.00	20.29	21.90	112.69	22 56 2	1329.0	-16.75	13.00
100.00	9 43 1	4754.70	24.31	201.01	23.69	72.05	11 2 16	4154.7	21.63	193.24
110.00	23 28 50	1725.65	-22.99	3.40	20.45	116.02	23 57 35	1125.7	-19.30	356.21
110.00	10 54 34	4530.79	27.40	182.79	22.47	68.72	12 10 5	3930.8	24.26	175.03

DIFFERENTIAL CORRECTIONS
TDE 1.6939 TRA-3.7874 TC3 1.3995 BAU .5631
RDE .7248 RRA-1.0510 RC3 .7625 FAU .18332
FDE-3.8796 FRA 7.9307 FC3-6.0051 BSP 17345
BDE 1.8424 BRA 3.9305 BC3 1.5937 FSP 3164

MID-COURSE EXECUTION ACCURACY
SGT 4848.1 SGR 1625.8 SG3 1004.5
RRT .9657 RRF -.9902 RTF -.9663
SGB 5113.4 R23 -.1948 R13 -.9716
SG1 5097.7 SG2 401.4 THA 18.06

ORBIT DETERMINATION ACCURACY
ST 2274.7 SR 881.5 SS 2392.7
CRT .9837 CRS .9902 CST .9990
LSA 3413.6 MSA 151.4 SSA 26.2
EL1 2435.0 EL2 148.1 ALF 20.95

LAUNCH DATE OCT 8 1964 FLIGHT TIME 250.00 ARRIVAL DATE JUN 15 1965

HELIOCENTRIC CONIC DISTANCE 605.669 EARTH TO MARS

RL 149.46 LAL -.00 LOL 14.75 VL 32.989 GAL -7.99 AZL 91.64 HCA 198.33 SMA 192.98 ECC .26305 INC 1.6422 V1 29.814
RP 237.81 LAP .52 LOP 213.08 VP 20.698 GAP 7.29 AZP 88.44 TAL 320.12 TAP 158.46 RCA 142.22 APO 243.74 V2 23.106
RC 183.786 GL -10.65 GP 12.95 ZAL 143.75 ZAP 148.33 ETS 156.77 ZAE 162.67 ETE 50.72 ZAC 101.18 ETC 255.82 CLP 150.85

PLANETOCENTRIC CONIC

C3 25.676 VHL 5.067 DLA -2.01 RAL 157.44 RAD 6568.0 VEL 12.127 PTH 2.17 VHP 5.331 DPA 11.39 RAP 189.61 ECC 1.4226

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 56 48	2212.72	-19.52	41.56	22.33	110.93	21 33 40	1612.7	-16.50	33.99
90.00	8 28 56	4981.44	22.35	218.37	23.42	72.14	9 51 57	4381.4	19.70	210.70
100.00	22 17 12	1953.34	-20.63	21.82	21.86	112.12	22 49 45	1353.3	-17.45	14.47
100.00	9 51 13	4716.05	23.48	198.44	23.01	70.95	11 9 49	4116.0	20.66	190.78
110.00	23 23 18	1746.44	-23.60	4.71	20.45	115.47	23 52 24	1146.4	-19.98	357.44
110.00	11 1 36	4495.72	26.52	180.45	21.75	67.59	12 16 32	3895.7	23.24	172.82

DIFFERENTIAL CORRECTIONS
TDE 1.6508 TRA-3.7302 TC3 1.4316 BAU .5581
RDE .7067 RRA-1.0197 RC3 .7709 FAU .19040
FDE-3.9358 FRA 8.2432 FC3-6.4199 BSP 17431
BDE 1.7957 BRA 3.8671 BC3 1.6259 FSP 3341

MID-COURSE EXECUTION ACCURACY
SGT 4837.4 SGR 1606.2 SG3 1055.1
RRT .9645 RRF -.9890 RTF -.9667
SGB 5097.1 R23 -.1895 R13 -.9719
SG1 5081.1 SG2 403.8 THA 17.87

ORBIT DETERMINATION ACCURACY
ST 2255.9 SR 871.1 SS 2422.8
CRT .9825 CRS .9883 CST .9992
LSA 3419.6 MSA 153.0 SSA 27.7
EL1 2413.5 EL2 151.7 ALF 20.86

LAUNCH DATE OCT 8 1964 FLIGHT TIME 252.00 ARRIVAL DATE JUN 17 1965

HELIOCENTRIC CONIC DISTANCE 609.267 EARTH TO MARS

RL 149.46 LAL -.00 LOL 14.75 VL 32.965 GAL -7.90 AZL 91.47 HCA 199.29 SMA 192.53 ECC .26078 INC 1.4733 V1 29.814
RP 237.48 LAP .49 LOP 214.04 VP 20.697 GAP 6.86 AZP 88.61 TAL 320.30 TAP 159.59 RCA 142.33 APO 242.74 V2 23.140
RC 186.049 GL -9.67 GP 12.62 ZAL 143.78 ZAP 147.70 ETS 157.93 ZAE 163.36 ETE 52.25 ZAC 100.89 ETC 255.83 CLP 150.02

PLANETOCENTRIC CONIC

C3 24.988 VHL 4.999 DLA -1.02 RAL 157.60 RAD 6568.0 VEL 12.098 PTH 2.17 VHP 5.212 DPA 11.04 RAP 189.58 ECC 1.4112

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 50 6	2236.70	-20.10	42.89	22.27	110.38	21 27 23	1636.7	-17.15	35.46
90.00	8 36 56	4944.04	21.55	215.92	22.82	71.17	9 59 20	4344.0	18.78	208.34
100.00	22 10 58	1975.84	-21.20	23.25	21.82	111.58	22 43 54	1375.8	-18.09	15.85
100.00	9 58 45	4680.13	22.66	196.09	22.40	69.97	11 16 45	4080.1	19.73	188.52
110.00	23 18 8	1765.63	-24.16	5.92	20.44	114.95	23 47 33	1165.6	-20.59	358.59
110.00	11 8 5	4463.11	25.65	178.31	21.09	66.59	12 22 28	3863.1	22.26	170.79

DIFFERENTIAL CORRECTIONS
TDE 1.6096 TRA-3.6701 TC3 1.4617 BAU .5536
RDE .6919 RRA -.9925 RC3 .7806 FAU .19773
FDE-3.9974 FRA 8.5632 FC3-6.8508 BSP 17471
BDE 1.7520 BRA 3.8020 BC3 1.6571 FSP 3525

MID-COURSE EXECUTION ACCURACY
SGT 4820.9 SGR 1591.4 SG3 1107.4
RRT .9633 RRF -.9878 RTF -.9672
SGB 5076.8 R23 -.1839 R13 -.9723
SG1 5060.5 SG2 406.7 THA 17.76

ORBIT DETERMINATION ACCURACY
ST 2235.8 SR 863.7 SS 2454.2
CRT .9813 CRS .9864 CST .9994
LSA 3426.8 MSA 155.6 SSA 28.9
EL1 2391.8 EL2 155.3 ALF 20.85

LAUNCH DATE OCT 8 1964 FLIGHT TIME 254.00 ARRIVAL DATE JUN 19 1965

HELIOCENTRIC CONIC DISTANCE 612.880 EARTH TO MARS

RL 149.46 LAL -.00 LOL 14.75 VL 32.942 GAL -7.81 AZL 91.32 HCA 200.25 SMA 192.11 ECC .25859 INC 1.3191 V1 29.814
RP 237.15 LAP .46 LOP 215.00 VP 20.699 GAP 6.44 AZP 88.76 TAL 320.46 TAP 160.72 RCA 142.43 APO 241.78 V2 23.174
RC 188.300 GL -8.76 GP 12.32 ZAL 143.78 ZAP 147.01 ETS 159.00 ZAE 164.04 ETE 54.11 ZAC 100.62 ETC 255.83 CLP 149.15

PLANETOCENTRIC CONIC

C3 24.354 VHL 4.935 DLA -.10 RAL 157.75 RAD 6568.0 VEL 12.072 PTH 2.16 VHP 5.096 DPA 10.73 RAP 189.54 ECC 1.4008

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 43 51	2258.97	-20.62	44.31	22.22	109.85	21 21 30	1659.0	-17.73	36.83
90.00	8 44 21	4909.13	20.76	213.66	22.28	70.30	10 6 10	4309.1	17.89	206.16
100.00	22 5 9	1996.74	-21.72	24.59	21.78	111.06	22 38 25	1396.7	-18.66	17.13
100.00	10 5 44	4646.60	21.86	193.92	21.84	69.09	11 23 11	4046.6	18.82	186.44
110.00	23 13 17	1783.45	-24.67	7.05	20.44	114.45	23 43 0	1183.5	-21.16	359.66
110.00	11 14 5	4432.65	24.81	176.34	20.50	65.70	12 27 58	3832.6	21.32	168.93

DIFFERENTIAL CORRECTIONS
TDE 1.5703 TRA-3.6076 TC3 1.4902 BAU .5495
RDE .6799 RRA -.9689 RC3 .7923 FAU .20545
FDE-4.0862 FRA 8.8904 FC3-7.3036 BSP 17460
BDE 1.7112 BRA 3.7355 BC3 1.6877 FSP 3711

MID-COURSE EXECUTION ACCURACY
SGT 4799.0 SGR 1581.2 SG3 1161.7
RRT .9622 RRF -.9866 RTF -.9677
SGB 5052.8 R23 -.1784 R13 -.9727
SG1 5036.1 SG2 410.5 THA 17.71

ORBIT DETERMINATION ACCURACY
ST 2214.6 SR 858.9 SS 2487.7
CRT .9802 CRS .9844 CST .9996
LSA 3435.8 MSA 159.1 SSA 29.9
EL1 2370.0 EL2 159.1 ALF 20.91

LAUNCH DATE OCT 8 1964 FLIGHT TIME 256.00 ARRIVAL DATE JUN 21 1965

HELIOCENTRIC CONIC DISTANCE 616.508 EARTH TO MARS

RL	149.46	LAL	-.00	LOL	14.75	VL	32.919	GAL	-7.73	AZL	91.18	HCA	201.22	SMA	191.70	ECC	.25649	INC	1.1781
RP	236.81	LAP	.43	LOP	215.96	VP	20.702	GAP	6.03	AZP	88.90	TAL	320.63	TAP	161.85	RCA	142.53	APO	240.87
RC	190.540	GL	-7.91	GP	12.06	ZAL	143.75	ZAP	146.28	ETS	160.00	ZAE	164.70	ETE	56.31	ZAC	100.38	ETC	255.84

V1 29.814 V2 23.209 CLP 148.27

PLANETOCENTRIC CONIC

C3	23.768	VHL	4.875	DLA	.77	RAL	157.87	RAD	6568.0	VEL	12.048	PTH	2.15	VHP	4.984	DPA	10.46	RAP	189.50

ECC 1.3912

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 37 57	2279.78	-21.10	45.65	22.17	109.34	21 15 57	1679.8	-18.27	38.12
90.00	8 51 15	4876.39	20.00	211.56	21.77	69.52	10 12 32	4276.4	17.03	204.14
100.00	21 59 39	2016.25	-22.19	25.85	21.75	110.56	22 33 15	1416.3	-19.20	18.33
100.00	10 12 14	4615.15	21.08	191.91	21.33	68.31	11 29 9	4015.1	17.95	184.51
110.00	23 8 43	1800.09	-25.13	8.12	20.43	113.97	23 38 43	1200.1	-21.68	.68
110.00	11 19 40	4404.08	24.00	174.52	19.96	64.89	12 33 4	3804.1	20.42	167.21

DIFFERENTIAL CORRECTIONS

TDE	1.5325	TRA	-3.5414	TC3	1.5167	BAU	.5457
RDE	.6703	RRA	-.9485	RC3	.8053	FAU	.21347
FDE	-4.1394	FRA	9.2264	FC3	-7.7754	BSP	17411
BDE	1.6727	BRA	3.6662	BC3	1.7172	FSP	3904

MID-COURSE EXECUTION ACCURACY

SGT	4770.3	SGR	1574.8	SG3	1218.0		
RRT	.9611	RRF	-.9853	RTF	-.9682		
SGB	5023.6	R23	-.1727	R13	-.9731		
SG1	5006.4	SG2	414.2	THA	17.73		

ORBIT DETERMINATION ACCURACY

ST	2192.1	SR	856.1	SS	2522.1
CRT	.9791	CRS	.9824	CST	.9997
LSA	3445.5	MSA	163.3	SSA	30.7
EL1	2347.7	EL2	162.6	ALF	21.03

LAUNCH DATE OCT 8 1964 FLIGHT TIME 258.00 ARRIVAL DATE JUN 23 1965

HELIOCENTRIC CONIC DISTANCE 620.152 EARTH TO MARS

RL	149.46	LAL	-.00	LOL	14.75	VL	32.898	GAL	-7.65	AZL	91.05	HCA	202.19	SMA	191.31	ECC	.25448	INC	1.0484
RP	236.46	LAP	.40	LOP	216.93	VP	20.707	GAP	5.62	AZP	89.03	TAL	320.79	TAP	162.97	RCA	142.63	APO	240.00
RC	192.768	GL	-7.11	GP	11.82	ZAL	143.70	ZAP	145.50	ETS	160.93	ZAE	165.33	ETE	58.90	ZAC	100.16	ETC	255.85

V1 29.814 V2 23.244 CLP 147.35

PLANETOCENTRIC CONIC

C3	23.225	VHL	4.819	DLA	1.58	RAL	157.98	RAD	6567.9	VEL	12.025	PTH	2.15	VHP	4.876	DPA	10.23	RAP	189.44

ECC 1.3822

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 32 23	2299.31	-21.53	46.92	22.13	108.85	21 10 42	1699.3	-18.76	39.34
90.00	8 57 43	4845.56	19.25	209.61	21.31	68.82	10 18 29	4245.6	16.20	202.26
100.00	21 54 27	2034.57	-22.63	27.03	21.71	110.07	22 28 22	1434.6	-19.69	19.47
100.00	10 18 20	4585.54	20.33	190.03	20.86	67.60	11 34 46	3985.5	17.11	182.71
110.00	23 4 23	1815.69	-25.56	9.13	20.42	113.51	23 34 39	1215.7	-22.16	1.63
110.00	11 24 54	4377.18	23.21	172.83	19.47	64.17	12 37 51	3777.2	19.55	165.61

DIFFERENTIAL CORRECTIONS

TDE	1.4972	TRA	-3.4717	TC3	1.5425	BAU	.5425
RDE	.6629	RRA	-.9309	RC3	.8203	FAU	.22192
FDE	-4.2210	FRA	9.5702	FC3	-8.2724	BSP	17286
BDE	1.6374	BRA	3.5944	BC3	1.7471	FSP	4098

MID-COURSE EXECUTION ACCURACY

SGT	4735.9	SGR	1572.3	SG3	1276.6		
RRT	.9602	RRF	-.9841	RTF	-.9687		
SGB	4990.1	R23	-.1667	R13	-.9736		
SG1	4972.5	SG2	418.1	THA	17.81		

ORBIT DETERMINATION ACCURACY

ST	2169.1	SR	855.6	SS	2558.9
CRT	.9782	CRS	.9803	CST	.9998
LSA	3457.7	MSA	168.2	SSA	31.3
EL1	2325.9	EL2	165.7	ALF	21.21

LAUNCH DATE OCT 8 1964 FLIGHT TIME 260.00 ARRIVAL DATE JUN 25 1965

HELIOCENTRIC CONIC DISTANCE 623.811 EARTH TO MARS

RL	149.46	LAL	-.00	LOL	14.75	VL	32.878	GAL	-7.58	AZL	90.93	HCA	203.16	SMA	190.95	ECC	.25255	INC	.9287
RP	236.12	LAP	.37	LOP	217.90	VP	20.715	GAP	5.22	AZP	89.15	TAL	320.95	TAP	164.10	RCA	142.72	APO	239.17
RC	194.983	GL	-6.36	GP	11.61	ZAL	143.63	ZAP	144.67	ETS	161.81	ZAE	165.93	ETE	61.92	ZAC	99.96	ETC	255.86

V1 29.814 V2 23.279 CLP 146.40

PLANETOCENTRIC CONIC

C3	22.720	VHL	4.767	DLA	2.34	RAL	158.08	RAD	6567.9	VEL	12.004	PTH	2.14	VHP	4.770	DPA	10.03	RAP	189.37

ECC 1.3739

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 27 5	2317.73	-21.93	48.12	22.08	108.38	21 5 43	1717.7	-19.22	40.50
90.00	9 3 49	4816.44	18.52	207.78	20.89	68.19	10 24 5	4216.4	15.40	200.50
100.00	21 49 31	2051.84	-23.02	28.16	21.67	109.61	22 23 43	1451.8	-20.14	20.55
100.00	10 24 4	4557.56	19.59	188.28	20.42	66.96	11 40 1	3957.6	16.30	181.03
110.00	23 0 16	1830.39	-25.96	10.09	20.41	113.07	23 30 46	1230.4	-22.61	2.54
110.00	11 29 48	4351.77	22.45	171.25	19.01	63.52	12 42 20	3751.8	18.71	164.11

DIFFERENTIAL CORRECTIONS

TDE	1.4745	TRA	-3.3864	TC3	1.5866	BAU	.5452
RDE	.6588	RRA	-.9140	RC3	.8394	FAU	.23139
FDE	-4.3213	FRA	9.9062	FC3	-8.8171	BSP	16838
BDE	1.6150	BRA	3.5076	BC3	1.7949	FSP	4266

MID-COURSE EXECUTION ACCURACY

SGT	4693.3	SGR	1573.7	SG3	1337.6		
RRT	.9604	RRF	-.9828	RTF	-.9699		
SGB	4950.1	R23	-.1574	R13	-.9746		
SG1	4932.5	SG2	417.0	THA	17.98		

ORBIT DETERMINATION ACCURACY

ST	2153.4	SR	858.2	SS	2601.0
CRT	.9782	CRS	.9784	CST	.9998
LSA	3479.7	MSA	172.3	SSA	31.4
EL1	2312.2	EL2	165.9	ALF	21.41

LAUNCH DATE OCT 8 1964 FLIGHT TIME 262.00 ARRIVAL DATE JUN 27 1965

HELIOCENTRIC CONIC DISTANCE 627.481 EARTH TO MARS

RL	149.46	LAL	-.00	LOL	14.75	VL	32.858	GAL	-7.51	AZL	90.82	HCA	204.13	SMA	190.59	ECC	.25071	INC	.8179
RP	235.77	LAP	.33	LOP	218.87	VP	20.724	GAP	4.82	AZP	89.25	TAL	321.10	TAP	165.23	RCA	142.81	APO	238.38
RC	197.185	GL	-5.66	GP	11.42	ZAL	143.54	ZAP	143.81	ETS	162.63	ZAE	166.48	ETE	65.38	ZAC	99.78	ETC	255.87

V1 29.814 V2 23.315 CLP 145.42

PLANETOCENTRIC CONIC

C3	22.251	VHL	4.717	DLA	3.07	RAL	158.17	RAD	6567.9	VEL	11.985	PTH	2.14	VHP	4.668	DPA	9.86	RAP	189.28

ECC 1.3662

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 22 3	2335.18	-22.30	49.27	22.03	107.92	21 0 58	1735.2	-19.64	41.60
90.00	9 9 34	4788.87	17.82	206.07	20.50	67.62	10 29 23	4188.9	14.63	198.84
100.00	21 44 49	2068.19	-23.39	29.24	21.64	109.16	22 19 18	1468.2	-20.56	21.58
100.00	10 29 28	4531.09	18.88	186.64	20.03	66.38	11 44 59	3931.1	15.53	179.45
110.00	22 56 21	1844.31	-26.32	11.01	20.40	112.64	23 27 6	1244.3	-23.02	3.40
110.00	11 34 26	4327.74	21.71	169.77	18.60	62.93	12 46 34	3727.7	17.91	162.71

DIFFERENTIAL CORRECTIONS

TDE	1.4339	TRA	-3.3171	TC3	1.5942	BAU	.5382
RDE	.6538	RRA	-.9024	RC3	.8555	FAU	.24022
FDE	-4.4060	FRA	10.2785	FC3	-9.3464	BSP	16803
BDE	1.5759	BRA	3.4377	BC3	1.8093	FSP	4490

MID-COURSE EXECUTION ACCURACY

SGT	4645.0	SGR	1577.0	SG3	1400.4		
RRT	.9591	RRF	-.9816	RTF	-.9700		
SGB	4905.4	R23	-.1533	R13	-.9748		
SG1	4887.0	SG2	424.1	THA	18.18		

ORBIT DETERMINATION ACCURACY

ST	2121.5	SR	860.1	SS	2637.8
CRT	.9771	CRS	.9762	CST	.9998
LSA	3487.8	MSA	179.6	SSA	31.6
EL1	2282.9	EL2	170.0	ALF	21.74

LAUNCH DATE OCT 8 1964 FLIGHT TIME 264.00 ARRIVAL DATE JUN 29 1965

HELIOCENTRIC CONIC DISTANCE 631.163 EARTH TO MARS

RL 149.46 LAL -.00 LOL 14.75 VL 32.840 GAL -7.44 AZL 90.71 HCA 205.10 SMA 190.26 ECC .24895 INC .7148 V1 29.814
RP 235.42 LAP .30 LOP 219.85 VP 20.735 GAP 4.43 AZP 89.35 TAL 321.24 TAP 166.35 RCA 142.90 APO 237.62 V2 23.351
RC 199.372 GL -4.99 GP 11.26 ZAL 143.45 ZAP 142.90 ETS 165.40 ZAE 166.99 ETE 69.33 ZAC 99.61 ETC 255.87 CLP 144.41

PLANETOCENTRIC CONIC

C3 21.815 VHL 4.671 DLA 3.75 RAL 158.26 RAD 6567.9 VEL 11.966 PTH 2.13 VHP 4.568 DPA 9.72 RAP 189.18 ECC 1.3590

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 17 15	2351.76	-22.64	50.36	21.99	107.47	20 56 27	1751.8	-20.04	42.66
90.00	9 15 1	4762.71	17.13	204.45	20.15	67.10	10 34 24	4162.7	13.88	197.28
100.00	21 40 21	2083.72	-23.74	30.26	21.61	108.72	22 15 5	1483.7	-20.96	22.57
100.00	10 34 36	4505.98	18.19	185.09	19.66	65.86	11 49 42	3906.0	14.77	177.96
110.00	22 52 38	1857.52	-26.67	11.88	20.40	112.22	23 23 35	1257.5	-23.41	4.23
110.00	11 38 49	4304.95	21.00	168.39	18.22	62.39	12 50 34	3704.9	17.14	161.39

DIFFERENTIAL CORRECTIONS
TDE 1.3834 TRA-3.2548 TC3 1.5789 BAU .5258
RDE .6488 RRA -.8944 RC3 .8705 FAU .24877
FDE-4.4809 FRA10.6782 FC3-9.8725 BSP 16959
BDE 1.5280 BRA 3.3755 BC3 1.8029 FSP 4750

MID-COURSE EXECUTION ACCURACY
SGT 4589.8 SGR 1582.4 SG3 1465.2
RRT .9569 RRF -.9804 RTF -.9694
SGB 4854.9 R23 -.1525 R13 -.9745
SG1 4835.3 SG2 436.1 THA 18.41

ORBIT DETERMINATION ACCURACY
ST 2079.1 SR 861.9 SS 2671.3
CRT .9753 CRS .9739 CST .9998
LSA 3487.8 MSA 188.1 SSA 31.9
EL1 2243.8 EL2 176.5 ALF 22.16

LAUNCH DATE OCT 8 1964 FLIGHT TIME 266.00 ARRIVAL DATE JUL 1 1965

HELIOCENTRIC CONIC DISTANCE 634.860 EARTH TO MARS

RL 149.46 LAL -.00 LOL 14.75 VL 32.822 GAL -7.37 AZL 90.62 HCA 206.08 SMA 189.94 ECC .24726 INC .6189 V1 29.814
RP 235.06 LAP .27 LOP 220.83 VP 20.748 GAP 4.05 AZP 89.44 TAL 321.38 TAP 167.47 RCA 142.98 APO 236.90 V2 23.387
RC 201.544 GL -4.36 GP 11.11 ZAL 143.35 ZAP 141.95 ETS 164.14 ZAE 167.42 ETE 73.78 ZAC 99.45 ETC 255.88 CLP 143.37

PLANETOCENTRIC CONIC

C3 21.407 VHL 4.627 DLA 4.41 RAL 158.33 RAD 6567.9 VEL 11.949 PTH 2.13 VHP 4.472 DPA 9.61 RAP 189.06 ECC 1.3523

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 12 39	2367.57	-22.96	51.41	21.96	107.04	20 52 7	1767.6	-20.41	43.67
90.00	9 20 13	4737.79	16.47	202.93	19.82	66.63	10 39 10	4137.8	13.16	195.81
100.00	21 36 4	2098.53	-24.06	31.25	21.58	108.30	22 11 3	1498.5	-21.33	23.51
100.00	10 39 29	4482.06	17.51	183.64	19.33	65.38	11 54 11	3882.1	14.05	176.56
110.00	22 49 3	1870.10	-26.99	12.72	20.39	111.82	23 20 13	1270.1	-23.78	5.02
110.00	11 42 59	4283.26	20.31	167.08	17.87	61.90	12 54 23	3683.3	16.39	160.15

DIFFERENTIAL CORRECTIONS
TDE 1.3488 TRA-3.1736 TC3 1.5866 BAU .5207
RDE .6471 RRA -.8862 RC3 .8905 FAU .25861
FDE-4.5817 FRA11.0659 FC-10.4584 BSP 16713
BDE 1.4960 BRA 3.2950 BC3 1.8194 FSP 4972

MID-COURSE EXECUTION ACCURACY
SGT 4525.7 SGR 1591.4 SG3 1532.8
RRT .9562 RRF -.9793 RTF -.9697
SGB 4797.3 R23 -.1473 R13 -.9748
SG1 4777.0 SG2 441.4 THA 18.75

ORBIT DETERMINATION ACCURACY
ST 2047.0 SR 867.1 SS 2712.2
CRT .9747 CRS .9719 CST .9997
LSA 3501.2 MSA 195.5 SSA 31.8
EL1 2215.8 EL2 178.9 ALF 22.59

LAUNCH DATE OCT 8 1964 FLIGHT TIME 268.00 ARRIVAL DATE JUL 3 1965

HELIOCENTRIC CONIC DISTANCE 638.569 EARTH TO MARS

RL 149.46 LAL -.00 LOL 14.75 VL 32.805 GAL -7.31 AZL 90.53 HCA 207.06 SMA 189.64 ECC .24564 INC .5289 V1 29.814
RP 234.71 LAP .24 LOP 221.81 VP 20.762 GAP 3.66 AZP 89.53 TAL 321.52 TAP 168.58 RCA 143.05 APO 236.22 V2 23.424
RC 203.699 GL -3.76 GP 10.97 ZAL 143.24 ZAP 140.96 ETS 164.83 ZAE 167.77 ETE 78.73 ZAC 99.30 ETC 255.90 CLP 142.29

PLANETOCENTRIC CONIC

C3 21.027 VHL 4.586 DLA 5.03 RAL 158.40 RAD 6567.9 VEL 11.933 PTH 2.12 VHP 4.378 DPA 9.53 RAP 188.92 ECC 1.3460

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 8 15	2382.70	-23.26	52.42	21.93	106.62	20 47 58	1782.7	-20.76	44.64
90.00	9 25 10	4714.04	15.82	201.48	19.52	66.20	10 43 44	4114.0	12.47	194.41
100.00	21 31 58	2112.70	-24.36	32.19	21.55	107.89	22 7 11	1512.7	-21.68	24.42
100.00	10 44 9	4459.28	16.86	182.26	19.02	64.95	11 58 28	3859.3	13.35	175.23
110.00	22 45 38	1882.13	-27.29	13.52	20.39	111.43	23 17 0	1282.1	-24.13	5.78
110.00	11 46 58	4262.61	19.64	165.85	17.55	61.45	12 58 0	3662.6	15.68	158.98

DIFFERENTIAL CORRECTIONS
TDE 1.3114 TRA-3.0919 TC3 1.5843 BAU .5138
RDE .6461 RRA -.8801 RC3 .9111 FAU .26869
FDE-4.6839 FRA11.4694 FC-11.0629 BSP 16503
BDE 1.4619 BRA 3.2147 BC3 1.8276 FSP 5210

MID-COURSE EXECUTION ACCURACY
SGT 4453.8 SGR 1602.7 SG3 1602.8
RRT .9552 RRF -.9782 RTF -.9697
SGB 4733.4 R23 -.1433 R13 -.9750
SG1 4712.2 SG2 448.4 THA 19.15

ORBIT DETERMINATION ACCURACY
ST 2010.1 SR 873.0 SS 2753.1
CRT .9741 CRS .9698 CST .9996
LSA 3512.8 MSA 203.5 SSA 31.7
EL1 2184.0 EL2 181.7 ALF 23.10

LAUNCH DATE OCT 8 1964 FLIGHT TIME 270.00 ARRIVAL DATE JUL 5 1965

HELIOCENTRIC CONIC DISTANCE 642.290 EARTH TO MARS

RL 149.46 LAL -.00 LOL 14.75 VL 32.788 GAL -7.25 AZL 90.44 HCA 208.05 SMA 189.35 ECC .24410 INC .4443 V1 29.814
RP 234.35 LAP .21 LOP 222.80 VP 20.778 GAP 3.29 AZP 89.61 TAL 321.65 TAP 169.70 RCA 143.13 APO 235.57 V2 23.461
RC 205.837 GL -3.18 GP 10.85 ZAL 143.13 ZAP 139.92 ETS 165.50 ZAE 168.01 ETE 84.15 ZAC 99.16 ETC 255.91 CLP 141.18

PLANETOCENTRIC CONIC

C3 20.672 VHL 4.547 DLA 5.62 RAL 158.47 RAD 6567.8 VEL 11.919 PTH 2.12 VHP 4.287 DPA 9.47 RAP 188.76 ECC 1.3402

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 4 2	2397.21	-23.54	53.39	21.90	106.21	20 43 59	1797.2	-21.09	45.58
90.00	9 29 55	4691.37	15.19	200.12	19.24	65.81	10 48 6	4091.4	11.80	193.08
100.00	21 28 2	2126.28	-24.64	33.10	21.54	107.49	22 3 28	1526.3	-22.01	25.29
100.00	10 48 36	4437.53	16.23	180.95	18.74	64.55	12 2 33	3837.5	12.67	173.97
110.00	22 42 22	1893.66	-27.57	14.30	20.39	111.05	23 13 55	1293.7	-24.46	6.51
110.00	11 50 46	4242.92	19.00	164.69	17.25	61.03	13 1 29	3642.9	14.99	157.87

DIFFERENTIAL CORRECTIONS
TDE 1.2738 TRA-3.0070 TC3 1.5752 BAU .5059
RDE .6461 RRA -.8758 RC3 .9328 FAU .27915
FDE-4.7918 FRA11.8843 FC-11.6906 BSP 16256
BDE 1.4283 BRA 3.1320 BC3 1.8307 FSP 5452

MID-COURSE EXECUTION ACCURACY
SGT 4373.4 SGR 1616.2 SG3 1675.2
RRT .9542 RRF -.9772 RTF -.9696
SGB 4662.5 R23 -.1397 R13 -.9751
SG1 4640.2 SG2 455.9 THA 19.62

ORBIT DETERMINATION ACCURACY
ST 1970.7 SR 879.9 SS 2795.2
CRT .9735 CRS .9678 CST .9995
LSA 3525.0 MSA 211.7 SSA 31.6
EL1 2150.3 EL2 184.3 ALF 23.68

LAUNCH DATE OCT 8 1964 FLIGHT TIME 272.00 ARRIVAL DATE JUL 7 1965

HELIOCENTRIC CONIC DISTANCE 646.023 EARTH TO MARS

RL	149.46	LAL	-.00	LOL	14.75	VL	32.773	GAL	-7.19	AZL	90.37	HCA	209.04	SMA	189.07	ECC	.24263	INC	.3650
RP	233.98	LAP	.18	LOP	223.79	VP	20.796	GAP	2.92	AZP	89.68	TAL	321.77	TAP	170.81	RCA	143.20	APO	234.95
RC	207.958	GL	-2.64	GP	10.75	ZAL	143.02	ZAP	138.85	ETS	166.13	ZAE	168.14	ETE	90.00	ZAC	99.02	ETC	255.92

V1	29.814	V2	23.498	CLP	140.04														

PLANETOCENTRIC CONIC

C3	20.341	VHL	4.510	DLA	6.18	RAL	158.53	RAD	6567.8	VEL	11.905	PTH	2.12	VHP	4.199	DPA	9.44	RAP	188.57
ECC	1.3348																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 59 59	2411.17	-23.80	54.33	21.88	105.81	20 40 10	1811.2	-21.41	46.48
90.00	9 34 28	4669.70	14.58	198.82	19.00	65.46	10 52 18	4069.7	11.15	191.82
100.00	21 24 16	2139.34	-24.90	33.98	21.53	107.09	21 59 55	1539.3	-22.32	26.13
100.00	10 52 53	4416.76	15.62	179.71	18.49	64.19	12 6 29	3816.8	12.02	172.77
110.00	22 39 13	1904.74	-27.84	15.05	20.40	110.68	23 10 58	1304.7	-24.77	7.22
110.00	11 54 24	4224.12	18.37	163.59	16.99	60.66	13 4 48	3624.1	14.33	156.81

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.2346	TRA	-2.9196	TC3	1.5577	BAU	.4969	SGT	4283.9	SGR	1631.6	SG3	1749.9	ST	1927.2	SR	887.4
RDE	.6466	RRA	-.8733	RC3	.9551	FAU	.28985	RRT	.9531	RRF	-.9762	RTF	-.9694	CRT	.9730	CRS	.9659
FDE	-4.9000	FRA	12.3152	FC	-12.3364	BSP	16002	SGB	4584.1	R23	-.1366	R13	-.9751	LSA	3535.6	MSA	220.3
BDE	1.3936	BRA	3.0474	BC3	1.8272	FSP	5709	SG1	4560.6	SG2	463.9	THA	20.17	EL1	2113.5	EL2	186.7

SS	2836.9	CST	.9994	INJ 2 LAT	-21.41
SSA	31.3	ALF	24.34	INJ 2 LONG	46.48

LAUNCH DATE OCT 8 1964 FLIGHT TIME 274.00 ARRIVAL DATE JUL 9 1965

HELIOCENTRIC CONIC DISTANCE 649.767 EARTH TO MARS

RL	149.46	LAL	-.00	LOL	14.75	VL	32.758	GAL	-7.13	AZL	90.29	HCA	210.03	SMA	188.81	ECC	.24124	INC	.2898
RP	233.62	LAP	.15	LOP	224.78	VP	20.815	GAP	2.55	AZP	89.75	TAL	321.89	TAP	171.92	RCA	143.26	APO	234.36
RC	210.060	GL	-2.11	GP	10.65	ZAL	142.90	ZAP	137.74	ETS	166.73	ZAE	168.12	ETE	96.04	ZAC	98.88	ETC	255.94

V1	29.814	V2	23.536	CLP	138.86														

PLANETOCENTRIC CONIC

C3	20.033	VHL	4.476	DLA	6.72	RAL	158.59	RAD	6567.8	VEL	11.892	PTH	2.11	VHP	4.113	DPA	9.44	RAP	188.36
ECC	1.3297																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 56 5	2424.62	-24.05	55.24	21.87	105.42	20 36 30	1824.6	-21.70	47.36
90.00	9 38 51	4648.96	13.99	197.58	18.77	65.13	10 56 20	4049.0	10.52	190.62
100.00	21 20 38	2151.92	-25.15	34.84	21.52	106.71	21 56 30	1551.9	-22.62	26.95
100.00	10 56 59	4396.89	15.03	178.53	18.26	63.85	12 10 16	3796.9	11.39	171.63
110.00	22 36 13	1915.41	-28.10	15.78	20.42	110.32	23 8 8	1315.4	-25.07	7.91
110.00	11 57 54	4206.17	17.77	162.54	16.74	60.31	13 8 0	3606.2	13.69	155.81

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.1943	TRA	-2.8287	TC3	1.5319	BAU	.4868	SGT	4184.8	SGR	1648.9	SG3	1826.9	ST	1880.3	SR	895.7
RDE	.6479	RRA	-.8723	RC3	.9784	FAU	.30090	RRT	.9519	RRF	-.9753	RTF	-.9689	CRT	.9726	CRS	.9640
FDE	-5.0130	FRA	12.7579	FC	-13.0036	BSP	15734	SGB	4497.9	R23	-.1341	R13	-.9751	LSA	3546.3	MSA	229.1
BDE	1.3587	BRA	2.9601	BC3	1.8177	FSP	5974	SG1	4473.0	SG2	472.7	THA	20.80	EL1	2074.2	EL2	188.9

SS	2879.5	CST	.9992	INJ 2 LAT	-21.70
SSA	31.1	ALF	25.08	INJ 2 LONG	47.36

LAUNCH DATE OCT 8 1964 FLIGHT TIME 276.00 ARRIVAL DATE JUL 11 1965

HELIOCENTRIC CONIC DISTANCE 653.523 EARTH TO MARS

RL	149.46	LAL	-.00	LOL	14.75	VL	32.744	GAL	-7.08	AZL	90.22	HCA	211.02	SMA	188.56	ECC	.23991	INC	.2203
RP	233.25	LAP	.11	LOP	225.77	VP	20.836	GAP	2.19	AZP	89.81	TAL	322.00	TAP	173.02	RCA	143.32	APO	233.80
RC	212.144	GL	-1.61	GP	10.57	ZAL	142.79	ZAP	136.58	ETS	167.31	ZAE	167.96	ETE	102.25	ZAC	98.75	ETC	255.95

V1	29.814	V2	23.574	CLP	137.64														

PLANETOCENTRIC CONIC

C3	19.745	VHL	4.444	DLA	7.24	RAL	158.65	RAD	6567.8	VEL	11.880	PTH	2.11	VHP	4.031	DPA	9.45	RAP	188.12
ECC	1.3250																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 52 21	2437.61	-24.28	56.12	21.87	105.03	20 32 58	1837.6	-21.98	48.20
90.00	9 43 5	4629.10	13.42	196.40	18.57	64.83	11 0 14	4029.1	9.92	189.47
100.00	21 17 9	2164.07	-25.39	35.66	21.53	106.34	21 53 13	1564.1	-22.90	27.74
100.00	11 0 57	4377.88	14.45	177.41	18.05	63.55	12 13 55	3777.9	10.79	170.54
110.00	22 33 19	1925.70	-28.34	16.48	20.44	109.97	23 5 25	1325.7	-25.35	8.57
110.00	12 1 16	4189.01	17.19	161.55	16.53	59.99	13 11 5	3589.0	13.07	154.86

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.1535	TRA	-2.7340	TC3	1.4981	BAU	.4758	SGT	4075.8	SGR	1667.8	SG3	1906.1	ST	1830.3	SR	904.5
RDE	.6496	RRA	-.8728	RC3	1.0021	FAU	.31216	RRT	.9507	RRF	-.9745	RTF	-.9683	CRT	.9723	CRS	.9621
FDE	-5.1271	FRA	13.2160	FC	-13.6865	BSP	15434	SGB	4403.8	R23	-.1318	R13	-.9749	LSA	3556.4	MSA	238.1
BDE	1.3238	BRA	2.8699	BC3	1.8024	FSP	6254	SG1	4377.4	SG2	481.5	THA	21.53	EL1	2032.7	EL2	190.4

SS	2921.9	CST	.9990	INJ 2 LAT	-21.98
SSA	30.9	ALF	25.91	INJ 2 LONG	48.20

LAUNCH DATE OCT 8 1964 FLIGHT TIME 278.00 ARRIVAL DATE JUL 13 1965

HELIOCENTRIC CONIC DISTANCE 657.289 EARTH TO MARS

RL	149.46	LAL	-.00	LOL	14.75	VL	32.730	GAL	-7.03	AZL	90.15	HCA	212.02	SMA	188.32	ECC	.23864	INC	.1511
RP	232.88	LAP	.08	LOP	226.77	VP	20.858	GAP	1.84	AZP	89.87	TAL	322.10	TAP	174.12	RCA	143.38	APO	233.27
RC	214.210	GL	-1.13	GP	10.49	ZAL	142.68	ZAP	135.38	ETS	167.87	ZAE	167.65	ETE	108.42	ZAC	98.62	ETC	255.97

V1	29.814	V2	23.612	CLP	136.38														

PLANETOCENTRIC CONIC

C3	19.478	VHL	4.413	DLA	7.73	RAL	158.71	RAD	6567.8	VEL	11.868	PTH	2.11	VHP	3.951	DPA	9.49	RAP	187.86
ECC	1.3206																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 48 45	2450.17	-24.50	56.98	21.87	104.66	20 29 35	1850.2	-22.25	49.03
90.00	9 47 10	4610.08	12.87	195.28	18.39	64.56	11 4 0	4010.1	9.34	188.38
100.00	21 13 48	2175.81	-25.61	36.46	21.54	105.97	21 50 4	1575.8	-23.17	28.51
100.00	11 4 47	4359.67	13.90	176.35	17.87	63.27	12 17 26	3759.7	10.20	169.51
110.00	22 30 33	1935.65	-28.57	17.16	20.47	109.62	23 2 49	1335.6	-25.63	9.22
110.00	12 4 32	4172.60	16.63	160.61	16.33	59.70	13 14 4	3572.6	12.48	153.96

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.1126	TRA	-2.6350	TC3	1.4570	BAU	.4642	SGT	3957.0	SGR	1688.7	SG3	1987.8	ST	1777.8	SR	914.4
RDE	.6524	RRA	-.8743	RC3	1.0273	FAU	.32400	RRT	.9494	RRF	-.9737	RTF	-.9674	CRT	.9721	CRS	.9603
FDE	-5.2513	FRA	13.6810	FC	-14.4004	BSP	15082	SGB	4302.3	R23	-.1302	R13	-.9746	LSA	3568.6	MSA	247.1
BDE	1.2898	BRA	2.7763	BC3	1.7828	FSP	6528	SG1	4274.2	SG2	491.2	THA	22.37	EL1	1990.0	EL2	191.5

SS	2966.6	CST	.9987	INJ 2 LAT	-22.25
SSA	30.6	ALF	26.83	INJ 2 LONG	49.03

LAUNCH DATE OCT 8 1964 FLIGHT TIME 280.00 ARRIVAL DATE JUL 15 1965

HELIOCENTRIC CONIC DISTANCE 661.066 EARTH TO MARS

RL 149.46 LAL -.00 LOL 14.75 VL 32.717 GAL -6.99 AZL 90.09 HCA 213.02 SMA 188.10 ECC .23745 INC .0890 V1 29.814
RP 232.51 LAP .05 LOP 227.77 VP 20.881 GAP 1.49 AZP 89.92 TAL 322.20 TAP 175.22 RCA 143.44 APO 232.76 V2 23.650
RC 216.258 GL -.67 GP 10.43 ZAL 142.57 ZAP 134.14 ETS 168.41 ZAE 167.17 ETE 114.41 ZAC 98.50 ETC 255.99 CLP 135.09

PLANETOCENTRIC CONIC

C3 19.230 VHL 4.385 DLA 8.21 RAL 158.77 RAD 6567.8 VEL 11.858 PTH 2.10 VHP 3.873 DPA 9.55 RAP 187.56 ECC 1.3165

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 45 17	2462.33	-24.71	57.81	21.89	104.29	20 26 19	1862.3	-22.50	49.83
90.00	9 51 7	4591.85	12.33	194.21	18.23	64.31	11 7 38	3991.8	8.77	187.33
100.00	21 10 36	2187.18	-25.82	37.24	21.56	105.61	21 47 3	1587.2	-23.43	29.26
100.00	11 8 29	4342.24	13.36	175.33	17.71	63.01	12 20 51	3742.2	9.64	168.52
110.00	22 27 54	1945.28	-28.79	17.83	20.51	109.29	23 0 19	1345.3	-25.88	9.85
110.00	12 7 40	4156.90	16.09	159.72	16.16	59.42	13 16 57	3556.9	11.91	153.10

DIFFERENTIAL CORRECTIONS
TDE 1.0697 TRA-2.5321 TC3 1.4049 BAU .4513
RDE .6552 RRA -.8772 RC3 1.0524 FAU .33586
FDE-5.3712 FRA14.1627 FC-15.1200 BSP 14725
BDE 1.2544 BRA 2.6798 BC3 1.7553 FSP 6823

MID-COURSE EXECUTION ACCURACY
SGT 3826.8 SGR 1710.4 SG3 2071.1
RRT .9479 RRF -.9730 RTF -.9663
SGB 4191.7 R23 -.1290 R13 -.9743
SG1 4161.6 SG2 501.1 THA 23.32

ORBIT DETERMINATION ACCURACY
ST 1720.6 SR 924.2 SS 3009.4
CRT .9721 CRS .9586 CST .9984
LSA 3578.3 MSA 256.3 SSA 30.3
EL1 1943.7 EL2 192.0 ALF 27.87

LAUNCH DATE OCT 8 1964 FLIGHT TIME 282.00 ARRIVAL DATE JUL 17 1965

HELIOCENTRIC CONIC DISTANCE 664.853 EARTH TO MARS

RL 149.46 LAL -.00 LOL 14.75 VL 32.705 GAL -6.94 AZL 90.03 HCA 214.03 SMA 187.89 ECC .23631 INC .0221 V1 29.814
RP 232.14 LAP .02 LOP 228.77 VP 20.906 GAP 1.14 AZP 89.98 TAL 322.28 TAP 176.31 RCA 143.49 APO 232.29 V2 23.689
RC 218.287 GL -.22 GP 10.37 ZAL 142.46 ZAP 132.86 ETS 168.93 ZAE 166.55 ETE 120.09 ZAC 98.37 ETC 256.01 CLP 133.75

PLANETOCENTRIC CONIC

C3 19.000 VHL 4.359 DLA 8.66 RAL 158.84 RAD 6567.8 VEL 11.848 PTH 2.10 VHP 3.799 DPA 9.64 RAP 187.24 ECC 1.3127

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 41 58	2474.13	-24.90	58.62	21.91	103.93	20 23 12	1874.1	-22.74	50.61
90.00	9 54 56	4574.38	11.81	193.19	18.10	64.08	11 11 11	3974.4	8.23	186.34
100.00	21 7 31	2198.20	-26.02	38.00	21.59	105.26	21 44 9	1598.2	-23.67	29.99
100.00	11 12 4	4325.54	12.84	174.36	17.57	62.77	12 24 10	3725.5	9.09	167.58
110.00	22 25 21	1954.61	-28.99	18.47	20.56	108.95	22 57 56	1354.6	-26.13	10.46
110.00	12 10 43	4141.89	15.57	158.87	16.01	59.18	13 19 45	3541.9	11.36	152.28

DIFFERENTIAL CORRECTIONS
TDE 1.0264 TRA-2.4243 TC3 1.3450 BAU .4379
RDE .6587 RRA -.8810 RC3 1.0784 FAU .34815
FDE-5.4986 FRA14.6517 FC-15.8633 BSP 14322
BDE 1.2195 BRA 2.5794 BC3 1.7239 FSP 7117

MID-COURSE EXECUTION ACCURACY
SGT 3685.8 SGR 1733.7 SG3 2156.5
RRT .9462 RRF -.9724 RTF -.9648
SGB 4073.2 R23 -.1282 R13 -.9738
SG1 4040.9 SG2 511.7 THA 24.41

ORBIT DETERMINATION ACCURACY
ST 1660.2 SR 934.9 SS 3053.7
CRT .9722 CRS .9569 CST .9980
LSA 3589.4 MSA 265.4 SSA 30.1
EL1 1895.7 EL2 191.8 ALF 29.02

LAUNCH DATE OCT 8 1964 FLIGHT TIME 284.00 ARRIVAL DATE JUL 19 1965

HELIOCENTRIC CONIC DISTANCE 668.650 EARTH TO MARS

RL 149.46 LAL -.00 LOL 14.75 VL 32.694 GAL -6.90 AZL 89.97 HCA 215.03 SMA 187.68 ECC .23524 INC .0252 V1 29.814
RP 231.76 LAP -.02 LOP 229.78 VP 20.932 GAP .80 AZP 90.02 TAL 322.37 TAP 177.40 RCA 143.53 APO 231.84 V2 23.728
RC 220.299 GL .21 GP 10.31 ZAL 142.36 ZAP 131.54 ETS 169.44 ZAE 165.77 ETE 125.37 ZAC 98.23 ETC 256.04 CLP 132.37

PLANETOCENTRIC CONIC

C3 18.788 VHL 4.335 DLA 9.10 RAL 158.90 RAD 6567.8 VEL 11.839 PTH 2.10 VHP 3.727 DPA 9.74 RAP 186.88 ECC 1.3092

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 38 46	2485.58	-25.09	59.40	21.95	103.58	20 20 12	1885.6	-22.97	51.37
90.00	9 58 39	4557.63	11.31	192.21	17.98	63.87	11 14 37	3957.6	7.71	185.38
100.00	21 4 33	2208.90	-26.21	38.74	21.63	104.92	21 41 22	1608.9	-23.90	30.70
100.00	11 15 33	4309.55	12.34	173.44	17.45	62.56	12 27 23	3709.5	8.57	166.68
110.00	22 22 55	1963.67	-29.19	19.10	20.62	108.63	22 55 39	1363.7	-26.37	11.06
110.00	12 13 41	4127.54	15.06	158.06	15.88	58.95	13 22 28	3527.5	10.84	151.50

DIFFERENTIAL CORRECTIONS
TDE .9820 TRA-2.3121 TC3 1.2742 BAU .4236
RDE .6626 RRA -.8859 RC3 1.1046 FAU .36063
FDE-5.6270 FRA15.1536 FC-16.6173 BSP 13900
BDE 1.1846 BRA 2.4760 BC3 1.6863 FSP 7425

MID-COURSE EXECUTION ACCURACY
SGT 3533.4 SGR 1758.0 SG3 2243.7
RRT .9442 RRF -.9719 RTF -.9629
SGB 3946.6 R23 -.1281 R13 -.9731
SG1 3911.8 SG2 522.9 THA 25.66

ORBIT DETERMINATION ACCURACY
ST 1596.4 SR 945.7 SS 3097.7
CRT .9725 CRS .9553 CST .9976
LSA 3600.3 MSA 274.8 SSA 29.8
EL1 1845.7 EL2 190.6 ALF 30.30

LAUNCH DATE OCT 8 1964 FLIGHT TIME 286.00 ARRIVAL DATE JUL 21 1965

HELIOCENTRIC CONIC DISTANCE 672.458 EARTH TO MARS

RL 149.46 LAL -.00 LOL 14.75 VL 32.683 GAL -6.87 AZL 89.92 HCA 216.04 SMA 187.49 ECC .23423 INC .0819 V1 29.814
RP 231.38 LAP -.05 LOP 230.79 VP 20.959 GAP .46 AZP 90.07 TAL 322.44 TAP 178.48 RCA 143.58 APO 231.41 V2 23.768
RC 222.292 GL .62 GP 10.27 ZAL 142.26 ZAP 130.17 ETS 169.93 ZAE 164.85 ETE 130.22 ZAC 98.10 ETC 256.07 CLP 130.96

PLANETOCENTRIC CONIC

C3 18.592 VHL 4.312 DLA 9.51 RAL 158.97 RAD 6567.8 VEL 11.831 PTH 2.10 VHP 3.658 DPA 9.87 RAP 186.49 ECC 1.3060

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 35 43	2496.71	-25.26	60.17	21.99	103.23	20 17 19	1896.7	-23.19	52.11
90.00	10 2 16	4541.59	10.83	191.28	17.89	63.68	11 17 57	3941.6	7.21	184.47
100.00	21 1 43	2219.29	-26.39	39.46	21.69	104.58	21 38 43	1619.3	-24.13	31.39
100.00	11 18 56	4294.24	11.86	172.56	17.35	62.36	12 30 30	3694.2	8.07	165.82
110.00	22 20 36	1972.47	-29.38	19.72	20.69	108.31	22 53 28	1372.5	-26.60	11.64
110.00	12 16 33	4113.82	14.58	157.29	15.78	58.73	13 25 7	3513.8	10.33	150.76

DIFFERENTIAL CORRECTIONS
TDE .9368 TRA-2.1943 TC3 1.1944 BAU .4089
RDE .6668 RRA -.8914 RC3 1.1313 FAU .37338
FDE-5.7587 FRA15.6614 FC-17.3862 BSP 13427
BDE 1.1499 BRA 2.3685 BC3 1.6451 FSP 7732

MID-COURSE EXECUTION ACCURACY
SGT 3369.2 SGR 1783.1 SG3 2332.2
RRT .9419 RRF -.9713 RTF -.9605
SGB 3811.9 R23 -.1284 R13 -.9723
SG1 3774.3 SG2 534.5 THA 27.08

ORBIT DETERMINATION ACCURACY
ST 1528.8 SR 957.0 SS 3141.7
CRT .9730 CRS .9538 CST .9971
LSA 3611.4 MSA 284.0 SSA 29.5
EL1 1793.8 EL2 188.3 ALF 31.73

LAUNCH DATE OCT 8 1964 FLIGHT TIME 288.00 ARRIVAL DATE JUL 23 1965

HELIOCENTRIC CONIC DISTANCE 676.274 EARTH TO MARS

RL 149.46 LAL -.00 LOL 14.75 VL 32.672 GAL -6.83 AZL 89.86 HCA 217.06 SMA 187.31 ECC .23328 INC .1338 V1 29.814
RP 231.01 LAP -.08 LOP 231.81 VP 20.988 GAP .13 AZP 90.11 TAL 322.50 TAP 179.56 RCA 143.61 APO 231.01 V2 23.807
RC 224.266 GL 1.02 GP 10.22 ZAL 142.17 ZAP 128.75 ETS 170.41 ZAE 163.81 ETE 134.61 ZAC 97.96 ETC 256.10 CLP 129.50

PLANETOCENTRIC CONIC

C3 18.413 VHL 4.291 DLA 9.92 RAL 159.04 RAD 6567.7 VEL 11.823 PTH 2.09 VHP 3.591 DPA 10.01 RAP 186.07 ECC 1.3050

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 32 47	2507.52	-25.43	60.92	22.05	102.89	20 14 34	1907.5	-23.40	52.84
90.00	10 5 46	4526.22	10.36	190.39	17.82	63.50	11 21 13	3926.2	6.72	183.60
100.00	20 59 1	2229.39	-26.56	40.16	21.75	104.25	21 36 10	1629.4	-24.34	32.06
100.00	11 22 13	4279.59	11.40	171.72	17.28	62.18	12 33 33	3679.6	7.59	165.00
110.00	22 18 23	1981.02	-29.56	20.32	20.77	108.00	22 51 24	1381.0	-26.82	12.21
110.00	12 19 21	4100.72	14.12	156.56	15.69	58.54	13 27 41	3500.7	9.85	150.06

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .8901 TRA-2.0720 TC3 1.1028 BAU .3936 SGT 3193.2 SGR 1808.9 SG3 2421.8 ST 1457.2 SR 968.5 SS 3185.8
RDE .6715 RRA -.8977 RC3 1.1580 FAU .38626 RRT .9390 RRF -.9709 RTF -.9574 CRT .9736 CRS .9524 CST .9965
FDE-5.8926 FRA16.1774 FC-18.1612 BSP 12943 SGB 3670.0 R23 -.1295 R13 -.9713 LSA 3622.7 MSA 293.2 SSA 29.2
BDE 1.1150 BRA 2.2581 BC3 1.5991 FSP 8048 SG1 3628.9 SG2 547.5 THA 28.72 EL1 1739.9 EL2 185.1 ALF 33.33

LAUNCH DATE OCT 8 1964 FLIGHT TIME 290.00 ARRIVAL DATE JUL 25 1965

HELIOCENTRIC CONIC DISTANCE 680.101 EARTH TO MARS

RL 149.46 LAL -.00 LOL 14.75 VL 32.662 GAL -6.80 AZL 89.81 HCA 218.07 SMA 187.14 ECC .23239 INC .1850 V1 29.814
RP 230.62 LAP -.11 LOP 232.82 VP 21.018 GAP -.19 AZP 90.15 TAL 322.56 TAP 180.64 RCA 143.65 APO 230.63 V2 23.847
RC 226.222 GL 1.41 GP 10.18 ZAL 142.09 ZAP 127.30 ETS 170.88 ZAE 162.65 ETE 138.57 ZAC 97.82 ETC 256.13 CLP 128.00

PLANETOCENTRIC CONIC

C3 18.249 VHL 4.272 DLA 10.30 RAL 159.12 RAD 6567.7 VEL 11.817 PTH 2.09 VHP 3.528 DPA 10.18 RAP 185.62 ECC 1.3003

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 29 59	2518.04	-25.59	61.65	22.12	102.56	20 11 57	1918.0	-23.60	53.54
90.00	10 9 11	4511.52	9.92	189.54	17.76	63.34	11 24 23	3911.5	6.26	182.77
100.00	20 56 26	2239.21	-26.72	40.84	21.83	103.92	21 33 45	1639.2	-24.54	32.72
100.00	11 25 25	4265.58	10.95	170.92	17.22	62.01	12 36 31	3665.6	7.12	164.22
110.00	22 16 17	1989.34	-29.74	20.90	20.86	107.69	22 49 26	1389.3	-27.03	12.76
110.00	12 22 4	4088.21	13.67	155.86	15.63	58.36	13 30 12	3488.2	9.39	149.38

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .8426 TRA-1.9436 TC3 1.0018 BAU .3785 SGT 3004.9 SGR 1835.2 SG3 2512.2 ST 1381.9 SR 980.1 SS 3229.2
RDE .6763 RRA -.9046 RC3 1.1847 FAU .39930 RRT .9354 RRF -.9704 RTF -.9534 CRT .9746 CRS .9510 CST .9957
FDE-6.0273 FRA16.6906 FC-18.9428 BSP 12413 SGB 3521.0 R23 -.1308 R13 -.9702 LSA 3634.0 MSA 302.5 SSA 28.9
BDE 1.0805 BRA 2.1437 BC3 1.5515 FSP 8367 SG1 3476.0 SG2 560.7 THA 30.62 EL1 1684.6 EL2 180.1 ALF 35.11

LAUNCH DATE OCT 8 1964 FLIGHT TIME 292.00 ARRIVAL DATE JUL 27 1965

HELIOCENTRIC CONIC DISTANCE 683.937 EARTH TO MARS

RL 149.46 LAL -.00 LOL 14.75 VL 32.653 GAL -6.77 AZL 89.77 HCA 219.10 SMA 186.98 ECC .23156 INC .2326 V1 29.814
RP 230.24 LAP -.15 LOP 233.84 VP 21.048 GAP -.51 AZP 90.18 TAL 322.61 TAP 181.70 RCA 143.68 APO 230.27 V2 23.887
RC 228.159 GL 1.78 GP 10.15 ZAL 142.02 ZAP 125.80 ETS 171.35 ZAE 161.37 ETE 142.12 ZAC 97.67 ETC 256.17 CLP 126.46

PLANETOCENTRIC CONIC

C3 18.100 VHL 4.254 DLA 10.67 RAL 159.20 RAD 6567.7 VEL 11.810 PTH 2.09 VHP 3.468 DPA 10.36 RAP 185.13 ECC 1.2979

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 27 18	2528.26	-25.74	62.36	22.21	102.23	20 9 26	1928.3	-23.79	54.23
90.00	10 12 31	4497.46	9.49	188.73	17.73	63.19	11 27 29	3897.5	5.81	181.98
100.00	20 53 58	2248.76	-26.88	41.51	21.92	103.60	21 31 27	1648.8	-24.74	33.36
100.00	11 28 32	4252.16	10.52	170.15	17.19	61.86	12 39 25	3652.2	6.68	163.47
110.00	22 14 17	1997.43	-29.90	21.47	20.96	107.39	22 47 34	1397.4	-27.23	13.30
110.00	12 24 43	4076.29	13.24	155.20	15.58	58.20	13 32 39	3476.3	8.94	148.74

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .7937 TRA-1.8093 TC3 .8894 BAU .3637 SGT 2804.2 SGR 1861.7 SG3 2602.9 ST 1302.5 SR 992.0 SS 3272.6
RDE .6816 RRA -.9116 RC3 1.2115 FAU .41252 RRT .9307 RRF -.9701 RTF -.9480 CRT .9757 CRS .9497 CST .9948
FDE-6.1660 FRA17.2182 FC-19.7311 BSP 11857 SGB 3365.9 R23 -.1328 R13 -.9688 LSA 3645.9 MSA 311.6 SSA 28.6
BDE 1.0462 BRA 2.0260 BC3 1.5029 FSP 8683 SG1 3316.3 SG2 575.7 THA 32.83 EL1 1628.0 EL2 173.7 ALF 37.11

LAUNCH DATE OCT 8 1964 FLIGHT TIME 294.00 ARRIVAL DATE JUL 29 1965

HELIOCENTRIC CONIC DISTANCE 687.781 EARTH TO MARS

RL 149.46 LAL -.00 LOL 14.75 VL 32.644 GAL -6.75 AZL 89.72 HCA 220.12 SMA 186.82 ECC .23078 INC .2793 V1 29.814
RP 229.86 LAP -.18 LOP 234.87 VP 21.080 GAP -.83 AZP 90.21 TAL 322.65 TAP 182.77 RCA 143.71 APO 229.94 V2 23.927
RC 230.076 GL 2.14 GP 10.11 ZAL 141.95 ZAP 124.26 ETS 171.80 ZAE 160.01 ETE 145.30 ZAC 97.52 ETC 256.21 CLP 124.87

PLANETOCENTRIC CONIC

C3 17.966 VHL 4.239 DLA 11.02 RAL 159.29 RAD 6567.7 VEL 11.805 PTH 2.09 VHP 3.410 DPA 10.56 RAP 184.61 ECC 1.2957

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 24 45	2538.21	-25.88	63.06	22.31	101.91	20 7 3	1938.2	-23.98	54.90
90.00	10 15 46	4484.04	9.07	187.96	17.72	63.06	11 30 30	3884.0	5.39	181.22
100.00	20 51 37	2258.05	-27.02	42.16	22.02	103.29	21 29 15	1658.0	-24.93	33.99
100.00	11 31 35	4239.44	10.11	169.43	17.17	61.72	12 42 14	3639.4	6.26	162.76
110.00	22 12 24	2005.31	-30.06	22.03	21.08	107.09	22 45 49	1405.3	-27.43	13.83
110.00	12 27 18	4064.94	12.84	154.58	15.56	58.04	13 35 3	3464.9	8.52	148.14

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .7433 TRA-1.6699 TC3 .7648 BAU .3494 SGT 2592.1 SGR 1888.1 SG3 2693.7 ST 1219.0 SR 1003.7 SS 3314.8
RDE .6869 RRA -.9192 RC3 1.2373 FAU .42557 RRT .9245 RRF -.9697 RTF -.9408 CRT .9772 CRS .9485 CST .9936
FDE-6.3017 FRA17.7455 FC-20.5076 BSP 11287 SGB 3206.8 R23 -.1353 R13 -.9672 LSA 3657.6 MSA 320.8 SSA 28.2
BDE 1.0121 BRA 1.9062 BC3 1.4546 FSP 9009 SG1 3151.7 SG2 592.1 THA 35.39 EL1 1570.4 EL2 165.4 ALF 39.34

LAUNCH DATE OCT 8 1964 FLIGHT TIME 296.00 ARRIVAL DATE JUL 31 1965

HELIOCENTRIC CONIC DISTANCE 691.636 EARTH TO MARS
RL 149.46 LAL -.00 LOL 14.75 VL 32.635 GAL -6.72 AZL 89.68 HCA 221.15 SMA 186.68 ECC .23006 INC .3236 V1 29.814
RP 229.47 LAP -.21 LOP 235.89 VP 21.113 GAP -1.14 AZP 90.24 TAL 322.68 TAP 183.83 RCA 143.73 APO 229.63 V2 23.968
RC 231.973 GL 2.48 GP 10.08 ZAL 141.89 ZAP 122.67 ETS 172.25 ZAE 158.54 ETE 148.15 ZAC 97.36 ETC 256.26 CLP 123.25
PLANETOCENTRIC CONIC
C3 17.846 VHL 4.224 DLA 11.36 RAL 159.38 RAD 6567.7 VEL 11.799 PTH 2.09 VHP 3.355 DPA 10.78 RAP 184.05 ECC 1.2937

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 22 20	2547.90	-26.01	63.73	22.42	101.60	20 4 48	1947.9	-24.15	55.56
90.00	10 18 56	4471.23	8.68	187.23	17.73	62.94	11 33 27	3871.2	4.98	180.50
100.00	20 49 24	2267.09	-27.16	42.80	22.14	102.98	21 27 11	1667.1	-25.10	34.60
100.00	11 34 33	4227.27	9.72	168.74	17.17	61.59	12 45 0	3627.3	5.85	162.09
110.00	22 10 36	2012.97	-30.21	22.58	21.21	106.80	22 44 9	1413.0	-27.62	14.35
110.00	12 29 50	4054.15	12.45	153.98	15.55	57.90	13 37 24	3454.1	8.12	147.56

DIFFERENTIAL CORRECTIONS
TDE .6948 TRA-1.5211 TC3 .6367 BAU .3378
RDE .6933 RRA -.9258 RC3 1.2648 FAU .43938
FDE-6.4542 FRA18.2484 FC-21.3156 BSP 10617
BDE .9815 BRA 1.7806 BC3 1.4160 FSP 9293

MID-COURSE EXECUTION ACCURACY
SGT 2367.5 SGR 1914.7 SG3 2784.0
RRT .9168 RRF -.9694 RTF -.9315
SGB 3044.9 R23 -.1369 R13 -.9656
SG1 2983.8 SG2 606.9 THA 38.43

ORBIT DETERMINATION ACCURACY
ST 1134.3 SR 1016.3 SS 3359.4
CRT .9795 CRS .9475 CST .9919
LSA 3673.7 MSA 329.8 SSA 27.8
EL1 1515.2 EL2 153.4 ALF 41.79

LAUNCH DATE OCT 8 1964 FLIGHT TIME 298.00 ARRIVAL DATE AUG 2 1965

HELIOCENTRIC CONIC DISTANCE 695.498 EARTH TO MARS
RL 149.46 LAL -.00 LOL 14.75 VL 32.627 GAL -6.70 AZL 89.63 HCA 222.18 SMA 186.54 ECC .22939 INC .3661 V1 29.814
RP 229.09 LAP -.25 LOP 236.93 VP 21.147 GAP -1.45 AZP 90.27 TAL 322.70 TAP 184.88 RCA 143.75 APO 229.33 V2 24.009
RC 233.848 GL 2.82 GP 10.04 ZAL 141.84 ZAP 121.04 ETS 172.69 ZAE 157.00 ETE 150.71 ZAC 97.19 ETC 256.31 CLP 121.58
PLANETOCENTRIC CONIC
C3 17.739 VHL 4.212 DLA 11.68 RAL 159.48 RAD 6567.7 VEL 11.795 PTH 2.09 VHP 3.304 DPA 11.02 RAP 183.46 ECC 1.2919

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 20 2	2557.31	-26.14	64.39	22.54	101.29	20 2 39	1957.3	-24.32	56.20
90.00	10 22 1	4459.04	8.30	186.53	17.75	62.83	11 36 20	3859.0	4.59	179.82
100.00	20 47 18	2275.88	-27.30	43.42	22.27	102.68	21 25 14	1675.9	-25.28	35.20
100.00	11 37 26	4215.70	9.34	168.09	17.20	61.48	12 47 42	3615.7	5.46	161.45
110.00	22 8 56	2020.43	-30.36	23.11	21.35	106.52	22 42 36	1420.4	-27.80	14.85
110.00	12 32 18	4043.91	12.08	153.42	15.57	57.78	13 39 42	3443.9	7.74	147.02

DIFFERENTIAL CORRECTIONS
TDE .6409 TRA-1.3702 TC3 .4876 BAU .3268
RDE .6987 RRA -.9336 RC3 1.2889 FAU .45218
FDE-6.5873 FRA18.7681 FC-22.0679 BSP 10034
BDE .9481 BRA 1.6580 BC3 1.3781 FSP .9618

MID-COURSE EXECUTION ACCURACY
SGT 2133.5 SGR 1940.1 SG3 2872.8
RRT .9043 RRF -.9690 RTF -.9173
SGB 2883.7 R23 -.1398 R13 -.9637
SG1 2814.6 SG2 627.9 THA 42.00

ORBIT DETERMINATION ACCURACY
ST 1042.2 SR 1027.6 SS 3399.1
CRT .9816 CRS .9463 CST .9899
LSA 3685.1 MSA 338.7 SSA 27.5
EL1 1456.8 EL2 140.5 ALF 44.59

LAUNCH DATE OCT 8 1964 FLIGHT TIME 300.00 ARRIVAL DATE AUG 4 1965

HELIOCENTRIC CONIC DISTANCE 699.369 EARTH TO MARS
RL 149.46 LAL -.00 LOL 14.75 VL 32.620 GAL -6.69 AZL 89.59 HCA 223.21 SMA 186.41 ECC .22878 INC .4073 V1 29.814
RP 228.70 LAP -.28 LOP 237.96 VP 21.182 GAP -1.75 AZP 90.30 TAL 322.71 TAP 185.92 RCA 143.77 APO 229.06 V2 24.049
RC 235.703 GL 3.15 GP 10.01 ZAL 141.80 ZAP 119.37 ETS 173.12 ZAE 155.38 ETE 153.02 ZAC 97.01 ETC 256.36 CLP 119.87
PLANETOCENTRIC CONIC
C3 17.647 VHL 4.201 DLA 11.99 RAL 159.59 RAD 6567.7 VEL 11.791 PTH 2.08 VHP 3.255 DPA 11.27 RAP 182.83 ECC 1.2904

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 17 52	2566.46	-26.26	65.04	22.68	100.99	20 0 39	1966.5	-24.48	56.82
90.00	10 25 2	4447.45	7.94	185.87	17.80	62.73	11 39 9	3847.5	4.22	179.17
100.00	20 45 19	2284.42	-27.42	44.02	22.41	102.39	21 23 24	1684.4	-25.44	35.78
100.00	11 40 16	4204.72	8.99	167.47	17.24	61.37	12 50 20	3604.7	5.10	160.84
110.00	22 7 22	2027.70	-30.50	23.63	21.51	106.24	22 41 10	1427.7	-27.97	15.35
110.00	12 34 42	4034.21	11.72	152.89	15.60	57.66	13 41 57	3434.2	7.37	146.50

DIFFERENTIAL CORRECTIONS
TDE .5876 TRA-1.2110 TC3 .3321 BAU .3197
RDE .7049 RRA -.9404 RC3 1.3137 FAU .46538
FDE-6.7313 FRA19.2654 FC-22.8311 BSP 9400
BDE .9177 BRA 1.5333 BC3 1.3550 FSP 9915

MID-COURSE EXECUTION ACCURACY
SGT 1889.8 SGR 1965.2 SG3 2960.2
RRT .8866 RRF -.9687 RTF -.8969
SGB 2726.4 R23 -.1410 R13 -.9619
SG1 2648.1 SG2 648.7 THA 46.26

ORBIT DETERMINATION ACCURACY
ST 948.1 SR 1039.3 SS 3439.9
CRT .9844 CRS .9454 CST .9870
LSA 3700.1 MSA 347.5 SSA 27.2
EL1 1401.4 EL2 123.7 ALF 47.67

LAUNCH DATE OCT 8 1964 FLIGHT TIME 302.00 ARRIVAL DATE AUG 6 1965

HELIOCENTRIC CONIC DISTANCE 703.249 EARTH TO MARS
RL 149.46 LAL -.00 LOL 14.75 VL 32.613 GAL -6.67 AZL 89.55 HCA 224.25 SMA 186.29 ECC .22821 INC .4472 V1 29.814
RP 228.31 LAP -.31 LOP 239.00 VP 21.218 GAP -2.05 AZP 90.32 TAL 322.71 TAP 186.96 RCA 143.78 APO 228.81 V2 24.090
RC 237.537 GL 3.46 GP 9.98 ZAL 141.77 ZAP 117.66 ETS 173.55 ZAE 153.69 ETE 155.10 ZAC 96.83 ETC 256.42 CLP 118.12
PLANETOCENTRIC CONIC
C3 17.567 VHL 4.191 DLA 12.28 RAL 159.70 RAD 6567.7 VEL 11.788 PTH 2.08 VHP 3.210 DPA 11.54 RAP 182.17 ECC 1.2891

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 15 50	2575.36	-26.38	65.66	22.83	100.70	19 58 45	1975.4	-24.63	57.43
90.00	10 27 58	4436.46	7.60	185.25	17.87	62.64	11 41 54	3836.5	3.87	178.55
100.00	20 43 28	2292.73	-27.54	44.61	22.57	102.10	21 21 41	1692.7	-25.60	36.35
100.00	11 43 1	4194.32	8.65	166.88	17.30	61.27	12 52 55	3594.3	4.75	160.26
110.00	22 5 55	2034.76	-30.63	24.14	21.68	105.97	22 39 49	1434.8	-28.14	15.83
110.00	12 37 4	4025.05	11.39	152.39	15.65	57.55	13 44 9	3425.1	7.03	146.02

DIFFERENTIAL CORRECTIONS
TDE .5312 TRA-1.0464 TC3 .1617 BAU .3160
RDE .7105 RRA -.9473 RC3 1.3356 FAU .47774
FDE-6.8618 FRA19.7583 FC-23.5438 BSP 8807
BDE .8872 BRA 1.4115 BC3 1.3454 FSP 10219

MID-COURSE EXECUTION ACCURACY
SGT 1639.8 SGR 1988.3 SG3 3044.4
RRT .8580 RRF -.9683 RTF -.8646
SGB 2577.3 R23 -.1404 R13 -.9603
SG1 2487.8 SG2 673.2 THA 51.37

ORBIT DETERMINATION ACCURACY
ST 848.7 SR 1050.1 SS 3476.5
CRT .9876 CRS .9442 CST .9830
LSA 3712.3 MSA 356.2 SSA 26.8
EL1 1346.1 EL2 104.0 ALF 51.13

LAUNCH DATE OCT 8 1964 FLIGHT TIME 304.00 ARRIVAL DATE AUG 8 1965

HELIOCENTRIC CONIC DISTANCE 707.136 EARTH TO MARS

RL	149.46	LAL	-.00	LOL	14.75	VL	32.606	GAL	-6.66	AZL	89.51	HCA	225.29	SMA	186.18	ECC	.22770	INC	.4856
RP	227.92	LAP	-.35	LOP	240.04	VP	21.254	GAP	-2.34	AZP	90.34	TAL	322.71	TAP	188.00	RCA	143.79	APO	228.58
RC	239.350	GL	3.76	GP	9.94	ZAL	141.75	ZAP	115.91	ETS	173.98	ZAE	151.93	ETE	156.98	ZAC	96.64	ETC	256.49

V1	29.814	V2	24.132	CLP	116.33														

PLANETOCENTRIC CONIC

C3	17.501	VHL	4.183	DLA	12.56	RAL	159.82	RAD	6567.7	VEL	11.785	PTH	2.08	VHP	3.168	DPA	11.82	RAP	181.48

ECC	1.2880														

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 13 56	2583.99	-26.48	66.27	23.00	100.41	19 57 0	1984.0	-24.78	58.02
90.00	10 30 50	4426.07	7.27	184.66	17.95	62.56	11 44 36	3826.1	3.54	177.97
100.00	20 41 44	2300.80	-27.66	45.18	22.74	101.82	21 20 5	1700.8	-25.75	36.90
100.00	11 45 42	4184.49	8.32	166.33	17.38	61.19	12 55 27	3584.5	4.42	159.72
110.00	22 4 34	2041.64	-30.76	24.63	21.87	105.70	22 38 36	1441.6	-28.30	16.30
110.00	12 39 22	4016.42	11.07	151.92	15.73	57.45	13 46 19	3416.4	6.70	145.56

DIFFERENTIAL CORRECTIONS

TDE	.4741	TRA	-.8755	TC3	-.0180	BAU	.3175
RDE	.7165	RRA	-.9535	RC3	1.3568	FAU	.49000
FDE	-6.9955	FRA	20.2318	FC	-24.2394	BSP	8233
BDE	.8591	BRA	1.2944	BC3	1.3569	FSP	10506

MID-COURSE EXECUTION ACCURACY

SGT	1389.6	SGR	2010.4	SG3	3126.0		
RRT	.8103	RRF	-.9680	RTF	-.8113		
SGB	2443.9	R23	-.1356	R13	-.9595		
SG1	2341.8	SG2	699.0	THA	57.50		

ORBIT DETERMINATION ACCURACY

ST	746.6	SR	1060.8	SS	3512.9
CRT	.9913	CRS	.9433	CST	.9768
LSA	3726.9	MSA	364.7	SSA	26.5
EL1	1294.7	EL2	80.6	ALF	54.94

LAUNCH DATE OCT 8 1964 FLIGHT TIME 306.00 ARRIVAL DATE AUG 10 1965

HELIOCENTRIC CONIC DISTANCE 711.032 EARTH TO MARS

RL	149.46	LAL	-.00	LOL	14.75	VL	32.600	GAL	-6.65	AZL	89.48	HCA	226.34	SMA	186.08	ECC	.22724	INC	.5230
RP	227.53	LAP	-.38	LOP	241.08	VP	21.292	GAP	-2.63	AZP	90.36	TAL	322.69	TAP	189.03	RCA	143.79	APO	228.36
RC	241.142	GL	4.06	GP	9.90	ZAL	141.74	ZAP	114.12	ETS	174.40	ZAE	150.11	ETE	158.70	ZAC	96.43	ETC	256.56

V1	29.814	V2	24.173	CLP	114.51														

PLANETOCENTRIC CONIC

C3	17.447	VHL	4.177	DLA	12.83	RAL	159.95	RAD	6567.7	VEL	11.783	PTH	2.08	VHP	3.129	DPA	12.11	RAP	180.75

ECC	1.2871														

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 12 10	2592.38	-26.58	66.86	23.18	100.13	19 55 22	1992.4	-24.92	58.59
90.00	10 33 38	4416.26	6.96	184.10	18.05	62.48	11 47 14	3816.3	3.22	177.42
100.00	20 40 8	2308.64	-27.76	45.74	22.93	101.55	21 18 37	1708.6	-25.89	37.44
100.00	11 48 20	4175.23	8.02	165.81	17.48	61.11	12 57 55	3575.2	4.10	159.21
110.00	22 3 20	2048.32	-30.88	25.12	22.07	105.44	22 37 28	1448.3	-28.46	16.76
110.00	12 41 38	4008.32	10.78	151.48	15.82	57.36	13 48 26	3408.3	6.40	145.13

DIFFERENTIAL CORRECTIONS

TDE	.4147	TRA	-.6985	TC3	-.2092	BAU	.3245
RDE	.7221	RRA	-.9593	RC3	1.3755	FAU	.50153
FDE	-7.1192	FRA	20.6900	FC	-24.8860	BSP	7728
BDE	.8327	BRA	1.1866	BC3	1.3914	FSP	10793

MID-COURSE EXECUTION ACCURACY

SGT	1148.8	SGR	2030.5	SG3	3203.6		
RRT	.7240	RRF	-.9675	RTF	-.7166		
SGB	2332.9	R23	-.1239	R13	-.9599		
SG1	2217.2	SG2	725.7	THA	64.85		

ORBIT DETERMINATION ACCURACY

ST	640.8	SR	1070.6	SS	3546.0
CRT	.9951	CRS	.9422	CST	.9670
LSA	3740.4	MSA	373.1	SSA	26.2
EL1	1246.5	EL2	54.2	ALF	59.16

LAUNCH DATE OCT 8 1964 FLIGHT TIME 308.00 ARRIVAL DATE AUG 12 1965

HELIOCENTRIC CONIC DISTANCE 714.934 EARTH TO MARS

RL	149.46	LAL	-.00	LOL	14.75	VL	32.594	GAL	-6.65	AZL	89.44	HCA	227.39	SMA	185.98	ECC	.22684	INC	.5590
RP	227.14	LAP	-.41	LOP	242.13	VP	21.330	GAP	-2.92	AZP	90.38	TAL	322.66	TAP	190.05	RCA	143.79	APO	228.16
RC	242.914	GL	4.34	GP	9.86	ZAL	141.74	ZAP	112.30	ETS	174.82	ZAE	148.24	ETE	160.27	ZAC	96.22	ETC	256.63

V1	29.814	V2	24.214	CLP	112.65														

PLANETOCENTRIC CONIC

C3	17.407	VHL	4.172	DLA	13.08	RAL	160.09	RAD	6567.7	VEL	11.781	PTH	2.08	VHP	3.094	DPA	12.40	RAP	179.99

ECC	1.2865														

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 10 32	2600.50	-26.68	67.44	23.38	99.86	19 53 52	2000.5	-25.05	59.15
90.00	10 36 21	4407.06	6.67	183.58	18.18	62.42	11 49 48	3807.1	2.93	176.91
100.00	20 38 40	2316.24	-27.87	46.28	23.13	101.28	21 17 16	1716.2	-26.03	37.96
100.00	11 50 54	4166.56	7.73	165.32	17.60	61.04	13 0 20	3566.6	3.81	158.73
110.00	22 2 13	2054.81	-31.00	25.58	22.29	105.18	22 36 28	1454.8	-28.61	17.20
110.00	12 43 50	4000.75	10.50	151.08	15.93	57.28	13 50 31	3400.8	6.11	144.73

DIFFERENTIAL CORRECTIONS

TDE	.3493	TRA	-.5187	TC3	-.4220	BAU	.3374
RDE	.7255	RRA	-.9664	RC3	1.3873	FAU	.51053
FDE	-7.1959	FRA	21.1666	FC	-25.3916	BSP	7394
BDE	.8052	BRA	1.0968	BC3	1.4500	FSP	11150

MID-COURSE EXECUTION ACCURACY

SGT	942.9	SGR	2046.7	SG3	3275.4		
RRT	.5528	RRF	-.9670	RTF	-.5345		
SGB	2253.4	R23	-.1014	R13	-.9617		
SG1	2122.2	SG2	757.7	THA	73.56		

ORBIT DETERMINATION ACCURACY

ST	527.6	SR	1077.5	SS	3568.6
CRT	.9978	CRS	.9405	CST	.9510
LSA	3745.4	MSA	381.3	SSA	26.2
EL1	1199.3	EL2	31.1	ALF	63.94

LAUNCH DATE OCT 8 1964 FLIGHT TIME 310.00 ARRIVAL DATE AUG 14 1965

HELIOCENTRIC CONIC DISTANCE 718.847 EARTH TO MARS

RL	149.46	LAL	-.00	LOL	14.75	VL	32.589	GAL	-6.65	AZL	89.41	HCA	228.44	SMA	185.89	ECC	.22648	INC	.5939
RP	226.75	LAP	-.44	LOP	243.18	VP	21.369	GAP	-3.20	AZP	90.39	TAL	322.62	TAP	191.06	RCA	143.79	APO	227.99
RC	244.666	GL	4.62	GP	9.81	ZAL	141.75	ZAP	110.44	ETS	175.23	ZAE	146.31	ETE	161.71	ZAC	96.00	ETC	256.71

V1	29.814	V2	24.256	CLP	110.76														

PLANETOCENTRIC CONIC

C3	17.378	VHL	4.169	DLA	13.32	RAL	160.23	RAD	6567.7	VEL	11.780	PTH	2.08	VHP	3.062	DPA	12.71	RAP	179.20

ECC	1.2860														

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 9 1	2608.38	-26.77	68.00	23.60	99.59	19 52 29	2008.4	-25.17	59.70
90.00	10 39 1	4398.42	6.40	183.09	18.32	62.36	11 52 19	3798.4	2.65	176.48
100.00	20 37 19	2323.61	-27.96	46.81	23.35	101.02	21 16 3	1723.6	-26.16	38.47
100.00	11 53 24	4158.43	7.47	164.87	17.74	60.97	13 2 42	3558.4	3.54	158.28
110.00	22 1 12	2061.12	-31.11	26.04	22.52	104.93	22 35 34	1461.1	-28.75	17.64
110.00	12 46 0	3993.68	10.24	150.69	16.06	57.21	13 52 34	3393.7	5.84	144.36

DIFFERENTIAL CORRECTIONS

TDE	.2904	TRA	-.3268	TC3	-.6256	BAU	.3574
RDE	.7324	RRA	-.9684	RC3	1.4052	FAU	.52212
FDE	-7.3386	FRA	21.5368	FC	-26.0105	BSP	7029
BDE	.7879	BRA	1.0221	BC3	1.5382	FSP	11340

MID-COURSE EXECUTION ACCURACY

SGT	802.7	SGR	2063.2	SG3	3343.3		
RRT	.2548	RRF	-.9666	RTF	-.2174		
SGB	2213.9	R23	-.0712	R13	-.9644		
SG1	2075.0	SG2	771.8	THA	83.43		

ORBIT DETERMINATION ACCURACY

ST	422.7	SR	1087.7	SS	3602.4
CRT	.9962	CRS	.9399	CST	.9170
LSA	3766.5	MSA	389.4	SSA	25.8
EL1	1166.4	EL2	34.4	ALF	68.82

LAUNCH DATE OCT 8 1964 FLIGHT TIME 312.00 ARRIVAL DATE AUG 16 1965

HELIOCENTRIC CONIC DISTANCE 722.767 EARTH TO MARS

RL	149.46	LAL	-.00	LOL	14.75	VL	32.584	GAL	-6.65	AZL	89.37	HCA	229.49	SMA	185.80	ECC	.22616	INC	.6278
RP	226.36	LAP	-.48	LOP	244.24	VP	21.408	GAP	-3.47	AZP	90.41	TAL	322.57	TAP	192.07	RCA	143.78	APO	227.82
RC	246.398	GL	4.88	GP	9.76	ZAL	141.78	ZAP	108.55	ETS	175.64	ZAE	144.34	ETE	163.03	ZAC	95.77	ETC	256.80

V1 29.814 V2 24.297 CLP 108.84

PLANETOCENTRIC CONIC

C3	17.362	VHL	4.167	DLA	13.55	RAL	160.39	RAD	6567.7	VEL	11.779	PTH	2.08	VHP	3.033	DPA	13.03	RAP	178.39

ECC 1.2857

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 7 39	2616.01	-26.86	68.54	23.83	99.33	19 51 15	2016.0	-25.29	60.22
90.00	10 41 37	4390.37	6.14	182.64	18.48	62.30	11 54 47	3790.4	2.39	175.97
100.00	20 36 6	2330.75	-28.06	47.32	23.59	100.76	21 14 57	1730.7	-26.28	38.97
100.00	11 55 50	4150.86	7.22	164.45	17.90	60.91	13 5 1	3550.9	3.28	157.87
110.00	22 0 19	2067.24	-31.22	26.49	22.77	104.69	22 34 46	1467.2	-28.89	18.06
110.00	12 48 7	3987.13	10.00	150.34	16.21	57.14	13 54 34	3387.1	5.60	144.01

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2277	TRA	-.1307	TC3	-.8427	BAU	.3830	SGT	790.8	SGR	2076.4	SG3	3404.6	ST	318.7	SR	1096.1	SS	3630.2
RDE	.7384	RRA	-.9700	RC3	1.4187	FAU	.53218	RRT	-.1577	RRF	-.9660	RTF	.2117	CRT	.9733	CRS	.9391	CST	.8409
FDE	-7.4581	FRA	21.8894	FC	-26.5362	BSP	6864	SGB	2221.9	R23	-.0349	R13	-.9673	LSA	3784.5	MSA	397.2	SSA	25.2
BDE	.7727	BRA	.9788	BC3	1.6501	FSP	11538	SG1	2080.7	SG2	779.3	THA	94.00	EL1	1139.3	EL2	70.4	ALF	74.14

LAUNCH DATE OCT 8 1964 FLIGHT TIME 314.00 ARRIVAL DATE AUG 18 1965

HELIOCENTRIC CONIC DISTANCE 726.694 EARTH TO MARS

RL	149.46	LAL	-.00	LOL	14.75	VL	32.579	GAL	-6.65	AZL	89.34	HCA	230.55	SMA	185.72	ECC	.22590	INC	.6609
RP	225.97	LAP	-.51	LOP	245.30	VP	21.448	GAP	-3.75	AZP	90.42	TAL	322.51	TAP	193.07	RCA	143.77	APO	227.68
RC	248.110	GL	5.14	GP	9.71	ZAL	141.81	ZAP	106.64	ETS	176.04	ZAE	142.32	ETE	164.26	ZAC	95.54	ETC	256.89

V1 29.814 V2 24.339 CLP 106.89

PLANETOCENTRIC CONIC

C3	17.358	VHL	4.166	DLA	13.77	RAL	160.55	RAD	6567.7	VEL	11.779	PTH	2.08	VHP	3.008	DPA	13.35	RAP	177.55

ECC 1.2857

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 6 25	2623.38	-26.94	69.07	24.07	99.08	19 50 8	2023.4	-25.41	60.73
90.00	10 44 8	4382.90	5.91	182.22	18.66	62.26	11 57 11	3782.9	2.15	175.55
100.00	20 35 1	2337.65	-28.14	47.81	23.84	100.52	21 13 58	1737.7	-26.40	39.44
100.00	11 58 13	4143.86	6.98	164.06	18.08	60.86	13 7 17	3543.9	3.05	157.48
110.00	21 59 32	2073.18	-31.32	26.92	23.03	104.45	22 34 5	1473.2	-29.02	18.47
110.00	12 50 11	3981.09	9.77	150.01	16.38	57.08	13 56 32	3381.1	5.37	143.69

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1632	TRA	.0707	TC3	-1.0691	BAU	.4141	SGT	924.1	SGR	2086.4	SG3	3459.3	ST	228.0	SR	1103.4	SS	3654.1
RDE	.7438	RRA	-.9708	RC3	1.4289	FAU	.54108	RRT	-.5024	RRF	-.9654	RTF	.5634	CRT	.8595	CRS	.9382	CST	.6343
FDE	-7.5643	FRA	22.2133	FC	-26.9859	BSP	6905	SGB	2281.9	R23	-.0003	R13	-.9696	LSA	3802.3	MSA	405.0	SSA	24.8
BDE	.7615	BRA	.9733	BC3	1.7846	FSP	11730	SG1	2145.6	SG2	777.0	THA	104.48	EL1	1120.9	EL2	114.7	ALF	79.82

LAUNCH DATE OCT 8 1964 FLIGHT TIME 316.00 ARRIVAL DATE AUG 20 1965

HELIOCENTRIC CONIC DISTANCE 730.628 EARTH TO MARS

RL	149.46	LAL	-.00	LOL	14.75	VL	32.575	GAL	-6.66	AZL	89.31	HCA	231.62	SMA	185.65	ECC	.22569	INC	.6932
RP	225.58	LAP	-.54	LOP	246.36	VP	21.489	GAP	-4.02	AZP	90.43	TAL	322.44	TAP	194.06	RCA	143.75	APO	227.55
RC	249.803	GL	5.39	GP	9.65	ZAL	141.86	ZAP	104.70	ETS	176.44	ZAE	140.27	ETE	165.39	ZAC	95.29	ETC	256.99

V1 29.814 V2 24.381 CLP 104.92

PLANETOCENTRIC CONIC

C3	17.367	VHL	4.167	DLA	13.97	RAL	160.72	RAD	6567.7	VEL	11.779	PTH	2.08	VHP	2.986	DPA	13.67	RAP	176.69

ECC 1.2858

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 5 19	2630.49	-27.01	69.57	24.34	98.84	19 49 10	2030.5	-25.51	61.23
90.00	10 46 35	4376.02	5.69	181.83	18.86	62.21	11 59 31	3776.0	1.93	175.17
100.00	20 34 3	2344.32	-28.22	48.29	24.11	100.28	21 13 8	1744.3	-26.52	39.91
100.00	12 0 33	4137.41	6.77	163.70	18.27	60.82	13 9 30	3537.4	2.83	157.13
110.00	21 58 52	2078.93	-31.42	27.34	23.31	104.22	22 33 31	1478.9	-29.14	18.87
110.00	12 52 13	3975.57	9.57	149.72	16.57	57.03	13 58 28	3375.6	5.16	143.40

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0967	TRA	.2769	TC3	-1.3036	BAU	.4502	SGT	1162.8	SGR	2093.0	SG3	3506.1	ST	180.5	SR	1109.5	SS	3673.5
RDE	.7487	RRA	-.9702	RC3	1.4356	FAU	.54875	RRT	-.6995	RRF	-.9646	RTF	.7604	CRT	.4350	CRS	.9371	CST	.0977
FDE	-7.6560	FRA	22.5002	FC	-27.3549	BSP	7160	SGB	2394.3	R23	.0263	R13	-.9717	LSA	3819.4	MSA	412.6	SSA	24.4
BDE	.7549	BRA	1.0090	BC3	1.9392	FSP	11908	SG1	2268.2	SG2	766.7	THA	114.17	EL1	1112.3	EL2	162.1	ALF	85.86

LAUNCH DATE OCT 8 1964 FLIGHT TIME 318.00 ARRIVAL DATE AUG 22 1965

HELIOCENTRIC CONIC DISTANCE 734.569 EARTH TO MARS

RL	149.46	LAL	-.00	LOL	14.75	VL	32.571	GAL	-6.66	AZL	89.28	HCA	232.68	SMA	185.58	ECC	.22552	INC	.7245
RP	225.19	LAP	-.58	LOP	247.43	VP	21.531	GAP	-4.28	AZP	90.44	TAL	322.36	TAP	195.05	RCA	143.73	APO	227.44
RC	251.477	GL	5.63	GP	9.58	ZAL	141.92	ZAP	102.74	ETS	176.84	ZAE	138.19	ETE	166.44	ZAC	95.04	ETC	257.09

V1 29.814 V2 24.423 CLP 102.92

PLANETOCENTRIC CONIC

C3	17.388	VHL	4.170	DLA	14.15	RAL	160.90	RAD	6567.7	VEL	11.780	PTH	2.08	VHP	2.968	DPA	13.99	RAP	175.81

ECC 1.2862

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 4 22	2637.35	-27.08	70.06	24.62	98.60	19 48 20	2037.3	-25.61	61.70
90.00	10 48 59	4369.72	5.49	181.47	19.08	62.18	12 1 49	3769.7	1.72	174.82
100.00	20 33 14	2350.76	-28.30	48.76	24.39	100.05	21 12 25	1750.8	-26.62	40.36
100.00	12 2 48	4131.54	6.58	163.37	18.49	60.77	13 11 40	3531.5	2.63	156.81
110.00	21 58 20	2084.50	-31.51	27.75	23.60	104.00	22 33 4	1484.5	-29.26	19.26
110.00	12 54 12	3970.56	9.38	149.45	16.78	56.98	14 0 22	3370.6	4.97	143.14

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0285	TRA	.4883	TC3	-1.5449	BAU	.4908	SGT	1463.0	SGR	2096.1	SG3	3544.8	ST	214.7	SR	1114.4	SS	3689.2
RDE	.7532	RRA	-.9681	RC3	1.4390	FAU	.55523	RRT	-.8006	RRF	-.9638	RTF	.8595	CRT	-.1934	CRS	.9360	CST	-.5236
FDE	-7.7358	FRA	22.7447	FC	-27.6445	BSP	7614	SGB	2556.1	R23	.0428	R13	-.9740	LSA	3836.8	MSA	419.9	SSA	24.0
BDE	.7538	BRA	1.0843	BC3	2.1113	FSP	12061	SG1	2443.0	SG2	752.2	THA	122.67	EL1	1115.2	EL2	210.5	ALF	92.21

LAUNCH DATE OCT 8 1964 FLIGHT TIME 320.00 ARRIVAL DATE AUG 24 1965

HELIOCENTRIC CONIC DISTANCE 738.518 EARTH TO MARS

RL	149.46	LAL	-.00	LOL	14.75	VL	32.567	GAL	-6.68	AZL	89.24	HCA	233.75	SMA	185.52	ECC	.22540	INC	.7549
RP	224.80	LAP	-.61	LOP	248.50	VP	21.573	GAP	-4.54	AZP	90.45	TAL	322.27	TAP	196.02	RCA	143.71	APO	227.34
RC	253.132	GL	5.86	GP	9.51	ZAL	142.00	ZAP	100.76	ETS	177.23	ZAE	136.08	ETE	167.42	ZAC	94.78	ETC	257.19

V1	29.814	V2	24.465	CLP	100.91														

PLANETOCENTRIC CONIC

C3	17.421	VHL	4.174	DLA	14.33	RAL	161.09	RAD	6567.7	VEL	11.782	PTH	2.08	VHP	2.954	DPA	14.32	RAP	174.91

ECC	1.2867																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 3 34	2643.94	-27.15	70.53	24.91	98.37	19 47 38	2043.9	-25.71	62.16
90.00	10 51 18	4364.00	5.31	181.15	19.32	62.14	12 4 2	3764.0	1.54	174.50
100.00	20 32 33	2356.96	-28.37	49.20	24.69	99.82	21 11 50	1757.0	-26.73	40.79
100.00	12 5 0	4126.22	6.40	163.08	18.72	60.74	13 13 46	3526.2	2.45	156.51
110.00	21 57 54	2089.69	-31.60	28.14	23.91	103.78	22 32 44	1489.9	-29.38	19.64
110.00	12 56 8	3966.06	9.21	149.21	17.00	56.94	14 2 14	3366.1	4.80	142.90

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0409	TRA	.7037	TC3	-1.7904	BAU	.5351	SGT	1797.5	SGR	2095.9	SG3	3575.3	ST	307.6	SR	1118.5	SS	3702.3
RDE	.7577	RRA	-.9644	RC3	1.4396	FAU	.56067	RRT	-.8539	RRF	-.9629	RTF	.9111	CRT	-.5308	CRS	.9349	CST	-.7954
FDE	-7.8092	FRA	22.9411	FC	-27.8622	BSP	8245	SGB	2761.2	R23	.0506	R13	-.9766	LSA	3856.1	MSA	427.1	SSA	23.6
BDE	.7588	BRA	1.1938	BC3	2.2974	FSP	12177	SG1	2661.0	SG2	736.9	THA	129.88	EL1	1131.0	EL2	257.8	ALF	98.76

LAUNCH DATE OCT 8 1964 FLIGHT TIME 322.00 ARRIVAL DATE AUG 26 1965

HELIOCENTRIC CONIC DISTANCE 742.473 EARTH TO MARS

RL	149.46	LAL	-.00	LOL	14.75	VL	32.564	GAL	-6.69	AZL	89.22	HCA	234.83	SMA	185.47	ECC	.22532	INC	.7848
RP	224.41	LAP	-.64	LOP	249.58	VP	21.616	GAP	-4.80	AZP	90.45	TAL	322.16	TAP	196.99	RCA	143.68	APO	227.26
RC	254.766	GL	6.09	GP	9.43	ZAL	142.08	ZAP	98.77	ETS	177.61	ZAE	133.94	ETE	168.34	ZAC	94.51	ETC	257.30

V1	29.814	V2	24.506	CLP	98.89														

PLANETOCENTRIC CONIC

C3	17.467	VHL	4.179	DLA	14.49	RAL	161.29	RAD	6567.7	VEL	11.783	PTH	2.08	VHP	2.943	DPA	14.64	RAP	174.00

ECC	1.2875																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 2 54	2650.28	-27.21	70.99	25.23	98.15	19 47 4	2050.3	-25.80	62.60
90.00	10 53 34	4358.87	5.14	180.86	19.57	62.12	12 6 12	3758.9	1.37	174.21
100.00	20 32 0	2362.93	-28.44	49.63	25.01	99.60	21 11 23	1762.9	-26.82	41.21
100.00	12 7 9	4121.46	6.24	162.81	18.97	60.71	13 15 50	3521.5	2.29	156.25
110.00	21 57 36	2095.09	-31.68	28.53	24.24	103.57	22 32 31	1495.1	-29.49	20.00
110.00	12 58 2	3962.07	9.07	148.99	17.25	56.90	14 4 4	3362.1	4.65	142.69

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1118	TRA	.9237	TC3	-2.0399	BAU	.5826	SGT	2154.4	SGR	2091.8	SG3	3596.3	ST	424.3	SR	1121.3	SS	3710.7
RDE	.7616	RRA	-.9588	RC3	1.4367	FAU	.56473	RRT	-.8839	RRF	-.9618	RTF	.9401	CRT	-.6760	CRS	.9337	CST	-.8940
FDE	-7.8675	FRA	23.0881	FC	-27.9910	BSP	9033	SGB	3002.8	R23	.0527	R13	-.9795	LSA	3875.3	MSA	434.1	SSA	23.2
BDE	.7698	BRA	1.3314	BC3	2.4950	FSP	12270	SG1	2914.5	SG2	723.2	THA	135.96	EL1	1160.2	EL2	302.2	ALF	105.42

LAUNCH DATE OCT 8 1964 FLIGHT TIME 324.00 ARRIVAL DATE AUG 28 1965

HELIOCENTRIC CONIC DISTANCE 746.435 EARTH TO MARS

RL	149.46	LAL	-.00	LOL	14.75	VL	32.561	GAL	-6.71	AZL	89.19	HCA	235.91	SMA	185.42	ECC	.22530	INC	.8140
RP	224.02	LAP	-.67	LOP	250.65	VP	21.659	GAP	-5.05	AZP	90.46	TAL	322.05	TAP	197.96	RCA	143.64	APO	227.19
RC	256.380	GL	6.30	GP	9.35	ZAL	142.18	ZAP	96.77	ETS	177.99	ZAE	131.79	ETE	169.20	ZAC	94.24	ETC	257.42

V1	29.814	V2	24.548	CLP	96.86														

PLANETOCENTRIC CONIC

C3	17.525	VHL	4.186	DLA	14.64	RAL	161.50	RAD	6567.7	VEL	11.786	PTH	2.08	VHP	2.935	DPA	14.95	RAP	173.08

ECC	1.2884																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 2 22	2656.36	-27.27	71.42	25.55	97.94	19 46 39	2056.4	-25.89	63.03
90.00	10 55 45	4354.33	5.00	180.61	19.85	62.09	12 8 19	3754.3	1.23	173.96
100.00	20 31 35	2368.67	-28.51	50.05	25.34	99.40	21 11 3	1768.7	-26.91	41.61
100.00	12 9 13	4117.26	6.10	162.58	19.24	60.68	13 17 51	3517.3	2.15	156.02
110.00	21 57 25	2100.11	-31.76	28.90	24.58	103.36	22 32 25	1500.1	-29.60	20.36
110.00	12 59 53	3958.58	8.94	148.81	17.51	56.87	14 5 51	3358.6	4.51	142.51

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1839	TRA	1.1472	TC3	-2.2917	BAU	.6329	SGT	2525.6	SGR	2083.9	SG3	3607.9	ST	551.1	SR	1123.0	SS	3715.0
RDE	.7651	RRA	-.9516	RC3	1.4301	FAU	.56739	RRT	-.9017	RRF	-.9606	RTF	.9575	CRT	-.7469	CRS	.9325	CST	-.9360
FDE	-7.9122	FRA	23.1856	FC	-28.0293	BSP	9942	SGB	3274.3	R23	.0517	R13	-.9822	LSA	3895.0	MSA	441.0	SSA	22.8
BDE	.7869	BRA	1.4906	BC3	2.7013	FSP	12330	SG1	3196.0	SG2	712.0	THA	141.05	EL1	1203.2	EL2	342.0	ALF	112.00

LAUNCH DATE OCT 8 1964 FLIGHT TIME 326.00 ARRIVAL DATE AUG 30 1965

HELIOCENTRIC CONIC DISTANCE 750.404 EARTH TO MARS

RL	149.46	LAL	-.00	LOL	14.75	VL	32.558	GAL	-6.73	AZL	89.16	HCA	236.99	SMA	185.37	ECC	.22532	INC	.8425
RP	223.63	LAP	-.71	LOP	251.74	VP	21.702	GAP	-5.30	AZP	90.46	TAL	321.92	TAP	198.91	RCA	143.61	APO	227.14
RC	257.974	GL	6.51	GP	9.26	ZAL	142.29	ZAP	94.77	ETS	178.36	ZAE	129.62	ETE	170.00	ZAC	93.96	ETC	257.54

V1	29.814	V2	24.590	CLP	94.83														

PLANETOCENTRIC CONIC

C3	17.595	VHL	4.195	DLA	14.78	RAL	161.71	RAD	6567.7	VEL	11.789	PTH	2.08	VHP	2.932	DPA	15.26	RAP	172.16

ECC	1.2896																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 1 59	2662.18	-27.32	71.84	25.90	97.74	19 46 22	2062.2	-25.97	63.43
90.00	10 57 52	4350.37	4.87	180.39	20.14	62.07	12 10 22	3750.4	1.10	173.74
100.00	20 31 18	2374.16	-28.57	50.44	25.69	99.20	21 10 52	1774.2	-27.00	41.99
100.00	12 11 15	4113.63	5.98	162.38	19.53	60.66	13 19 48	3513.6	2.02	155.82
110.00	21 57 21	2104.95	-31.84	29.25	24.94	103.16	22 32 25	1504.9	-29.70	20.70
110.00	13 1 41	3955.61	8.83	148.65	17.79	56.84	14 7 37	3355.6	4.40	142.35

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2573	TRA	1.3739	TC3	-2.5450	BAU	.6856	SGT	2906.7	SGR	2072.6	SG3	3610.4	ST	683.1	SR	1123.6	SS	3715.8
RDE	.7684	RRA	-.9427	RC3	1.4208	FAU	.56887	RRT	-.9127	RRF	-.9593	RTF	.9685	CRT	-.7866	CRS	.9312	CST	-.9571
FDE	-7.9459	FRA	23.2306	FC	-27.9902	BSP	10943	SGB	3569.9	R23	.0493	R13	-.9847	LSA	3916.0	MSA	447.6	SSA	22.4
BDE	.8103	BRA	1.6662	BC3	2.9147	FSP	12357	SG1	3499.9	SG2	703.5	THA	145.35	EL1	1260.0	EL2	376.1	ALF	118.31

LAUNCH DATE OCT 8 1964 FLIGHT TIME 328.00 ARRIVAL DATE SEP 1 1965

HELIOCENTRIC CONIC DISTANCE 754.380 EARTH TO MARS

RL 149.46 LAL -.00 LOL 14.75 VL 32.556 GAL -6.76 AZL 89.13 HCA 238.08 SMA 185.33 ECC .22538 INC .8705 V1 29.814
RP 223.24 LAP -.74 LOP 252.82 VP 21.746 GAP -5.55 AZP 90.46 TAL 321.78 TAP 199.86 RCA 143.56 APO 227.10 V2 24.632
RC 259.547 GL 6.71 GP 9.16 ZAL 142.42 ZAP 92.76 ETS 178.72 ZAE 127.44 ETE 170.76 ZAC 93.67 ETC 257.66 CLP 92.80

PLANETOCENTRIC CONIC

C3 17.678 VHL 4.205 DLA 14.91 RAL 161.94 RAD 6567.7 VEL 11.792 PTH 2.09 VHP 2.931 DPA 15.56 RAP 171.24 ECC 1.2909

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 1 46	2667.74	-27.37	72.24	26.27	97.55	19 46 13	2067.7	-26.05	63.82
90.00	10 59 55	4347.01	4.77	180.20	20.45	62.05	12 12 22	3747.0	.99	173.55
100.00	20 31 10	2379.43	-28.62	50.83	26.06	99.00	21 10 49	1779.4	-27.08	42.36
100.00	12 13 12	4110.55	5.88	162.21	19.84	60.64	13 21 43	3510.6	1.92	155.65
110.00	21 57 24	2109.61	-31.91	29.60	25.32	102.97	22 32 33	1509.6	-29.79	21.02
110.00	13 3 27	3953.14	8.73	148.52	18.09	56.82	14 9 21	3353.1	4.31	142.23

DIFFERENTIAL CORRECTIONS
TDE -.3315 TRA 1.6034 TC3-2.7973 BAU .7401
RDE .7712 RRA -.9320 RC3 1.4078 FAU .56883
FDE-7.9649 FRA23.2244 FC-27.8565 BSP 12022
BDE .8394 BRA 1.8546 BC3 3.1316 FSP 12353

MID-COURSE EXECUTION ACCURACY
SGT 3293.8 SGR 2057.5 SG3 3603.1
RRT -.9194 RRF -.9578 RTF .9759
SGB 3883.6 R23 .0464 R13 -.9869
SG1 3820.5 SG2 697.5 THA 148.98

ORBIT DETERMINATION ACCURACY
ST 818.0 SR 1123.0 SS 3712.3
CRT -.8107 CRS .9298 CST -.9689
LSA 3937.6 MSA 454.2 SSA 21.9
EL1 1329.1 EL2 404.7 ALF 124.16

LAUNCH DATE OCT 8 1964 FLIGHT TIME 330.00 ARRIVAL DATE SEP 3 1965

HELIOCENTRIC CONIC DISTANCE 758.361 EARTH TO MARS

RL 149.46 LAL -.00 LOL 14.75 VL 32.554 GAL -6.78 AZL 89.10 HCA 239.16 SMA 185.30 ECC .22549 INC .8978 V1 29.814
RP 222.85 LAP -.77 LOP 253.91 VP 21.790 GAP -5.79 AZP 90.46 TAL 321.63 TAP 200.80 RCA 143.52 APO 227.08 V2 24.674
RC 261.100 GL 6.90 GP 9.06 ZAL 142.55 ZAP 90.76 ETS 179.07 ZAE 125.26 ETE 171.47 ZAC 93.39 ETC 257.78 CLP 90.77

PLANETOCENTRIC CONIC

C3 17.774 VHL 4.216 DLA 15.02 RAL 162.18 RAD 6567.7 VEL 11.796 PTH 2.09 VHP 2.935 DPA 15.85 RAP 170.32 ECC 1.2925

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 1 40	2673.04	-27.42	72.62	26.65	97.36	19 46 13	2073.0	-26.12	64.19
90.00	11 1 54	4344.23	4.68	180.04	20.78	62.04	12 14 18	3744.2	.90	173.40
100.00	20 31 9	2384.46	-28.68	51.19	26.44	98.82	21 10 54	1784.5	-27.16	42.72
100.00	12 15 6	4108.04	5.79	162.07	20.17	60.62	13 23 34	3508.0	1.83	155.51
110.00	21 57 34	2114.09	-31.98	29.93	25.72	102.78	22 32 48	1514.1	-29.89	21.34
110.00	13 5 11	3951.18	8.66	148.41	18.41	56.80	14 11 2	3351.2	4.23	142.12

DIFFERENTIAL CORRECTIONS
TDE -.4070 TRA 1.8351 TC3-3.0484 BAU .7963
RDE .7736 RRA -.9197 RC3 1.3917 FAU .56738
FDE-7.9699 FRA23.1666 FC-27.6351 BSP 13158
BDE .8741 BRA 2.0527 BC3 3.3511 FSP 12319

MID-COURSE EXECUTION ACCURACY
SGT 3685.2 SGR 2038.8 SG3 3586.3
RRT -.9236 RRF -.9561 RTF .9810
SGB 4211.6 R23 .0437 R13 -.9887
SG1 4154.1 SG2 693.5 THA 152.09

ORBIT DETERMINATION ACCURACY
ST 955.0 SR 1121.2 SS 3704.7
CRT -.8265 CRS .9284 CST -.9763
LSA 3960.0 MSA 460.5 SSA 21.5
EL1 1409.4 EL2 427.7 ALF 129.48

LAUNCH DATE OCT 8 1964 FLIGHT TIME 332.00 ARRIVAL DATE SEP 5 1965

HELIOCENTRIC CONIC DISTANCE 762.345 EARTH TO MARS

RL 149.46 LAL -.00 LOL 14.75 VL 32.552 GAL -6.81 AZL 89.08 HCA 240.26 SMA 185.27 ECC .22565 INC .9247 V1 29.814
RP 222.47 LAP -.80 LOP 255.00 VP 21.835 GAP -6.03 AZP 90.46 TAL 321.47 TAP 201.72 RCA 143.46 APO 227.07 V2 24.716
RC 262.633 GL 7.09 GP 8.95 ZAL 142.71 ZAP 88.77 ETS 179.41 ZAE 123.09 ETE 172.14 ZAC 93.10 ETC 257.90 CLP 88.75

PLANETOCENTRIC CONIC

C3 17.884 VHL 4.229 DLA 15.12 RAL 162.43 RAD 6567.7 VEL 11.801 PTH 2.09 VHP 2.942 DPA 16.12 RAP 169.41 ECC 1.2943

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 1 45	2678.06	-27.46	72.98	27.05	97.18	19 46 23	2078.1	-26.18	64.55
90.00	11 3 49	4342.07	4.61	179.92	21.13	62.03	12 16 11	3742.1	.83	173.28
100.00	20 31 18	2389.24	-28.73	51.54	26.85	98.64	21 11 8	1789.2	-27.23	43.05
100.00	12 16 56	4106.13	5.73	161.96	20.51	60.61	13 25 23	3506.1	1.77	155.41
110.00	21 57 52	2118.38	-32.04	30.25	26.13	102.61	22 33 11	1518.4	-29.97	21.64
110.00	13 6 52	3949.75	8.61	148.33	18.75	56.79	14 12 41	3349.8	4.18	142.05

DIFFERENTIAL CORRECTIONS
TDE -.4809 TRA 2.0749 TC3-3.2913 BAU .8515
RDE .7706 RRA -.9109 RC3 1.3609 FAU .55934
FDE-7.8513 FRA23.1692 FC-27.0765 BSP 14478
BDE .9083 BRA 2.2661 BC3 3.5615 FSP 12481

MID-COURSE EXECUTION ACCURACY
SGT 4080.9 SGR 2012.2 SG3 3557.0
RRT -.9264 RRF -.9540 RTF .9843
SGB 4550.0 R23 .0412 R13 -.9898
SG1 4497.7 SG2 687.7 THA 154.82

ORBIT DETERMINATION ACCURACY
ST 1093.0 SR 1112.8 SS 3673.0
CRT -.8371 CRS .9248 CST -.9821
LSA 3963.0 MSA 467.0 SSA 21.5
EL1 1494.9 EL2 445.1 ALF 134.38

LAUNCH DATE OCT 8 1964 FLIGHT TIME 334.00 ARRIVAL DATE SEP 7 1965

HELIOCENTRIC CONIC DISTANCE 766.341 EARTH TO MARS

RL 149.46 LAL -.00 LOL 14.75 VL 32.551 GAL -6.85 AZL 89.05 HCA 241.36 SMA 185.24 ECC .22585 INC .9511 V1 29.814
RP 222.08 LAP -.83 LOP 256.10 VP 21.880 GAP -6.27 AZP 90.46 TAL 321.29 TAP 202.65 RCA 143.41 APO 227.08 V2 24.758
RC 264.145 GL 7.26 GP 8.84 ZAL 142.87 ZAP 86.79 ETS 179.75 ZAE 120.92 ETE 172.77 ZAC 92.82 ETC 258.02 CLP 86.75

PLANETOCENTRIC CONIC

C3 18.006 VHL 4.243 DLA 15.21 RAL 162.69 RAD 6567.7 VEL 11.806 PTH 2.09 VHP 2.953 DPA 16.39 RAP 168.50 ECC 1.2963

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 1 57	2682.85	-27.50	73.32	27.46	97.02	19 46 40	2082.8	-26.25	64.88
90.00	11 5 40	4340.46	4.56	179.83	21.49	62.02	12 18 0	3740.5	.78	173.19
100.00	20 31 34	2393.81	-28.77	51.87	27.27	98.47	21 11 28	1793.8	-27.30	43.37
100.00	12 18 43	4104.73	5.68	161.88	20.88	60.60	13 27 8	3504.7	1.72	155.33
110.00	21 58 17	2122.51	-32.10	30.55	26.55	102.43	22 33 39	1522.5	-30.06	21.94
110.00	13 8 30	3948.79	8.57	148.28	19.11	56.78	14 14 19	3348.8	4.14	142.00

DIFFERENTIAL CORRECTIONS
TDE -.5585 TRA 2.3077 TC3-3.5351 BAU .9104
RDE .7747 RRA -.8932 RC3 1.3442 FAU .55756
FDE-7.8824 FRA22.9620 FC-26.8073 BSP 15626
BDE .9550 BRA 2.4745 BC3 3.7821 FSP 12275

MID-COURSE EXECUTION ACCURACY
SGT 4471.7 SGR 1989.4 SG3 3523.6
RRT -.9270 RRF -.9521 RTF .9872
SGB 4894.3 R23 .0391 R13 -.9913
SG1 4845.6 SG2 688.3 THA 157.10

ORBIT DETERMINATION ACCURACY
ST 1230.9 SR 1111.7 SS 3667.5
CRT -.8441 CRS .9242 CST -.9847
LSA 3997.2 MSA 472.9 SSA 20.8
EL1 1593.4 EL2 460.5 ALF 138.44

LAUNCH DATE OCT 8 1964 FLIGHT TIME 336.00 ARRIVAL DATE SEP 9 1965

HELIOCENTRIC CONIC DISTANCE 770.342 EARTH TO MARS

RL 149.46 LAL -.00 LOL 14.75 VL 32.549 GAL -6.88 AZL 89.02 HCA 242.46 SMA 185.22 ECC .22609 INC .9769 V1 29.814
RP 221.70 LAP -.87 LOP 257.20 VP 21.925 GAP -6.50 AZP 90.45 TAL 321.10 TAP 203.56 RCA 143.34 APO 227.10 V2 24.799
RC 265.639 GL 7.43 GP 8.72 ZAL 143.04 ZAP 84.82 ETS 180.07 ZAE 118.76 ETE 173.36 ZAC 92.53 ETC 258.15 CLP 84.76

PLANETOCENTRIC CONIC

C3 18.142 VHL 4.259 DLA 15.29 RAL 162.95 RAD 6567.7 VEL 11.812 PTH 2.09 VHP 2.967 DPA 16.64 RAP 167.62 ECC 1.2986

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 2 18	2687.37	-27.54	73.65	27.90	96.86	19 47 5	2087.4	-26.31	65.20
90.00	11 7 26	4339.44	4.53	179.77	21.88	62.02	12 19 46	3739.4	.75	173.13
100.00	20 31 59	2398.14	-28.82	52.18	27.70	98.31	21 11 57	1798.1	-27.37	43.68
100.00	12 20 26	4103.90	5.65	161.84	21.26	60.60	13 28 50	3503.9	1.69	155.29
110.00	21 58 49	2126.46	-32.16	30.85	27.00	102.27	22 34 15	1526.5	-30.13	22.22
110.00	13 10 6	3948.34	8.56	148.26	19.48	56.78	14 15 54	3348.3	4.12	141.97

DIFFERENTIAL CORRECTIONS
TDE -.6376 TRA 2.5417 TC3-3.7745 BAU .9701
RDE .7776 RRA -.8750 RC3 1.3228 FAU .55353
FDE-7.8819 FRA22.7276 FC-26.4148 BSP 16801
BDE 1.0056 BRA 2.6881 BC3 3.9996 FSP 12083

MID-COURSE EXECUTION ACCURACY
SGT 4861.8 SGR 1962.9 SG3 3481.0
RRT -.9269 RRF -.9499 RTF .9893
SGB 5243.1 R23 .0376 R13 -.9925
SG1 5197.6 SG2 689.2 THA 159.10

ORBIT DETERMINATION ACCURACY
ST 1369.5 SR 1108.8 SS 3655.0
CRT -.8493 CRS .9232 CST -.9868
LSA 4029.3 MSA 478.5 SSA 20.2
EL1 1697.7 EL2 472.2 ALF 142.03

LAUNCH DATE OCT 8 1964 FLIGHT TIME 338.00 ARRIVAL DATE SEP 11 1965

HELIOCENTRIC CONIC DISTANCE 774.348 EARTH TO MARS

RL 149.46 LAL -.00 LOL 14.75 VL 32.548 GAL -6.92 AZL 89.00 HCA 243.56 SMA 185.20 ECC .22639 INC 1.0024 V1 29.814
RP 221.32 LAP -.90 LOP 258.31 VP 21.971 GAP -6.73 AZP 90.45 TAL 320.90 TAP 204.46 RCA 143.28 APO 227.13 V2 24.841
RC 267.114 GL 7.60 GP 8.59 ZAL 143.23 ZAP 82.87 ETS 180.38 ZAE 116.61 ETE 173.92 ZAC 92.24 ETC 258.27 CLP 82.79

PLANETOCENTRIC CONIC

C3 18.291 VHL 4.277 DLA 15.35 RAL 163.23 RAD 6567.7 VEL 11.818 PTH 2.09 VHP 2.985 DPA 16.87 RAP 166.75 ECC 1.3010

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 2 48	2691.63	-27.58	73.96	28.35	96.71	19 47 40	2091.6	-26.36	65.50
90.00	11 9 8	4339.02	4.51	179.75	22.28	62.02	12 21 27	3739.0	.73	173.11
100.00	20 32 32	2402.24	-28.86	52.48	28.16	98.16	21 12 34	1802.2	-27.43	43.97
100.00	12 22 5	4103.63	5.65	161.82	21.66	60.60	13 30 29	3503.6	1.69	155.27
110.00	21 59 28	2130.24	-32.21	31.13	27.46	102.11	22 34 58	1530.2	-30.21	22.49
110.00	13 11 39	3948.40	8.56	148.26	19.87	56.78	14 17 27	3348.4	4.13	141.98

DIFFERENTIAL CORRECTIONS
TDE -.7173 TRA 2.7769 TC3-4.0067 BAU 1.0299
RDE .7797 RRA -.8563 RC3 1.2975 FAU .54760
FDE-7.8563 FRA22.4635 FC-25.9181 BSP 17998
BDE 1.0594 BRA 2.9059 BC3 4.2116 FSP 11889

MID-COURSE EXECUTION ACCURACY
SGT 5248.9 SGR 1933.3 SG3 3430.1
RRT -.9259 RRF -.9474 RTF .9909
SGB 5593.7 R23 .0365 R13 -.9934
SG1 5550.9 SG2 690.5 THA 160.86

ORBIT DETERMINATION ACCURACY
ST 1507.7 SR 1104.3 SS 3636.8
CRT -.8529 CRS .9219 CST -.9885
LSA 4060.1 MSA 483.9 SSA 19.6
EL1 1805.9 EL2 481.3 ALF 145.18

LAUNCH DATE OCT 8 1964 FLIGHT TIME 340.00 ARRIVAL DATE SEP 13 1965

HELIOCENTRIC CONIC DISTANCE 778.359 EARTH TO MARS

RL 149.46 LAL -.00 LOL 14.75 VL 32.548 GAL -6.97 AZL 88.97 HCA 244.67 SMA 185.19 ECC .22673 INC 1.0275 V1 29.814
RP 220.94 LAP -.93 LOP 259.41 VP 22.017 GAP -6.96 AZP 90.44 TAL 320.69 TAP 205.36 RCA 143.20 APO 227.18 V2 24.883
RC 268.570 GL 7.75 GP 8.47 ZAL 143.44 ZAP 80.95 ETS 180.69 ZAE 114.48 ETE 174.45 ZAC 91.96 ETC 258.39 CLP 80.85

PLANETOCENTRIC CONIC

C3 18.455 VHL 4.296 DLA 15.40 RAL 163.52 RAD 6567.7 VEL 11.825 PTH 2.09 VHP 3.006 DPA 17.09 RAP 165.91 ECC 1.3037

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 3 27	2695.63	-27.61	74.25	28.81	96.57	19 48 23	2095.6	-26.41	65.78
90.00	11 10 47	4339.19	4.52	179.76	22.70	62.02	12 23 6	3739.2	.74	173.12
100.00	20 33 14	2406.12	-28.89	52.76	28.63	98.02	21 13 20	1806.1	-27.48	44.25
100.00	12 23 41	4103.94	5.66	161.84	22.07	60.60	13 32 5	3503.9	1.70	155.29
110.00	22 0 15	2133.85	-32.26	31.40	27.94	101.96	22 35 48	1533.9	-30.28	22.75
110.00	13 13 9	3948.97	8.58	148.29	20.28	56.78	14 18 58	3349.0	4.15	142.01

DIFFERENTIAL CORRECTIONS
TDE -.7973 TRA 3.0128 TC3-4.2311 BAU 1.0899
RDE .7809 RRA -.8369 RC3 1.2692 FAU .54014
FDE-7.8069 FRA22.1676 FC-25.3377 BSP 19205
BDE 1.1161 BRA 3.1269 BC3 4.4174 FSP 11688

MID-COURSE EXECUTION ACCURACY
SGT 5631.9 SGR 1901.1 SG3 3371.6
RRT -.9244 RRF -.9447 RTF .9921
SGB 5944.1 R23 .0357 R13 -.9941
SG1 5903.7 SG2 691.9 THA 162.42

ORBIT DETERMINATION ACCURACY
ST 1645.1 SR 1098.4 SS 3612.8
CRT -.8553 CRS .9203 CST -.9897
LSA 4089.6 MSA 489.1 SSA 19.1
EL1 1916.8 EL2 488.5 ALF 147.94

LAUNCH DATE OCT 8 1964 FLIGHT TIME 342.00 ARRIVAL DATE SEP 15 1965

HELIOCENTRIC CONIC DISTANCE 782.375 EARTH TO MARS

RL 149.46 LAL -.00 LOL 14.75 VL 32.547 GAL -7.01 AZL 88.95 HCA 245.78 SMA 185.18 ECC .22711 INC 1.0522 V1 29.814
RP 220.56 LAP -.96 LOP 260.53 VP 22.063 GAP -7.19 AZP 90.43 TAL 320.46 TAP 206.24 RCA 143.13 APO 227.24 V2 24.924
RC 270.009 GL 7.90 GP 8.33 ZAL 143.65 ZAP 79.05 ETS 180.98 ZAE 112.37 ETE 174.94 ZAC 91.68 ETC 258.51 CLP 78.93

PLANETOCENTRIC CONIC

C3 18.634 VHL 4.317 DLA 15.45 RAL 163.81 RAD 6567.8 VEL 11.833 PTH 2.10 VHP 3.031 DPA 17.29 RAP 165.09 ECC 1.3067

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 4 15	2699.38	-27.64	74.52	29.30	96.43	19 49 14	2099.4	-26.46	66.05
90.00	11 12 20	4339.95	4.54	179.80	23.14	62.02	12 24 40	3740.0	.76	173.16
100.00	20 34 3	2409.77	-28.93	53.03	29.12	97.88	21 14 13	1809.8	-27.54	44.50
100.00	12 25 13	4104.80	5.68	161.89	22.51	60.60	13 33 38	3504.8	1.73	155.34
110.00	22 1 8	2137.30	-32.31	31.66	28.43	101.81	22 36 46	1537.3	-30.35	22.99
110.00	13 14 38	3950.04	8.62	148.35	20.71	56.79	14 20 28	3350.0	4.19	142.06

DIFFERENTIAL CORRECTIONS
TDE -.8782 TRA 3.2497 TC3-4.4454 BAU 1.1496
RDE .7819 RRA -.8169 RC3 1.2384 FAU .53127
FDE-7.7447 FRA21.8416 FC-24.6831 BSP 20427
BDE 1.1758 BRA 3.3508 BC3 4.6147 FSP 11475

MID-COURSE EXECUTION ACCURACY
SGT 6009.4 SGR 1866.9 SG3 3306.3
RRT -.9222 RRF -.9418 RTF .9930
SGB 6292.8 R23 .0353 R13 -.9947
SG1 6254.4 SG2 693.6 THA 163.81

ORBIT DETERMINATION ACCURACY
ST 1781.6 SR 1091.8 SS 3585.6
CRT -.8567 CRS .9187 CST -.9907
LSA 4120.5 MSA 494.2 SSA 18.6
EL1 2030.3 EL2 494.2 ALF 150.37

LAUNCH DATE OCT 8 1964 FLIGHT TIME 344.00 ARRIVAL DATE SEP 17 1965

HELIOCENTRIC CONIC DISTANCE 786.397 EARTH TO MARS

RL 149.46 LAL -.00 LOL 14.75 VL 32.547 GAL -7.06 AZL 88.92 HCA 246.90 SMA 185.18 ECC .22755 INC 1.0766 V1 29.814
RP 220.18 LAP -.99 LOP 261.64 VP 22.109 GAP -7.41 AZP 90.42 TAL 320.22 TAP 207.12 RCA 143.04 APO 227.31 V2 24.965
RC 271.430 GL 8.04 GP 8.20 ZAL 143.88 ZAP 77.18 ETS 181.26 ZAE 110.29 ETE 175.41 ZAC 91.41 ETC 258.62 CLP 77.04

PLANETOCENTRIC CONIC

C3 18.827 VHL 4.339 DLA 15.48 RAL 164.12 RAD 6567.8 VEL 11.841 PTH 2.10 VHP 3.059 DPA 17.47 RAP 164.30 ECC 1.3098

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 5 12	2702.88	-27.66	74.77	29.80	96.31	19 50 14	2102.9	-26.50	66.30
90.00	11 13 50	4341.31	4.58	179.88	23.60	62.03	12 26 11	3741.3	.81	173.23
100.00	20 35 1	2413.19	-28.96	53.28	29.62	97.75	21 15 14	1813.2	-27.58	44.75
100.00	12 26 42	4106.23	5.73	161.97	22.97	60.61	13 35 8	3506.2	1.77	155.41
110.00	22 2 9	2140.57	-32.36	31.90	28.95	101.68	22 37 50	1540.6	-30.41	23.23
110.00	13 16 3	3951.62	8.68	148.43	21.16	56.81	14 21 55	3351.6	4.25	142.15

DIFFERENTIAL CORRECTIONS
TDE -.9596 TRA 3.4861 TC3-4.6499 BAU 1.2091
RDE .7826 RRA -.7961 RC3 1.2058 FAU .52132
FDE-7.6698 FRA21.4824 FC-23.9719 BSP 21636
BDE 1.2382 BRA 3.5759 BC3 4.8037 FSP 11244

MID-COURSE EXECUTION ACCURACY
SGT 6380.0 SGR 1831.0 SG3 3234.8
RRT -.9196 RRF -.9386 RTF .9938
SGB 6637.5 R23 .0350 R13 -.9951
SG1 6601.0 SG2 695.4 THA 165.05

ORBIT DETERMINATION ACCURACY
ST 1916.6 SR 1084.4 SS 3554.9
CRT -.8574 CRS .9169 CST -.9915
LSA 4151.8 MSA 498.9 SSA 18.2
EL1 2144.9 EL2 498.6 ALF 152.51

LAUNCH DATE OCT 8 1964 FLIGHT TIME 346.00 ARRIVAL DATE SEP 19 1965

HELIOCENTRIC CONIC DISTANCE 790.423 EARTH TO MARS

RL 149.46 LAL -.00 LOL 14.75 VL 32.547 GAL -7.12 AZL 88.90 HCA 248.02 SMA 185.18 ECC .22803 INC 1.1005 V1 29.814
RP 219.81 LAP -1.02 LOP 262.76 VP 22.155 GAP -7.63 AZP 90.41 TAL 319.97 TAP 207.98 RCA 142.95 APO 227.40 V2 25.006
RC 272.833 GL 8.17 GP 8.06 ZAL 144.12 ZAP 75.34 ETS 181.52 ZAE 108.24 ETE 175.85 ZAC 91.14 ETC 258.73 CLP 75.19

PLANETOCENTRIC CONIC

C3 19.036 VHL 4.363 DLA 15.49 RAL 164.43 RAD 6567.8 VEL 11.850 PTH 2.10 VHP 3.090 DPA 17.63 RAP 163.55 ECC 1.3133

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 6 17	2706.14	-27.69	75.00	30.33	96.19	19 51 23	2106.1	-26.54	66.53
90.00	11 15 16	4343.25	4.65	179.99	24.07	62.04	12 27 39	3743.3	.87	173.34
100.00	20 36 7	2416.40	-28.99	53.51	30.15	97.63	21 16 24	1816.4	-27.63	44.97
100.00	12 28 6	4108.22	5.80	162.08	23.44	60.62	13 36 34	3508.2	1.84	155.52
110.00	22 3 17	2143.69	-32.40	32.13	29.48	101.54	22 39 1	1543.7	-30.47	23.45
110.00	13 17 26	3953.69	8.76	148.55	21.63	56.82	14 23 20	3353.7	4.33	142.25

DIFFERENTIAL CORRECTIONS
TDE-1.0422 TRA 3.7220 TC3-4.8445 BAU 1.2684
RDE .7831 RRA -.7748 RC3 1.1720 FAU .51053
FDE-7.5865 FRA21.0933 FC-23.2184 BSP 22816
BDE 1.3036 BRA 3.8018 BC3 4.9842 FSP 10989

MID-COURSE EXECUTION ACCURACY
SGT 6743.1 SGR 1794.0 SG3 3158.0
RRT -.9164 RRF -.9351 RTF .9944
SGB 6977.7 R23 .0349 R13 -.9955
SG1 6942.7 SG2 697.3 THA 166.16

ORBIT DETERMINATION ACCURACY
ST 2050.5 SR 1076.5 SS 3521.8
CRT -.8577 CRS .9152 CST -.9921
LSA 4184.8 MSA 503.3 SSA 17.7
EL1 2260.9 EL2 502.0 ALF 154.40

LAUNCH DATE OCT 8 1964 FLIGHT TIME 348.00 ARRIVAL DATE SEP 21 1965

HELIOCENTRIC CONIC DISTANCE 794.454 EARTH TO MARS

RL 149.46 LAL -.00 LOL 14.75 VL 32.547 GAL -7.17 AZL 88.88 HCA 249.14 SMA 185.18 ECC .22855 INC 1.1244 V1 29.814
RP 219.44 LAP -1.05 LOP 263.89 VP 22.201 GAP -7.85 AZP 90.40 TAL 319.70 TAP 208.84 RCA 142.86 APO 227.50 V2 25.047
RC 274.220 GL 8.30 GP 7.92 ZAL 144.38 ZAP 73.54 ETS 181.78 ZAE 106.21 ETE 176.27 ZAC 90.88 ETC 258.84 CLP 73.38

PLANETOCENTRIC CONIC

C3 19.261 VHL 4.389 DLA 15.50 RAL 164.76 RAD 6567.8 VEL 11.859 PTH 2.10 VHP 3.125 DPA 17.77 RAP 162.83 ECC 1.3170

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 7 31	2709.15	-27.71	75.22	30.86	96.09	19 52 40	2109.1	-26.58	66.74
90.00	11 16 37	4345.78	4.73	180.13	24.56	62.05	12 29 3	3745.8	.95	173.48
100.00	20 37 22	2419.40	-29.02	53.73	30.69	97.52	21 17 41	1819.4	-27.67	45.19
100.00	12 29 27	4110.77	5.88	162.22	23.93	60.64	13 37 58	3510.8	1.93	155.66
110.00	22 4 32	2146.65	-32.44	32.36	30.02	101.42	22 40 19	1546.7	-30.53	23.66
110.00	13 18 46	3956.28	8.85	148.68	22.11	56.85	14 24 43	3356.3	4.43	142.39

DIFFERENTIAL CORRECTIONS
TDE-1.1245 TRA 3.9584 TC3-5.0261 BAU 1.3269
RDE .7834 RRA -.7532 RC3 1.1368 FAU .49873
FDE-7.4900 FRA20.6827 FC-22.4168 BSP 24003
BDE 1.3705 BRA 4.0295 BC3 5.1530 FSP 10728

MID-COURSE EXECUTION ACCURACY
SGT 7097.8 SGR 1755.8 SG3 3076.6
RRT -.9128 RRF -.9313 RTF .9948
SGB 7311.7 R23 .0351 R13 -.9958
SG1 7278.2 SG2 699.3 THA 167.16

ORBIT DETERMINATION ACCURACY
ST 2182.0 SR 1068.0 SS 3485.1
CRT -.8573 CRS .9134 CST -.9926
LSA 4217.8 MSA 507.6 SSA 17.3
EL1 2376.3 EL2 504.8 ALF 156.09

LAUNCH DATE OCT 8 1964 FLIGHT TIME 350.00 ARRIVAL DATE SEP 23 1965

HELIOCENTRIC CONIC DISTANCE 798.487 EARTH TO MARS

RL 149.46 LAL -.00 LOL 14.75 VL 32.547 GAL -7.24 AZL 88.85 HCA 250.27 SMA 185.19 ECC .22913 INC 1.1477 V1 29.814
RP 219.07 LAP -1.08 LOP 265.01 VP 22.248 GAP -8.06 AZP 90.39 TAL 319.42 TAP 209.69 RCA 142.75 APO 227.62 V2 25.088
RC 275.589 GL 8.42 GP 7.78 ZAL 144.64 ZAP 71.77 ETS 182.02 ZAE 104.22 ETE 176.66 ZAC 90.62 ETC 258.94 CLP 71.60

PLANETOCENTRIC CONIC

C3 19.502 VHL 4.416 DLA 15.50 RAL 165.09 RAD 6567.8 VEL 11.869 PTH 2.11 VHP 3.163 DPA 17.90 RAP 162.15 ECC 1.3210

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 8 54	2711.91	-27.73	75.42	31.42	95.99	19 54 6	2111.9	-26.61	66.93
90.00	11 17 54	4348.91	4.83	180.30	25.07	62.06	12 30 23	3748.9	1.05	173.66
100.00	20 38 44	2422.18	-29.04	53.94	31.25	97.42	21 19 6	1822.2	-27.71	45.38
100.00	12 30 45	4113.88	5.99	162.39	24.44	60.66	13 39 19	3513.9	2.03	155.84
110.00	22 5 54	2149.46	-32.48	32.57	30.59	101.30	22 41 43	1549.5	-30.58	23.86
110.00	13 20 4	3959.37	8.97	148.85	22.62	56.87	14 26 4	3359.4	4.54	142.55

DIFFERENTIAL CORRECTIONS
TDE-1.2025 TRA 4.2012 TC3-5.1855 BAU 1.3819
RDE .7817 RRA -.7330 RC3 1.0967 FAU .48416
FDE-7.3440 FRA20.2883 FC-21.4929 BSP 25317
BDE 1.4343 BRA 4.2646 BC3 5.3002 FSP 10537

MID-COURSE EXECUTION ACCURACY
SGT 7443.4 SGR 1714.9 SG3 2989.6
RRT -.9088 RRF -.9270 RTF .9952
SGB 7638.4 R23 .0348 R13 -.9960
SG1 7606.2 SG2 700.1 THA 168.07

ORBIT DETERMINATION ACCURACY
ST 2309.2 SR 1057.0 SS 3437.6
CRT -.8558 CRS .9105 CST -.9931
LSA 4243.2 MSA 511.8 SSA 17.1
EL1 2488.4 EL2 507.4 ALF 157.63

LAUNCH DATE OCT 8 1964 FLIGHT TIME 352.00 ARRIVAL DATE SEP 25 1965

HELIOCENTRIC CONIC DISTANCE 802.528 EARTH TO MARS

RL 149.46 LAL -.00 LOL 14.75 VL 32.548 GAL -7.30 AZL 88.83 HCA 251.40 SMA 185.20 ECC .22975 INC 1.1710 V1 29.814
RP 218.70 LAP -1.11 LOP 266.15 VP 22.294 GAP -8.28 AZP 90.37 TAL 319.12 TAP 210.53 RCA 142.65 APO 227.74 V2 25.128
RC 276.940 GL 8.54 GP 7.64 ZAL 144.92 ZAP 70.04 ETS 182.25 ZAE 102.26 ETE 177.03 ZAC 90.37 ETC 259.04 CLP 69.86

PLANETOCENTRIC CONIC

C3 19.760 VHL 4.445 DLA 15.48 RAL 165.43 RAD 6567.8 VEL 11.880 PTH 2.11 VHP 3.204 DPA 18.01 RAP 161.51 ECC 1.3252

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 10 24	2714.46	-27.75	75.61	32.00	95.90	19 55 39	2114.5	-26.64	67.12
90.00	11 19 7	4352.60	4.95	180.51	25.60	62.08	12 31 40	3752.6	1.17	173.86
100.00	20 40 14	2424.76	-29.06	54.12	31.82	97.32	21 20 39	1824.8	-27.75	45.57
100.00	12 31 59	4117.53	6.11	162.59	24.96	60.68	13 40 36	3517.5	2.16	156.04
110.00	22 7 22	2152.12	-32.51	32.77	31.17	101.19	22 43 15	1552.1	-30.63	24.05
110.00	13 21 20	3962.94	9.10	149.04	23.14	56.91	14 27 23	3362.9	4.68	142.74

DIFFERENTIAL CORRECTIONS
TDE-1.2927 TRA 4.4293 TC3-5.3558 BAU 1.4426
RDE .7841 RRA -.7091 RC3 1.0648 FAU .47338
FDE-7.2810 FRA19.7961 FC-20.7396 BSP 26284
BDE 1.5118 BRA 4.4857 BC3 5.4606 FSP 10156

MID-COURSE EXECUTION ACCURACY
SGT 7780.8 SGR 1678.3 SG3 2903.1
RRT -.9043 RRF -.9229 RTF .9955
SGB 7959.7 R23 .0357 R13 -.9963
SG1 7928.6 SG2 703.1 THA 168.87

ORBIT DETERMINATION ACCURACY
ST 2440.2 SR 1050.3 SS 3406.6
CRT -.8559 CRS .9098 CST -.9933
LSA 4289.2 MSA 515.1 SSA 16.5
EL1 2607.5 EL2 508.3 ALF 158.94

LAUNCH DATE OCT 8 1964 FLIGHT TIME 354.00 ARRIVAL DATE SEP 27 1965

HELIOCENTRIC CONIC DISTANCE 806.571 EARTH TO MARS

RL 149.46 LAL -.00 LOL 14.75 VL 32.549 GAL -7.37 AZL 88.81 HCA 252.54 SMA 185.21 ECC .23043 INC 1.1939 V1 29.814
RP 218.34 LAP -1.14 LOP 267.28 VP 22.341 GAP -8.49 AZP 90.36 TAL 318.82 TAP 211.35 RCA 142.53 APO 227.89 V2 25.168
RC 278.273 GL 8.64 GP 7.50 ZAL 145.21 ZAP 68.35 ETS 182.47 ZAE 100.34 ETE 177.37 ZAC 90.13 ETC 259.13 CLP 68.15

PLANETOCENTRIC CONIC

C3 20.036 VHL 4.476 DLA 15.45 RAL 165.79 RAD 6567.8 VEL 11.892 PTH 2.11 VHP 3.248 DPA 18.09 RAP 160.90 ECC 1.3297

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 12 4	2716.78	-27.76	75.77	32.59	95.81	19 57 20	2116.8	-26.67	67.28
90.00	11 20 16	4356.88	5.08	180.75	26.15	62.11	12 32 53	3756.9	1.31	174.10
100.00	20 41 52	2427.15	-29.08	54.30	32.42	97.23	21 22 19	1827.1	-27.78	45.74
100.00	12 33 9	4121.74	6.25	162.83	25.51	60.71	13 41 51	3521.7	2.30	156.27
110.00	22 8 58	2154.64	-32.55	32.95	31.77	101.08	22 44 53	1554.6	-30.68	24.24
110.00	13 22 33	3967.01	9.25	149.26	23.68	56.94	14 28 40	3367.0	4.83	142.95

DIFFERENTIAL CORRECTIONS
TDE-1.3780 TRA 4.6641 TC3-5.5021 BAU 1.4993
RDE .7844 RRA -.6870 RC3 1.0282 FAU .45989
FDE-7.1662 FRA19.3294 FC-19.8712 BSP 27389
BDE 1.5856 BRA 4.7145 BC3 5.5973 FSP 9856

MID-COURSE EXECUTION ACCURACY
SGT 8108.0 SGR 1639.4 SG3 2812.4
RRT -.8995 RRF -.9183 RTF .9958
SGB 8272.1 R23 .0362 R13 -.9965
SG1 8242.0 SG2 704.7 THA 169.62

ORBIT DETERMINATION ACCURACY
ST 2566.3 SR 1041.0 SS 3364.1
CRT -.8548 CRS .9080 CST -.9935
LSA 4326.4 MSA 518.3 SSA 16.2
EL1 2722.2 EL2 509.3 ALF 160.15

LAUNCH DATE OCT 8 1964 FLIGHT TIME 356.00 ARRIVAL DATE SEP 29 1965

HELIOCENTRIC CONIC DISTANCE 810.618 EARTH TO MARS

RL 149.46 LAL -.00 LOL 14.75 VL 32.550 GAL -7.44 AZL 88.78 HCA 253.68 SMA 185.22 ECC .23115 INC 1.2167 V1 29.814
RP 217.98 LAP -1.17 LOP 268.42 VP 22.387 GAP -8.70 AZP 90.34 TAL 318.50 TAP 212.17 RCA 142.41 APO 228.04 V2 25.208
RC 279.589 GL 8.74 GP 7.36 ZAL 145.52 ZAP 66.70 ETS 182.68 ZAE 98.45 ETE 177.70 ZAC 89.90 ETC 259.21 CLP 66.50

PLANETOCENTRIC CONIC

C3 20.330 VHL 4.509 DLA 15.41 RAL 166.15 RAD 6567.8 VEL 11.904 PTH 2.12 VHP 3.295 DPA 18.16 RAP 160.35 ECC 1.3346

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 13 51	2718.88	-27.78	75.93	33.20	95.74	19 59 10	2118.9	-26.69	67.43
90.00	11 21 21	4361.74	5.24	181.03	26.71	62.13	12 34 3	3761.7	1.47	174.37
100.00	20 43 38	2429.34	-29.10	54.46	33.03	97.15	21 24 7	1829.3	-27.81	45.89
100.00	12 34 16	4126.51	6.41	163.09	26.07	60.74	13 43 2	3526.5	2.46	156.53
110.00	22 10 40	2157.02	-32.58	33.13	32.38	100.98	22 46 37	1557.0	-30.72	24.41
110.00	13 23 43	3971.59	9.42	149.50	24.24	56.99	14 29 55	3371.6	5.01	143.19

DIFFERENTIAL CORRECTIONS
TDE-1.4641 TRA 4.8994 TC3-5.6349 BAU 1.5551
RDE .7847 RRA -.6651 RC3 .9916 FAU .44599
FDE-7.0464 FRA18.8528 FC-18.9915 BSP 28474
BDE 1.6611 BRA 4.9443 BC3 5.7215 FSP 9551

MID-COURSE EXECUTION ACCURACY
SGT 8425.5 SGR 1600.8 SG3 2719.9
RRT -.8942 RRF -.9134 RTF .9960
SGB 8576.2 R23 .0368 R13 -.9966
SG1 8547.1 SG2 706.3 THA 170.29

ORBIT DETERMINATION ACCURACY
ST 2690.3 SR 1031.6 SS 3320.1
CRT -.8535 CRS .9062 CST -.9937
LSA 4365.0 MSA 521.4 SSA 15.8
EL1 2835.9 EL2 510.0 ALF 161.25

LAUNCH DATE OCT 8 1964 FLIGHT TIME 358.00 ARRIVAL DATE OCT 1 1965

HELIOCENTRIC CONIC DISTANCE 814.668 EARTH TO MARS

RL 149.46 LAL -.00 LOL 14.75 VL 32.551 GAL -7.51 AZL 88.76 HCA 254.82 SMA 185.24 ECC .23193 INC 1.2394 V1 29.814
RP 217.62 LAP -1.20 LOP 269.56 VP 22.434 GAP -8.91 AZP 90.32 TAL 318.16 TAP 212.98 RCA 142.28 APO 228.21 V2 25.248
RC 280.887 GL 8.84 GP 7.22 ZAL 145.84 ZAP 65.09 ETS 182.88 ZAE 96.60 ETE 178.00 ZAC 89.68 ETC 259.29 CLP 64.88

PLANETOCENTRIC CONIC

C3 20.644 VHL 4.544 DLA 15.36 RAL 166.51 RAD 6567.8 VEL 11.917 PTH 2.12 VHP 3.345 DPA 18.22 RAP 159.83 ECC 1.3397

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 15 47	2720.76	-27.79	76.06	33.83	95.67	20 1 8	2120.8	-26.71	67.56
90.00	11 22 22	4367.17	5.41	181.33	27.30	62.16	12 35 9	3767.2	1.64	174.68
100.00	20 45 32	2431.34	-29.12	54.61	33.66	97.07	21 26 3	1831.3	-27.83	46.04
100.00	12 35 19	4131.82	6.58	163.39	26.65	60.78	13 44 11	3531.8	2.64	156.82
110.00	22 12 29	2159.27	-32.61	33.30	33.02	100.88	22 48 28	1559.3	-30.76	24.57
110.00	13 24 51	3978.65	9.61	149.78	24.81	57.04	14 31 8	3376.7	5.20	143.46

DIFFERENTIAL CORRECTIONS
TDE-1.5513 TRA 5.1343 TC3-5.7554 BAU 1.6101
RDE .7852 RRA -.6434 RC3 .9551 FAU .43174
FDE-6.9231 FRA18.3672 FC-18.1058 BSP 29522
BDE 1.7387 BRA 5.1745 BC3 5.8341 FSP 9240

MID-COURSE EXECUTION ACCURACY
SGT 8732.9 SGR 1562.6 SG3 2626.2
RRT -.8886 RRF -.9082 RTF .9961
SGB 8871.6 R23 .0375 R13 -.9967
SG1 8843.4 SG2 707.8 THA 170.91

ORBIT DETERMINATION ACCURACY
ST 2812.3 SR 1022.2 SS 3274.7
CRT -.8521 CRS .9045 CST -.9939
LSA 4404.8 MSA 524.0 SSA 15.5
EL1 2948.5 EL2 510.2 ALF 162.24

LAUNCH DATE OCT 8 1964 FLIGHT TIME 360.00 ARRIVAL DATE OCT 3 1965

HELIOCENTRIC CONIC DISTANCE 818.721 EARTH TO MARS

RL	149.46	LAL	-.00	LOL	14.75	VL	32.552	GAL	-7.59	AZL	88.74	HCA	255.96	SMA	185.27	ECC	.23276	INC	1.2617
RP	217.27	LAP	-1.22	LOP	270.71	VP	22.480	GAP	-9.11	AZP	90.31	TAL	317.81	TAP	213.77	RCA	142.14	APO	228.39
RC	282.167	GL	8.92	GP	7.08	ZAL	146.16	ZAP	63.52	ETS	183.07	ZAE	94.79	ETE	178.29	ZAC	89.46	ETC	259.36

V1	29.814	V2	25.287	CLP	63.30														

PLANETOCENTRIC CONIC

C3	20.977	VHL	4.580	DLA	15.30	RAL	166.89	RAD	6567.9	VEL	11.931	PTH	2.12	VHP	3.398	DPA	18.25	RAP	159.36
ECC	1.3452																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 17 51	2722.44	-27.80	76.18	34.47	95.61	20 3 13	2122.4	-26.73	67.68
90.00	11 23 19	4373.17	5.60	181.67	27.90	62.20	12 36 13	3773.2	1.83	175.01
100.00	20 47 33	2433.17	-29.13	54.74	34.30	97.00	21 28 6	1833.2	-27.86	46.17
100.00	12 36 19	4137.67	6.78	163.71	27.25	60.82	13 45 16	3537.7	2.84	157.14
110.00	22 14 24	2161.40	-32.63	33.46	33.67	100.79	22 50 25	1561.4	-30.80	24.72
110.00	13 25 56	3982.21	9.81	150.07	25.41	57.09	14 32 19	3382.2	5.41	143.75

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.6395	TRA	5.3694	TC3	-5.8622	BAU	1.6641	SGT	9029.9	SGR	1525.1	SG3	2531.8	ST	2932.1	SR	1012.7
RDE	.7858	RRA	-.6221	RC3	.9190	FAU	.41728	RRT	-.8826	RRF	-.9027	RTF	.9962	CRT	-.8507	CRS	.9029
FDE	-6.7955	FRA	17.8766	FC	-17.2212	BSP	30552	SGB	9157.8	R23	.0382	R13	-.9967	LSA	4445.7	MSA	526.3
BDE	1.8181	BRA	5.4054	BC3	5.9338	FSP	8929	SG1	9130.3	SG2	708.9	THA	171.47	EL1	3059.8	EL2	510.1

SS	3227.7	CST	-.9940	SSA	15.2	ALF	163.15										

LAUNCH DATE OCT 8 1964 FLIGHT TIME 362.00 ARRIVAL DATE OCT 5 1965

HELIOCENTRIC CONIC DISTANCE 822.777 EARTH TO MARS

RL	149.46	LAL	-.00	LOL	14.75	VL	32.554	GAL	-7.68	AZL	88.72	HCA	257.11	SMA	185.29	ECC	.23364	INC	1.2840
RP	216.91	LAP	-1.25	LOP	271.86	VP	22.526	GAP	-9.32	AZP	90.29	TAL	317.44	TAP	214.56	RCA	142.00	APO	228.58
RC	283.431	GL	9.01	GP	6.94	ZAL	146.50	ZAP	61.99	ETS	183.25	ZAE	93.02	ETE	178.57	ZAC	89.26	ETC	259.42

V1	29.814	V2	25.327	CLP	61.77												

PLANETOCENTRIC CONIC

C3	21.331	VHL	4.619	DLA	15.23	RAL	167.28	RAD	6567.9	VEL	11.946	PTH	2.13	VHP	3.454	DPA	18.27	RAP	158.94
ECC	1.3511																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 20 2	2723.93	-27.81	76.29	35.13	95.56	20 5 26	2123.9	-26.75	67.79
90.00	11 24 13	4379.73	5.81	182.04	28.52	62.24	12 37 12	3779.7	2.05	175.38
100.00	20 49 41	2434.83	-29.15	54.86	34.97	96.94	21 30 16	1834.8	-27.88	46.29
100.00	12 37 15	4144.06	6.99	164.07	27.87	60.86	13 46 19	3544.1	3.05	157.49
110.00	22 16 26	2163.40	-32.66	33.61	34.33	100.70	22 52 29	1563.4	-30.84	24.87
110.00	13 26 59	3988.25	10.04	150.40	26.02	57.15	14 33 28	3388.3	5.64	144.07

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.7286	TRA	5.6052	TC3	-5.9565	BAU	1.7173	SGT	9317.2	SGR	1488.4	SG3	2437.4	ST	3049.6	SR	1003.2
RDE	.7865	RRA	-.6012	RC3	.8834	FAU	.40274	RRT	-.8763	RRF	-.8970	RTF	.9963	CRT	-.8491	CRS	.9013
FDE	-6.6650	FRA	17.3834	FC	-16.3450	BSP	31544	SGB	9435.4	R23	.0390	R13	-.9968	LSA	4487.4	MSA	528.3
BDE	1.8991	BRA	5.6374	BC3	6.0217	FSP	8615	SG1	9408.6	SG2	710.0	THA	171.98	EL1	3169.7	EL2	509.8

SS	3179.6	CST	-.9941	SSA	15.0	ALF	163.97										

LAUNCH DATE OCT 8 1964 FLIGHT TIME 364.00 ARRIVAL DATE OCT 7 1965

HELIOCENTRIC CONIC DISTANCE 826.835 EARTH TO MARS

RL	149.46	LAL	-.00	LOL	14.75	VL	32.555	GAL	-7.77	AZL	88.69	HCA	258.27	SMA	185.32	ECC	.23458	INC	1.3062
RP	216.57	LAP	-1.28	LOP	273.01	VP	22.572	GAP	-9.52	AZP	90.27	TAL	317.06	TAP	215.33	RCA	141.85	APO	228.79
RC	284.679	GL	9.08	GP	6.80	ZAL	146.86	ZAP	60.51	ETS	183.42	ZAE	91.29	ETE	178.82	ZAC	89.07	ETC	259.48

V1	29.814	V2	25.365	CLP	60.28												

PLANETOCENTRIC CONIC

C3	21.707	VHL	4.659	DLA	15.15	RAL	167.67	RAD	6567.9	VEL	11.962	PTH	2.13	VHP	3.513	DPA	18.27	RAP	158.56
ECC	1.3572																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 22 21	2725.22	-27.82	76.39	35.82	95.51	20 7 46	2125.2	-26.76	67.88
90.00	11 25 2	4386.86	6.03	182.44	29.16	62.28	12 38 9	3786.9	2.28	175.78
100.00	20 51 56	2436.32	-29.16	54.97	35.65	96.88	21 32 33	1836.3	-27.90	46.39
100.00	12 38 8	4150.99	7.22	164.45	28.51	60.91	13 47 19	3551.0	3.29	157.88
110.00	22 18 33	2165.30	-32.68	33.76	35.02	100.62	22 54 39	1565.3	-30.87	25.00
110.00	13 28 0	3994.78	10.28	150.75	26.66	57.22	14 34 35	3394.8	5.89	144.41

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.8188	TRA	5.8425	TC3	-6.0373	BAU	1.7693	SGT	9594.8	SGR	1452.6	SG3	2343.4	ST	3165.1	SR	993.6
RDE	.7873	RRA	-.5809	RC3	.8484	FAU	.38804	RRT	-.8697	RRF	-.8910	RTF	.9964	CRT	-.8475	CRS	.8997
FDE	-6.5309	FRA	16.8917	FC	-15.4758	BSP	32531	SGB	9704.1	R23	.0398	R13	-.9968	LSA	4530.1	MSA	530.0
BDE	1.9819	BRA	5.8713	BC3	6.0967	FSP	8305	SG1	9678.0	SG2	710.7	THA	172.46	EL1	3278.1	EL2	509.2

SS	3130.1	CST	-.9942	SSA	14.7	ALF	164.72										

LAUNCH DATE OCT 8 1964 FLIGHT TIME 366.00 ARRIVAL DATE OCT 9 1965

HELIOCENTRIC CONIC DISTANCE 830.895 EARTH TO MARS

RL	149.46	LAL	-.00	LOL	14.75	VL	32.557	GAL	-7.86	AZL	88.67	HCA	259.43	SMA	185.35	ECC	.23557	INC	1.3281
RP	216.22	LAP	-1.31	LOP	274.17	VP	22.618	GAP	-9.73	AZP	90.24	TAL	316.67	TAP	216.10	RCA	141.69	APO	229.01
RC	285.910	GL	9.15	GP	6.67	ZAL	147.22	ZAP	59.06	ETS	183.58	ZAE	89.59	ETE	179.06	ZAC	88.89	ETC	259.53

V1	29.814	V2	25.404	CLP	58.83												

PLANETOCENTRIC CONIC

C3	22.106	VHL	4.702	DLA	15.06	RAL	168.07	RAD	6567.9	VEL	11.979	PTH	2.13	VHP	3.574	DPA	18.26	RAP	158.22
ECC	1.3638																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 24 48	2726.34	-27.83	76.47	36.51	95.47	20 10 14	2126.3	-26.78	67.96
90.00	11 25 48	4394.54	6.28	182.87	29.81	62.33	12 39 2	3794.5	2.52	176.20
100.00	20 54 19	2437.66	-29.17	55.07	36.35	96.83	21 34 56	1837.7	-27.92	46.49
100.00	12 38 58	4158.45	7.47	164.87	29.16	60.97	13 48 16	3558.5	3.54	158.29
110.00	22 20 47	2167.09	-32.71	33.89	35.72	100.55	22 56 54	1567.1	-30.91	25.13
110.00	13 28 58	4001.79	10.54	151.13	27.31	57.29	14 35 40	3401.8	6.15	144.78

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.9106	TRA	6.0799	TC3	-6.1065	BAU	1.8207	SGT	9862.2	SGR	1418.0	SG3	2250.0	ST	3278.6	SR	984.2
RDE	.7884	RRA	-.5611	RC3	.8142	FAU	.37342	RRT	-.8628	RRF	-.8848	RTF	.9964	CRT	-.8460	CRS	.8982
FDE	-6.3959	FRA	16.3992	FC	-14.6242	BSP	33475	SGB	9963.6	R23	.0406	R13	-.9968	LSA	4573.9	MSA	531.3
BDE	2.0669	BRA	6.1057	BC3	6.1605	FSP	7995	SG1	9938.2	SG2	711.3	THA	172.89	EL1	3385.2	EL2	508.3

SS	3079.8	CST	-.9942	SSA	14.5	ALF	165.41										

LAUNCH DATE OCT 8 1964 FLIGHT TIME 376.00 ARRIVAL DATE OCT 19 1965

HELIOCENTRIC CONIC DISTANCE 851.212 EARTH TO MARS

RL 149.46 LAL -.00 LOL 14.75 VL 32.569 GAL -8.38 AZL 88.56 HCA 265.27 SMA 185.55 ECC .24141 INC 1.4372 V1 29.814
RP 214.56 LAP -1.43 LOP 280.02 VP 22.843 GAP -10.73 AZP 90.12 TAL 314.47 TAP 219.74 RCA 140.75 APO 230.34 V2 25.590
RC 291.851 GL 9.40 GP 6.03 ZAL 149.20 ZAP 52.44 ETS 184.24 ZAE 81.69 ETE 180.08 ZAC 88.12 ETC 259.66 CLP 52.20

PLANETOCENTRIC CONIC

C3 24.481 VHL 4.948 DLA 14.45 RAL 170.19 RAD 6568.0 VEL 12.077 PTH 2.16 VHP 3.923 DPA 17.96 RAP 157.21 ECC 1.4029

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 38 46	2729.61	-27.85	76.70	40.27	95.36	20 24 16	2129.6	-26.81	68.19
90.00	11 28 43	4441.05	7.74	185.51	33.37	62.68	12 42 44	3841.1	4.02	178.81
100.00	21 7 51	2442.35	-29.21	55.41	40.10	96.66	21 48 33	1842.4	-27.98	46.82
100.00	12 42 19	4203.54	8.95	167.40	32.72	61.36	13 52 23	3603.5	5.06	160.77
110.00	22 33 23	2174.70	-32.80	34.46	39.48	100.22	23 9 38	1574.7	-31.04	25.68
110.00	13 33 16	4043.96	12.08	153.43	30.85	57.78	14 40 40	3444.0	7.74	147.02

DIFFERENTIAL CORRECTIONS
TDE-2.3899 TRA 7.2983 TC3-6.2674 BAU 2.0625
RDE .7973 RRA -.4728 RC3 .6571 FAU .30188
FDE-5.7048 FRA14.0127 FC-10.6754 BSP 37896
BDE 2.5193 BRA 7.3136 BC3 6.3018 FSP 6524

MID-COURSE EXECUTION ACCURACY
SGT11058.7 SGR 1262.9 SG3 1804.2
RRT -.8250 RRF -.8510 RTF .9962
SGB11130.6 R23 .0455 R13 -.9965
SG111107.9 SG2 710.5 THA 174.60

ORBIT DETERMINATION ACCURACY
ST 3814.3 SR 938.9 SS 2815.5
CRT -.8388 CRS .8921 CST -.9942
LSA 4803.4 MSA 533.3 SSA 13.7
EL1 3896.4 EL2 500.9 ALF 168.14

LAUNCH DATE OCT 8 1964 FLIGHT TIME 378.00 ARRIVAL DATE OCT 21 1965

HELIOCENTRIC CONIC DISTANCE 855.275 EARTH TO MARS

RL 149.46 LAL -.00 LOL 14.75 VL 32.571 GAL -8.50 AZL 88.54 HCA 266.45 SMA 185.59 ECC .24277 INC 1.4588 V1 29.814
RP 214.24 LAP -1.46 LOP 281.20 VP 22.888 GAP -10.93 AZP 90.09 TAL 313.99 TAP 220.44 RCA 140.54 APO 230.65 V2 25.626
RC 292.998 GL 9.43 GP 5.91 ZAL 149.63 ZAP 51.24 ETS 184.35 ZAE 80.22 ETE 180.25 ZAC 88.00 ETC 259.66 CLP 50.99

PLANETOCENTRIC CONIC

C3 25.042 VHL 5.004 DLA 14.30 RAL 170.63 RAD 6568.0 VEL 12.100 PTH 2.17 VHP 4.000 DPA 17.86 RAP 157.13 ECC 1.4121

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 41 54	2729.87	-27.85	76.72	41.07	95.35	20 27 24	[illegible]	-26.82	68.21
90.00	11 29 8	4451.93	8.08	186.13	34.14	62.77	12 43 20	[illegible]	4.36	179.42
100.00	21 10 52	2442.96	-29.21	55.46	40.91	96.63	21 51 35	[illegible]	-27.99	46.87
100.00	12 42 51	4214.08	9.29	167.99	33.49	61.46	13 53 5	3814.1	5.41	161.36
110.00	22 36 11	2176.01	-32.81	34.56	40.29	100.16	23 12 27	1576.0	-31.06	25.78
110.00	13 34 1	4053.79	12.43	153.96	31.62	57.90	14 41 35	3453.8	8.10	147.54

DIFFERENTIAL CORRECTIONS
TDE-2.4917 TRA 7.5495 TC3-6.2670 BAU 2.1086
RDE .8000 RRA -.4574 RC3 .6290 FAU .28828
FDE-5.5685 FRA13.5553 FC3-9.9665 BSP 38709
BDE 2.6170 BRA 7.5633 BC3 6.2985 FSP 6246

MID-COURSE EXECUTION ACCURACY
SGT11271.7 SGR 1235.9 SG3 1720.8
RRT -.8171 RRF -.8440 RTF .9961
SGB11339.3 R23 .0466 R13 -.9964
SG111317.1 SG2 709.6 THA 174.86

ORBIT DETERMINATION ACCURACY
ST [illegible].1 SR 930.4 SS 2761.3
CRT [illegible] CRS .8912 CST -.9942
LSA 4852.1 MSA 532.7 SSA 13.6
EL1 3994.1 EL2 498.8 ALF 168.57

LAUNCH DATE OCT 8 1964 FLIGHT TIME 380.00 ARRIVAL DATE OCT 23 1965

HELIOCENTRIC CONIC DISTANCE 859.337 EARTH TO MARS

RL 149.46 LAL -.00 LOL 14.75 VL 32.574 GAL -8.63 AZL 88.52 HCA 267.63 SMA 185.64 ECC .24420 INC 1.4805 V1 29.814
RP 213.93 LAP -1.48 LOP 282.38 VP 22.931 GAP -11.13 AZP 90.06 TAL 313.48 TAP 221.12 RCA 140.31 APO 230.97 V2 25.662
RC 294.131 GL 9.46 GP 5.80 ZAL 150.06 ZAP 50.07 ETS 184.46 ZAE 78.79 ETE 180.41 ZAC 87.89 ETC 259.66 CLP 49.82

PLANETOCENTRIC CONIC

C3 25.635 VHL 5.063 DLA 14.14 RAL 171.09 RAD 6568.0 VEL 12.125 PTH 2.17 VHP 4.081 DPA 17.75 RAP 157.10 ECC 1.4219

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 45 7	2730.03	-27.85	76.73	41.89	95.34	20 30 37	2130.0	-26.82	68.22
90.00	11 29 30	4463.32	8.43	186.78	34.93	62.87	12 43 53	3863.3	4.73	180.06
100.00	21 13 59	2443.47	-29.22	55.49	41.73	96.61	21 54 42	1843.5	-27.99	46.90
100.00	12 43 20	4225.11	9.65	168.62	34.28	61.57	13 53 45	3625.1	5.78	161.97
110.00	22 39 3	2177.27	-32.83	34.66	41.11	100.11	23 15 20	1577.3	-31.09	25.87
110.00	13 34 44	4064.07	12.80	154.53	32.41	58.03	14 42 29	3464.1	8.49	148.09

DIFFERENTIAL CORRECTIONS
TDE-2.5958 TRA 7.8039 TC3-6.2566 BAU 2.1541
RDE .8031 RRA -.4428 RC3 .6020 FAU .27502
FDE-5.4331 FRA13.1054 FC3-9.2879 BSP 39497
BDE 2.7172 BRA 7.8164 BC3 6.2855 FSP 5975

MID-COURSE EXECUTION ACCURACY
SGT11476.4 SGR 1210.2 SG3 1639.7
RRT -.8092 RRF -.8371 RTF .9960
SGB11540.0 R23 .0477 R13 -.9963
SG111518.3 SG2 708.5 THA 175.10

ORBIT DETERMINATION ACCURACY
ST 4016.2 SR 922.1 SS 2706.6
CRT -.8362 CRS .8906 CST -.9941
LSA 4901.3 MSA 531.9 SSA 13.5
EL1 4090.7 EL2 496.5 ALF 168.97

LAUNCH DATE OCT 8 1964 FLIGHT TIME 382.00 ARRIVAL DATE OCT 25 1965

HELIOCENTRIC CONIC DISTANCE 863.397 EARTH TO MARS

RL 149.46 LAL -.00 LOL 14.75 VL 32.577 GAL -8.75 AZL 88.50 HCA 268.82 SMA 185.69 ECC .24569 INC 1.5023 V1 29.814
RP 213.62 LAP -1.50 LOP 283.57 VP 22.975 GAP -11.33 AZP 90.03 TAL 312.97 TAP 221.78 RCA 140.07 APO 231.31 V2 25.697
RC 295.251 GL 9.48 GP 5.68 ZAL 150.51 ZAP 48.93 ETS 184.56 ZAE 77.38 ETE 180.56 ZAC 87.79 ETC 259.65 CLP 48.68

PLANETOCENTRIC CONIC

C3 26.262 VHL 5.125 DLA 13.97 RAL 171.54 RAD 6568.1 VEL 12.151 PTH 2.18 VHP 4.164 DPA 17.63 RAP 157.10 ECC 1.4322

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 48 27	2730.09	-27.85	76.74	42.73	95.34	20 33 57	2130.1	-26.82	68.22
90.00	11 29 49	4475.22	8.80	187.46	35.74	62.98	12 44 24	3875.2	5.11	180.73
100.00	21 17 11	2443.91	-29.22	55.53	42.57	96.60	21 57 55	1843.9	-28.00	46.94
100.00	12 43 46	4236.63	10.02	169.27	35.09	61.69	13 54 22	3636.6	6.16	162.61
110.00	22 42 1	2178.49	-32.84	34.75	41.95	100.05	23 18 19	1578.5	-31.11	25.96
110.00	13 35 26	4074.81	13.19	155.12	33.22	58.18	14 43 20	3474.8	8.89	148.66

DIFFERENTIAL CORRECTIONS
TDE-2.7017 TRA 8.0626 TC3-6.2367 BAU 2.1990
RDE .8064 RRA -.4291 RC3 .5761 FAU .26205
FDE-5.2980 FRA12.6642 FC3-8.6387 BSP 40259
BDE 2.8195 BRA 8.0740 BC3 6.2633 FSP 5710

MID-COURSE EXECUTION ACCURACY
SGT11673.6 SGR 1185.7 SG3 1560.9
RRT -.8012 RRF -.8301 RTF .9959
SGB11733.7 R23 .0489 R13 -.9961
SG111712.4 SG2 707.2 THA 175.33

ORBIT DETERMINATION ACCURACY
ST 4114.3 SR 913.9 SS 2651.4
CRT -.8352 CRS .8900 CST -.9940
LSA 4950.8 MSA 530.8 SSA 13.4
EL1 4185.5 EL2 494.1 ALF 169.34

LAUNCH DATE OCT 8 1964 FLIGHT TIME 368.00 ARRIVAL DATE OCT 11 1965

HELIOCENTRIC CONIC DISTANCE 834.957 EARTH TO MARS

RL 149.46 LAL -.00 LOL 14.75 VL 32.559 GAL -7.95 AZL 88.65 HCA 260.59 SMA 185.38 ECC .23662 INC 1.3501 V1 29.814
RP 215.88 LAP -1.33 LOP 275.33 VP 22.663 GAP -9.93 AZP 90.22 TAL 316.26 TAP 216.85 RCA 141.52 APO 229.25 V2 25.442
RC 287.127 GL 9.21 GP 6.54 ZAL 147.59 ZAP 57.66 ETS 183.72 ZAE 87.94 ETE 179.29 ZAC 88.71 ETC 259.57 CLP 57.42

PLANETOCENTRIC CONIC

C3 22.528 VHL 4.746 DLA 14.96 RAL 168.48 RAD 6567.9 VEL 11.996 PTH 2.14 VHP 3.638 DPA 18.23 RAP 157.93 ECC 1.3708

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 27 22	2727.29	-27.83	76.54	37.23	95.44	20 12 49	2127.3	-26.79	68.03
90.00	11 26 29	4402.77	6.54	183.34	30.49	62.39	12 39 52	3802.8	2.79	176.66
100.00	20 56 48	2438.85	-29.18	55.16	37.06	96.79	21 37 27	1838.9	-27.93	46.57
100.00	12 39 44	4166.44	7.73	165.32	29.84	61.03	13 49 11	3566.4	3.81	158.73
110.00	22 23 7	2168.77	-32.73	34.02	36.44	100.47	22 59 16	1568.8	-30.94	25.25
110.00	13 29 54	4009.28	10.81	151.54	27.98	57.37	14 36 44	3409.3	6.43	145.18

DIFFERENTIAL CORRECTIONS
TDE-2.0033 TRA 6.3196 TC3-6.1617 BAU 1.8707
RDE .7897 RRA -.5420 RC3 .7808 FAU .35876
FDE-6.2584 FRA15.9116 FC-13.7867 BSP 34403
BDE 2.1533 BRA 6.3428 BC3 6.2110 FSP 7690

MID-COURSE EXECUTION ACCURACY
SGT10119.9 SGR 1384.4 SG3 2157.6
RRT -.8557 RRF -.8783 RTF .9964
SGB10214.1 R23 .0415 R13 -.9968
SG110189.3 SG2 711.6 THA 173.29

ORBIT DETERMINATION ACCURACY
ST 3389.7 SR 974.9 SS 3028.3
CRT -.8444 CRS .8968 CST -.9943
LSA 4618.2 MSA 532.3 SSA 14.3
EL1 3490.5 EL2 507.2 ALF 166.05

LAUNCH DATE OCT 8 1964 FLIGHT TIME 370.00 ARRIVAL DATE OCT 13 1965

HELIOCENTRIC CONIC DISTANCE 839.020 EARTH TO MARS

RL 149.46 LAL -.00 LOL 14.75 VL 32.561 GAL -8.05 AZL 88.63 HCA 261.75 SMA 185.42 ECC .23772 INC 1.3719 V1 29.814
RP 215.54 LAP -1.36 LOP 276.50 VP 22.709 GAP -10.13 AZP 90.20 TAL 315.84 TAP 217.59 RCA 141.34 APO 229.50 V2 25.460
RC 288.329 GL 9.27 GP 6.41 ZAL 147.98 ZAP 56.30 ETS 183.87 ZAE 86.32 ETE 179.50 ZAC 88.55 ETC 259.60 CLP 56.06

PLANETOCENTRIC CONIC

C3 22.976 VHL 4.793 DLA 14.85 RAL 168.90 RAD 6567.9 VEL 12.015 PTH 2.14 VHP 3.705 DPA 18.18 RAP 157.68 ECC 1.3781

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 30 3	2728.09	-27.84	76.59	37.96	95.41	20 15 31	2128.1	-26.80	68.08
90.00	11 27 8	4411.54	6.81	183.84	31.18	62.45	12 40 39	3811.5	3.07	177.16
100.00	20 59 24	2439.91	-29.19	55.23	37.80	96.75	21 40 4	1839.9	-27.95	46.65
100.00	12 40 28	4174.95	8.01	165.79	30.53	61.10	13 50 2	3574.9	4.10	159.19
110.00	22 25 33	2170.37	-32.75	34.14	37.17	100.41	23 1 43	1570.4	-30.96	25.37
110.00	13 30 48	4017.25	11.10	151.97	28.67	57.46	14 37 45	3417.2	6.73	145.60

DIFFERENTIAL CORRECTIONS
TDE-2.0979 TRA 6.5606 TC3-6.2060 BAU 1.9201
RDE .7912 RRA -.5236 RC3 .7484 FAU .34429
FDE-6.1211 FRA15.4269 FC-12.9730 BSP 35309
BDE 2.2421 BRA 6.5815 BC3 6.2509 FSP 7391

MID-COURSE EXECUTION ACCURACY
SGT10368.4 SGR 1352.2 SG3 2066.6
RRT -.8483 RRF -.8717 RTF .9964
SGB10456.2 R23 .0425 R13 -.9967
SG110432.0 SG2 711.7 THA 173.66

ORBIT DETERMINATION ACCURACY
ST 3499.1 SR 965.7 SS 2976.3
CRT -.8429 CRS .8955 CST -.9943
LSA 4663.7 MSA 533.0 SSA 14.1
EL1 3594.5 EL2 505.9 ALF 166.64

LAUNCH DATE OCT 8 1964 FLIGHT TIME 372.00 ARRIVAL DATE OCT 15 1965

HELIOCENTRIC CONIC DISTANCE 843.084 EARTH TO MARS

RL 149.46 LAL -.00 LOL 14.75 VL 32.564 GAL -8.16 AZL 88.61 HCA 262.92 SMA 185.46 ECC .23889 INC 1.3937 V1 29.814
RP 215.21 LAP -1.38 LOP 277.67 VP 22.754 GAP -10.33 AZP 90.17 TAL 315.40 TAP 218.32 RCA 141.16 APO 229.76 V2 25.517
RC 289.516 GL 9.32 GP 6.28 ZAL 148.38 ZAP 54.97 ETS 184.00 ZAE 84.74 ETE 179.71 ZAC 88.40 ETC 259.63 CLP 54.73

PLANETOCENTRIC CONIC

C3 23.450 VHL 4.842 DLA 14.73 RAL 169.32 RAD 6568.0 VEL 12.034 PTH 2.15 VHP 3.775 DPA 18.12 RAP 157.48 ECC 1.3859

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 32 51	2728.73	-27.84	76.64	38.71	95.39	20 18 19	2128.7	-26.80	68.13
90.00	11 27 43	4420.85	7.11	184.36	31.89	62.52	12 41 24	3820.8	3.37	177.68
100.00	21 2 7	2440.84	-29.20	55.30	38.55	96.71	21 42 48	1840.8	-27.96	46.72
100.00	12 41 8	4183.97	8.31	166.30	31.24	61.18	13 50 52	3584.0	4.40	159.69
110.00	22 28 4	2171.89	-32.76	34.25	37.93	100.34	23 4 16	1571.9	-30.99	25.48
110.00	13 31 40	4025.69	11.41	152.43	29.38	57.56	14 38 45	3425.7	7.05	146.05

DIFFERENTIAL CORRECTIONS
TDE-2.1937 TRA 6.8036 TC3-6.2379 BAU 1.9685
RDE .7930 RRA -.5058 RC3 .7169 FAU .32996
FDE-5.9830 FRA14.9480 FC-12.1820 BSP 36190
BDE 2.3326 BRA 6.8224 BC3 6.2790 FSP 7095

MID-COURSE EXECUTION ACCURACY
SGT10607.3 SGR 1321.1 SG3 1977.3
RRT -.8407 RRF -.8649 RTF .9963
SGB10689.2 R23 .0435 R13 -.9967
SG110665.5 SG2 711.5 THA 174.00

ORBIT DETERMINATION ACCURACY
ST 3606.2 SR 956.7 SS 2923.5
CRT -.8414 CRS .8942 CST -.9943
LSA 4709.8 MSA 533.4 SSA 14.0
EL1 3696.7 EL2 504.4 ALF 167.18

LAUNCH DATE OCT 8 1964 FLIGHT TIME 374.00 ARRIVAL DATE OCT 17 1965

HELIOCENTRIC CONIC DISTANCE 847.148 EARTH TO MARS

RL 149.46 LAL -.00 LOL 14.75 VL 32.566 GAL -8.27 AZL 88.58 HCA 264.09 SMA 185.50 ECC .24012 INC 1.4154 V1 29.814
RP 214.88 LAP -1.41 LOP 278.84 VP 22.799 GAP -10.53 AZP 90.15 TAL 314.94 TAP 219.04 RCA 140.96 APO 230.04 V2 25.554
RC 290.691 GL 9.36 GP 6.15 ZAL 148.78 ZAP 53.69 ETS 184.12 ZAE 83.20 ETE 179.90 ZAC 88.25 ETC 259.64 CLP 53.44

PLANETOCENTRIC CONIC

C3 23.951 VHL 4.894 DLA 14.59 RAL 169.75 RAD 6568.0 VEL 12.055 PTH 2.15 VHP 3.848 DPA 18.05 RAP 157.32 ECC 1.3942

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 35 45	2729.23	-27.84	76.68	39.48	95.37	20 21 14	2129.2	-26.81	68.16
90.00	11 28 14	4430.69	7.41	184.92	32.62	62.59	12 42 5	3830.7	3.68	178.23
100.00	21 4 56	2441.65	-29.20	55.36	39.32	96.68	21 45 37	1841.6	-27.97	46.77
100.00	12 41 45	4193.50	8.62	166.83	31.97	61.27	13 51 39	3593.5	4.72	160.22
110.00	22 30 41	2173.33	-32.78	34.36	38.70	100.28	23 6 54	1573.3	-31.02	25.58
110.00	13 32 29	4034.59	11.74	152.91	30.11	57.66	14 39 44	3434.6	7.39	146.52

DIFFERENTIAL CORRECTIONS
TDE-2.2913 TRA 7.0492 TC3-6.2583 BAU 2.0159
RDE .7950 RRA -.4889 RC3 .6865 FAU .31580
FDE-5.8447 FRA14.4763 FC-11.4149 BSP 37046
BDE 2.4253 BRA 7.0661 BC3 6.2959 FSP 6805

MID-COURSE EXECUTION ACCURACY
SGT10837.2 SGR 1291.4 SG3 1889.7
RRT -.8329 RRF -.8580 RTF .9963
SGB10913.9 R23 .0445 R13 -.9966
SG110890.7 SG2 711.1 THA 174.31

ORBIT DETERMINATION ACCURACY
ST 3711.5 SR 947.8 SS 2870.0
CRT -.8399 CRS .8931 CST -.9942
LSA 4756.6 MSA 533.5 SSA 13.9
EL1 3797.4 EL2 502.7 ALF 167.68

LAUNCH DATE OCT 8 1964 FLIGHT TIME 384.00 ARRIVAL DATE OCT 27 1965

HELIOCENTRIC CONIC DISTANCE 867.454 EARTH TO MARS

RL	149.46	LAL	-.00	LOL	14.75	VL	32.580	GAL	-8.89	AZL	88.48	HCA	270.01	SMA	185.74	ECC	.24726	INC	1.5240
RP	213.31	LAP	-1.52	LOP	284.76	VP	23.018	GAP	-11.54	AZP	90.00	TAL	312.43	TAP	222.44	RCA	139.82	APO	231.67
RC	296.356	GL	9.50	GP	5.57	ZAL	150.97	ZAP	47.83	ETS	184.65	ZAE	76.01	ETE	180.71	ZAC	87.69	ETC	259.63

V1	29.814	V2	25.731	CLP	47.58														

PLANETOCENTRIC CONIC

C3	26.924	VHL	5.189	DLA	13.79	RAL	172.00	RAD	6568.1	VEL	12.178	PTH	2.19	VHP	4.250	DPA	17.49	RAP	157.14
ECC	1.4431																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 51 52	2730.07	-27.85	76.74	43.58	95.34	20 37 22	2130.1	-26.82	68.22
90.00	11 30 5	4487.61	9.18	188.17	36.57	63.10	12 44 53	3887.6	5.50	181.42
100.00	21 20 29	2444.28	-29.22	55.55	43.42	96.58	22 1 13	1844.3	-28.00	46.96
100.00	12 44 9	4248.62	10.41	169.95	35.92	61.82	13 54 58	3648.6	6.56	163.27
110.00	22 45 3	2179.68	-32.86	34.84	42.80	100.00	23 21 22	1579.7	-31.13	26.05
110.00	13 36 5	4085.99	13.59	155.74	34.05	58.33	14 44 11	3486.0	9.30	149.26

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-2.8106	TRA	8.3248	TC3	-6.2086	BAU	2.2436	SGT	11863.3	SGR	1162.6	SG3	1484.5	ST	4211.0	SR	906.0	SS	2596.2
RDE	.8102	RRA	-.4162	RC3	.5514	FAU	.24946	RRT	-.7934	RRF	-.8233	RTF	.9957	CRT	-.8343	CRS	.8896	CST	-.9940
FDE	-5.1654	FRA	12.2309	FC3	-8.0212	BSP	40997	SGB	11920.1	R23	.0502	R13	-.9960	LSA	5001.3	MSA	529.4	SSA	13.4
BDE	2.9250	BRA	8.3352	BC3	6.2330	FSP	5451	SG	111899.2	SG2	705.6	THA	175.54	EL1	4279.2	EL2	491.5	ALF	169.69

LAUNCH DATE OCT 8 1964 FLIGHT TIME 386.00 ARRIVAL DATE OCT 29 1965

HELIOCENTRIC CONIC DISTANCE 871.509 EARTH TO MARS

RL	149.46	LAL	-.00	LOL	14.75	VL	32.584	GAL	-9.03	AZL	88.45	HCA	271.20	SMA	185.80	ECC	.24890	INC	1.5459
RP	213.01	LAP	-1.55	LOP	285.95	VP	23.060	GAP	-11.74	AZP	89.97	TAL	311.88	TAP	223.08	RCA	139.55	APO	232.05
RC	297.448	GL	9.51	GP	5.47	ZAL	151.43	ZAP	46.76	ETS	184.74	ZAE	74.68	ETE	180.85	ZAC	87.61	ETC	259.61

V1	29.814	V2	25.765	CLP	46.52														

PLANETOCENTRIC CONIC

C3	27.625	VHL	5.256	DLA	13.81	RAL	172.47	RAD	6568.1	VEL	12.207	PTH	2.19	VHP	4.338	DPA	17.35	RAP	157.23
ECC	1.4546																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 55 22	2729.97	-27.85	76.73	44.46	95.34	20 40 52	2130.0	-26.82	68.22
90.00	11 30 18	4500.48	9.58	188.91	37.42	63.23	12 45 19	3900.5	5.91	182.15
100.00	21 23 52	2444.59	-29.23	55.58	44.29	96.57	22 4 36	1844.6	-28.01	46.98
100.00	12 44 30	4261.10	10.81	170.66	36.77	61.96	13 55 31	3661.1	6.98	163.97
110.00	22 48 9	2180.83	-32.87	34.93	43.68	99.95	23 24 30	1580.8	-31.15	26.13
110.00	13 36 42	4097.61	14.01	156.39	34.90	58.49	14 45 0	3497.6	9.74	149.89

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-2.9223	TRA	8.5918	TC3	-6.1724	BAU	2.2879	SGT	12046.1	SGR	1140.7	SG3	1410.6	ST	4306.2	SR	898.2	SS	2540.6
RDE	.8143	RRA	-.4041	RC3	.5278	FAU	.23724	RRT	-.7856	RRF	-.8167	RTF	.9956	CRT	-.8336	CRS	.8894	CST	-.9939
FDE	-5.0339	FRA	11.8063	FC3	-7.4347	BSP	41718	SGB	12100.0	R23	.0515	R13	-.9958	LSA	5052.3	MSA	527.8	SSA	13.3
BDE	3.0336	BRA	8.6013	BC3	6.1949	FSP	5200	SG	112079.5	SG2	703.8	THA	175.73	EL1	4371.6	EL2	488.7	ALF	170.01

LAUNCH DATE OCT 8 1964 FLIGHT TIME 388.00 ARRIVAL DATE OCT 31 1965

HELIOCENTRIC CONIC DISTANCE 875.559 EARTH TO MARS

RL	149.46	LAL	-.00	LOL	14.75	VL	32.587	GAL	-9.18	AZL	88.43	HCA	272.40	SMA	185.86	ECC	.25062	INC	1.5678
RP	212.72	LAP	-1.57	LOP	287.15	VP	23.102	GAP	-11.94	AZP	89.93	TAL	311.31	TAP	223.71	RCA	139.28	APO	232.44
RC	298.526	GL	9.51	GP	5.36	ZAL	151.90	ZAP	45.73	ETS	184.82	ZAE	73.37	ETE	180.98	ZAC	87.54	ETC	259.58

V1	29.814	V2	25.798	CLP	45.48														

PLANETOCENTRIC CONIC

C3	28.366	VHL	5.326	DLA	13.41	RAL	172.95	RAD	6568.1	VEL	12.237	PTH	2.20	VHP	4.429	DPA	17.19	RAP	157.34
ECC	1.4668																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 58 58	2729.81	-27.85	76.72	45.35	95.35	20 44 28	2129.8	-26.82	68.20
90.00	11 30 29	4513.84	9.99	189.67	38.29	63.37	12 45 43	3913.8	6.33	182.90
100.00	[illegible]27 20	2444.85	-29.23	55.59	45.18	96.56	22 8 5	1844.9	-28.01	47.00
100.00	12 44 49	4274.03	11.22	171.40	37.64	62.11	13 56 3	3674.0	7.40	164.69
110.00	22 51 20	2181.97	-32.89	35.01	44.56	99.90	23 27 42	1582.0	-31.17	26.21
110.00	13 37 17	4109.67	14.43	157.06	35.77	58.67	14 45 47	3509.7	10.18	150.54

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-3.0369	TRA	8.8634	TC3	-6.1283	BAU	2.3319	SGT	12221.8	SGR	1120.0	SG3	1339.0	ST	4399.9	SR	890.6	SS	2484.8
RDE	.8188	RRA	-.3929	RC3	.5053	FAU	.22536	RRT	-.7780	RRF	-.8102	RTF	.9954	CRT	-.8330	CRS	.8894	CST	-.9938
FDE	-4.9040	FRA	11.3899	FC3	-6.8779	BSP	42411	SGB	12273.1	R23	.0528	R13	-.9956	LSA	5103.9	MSA	525.9	SSA	13.2
BDE	3.1453	BRA	8.8721	BC3	6.1491	FSP	4955	SG	112253.0	SG2	701.8	THA	175.91	EL1	4462.8	EL2	485.8	ALF	170.31

LAUNCH DATE OCT 8 1964 FLIGHT TIME 390.00 ARRIVAL DATE NOV 2 1965

HELIOCENTRIC CONIC DISTANCE 879.606 EARTH TO MARS

RL	149.46	LAL	-.00	LOL	14.75	VL	32.591	GAL	-9.33	AZL	88.41	HCA	273.60	SMA	185.92	ECC	.25242	INC	1.5898
RP	212.43	LAP	-1.59	LOP	288.35	VP	23.144	GAP	-12.15	AZP	89.90	TAL	310.73	TAP	224.33	RCA	138.99	APO	232.85
RC	299.592	GL	9.51	GP	5.26	ZAL	152.39	ZAP	44.73	ETS	184.90	ZAE	72.10	ETE	181.10	ZAC	87.47	ETC	259.55

V1	29.814	V2	25.831	CLP	44.48														

PLANETOCENTRIC CONIC

C3	29.149	VHL	5.399	DLA	13.21	RAL	173.42	RAD	6568.2	VEL	12.269	PTH	2.21	VHP	4.523	DPA	17.02	RAP	157.50
ECC	1.4797																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 2 39	2729.60	-27.85	76.70	46.25	95.36	20 48 9	2129.6	-26.81	68.19
90.00	11 30 37	4527.66	10.41	190.47	39.18	63.52	12 46 5	3927.7	6.77	183.68
100.00	21 30 52	2445.08	-29.23	55.61	46.09	96.55	22 11 38	1845.1	-28.02	47.02
100.00	12 45 5	4287.42	11.65	172.16	38.53	62.27	13 56 33	3687.4	7.85	165.44
110.00	22 54 36	2183.10	-32.90	35.10	45.47	99.86	23 30 59	1583.1	-31.19	26.29
110.00	13 37 51	4122.16	14.87	157.76	36.66	58.86	14 46 33	3522.2	10.64	151.21

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-3.1554	TRA	9.1394	TC3	-6.0781	BAU	2.3761	SGT	12391.1	SGR	1100.6	SG3	1269.9	ST	4492.7	SR	883.3	SS	2429.0
RDE	.8238	RRA	-.3824	RC3	.4840	FAU	.21390	RRT	-.7707	RRF	-.8041	RTF	.9952	CRT	-.8327	CRS	.8896	CST	-.9936
FDE	-4.7768	FRA	10.9808	FC3	-6.3528	BSP	43065	SGB	12439.9	R23	.0543	R13	-.9954	LSA	5156.6	MSA	523.7	SSA	13.1
BDE	3.2612	BRA	9.1474	BC3	6.0973	FSP	4716	SG	112420.2	SG2	699.6	THA	176.07	EL1	4553.2	EL2	482.6	ALF	170.60

LAUNCH DATE OCT 8 1964 FLIGHT TIME 392.00 ARRIVAL DATE NOV 4 1965

HELIOCENTRIC CONIC DISTANCE 883.646 EARTH TO MARS

RL 149.46 LAL -.00 LOL 14.75 VL 32.594 GAL -9.48 AZL 88.39 HCA 274.80 SMA 185.98 ECC .25431 INC 1.6120 V1 29.814
RP 212.15 LAP -1.61 LOP 289.55 VP 23.185 GAP -12.35 AZP 89.87 TAL 310.13 TAP 224.93 RCA 138.68 APO 233.28 V2 25.863
RC 300.645 GL 9.51 GP 5.17 ZAL 152.88 ZAP 43.76 ETS 184.97 ZAE 70.85 ETE 181.22 ZAC 87.42 ETC 259.51 CLP 43.52

PLANETOCENTRIC CONIC

C3 29.978 VHL 5.475 DLA 13.00 RAL 173.91 RAD 6568.2 VEL 12.303 PTH 2.22 VHP 4.620 DPA 16.84 RAP 157.68 ECC 1.4934

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 6 25	2729.35	-27.85	76.68	47.18	95.37	20 51 54	2129.3	-26.81	68.17
90.00	11 30 43	4541.95	10.84	191.30	40.09	63.68	12 46 25	3942.0	7.22	184.49
100.00	21 34 30	2445.27	-29.23	55.63	47.01	96.55	22 15 15	1845.3	-28.02	47.03
100.00	12 45 19	4301.27	12.08	172.96	39.44	62.45	13 57 1	3701.3	8.30	166.21
110.00	22 57 55	2184.23	-32.91	35.19	46.39	99.81	23 34 20	1584.2	-31.21	26.38
110.00	13 38 23	4135.07	15.33	158.48	37.58	59.07	14 47 18	3535.1	11.11	151.91

DIFFERENTIAL CORRECTIONS
TDE-3.2768 TRA 9.4214 TC3-6.0204 BAU 2.4200
RDE .8292 RRA -.3729 RC3 .4636 FAU .20277
FDE-4.6499 FRA10.5805 FC3-5.8558 BSP 43706
BDE 3.3800 BRA 9.4288 BC3 6.0382 FSP 4484

MID-COURSE EXECUTION ACCURACY
SGT12553.9 SGR 1082.1 SG3 1203.2
RRT -.7636 RRF -.7982 RTF .9949
SGB12600.5 R23 .0558 R13 -.9952
SG112581.2 SG2 697.1 THA 176.22

ORBIT DETERMINATION ACCURACY
ST 4583.8 SR 876.1 SS 2372.6
CRT -.8324 CRS .8899 CST -.9935
LSA 5209.3 MSA 521.3 SSA 13.1
EL1 4642.1 EL2 479.4 ALF 170.86

LAUNCH DATE OCT 8 1964 FLIGHT TIME 394.00 ARRIVAL DATE NOV 6 1965

HELIOCENTRIC CONIC DISTANCE 887.681 EARTH TO MARS

RL 149.46 LAL -.00 LOL 14.75 VL 32.598 GAL -9.65 AZL 88.37 HCA 276.01 SMA 186.04 ECC .25628 INC 1.6342 V1 29.814
RP 211.87 LAP -1.63 LOP 290.76 VP 23.226 GAP -12.56 AZP 89.83 TAL 309.51 TAP 225.52 RCA 138.36 APO 233.72 V2 25.895
RC 301.687 GL 9.50 GP 5.07 ZAL 153.38 ZAP 42.82 ETS 185.04 ZAE 69.64 ETE 181.33 ZAC 87.37 ETC 259.46 CLP 42.58

PLANETOCENTRIC CONIC

C3 30.854 VHL 5.555 DLA 12.78 RAL 174.40 RAD 6568.2 VEL 12.338 PTH 2.22 VHP 4.719 DPA 16.65 RAP 157.90 ECC 1.5078

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 10 15	2729.06	-27.84	76.66	48.12	95.38	20 55 44	2129.1	-26.81	68.15
90.00	11 30 47	4556.70	11.29	192.16	41.02	63.86	12 46 43	3956.7	7.68	185.33
100.00	21 38 12	2445.44	-29.23	55.64	47.95	96.54	22 18 57	1845.4	-28.02	47.04
100.00	12 45 31	4315.56	12.53	173.78	40.38	62.64	13 57 27	3715.6	8.77	167.02
110.00	23 1 19	2185.36	-32.92	35.27	47.34	99.76	23 37 44	1585.4	-31.23	26.46
110.00	13 38 54	4148.40	15.79	159.24	38.51	59.28	14 48 2	3548.4	11.60	152.64

DIFFERENTIAL CORRECTIONS
TDE-3.4024 TRA 9.7080 TC3-5.9583 BAU 2.4646
RDE .8350 RRA -.3641 RC3 .4443 FAU .19208
FDE-4.5262 FRA10.1868 FC3-5.3896 BSP 44305
BDE 3.5034 BRA 9.7148 BC3 5.9749 FSP 4257

MID-COURSE EXECUTION ACCURACY
SGT12710.7 SGR 1064.8 SG3 1138.8
RRT -.7569 RRF -.7927 RTF .9947
SGB12755.2 R23 .0575 R13 -.9949
SG112736.3 SG2 694.4 THA 176.36

ORBIT DETERMINATION ACCURACY
ST 4673.9 SR 869.1 SS 2316.5
CRT -.8324 CRS .8905 CST -.9934
LSA 5262.9 MSA 518.6 SSA 13.0
EL1 4730.1 EL2 475.9 ALF 171.11

LAUNCH DATE OCT 8 1964 FLIGHT TIME 396.00 ARRIVAL DATE NOV 8 1965

HELIOCENTRIC CONIC DISTANCE 891.708 EARTH TO MARS

RL 149.46 LAL -.00 LOL 14.75 VL 32.602 GAL -9.82 AZL 88.34 HCA 277.21 SMA 186.11 ECC .25834 INC 1.6567 V1 29.814
RP 211.60 LAP -1.64 LOP 291.97 VP 23.266 GAP -12.78 AZP 89.79 TAL 308.87 TAP 226.09 RCA 138.03 APO 234.19 V2 25.926
RC 302.717 GL 9.48 GP 4.98 ZAL 153.88 ZAP 41.91 ETS 185.11 ZAE 68.45 ETE 181.44 ZAC 87.33 ETC 259.41 CLP 41.67

PLANETOCENTRIC CONIC

C3 31.782 VHL 5.638 DLA 12.55 RAL 174.89 RAD 6568.3 VEL 12.376 PTH 2.23 VHP 4.822 DPA 16.46 RAP 158.16 ECC 1.5230

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 14 10	2728.76	-27.84	76.64	49.07	95.39	20 59 39	2128.8	-26.80	68.13
90.00	11 30 48	4571.89	11.74	193.04	41.97	64.05	12 47 0	3971.9	8.15	186.20
100.00	21 41 58	2445.60	-29.23	55.65	48.91	96.53	22 22 44	1845.6	-28.02	47.06
100.00	12 45 41	4330.28	12.99	174.64	41.33	62.84	13 57 52	3730.3	9.25	167.85
110.00	23 4 46	2186.50	-32.94	35.36	48.29	99.71	23 41 13	1586.5	-31.25	26.54
110.00	13 39 22	4162.15	16.27	160.02	39.47	59.51	14 48 45	3562.1	12.10	153.39

DIFFERENTIAL CORRECTIONS
TDE-3.5318 TRA10.0016 TC3-5.8895 BAU 2.5089
RDE .8412 RRA -.3563 RC3 .4258 FAU .18171
FDE-4.4034 FRA 9.8016 FC3-4.9497 BSP 44874
BDE 3.6306 BRA10.0079 BC3 5.9049 FSP 4036

MID-COURSE EXECUTION ACCURACY
SGT12861.8 SGR 1048.4 SG3 1076.8
RRT -.7505 RRF -.7876 RTF .9944
SGB12904.4 R23 .0593 R13 -.9946
SG112885.9 SG2 691.5 THA 176.49

ORBIT DETERMINATION ACCURACY
ST 4762.8 SR 862.3 SS 2260.0
CRT -.8326 CRS .8913 CST -.9932
LSA 5316.9 MSA 515.8 SSA 12.9
EL1 4817.1 EL2 472.2 ALF 171.34

LAUNCH DATE OCT 8 1964 FLIGHT TIME 398.00 ARRIVAL DATE NOV 10 1965

HELIOCENTRIC CONIC DISTANCE 895.727 EARTH TO MARS

RL 149.46 LAL -.00 LOL 14.75 VL 32.606 GAL -10.00 AZL 88.32 HCA 278.43 SMA 186.18 ECC .26050 INC 1.6793 V1 29.814
RP 211.33 LAP -1.66 LOP 293.18 VP 23.305 GAP -12.99 AZP 89.75 TAL 308.22 TAP 226.65 RCA 137.68 APO 234.67 V2 25.956
RC 303.736 GL 9.46 GP 4.89 ZAL 154.39 ZAP 41.03 ETS 185.17 ZAE 67.29 ETE 181.55 ZAC 87.30 ETC 259.36 CLP 40.79

PLANETOCENTRIC CONIC

C3 32.763 VHL 5.724 DLA 12.31 RAL 175.39 RAD 6568.3 VEL 12.415 PTH 2.24 VHP 4.927 DPA 16.25 RAP 158.44 ECC 1.5392

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 18 9	2728.44	-27.84	76.62	50.05	95.40	21 3 38	2128.4	-26.80	68.11
90.00	11 30 47	4587.52	12.20	193.95	42.95	64.25	12 47 15	3987.5	8.64	187.09
100.00	21 45 48	2445.76	-29.24	55.66	49.88	96.53	22 26 34	1845.8	-28.02	47.07
100.00	12 45 49	4345.44	13.46	175.52	42.31	63.06	13 58 15	3745.4	9.74	168.70
110.00	23 8 17	2187.66	-32.95	35.45	49.27	99.66	23 44 45	1587.7	-31.27	26.63
110.00	13 39 50	4176.30	16.76	160.82	40.45	59.76	14 49 26	3576.3	12.61	154.17

DIFFERENTIAL CORRECTIONS
TDE-3.6666 TRA10.2994 TC3-5.8181 BAU 2.5547
RDE .8480 RRA -.3491 RC3 .4085 FAU .17179
FDE-4.2836 FRA 9.4219 FC3-4.5394 BSP 45387
BDE 3.7634 BRA10.3053 BC3 5.8324 FSP 3820

MID-COURSE EXECUTION ACCURACY
SGT13007.1 SGR 1033.1 SG3 1017.1
RRT -.7446 RRF -.7831 RTF .9941
SGB13048.1 R23 .0611 R13 -.9943
SG113029.9 SG2 688.4 THA 176.61

ORBIT DETERMINATION ACCURACY
ST 4851.0 SR 855.7 SS 2203.7
CRT -.8330 CRS .8923 CST -.9930
LSA 5372.0 MSA 512.6 SSA 12.9
EL1 4903.6 EL2 468.3 ALF 171.56

LAUNCH DATE OCT 9 1964 FLIGHT TIME 240.00 ARRIVAL DATE JUN 6 1965

HELIOCENTRIC CONIC DISTANCE 587.161 EARTH TO MARS

RL	149.41	LAL	-.00	LOL	15.74	VL	33.131	GAL	-8.30	AZL	92.87	HCA	193.07	SMA	195.49	ECC	.27434	INC	2.8663
RP	239.26	LAP	.65	LOP	208.79	VP	20.748	GAP	9.36	AZP	87.21	TAL	319.93	TAP	153.00	RCA	141.86	APO	249.12
RC	173.485	GL	-17.53	GP	15.68	ZAL	141.98	ZAP	150.31	ETS	149.15	ZAE	158.74	ETE	47.86	ZAC	103.71	ETC	255.71

V1	29.822	V2	22.959	CLP	154.47														

PLANETOCENTRIC CONIC

C3	29.623	VHL	5.443	DLA	-8.95	RAL	156.23	RAD	6568.2	VEL	12.288	PTH	2.21	VHP	5.975	DPA	14.14	RAP	190.21
ECC	1.4875																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 40 56	2029.33	-14.69	30.08	22.33	114.49	22 14 45	1429.3	-11.26	23.08
90.00	7 27 16	5236.00	26.58	235.79	27.43	79.86	8 54 32	4636.0	24.91	227.52
100.00	22 57 55	1781.00	-15.86	11.25	21.76	115.67	23 27 36	1181.0	-12.28	4.29
100.00	8 52 59	4959.57	27.86	215.19	27.16	78.70	10 15 38	4359.6	26.02	206.87
110.00	0 0 9	1598.44	-18.98	355.71	20.07	118.98	0 26 47	998.4	-14.97	348.89
110.00	10 11 10	4714.88	31.28	195.70	26.26	75.45	11 29 45	4114.9	28.97	187.27

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.8389	TRA	-3.9475	TC3	1.2332	BAU	.5761	SGT	4821.5	SGR	1797.4	SG3	820.5	ST	2311.3	SR	974.0	SS	2296.7
RDE	.8455	RRA	-1.2352	RC3	.7718	FAU	.15689	RRT	.9679	RRF	-.9947	RTF	-.9612	CRT	.9872	CRS	.9968	CST	.9966
FDE	-3.7120	FRA	6.6360	FC3	-4.5851	BSP	17674	SGB	5145.7	R23	-.2270	R13	-.9685	LSA	3396.3	MSA	173.4	SSA	16.7
BDE	2.0240	BRA	4.1363	BC3	1.4548	FSP	2575	SG1	5128.1	SG2	424.5	THA	19.98	EL1	2504.0	EL2	143.5	ALF	22.67

LAUNCH DATE OCT 9 1964 FLIGHT TIME 242.00 ARRIVAL DATE JUN 8 1965

HELIOCENTRIC CONIC DISTANCE 590.676 EARTH TO MARS

RL	149.41	LAL	-.00	LOL	15.74	VL	33.101	GAL	-8.20	AZL	92.56	HCA	194.01	SMA	194.93	ECC	.27160	INC	2.5571
RP	238.95	LAP	.62	LOP	209.74	VP	20.736	GAP	8.91	AZP	87.52	TAL	320.12	TAP	154.13	RCA	141.99	APO	247.87
RC	175.790	GL	-15.90	GP	15.01	ZAL	142.36	ZAP	150.06	ETS	150.92	ZAE	159.58	ETE	47.98	ZAC	103.10	ETC	255.73

V1	29.822	V2	22.991	CLP	153.78														

PLANETOCENTRIC CONIC

C3	28.459	VHL	5.335	DLA	-7.34	RAL	156.59	RAD	6568.1	VEL	12.241	PTH	2.20	VHP	5.828	DPA	13.42	RAP	190.14
ECC	1.4684																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 29 48	2070.97	-15.84	32.59	22.22	113.78	22 4 19	1471.0	-12.50	25.51
90.00	7 41 20	5174.31	25.77	231.46	26.37	77.83	9 7 35	4574.3	23.83	223.32
100.00	22 47 37	1819.92	-17.00	13.59	21.67	114.97	23 17 57	1219.9	-13.49	6.55
100.00	9 6 12	4900.60	27.00	211.01	26.06	76.66	10 27 53	4300.6	24.90	202.85
110.00	23 47 49	1631.44	-20.06	357.66	20.06	118.28	24 15 0	1031.4	-16.12	350.75
110.00	10 22 30	4661.84	30.31	191.88	25.05	73.38	11 40 12	4061.8	27.74	183.63

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.7915	TRA	-3.8895	TC3	1.2894	BAU	.5724	SGT	4830.7	SGR	1746.0	SG3	866.4	ST	2302.3	SR	943.8	SS	2321.0
RDE	.8033	RRA	-1.1755	RC3	.7752	FAU	.16351	RRT	.9674	RRF	-.9939	RTF	-.9624	CRT	.9865	CRS	.9956	CST	.9974
FDE	-3.7426	FRA	6.9254	FC3	-4.9739	BSP	17629	SGB	5136.5	R23	-.2205	R13	-.9692	LSA	3398.6	MSA	165.2	SSA	19.0
BDE	1.9633	BRA	4.0633	BC3	1.5044	FSP	2721	SG1	5119.5	SG2	417.5	THA	19.41	EL1	2484.1	EL2	143.3	ALF	22.10

LAUNCH DATE OCT 9 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUN 10 1965

HELIOCENTRIC CONIC DISTANCE 594.210 EARTH TO MARS

RL	149.41	LAL	-.00	LOL	15.74	VL	33.073	GAL	-8.10	AZL	92.29	HCA	194.96	SMA	194.40	ECC	.26896	INC	2.2862
RP	238.63	LAP	.59	LOP	210.69	VP	20.727	GAP	8.47	AZP	87.79	TAL	320.31	TAP	155.27	RCA	142.11	APO	246.68
RC	178.086	GL	-14.44	GP	14.42	ZAL	142.63	ZAP	149.70	ETS	152.55	ZAE	160.37	ETE	48.37	ZAC	102.58	ETC	255.75

V1	29.822	V2	23.024	CLP	153.06														

PLANETOCENTRIC CONIC

C3	27.435	VHL	5.238	DLA	-5.89	RAL	156.91	RAD	6568.1	VEL	12.199	PTH	2.19	VHP	5.689	DPA	12.80	RAP	190.09
ECC	1.4515																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 19 52	2107.97	-16.85	34.84	22.14	113.10	21 55 0	1508.0	-13.58	27.69
90.00	7 53 46	5119.05	24.92	227.63	25.43	76.10	9 19 5	4519.0	22.76	219.62
100.00	22 38 26	1854.56	-17.98	15.69	21.62	114.29	23 9 20	1254.6	-14.55	8.58
100.00	9 17 54	4847.68	26.12	207.33	25.09	74.91	10 38 42	4247.7	23.79	199.30
110.00	23 40 17	1660.90	-21.00	359.43	20.06	117.61	24 7 58	1060.9	-17.14	352.44
110.00	10 32 32	4614.11	29.33	188.50	24.00	71.60	11 49 27	4014.1	26.54	180.43

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.7447	TRA	-3.8334	TC3	1.3385	BAU	.5679	SGT	4835.2	SGR	1703.4	SG3	913.2	ST	2289.8	SR	918.7	SS	2344.4
RDE	.7679	RRA	-1.1251	RC3	.7785	FAU	.17001	RRT	.9668	RRF	-.9930	RTF	-.9635	CRT	.9857	CRS	.9942	CST	.9980
FDE	-3.7741	FRA	7.2233	FC3	-5.3647	BSP	17654	SGB	5126.4	R23	-.2138	R13	-.9698	LSA	3399.7	MSA	158.9	SSA	21.4
BDE	1.9062	BRA	3.9951	BC3	1.5485	FSP	2885	SG1	5109.8	SG2	412.2	THA	18.94	EL1	2463.1	EL2	143.9	ALF	21.65

LAUNCH DATE OCT 9 1964 FLIGHT TIME 246.00 ARRIVAL DATE JUN 12 1965

HELIOCENTRIC CONIC DISTANCE 597.765 EARTH TO MARS

RL	149.41	LAL	-.00	LOL	15.74	VL	33.045	GAL	-8.00	AZL	92.05	HCA	195.91	SMA	193.88	ECC	.26641	INC	2.0457
RP	238.31	LAP	.56	LOP	211.64	VP	20.720	GAP	8.03	AZP	88.03	TAL	320.49	TAP	156.41	RCA	142.23	APO	245.54
RC	180.373	GL	-13.11	GP	13.90	ZAL	142.82	ZAP	149.26	ETS	154.05	ZAE	161.15	ETE	49.03	ZAC	102.12	ETC	255.77

V1	29.822	V2	23.056	CLP	152.31														

PLANETOCENTRIC CONIC

C3	26.522	VHL	5.150	DLA	-4.57	RAL	157.18	RAD	6568.1	VEL	12.161	PTH	2.18	VHP	5.555	DPA	12.25	RAP	190.05
ECC	1.4365																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 10 55	2141.19	-17.72	36.89	22.08	112.45	21 46 36	1541.2	-14.53	29.67
90.00	8 4 53	5069.00	24.06	224.22	24.60	74.59	9 29 22	4469.0	21.71	216.33
100.00	22 30 6	1885.71	-18.84	17.60	21.57	113.65	23 1 32	1285.7	-15.48	10.42
100.00	9 28 22	4799.72	25.22	204.05	24.23	73.40	10 48 22	4199.7	22.71	196.15
110.00	23 33 26	1687.45	-21.83	1.05	20.07	116.98	24 1 34	1087.5	-18.03	353.97
110.00	10 41 32	4570.74	28.36	185.50	23.07	70.07	11 57 43	3970.7	25.38	177.59

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.7222	TRA	-3.7538	TC3	1.4183	BAU	.5754	SGT	4833.0	SGR	1669.9	SG3	961.9	ST	2292.0	SR	901.6	SS	2376.6
RDE	.7424	RRA	-1.0777	RC3	.7887	FAU	.17764	RRT	.9675	RRF	-.9920	RTF	-.9659	CRT	.9858	CRS	.9927	CST	.9987
FDE	-3.8321	FRA	7.5021	FC3	-5.7985	BSP	17137	SGB	5113.4	R23	-.2018	R13	-.9716	LSA	3419.3	MSA	148.5	SSA	23.9
BDE	1.8754	BRA	3.9054	BC3	1.6228	FSP	3012	SG1	5097.7	SG2	400.5	THA	18.60	EL1	2458.9	EL2	141.2	ALF	21.27

LAUNCH DATE OCT 9 1964 FLIGHT TIME 248.00 ARRIVAL DATE JUN 14 1965

HELIOCENTRIC CONIC DISTANCE 601.334 EARTH TO MARS

RL 149.41 LAL -.00 LOL 15.74 VL 33.019 GAL -7.91 AZL 91.83 HCA 196.87 SMA 193.40 ECC .26397 INC 1.8317 V1 29.822
RP 237.98 LAP .53 LOP 212.60 VP 20.715 GAP 7.60 AZP 88.25 TAL 320.68 TAP 157.54 RCA 142.35 APO 244.45 V2 23.089
RC 182.651 GL -11.90 GP 13.45 ZAL 142.95 ZAP 148.75 ETS 155.44 ZAE 161.90 ETE 49.97 ZAC 101.72 ETC 255.78 CLP 151.53

PLANETOCENTRIC CONIC

C3 25.702 VHL 5.070 DLA -3.35 RAL 157.41 RAD 6568.0 VEL 12.128 PTH 2.17 VHP 5.427 DPA 11.77 RAP 190.01 ECC 1.4230

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 2 44	2171.32	-18.50	38.76	22.03	111.83	21 38 56	1571.3	-15.37	31.48
90.00	8 14 56	5023.33	23.20	221.15	23.85	73.29	9 38 39	4423.3	20.69	213.37
100.00	22 22 31	1913.98	-19.60	19.35	21.54	113.03	22 54 25	1314.0	-16.32	12.10
100.00	9 37 50	4755.91	24.34	201.09	23.46	72.09	10 57 6	4155.9	21.66	193.32
110.00	23 27 10	1711.58	-22.57	2.53	20.08	116.38	23 55 42	1111.6	-18.84	355.38
110.00	10 49 40	4531.07	27.41	182.81	22.25	68.73	12 5 11	3931.1	24.27	175.05

DIFFERENTIAL CORRECTIONS
TDE 1.6721 TRA-3.7027 TC3 1.4491 BAU .5677
RDE .7176 RRA-1.0409 RC3 .7936 FAU .18436
FDE-3.8729 FRA 7.8122 FC3-6.2097 BSP 17325
BDE 1.8196 BRA 3.8462 BC3 1.6522 FSP 3196

MID-COURSE EXECUTION ACCURACY
SGT 4827.1 SGR 1641.3 SG3 1011.4
RRT .9661 RRF -.9909 RTF -.9662
SGB 5098.5 R23 -.1972 R13 -.9717
SG1 5082.6 SG2 402.2 THA 18.30

ORBIT DETERMINATION ACCURACY
ST 2270.3 SR 885.0 SS 2401.6
CRT .9845 CRS .9910 CST .9990
LSA 3418.0 MSA 148.9 SSA 25.8
EL1 2432.4 EL2 144.8 ALF 21.07

LAUNCH DATE OCT 9 1964 FLIGHT TIME 250.00 ARRIVAL DATE JUN 16 1965

HELIOCENTRIC CONIC DISTANCE 604.919 EARTH TO MARS

RL 149.41 LAL -.00 LOL 15.74 VL 32.994 GAL -7.82 AZL 91.64 HCA 197.83 SMA 192.93 ECC .26163 INC 1.6389 V1 29.822
RP 237.65 LAP .50 LOP 213.56 VP 20.713 GAP 7.17 AZP 88.44 TAL 320.85 TAP 158.68 RCA 142.46 APO 243.41 V2 23.123
RC 184.919 GL -10.79 GP 13.05 ZAL 143.02 ZAP 148.18 ETS 156.71 ZAE 162.63 ETE 51.20 ZAC 101.36 ETC 255.79 CLP 150.72

PLANETOCENTRIC CONIC

C3 24.959 VHL 4.996 DLA -2.23 RAL 157.62 RAD 6568.0 VEL 12.097 PTH 2.17 VHP 5.304 DPA 11.34 RAP 189.97 ECC 1.4108

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 55 13	2198.86	-19.18	40.49	21.98	111.24	21 31 52	1598.9	-16.13	33.15
90.00	8 24 4	4981.32	22.35	218.36	23.18	72.14	9 47 5	4381.3	19.69	210.69
100.00	22 15 31	1939.82	-20.28	20.97	21.52	112.44	22 47 51	1339.8	-17.07	13.66
100.00	9 46 27	4715.59	23.47	198.41	22.77	70.94	11 5 3	4115.6	20.65	190.75
110.00	23 21 23	1733.66	-23.23	3.90	20.10	115.81	23 50 16	1133.7	-19.56	356.68
110.00	10 57 5	4494.52	26.48	180.37	21.51	67.55	12 11 59	3894.5	23.21	172.74

DIFFERENTIAL CORRECTIONS
TDE 1.6275 TRA-3.6463 TC3 1.4829 BAU .5625
RDE .6980 RRA-1.0081 RC3 .8018 FAU .19164
FDE-3.9260 FRA 8.1218 FC3-6.6474 BSP 17398
BDE 1.7709 BRA 3.7831 BC3 1.6858 FSP 3371

MID-COURSE EXECUTION ACCURACY
SGT 4816.0 SGR 1619.1 SG3 1062.7
RRT .9649 RRF -.9898 RTF -.9666
SGB 5080.8 R23 -.1923 R13 -.9719
SG1 5064.7 SG2 404.5 THA 18.09

ORBIT DETERMINATION ACCURACY
ST 2249.9 SR 872.9 SS 2430.5
CRT .9833 CRS .9892 CST .9992
LSA 3421.7 MSA 150.3 SSA 27.4
EL1 2408.7 EL2 148.5 ALF 20.96

LAUNCH DATE OCT 9 1964 FLIGHT TIME 252.00 ARRIVAL DATE JUN 18 1965

HELIOCENTRIC CONIC DISTANCE 608.521 EARTH TO MARS

RL 149.41 LAL -.00 LOL 15.74 VL 32.970 GAL -7.73 AZL 91.47 HCA 198.79 SMA 192.49 ECC .25937 INC 1.4651 V1 29.822
RP 237.31 LAP .47 LOP 214.52 VP 20.713 GAP 6.75 AZP 88.61 TAL 321.03 TAP 159.81 RCA 142.56 APO 242.42 V2 23.157
RC 187.176 GL -9.76 GP 12.70 ZAL 143.05 ZAP 147.55 ETS 157.90 ZAE 163.35 ETE 52.74 ZAC 101.04 ETC 255.80 CLP 149.88

PLANETOCENTRIC CONIC

C3 24.281 VHL 4.928 DLA -1.20 RAL 157.79 RAD 6568.0 VEL 12.069 PTH 2.16 VHP 5.184 DPA 10.97 RAP 189.93 ECC 1.3996

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 48 14	2224.20	-19.80	42.09	21.94	110.67	21 25 18	1624.2	-16.81	34.69
90.00	8 32 28	4942.43	21.51	215.82	22.58	71.13	9 54 50	4342.4	18.74	208.24
100.00	22 9 2	1963.61	-20.89	22.47	21.49	111.88	22 41 45	1363.6	-17.74	15.10
100.00	9 54 22	4678.26	22.62	195.97	22.15	69.92	11 12 20	4078.3	19.68	188.40
110.00	23 15 59	1753.98	-23.82	5.18	20.11	115.27	23 45 13	1154.0	-20.22	357.89
110.00	11 3 53	4460.65	25.58	178.15	20.85	66.52	12 18 14	3860.6	22.19	170.64

DIFFERENTIAL CORRECTIONS
TDE 1.5851 TRA-3.5868 TC3 1.5146 BAU .5577
RDE .6818 RRA -.9798 RC3 .8111 FAU .19911
FDE-3.9829 FRA 8.4403 FC3-7.0993 BSP 17424
BDE 1.7255 BRA 3.7182 BC3 1.7182 FSP 3557

MID-COURSE EXECUTION ACCURACY
SGT 4798.6 SGR 1601.9 SG3 1115.7
RRT .9637 RRF -.9886 RTF -.9671
SGB 5058.9 R23 -.1867 R13 -.9723
SG1 5042.5 SG2 406.8 THA 17.95

ORBIT DETERMINATION ACCURACY
ST 2228.3 SR 863.7 SS 2460.1
CRT .9821 CRS .9873 CST .9994
LSA 3426.2 MSA 152.4 SSA 28.8
EL1 2385.0 EL2 151.9 ALF 20.93

LAUNCH DATE OCT 9 1964 FLIGHT TIME 254.00 ARRIVAL DATE JUN 20 1965

HELIOCENTRIC CONIC DISTANCE 612.139 EARTH TO MARS

RL 149.41 LAL -.00 LOL 15.74 VL 32.947 GAL -7.65 AZL 91.31 HCA 199.75 SMA 192.07 ECC .25721 INC 1.3071 V1 29.822
RP 236.98 LAP .44 LOP 215.48 VP 20.715 GAP 6.33 AZP 88.77 TAL 321.20 TAP 160.95 RCA 142.67 APO 241.47 V2 23.191
RC 189.421 GL -8.81 GP 12.38 ZAL 143.04 ZAP 146.86 ETS 159.00 ZAE 164.04 ETE 54.61 ZAC 100.76 ETC 255.81 CLP 149.02

PLANETOCENTRIC CONIC

C3 23.658 VHL 4.864 DLA -.23 RAL 157.95 RAD 6568.0 VEL 12.043 PTH 2.15 VHP 5.069 DPA 10.64 RAP 189.88 ECC 1.3894

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 41 43	2247.68	-20.36	43.59	21.90	110.12	21 19 11	1647.7	-17.43	36.13
90.00	8 40 13	4906.22	20.70	213.47	22.03	70.23	10 1 59	4306.2	17.81	205.98
100.00	22 2 57	1985.65	-21.45	23.88	21.46	111.34	22 36 3	1385.7	-18.36	16.45
100.00	10 1 40	4643.49	21.79	193.72	21.59	69.01	11 19 3	4043.5	18.74	186.25
110.00	23 10 57	1772.81	-24.37	6.37	20.12	114.75	23 40 30	1172.8	-20.82	359.02
110.00	11 10 9	4429.09	24.71	176.11	20.26	65.60	12 23 59	3829.1	21.21	168.72

DIFFERENTIAL CORRECTIONS
TDE 1.5451 TRA-3.5245 TC3 1.5449 BAU .5535
RDE .6686 RRA -.9552 RC3 .8223 FAU .20692
FDE-4.0463 FRA 8.7657 FC3-7.5719 BSP 17401
BDE 1.6835 BRA 3.6516 BC3 1.7501 FSP 3746

MID-COURSE EXECUTION ACCURACY
SGT 4775.8 SGR 1589.5 SG3 1170.7
RRT .9626 RRF -.9874 RTF -.9676
SGB 5033.3 R23 -.1810 R13 -.9727
SG1 5016.6 SG2 409.7 THA 17.89

ORBIT DETERMINATION ACCURACY
ST 2205.9 SR 857.3 SS 2491.4
CRT .9810 CRS .9853 CST .9995
LSA 3432.6 MSA 155.4 SSA 29.9
EL1 2361.5 EL2 155.4 ALF 20.96

LAUNCH DATE OCT 9 1964 FLIGHT TIME 256.00 ARRIVAL DATE JUN 22 1965

HELIOCENTRIC CONIC DISTANCE 615.772 EARTH TO MARS

RL	149.41	LAL	-.00	LOL	15.74	VL	32.925	GAL	-7.57	AZL	91.16	HCA	200.71	SMA	191.67	ECC	.25514	INC	1.1627
RP	236.64	LAP	.41	LOP	216.45	VP	20.719	GAP	5.92	AZP	88.91	TAL	321.37	TAP	162.08	RCA	142.77	APO	240.57
RC	191.655	GL	-7.92	GP	12.10	ZAL	143.01	ZAP	146.13	ETS	160.02	ZAE	164.71	ETE	56.85	ZAC	100.50	ETC	255.82

V1	29.822	V2	23.226	CLP	148.12														

PLANETOCENTRIC CONIC

C3	23.085	VHL	4.805	DLA	.67	RAL	158.08	RAD	6567.9	VEL	12.019	PTH	2.15	VHP	4.957	DPA	10.36	RAP	189.82

ECC	1.3799																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 35 36	2269.56	-20.86	44.99	21.87	109.59	21 13 25	1669.6	-18.00	37.49
90.00	8 47 25	4872.36	19.90	211.31	21.52	69.43	10 8 37	4272.4	16.92	203.90
100.00	21 57 15	2006.19	-21.95	25.20	21.44	110.82	22 30 41	1406.2	-18.92	17.71
100.00	10 8 27	4610.97	20.98	191.64	21.08	68.20	11 25 18	4011.0	17.84	184.26
110.00	23 6 12	1790.35	-24.86	7.50	20.12	114.25	23 36 2	1190.4	-21.37	.08
110.00	11 15 59	4399.57	23.87	174.23	19.72	64.77	12 29 19	3799.6	20.27	166.94

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.5077	TRA	-3.4579	TC3	1.5745	BAU	.5501	SGT	4746.4	SGR	1581.4	SG3	1227.8	ST	2183.0	SR	853.4	SS	2524.9
RDE	.6582	RRA	-.9337	RC3	.8355	FAU	.21517	RRT	.9617	RRF	-.9861	RTF	-.9681	CRT	.9800	CRS	.9833	CST	.9997
FDE	-4.1173	FRA	9.0969	FC3	-8.0694	BSP	17315	SGB	5002.9	R23	-.1750	R13	-.9732	LSA	3441.3	MSA	159.2	SSA	30.7
BDE	1.6452	BRA	3.5817	BC3	1.7825	FSP	3938	SG1	4985.8	SG2	412.8	THA	17.89	EL1	2338.5	EL2	158.6	ALF	21.06

LAUNCH DATE OCT 9 1964 FLIGHT TIME 258.00 ARRIVAL DATE JUN 24 1965

HELIOCENTRIC CONIC DISTANCE 619.419 EARTH TO MARS

RL	149.41	LAL	-.00	LOL	15.74	VL	32.904	GAL	-7.49	AZL	91.03	HCA	201.68	SMA	191.28	ECC	.25315	INC	1.0304
RP	236.29	LAP	.38	LOP	217.42	VP	20.724	GAP	5.51	AZP	89.04	TAL	321.53	TAP	163.21	RCA	142.86	APO	239.71
RC	193.877	GL	-7.10	GP	11.85	ZAL	142.96	ZAP	145.35	ETS	160.97	ZAE	165.36	ETE	59.48	ZAC	100.27	ETC	255.83

V1	29.822	V2	23.261	CLP	147.20														

PLANETOCENTRIC CONIC

C3	22.554	VHL	4.749	DLA	1.51	RAL	158.20	RAD	6567.9	VEL	11.997	PTH	2.14	VHP	4.849	DPA	10.12	RAP	189.76

ECC	1.3712																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 29 49	2290.06	-21.33	46.32	21.83	109.08	21 7 59	1690.1	-18.53	38.76
90.00	8 54 9	4840.56	19.13	209.30	21.07	68.71	10 14 49	4240.6	16.07	201.96
100.00	21 51 52	2025.42	-22.41	26.44	21.41	110.32	22 25 37	1425.4	-19.44	18.90
100.00	10 14 47	4580.43	20.19	189.71	20.61	67.48	11 31 8	3980.4	16.97	182.40
110.00	23 1 43	1806.77	-25.32	8.56	20.12	113.78	23 31 50	1206.8	-21.88	1.08
110.00	11 21 25	4371.85	23.05	172.49	19.23	64.03	12 34 17	3771.8	19.37	165.29

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.4696	TRA	-3.3905	TC3	1.5977	BAU	.5456	SGT	4710.7	SGR	1576.9	SG3	1286.9	ST	2157.0	SR	851.4	SS	2558.9
RDE	.6497	RRA	-.9156	RC3	.8497	FAU	.22362	RRT	.9606	RRF	-.9849	RTF	-.9686	CRT	.9789	CRS	.9811	CST	.9998
FDE	-4.1913	FRA	9.4405	FC3	-8.5835	BSP	17227	SGB	4967.6	R23	-.1695	R13	-.9736	LSA	3449.3	MSA	164.2	SSA	31.3
BDE	1.6068	BRA	3.5120	BC3	1.8096	FSP	4140	SG1	4950.1	SG2	416.9	THA	17.96	EL1	2313.3	EL2	162.0	ALF	21.24

LAUNCH DATE OCT 9 1964 FLIGHT TIME 260.00 ARRIVAL DATE JUN 26 1965

HELIOCENTRIC CONIC DISTANCE 623.083 EARTH TO MARS

RL	149.41	LAL	-.00	LOL	15.74	VL	32.884	GAL	-7.41	AZL	90.91	HCA	202.65	SMA	190.92	ECC	.25124	INC	.9083
RP	235.94	LAP	.35	LOP	218.39	VP	20.732	GAP	5.11	AZP	89.16	TAL	321.69	TAP	164.34	RCA	142.95	APO	238.88
RC	196.086	GL	-6.32	GP	11.63	ZAL	142.88	ZAP	144.52	ETS	161.86	ZAE	165.97	ETE	62.55	ZAC	100.06	ETC	255.84

V1	29.822	V2	23.297	CLP	146.24														

PLANETOCENTRIC CONIC

C3	22.062	VHL	4.697	DLA	2.30	RAL	158.31	RAD	6567.9	VEL	11.977	PTH	2.13	VHP	4.743	DPA	9.91	RAP	189.68

ECC	1.3631																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 24 20	2309.35	-21.75	47.58	21.79	108.59	21 2 50	1709.3	-19.01	39.97
90.00	9 0 28	4810.56	18.37	207.42	20.64	68.07	10 20 38	4210.6	15.24	200.14
100.00	21 46 45	2043.51	-22.83	27.62	21.38	109.84	22 20 49	1443.5	-19.92	20.03
100.00	10 20 44	4551.63	19.43	187.91	20.18	66.83	11 36 36	3951.6	16.13	180.67
110.00	22 57 27	1822.21	-25.74	9.56	20.12	113.32	23 27 50	1222.2	-22.36	2.03
110.00	11 26 31	4345.70	22.27	170.87	18.77	63.37	12 38 57	3745.7	18.51	163.75

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.4467	TRA	-3.3060	TC3	1.6438	BAU	.5484	SGT	4667.8	SGR	1577.1	SG3	1348.8	ST	2140.7	SR	853.1	SS	2600.3
RDE	.6450	RRA	-.8978	RC3	.8691	FAU	.23333	RRT	.9608	RRF	-.9836	RTF	-.9698	CRT	.9789	CRS	.9792	CST	.9998
FDE	-4.2897	FRA	9.7721	FC3	-9.1563	BSP	16761	SGB	4927.0	R23	-.1601	R13	-.9746	LSA	3470.2	MSA	168.2	SSA	31.5
BDE	1.5840	BRA	3.4257	BC3	1.8594	FSP	4306	SG1	4909.4	SG2	415.5	THA	18.12	EL1	2298.7	EL2	162.2	ALF	21.42

LAUNCH DATE OCT 9 1964 FLIGHT TIME 262.00 ARRIVAL DATE JUN 28 1965

HELIOCENTRIC CONIC DISTANCE 626.756 EARTH TO MARS

RL	149.41	LAL	-.00	LOL	15.74	VL	32.865	GAL	-7.34	AZL	90.80	HCA	203.63	SMA	190.57	ECC	.24942	INC	.7955
RP	235.59	LAP	.32	LOP	219.36	VP	20.742	GAP	4.72	AZP	89.27	TAL	321.84	TAP	165.47	RCA	143.04	APO	238.10
RC	198.280	GL	-5.59	GP	11.43	ZAL	142.79	ZAP	143.65	ETS	162.70	ZAE	166.53	ETE	66.08	ZAC	99.86	ETC	255.85

V1	29.822	V2	23.333	CLP	145.26														

PLANETOCENTRIC CONIC

C3	21.606	VHL	4.648	DLA	3.05	RAL	158.40	RAD	6567.9	VEL	11.958	PTH	2.13	VHP	4.641	DPA	9.73	RAP	189.58

ECC	1.3556																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 19 9	2327.58	-22.14	48.79	21.76	108.12	20 57 56	1727.6	-19.46	41.12
90.00	9 6 25	4782.24	17.65	205.66	20.26	67.49	10 26 8	4182.2	14.44	198.45
100.00	21 41 55	2060.61	-23.22	28.74	21.36	109.37	22 16 15	1460.6	-20.37	21.10
100.00	10 26 20	4524.44	18.70	186.23	19.79	66.24	11 41 45	3924.4	15.33	179.06
110.00	22 53 25	1836.79	-26.12	10.51	20.13	112.87	23 24 2	1236.8	-22.80	2.93
110.00	11 31 19	4321.03	21.50	169.36	18.36	62.77	12 43 20	3721.0	17.68	162.32

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.3970	TRA	-3.2464	TC3	1.6344	BAU	.5366	SGT	4618.7	SGR	1578.3	SG3	1412.0	ST	2100.6	SR	853.0	SS	2632.2
RDE	.6383	RRA	-.8868	RC3	.8829	FAU	.24175	RRT	.9587	RRF	-.9824	RTF	-.9693	CRT	.9772	CRS	.9769	CST	.9998
FDE	-4.3593	FRA	10.1541	FC3	-9.6869	BSP	16927	SGB	4880.9	R23	-.1587	R13	-.9743	LSA	3469.4	MSA	176.4	SSA	31.9
BDE	1.5359	BRA	3.3653	BC3	1.8576	FSP	4557	SG1	4862.3	SG2	426.4	THA	18.28	EL1	2260.9	EL2	168.4	ALF	21.77

LAUNCH DATE OCT 9 1964 FLIGHT TIME 264.00 ARRIVAL DATE JUN 30 1965

HELIOCENTRIC CONIC DISTANCE 630.443 EARTH TO MARS

RL 149.41 LAL -.00 LOL 15.74 VL 32.846 GAL -7.27 AZL 90.69 HCA 204.61 SMA 190.24 ECC .24767 INC .6908 V1 29.822
RP 235.24 LAP .29 LOP 220.34 VP 20.753 GAP 4.33 AZP 89.37 TAL 321.99 TAP 166.59 RCA 143.12 APO 237.35 V2 23.369
RC 200.460 GL -4.90 GP 11.26 ZAL 142.69 ZAP 142.73 ETS 163.49 ZAE 167.03 ETE 70.11 ZAC 99.68 ETC 255.86 CLP 144.24

PLANETOCENTRIC CONIC

C3 21.181 VHL 4.602 DLA 3.76 RAL 158.49 RAD 6567.9 VEL 11.940 PTH 2.12 VHP 4.542 DPA 9.59 RAP 189.47 ECC 1.3486

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 14 11	2344.88	-22.50	49.91	21.73	107.66	20 53 16	1744.9	-19.88	42.22
90.00	9 12 4	4755.38	16.94	204.00	19.91	66.96	10 31 19	4155.4	13.67	196.85
100.00	21 37 17	2076.83	-23.59	29.81	21.34	108.92	22 11 54	1476.8	-20.79	22.13
100.00	10 31 39	4498.66	17.98	184.65	19.43	65.71	11 46 37	3898.7	14.55	177.53
110.00	22 49 34	1850.60	-26.49	11.42	20.13	112.44	23 20 25	1250.6	-23.21	3.80
110.00	11 35 51	4297.66	20.77	167.95	17.99	62.22	12 47 29	3697.7	16.89	160.97

DIFFERENTIAL CORRECTIONS
TDE 1.3579 TRA-3.1730 TC3 1.6398 BAU .5298
RDE .6343 RRA -.8764 RC3 .9007 FAU .25115
FDE-4.4457 FRA10.5317 FC-10.2651 BSP 16803
BDE 1.4987 BRA 3.2918 BC3 1.8709 FSP 4786

MID-COURSE EXECUTION ACCURACY
SGT 4561.5 SGR 1583.2 SG3 1477.8
RRT .9575 RRF -.9812 RTF -.9694
SGB 4828.4 R23 -.1545 R13 -.9745
SG1 4809.0 SG2 433.1 THA 18.54

ORBIT DETERMINATION ACCURACY
ST 2066.4 SR 855.5 SS 2669.0
CRT .9762 CRS .9747 CST .9998
LSA 3477.2 MSA 183.8 SSA 32.0
EL1 2229.9 EL2 172.1 ALF 22.14

LAUNCH DATE OCT 9 1964 FLIGHT TIME 266.00 ARRIVAL DATE JUL 2 1965

HELIOCENTRIC CONIC DISTANCE 634.144 EARTH TO MARS

RL 149.41 LAL -.00 LOL 15.74 VL 32.829 GAL -7.21 AZL 90.59 HCA 205.59 SMA 189.92 ECC .24600 INC .5937 V1 29.822
RP 234.89 LAP .26 LOP 221.32 VP 20.766 GAP 3.94 AZP 89.46 TAL 322.13 TAP 167.72 RCA 143.20 APO 236.64 V2 23.405
RC 202.623 GL -4.25 GP 11.10 ZAL 142.59 ZAP 141.78 ETS 164.23 ZAE 167.47 ETE 74.66 ZAC 99.51 ETC 255.87 CLP 143.19

PLANETOCENTRIC CONIC

C3 20.786 VHL 4.559 DLA 4.43 RAL 158.57 RAD 6567.8 VEL 11.923 PTH 2.12 VHP 4.446 DPA 9.48 RAP 189.34 ECC 1.3421

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 9 27	2361.35	-22.84	51.00	21.70	107.21	20 48 49	1761.4	-20.27	43.27
90.00	9 17 25	4729.86	16.25	202.44	19.59	66.49	10 36 15	4129.9	12.93	195.34
100.00	21 32 53	2092.27	-23.92	30.83	21.32	108.48	22 7 45	1492.3	-21.18	23.11
100.00	10 36 41	4474.17	17.29	183.16	19.10	65.23	11 51 15	3874.2	13.81	176.10
110.00	22 45 54	1863.75	-26.83	12.30	20.14	112.03	23 16 58	1263.7	-23.60	4.62
110.00	11 40 9	4275.46	20.06	166.62	17.64	61.72	12 51 25	3675.5	16.12	159.70

DIFFERENTIAL CORRECTIONS
TDE 1.3207 TRA-3.0947 TC3 1.6432 BAU .5233
RDE .6317 RRA -.8678 RC3 .9199 FAU .26097
FDE-4.5384 FRA10.9189 FC-10.8694 BSP 16603
BDE 1.4640 BRA 3.2141 BC3 1.8832 FSP 5019

MID-COURSE EXECUTION ACCURACY
SGT 4496.5 SGR 1590.7 SG3 1546.0
RRT .9565 RRF -.9801 RTF -.9695
SGB 4769.4 R23 -.1499 R13 -.9748
SG1 4749.1 SG2 439.2 THA 18.86

ORBIT DETERMINATION ACCURACY
ST 2031.3 SR 859.4 SS 2707.2
CRT .9754 CRS .9726 CST .9997
LSA 3486.6 MSA 191.4 SSA 32.0
EL1 2198.7 EL2 175.0 ALF 22.58

LAUNCH DATE OCT 9 1964 FLIGHT TIME 268.00 ARRIVAL DATE JUL 4 1965

HELIOCENTRIC CONIC DISTANCE 637.857 EARTH TO MARS

RL 149.41 LAL -.00 LOL 15.74 VL 32.812 GAL -7.14 AZL 90.50 HCA 206.57 SMA 189.62 ECC .24441 INC .5029 V1 29.822
RP 234.53 LAP .22 LOP 222.30 VP 20.781 GAP 3.56 AZP 89.55 TAL 322.27 TAP 168.84 RCA 143.27 APO 235.96 V2 23.442
RC 204.770 GL -3.63 GP 10.96 ZAL 142.47 ZAP 140.78 ETS 164.94 ZAE 167.81 ETE 79.70 ZAC 99.35 ETC 255.88 CLP 142.10

PLANETOCENTRIC CONIC

C3 20.417 VHL 4.519 DLA 5.07 RAL 158.64 RAD 6567.8 VEL 11.908 PTH 2.12 VHP 4.353 DPA 9.39 RAP 189.19 ECC 1.3360

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 4 56	2377.08	-23.15	52.05	21.68	106.78	20 44 33	1777.1	-20.63	44.28
90.00	9 22 32	4705.56	15.59	200.97	19.29	66.06	10 40 57	4105.6	12.22	193.91
100.00	21 28 40	2107.01	-24.24	31.81	21.31	108.05	22 3 47	1507.0	-21.54	24.05
100.00	10 41 29	4450.87	16.62	181.75	18.80	64.79	11 55 40	3850.9	13.09	174.74
110.00	22 42 23	1876.29	-27.14	13.13	20.14	111.62	23 13 39	1276.3	-23.96	5.41
110.00	11 44 15	4254.38	19.37	165.36	17.33	61.27	12 55 9	3654.4	15.39	158.51

DIFFERENTIAL CORRECTIONS
TDE 1.2820 TRA-3.0151 TC3 1.6377 BAU .5155
RDE .6300 RRA -.8614 RC3 .9402 FAU .27109
FDE-4.6341 FRA11.3205 FC-11.4947 BSP 16408
BDE 1.4284 BRA 3.1357 BC3 1.8884 FSP 5263

MID-COURSE EXECUTION ACCURACY
SGT 4423.2 SGR 1600.8 SG3 1616.7
RRT .9554 RRF -.9790 RTF -.9695
SGB 4704.0 R23 -.1461 R13 -.9749
SG1 4682.7 SG2 446.5 THA 19.26

ORBIT DETERMINATION ACCURACY
ST 1992.6 SR 864.3 SS 2746.0
CRT .9746 CRS .9704 CST .9996
LSA 3495.3 MSA 199.6 SSA 31.9
EL1 2164.7 EL2 178.1 ALF 23.08

LAUNCH DATE OCT 9 1964 FLIGHT TIME 270.00 ARRIVAL DATE JUL 6 1965

HELIOCENTRIC CONIC DISTANCE 641.583 EARTH TO MARS

RL 149.41 LAL -.00 LOL 15.74 VL 32.795 GAL -7.08 AZL 90.42 HCA 207.56 SMA 189.33 ECC .24289 INC .4177 V1 29.822
RP 234.17 LAP .19 LOP 223.29 VP 20.798 GAP 3.19 AZP 89.63 TAL 322.40 TAP 169.95 RCA 143.35 APO 235.32 V2 23.479
RC 206.900 GL -3.04 GP 10.83 ZAL 142.36 ZAP 139.74 ETS 165.61 ZAE 168.04 ETE 85.22 ZAC 99.20 ETC 255.89 CLP 140.98

PLANETOCENTRIC CONIC

C3 20.074 VHL 4.480 DLA 5.68 RAL 158.71 RAD 6567.8 VEL 11.893 PTH 2.11 VHP 4.262 DPA 9.33 RAP 189.01 ECC 1.3304

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 0 35	2392.16	-23.44	53.05	21.66	106.35	20 40 28	1792.2	-20.98	45.25
90.00	9 27 25	4682.40	14.94	199.58	19.03	65.66	10 45 27	4082.4	11.53	192.56
100.00	21 24 37	2121.13	-24.53	32.76	21.30	107.64	21 59 58	1521.1	-21.89	24.96
100.00	10 46 4	4428.66	15.97	180.42	18.53	64.39	11 59 53	3828.7	12.39	173.46
110.00	22 39 1	1888.29	-27.44	13.94	20.16	111.23	23 10 29	1288.3	-24.31	6.17
110.00	11 48 10	4234.26	18.71	164.18	17.04	60.86	12 58 44	3634.3	14.68	157.38

DIFFERENTIAL CORRECTIONS
TDE 1.2438 TRA-2.9311 TC3 1.6271 BAU .5072
RDE .6294 RRA -.8565 RC3 .9618 FAU .28165
FDE-4.7361 FRA11.7317 FC-12.1468 BSP 16155
BDE 1.3940 BRA 3.0536 BC3 1.8901 FSP 5509

MID-COURSE EXECUTION ACCURACY
SGT 4341.0 SGR 1613.1 SG3 1689.7
RRT .9544 RRF -.9779 RTF -.9694
SGB 4631.1 R23 -.1425 R13 -.9750
SG1 4608.8 SG2 453.8 THA 19.73

ORBIT DETERMINATION ACCURACY
ST 1951.7 SR 870.4 SS 2786.2
CRT .9740 CRS .9683 CST .9995
LSA 3505.1 MSA 208.0 SSA 31.7
EL1 2129.3 EL2 180.7 ALF 23.66

LAUNCH DATE OCT 9 1964 FLIGHT TIME 272.00 ARRIVAL DATE JUL 8 1965

HELIOCENTRIC CONIC DISTANCE 645.320 EARTH TO MARS

RL 149.41 LAL -.00 LOL 15.74 VL 32.780 GAL -7.03 AZL 90.34 HCA 208.55 SMA 189.06 ECC .24144 INC .3377 V1 29.822
RP 233.80 LAP .16 LOP 224.28 VP 20.816 GAP 2.82 AZP 89.70 TAL 322.52 TAP 171.07 RCA 143.41 APO 234.71 V2 23.517
RC 209.011 GL -2.47 GP 10.72 ZAL 142.24 ZAP 138.66 ETS 166.24 ZAE 168.15 ETE 91.11 ZAC 99.05 ETC 255.91 CLP 139.83

PLANETOCENTRIC CONIC

C3 19.754 VHL 4.445 DLA 6.26 RAL 158.77 RAD 6567.8 VEL 11.880 PTH 2.11 VHP 4.174 DPA 9.29 RAP 188.82 ECC 1.3251

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 56 26	2406.63	-23.72	54.03	21.65	105.94	20 36 32	1806.6	-21.30	46.19
90.00	9 32 6	4660.28	14.32	198.25	18.78	65.31	10 49 46	4060.3	10.87	191.27
100.00	21 20 45	2134.68	-24.81	33.67	21.30	107.23	21 56 19	1534.7	-22.21	25.83
100.00	10 50 28	4407.47	15.34	179.16	18.28	64.03	12 3 55	3807.5	11.73	172.24
110.00	22 35 48	1899.80	-27.72	14.72	20.17	110.85	23 7 28	1299.8	-24.63	6.91
110.00	11 51 54	4215.11	18.07	163.06	16.78	60.48	13 2 9	3615.1	14.01	156.31

DIFFERENTIAL CORRECTIONS
TDE 1.2045 TRA-2.8446 TC3 1.6079 BAU .4979
RDE .6296 RRA -.8533 RC3 .9842 FAU .29251
FDE-4.8406 FRA12.1567 FC-12.8197 BSP 15898
BDE 1.3591 BRA 2.9698 BC3 1.8852 FSP 5768

MID-COURSE EXECUTION ACCURACY
SGT 4250.0 SGR 1627.5 SG3 1765.1
RRT .9532 RRF -.9769 RTF -.9690
SGB 4551.0 R23 -.1395 R13 -.9750
SG1 4527.5 SG2 462.0 THA 20.27

ORBIT DETERMINATION ACCURACY
ST 1907.3 SR 877.3 SS 2826.7
CRT .9734 CRS .9663 CST .9993
LSA 3514.2 MSA 216.7 SSA 31.5
EL1 2091.3 EL2 183.2 ALF 24.32

LAUNCH DATE OCT 9 1964 FLIGHT TIME 274.00 ARRIVAL DATE JUL 10 1965

HELIOCENTRIC CONIC DISTANCE 649.068 EARTH TO MARS

RL 149.41 LAL -.00 LOL 15.74 VL 32.765 GAL -6.97 AZL 90.26 HCA 209.54 SMA 188.80 ECC .24006 INC .2618 V1 29.822
RP 233.44 LAP .13 LOP 225.27 VP 20.835 GAP 2.45 AZP 89.77 TAL 322.64 TAP 172.18 RCA 143.48 APO 234.12 V2 23.555
RC 211.104 GL -1.94 GP 10.61 ZAL 142.12 ZAP 137.54 ETS 166.85 ZAE 168.12 ETE 97.26 ZAC 98.91 ETC 255.92 CLP 138.64

PLANETOCENTRIC CONIC

C3 19.456 VHL 4.411 DLA 6.81 RAL 158.84 RAD 6567.8 VEL 11.867 PTH 2.11 VHP 4.089 DPA 9.28 RAP 188.60 ECC 1.3202

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 52 26	2420.56	-23.98	54.97	21.65	105.54	20 32 47	1820.6	-21.61	47.09
90.00	9 36 36	4639.15	13.71	197.00	18.57	64.98	10 53 55	4039.1	10.23	190.05
100.00	21 17 2	2147.71	-25.07	34.55	21.30	106.84	21 52 49	1547.7	-22.52	26.68
100.00	10 54 41	4387.23	14.74	177.96	18.06	63.70	12 7 48	3787.2	11.08	171.08
110.00	22 32 42	1910.87	-27.99	15.47	20.20	110.48	23 4 33	1310.9	-24.94	7.62
110.00	11 55 30	4196.83	17.46	162.00	16.55	60.13	13 5 27	3596.8	13.35	155.30

DIFFERENTIAL CORRECTIONS
TDE 1.1650 TRA-2.7541 TC3 1.5810 BAU .4877
RDE .6306 RRA -.8516 RC3 1.0078 FAU .30378
FDE-4.9506 FRA12.5922 FC-13.5172 BSP 15608
BDE 1.3247 BRA 2.8827 BC3 1.8749 FSP 6033

MID-COURSE EXECUTION ACCURACY
SGT 4149.2 SGR 1643.9 SG3 1842.8
RRT .9520 RRF -.9760 RTF -.9685
SGB 4463.0 R23 -.1369 R13 -.9749
SG1 4438.1 SG2 470.6 THA 20.91

ORBIT DETERMINATION ACCURACY
ST 1860.2 SR 885.1 SS 2868.3
CRT .9730 CRS .9643 CST .9992
LSA 3524.0 MSA 225.6 SSA 31.3
EL1 2051.6 EL2 185.2 ALF 25.06

LAUNCH DATE OCT 9 1964 FLIGHT TIME 276.00 ARRIVAL DATE JUL 12 1965

HELIOCENTRIC CONIC DISTANCE 652.827 EARTH TO MARS

RL 149.41 LAL -.00 LOL 15.74 VL 32.751 GAL -6.92 AZL 90.19 HCA 210.53 SMA 188.55 ECC .23875 INC .1914 V1 29.822
RP 233.07 LAP .10 LOP 226.27 VP 20.857 GAP 2.10 AZP 89.83 TAL 322.75 TAP 173.28 RCA 143.54 APO 233.57 V2 23.593
RC 213.179 GL -1.42 GP 10.52 ZAL 142.00 ZAP 136.37 ETS 167.44 ZAE 167.94 ETE 103.52 ZAC 98.77 ETC 255.94 CLP 137.41

PLANETOCENTRIC CONIC

C3 19.179 VHL 4.379 DLA 7.34 RAL 158.90 RAD 6567.8 VEL 11.856 PTH 2.10 VHP 4.007 DPA 9.30 RAP 188.35 ECC 1.3156

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 48 36	2433.98	-24.22	55.88	21.65	105.14	20 29 10	1834.0	-21.90	47.97
90.00	9 40 56	4618.93	13.13	195.80	18.37	64.68	10 57 55	4018.9	9.61	188.89
100.00	21 13 28	2160.27	-25.31	35.40	21.31	106.45	21 49 28	1560.3	-22.82	27.50
100.00	10 58 45	4367.87	14.15	176.83	17.86	63.39	12 11 33	3767.9	10.46	169.98
110.00	22 29 45	1921.54	-28.24	16.19	20.23	110.11	23 1 47	1321.5	-25.24	8.30
110.00	11 58 57	4179.38	16.86	161.00	16.34	59.82	13 8 37	3579.4	12.73	154.33

DIFFERENTIAL CORRECTIONS
TDE 1.1245 TRA-2.6605 TC3 1.5454 BAU .4764
RDE .6321 RRA -.8514 RC3 1.0317 FAU .31524
FDE-5.0619 FRA13.0438 FC-14.2301 BSP 15297
BDE 1.2900 BRA 2.7934 BC3 1.8581 FSP 6312

MID-COURSE EXECUTION ACCURACY
SGT 4039.0 SGR 1661.9 SG3 1922.8
RRT .9507 RRF -.9751 RTF -.9679
SGB 4367.5 R23 -.1346 R13 -.9747
SG1 4341.1 SG2 479.5 THA 21.64

ORBIT DETERMINATION ACCURACY
ST 1809.6 SR 893.4 SS 2909.9
CRT .9727 CRS .9623 CST .9989
LSA 3533.2 MSA 234.8 SSA 31.0
EL1 2009.4 EL2 186.8 ALF 25.89

LAUNCH DATE OCT 9 1964 FLIGHT TIME 278.00 ARRIVAL DATE JUL 14 1965

HELIOCENTRIC CONIC DISTANCE 656.598 EARTH TO MARS

RL 149.41 LAL -.00 LOL 15.74 VL 32.738 GAL -6.88 AZL 90.12 HCA 211.53 SMA 188.32 ECC .23750 INC .1233 V1 29.822
RP 232.70 LAP .07 LOP 227.27 VP 20.879 GAP 1.74 AZP 89.89 TAL 322.85 TAP 174.39 RCA 143.59 APO 233.05 V2 23.631
RC 215.236 GL -.93 GP 10.44 ZAL 141.88 ZAP 135.17 ETS 168.00 ZAE 167.60 ETE 109.71 ZAC 98.63 ETC 255.96 CLP 136.15

PLANETOCENTRIC CONIC

C3 18.921 VHL 4.350 DLA 7.85 RAL 158.96 RAD 6567.8 VEL 11.845 PTH 2.10 VHP 3.927 DPA 9.34 RAP 188.07 ECC 1.3114

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 44 55	2446.96	-24.44	56.76	21.67	104.76	20 25 42	1847.0	-22.18	48.82
90.00	9 45 7	4599.58	12.56	194.66	18.20	64.41	11 1 46	3999.6	9.01	187.78
100.00	21 10 2	2172.41	-25.54	36.23	21.33	106.08	21 46 15	1572.4	-23.09	28.29
100.00	11 2 40	4349.37	13.58	175.75	17.68	63.11	12 15 10	3749.4	9.87	168.93
110.00	22 26 55	1931.83	-28.48	16.90	20.27	109.76	22 59 7	1331.8	-25.52	8.97
110.00	12 2 17	4162.71	16.29	160.05	16.15	59.52	13 11 40	3562.7	12.12	153.42

DIFFERENTIAL CORRECTIONS
TDE 1.0829 TRA-2.5628 TC3 1.5002 BAU .4642
RDE .6341 RRA -.8525 RC3 1.0566 FAU .32707
FDE-5.1765 FRA13.5057 FC-14.9650 BSP 14952
BDE 1.2549 BRA 2.7009 BC3 1.8350 FSP 6596

MID-COURSE EXECUTION ACCURACY
SGT 3917.9 SGR 1681.5 SG3 2004.9
RRT .9493 RRF -.9743 RTF -.9670
SGB 4263.5 R23 -.1331 R13 -.9744
SG1 4235.4 SG2 489.2 THA 22.48

ORBIT DETERMINATION ACCURACY
ST 1755.3 SR 902.3 SS 2951.7
CRT .9724 CRS .9604 CST .9986
LSA 3542.2 MSA 244.0 SSA 30.8
EL1 1964.7 EL2 187.9 ALF 26.82

LAUNCH DATE OCT 9 1964 FLIGHT TIME 280.00 ARRIVAL DATE JUL 16 1965

HELIOCENTRIC CONIC DISTANCE 660.378 EARTH TO MARS

RL 149.41 LAL -.00 LOL 15.74 VL 32.725 GAL -6.83 AZL 90.06 HCA 212.54 SMA 188.10 ECC .23632 INC .0606 V1 29.822
RP 232.32 LAP .03 LOP 228.27 VP 20.903 GAP 1.39 AZP 89.95 TAL 322.95 TAP 175.49 RCA 143.65 APO 232.55 V2 23.670
RC 217.275 GL -.46 GP 10.37 ZAL 141.77 ZAP 133.92 ETS 168.54 ZAE 167.09 ETE 115.69 ZAC 98.50 ETC 255.98 CLP 134.84

PLANETOCENTRIC CONIC

C3 18.682 VHL 4.322 DLA 8.33 RAL 159.02 RAD 6567.8 VEL 11.835 PTH 2.10 VHP 3.851 DPA 9.40 RAP 187.77 ECC 1.3075

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 41 23	2459.50	-24.66	57.61	21.69	104.38	20 22 22	1859.5	-22.44	49.64
90.00	9 49 9	4581.06	12.01	193.58	18.05	64.16	11 5 30	3981.1	8.44	186.72
100.00	21 6 46	2184.14	-25.76	37.03	21.36	105.71	21 43 10	1584.1	-23.36	29.06
100.00	11 6 27	4331.66	13.03	174.72	17.53	62.86	12 18 39	3731.7	9.29	167.92
110.00	22 24 12	1941.78	-28.71	17.58	20.31	109.41	22 56 34	1341.8	-25.79	9.62
110.00	12 5 30	4146.78	15.74	159.14	15.99	59.26	13 14 37	3546.8	11.54	152.55

DIFFERENTIAL CORRECTIONS
TDE 1.0402 TRA-2.4618 TC3 1.4447 BAU .4508
RDE .6366 RRA -.8549 RC3 1.0817 FAU .33907
FDE-5.2927 FRA13.9828 FC-15.7124 BSP 14595
BDE 1.2195 BRA 2.6060 BC3 1.8048 FSP 6894

MID-COURSE EXECUTION ACCURACY
SGT 3786.6 SGR 1702.5 SG3 2089.1
RRT .9476 RRF -.9736 RTF -.9657
SGB 4151.8 R23 -.1320 R13 -.9740
SG1 4121.6 SG2 499.6 THA 23.44

ORBIT DETERMINATION ACCURACY
ST 1697.5 SR 911.6 SS 2993.7
CRT .9723 CRS .9586 CST .9983
LSA 3551.0 MSA 253.4 SSA 30.5
EL1 1917.6 EL2 188.6 ALF 27.87

LAUNCH DATE OCT 9 1964 FLIGHT TIME 282.00 ARRIVAL DATE JUL 18 1965

HELIOCENTRIC CONIC DISTANCE 664.169 EARTH TO MARS

RL 149.41 LAL -.00 LOL 15.74 VL 32.713 GAL -6.79 AZL 90.00 HCA 213.54 SMA 187.89 ECC .23520 INC .0000 V1 29.822
RP 231.95 LAP .00 LOP 229.28 VP 20.928 GAP 1.05 AZP 90.00 TAL 323.04 TAP 176.58 RCA 143.69 APO 232.08 V2 23.709
RC 219.295 GL -.00 GP 10.31 ZAL 141.66 ZAP 132.62 ETS 169.07 ZAE 166.43 ETE 121.33 ZAC 98.36 ETC 256.00 CLP 133.49

PLANETOCENTRIC CONIC

C3 18.461 VHL 4.297 DLA 8.79 RAL 159.09 RAD 6567.7 VEL 11.826 PTH 2.09 VHP 3.776 DPA 9.48 RAP 187.44 ECC 1.3038

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 37 59	2471.65	-24.86	58.45	21.72	104.01	20 19 11	1871.7	-22.69	50.45
90.00	9 53 4	4563.33	11.48	192.54	17.92	63.94	11 9 7	3963.3	7.89	185.71
100.00	21 3 37	2195.49	-25.97	37.81	21.40	105.35	21 40 12	1595.5	-23.61	29.81
100.00	11 10 7	4314.72	12.51	173.74	17.40	62.63	12 22 2	3714.7	8.74	166.97
110.00	22 21 37	1951.41	-28.92	18.25	20.37	109.07	22 54 8	1351.4	-26.05	10.25
110.00	12 8 37	4131.57	15.21	158.29	15.85	59.01	13 17 28	3531.6	10.99	151.72

DIFFERENTIAL CORRECTIONS
TDE .9977 TRA-2.3547 TC3 1.3816 BAU .4371
RDE .6400 RRA -.8579 RC3 1.1080 FAU .35158
FDE-5.4167 FRA14.4633 FC-16.4868 BSP 14170
BDE 1.1853 BRA 2.5061 BC3 1.7710 FSP 7187

MID-COURSE EXECUTION ACCURACY
SGT 3643.5 SGR 1724.8 SG3 2175.1
RRT .9458 RRF -.9729 RTF -.9642
SGB 4031.1 R23 -.1314 R13 -.9735
SG1 3998.7 SG2 510.2 THA 24.55

ORBIT DETERMINATION ACCURACY
ST 1637.0 SR 921.8 SS 3037.0
CRT .9724 CRS .9569 CST .9979
LSA 3561.3 MSA 262.7 SSA 30.2
EL1 1869.3 EL2 188.2 ALF 29.03

LAUNCH DATE OCT 9 1964 FLIGHT TIME 284.00 ARRIVAL DATE JUL 20 1965

HELIOCENTRIC CONIC DISTANCE 667.971 EARTH TO MARS

RL 149.41 LAL -.00 LOL 15.74 VL 32.702 GAL -6.75 AZL 89.94 HCA 214.55 SMA 187.69 ECC .23415 INC .0568 V1 29.822
RP 231.57 LAP -.03 LOP 230.29 VP 20.954 GAP .71 AZP 90.05 TAL 323.12 TAP 177.67 RCA 143.74 APO 231.63 V2 23.748
RC 221.297 GL .43 GP 10.25 ZAL 141.55 ZAP 131.29 ETS 169.58 ZAE 165.63 ETE 126.56 ZAC 98.22 ETC 256.03 CLP 132.11

PLANETOCENTRIC CONIC

C3 18.257 VHL 4.273 DLA 9.24 RAL 159.16 RAD 6567.7 VEL 11.817 PTH 2.09 VHP 3.705 DPA 9.58 RAP 187.07 ECC 1.3005

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 34 44	2483.43	-25.05	59.26	21.76	103.65	20 16 7	1883.4	-22.93	51.23
90.00	9 56 51	4546.35	10.97	191.55	17.82	63.73	11 12 38	3946.3	7.36	184.74
100.00	21 0 36	2206.50	-26.17	38.57	21.45	104.99	21 37 22	1606.5	-23.85	30.54
100.00	11 13 41	4298.51	12.00	172.80	17.29	62.41	12 25 19	3698.5	8.21	166.06
110.00	22 19 8	1960.74	-29.13	18.90	20.44	108.73	22 51 49	1360.7	-26.29	10.86
110.00	12 11 38	4117.04	14.69	157.47	15.72	58.78	13 20 15	3517.0	10.45	150.94

DIFFERENTIAL CORRECTIONS
TDE .9535 TRA-2.2437 TC3 1.3066 BAU .4223
RDE .6434 RRA -.8621 RC3 1.1341 FAU .36411
FDE-5.5388 FRA14.9579 FC-17.2654 BSP 13740
BDE 1.1503 BRA 2.4037 BC3 1.7302 FSP 7497

MID-COURSE EXECUTION ACCURACY
SGT 3489.0 SGR 1748.0 SG3 2262.6
RRT .9437 RRF -.9723 RTF -.9622
SGB 3902.4 R23 -.1313 R13 -.9728
SG1 3867.4 SG2 521.6 THA 25.81

ORBIT DETERMINATION ACCURACY
ST 1572.3 SR 932.0 SS 3079.2
CRT .9727 CRS .9551 CST .9975
LSA 3570.3 MSA 272.1 SSA 29.9
EL1 1818.2 EL2 187.1 ALF 30.32

LAUNCH DATE OCT 9 1964 FLIGHT TIME 286.00 ARRIVAL DATE JUL 22 1965

HELIOCENTRIC CONIC DISTANCE 671.782 EARTH TO MARS

RL 149.41 LAL -.00 LOL 15.74 VL 32.691 GAL -6.71 AZL 89.89 HCA 215.56 SMA 187.50 ECC .23316 INC .1108 V1 29.822
RP 231.20 LAP -.06 LOP 231.30 VP 20.982 GAP .38 AZP 90.09 TAL 323.19 TAP 178.75 RCA 143.78 APO 231.21 V2 23.788
RC 223.281 GL .85 GP 10.19 ZAL 141.45 ZAP 129.91 ETS 170.07 ZAE 164.68 ETE 131.34 ZAC 98.08 ETC 256.05 CLP 130.68

PLANETOCENTRIC CONIC

C3 18.070 VHL 4.251 DLA 9.66 RAL 159.23 RAD 6567.7 VEL 11.809 PTH 2.09 VHP 3.637 DPA 9.71 RAP 186.67 ECC 1.2974

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 31 37	2494.85	-25.24	60.04	21.82	103.29	20 13 12	1894.9	-23.16	51.99
90.00	10 0 32	4530.09	10.48	190.61	17.73	63.54	11 16 2	3930.1	6.85	183.82
100.00	20 57 43	2217.17	-26.35	39.31	21.51	104.65	21 34 40	1617.2	-24.08	31.25
100.00	11 17 8	4283.01	11.51	171.91	17.20	62.22	12 28 31	3683.0	7.70	165.19
110.00	22 16 46	1969.79	-29.32	19.53	20.51	108.41	22 49 36	1369.8	-26.53	11.46
110.00	12 14 34	4103.16	14.20	156.69	15.63	58.58	13 22 57	3503.2	9.94	150.19

DIFFERENTIAL CORRECTIONS
TDE .9084 TRA-2.1278 TC3 1.2220 BAU .4072
RDE .6473 RRA -.8671 RC3 1.1608 FAU .37697
FDE-5.6652 FRA15.4595 FC-18.0609 BSP 13271
BDE 1.1155 BRA 2.2977 BC3 1.6854 FSP 7809

MID-COURSE EXECUTION ACCURACY
SGT 3323.0 SGR 1772.2 SG3 2351.7
RRT .9412 RRF -.9718 RTF -.9596
SGB 3766.1 R23 -.1318 R13 -.9719
SG1 3728.0 SG2 533.8 THA 27.26

ORBIT DETERMINATION ACCURACY
ST 1504.0 SR 942.7 SS 3122.0
CRT .9731 CRS .9535 CST .9970
LSA 3580.1 MSA 281.5 SSA 29.6
EL1 1765.3 EL2 185.0 ALF 31.77

LAUNCH DATE OCT 9 1964 FLIGHT TIME 288.00 ARRIVAL DATE JUL 24 1965

HELIOCENTRIC CONIC DISTANCE 675.603 EARTH TO MARS

RL	149.41	LAL	-.00	LOL	15.74	VL	32.680	GAL	-6.68	AZL	89.84	HCA	216.58	SMA	187.32	ECC	.23222	INC	.1643
RP	230.82	LAP	-.10	LOP	232.31	VP	21.011	GAP	.05	AZP	90.13	TAL	323.26	TAP	179.83	RCA	143.82	APO	230.82
RC	225.247	GL	1.26	GP	10.15	ZAL	141.36	ZAP	128.49	ETS	170.55	ZAE	163.61	ETE	135.66	ZAC	97.94	ETC	256.09

V1	29.822	V2	23.827	CLP	129.21														

PLANETOCENTRIC CONIC

C3	17.898	VHL	4.231	DLA	10.07	RAL	159.30	RAD	6567.7	VEL	11.802	PTH	2.09	VHP	3.571	DPA	9.85	RAP	186.24

ECC	1.2946												

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 28 38	2505.95	-25.41	60.81	21.88	102.94	20 10 24	1905.9	-23.37	52.73
90.00	10 4 7	4514.55	10.01	189.72	17.67	63.37	11 19 22	3914.5	6.36	182.94
100.00	20 54 57	2227.53	-26.53	40.03	21.58	104.31	21 32 5	1627.5	-24.30	31.94
100.00	11 20 29	4268.19	11.04	171.06	17.13	62.04	12 31 37	3668.2	7.21	164.36
110.00	22 14 31	1978.57	-29.51	20.15	20.60	108.09	22 47 30	1378.6	-26.76	12.04
110.00	12 17 24	4089.92	13.73	155.96	15.55	58.38	13 25 34	3489.9	9.45	149.47

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8619	TRA	-2.0069	TC3	1.1258	BAU	.3915	SGT	3144.9	SGR	1796.9	SG3	2441.8	ST	1431.6	SR	953.5	SS	3164.0
RDE	.6515	RRA	-.8728	RC3	1.1873	FAU	.38994	RRT	.9380	RRF	-.9712	RTF	-.9563	CRT	.9737	CRS	.9519	CST	.9963
FDE	-5.7912	FRA	15.9694	FC	-18.8613	BSP	12773	SGB	3622.1	R23	-.1329	R13	-.9709	LSA	3589.4	MSA	291.0	SSA	29.3
BDE	1.0805	BRA	2.1885	BC3	1.6362	FSP	8128	SG1	3580.5	SG2	547.0	THA	28.93	EL1	1710.4	EL2	181.7	ALF	33.39

LAUNCH DATE OCT 9 1964 FLIGHT TIME 290.00 ARRIVAL DATE JUL 26 1965

HELIOCENTRIC CONIC DISTANCE 679.433 EARTH TO MARS

RL	149.41	LAL	-.00	LOL	15.74	VL	32.670	GAL	-6.65	AZL	89.79	HCA	217.60	SMA	187.15	ECC	.23135	INC	.2139
RP	230.43	LAP	-.13	LOP	233.33	VP	21.041	GAP	-.27	AZP	90.17	TAL	323.31	TAP	180.91	RCA	143.85	APO	230.44
RC	227.193	GL	1.65	GP	10.10	ZAL	141.27	ZAP	127.02	ETS	171.02	ZAE	162.42	ETE	139.55	ZAC	97.79	ETC	256.12

V1	29.822	V2	23.867	CLP	127.70														

PLANETOCENTRIC CONIC

C3	17.741	VHL	4.212	DLA	10.46	RAL	159.38	RAD	6567.7	VEL	11.795	PTH	2.09	VHP	3.508	DPA	10.02	RAP	185.78

ECC	1.2920												

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 25 47	2516.72	-25.57	61.56	21.96	102.60	20 7 44	1916.7	-23.58	53.45
90.00	10 7 36	4499.68	9.55	188.86	17.62	63.22	11 22 35	3899.7	5.88	182.10
100.00	20 52 20	2237.59	-26.70	40.73	21.67	103.97	21 29 37	1637.6	-24.51	32.61
100.00	11 23 44	4254.08	10.58	170.26	17.08	61.88	12 34 38	3654.1	6.74	163.58
110.00	22 12 23	1987.10	-29.69	20.75	20.70	107.77	22 45 30	1387.1	-26.97	12.61
110.00	12 20 11	4077.30	13.28	155.26	15.49	58.21	13 28 8	3477.3	8.98	148.80

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8157	TRA	-1.8797	TC3	1.0199	BAU	.3761	SGT	2954.7	SGR	1822.3	SG3	2532.6	ST	1356.6	SR	964.8	SS	3207.2
RDE	.6563	RRA	-.8788	RC3	1.2142	FAU	.40315	RRT	.9342	RRF	-.9708	RTF	-.9520	CRT	.9747	CRS	.9505	CST	.9955
FDE	-5.9248	FRA	16.4794	FC	-19.6730	BSP	12228	SGB	3471.4	R23	-.1344	R13	-.9697	LSA	3600.9	MSA	300.3	SSA	29.0
BDE	1.0469	BRA	2.0750	BC3	1.5857	FSP	8443	SG1	3425.9	SG2	560.7	THA	30.87	EL1	1655.3	EL2	176.6	ALF	35.19

LAUNCH DATE OCT 9 1964 FLIGHT TIME 292.00 ARRIVAL DATE JUL 28 1965

HELIOCENTRIC CONIC DISTANCE 683.272 EARTH TO MARS

RL	149.41	LAL	-.00	LOL	15.74	VL	32.661	GAL	-6.62	AZL	89.74	HCA	218.62	SMA	186.99	ECC	.23053	INC	.2620
RP	230.05	LAP	-.16	LOP	234.35	VP	21.072	GAP	-.59	AZP	90.20	TAL	323.36	TAP	181.98	RCA	143.88	APO	230.09
RC	229.120	GL	2.03	GP	10.06	ZAL	141.20	ZAP	125.51	ETS	171.48	ZAE	161.13	ETE	143.03	ZAC	97.63	ETC	256.16

V1	29.822	V2	23.907	CLP	126.15														

PLANETOCENTRIC CONIC

C3	17.599	VHL	4.195	DLA	10.83	RAL	159.47	RAD	6567.7	VEL	11.789	PTH	2.08	VHP	3.448	DPA	10.20	RAP	185.28

ECC	1.2896												

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 23 4	2527.18	-25.72	62.29	22.05	102.27	20 5 11	1927.2	-23.77	54.16
90.00	10 10 59	4485.49	9.12	188.05	17.60	63.08	11 25 45	3885.5	5.43	181.30
100.00	20 49 50	2247.36	-26.85	41.42	21.76	103.65	21 27 17	1647.4	-24.71	33.27
100.00	11 26 55	4240.53	10.15	169.49	17.05	61.73	12 37 35	3640.5	6.29	162.82
110.00	22 10 21	1995.38	-29.86	21.33	20.81	107.47	22 43 36	1395.4	-27.18	13.16
110.00	12 22 52	4065.28	12.85	154.60	15.45	58.05	13 30 38	3465.3	8.53	148.16

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.7670	TRA	-1.7479	TC3	.9009	BAU	.3607	SGT	2752.4	SGR	1847.7	SG3	2623.7	ST	1276.5	SR	975.9	SS	3248.5
RDE	.6610	RRA	-.8854	RC3	1.2404	FAU	.41631	RRT	.9290	RRF	-.9703	RTF	-.9462	CRT	.9759	CRS	.9490	CST	.9945
FDE	-6.0537	FRA	16.9959	FC	-20.4788	BSP	11677	SGB	3315.1	R23	-.1367	R13	-.9682	LSA	3610.8	MSA	309.7	SSA	28.7
BDE	1.0125	BRA	1.9593	BC3	1.5330	FSP	8769	SG1	3264.6	SG2	576.4	THA	33.11	EL1	1597.8	EL2	170.2	ALF	37.22

LAUNCH DATE OCT 9 1964 FLIGHT TIME 294.00 ARRIVAL DATE JUL 30 1965

HELIOCENTRIC CONIC DISTANCE 687.121 EARTH TO MARS

RL	149.41	LAL	-.00	LOL	15.74	VL	32.652	GAL	-6.60	AZL	89.69	HCA	219.64	SMA	186.83	ECC	.22976	INC	.3078
RP	229.67	LAP	-.20	LOP	235.38	VP	21.104	GAP	-.91	AZP	90.24	TAL	323.40	TAP	183.04	RCA	143.91	APO	229.76
RC	231.027	GL	2.39	GP	10.02	ZAL	141.13	ZAP	123.95	ETS	171.94	ZAE	159.73	ETE	146.14	ZAC	97.47	ETC	256.20

V1	29.822	V2	23.948	CLP	124.55														

PLANETOCENTRIC CONIC

C3	17.472	VHL	4.180	DLA	11.19	RAL	159.55	RAD	6567.7	VEL	11.784	PTH	2.08	VHP	3.391	DPA	10.40	RAP	184.75

ECC	1.2875												

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 20 29	2537.34	-25.87	62.99	22.16	101.94	20 2 46	1937.3	-23.96	54.84
90.00	10 14 17	4471.94	8.70	187.27	17.59	62.95	11 28 49	3871.9	5.00	180.54
100.00	20 47 27	2256.86	-27.01	42.08	21.87	103.33	21 25 4	1656.9	-24.90	33.91
100.00	11 30 0	4227.66	9.73	168.76	17.04	61.60	12 40 28	3627.7	5.86	162.11
110.00	22 8 26	2003.43	-30.02	21.90	20.93	107.16	22 41 50	1403.4	-27.38	13.70
110.00	12 25 30	4053.85	12.44	153.97	15.43	57.90	13 33 4	3453.9	8.11	147.55

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.7176	TRA	-1.6098	TC3	.7709	BAU	.3463	SGT	2538.2	SGR	1873.1	SG3	2714.6	ST	1193.0	SR	987.1	SS	3289.6
RDE	.6661	RRA	-.8921	RC3	1.2665	FAU	.42958	RRT	.9222	RRF	-.9699	RTF	-.9385	CRT	.9774	CRS	.9477	CST	.9932
FDE	-6.1856	FRA	17.5096	FC	-21.2863	BSP	11092	SGB	3154.5	R23	-.1394	R13	-.9666	LSA	3621.7	MSA	318.9	SSA	28.4
BDE	.9791	BRA	1.8404	BC3	1.4827	FSP	9088	SG1	3098.1	SG2	593.5	THA	35.75	EL1	1540.0	EL2	161.7	ALF	39.48

LAUNCH DATE OCT 9 1964 FLIGHT TIME 296.00 ARRIVAL DATE AUG 1 1965

HELIOCENTRIC CONIC DISTANCE 690.980 EARTH TO MARS

RL	149.41	LAL	-.00	LOL	15.74	VL	32.644	GAL	-6.58	AZL	89.65	HCA	220.67	SMA	186.69	ECC	.22905	INC	.3518	V1	29.822
RP	229.28	LAP	-.23	LOP	236.41	VP	21.137	GAP	-1.22	AZP	90.27	TAL	323.43	TAP	184.10	RCA	143.93	APO	229.45	V2	23.988
RC	232.913	GL	2.74	GP	9.98	ZAL	141.07	ZAP	122.36	ETS	172.38	ZAE	158.25	ETE	148.93	ZAC	97.30	ETC	256.25	CLP	122.92

PLANETOCENTRIC CONIC

C3	17.357	VHL	4.166	DLA	11.53	RAL	159.65	RAD	6567.7	VEL	11.779	PTH	2.08	VHP	3.337	DPA	10.62	RAP	184.18	ECC	1.2857

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 18 2	2547.22	-26.00	63.69	22.27	101.62	20 0 29	1947.2	-24.14	55.51
90.00	10 17 30	4459.03	8.30	186.53	17.61	62.83	11 31 49	3859.0	4.59	179.82
100.00	20 45 12	2266.08	-27.15	42.73	21.99	103.02	21 22 58	1666.1	-25.08	34.54
100.00	11 33 0	4215.40	9.33	168.07	17.05	61.47	12 43 16	3615.4	5.45	161.43
110.00	22 6 38	2011.26	-30.18	22.46	21.07	106.87	22 40 9	1411.3	-27.58	14.23
110.00	12 28 4	4042.99	12.04	153.37	15.44	57.76	13 35 27	3443.0	7.70	146.97

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY			ORBIT DETERMINATION ACCURACY					
TDE	.6701	TRA	-1.4629	TC3	.6369	BAU	.3347	SGT 2312.3 SGR 1898.7 SG3 2805.1	ST	1108.6	SR	999.4	SS	3333.5
RDE	.6723	RRA	-.8978	RC3	1.2940	FAU	.44351	RRT .9137 RRF -.9695 RTF -.9283	CRT	.9797	CRS	.9467	CST	.9914
FDE	-6.3346	FRA	18.0018	FC	-22.1208	BSP	10413	SGB 2992.0 R23 -.1410 R13 -.9649	LSA	3637.5	MSA	328.1	SSA	27.9
BDE	.9492	BRA	1.7164	BC3	1.4422	FSP	9371	SG1 2929.3 SG2 609.1 THA 38.88	EL1	1485.0	EL2	149.5	ALF	41.97

LAUNCH DATE OCT 9 1964 FLIGHT TIME 298.00 ARRIVAL DATE AUG 3 1965

HELIOCENTRIC CONIC DISTANCE 694.846 EARTH TO MARS

RL	149.41	LAL	-.00	LOL	15.74	VL	32.636	GAL	-6.56	AZL	89.61	HCA	221.71	SMA	186.56	ECC	.22840	INC	.3945	V1	29.822
RP	228.89	LAP	-.26	LOP	237.44	VP	21.172	GAP	-1.52	AZP	90.29	TAL	323.45	TAP	185.16	RCA	143.95	APO	229.17	V2	24.029
RC	234.778	GL	3.08	GP	9.94	ZAL	141.02	ZAP	120.72	ETS	172.82	ZAE	156.68	ETE	151.44	ZAC	97.13	ETC	256.30	CLP	121.24

PLANETOCENTRIC CONIC

C3	17.257	VHL	4.154	DLA	11.86	RAL	159.75	RAD	6567.7	VEL	11.775	PTH	2.08	VHP	3.286	DPA	10.86	RAP	183.58	ECC	1.2840

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 15 43	2556.80	-26.13	64.36	22.40	101.31	19 58 19	1956.8	-24.31	56.16
90.00	10 20 38	4446.76	7.92	185.83	17.64	62.72	11 34 44	3846.8	4.20	179.13
100.00	20 43 5	2275.03	-27.28	43.36	22.13	102.71	21 21 0	1675.0	-25.26	35.14
100.00	11 35 57	4203.77	8.96	167.41	17.08	61.36	12 46 0	3603.8	5.06	160.79
110.00	22 4 57	2018.86	-30.33	23.00	21.22	106.58	22 38 36	1418.9	-27.76	14.75
110.00	12 30 34	4032.70	11.67	152.81	15.46	57.64	13 37 47	3432.7	7.31	146.42

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY			ORBIT DETERMINATION ACCURACY					
TDE	.6168	TRA	-1.3139	TC3	.4808	BAU	.3236	SGT 2076.6 SGR 1922.8 SG3 2893.8	ST	1016.1	SR	1009.9	SS	3370.9
RDE	.6772	RRA	-.9050	RC3	1.3175	FAU	.45623	RRT .9000 RRF -.9691 RTF -.9129	CRT	.9819	CRS	.9453	CST	.9892
FDE	-6.4581	FRA	18.5145	FC	-22.8880	BSP	9829	SGB 2830.1 R23 -.1438 R13 -.9629	LSA	3647.1	MSA	337.2	SSA	27.6
BDE	.9160	BRA	1.5954	BC3	1.4025	FSP	9703	SG1 2758.9 SG2 630.9 THA 42.56	EL1	1426.1	EL2	136.4	ALF	44.82

LAUNCH DATE OCT 9 1964 FLIGHT TIME 300.00 ARRIVAL DATE AUG 5 1965

HELIOCENTRIC CONIC DISTANCE 698.721 EARTH TO MARS

RL	149.41	LAL	-.00	LOL	15.74	VL	32.629	GAL	-6.54	AZL	89.56	HCA	222.74	SMA	186.43	ECC	.22780	INC	.4353	V1	29.822
RP	228.51	LAP	-.30	LOP	238.48	VP	21.207	GAP	-1.82	AZP	90.32	TAL	323.46	TAP	186.20	RCA	143.96	APO	228.90	V2	24.070
RC	236.623	GL	3.41	GP	9.91	ZAL	140.98	ZAP	119.04	ETS	173.26	ZAE	155.04	ETE	153.69	ZAC	96.95	ETC	256.35	CLP	119.52

PLANETOCENTRIC CONIC

C3	17.170	VHL	4.144	DLA	12.17	RAL	159.86	RAD	6567.7	VEL	11.771	PTH	2.08	VHP	3.239	DPA	11.11	RAP	182.94	ECC	1.2826

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 13 31	2566.11	-26.26	65.01	22.55	101.00	19 56 18	1966.1	-24.47	56.80
90.00	10 23 41	4435.11	7.55	185.17	17.69	62.63	11 37 36	3835.1	3.83	178.47
100.00	20 41 5	2283.72	-27.41	43.97	22.28	102.41	21 19 9	1683.7	-25.43	35.73
100.00	11 38 48	4192.73	8.59	166.79	17.13	61.26	12 48 41	3592.7	4.69	160.18
110.00	22 3 22	2026.25	-30.47	23.53	21.39	106.30	22 37 8	1426.2	-27.94	15.25
110.00	12 33 1	4022.97	11.31	152.28	15.50	57.53	13 40 4	3423.0	6.95	145.91

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY			ORBIT DETERMINATION ACCURACY					
TDE	.5645	TRA	-1.1567	TC3	.3184	BAU	.3166	SGT 1831.9 SGR 1946.7 SG3 2981.0	ST	922.1	SR	1021.1	SS	3410.4
RDE	.6831	RRA	-.9110	RC3	1.3420	FAU	.46948	RRT .8803 RRF -.9688 RTF -.8903	CRT	.9848	CRS	.9442	CST	.9860
FDE	-6.5960	FRA	19.0005	FC	-23.6723	BSP	9189	SGB 2673.1 R23 -.1447 R13 -.9612	LSA	3661.0	MSA	346.1	SSA	27.3
BDE	.8861	BRA	1.4724	BC3	1.3793	FSP	9994	SG1 2592.2 SG2 652.8 THA 46.98	EL1	1370.7	EL2	119.3	ALF	47.96

LAUNCH DATE OCT 9 1964 FLIGHT TIME 302.00 ARRIVAL DATE AUG 7 1965

HELIOCENTRIC CONIC DISTANCE 702.604 EARTH TO MARS

RL	149.41	LAL	-.00	LOL	15.74	VL	32.622	GAL	-6.53	AZL	89.52	HCA	223.78	SMA	186.31	ECC	.22725	INC	.4747	V1	29.822
RP	228.12	LAP	-.33	LOP	239.52	VP	21.243	GAP	-2.12	AZP	90.34	TAL	323.46	TAP	187.24	RCA	143.97	APO	228.65	V2	24.111
RC	238.446	GL	3.73	GP	9.87	ZAL	140.95	ZAP	117.31	ETS	173.68	ZAE	153.33	ETE	155.72	ZAC	96.76	ETC	256.41	CLP	117.76

PLANETOCENTRIC CONIC

C3	17.095	VHL	4.135	DLA	12.46	RAL	159.98	RAD	6567.7	VEL	11.768	PTH	2.08	VHP	3.194	DPA	11.37	RAP	182.27	ECC	1.2813

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 11 28	2575.14	-26.37	65.65	22.71	100.70	19 54 24	1975.1	-24.63	57.41
90.00	10 26 39	4424.08	7.21	184.55	17.77	62.54	11 40 23	3824.1	3.47	177.86
100.00	20 39 13	2292.16	-27.53	44.57	22.45	102.12	21 17 25	1692.2	-25.59	36.31
100.00	11 41 36	4182.29	8.25	166.21	17.20	61.17	12 51 18	3582.3	4.34	159.60
110.00	22 1 54	2033.42	-30.61	24.04	21.56	106.02	22 35 48	1433.4	-28.11	15.74
110.00	12 35 24	4013.79	10.98	151.78	15.56	57.42	13 42 18	3413.8	6.60	145.42

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY			ORBIT DETERMINATION ACCURACY					
TDE	.5097	TRA	-.9943	TC3	.1422	BAU	.3135	SGT 1582.4 SGR 1969.1 SG3 3065.4	ST	823.5	SR	1031.7	SS	3447.2
RDE	.6887	RRA	-.9171	RC3	1.3642	FAU	.48208	RRT .8484 RRF -.9684 RTF -.8544	CRT	.9881	CRS	.9431	CST	.9816
FDE	-6.7263	FRA	19.4803	FC	-24.4131	BSP	8591	SGB 2526.1 R23 -.1432 R13 -.9597	LSA	3674.1	MSA	354.8	SSA	27.0
BDE	.8568	BRA	1.3526	BC3	1.3716	FSP	10291	SG1 2433.5 SG2 677.9 THA 52.28	EL1	1316.4	EL2	99.1	ALF	51.48

LAUNCH DATE OCT 9 1964 FLIGHT TIME 304.00 ARRIVAL DATE AUG 9 1965

HELIOCENTRIC CONIC DISTANCE 706.496 EARTH TO MARS

RL 149.41 LAL -.00 LOL 15.74 VL 32.615 GAL -6.52 AZL 89.49 HCA 224.83 SMA 186.20 ECC .22675 INC .5131 V1 29.822
RP 227.73 LAP -.36 LOP 240.56 VP 21.279 GAP -2.41 AZP 90.36 TAL 323.45 TAP 188.28 RCA 143.98 APO 228.42 V2 24.152
RC 240.248 GL 4.03 GP 9.83 ZAL 140.93 ZAP 115.55 ETS 174.11 ZAE 151.55 ETE 157.57 ZAC 96.56 ETC 256.48 CLP 115.96

PLANETOCENTRIC CONIC

C3 17.034 VHL 4.127 DLA 12.75 RAL 160.10 RAD 6567.7 VEL 11.765 PTH 2.08 VHP 3.153 DPA 11.65 RAP 181.57 ECC 1.2803

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 9 34	2583.90	-26.48	66.27	22.88	100.41	19 52 38	1983.9	-24.78	58.01
90.00	10 29 33	4413.65	6.88	183.96	17.86	62.46	11 43 7	3813.7	3.14	177.27
100.00	20 37 29	2300.34	-27.65	45.15	22.62	101.84	21 15 49	1700.3	-25.74	36.87
100.00	11 44 19	4172.45	7.93	165.65	17.29	61.08	12 53 51	3572.4	4.01	159.06
110.00	22 0 34	2040.39	-30.74	24.54	21.76	105.75	22 34 34	1440.4	-28.27	16.21
110.00	12 37 44	4005.16	10.66	151.31	15.64	57.33	13 44 29	3405.2	6.28	144.96

DIFFERENTIAL CORRECTIONS
TDE .4532 TRA -.8261 TC3 -.0465 BAU .3154
RDE .6941 RRA -.9228 RC3 1.3842 FAU .49405
FDE-6.8488 FRA19.9480 FC-25.1099 BSP 8035
BDE .8290 BRA 1.2385 BC3 1.3849 FSP 10587

MID-COURSE EXECUTION ACCURACY
SGT 1334.1 SGR 1989.7 SG3 3146.4
RRT .7937 RRF -.9679 RTF -.7939
SGB 2395.6 R23 -.1369 R13 -.9591
SG1 2289.4 SG2 705.4 THA 58.67

ORBIT DETERMINATION ACCURACY
ST 721.3 SR 1041.6 SS 3481.2
CRT .9919 CRS .9419 CST .9748
LSA 3686.7 MSA 363.5 SSA 26.6
EL1 1264.7 EL2 75.5 ALF 55.37

LAUNCH DATE OCT 9 1964 FLIGHT TIME 306.00 ARRIVAL DATE AUG 11 1965

HELIOCENTRIC CONIC DISTANCE 710.396 EARTH TO MARS

RL 149.41 LAL -.00 LOL 15.74 VL 32.609 GAL -6.51 AZL 89.45 HCA 225.87 SMA 186.10 ECC .22630 INC .5499 V1 29.822
RP 227.34 LAP -.39 LOP 241.61 VP 21.317 GAP -2.70 AZP 90.38 TAL 323.43 TAP 189.31 RCA 143.98 APO 228.21 V2 24.193
RC 242.030 GL 4.33 GP 9.78 ZAL 140.92 ZAP 113.76 ETS 174.53 ZAE 149.72 ETE 159.25 ZAC 96.35 ETC 256.55 CLP 114.13

PLANETOCENTRIC CONIC

C3 16.984 VHL 4.121 DLA 13.01 RAL 160.23 RAD 6567.7 VEL 11.763 PTH 2.08 VHP 3.115 DPA 11.94 RAP 180.83 ECC 1.2795

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 7 47	2592.38	-26.58	66.86	23.07	100.13	19 50 59	1992.4	-24.92	58.59
90.00	10 32 23	4403.84	6.57	183.40	17.97	62.39	11 45 47	3803.8	2.82	176.72
100.00	20 35 53	2308.27	-27.76	45.71	22.82	101.56	21 14 21	1708.3	-25.88	37.42
100.00	11 46 58	4163.19	7.62	165.14	17.40	61.01	12 56 21	3563.2	3.70	158.55
110.00	21 59 20	2047.15	-30.86	25.03	21.96	105.49	22 33 27	1447.2	-28.43	16.68
110.00	12 40 1	3997.06	10.36	150.88	15.74	57.24	13 46 38	3397.1	5.97	144.54

DIFFERENTIAL CORRECTIONS
TDE .3955 TRA -.6512 TC3 -.2447 BAU .3234
RDE .6996 RRA -.9275 RC3 1.4030 FAU .50577
FDE-6.9702 FRA20.3891 FC-25.7803 BSP 7532
BDE .8037 BRA 1.1333 BC3 1.4241 FSP 10861

MID-COURSE EXECUTION ACCURACY
SGT 1098.4 SGR 2008.7 SG3 3223.4
RRT .6941 RRF -.9675 RTF -.6852
SGB 2289.4 R23 -.1227 R13 -.9598
SG1 2169.2 SG2 732.3 THA 66.36

ORBIT DETERMINATION ACCURACY
ST 616.5 SR 1051.2 SS 3513.7
CRT .9958 CRS .9408 CST .9637
LSA 3700.2 MSA 372.0 SSA 26.3
EL1 1217.6 EL2 49.0 ALF 59.66

LAUNCH DATE OCT 9 1964 FLIGHT TIME 308.00 ARRIVAL DATE AUG 13 1965

HELIOCENTRIC CONIC DISTANCE 714.302 EARTH TO MARS

RL 149.41 LAL -.00 LOL 15.74 VL 32.604 GAL -6.50 AZL 89.41 HCA 226.92 SMA 186.00 ECC .22590 INC .5858 V1 29.822
RP 226.95 LAP -.43 LOP 242.66 VP 21.355 GAP -2.98 AZP 90.40 TAL 323.40 TAP 190.33 RCA 143.98 APO 228.02 V2 24.235
RC 243.792 GL 4.62 GP 9.74 ZAL 140.92 ZAP 111.93 ETS 174.94 ZAE 147.83 ETE 160.78 ZAC 96.13 ETC 256.62 CLP 112.26

PLANETOCENTRIC CONIC

C3 16.948 VHL 4.117 DLA 13.27 RAL 160.37 RAD 6567.7 VEL 11.761 PTH 2.08 VHP 3.080 DPA 12.24 RAP 180.07 ECC 1.2789

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 6 9	2600.59	-26.68	67.45	23.28	99.85	19 49 30	2000.6	-25.05	59.16
90.00	10 35 8	4394.64	6.28	182.88	18.11	62.33	11 48 23	3794.6	2.53	176.21
100.00	20 34 25	2315.94	-27.86	46.26	23.03	101.29	21 13 1	1715.9	-26.02	37.94
100.00	11 49 34	4154.53	7.34	164.65	17.53	60.94	12 58 48	3554.5	3.41	158.07
110.00	21 58 13	2053.71	-30.98	25.50	22.19	105.23	22 32 27	1453.7	-28.58	17.13
110.00	12 42 15	3989.52	10.08	150.47	15.86	57.16	13 48 44	3389.5	5.69	144.14

DIFFERENTIAL CORRECTIONS
TDE .3311 TRA -.4742 TC3 -.4660 BAU .3372
RDE .7025 RRA -.9341 RC3 1.4134 FAU .51449
FDE-7.0355 FRA20.8591 FC-26.2812 BSP 7223
BDE .7766 BRA 1.0476 BC3 1.4883 FSP 11227

MID-COURSE EXECUTION ACCURACY
SGT 905.2 SGR 2023.4 SG3 3294.3
RRT .4966 RRF -.9669 RTF -.4761
SGB 2216.7 R23 -.0962 R13 -.9621
SG1 2080.9 SG2 764.0 THA 75.47

ORBIT DETERMINATION ACCURACY
ST 503.9 SR 1057.2 SS 3533.9
CRT .9981 CRS .9389 CST .9452
LSA 3703.3 MSA 380.3 SSA 26.3
EL1 1170.8 EL2 28.2 ALF 64.54

LAUNCH DATE OCT 9 1964 FLIGHT TIME 310.00 ARRIVAL DATE AUG 15 1965

HELIOCENTRIC CONIC DISTANCE 718.219 EARTH TO MARS

RL 149.41 LAL -.00 LOL 15.74 VL 32.598 GAL -6.50 AZL 89.38 HCA 227.98 SMA 185.91 ECC .22555 INC .6202 V1 29.822
RP 226.56 LAP -.46 LOP 243.71 VP 21.394 GAP -3.26 AZP 90.42 TAL 323.36 TAP 191.34 RCA 143.98 APO 227.85 V2 24.277
RC 245.534 GL 4.89 GP 9.69 ZAL 140.94 ZAP 110.06 ETS 175.35 ZAE 145.89 ETE 162.18 ZAC 95.91 ETC 256.70 CLP 110.36

PLANETOCENTRIC CONIC

C3 16.923 VHL 4.114 DLA 13.51 RAL 160.52 RAD 6567.7 VEL 11.760 PTH 2.08 VHP 3.048 DPA 12.54 RAP 179.27 ECC 1.2785

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 4 39	2608.53	-26.77	68.01	23.50	99.58	19 48 8	2008.5	-25.17	59.71
90.00	10 37 49	4386.02	6.01	182.39	18.26	62.28	11 50 55	3786.0	2.25	175.73
100.00	20 33 4	2323.37	-27.96	46.79	23.26	101.03	21 11 48	1723.4	-26.15	38.46
100.00	11 52 5	4146.42	7.07	164.20	17.68	60.88	13 1 11	3546.4	3.13	157.62
110.00	21 57 13	2060.07	-31.09	25.97	22.43	104.98	22 31 33	1460.1	-28.72	17.57
110.00	12 44 25	3982.48	9.82	150.09	16.00	57.09	13 50 48	3382.5	5.42	143.77

DIFFERENTIAL CORRECTIONS
TDE .2739 TRA -.2852 TC3 -.6773 BAU .3582
RDE .7093 RRA -.9354 RC3 1.4311 FAU .52614
FDE-7.1762 FRA21.2158 FC-26.9160 BSP 6888
BDE .7604 BRA .9779 BC3 1.5833 FSP 11408

MID-COURSE EXECUTION ACCURACY
SGT 789.2 SGR 2039.0 SG3 3361.6
RRT .1665 RRF -.9664 RTF -.1266
SGB 2186.4 R23 -.0625 R13 -.9650
SG1 2044.0 SG2 776.3 THA 85.69

ORBIT DETERMINATION ACCURACY
ST 401.0 SR 1067.2 SS 3567.5
CRT .9944 CRS .9383 CST .9056
LSA 3724.9 MSA 388.5 SSA 25.8
EL1 1139.3 EL2 39.8 ALF 69.49

LAUNCH DATE OCT 9 1964 FLIGHT TIME 312.00 ARRIVAL DATE AUG 17 1965

HELIOCENTRIC CONIC DISTANCE 722.143 EARTH TO MARS

RL	149.41	LAL	-.00	LOL	15.74	VL	32.593	GAL	-6.50	AZL	89.35	HCA	229.04	SMA	185.83	ECC	.22525	INC	.6541
RP	226.17	LAP	-.49	LOP	244.77	VP	21.434	GAP	-3.53	AZP	90.43	TAL	323.31	TAP	192.35	RCA	143.97	APO	227.69
RC	247.256	GL	5.16	GP	9.63	ZAL	140.96	ZAP	108.16	ETS	175.76	ZAE	143.90	ETE	163.48	ZAC	95.67	ETC	256.79

V1	29.822	V2	24.318	CLP	108.43														

PLANETOCENTRIC CONIC

C3	16.910	VHL	4.112	DLA	13.73	RAL	160.68	RAD	6567.7	VEL	11.760	PTH	2.08	VHP	3.021	DPA	12.86	RAP	178.45
ECC	1.2783																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 3 17	2616.20	-26.86	68.55	23.74	99.32	19 46 54	2016.2	-25.30	60.24
90.00	10 40 26	4378.00	5.75	181.94	18.42	62.23	11 53 24	3778.0	1.99	175.28
100.00	20 31 52	2330.55	-28.05	47.31	23.50	100.77	21 10 42	1730.6	-26.28	38.95
100.00	11 54 33	4138.89	6.82	163.78	17.84	60.83	13 3 31	3538.9	2.88	157.21
110.00	21 56 20	2066.23	-31.20	26.41	22.68	104.73	22 30 47	1466.2	-28.86	17.99
110.00	12 46 33	3975.98	9.58	149.74	16.16	57.03	13 52 49	3376.0	5.17	143.42

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2128	TRA	-.0919	TC3	-.9021	BAU	.3848	SGT	809.8	SGR	2050.9	SG3	3422.1	ST	300.0	SR	1075.0
RDE	.7149	RRA	-.9366	RC3	1.4435	FAU	.53596	RRT	-.2459	RRF	-.9658	RTF	.3010	CRT	.9628	CRS	.9373
FDE	-7.2872	FRA	21.5619	FC	-27.4386	BSP	6768	SGB	2205.0	R23	-.0240	R13	-.9677	LSA	3742.0	MSA	396.6
BDE	.7459	BRA	.9411	BC3	1.7022	FSP	11610	SG1	2062.2	SG2	780.6	THA	96.48	EL1	1113.4	EL2	78.3

SS	3593.7																
CST	.8140																
SSA	25.3																
ALF	74.89																

LAUNCH DATE OCT 9 1964 FLIGHT TIME 314.00 ARRIVAL DATE AUG 19 1965

HELIOCENTRIC CONIC DISTANCE 726.074 EARTH TO MARS

RL	149.41	LAL	-.00	LOL	15.74	VL	32.589	GAL	-6.51	AZL	89.31	HCA	230.10	SMA	185.75	ECC	.22500	INC	.6869
RP	225.78	LAP	-.53	LOP	245.83	VP	21.475	GAP	-3.80	AZP	90.44	TAL	323.25	TAP	193.35	RCA	143.96	APO	227.55
RC	248.959	GL	5.42	GP	9.57	ZAL	141.00	ZAP	106.24	ETS	176.16	ZAE	141.88	ETE	164.67	ZAC	95.43	ETC	256.88

V1	29.822	V2	24.360	CLP	106.48														

PLANETOCENTRIC CONIC

C3	16.910	VHL	4.112	DLA	13.95	RAL	160.84	RAD	6567.7	VEL	11.760	PTH	2.08	VHP	2.996	DPA	13.18	RAP	177.60
ECC	1.2783																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 2 5	2623.60	-26.94	69.08	23.99	99.07	19 45 48	2023.6	-25.41	60.75
90.00	10 42 58	4370.59	5.52	181.52	18.61	62.18	11 55 49	3770.6	1.75	174.87
100.00	20 30 48	2337.48	-28.14	47.80	23.75	100.52	21 9 45	1737.5	-26.40	39.43
100.00	11 56 56	4131.94	6.59	163.39	18.03	60.78	13 5 48	3531.9	2.64	156.83
110.00	21 55 35	2072.19	-31.30	26.85	22.95	104.49	22 30 7	1472.2	-29.00	18.40
110.00	12 48 39	3970.00	9.36	149.42	16.34	56.97	13 54 49	3370.0	4.95	143.11

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1495	TRA	.1063	TC3	-1.1370	BAU	.4170	SGT	970.1	SGR	2059.6	SG3	3475.4	ST	215.1	SR	1081.7
RDE	.7199	RRA	-.9368	RC3	1.4524	FAU	.54455	RRT	-.5572	RRF	-.9651	RTF	.6173	CRT	.8142	CRS	.9362
FDE	-7.3843	FRA	21.8765	FC	-27.8793	BSP	6859	SGB	2276.6	R23	.0109	R13	-.9697	LSA	3758.5	MSA	404.5
BDE	.7352	BRA	.9428	BC3	1.8445	FSP	11801	SG1	2140.6	SG2	775.0	THA	107.00	EL1	1096.0	EL2	123.3

SS	3615.8																
CST	.5633																
SSA	24.9																
ALF	80.68																

LAUNCH DATE OCT 9 1964 FLIGHT TIME 316.00 ARRIVAL DATE AUG 21 1965

HELIOCENTRIC CONIC DISTANCE 730.012 EARTH TO MARS

RL	149.41	LAL	-.00	LOL	15.74	VL	32.585	GAL	-6.51	AZL	89.28	HCA	231.16	SMA	185.68	ECC	.22479	INC	.7186
RP	225.38	LAP	-.56	LOP	246.90	VP	21.516	GAP	-4.07	AZP	90.45	TAL	323.18	TAP	194.34	RCA	143.94	APO	227.42
RC	250.643	GL	5.67	GP	9.51	ZAL	141.05	ZAP	104.30	ETS	176.55	ZAE	139.81	ETE	165.78	ZAC	95.18	ETC	256.98

V1	29.822	V2	24.402	CLP	104.50														

PLANETOCENTRIC CONIC

C3	16.921	VHL	4.114	DLA	14.14	RAL	161.02	RAD	6567.7	VEL	11.760	PTH	2.08	VHP	2.975	DPA	13.50	RAP	176.74
ECC	1.2785																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 1 0	2630.73	-27.01	69.59	24.26	98.83	19 44 51	2030.7	-25.52	61.24
90.00	10 45 27	4363.77	5.30	181.14	18.82	62.14	11 58 10	3763.8	1.53	174.49
100.00	20 29 52	2344.17	-28.22	48.28	24.03	100.28	21 8 56	1744.2	-26.51	39.90
100.00	11 59 16	4125.57	6.38	163.04	18.23	60.73	13 8 2	3525.6	2.43	156.48
110.00	21 54 57	2077.95	-31.40	27.27	23.23	104.26	22 29 35	1477.9	-29.12	18.81
110.00	12 50 41	3964.55	9.16	149.13	16.53	56.92	13 56 45	3364.6	4.74	142.82

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0846	TRA	.3093	TC3	-1.3796	BAU	.4542	SGT	1224.5	SGR	2065.1	SG3	3521.0	ST	181.2	SR	1087.5
RDE	.7247	RRA	-.9355	RC3	1.4585	FAU	.55219	RRT	-.7276	RRF	-.9643	RTF	.7873	CRT	.3249	CRS	.9351
FDE	-7.4722	FRA	22.1491	FC	-28.2515	BSP	7162	SGB	2400.8	R23	.0358	R13	-.9717	LSA	3775.4	MSA	412.1
BDE	.7296	BRA	.9853	BC3	2.0076	FSP	11970	SG1	2276.7	SG2	761.9	THA	116.54	EL1	1089.1	EL2	171.1

SS	3634.4																
CST	-.0270																
SSA	24.6																
ALF	86.82																

LAUNCH DATE OCT 9 1964 FLIGHT TIME 318.00 ARRIVAL DATE AUG 23 1965

HELIOCENTRIC CONIC DISTANCE 733.958 EARTH TO MARS

RL	149.41	LAL	-.00	LOL	15.74	VL	32.581	GAL	-6.52	AZL	89.25	HCA	232.23	SMA	185.62	ECC	.22464	INC	.7496
RP	224.99	LAP	-.59	LOP	247.97	VP	21.557	GAP	-4.33	AZP	90.46	TAL	323.09	TAP	195.32	RCA	143.92	APO	227.31
RC	252.307	GL	5.91	GP	9.44	ZAL	141.12	ZAP	102.33	ETS	176.94	ZAE	137.72	ETE	166.81	ZAC	94.92	ETC	257.08

V1	29.822	V2	24.444	CLP	102.50														

PLANETOCENTRIC CONIC

C3	16.945	VHL	4.116	DLA	14.33	RAL	161.20	RAD	6567.7	VEL	11.761	PTH	2.08	VHP	2.958	DPA	13.82	RAP	175.85
ECC	1.2789																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 0 5	2637.58	-27.09	70.08	24.54	98.59	19 44 2	2037.6	-25.62	61.72
90.00	10 47 51	4357.56	5.10	180.79	19.05	62.11	12 0 28	3757.6	1.33	174.14
100.00	20 29 4	2350.60	-28.30	48.74	24.32	100.05	21 8 15	1750.6	-26.62	40.34
100.00	12 1 32	4119.77	6.18	162.72	18.45	60.70	13 10 12	3519.8	2.23	156.16
110.00	21 54 26	2083.52	-31.49	27.68	23.53	104.04	22 29 9	1483.5	-29.24	19.19
110.00	12 52 40	3959.62	8.98	148.86	16.75	56.88	13 58 40	3359.6	4.55	142.57

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0185	TRA	.5170	TC3	-1.6283	BAU	.4956	SGT	1532.8	SGR	2067.2	SG3	3558.5	ST	227.9	SR	1092.4
RDE	.7293	RRA	-.9328	RC3	1.4614	FAU	.55865	RRT	-.8149	RRF	-.9634	RTF	.8730	CRT	-.2609	CRS	.9340
FDE	-7.5525	FRA	22.3792	FC	-28.5423	BSP	7661	SGB	2573.5	R23	.0498	R13	-.9740	LSA	3793.8	MSA	419.5
BDE	.7295	BRA	1.0665	BC3	2.1879	FSP	12108	SG1	2463.1	SG2	745.7	THA	124.78	EL1	1094.0	EL2	219.6

SS	3650.2																
CST	-.5860																
SSA	24.2																
ALF	93.25																

LAUNCH DATE OCT 9 1964 FLIGHT TIME 320.00 ARRIVAL DATE AUG 25 1965

HELIOCENTRIC CONIC DISTANCE 737.910 EARTH TO MARS

RL 149.41 LAL -.00 LOL 15.74 VL 32.577 GAL -6.54 AZL 89.22 HCA 233.30 SMA 185.56 ECC .22452 INC .7798 V1 29.822
RP 224.60 LAP -.63 LOP 249.04 VP 21.600 GAP -4.59 AZP 90.47 TAL 323.00 TAP 196.30 RCA 143.89 APO 227.22 V2 24.486
RC 253.951 GL 6.14 GP 9.37 ZAL 141.20 ZAP 100.35 ETS 177.33 ZAE 135.60 ETE 167.77 ZAC 94.66 ETC 257.18 CLP 100.49

PLANETOCENTRIC CONIC

C3 16.980 VHL 4.121 DLA 14.50 RAL 161.40 RAD 6567.7 VEL 11.763 PTH 2.08 VHP 2.944 DPA 14.14 RAP 174.95 ECC 1.2794

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 59 18	2644.16	-27.15	70.55	24.85	98.37	19 43 22	2044.2	-25.71	62.18
90.00	10 50 10	4351.94	4.92	180.47	19.29	62.08	12 2 42	3751.9	1.15	173.83
100.00	20 28 25	2356.78	-28.37	49.19	24.63	99.83	21 7 41	1756.8	-26.72	40.78
100.00	12 3 45	4114.55	6.01	162.43	18.70	60.66	13 12 19	3514.6	2.06	155.87
110.00	21 54 2	2088.88	-31.58	28.07	23.85	103.82	22 28 51	1488.9	-29.36	19.57
110.00	12 54 37	3955.21	8.81	148.63	16.98	56.84	14 0 32	3355.2	4.39	142.33

DIFFERENTIAL CORRECTIONS

TDE -.0491 TRA .7294 TC3-1.8814 BAU .5407
RDE .7332 RRA -.9287 RC3 1.4605 FAU .56369
FDE-7.6143 FRA22.5698 FC-28.7402 BSP 8344
BDE .7348 BRA 1.1809 BC3 2.3818 FSP 12229

MID-COURSE EXECUTION ACCURACY

SGT 1872.5 SGR 2065.7 SG3 3587.3
RRT -.8617 RRF -.9624 RTF .9185
SGB 2788.1 R23 .0554 R13 -.9767
SG1 2691.0 SG2 729.3 THA 131.74

ORBIT DETERMINATION ACCURACY

ST 324.9 SR 1095.8 SS 3661.0
CRT -.5535 CRS .9327 CST -.8151
LSA 3811.3 MSA 426.9 SSA 23.8
EL1 1111.4 EL2 266.8 ALF 99.90

LAUNCH DATE OCT 9 1964 FLIGHT TIME 322.00 ARRIVAL DATE AUG 27 1965

HELIOCENTRIC CONIC DISTANCE 741.870 EARTH TO MARS

RL 149.41 LAL -.00 LOL 15.74 VL 32.574 GAL -6.55 AZL 89.19 HCA 234.38 SMA 185.50 ECC .22446 INC .8093 V1 29.822
RP 224.21 LAP -.66 LOP 250.11 VP 21.642 GAP -4.85 AZP 90.47 TAL 322.89 TAP 197.27 RCA 143.86 APO 227.14 V2 24.527
RC 255.576 GL 6.36 GP 9.28 ZAL 141.29 ZAP 98.35 ETS 177.70 ZAE 133.45 ETE 168.67 ZAC 94.38 ETC 257.29 CLP 98.47

PLANETOCENTRIC CONIC

C3 17.027 VHL 4.126 DLA 14.66 RAL 161.60 RAD 6567.7 VEL 11.765 PTH 2.08 VHP 2.934 DPA 14.46 RAP 174.04 ECC 1.2802

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 58 40	2650.46	-27.21	71.00	25.17	98.15	19 42 51	2050.5	-25.80	62.62
90.00	10 52 26	4346.92	4.76	180.19	19.55	62.05	12 4 53	3746.9	.99	173.55
100.00	20 27 54	2362.72	-28.44	49.62	24.95	99.61	21 7 16	1762.7	-26.82	41.19
100.00	12 5 54	4109.90	5.85	162.17	18.96	60.63	13 14 23	3509.9	1.90	155.62
110.00	21 53 45	2094.06	-31.66	28.45	24.18	103.61	22 28 40	1494.1	-29.47	19.93
110.00	12 56 31	3951.33	8.67	148.42	17.23	56.80	14 2 22	3351.3	4.24	142.13

DIFFERENTIAL CORRECTIONS

TDE -.1182 TRA .9454 TC3-2.1386 BAU .5890
RDE .7370 RRA -.9229 RC3 1.4563 FAU .56749
FDE-7.6691 FRA22.7078 FC-28.8530 BSP 9166
BDE .7465 BRA 1.3212 BC3 2.5874 FSP 12314

MID-COURSE EXECUTION ACCURACY

SGT 2232.3 SGR 2060.6 SG3 3606.7
RRT -.8884 RRF -.9612 RTF .9443
SGB 3038.0 R23 .0560 R13 -.9796
SG1 2952.6 SG2 715.3 THA 137.58

ORBIT DETERMINATION ACCURACY

ST 442.1 SR 1098.4 SS 3668.9
CRT -.6829 CRS .9314 CST -.9010
LSA 3830.6 MSA 434.0 SSA 23.4
EL1 1142.6 EL2 310.5 ALF 106.63

LAUNCH DATE OCT 9 1964 FLIGHT TIME 324.00 ARRIVAL DATE AUG 29 1965

HELIOCENTRIC CONIC DISTANCE 745.837 EARTH TO MARS

RL 149.41 LAL -.00 LOL 15.74 VL 32.571 GAL -6.57 AZL 89.16 HCA 235.46 SMA 185.45 ECC .22444 INC .8381 V1 29.822
RP 223.82 LAP -.69 LOP 251.19 VP 21.686 GAP -5.10 AZP 90.48 TAL 322.77 TAP 198.23 RCA 143.83 APO 227.08 V2 24.569
RC 257.180 GL 6.57 GP 9.20 ZAL 141.39 ZAP 96.35 ETS 178.07 ZAE 131.29 ETE 169.51 ZAC 94.11 ETC 257.41 CLP 96.43

PLANETOCENTRIC CONIC

C3 17.087 VHL 4.134 DLA 14.81 RAL 161.82 RAD 6567.7 VEL 11.767 PTH 2.08 VHP 2.927 DPA 14.77 RAP 173.12 ECC 1.2812

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 58 11	2656.49	-27.27	71.43	25.50	97.94	19 42 28	2056.5	-25.89	63.04
90.00	10 54 37	4342.50	4.62	179.94	19.84	62.03	12 7 0	3742.5	.85	173.30
100.00	20 27 31	2368.40	-28.50	50.03	25.29	99.41	21 7 0	1768.4	-26.91	41.59
100.00	12 7 58	4105.83	5.72	161.94	19.23	60.61	13 16 24	3505.8	1.76	155.39
110.00	21 53 36	2099.04	-31.74	28.82	24.53	103.41	22 28 36	1499.0	-29.57	20.28
110.00	12 58 22	3947.96	8.54	148.24	17.50	56.77	14 4 10	3348.0	4.11	141.95

DIFFERENTIAL CORRECTIONS

TDE -.1881 TRA 1.1654 TC3-2.3975 BAU .6399
RDE .7404 RRA -.9153 RC3 1.4489 FAU .56995
FDE-7.7083 FRA22.7962 FC-28.8773 BSP 10108
BDE .7639 BRA 1.4818 BC3 2.8013 FSP 12370

MID-COURSE EXECUTION ACCURACY

SGT 2605.4 SGR 2051.8 SG3 3616.8
RRT -.9043 RRF -.9600 RTF .9601
SGB 3316.4 R23 .0539 R13 -.9824
SG1 3240.8 SG2 704.2 THA 142.47

ORBIT DETERMINATION ACCURACY

ST 568.1 SR 1099.7 SS 3672.0
CRT -.7475 CRS .9301 CST -.9387
LSA 3849.8 MSA 441.0 SSA 22.9
EL1 1187.4 EL2 349.5 ALF 113.25

LAUNCH DATE OCT 9 1964 FLIGHT TIME 326.00 ARRIVAL DATE AUG 31 1965

HELIOCENTRIC CONIC DISTANCE 749.810 EARTH TO MARS

RL 149.41 LAL -.00 LOL 15.74 VL 32.569 GAL -6.59 AZL 89.13 HCA 236.54 SMA 185.41 ECC .22446 INC .8662 V1 29.822
RP 223.44 LAP -.72 LOP 252.28 VP 21.729 GAP -5.35 AZP 90.48 TAL 322.64 TAP 199.19 RCA 143.79 APO 227.03 V2 24.611
RC 258.763 GL 6.78 GP 9.10 ZAL 141.51 ZAP 94.34 ETS 178.44 ZAE 129.12 ETE 170.29 ZAC 93.83 ETC 257.52 CLP 94.40

PLANETOCENTRIC CONIC

C3 17.159 VHL 4.142 DLA 14.95 RAL 162.04 RAD 6567.7 VEL 11.770 PTH 2.08 VHP 2.924 DPA 15.07 RAP 172.20 ECC 1.2824

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 57 51	2662.25	-27.32	71.84	25.86	97.74	19 42 14	2062.2	-25.97	63.44
90.00	10 56 44	4338.69	4.50	179.73	20.14	62.01	12 9 3	3738.7	.72	173.09
100.00	20 27 17	2373.84	-28.56	50.42	25.65	99.21	21 6 51	1773.8	-27.00	41.97
100.00	12 10 0	4102.33	5.60	161.75	19.53	60.59	13 18 22	3502.3	1.64	155.20
110.00	21 53 35	2103.82	-31.82	29.17	24.90	103.21	22 28 39	1503.8	-29.67	20.62
110.00	13 0 11	3945.11	8.43	148.09	17.79	56.75	14 5 56	3345.1	4.00	141.80

DIFFERENTIAL CORRECTIONS

TDE -.2595 TRA 1.3881 TC3-2.6577 BAU .6932
RDE .7435 RRA -.9062 RC3 1.4380 FAU .57102
FDE-7.7378 FRA22.8349 FC-28.8104 BSP 11133
BDE .7875 BRA 1.6577 BC3 3.0218 FSP 12391

MID-COURSE EXECUTION ACCURACY

SGT 2987.7 SGR 2039.6 SG3 3617.4
RRT -.9141 RRF -.9585 RTF .9702
SGB 3617.5 R23 .0508 R13 -.9849
SG1 3549.9 SG2 695.9 THA 146.58

ORBIT DETERMINATION ACCURACY

ST 699.0 SR 1100.1 SS 3672.1
CRT -.7848 CRS .9287 CST -.9583
LSA 3870.7 MSA 447.7 SSA 22.5
EL1 1246.1 EL2 382.5 ALF 119.56

LAUNCH DATE OCT 9 1964 FLIGHT TIME 328.00 ARRIVAL DATE SEP 2 1965

HELIOCENTRIC CONIC DISTANCE 753.790 EARTH TO MARS

RL 149.41 LAL -.00 LOL 15.74 VL 32.566 GAL -6.62 AZL 89.11 HCA 237.63 SMA 185.37 ECC .22453 INC .8937 V1 29.822
RP 223.05 LAP -.75 LOP 253.36 VP 21.773 GAP -5.59 AZP 90.48 TAL 322.50 TAP 200.13 RCA 143.75 APO 226.99 V2 24.653
RC 260.326 GL 6.98 GP 9.00 ZAL 141.64 ZAP 92.34 ETS 178.79 ZAE 126.94 ETE 171.03 ZAC 93.54 ETC 257.64 CLP 92.37

PLANETOCENTRIC CONIC

C3 17.243 VHL 4.152 DLA 15.07 RAL 162.27 RAD 6567.7 VEL 11.774 PTH 2.08 VHP 2.925 DPA 15.37 RAP 171.27 ECC 1.2838

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 57 40	2667.72	-27.37	72.24	26.23	97.55	19 42 8	2067.7	-26.05	63.82
90.00	10 58 47	4335.47	4.40	179.55	20.46	62.00	12 11 2	3735.5	.62	172.91
100.00	20 27 12	2379.02	-28.62	50.80	26.02	99.02	21 6 51	1779.0	-27.08	42.33
100.00	12 11 57	4099.40	5.50	161.59	19.85	60.57	13 20 16	3499.4	1.54	155.04
110.00	21 53 41	2108.42	-31.89	29.51	25.28	103.02	22 28 49	1508.4	-29.77	20.94
110.00	13 1 57	3942.77	8.35	147.96	18.10	56.73	14 7 40	3342.8	3.91	141.68

DIFFERENTIAL CORRECTIONS
TDE -.3320 TRA 1.6136 TC3-2.9167 BAU .7482
RDE .7464 RRA -.8953 RC3 1.4241 FAU .57079
FDE-7.7567 FRA22.8213 FC-28.6581 BSP 12229
BDE .8169 BRA 1.8454 BC3 3.2458 FSP 12377

MID-COURSE EXECUTION ACCURACY
SGT 3375.5 SGR 2023.9 SG3 3608.6
RRT -.9202 RRF -.9569 RTF .9770
SGB 3935.7 R23 .0474 R13 -.9870
SG1 3874.7 SG2 690.1 THA 150.07

ORBIT DETERMINATION ACCURACY
ST 832.9 SR 1099.6 SS 3668.7
CRT -.8079 CRS .9272 CST -.9695
LSA 3893.0 MSA 454.2 SSA 22.0
EL1 1317.1 EL2 409.7 ALF 125.40

LAUNCH DATE OCT 9 1964 FLIGHT TIME 330.00 ARRIVAL DATE SEP 4 1965

HELIOCENTRIC CONIC DISTANCE 757.776 EARTH TO MARS

RL 149.41 LAL -.00 LOL 15.74 VL 32.564 GAL -6.65 AZL 89.08 HCA 238.72 SMA 185.34 ECC .22465 INC .9207 V1 29.822
RP 222.66 LAP -.79 LOP 254.46 VP 21.818 GAP -5.83 AZP 90.48 TAL 322.34 TAP 201.07 RCA 143.70 APO 226.97 V2 24.695
RC 261.869 GL 7.17 GP 8.90 ZAL 141.78 ZAP 90.34 ETS 179.14 ZAE 124.76 ETE 171.73 ZAC 93.26 ETC 257.76 CLP 90.34

PLANETOCENTRIC CONIC

C3 17.340 VHL 4.164 DLA 15.18 RAL 162.52 RAD 6567.7 VEL 11.778 PTH 2.08 VHP 2.929 DPA 15.65 RAP 170.36 ECC 1.2854

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 57 39	2672.92	-27.42	72.61	26.61	97.36	19 42 11	2072.9	-26.12	64.19
90.00	11 0 45	4332.86	4.31	179.40	20.79	61.99	12 12 58	3732.9	.53	172.76
100.00	20 27 15	2383.96	-28.67	51.15	26.41	98.84	21 6 59	1784.0	-27.15	42.68
100.00	12 13 50	4097.05	5.42	161.46	20.18	60.56	13 22 7	3497.0	1.46	154.91
110.00	21 53 54	2112.82	-31.96	29.84	25.68	102.84	22 29 7	1512.8	-29.86	21.25
110.00	13 3 40	3940.95	8.28	147.86	18.43	56.72	14 9 21	3341.0	3.84	141.59

DIFFERENTIAL CORRECTIONS
TDE -.4053 TRA 1.8412 TC3-3.1739 BAU .8048
RDE .7487 RRA -.8830 RC3 1.4068 FAU .56907
FDE-7.7594 FRA22.7588 FC-28.4122 BSP 13376
BDE .8514 BRA 2.0419 BC3 3.4717 FSP 12333

MID-COURSE EXECUTION ACCURACY
SGT 3766.7 SGR 2004.7 SG3 3590.2
RRT -.9238 RRF -.9552 RTF .9818
SGB 4266.9 R23 .0443 R13 -.9888
SG1 4211.4 SG2 686.4 THA 153.04

ORBIT DETERMINATION ACCURACY
ST 968.2 SR 1097.8 SS 3660.7
CRT -.8229 CRS .9257 CST -.9765
LSA 3915.5 MSA 460.6 SSA 21.6
EL1 1398.6 EL2 431.8 ALF 130.65

LAUNCH DATE OCT 9 1964 FLIGHT TIME 332.00 ARRIVAL DATE SEP 6 1965

HELIOCENTRIC CONIC DISTANCE 761.764 EARTH TO MARS

RL 149.41 LAL -.00 LOL 15.74 VL 32.563 GAL -6.68 AZL 89.05 HCA 239.82 SMA 185.31 ECC .22481 INC .9472 V1 29.822
RP 222.28 LAP -.82 LOP 255.55 VP 21.862 GAP -6.07 AZP 90.48 TAL 322.18 TAP 201.99 RCA 143.65 APO 226.97 V2 24.737
RC 263.392 GL 7.35 GP 8.79 ZAL 141.94 ZAP 88.35 ETS 179.47 ZAE 122.58 ETE 172.38 ZAC 92.97 ETC 257.89 CLP 88.33

PLANETOCENTRIC CONIC

C3 17.450 VHL 4.177 DLA 15.27 RAL 162.77 RAD 6567.7 VEL 11.783 PTH 2.08 VHP 2.937 DPA 15.93 RAP 169.45 ECC 1.2872

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 57 47	2677.83	-27.46	72.96	27.02	97.19	19 42 24	2077.8	-26.18	64.53
90.00	11 2 39	4330.88	4.25	179.29	21.15	61.98	12 14 50	3730.9	.47	172.65
100.00	20 27 27	2388.64	-28.72	51.49	26.82	98.66	21 7 16	1788.6	-27.23	43.01
100.00	12 15 40	4095.31	5.37	161.36	20.54	60.55	13 23 55	3495.3	1.40	154.82
110.00	21 54 15	2117.03	-32.02	30.15	26.10	102.66	22 29 33	1517.0	-29.95	21.55
110.00	13 5 21	3939.68	8.23	147.80	18.78	56.71	14 11 1	3339.7	3.79	141.52

DIFFERENTIAL CORRECTIONS
TDE -.4765 TRA 2.0773 TC3-3.4216 BAU .8602
RDE .7457 RRA -.8742 RC3 1.3745 FAU .56062
FDE-7.6359 FRA22.7583 FC-27.8137 BSP 14719
BDE .8850 BRA 2.2537 BC3 3.6873 FSP 12499

MID-COURSE EXECUTION ACCURACY
SGT 4161.9 SGR 1977.3 SG3 3558.9
RRT -.9262 RRF -.9529 RTF .9849
SGB 4607.7 R23 .0415 R13 -.9899
SG1 4557.1 SG2 680.9 THA 155.67

ORBIT DETERMINATION ACCURACY
ST 1104.3 SR 1089.3 SS 3628.0
CRT -.8328 CRS .9219 CST -.9821
LSA 3917.8 MSA 467.3 SSA 21.6
EL1 1484.9 EL2 448.4 ALF 135.47

LAUNCH DATE OCT 9 1964 FLIGHT TIME 334.00 ARRIVAL DATE SEP 8 1965

HELIOCENTRIC CONIC DISTANCE 765.764 EARTH TO MARS

RL 149.41 LAL -.00 LOL 15.74 VL 32.561 GAL -6.71 AZL 89.03 HCA 240.92 SMA 185.28 ECC .22502 INC .9731 V1 29.822
RP 221.89 LAP -.85 LOP 256.65 VP 21.907 GAP -6.31 AZP 90.47 TAL 322.00 TAP 202.91 RCA 143.59 APO 226.98 V2 24.779
RC 264.895 GL 7.53 GP 8.67 ZAL 142.11 ZAP 86.36 ETS 179.80 ZAE 120.41 ETE 172.99 ZAC 92.68 ETC 258.01 CLP 86.32

PLANETOCENTRIC CONIC

C3 17.572 VHL 4.192 DLA 15.36 RAL 163.04 RAD 6567.7 VEL 11.788 PTH 2.08 VHP 2.948 DPA 16.19 RAP 168.55 ECC 1.2892

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 58 3	2682.49	-27.50	73.30	27.44	97.03	19 42 45	2082.5	-26.24	64.86
90.00	11 4 29	4329.46	4.21	179.21	21.52	61.97	12 16 39	3729.5	.42	172.57
100.00	20 27 47	2393.09	-28.77	51.82	27.25	98.50	21 7 40	1793.1	-27.29	43.32
100.00	12 17 26	4094.09	5.33	161.29	20.91	60.54	13 25 40	3494.1	1.36	154.75
110.00	21 54 43	2121.06	-32.08	30.45	26.53	102.50	22 30 4	1521.1	-30.03	21.84
110.00	13 6 59	3938.88	8.20	147.75	19.14	56.70	14 12 38	3338.9	3.76	141.48

DIFFERENTIAL CORRECTIONS
TDE -.5524 TRA 2.3055 TC3-3.6716 BAU .9196
RDE .7499 RRA -.8566 RC3 1.3571 FAU .55869
FDE-7.6672 FRA22.5467 FC-27.5253 BSP 15866
BDE .9314 BRA 2.4595 BC3 3.9144 FSP 12281

MID-COURSE EXECUTION ACCURACY
SGT 4552.4 SGR 1954.3 SG3 3524.1
RRT -.9266 RRF -.9509 RTF .9876
SGB 4954.2 R23 .0393 R13 -.9914
SG1 4907.0 SG2 681.7 THA 157.86

ORBIT DETERMINATION ACCURACY
ST 1240.9 SR 1088.3 SS 3622.5
CRT -.8398 CRS .9212 CST -.9847
LSA 3952.5 MSA 473.1 SSA 20.9
EL1 1584.3 EL2 462.7 ALF 139.45

LAUNCH DATE OCT 9 1964 FLIGHT TIME 336.00 ARRIVAL DATE SEP 10 1965

HELIOCENTRIC CONIC DISTANCE 769.769 EARTH TO MARS

RL 149.41 LAL -.00 LOL 15.74 VL 32.560 GAL -6.75 AZL 89.00 HCA 242.02 SMA 185.26 ECC .22527 INC .9986 V1 29.822
RP 221.51 LAP -.88 LOP 257.75 VP 21.953 GAP -6.54 AZP 90.47 TAL 321.81 TAP 203.83 RCA 143.53 APO 227.00 V2 24.820
RC 266.379 GL 7.70 GP 8.55 ZAL 142.29 ZAP 84.40 ETS 180.12 ZAE 118.25 ETE 173.57 ZAC 92.39 ETC 258.13 CLP 84.34

PLANETOCENTRIC CONIC

C3 17.708 VHL 4.208 DLA 15.43 RAL 163.31 RAD 6567.7 VEL 11.794 PTH 2.09 VHP 2.963 DPA 16.43 RAP 167.67 ECC 1.2914

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 58 28	2686.87	-27.54	73.61	27.88	96.87	19 43 15	2086.9	-26.30	65.17
90.00	11 6 15	4328.64	4.18	179.17	21.91	61.97	12 18 23	3728.6	.40	172.53
100.00	20 28 15	2397.30	-28.81	52.12	27.69	98.34	21 8 13	1797.3	-27.35	43.62
100.00	12 19 8	4093.45	5.30	161.26	21.30	60.54	13 27 22	3493.5	1.34	154.71
110.00	21 55 19	2124.91	-32.14	30.73	26.98	102.33	22 30 44	1524.9	-30.10	22.11
110.00	13 8 34	3938.60	8.19	147.74	19.52	56.70	14 14 13	3338.6	3.75	141.46

DIFFERENTIAL CORRECTIONS
TDE -.6294 TRA 2.5353 TC3-3.9160 BAU .9794
RDE .7529 RRA -.8386 RC3 1.3345 FAU .55438
FDE-7.6662 FRA22.3096 FC-27.1041 BSP 17044
BDE .9813 BRA 2.6704 BC3 4.1372 FSP 12078

MID-COURSE EXECUTION ACCURACY
SGT 4941.7 SGR 1927.5 SG3 3480.0
RRT -.9262 RRF -.9486 RTF .9896
SGB 5304.3 R23 .0377 R13 -.9925
SG1 5260.2 SG2 682.9 THA 159.78

ORBIT DETERMINATION ACCURACY
ST 1377.8 SR 1085.5 SS 3609.8
CRT -.8449 CRS .9202 CST -.9868
LSA 3984.7 MSA 478.7 SSA 20.3
EL1 1688.9 EL2 473.7 ALF 142.95

LAUNCH DATE OCT 9 1964 FLIGHT TIME 338.00 ARRIVAL DATE SEP 12 1965

HELIOCENTRIC CONIC DISTANCE 773.780 EARTH TO MARS

RL 149.41 LAL -.00 LOL 15.74 VL 32.559 GAL -6.79 AZL 88.98 HCA 243.13 SMA 185.25 ECC .22556 INC 1.0237 V1 29.822
RP 221.13 LAP -.91 LOP 258.86 VP 21.998 GAP -6.77 AZP 90.46 TAL 321.60 TAP 204.73 RCA 143.46 APO 227.03 V2 24.862
RC 267.844 GL 7.86 GP 8.43 ZAL 142.49 ZAP 82.46 ETS 180.42 ZAE 116.10 ETE 174.12 ZAC 92.11 ETC 258.25 CLP 82.37

PLANETOCENTRIC CONIC

C3 17.857 VHL 4.226 DLA 15.49 RAL 163.59 RAD 6567.7 VEL 11.800 PTH 2.09 VHP 2.982 DPA 16.66 RAP 166.81 ECC 1.2939

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 59 2	2690.98	-27.57	73.91	28.34	96.73	19 43 53	2091.0	-26.35	65.46
90.00	11 7 56	4328.44	4.17	179.16	22.32	61.97	12 20 4	3728.4	.39	172.52
100.00	20 28 53	2401.26	-28.85	52.41	28.15	98.20	21 8 54	1801.3	-27.41	43.90
100.00	12 20 47	4093.39	5.30	161.25	21.70	60.54	13 29 0	3493.4	1.34	154.71
110.00	21 56 2	2128.57	-32.19	31.01	27.45	102.18	22 31 30	1528.6	-30.18	22.37
110.00	13 10 7	3938.84	8.20	147.75	19.92	56.70	14 15 46	3338.8	3.76	141.48

DIFFERENTIAL CORRECTIONS
TDE -.7068 TRA 2.7666 TC3-4.1525 BAU 1.0393
RDE .7550 RRA -.8203 RC3 1.3080 FAU .54812
FDE-7.6388 FRA22.0487 FC-26.5739 BSP 18253
BDE 1.0342 BRA 2.8856 BC3 4.3536 FSP 11882

MID-COURSE EXECUTION ACCURACY
SGT 5327.9 SGR 1897.9 SG3 3427.8
RRT -.9250 RRF -.9460 RTF .9911
SGB 5655.8 R23 .0366 R13 -.9934
SG1 5614.2 SG2 684.4 THA 161.48

ORBIT DETERMINATION ACCURACY
ST 1514.3 SR 1081.1 SS 3591.4
CRT -.8483 CRS .9187 CST -.9884
LSA 4015.6 MSA 484.2 SSA 19.7
EL1 1797.0 EL2 482.4 ALF 146.02

LAUNCH DATE OCT 9 1964 FLIGHT TIME 340.00 ARRIVAL DATE SEP 14 1965

HELIOCENTRIC CONIC DISTANCE 777.796 EARTH TO MARS

RL 149.41 LAL -.00 LOL 15.74 VL 32.558 GAL -6.83 AZL 88.95 HCA 244.24 SMA 185.24 ECC .22591 INC 1.0483 V1 29.822
RP 220.75 LAP -.94 LOP 259.97 VP 22.044 GAP -6.99 AZP 90.46 TAL 321.38 TAP 205.62 RCA 143.39 APO 227.08 V2 24.903
RC 269.292 GL 8.01 GP 8.30 ZAL 142.70 ZAP 80.54 ETS 180.72 ZAE 113.98 ETE 174.63 ZAC 91.82 ETC 258.37 CLP 80.44

PLANETOCENTRIC CONIC

C3 18.020 VHL 4.245 DLA 15.54 RAL 163.88 RAD 6567.7 VEL 11.807 PTH 2.09 VHP 3.004 DPA 16.87 RAP 165.97 ECC 1.2966

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 59 46	2694.82	-27.60	74.19	28.81	96.59	19 44 41	2094.8	-26.40	65.73
90.00	11 9 33	4328.83	4.19	179.18	22.75	61.97	12 21 41	3728.8	.40	172.54
100.00	20 29 38	2404.98	-28.88	52.68	28.63	98.06	21 9 43	1805.0	-27.47	44.16
100.00	12 22 21	4093.91	5.32	161.28	22.13	60.54	13 30 35	3493.9	1.36	154.74
110.00	21 56 52	2132.06	-32.24	31.26	27.94	102.04	22 32 24	1532.1	-30.25	22.62
110.00	13 11 37	3939.60	8.23	147.79	20.34	56.70	14 17 16	3339.6	3.79	141.52

DIFFERENTIAL CORRECTIONS
TDE -.7850 TRA 2.9985 TC3-4.3806 BAU 1.0994
RDE .7564 RRA -.8012 RC3 1.2789 FAU .54046
FDE-7.5921 FRA21.7535 FC-25.9654 BSP 19460
BDE 1.0902 BRA 3.1037 BC3 4.5635 FSP 11674

MID-COURSE EXECUTION ACCURACY
SGT 5709.6 SGR 1865.8 SG3 3368.1
RRT -.9232 RRF -.9432 RTF .9923
SGB 6006.7 R23 .0357 R13 -.9941
SG1 5967.4 SG2 686.1 THA 162.98

ORBIT DETERMINATION ACCURACY
ST 1650.2 SR 1075.6 SS 3568.0
CRT -.8506 CRS .9171 CST -.9896
LSA 4046.1 MSA 489.4 SSA 19.2
EL1 1908.1 EL2 489.1 ALF 148.71

LAUNCH DATE OCT 9 1964 FLIGHT TIME 342.00 ARRIVAL DATE SEP 16 1965

HELIOCENTRIC CONIC DISTANCE 781.817 EARTH TO MARS

RL 149.41 LAL -.00 LOL 15.74 VL 32.558 GAL -6.88 AZL 88.93 HCA 245.35 SMA 185.23 ECC .22630 INC 1.0727 V1 29.822
RP 220.37 LAP -.97 LOP 261.08 VP 22.090 GAP -7.22 AZP 90.45 TAL 321.15 TAP 206.50 RCA 143.31 APO 227.15 V2 24.944
RC 270.721 GL 8.16 GP 8.17 ZAL 142.92 ZAP 78.64 ETS 181.00 ZAE 111.87 ETE 175.11 ZAC 91.55 ETC 258.49 CLP 78.53

PLANETOCENTRIC CONIC

C3 18.197 VHL 4.266 DLA 15.57 RAL 164.19 RAD 6567.7 VEL 11.814 PTH 2.09 VHP 3.029 DPA 17.07 RAP 165.16 ECC 1.2995

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 0 38	2698.40	-27.63	74.45	29.31	96.47	19 45 37	2098.4	-26.44	65.98
90.00	11 11 5	4329.83	4.22	179.23	23.20	61.97	12 23 15	3729.8	.44	172.59
100.00	20 30 33	2408.47	-28.92	52.94	29.12	97.93	21 10 41	1808.5	-27.52	44.41
100.00	12 23 52	4094.99	5.36	161.34	22.57	60.55	13 32 7	3495.0	1.39	154.80
110.00	21 57 50	2135.36	-32.28	31.51	28.44	101.90	22 33 25	1535.4	-30.31	22.85
110.00	13 13 4	3940.87	8.28	147.86	20.78	56.72	14 18 45	3340.9	3.84	141.58

DIFFERENTIAL CORRECTIONS
TDE -.8636 TRA 3.2312 TC3-4.5984 BAU 1.1591
RDE .7575 RRA -.7817 RC3 1.2470 FAU .53126
FDE-7.5308 FRA21.4306 FC-25.2748 BSP 20678
BDE 1.1488 BRA 3.3244 BC3 4.7645 FSP 11457

MID-COURSE EXECUTION ACCURACY
SGT 6085.6 SGR 1831.7 SG3 3301.5
RRT -.9208 RRF -.9401 RTF .9932
SGB 6355.3 R23 .0352 R13 -.9947
SG1 6317.9 SG2 688.0 THA 164.32

ORBIT DETERMINATION ACCURACY
ST 1785.0 SR 1069.2 SS 3541.0
CRT -.8519 CRS .9154 CST -.9906
LSA 4077.1 MSA 494.5 SSA 18.8
EL1 2021.1 EL2 494.5 ALF 151.07

LAUNCH DATE OCT 9 1964 FLIGHT TIME 344.00 ARRIVAL DATE SEP 18 1965

HELIOCENTRIC CONIC DISTANCE 785.843 EARTH TO MARS
RL 149.41 LAL -.00 LOL 15.74 VL 32.558 GAL -6.93 AZL 88.90 HCA 246.47 SMA 185.23 ECC .22673 INC 1.0966 V1 29.822
RP 220.00 LAP -1.01 LOP 262.20 VP 22.136 GAP -7.44 AZP 90.44 TAL 320.91 TAP 207.38 RCA 143.23 APO 227.22 V2 24.986
RC 272.134 GL 8.29 GP 8.03 ZAL 143.16 ZAP 76.78 ETS 181.27 ZAE 109.80 ETE 175.57 ZAC 91.27 ETC 258.60 CLP 76.65
PLANETOCENTRIC CONIC
C3 18.389 VHL 4.288 DLA 15.60 RAL 164.50 RAD 6567.7 VEL 11.822 PTH 2.09 VHP 3.058 DPA 17.25 RAP 164.39 ECC 1.3026

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 1 40	2701.71	-27.65	74.69	29.82	96.35	19 46 42	2101.7	-26.49	66.21
90.00	11 12 33	4331.44	4.27	179.32	23.66	61.98	12 24 44	3731.4	.49	172.68
100.00	20 31 35	2411.72	-28.95	53.17	29.63	97.81	21 11 47	1811.7	-27.56	44.64
100.00	12 25 19	4096.65	5.41	161.44	23.03	60.56	13 33 35	3496.7	1.45	154.89
110.00	21 58 55	2138.50	-32.33	31.75	28.96	101.76	22 34 33	1538.5	-30.37	23.08
110.00	13 14 29	3942.64	8.34	147.95	21.24	56.73	14 20 11	3342.6	3.91	141.67

DIFFERENTIAL CORRECTIONS
TDE -.9431 TRA 3.4633 TC3-4.8066 BAU 1.2188
RDE .7585 RRA -.7614 RC3 1.2139 FAU .52127
FDE-7.4592 FRA21.0733 FC-24.5402 BSP 21878
BDE 1.2103 BRA 3.5460 BC3 4.9575 FSP 11215

MID-COURSE EXECUTION ACCURACY
SGT 6454.7 SGR 1796.2 SG3 3229.1
RRT -.9180 RRF -.9368 RTF .9939
SGB 6699.9 R23 .0349 R13 -.9952
SG1 6664.3 SG2 690.0 THA 165.51

ORBIT DETERMINATION ACCURACY
ST 1918.4 SR 1062.2 SS 3510.9
CRT -.8526 CRS .9136 CST -.9913
LSA 4109.2 MSA 499.2 SSA 18.3
EL1 2135.4 EL2 498.6 ALF 153.15

LAUNCH DATE OCT 9 1964 FLIGHT TIME 346.00 ARRIVAL DATE SEP 20 1965

HELIOCENTRIC CONIC DISTANCE 789.873 EARTH TO MARS
RL 149.41 LAL -.00 LOL 15.74 VL 32.558 GAL -6.99 AZL 88.88 HCA 247.59 SMA 185.23 ECC .22721 INC 1.1202 V1 29.822
RP 219.62 LAP -1.04 LOP 263.32 VP 22.182 GAP -7.66 AZP 90.43 TAL 320.65 TAP 208.24 RCA 143.14 APO 227.31 V2 25.027
RC 273.529 GL 8.43 GP 7.89 ZAL 143.41 ZAP 74.95 ETS 181.53 ZAE 107.75 ETE 176.00 ZAC 91.00 ETC 258.71 CLP 74.80
PLANETOCENTRIC CONIC
C3 18.597 VHL 4.312 DLA 15.61 RAL 164.82 RAD 6567.8 VEL 11.831 PTH 2.10 VHP 3.089 DPA 17.41 RAP 163.64 ECC 1.3061

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 2 50	2704.76	-27.68	74.91	30.34	96.24	19 47 55	2104.8	-26.52	66.43
90.00	11 13 57	4333.64	4.34	179.45	24.15	61.99	12 26 10	3733.6	.56	172.81
100.00	20 32 46	2414.75	-28.97	53.39	30.16	97.69	21 13 1	1814.7	-27.61	44.86
100.00	12 26 42	4098.88	5.49	161.56	23.52	60.57	13 35 1	3498.9	1.52	155.01
110.00	22 0 7	2141.46	-32.37	31.97	29.49	101.64	22 35 48	1541.5	-30.43	23.29
110.00	13 15 51	3944.93	8.43	148.08	21.71	56.75	14 21 36	3344.9	3.99	141.79

DIFFERENTIAL CORRECTIONS
TDE-1.0233 TRA 3.6958 TC3-5.0028 BAU 1.2779
RDE .7592 RRA -.7408 RC3 1.1790 FAU .51014
FDE-7.3770 FRA20.6928 FC-23.7488 BSP 23072
BDE 1.2742 BRA 3.7693 BC3 5.1399 FSP 10963

MID-COURSE EXECUTION ACCURACY
SGT 6816.1 SGR 1759.5 SG3 3151.5
RRT -.9146 RRF -.9331 RTF .9944
SGB 7039.5 R23 .0348 R13 -.9955
SG1 7005.4 SG2 692.1 THA 166.58

ORBIT DETERMINATION ACCURACY
ST 2050.5 SR 1054.7 SS 3478.1
CRT -.8528 CRS .9118 CST -.9920
LSA 4142.4 MSA 503.7 SSA 17.8
EL1 2250.6 EL2 501.9 ALF 154.99

LAUNCH DATE OCT 9 1964 FLIGHT TIME 348.00 ARRIVAL DATE SEP 22 1965

HELIOCENTRIC CONIC DISTANCE 793.909 EARTH TO MARS
RL 149.41 LAL -.00 LOL 15.74 VL 32.558 GAL -7.04 AZL 88.86 HCA 248.72 SMA 185.23 ECC .22774 INC 1.1436 V1 29.822
RP 219.25 LAP -1.07 LOP 264.45 VP 22.229 GAP -7.87 AZP 90.42 TAL 320.38 TAP 209.10 RCA 143.05 APO 227.41 V2 25.067
RC 274.906 GL 8.55 GP 7.76 ZAL 143.67 ZAP 73.16 ETS 181.78 ZAE 105.73 ETE 176.40 ZAC 90.74 ETC 258.81 CLP 73.00
PLANETOCENTRIC CONIC
C3 18.819 VHL 4.338 DLA 15.61 RAL 165.15 RAD 6567.8 VEL 11.841 PTH 2.10 VHP 3.125 DPA 17.55 RAP 162.93 ECC 1.3097

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 4 10	2707.57	-27.70	75.11	30.89	96.14	19 49 17	2107.6	-26.56	66.63
90.00	11 15 16	4336.43	4.43	179.60	24.65	62.00	12 27 33	3736.4	.65	172.96
100.00	20 34 6	2417.55	-29.00	53.60	30.71	97.59	21 14 23	1817.5	-27.65	45.06
100.00	12 28 1	4101.68	5.58	161.71	24.01	60.59	13 36 23	3501.7	1.62	155.17
110.00	22 1 26	2144.26	-32.41	32.18	30.04	101.52	22 37 10	1544.3	-30.48	23.49
110.00	13 17 10	3947.73	8.53	148.23	22.20	56.77	14 22 58	3347.7	4.10	141.94

DIFFERENTIAL CORRECTIONS
TDE-1.1039 TRA 3.9282 TC3-5.1870 BAU 1.3364
RDE .7597 RRA -.7198 RC3 1.1431 FAU .49816
FDE-7.2838 FRA20.2877 FC-22.9165 BSP 24248
BDE 1.3401 BRA 3.9936 BC3 5.3114 FSP 10698

MID-COURSE EXECUTION ACCURACY
SGT 7169.1 SGR 1721.8 SG3 3069.2
RRT -.9108 RRF -.9292 RTF .9949
SGB 7373.0 R23 .0349 R13 -.9959
SG1 7340.3 SG2 694.2 THA 167.55

ORBIT DETERMINATION ACCURACY
ST 2180.7 SR 1046.6 SS 3442.0
CRT -.8524 CRS .9099 CST -.9925
LSA 4176.1 MSA 507.9 SSA 17.4
EL1 2365.7 EL2 504.5 ALF 156.62

LAUNCH DATE OCT 9 1964 FLIGHT TIME 350.00 ARRIVAL DATE SEP 24 1965

HELIOCENTRIC CONIC DISTANCE 797.948 EARTH TO MARS
RL 149.41 LAL -.00 LOL 15.74 VL 32.558 GAL -7.10 AZL 88.83 HCA 249.85 SMA 185.24 ECC .22832 INC 1.1665 V1 29.822
RP 218.89 LAP -1.10 LOP 265.58 VP 22.275 GAP -8.09 AZP 90.40 TAL 320.10 TAP 209.94 RCA 142.94 APO 227.53 V2 25.108
RC 276.266 GL 8.67 GP 7.62 ZAL 143.95 ZAP 71.40 ETS 182.01 ZAE 103.74 ETE 176.78 ZAC 90.49 ETC 258.91 CLP 71.23
PLANETOCENTRIC CONIC
C3 19.059 VHL 4.366 DLA 15.60 RAL 165.50 RAD 6567.8 VEL 11.851 PTH 2.10 VHP 3.163 DPA 17.67 RAP 162.26 ECC 1.3137

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 5 38	2710.12	-27.72	75.29	31.45	96.05	19 50 48	2110.1	-26.59	66.81
90.00	11 16 31	4339.83	4.54	179.79	25.17	62.02	12 28 51	3739.8	.76	173.15
100.00	20 35 33	2420.13	-29.02	53.79	31.28	97.49	21 15 54	1820.1	-27.68	45.24
100.00	12 29 17	4105.05	5.69	161.90	24.53	60.61	13 37 42	3505.1	1.73	155.35
110.00	22 2 53	2146.90	-32.44	32.37	30.61	101.41	22 38 40	1546.9	-30.53	23.68
110.00	13 18 27	3951.04	8.66	148.40	22.72	56.80	14 24 18	3351.0	4.23	142.12

DIFFERENTIAL CORRECTIONS
TDE-1.1816 TRA 4.1651 TC3-5.3514 BAU 1.3922
RDE .7590 RRA -.6997 RC3 1.1038 FAU .48418
FDE-7.1548 FRA19.8891 FC-21.9936 BSP 25510
BDE 1.4044 BRA 4.2234 BC3 5.4641 FSP 10478

MID-COURSE EXECUTION ACCURACY
SGT 7513.1 SGR 1682.3 SG3 2982.2
RRT -.9066 RRF -.9248 RTF .9953
SGB 7699.1 R23 .0348 R13 -.9961
SG1 7667.6 SG2 695.5 THA 168.43

ORBIT DETERMINATION ACCURACY
ST 2307.3 SR 1036.8 SS 3398.0
CRT -.8511 CRS .9073 CST -.9929
LSA 4205.0 MSA 512.0 SSA 17.1
EL1 2478.2 EL2 506.8 ALF 158.11

LAUNCH DATE OCT 9 1964 FLIGHT TIME 352.00 ARRIVAL DATE SEP 26 1965

HELIOCENTRIC CONIC DISTANCE 801.993 EARTH TO MARS

RL 149.41 LAL -.00 LOL 15.74 VL 32.559 GAL -7.17 AZL 88.81 HCA 250.98 SMA 185.25 ECC .22894 INC 1.1893 V1 29.822
RP 218.52 LAP -1.12 LOP 266.71 VP 22.322 GAP -8.30 AZP 90.39 TAL 319.80 TAP 210.78 RCA 142.84 APO 227.66 V2 25.148
RC 277.609 GL 8.78 GP 7.47 ZAL 144.24 ZAP 69.68 ETS 182.24 ZAE 101.79 ETE 177.14 ZAC 90.24 ETC 259.01 CLP 69.49

PLANETOCENTRIC CONIC

C3 19.314 VHL 4.395 DLA 15.57 RAL 165.84 RAD 6567.8 VEL 11.862 PTH 2.10 VHP 3.204 DPA 17.77 RAP 161.63 ECC 1.3179

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 7 15	2712.44	-27.73	75.46	32.03	95.97	19 52 27	2112.4	-26.62	66.97
90.00	11 17 42	4343.81	4.66	180.02	25.70	62.04	12 30 6	3743.8	.89	173.37
100.00	20 37 9	2422.51	-29.04	53.96	31.86	97.40	21 17 31	1822.5	-27.71	45.41
100.00	12 30 29	4108.97	5.82	162.12	25.06	60.63	13 38 58	3509.0	1.87	155.57
110.00	22 4 26	2149.40	-32.48	32.56	31.20	101.30	22 40 15	1549.4	-30.58	23.86
110.00	13 19 41	3954.84	8.80	148.61	23.24	56.83	14 25 36	3354.8	4.37	142.31

DIFFERENTIAL CORRECTIONS
TDE-1.2684 TRA 4.3913 TC3-5.5200 BAU 1.4519
RDE .7609 RRA -.6770 RC3 1.0700 FAU .47255
FDE-7.0822 FRA19.4159 FC-21.1813 BSP 26521
BDE 1.4791 BRA 4.4432 BC3 5.6227 FSP 10120

MID-COURSE EXECUTION ACCURACY
SGT 7848.4 SGR 1645.7 SG3 2894.6
RRT -.9019 RRF -.9204 RTF .9956
SGB 8019.0 R23 .0355 R13 -.9963
SG1 7988.6 SG2 698.3 THA 169.21

ORBIT DETERMINATION ACCURACY
ST 2436.1 SR 1029.8 SS 3364.8
CRT -.8509 CRS .9062 CST -.9932
LSA 4248.7 MSA 515.3 SSA 16.6
EL1 2595.6 EL2 507.7 ALF 159.39

LAUNCH DATE OCT 9 1964 FLIGHT TIME 354.00 ARRIVAL DATE SEP 28 1965

HELIOCENTRIC CONIC DISTANCE 806.041 EARTH TO MARS

RL 149.41 LAL -.00 LOL 15.74 VL 32.560 GAL -7.24 AZL 88.79 HCA 252.12 SMA 185.26 ECC .22962 INC 1.2119 V1 29.822
RP 218.16 LAP -1.15 LOP 267.85 VP 22.368 GAP -8.51 AZP 90.37 TAL 319.49 TAP 211.60 RCA 142.72 APO 227.80 V2 25.188
RC 278.933 GL 8.88 GP 7.33 ZAL 144.54 ZAP 67.99 ETS 182.45 ZAE 99.87 ETE 177.47 ZAC 90.01 ETC 259.09 CLP 67.80

PLANETOCENTRIC CONIC

C3 19.587 VHL 4.426 DLA 15.54 RAL 166.20 RAD 6567.8 VEL 11.873 PTH 2.11 VHP 3.249 DPA 17.86 RAP 161.04 ECC 1.3224

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 9 0	2714.52	-27.75	75.61	32.63	95.90	19 54 14	2114.5	-26.64	67.12
90.00	11 18 49	4348.38	4.81	180.27	26.26	62.06	12 31 17	3748.4	1.04	173.63
100.00	20 38 52	2424.67	-29.06	54.12	32.46	97.32	21 19 17	1824.7	-27.74	45.56
100.00	12 31 37	4113.45	5.97	162.37	25.62	60.66	13 40 11	3513.5	2.02	155.81
110.00	22 6 6	2151.73	-32.51	32.74	31.81	101.20	22 41 58	1551.7	-30.62	24.03
110.00	13 20 53	3959.16	8.96	148.84	23.79	56.87	14 26 52	3359.2	4.54	142.54

DIFFERENTIAL CORRECTIONS
TDE-1.3517 TRA 4.6231 TC3-5.6661 BAU 1.5082
RDE .7616 RRA -.6557 RC3 1.0328 FAU .45891
FDE-6.9722 FRA18.9590 FC-20.2831 BSP 27621
BDE 1.5515 BRA 4.6693 BC3 5.7594 FSP 9819

MID-COURSE EXECUTION ACCURACY
SGT 8173.5 SGR 1607.5 SG3 2803.4
RRT -.8969 RRF -.9156 RTF .9958
SGB 8330.1 R23 .0360 R13 -.9965
SG1 8300.6 SG2 700.2 THA 169.92

ORBIT DETERMINATION ACCURACY
ST 2560.8 SR 1021.1 SS 3323.4
CRT -.8498 CRS .9044 CST -.9934
LSA 4286.7 MSA 518.6 SSA 16.3
EL1 2709.6 EL2 508.8 ALF 160.57

LAUNCH DATE OCT 9 1964 FLIGHT TIME 356.00 ARRIVAL DATE SEP 30 1965

HELIOCENTRIC CONIC DISTANCE 810.093 EARTH TO MARS

RL 149.41 LAL -.00 LOL 15.74 VL 32.561 GAL -7.31 AZL 88.77 HCA 253.26 SMA 185.28 ECC .23034 INC 1.2342 V1 29.822
RP 217.80 LAP -1.18 LOP 268.99 VP 22.414 GAP -8.72 AZP 90.36 TAL 319.16 TAP 212.42 RCA 142.60 APO 227.96 V2 25.228
RC 280.240 GL 8.98 GP 7.19 ZAL 144.85 ZAP 66.35 ETS 182.66 ZAE 97.99 ETE 177.79 ZAC 89.78 ETC 259.18 CLP 66.15

PLANETOCENTRIC CONIC

C3 19.879 VHL 4.459 DLA 15.49 RAL 166.57 RAD 6567.8 VEL 11.885 PTH 2.11 VHP 3.296 DPA 17.92 RAP 160.50 ECC 1.3272

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 10 53	2716.37	-27.76	75.75	33.25	95.83	19 56 10	2116.4	-26.66	67.25
90.00	11 19 51	4353.53	4.97	180.56	26.83	62.09	12 32 25	3753.5	1.20	173.92
100.00	20 40 44	2426.64	-29.08	54.26	33.08	97.25	21 21 10	1826.6	-27.77	45.70
100.00	12 32 42	4118.50	6.14	162.65	26.19	60.69	13 41 21	3518.5	2.19	156.09
110.00	22 7 53	2153.93	-32.54	32.90	32.43	101.11	22 43 47	1553.9	-30.66	24.19
110.00	13 22 2	3963.97	9.14	149.10	24.36	56.92	14 28 6	3364.0	4.72	142.79

DIFFERENTIAL CORRECTIONS
TDE-1.4359 TRA 4.8548 TC3-5.7992 BAU 1.5637
RDE .7622 RRA -.6346 RC3 .9957 FAU .44485
FDE-6.8561 FRA18.4928 FC-19.3737 BSP 28699
BDE 1.6257 BRA 4.8961 BC3 5.8841 FSP 9513

MID-COURSE EXECUTION ACCURACY
SGT 8488.8 SGR 1569.7 SG3 2710.6
RRT -.8914 RRF -.9105 RTF .9960
SGB 8632.7 R23 .0366 R13 -.9966
SG1 8604.1 SG2 701.9 THA 170.58

ORBIT DETERMINATION ACCURACY
ST 2683.5 SR 1012.2 SS 3280.0
CRT -.8485 CRS .9026 CST -.9936
LSA 4325.7 MSA 521.6 SSA 15.9
EL1 2822.5 EL2 509.4 ALF 161.63

LAUNCH DATE OCT 9 1964 FLIGHT TIME 358.00 ARRIVAL DATE OCT 2 1965

HELIOCENTRIC CONIC DISTANCE 814.148 EARTH TO MARS

RL 149.41 LAL -.00 LOL 15.74 VL 32.562 GAL -7.39 AZL 88.74 HCA 254.40 SMA 185.30 ECC .23112 INC 1.2564 V1 29.822
RP 217.44 LAP -1.21 LOP 270.14 VP 22.461 GAP -8.92 AZP 90.34 TAL 318.82 TAP 213.22 RCA 142.47 APO 228.13 V2 25.268
RC 281.529 GL 9.07 GP 7.05 ZAL 145.18 ZAP 64.75 ETS 182.85 ZAE 96.15 ETE 178.09 ZAC 89.56 ETC 259.25 CLP 64.54

PLANETOCENTRIC CONIC

C3 20.189 VHL 4.493 DLA 15.44 RAL 166.95 RAD 6567.8 VEL 11.898 PTH 2.11 VHP 3.347 DPA 17.97 RAP 160.00 ECC 1.3323

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 12 55	2718.01	-27.77	75.86	33.88	95.77	19 58 13	2118.0	-26.68	67.37
90.00	11 20 50	4359.26	5.16	180.89	27.42	62.12	12 33 29	3759.3	1.39	174.24
100.00	20 42 43	2428.42	-29.09	54.39	33.71	97.18	21 23 11	1828.4	-27.80	45.83
100.00	12 33 43	4124.09	6.33	162.96	26.78	60.72	13 42 27	3524.1	2.38	156.40
110.00	22 9 47	2155.99	-32.56	33.06	33.07	101.02	22 45 43	1556.0	-30.70	24.33
110.00	13 23 8	3969.28	9.33	149.38	24.94	56.97	14 29 18	3369.3	4.92	143.07

DIFFERENTIAL CORRECTIONS
TDE-1.5212 TRA 5.0871 TC3-5.9193 BAU 1.6185
RDE .7630 RRA -.6138 RC3 .9588 FAU .43052
FDE-6.7371 FRA18.0196 FC-18.4617 BSP 29752
BDE 1.7018 BRA 5.1240 BC3 5.9965 FSP 9204

MID-COURSE EXECUTION ACCURACY
SGT 8794.7 SGR 1532.4 SG3 2616.8
RRT -.8856 RRF -.9051 RTF .9961
SGB 8927.2 R23 .0372 R13 -.9967
SG1 8899.4 SG2 703.5 THA 171.17

ORBIT DETERMINATION ACCURACY
ST 2804.3 SR 1003.3 SS 3235.5
CRT -.8470 CRS .9009 CST -.9938
LSA 4366.3 MSA 524.3 SSA 15.6
EL1 2934.5 EL2 509.6 ALF 162.60

LAUNCH DATE OCT 9 1964 FLIGHT TIME 360.00 ARRIVAL DATE OCT 4 1965

HELIOCENTRIC CONIC DISTANCE 818.206 EARTH TO MARS

RL 149.41 LAL -.00 LOL 15.74 VL 32.563 GAL -7.47 AZL 88.72 HCA 255.55 SMA 185.32 ECC .23194 INC 1.2784 V1 29.822
RP 217.09 LAP -1.24 LOP 271.28 VP 22.507 GAP -9.13 AZP 90.32 TAL 318.46 TAP 214.02 RCA 142.34 APO 228.31 V2 25.307
RC 282.801 GL 9.15 GP 6.92 ZAL 145.52 ZAP 63.19 ETS 183.03 ZAE 94.35 ETE 178.37 ZAC 89.35 ETC 259.32 CLP 62.98

PLANETOCENTRIC CONIC

C3 20.518 VHL 4.530 DLA 15.37 RAL 167.33 RAD 6567.8 VEL 11.912 PTH 2.12 VHP 3.400 DPA 18.01 RAP 159.54 ECC 1.3377

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 15 5	2719.43	-27.78	75.97	34.53	95.72	20 0 24	2119.4	-26.70	67.47
90.00	11 21 44	4365.57	5.36	181.24	28.03	62.15	12 34 30	3765.6	1.59	174.59
100.00	20 44 50	2430.01	-29.11	54.51	34.36	97.12	21 25 20	1830.0	-27.82	45.94
100.00	12 34 41	4130.23	6.53	163.30	27.39	60.77	13 43 31	3530.2	2.59	156.73
110.00	22 11 47	2157.92	-32.59	33.20	33.72	100.94	22 47 45	1557.9	-30.74	24.47
110.00	13 24 13	3975.08	9.55	149.69	25.55	57.02	14 30 28	3375.1	5.14	143.38

DIFFERENTIAL CORRECTIONS
TDE-1.6080 TRA 5.3188 TC3-6.0266 BAU 1.6724
RDE .7639 RRA -.5932 RC3 .9224 FAU .41609
FDE-6.6152 FRA17.5388 FC-17.5563 BSP 30771
BDE 1.7802 BRA 5.3518 BC3 6.0968 FSP 8889

MID-COURSE EXECUTION ACCURACY
SGT 9089.9 SGR 1495.9 SG3 2522.4
RRT -.8794 RRF -.8995 RTF .9963
SGB 9212.2 R23 .0379 R13 -.9967
SG1 9185.2 SG2 704.8 THA 171.72

ORBIT DETERMINATION ACCURACY
ST 2923.2 SR 994.4 SS 3189.7
CRT -.8456 CRS .8992 CST -.9939
LSA 4408.0 MSA 526.5 SSA 15.3
EL1 3045.4 EL2 509.5 ALF 163.48

LAUNCH DATE OCT 9 1964 FLIGHT TIME 362.00 ARRIVAL DATE OCT 6 1965

HELIOCENTRIC CONIC DISTANCE 822.267 EARTH TO MARS

RL 149.41 LAL -.00 LOL 15.74 VL 32.565 GAL -7.55 AZL 88.70 HCA 256.70 SMA 185.35 ECC .23282 INC 1.3001 V1 29.822
RP 216.74 LAP -1.27 LOP 272.44 VP 22.553 GAP -9.33 AZP 90.30 TAL 318.10 TAP 214.80 RCA 142.20 APO 228.50 V2 25.346
RC 284.057 GL 9.23 GP 6.78 ZAL 145.87 ZAP 61.67 ETS 183.20 ZAE 92.58 ETE 178.63 ZAC 89.15 ETC 259.38 CLP 61.45

PLANETOCENTRIC CONIC

C3 20.868 VHL 4.568 DLA 15.29 RAL 167.73 RAD 6567.8 VEL 11.927 PTH 2.12 VHP 3.456 DPA 18.02 RAP 159.13 ECC 1.3434

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 17 23	2720.66	-27.79	76.06	35.20	95.68	20 2 43	2120.7	-26.71	67.55
90.00	11 22 35	4372.45	5.58	181.63	28.66	62.19	12 35 27	3772.5	1.81	174.97
100.00	20 47 4	2431.42	-29.12	54.61	35.04	97.07	21 27 35	1831.4	-27.84	46.04
100.00	12 35 35	4136.92	6.75	163.67	28.01	60.81	13 44 32	3536.9	2.81	157.10
110.00	22 13 54	2159.73	-32.61	33.34	34.39	100.86	22 49 54	1559.7	-30.77	24.60
110.00	13 25 14	3981.38	9.78	150.03	26.17	57.08	14 31 35	3381.4	5.38	143.71

DIFFERENTIAL CORRECTIONS
TDE-1.6958 TRA 5.5516 TC3-6.1203 BAU 1.7253
RDE .7650 RRA -.5731 RC3 .8865 FAU .40146
FDE-6.4906 FRA17.0568 FC-16.6549 BSP 31760
BDE 1.8604 BRA 5.5811 BC3 6.1842 FSP 8575

MID-COURSE EXECUTION ACCURACY
SGT 9375.4 SGR 1460.2 SG3 2428.0
RRT -.8729 RRF -.8935 RTF .9963
SGB 9488.4 R23 .0387 R13 -.9968
SG1 9462.1 SG2 706.0 THA 172.21

ORBIT DETERMINATION ACCURACY
ST 3040.0 SR 985.5 SS 3142.7
CRT -.8441 CRS .8976 CST -.9940
LSA 4450.9 MSA 528.5 SSA 15.1
EL1 3154.9 EL2 509.1 ALF 164.27

LAUNCH DATE OCT 9 1964 FLIGHT TIME 364.00 ARRIVAL DATE OCT 8 1965

HELIOCENTRIC CONIC DISTANCE 826.330 EARTH TO MARS

RL 149.41 LAL -.00 LOL 15.74 VL 32.567 GAL -7.64 AZL 88.68 HCA 257.86 SMA 185.38 ECC .23376 INC 1.3218 V1 29.822
RP 216.39 LAP -1.29 LOP 273.59 VP 22.599 GAP -9.53 AZP 90.28 TAL 317.71 TAP 215.57 RCA 142.04 APO 228.71 V2 25.385
RC 285.296 GL 9.30 GP 6.64 ZAL 146.23 ZAP 60.20 ETS 183.36 ZAE 90.86 ETE 178.88 ZAC 88.96 ETC 259.43 CLP 59.97

PLANETOCENTRIC CONIC

C3 21.240 VHL 4.609 DLA 15.20 RAL 168.13 RAD 6567.9 VEL 11.942 PTH 2.13 VHP 3.515 DPA 18.02 RAP 158.76 ECC 1.3496

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 19 48	2721.69	-27.80	76.13	35.89	95.64	20 5 10	2121.7	-26.72	67.63
90.00	11 23 22	4379.89	5.81	182.05	29.30	62.24	12 36 22	3779.9	2.05	175.39
100.00	20 49 25	2432.67	-29.13	54.70	35.72	97.02	21 29 58	1832.7	-27.85	46.13
100.00	12 36 26	4144.14	6.99	164.07	28.66	60.86	13 45 30	3544.1	3.06	157.50
110.00	22 16 7	2161.42	-32.63	33.46	35.08	100.79	22 52 8	1561.4	-30.80	24.72
110.00	13 26 13	3988.17	10.03	150.40	26.81	57.15	14 32 41	3388.2	5.64	144.07

DIFFERENTIAL CORRECTIONS
TDE-1.7845 TRA 5.7853 TC3-6.2007 BAU 1.7773
RDE .7662 RRA -.5536 RC3 .8513 FAU .38678
FDE-6.3624 FRA16.5746 FC-15.7650 BSP 32729
BDE 1.9421 BRA 5.8117 BC3 6.2589 FSP 8263

MID-COURSE EXECUTION ACCURACY
SGT 9650.8 SGR 1425.4 SG3 2333.9
RRT -.8660 RRF -.8873 RTF .9964
SGB 9755.5 R23 .0395 R13 -.9968
SG1 9729.8 SG2 706.9 THA 172.67

ORBIT DETERMINATION ACCURACY
ST 3154.5 SR 976.6 SS 3094.4
CRT -.8426 CRS .8961 CST -.9941
LSA 4494.3 MSA 530.1 SSA 14.8
EL1 3262.8 EL2 508.5 ALF 165.01

LAUNCH DATE OCT 9 1964 FLIGHT TIME 366.00 ARRIVAL DATE OCT 10 1965

HELIOCENTRIC CONIC DISTANCE 830.396 EARTH TO MARS

RL 149.41 LAL -.00 LOL 15.74 VL 32.569 GAL -7.73 AZL 88.66 HCA 259.02 SMA 185.41 ECC .23475 INC 1.3434 V1 29.822
RP 216.05 LAP -1.32 LOP 274.75 VP 22.644 GAP -9.73 AZP 90.26 TAL 317.31 TAP 216.33 RCA 141.89 APO 228.93 V2 25.423
RC 286.520 GL 9.36 GP 6.51 ZAL 146.61 ZAP 58.76 ETS 183.52 ZAE 89.17 ETE 179.12 ZAC 88.78 ETC 259.48 CLP 58.53

PLANETOCENTRIC CONIC

C3 21.634 VHL 4.651 DLA 15.10 RAL 168.54 RAD 6567.9 VEL 11.959 PTH 2.13 VHP 3.577 DPA 18.00 RAP 158.43 ECC 1.3560

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 22 21	2722.54	-27.80	76.19	36.60	95.61	20 7 44	2122.5	-26.73	67.69
90.00	11 24 5	4387.90	6.07	182.50	29.96	62.29	12 37 12	3787.9	2.31	175.83
100.00	20 51 54	2433.77	-29.14	54.78	36.43	96.98	21 32 28	1833.8	-27.87	46.21
100.00	12 37 13	4151.91	7.25	164.51	29.32	60.92	13 46 25	3551.9	3.32	157.93
110.00	22 18 26	2163.00	-32.65	33.58	35.79	100.72	22 54 29	1563.0	-30.83	24.84
110.00	13 27 10	3995.44	10.30	150.79	27.47	57.22	14 33 45	3395.4	5.91	144.45

DIFFERENTIAL CORRECTIONS
TDE-1.8747 TRA 0.0208 TC3-6.2678 BAU 1.8281
RDE .7676 RRA -.5347 RC3 .8168 FAU .37205
FDE-6.2320 FRA16.0960 FC-14.8887 BSP 33679
BDE 2.0257 BRA 6.0444 BC3 6.3208 FSP 7958

MID-COURSE EXECUTION ACCURACY
SGT 9916.6 SGR 1391.7 SG3 2240.6
RRT -.8589 RRF -.8809 RTF .9964
SGB10013.8 R23 .0404 R13 -.9968
SG1 9988.8 SG2 707.5 THA 173.09

ORBIT DETERMINATION ACCURACY
ST 3267.2 SR 967.8 SS 3045.0
CRT -.8411 CRS .8946 CST -.9941
LSA 4538.8 MSA 531.4 SSA 14.6
EL1 3369.5 EL2 507.6 ALF 165.68

LAUNCH DATE OCT 9 1964 FLIGHT TIME 368.00 ARRIVAL DATE OCT 12 1965

HELIOCENTRIC CONIC DISTANCE 834.463 EARTH TO MARS

RL	149.41	LAL	-.00	LOL	15.74	VL	32.571	GAL	-7.83	AZL	88.64	HCA	260.18	SMA	185.44	ECC	.23579	INC	1.3648
RP	215.71	LAP	-1.34	LOP	275.92	VP	22.690	GAP	-9.93	AZP	90.23	TAL	316.90	TAP	217.08	RCA	141.72	APO	229.17
RC	287.729	GL	9.42	GP	6.38	ZAL	146.99	ZAP	57.37	ETS	183.66	ZAE	87.52	ETE	179.34	ZAC	88.61	ETC	259.52

V1	29.822	V2	25.461	CLP	57.14														

PLANETOCENTRIC CONIC

C3	22.051	VHL	4.696	DLA	14.99	RAL	168.95	RAD	6567.9	VEL	11.976	PTH	2.13	VHP	3.642	DPA	17.97	RAP	158.16

ECC	1.3629																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 25 1	2723.23	-27.81	76.24	37.32	95.58	20 10 25	2123.2	-26.74	67.74
90.00	11 24 44	4396.45	6.34	182.98	30.65	62.34	12 38 0	3796.4	2.58	176.31
100.00	20 54 29	2434.71	-29.15	54.85	37.15	96.95	21 35 4	1834.7	-27.88	46.28
100.00	12 37 57	4160.20	7.52	164.97	30.00	60.99	13 47 17	3560.2	3.60	158.38
110.00	22 20 51	2164.48	-32.67	33.69	36.51	100.66	22 56 56	1564.5	-30.86	24.94
110.00	13 28 4	4003.19	10.59	151.21	28.15	57.31	14 34 48	3403.2	6.20	144.86

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.9666	TRA	6.2575	TC3	-6.3221	BAU	1.8780	SGT	10172.7	SGR	1359.3	SG3	2148.5	ST	3378.1	SR	959.1	SS	2995.3
RDE	.7693	RRA	-.5163	RC3	.7833	FAU	.35743	RRT	-.8516	RRF	-.8743	RTF	.9964	CRT	-.8396	CRS	.8933	CST	-.9941
FDE	-6.1025	FRA	15.6190	FC	-14.0329	BSP	34592	SGB	10263.1	R23	.0413	R13	-.9968	LSA	4584.8	MSA	532.4	SSA	14.4
BDE	2.1117	BRA	6.2787	BC3	6.3704	FSP	7650	SG	110238.7	SG2	708.0	THA	173.48	EL1	3474.9	EL2	506.5	ALF	166.30

LAUNCH DATE OCT 9 1964 FLIGHT TIME 370.00 ARRIVAL DATE OCT 14 1965

HELIOCENTRIC CONIC DISTANCE 838.531 EARTH TO MARS

RL	149.41	LAL	-.00	LOL	15.74	VL	32.573	GAL	-7.93	AZL	88.61	HCA	261.35	SMA	185.48	ECC	.23689	INC	1.3862
RP	215.38	LAP	-1.37	LOP	277.08	VP	22.735	GAP	-10.13	AZP	90.21	TAL	316.47	TAP	217.82	RCA	141.54	APO	229.42
RC	288.924	GL	9.47	GP	6.25	ZAL	147.39	ZAP	56.01	ETS	183.80	ZAE	85.91	ETE	179.54	ZAC	88.45	ETC	259.55

V1	29.822	V2	25.498	CLP	55.78														

PLANETOCENTRIC CONIC

C3	22.493	VHL	4.743	DLA	14.87	RAL	169.38	RAD	6567.9	VEL	11.995	PTH	2.14	VHP	3.709	DPA	17.92	RAP	157.92

ECC	1.3702																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 27 49	2723.74	-27.81	76.28	38.06	95.57	20 13 13	2123.7	-26.75	67.77
90.00	11 25 19	4405.55	6.62	183.50	31.35	62.41	12 38 45	3805.5	2.88	176.82
100.00	20 57 11	2435.51	-29.15	54.91	37.89	96.91	21 37 47	1835.5	-27.89	46.34
100.00	12 38 38	4169.01	7.82	165.46	30.70	61.06	13 48 7	3569.0	3.90	158.87
110.00	22 23 22	2165.87	-32.69	33.80	37.25	100.60	22 59 28	1565.9	-30.88	25.04
110.00	13 28 57	4011.43	10.89	151.65	28.85	57.40	14 35 48	3411.4	6.51	145.29

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-2.0591	TRA	6.4964	TC3	-6.3635	BAU	1.9268	SGT	10419.2	SGR	1327.9	SG3	2057.7	ST	3486.4	SR	950.4	SS	2943.9
RDE	.7711	RRA	-.4987	RC3	.7506	FAU	.34289	RRT	-.8439	RRF	-.8674	RTF	.9964	CRT	-.8380	CRS	.8919	CST	-.9942
FDE	-5.9687	FRA	15.1475	FC	-13.1975	BSP	35508	SGB	10503.5	R23	.0422	R13	-.9967	LSA	4630.4	MSA	533.1	SSA	14.3
BDE	2.1988	BRA	6.5155	BC3	6.4077	FSP	7354	SG	110479.6	SG2	708.2	THA	173.83	EL1	3578.1	EL2	505.3	ALF	166.87

LAUNCH DATE OCT 9 1964 FLIGHT TIME 372.00 ARRIVAL DATE OCT 16 1965

HELIOCENTRIC CONIC DISTANCE 842.600 EARTH TO MARS

RL	149.41	LAL	-.00	LOL	15.74	VL	32.575	GAL	-8.03	AZL	88.59	HCA	262.52	SMA	185.52	ECC	.23806	INC	1.4075
RP	215.05	LAP	-1.40	LOP	278.25	VP	22.780	GAP	-10.33	AZP	90.18	TAL	316.03	TAP	218.55	RCA	141.36	APO	229.69
RC	290.105	GL	9.52	GP	6.13	ZAL	147.79	ZAP	54.70	ETS	183.93	ZAE	84.34	ETE	179.74	ZAC	88.30	ETC	259.57

V1	29.822	V2	25.535	CLP	54.46														

PLANETOCENTRIC CONIC

C3	22.961	VHL	4.792	DLA	14.74	RAL	169.81	RAD	6567.9	VEL	12.014	PTH	2.14	VHP	3.779	DPA	17.86	RAP	157.73

ECC	1.3779																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 30 43	2724.11	-27.81	76.31	38.81	95.55	20 16 7	2124.1	-26.75	67.80
90.00	11 25 52	4415.19	6.93	184.04	32.07	62.48	12 39 27	3815.2	3.19	177.36
100.00	21 0 0	2436.19	-29.16	54.96	38.65	96.89	21 40 36	1836.2	-27.90	46.38
100.00	12 39 16	4178.35	8.12	165.98	31.42	61.13	13 48 54	3578.3	4.21	159.38
110.00	22 25 59	2167.17	-32.71	33.90	38.01	100.54	23 2 6	1567.2	-30.91	25.14
110.00	13 29 46	4020.13	11.21	152.13	29.56	57.49	14 36 47	3420.1	6.84	145.75

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-2.1542	TRA	6.7374	TC3	-6.3937	BAU	1.9750	SGT	10657.0	SGR	1297.9	SG3	1968.6	ST	3593.6	SR	942.0	SS	2892.4
RDE	.7733	RRA	-.4818	RC3	.7190	FAU	.32857	RRT	-.8362	RRF	-.8605	RTF	.9963	CRT	-.8366	CRS	.8908	CST	-.9942
FDE	-5.8369	FRA	14.6806	FC	-12.3887	BSP	36372	SGB	10735.7	R23	.0431	R13	-.9967	LSA	4677.9	MSA	533.4	SSA	14.1
BDE	2.2888	BRA	6.7546	BC3	6.4340	FSP	7058	SG	110712.3	SG2	708.2	THA	174.16	EL1	3680.7	EL2	503.8	ALF	167.39

LAUNCH DATE OCT 9 1964 FLIGHT TIME 374.00 ARRIVAL DATE OCT 18 1965

HELIOCENTRIC CONIC DISTANCE 846.670 EARTH TO MARS

RL	149.41	LAL	-.00	LOL	15.74	VL	32.578	GAL	-8.14	AZL	88.57	HCA	263.69	SMA	185.56	ECC	.23928	INC	1.4288
RP	214.72	LAP	-1.42	LOP	279.43	VP	22.825	GAP	-10.53	AZP	90.16	TAL	315.57	TAP	219.26	RCA	141.16	APO	229.97
RC	291.272	GL	9.56	GP	6.00	ZAL	148.21	ZAP	53.42	ETS	184.05	ZAE	82.81	ETE	179.93	ZAC	88.16	ETC	259.59

V1	29.822	V2	25.572	CLP	53.19														

PLANETOCENTRIC CONIC

C3	23.456	VHL	4.843	DLA	14.60	RAL	170.25	RAD	6568.0	VEL	12.035	PTH	2.15	VHP	3.851	DPA	17.79	RAP	157.58

ECC	1.3860																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 33 44	2724.34	-27.81	76.32	39.59	95.54	20 19 9	2124.3	-26.75	67.82
90.00	11 26 20	4425.36	7.25	184.62	32.81	62.55	12 40 6	3825.4	3.51	177.93
100.00	21 2 55	2436.74	-29.16	55.00	39.42	96.87	21 43 32	1836.7	-27.91	46.42
100.00	12 39 51	4188.19	8.45	166.54	32.16	61.22	13 49 39	3588.2	4.54	159.93
110.00	22 28 41	2168.39	-32.72	33.99	38.79	100.49	23 4 49	1568.4	-30.93	25.23
110.00	13 30 34	4029.31	11.54	152.63	30.30	57.60	14 37 43	3429.3	7.19	146.24

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-2.2505	TRA	6.9807	TC3	-6.4118	BAU	2.0222	SGT	10885.3	SGR	1269.2	SG3	1881.4	ST	3698.3	SR	933.7	SS	2840.3
RDE	.7757	RRA	-.4655	RC3	.6886	FAU	.31447	RRT	-.8282	RRF	-.8534	RTF	.9963	CRT	-.8353	CRS	.8897	CST	-.9941
FDE	-5.7048	FRA	14.2201	FC	-11.6070	BSP	37237	SGB	10959.0	R23	.0442	R13	-.9966	LSA	4725.6	MSA	533.5	SSA	14.0
BDE	2.3804	BRA	6.9962	BC3	6.4487	FSP	6770	SG	110936.2	SG2	708.0	THA	174.46	EL1	3781.2	EL2	502.1	ALF	167.88

LAUNCH DATE OCT 9 1964 FLIGHT TIME 376.00 ARRIVAL DATE OCT 20 1965

HELIOCENTRIC CONIC DISTANCE 850.739 EARTH TO MARS

RL 149.41 LAL -.00 LOL 15.74 VL 32.580 GAL -8.26 AZL 88.55 HCA 264.87 SMA 185.61 ECC .24057 INC 1.4500 V1 29.822
RP 214.40 LAP -1.44 LOP 280.61 VP 22.869 GAP -10.73 AZP 90.13 TAL 315.09 TAP 219.96 RCA 140.96 APO 230.26 V2 25.608
RC 292.426 GL 9.59 GP 5.88 ZAL 148.64 ZAP 52.18 ETS 184.16 ZAE 81.31 ETE 180.10 ZAC 88.04 ETC 259.60 CLP 51.95

PLANETOCENTRIC CONIC

C3 23.979 VHL 4.897 DLA 14.45 RAL 170.69 RAD 6568.0 VEL 12.056 PTH 2.15 VHP 3.926 DPA 17.70 RAP 157.48 ECC 1.3946

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 36 52	2724.45	-27.81	76.33	40.38	95.54	20 22 16	2124.4	-26.75	67.82
90.00	11 26 46	4436.06	7.58	185.23	33.57	62.64	12 40 42	3836.1	3.86	178.53
100.00	21 5 56	2437.19	-29.17	55.03	40.21	96.85	21 46 33	1837.2	-27.91	46.46
100.00	12 40 22	4198.54	8.78	167.12	32.92	61.31	13 50 21	3598.5	4.89	160.50
110.00	22 31 28	2169.55	-32.74	34.08	39.58	100.44	23 7 38	1569.6	-30.95	25.31
110.00	13 31 20	4038.95	11.90	153.15	31.06	57.71	14 38 39	3438.9	7.55	146.75

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-2.3489 TRA 7.2273 TC3-6.4198 BAU 2.0689 SGT11105.9 SGR 1241.9 SG3 1796.3 ST 3801.6 SR 925.5 SS 2787.4
RDE .7784 RRA -.4501 RC3 .6593 FAU .30064 RRT -.8202 RRF -.8463 RTF .9962 CRT -.8340 CRS .8888 CST -.9941
FDE-5.5722 FRA13.7674 FC-10.8540 BSP 38062 SGB11175.1 R23 .0452 R13 -.9965 LSA 4774.3 MSA 533.2 SSA 13.9
BDE 2.4745 BRA 7.2413 BC3 6.4536 FSP 6487 SG111152.7 SG2 707.5 THA 174.74 EL1 3880.5 EL2 500.3 ALF 168.33

LAUNCH DATE OCT 9 1964 FLIGHT TIME 378.00 ARRIVAL DATE OCT 22 1965

HELIOCENTRIC CONIC DISTANCE 854.808 EARTH TO MARS

RL 149.41 LAL -.00 LOL 15.74 VL 32.583 GAL -8.38 AZL 88.53 HCA 266.05 SMA 185.66 ECC .24192 INC 1.4712 V1 29.822
RP 214.08 LAP -1.47 LOP 281.79 VP 22.913 GAP -10.93 AZP 90.10 TAL 314.60 TAP 220.65 RCA 140.74 APO 230.57 V2 25.644
RC 293.566 GL 9.82 GP 5.77 ZAL 149.08 ZAP 50.99 ETS 184.27 ZAE 79.85 ETE 180.27 ZAC 87.92 ETC 259.60 CLP 50.75

PLANETOCENTRIC CONIC

C3 24.533 VHL 4.953 DLA 14.29 RAL 171.14 RAD 6568.0 VEL 12.079 PTH 2.16 VHP 4.004 DPA 17.60 RAP 157.41 ECC 1.4037

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 40 6	2724.43	-27.81	76.33	41.19	95.54	20 25 30	2124.4	-26.75	67.82
90.00	11 27 8	4447.27	7.93	185.06	34.34	62.73	12 41 15	3847.3	4.22	179.16
100.00	21 9 3	2437.54	-29.17	55.06	41.02	96.84	21 49 41	1837.5	-27.92	46.48
100.00	12 40 51	4209.39	9.14	167.73	33.70	61.42	13 51 1	3609.4	5.25	161.10
110.00	22 34 21	2170.65	-32.75	34.16	40.39	100.39	23 10 32	1570.6	-30.97	25.39
110.00	13 32 3	4049.05	12.26	153.70	31.83	57.84	14 39 32	3449.1	7.93	147.29

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-2.4491 TRA 7.4763 TC3-6.4165 BAU 2.1146 SGT11317.0 SGR 1215.7 SG3 1713.1 ST 3902.6 SR 917.4 SS 2734.0
RDE .7814 RRA -.4354 RC3 .6310 FAU .28706 RRT -.8121 RRF -.8391 RTF .9961 CRT -.8328 CRS .8880 CST -.9941
FDE-5.4404 FRA13.3205 FC-10.1299 BSP 38864 SGB11302.2 R23 .0463 R13 -.9964 LSA 4823.2 MSA 532.7 SSA 13.7
BDE 2.5707 BRA 7.4090 BC3 6.4474 FSP 6210 SG111360.2 SG2 706.7 THA 174.99 EL1 3977.9 EL2 488.3 ALF 168.74

LAUNCH DATE OCT 9 1964 FLIGHT TIME 380.00 ARRIVAL DATE OCT 24 1965

HELIOCENTRIC CONIC DISTANCE 858.875 EARTH TO MARS

RL 149.41 LAL -.00 LOL 15.74 VL 32.586 GAL -8.50 AZL 88.51 HCA 267.24 SMA 185.71 ECC .24334 INC 1.4924 V1 29.822
RP 213.77 LAP -1.49 LOP 282.97 VP 22.957 GAP -11.12 AZP 90.07 TAL 314.09 TAP 221.33 RCA 140.52 APO 230.90 V2 25.679
RC 294.693 GL 9.64 GP 5.65 ZAL 149.53 ZAP 49.82 ETS 184.37 ZAE 78.42 ETE 180.42 ZAC 87.81 ETC 259.60 CLP 49.59

PLANETOCENTRIC CONIC

C3 25.118 VHL 5.012 DLA 14.12 RAL 171.60 RAD 6568.0 VEL 12.104 PTH 2.17 VHP 4.085 DPA 17.48 RAP 157.39 ECC 1.4134

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 43 26	2724.31	-27.81	76.32	42.01	95.55	20 28 50	2124.3	-26.75	67.81
90.00	11 27 27	4459.00	8.30	186.53	35.14	62.83	12 41 46	3859.0	4.59	179.81
100.00	21 12 16	2437.80	-29.17	55.08	41.85	96.83	21 52 54	1837.8	-27.92	46.50
100.00	12 41 18	4220.74	9.51	168.37	34.49	61.53	13 51 38	3620.7	5.63	161.73
110.00	22 37 19	2171.70	-32.76	34.24	41.21	100.35	23 13 31	1571.7	-30.99	25.47
110.00	13 32 44	4059.61	12.64	154.28	32.63	57.97	14 40 24	3459.6	8.32	147.85

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-2.5513 TRA 7.7301 TC3-6.4025 BAU 2.1595 SGT11520.9 SGR 1190.9 SG3 1632.4 ST 4002.2 SR 909.6 SS 2680.3
RDE .7847 RRA -.4216 RC3 .6039 FAU .27379 RRT -.8039 RRF -.8320 RTF .9960 CRT -.8317 CRS .8873 CST -.9940
FDE-5.3095 FRA12.8833 FC3-9.4366 BSP 39664 SGB11582.3 R23 .0474 R13 -.9963 LSA 4873.0 MSA 532.0 SSA 13.7
BDE 2.6692 BRA 7.7416 BC3 6.4309 FSP 5943 SG111560.8 SG2 705.8 THA 175.23 EL1 4074.2 EL2 496.1 ALF 169.13

LAUNCH DATE OCT 9 1964 FLIGHT TIME 382.00 ARRIVAL DATE OCT 26 1965

HELIOCENTRIC CONIC DISTANCE 862.941 EARTH TO MARS

RL 149.41 LAL -.00 LOL 15.74 VL 32.589 GAL -8.63 AZL 88.49 HCA 268.42 SMA 185.76 ECC .24482 INC 1.5136 V1 29.822
RP 213.46 LAP -1.51 LOP 284.16 VP 23.000 GAP -11.32 AZP 90.04 TAL 313.57 TAP 222.00 RCA 140.28 APO 231.24 V2 25.714
RC 295.805 GL 9.66 GP 5.54 ZAL 149.98 ZAP 48.70 ETS 184.46 ZAE 77.02 ETE 180.57 ZAC 87.71 ETC 259.59 CLP 48.46

PLANETOCENTRIC CONIC

C3 25.737 VHL 5.073 DLA 13.94 RAL 172.07 RAD 6568.0 VEL 12.129 PTH 2.17 VHP 4.168 DPA 17.36 RAP 157.40 ECC 1.4236

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 46 51	2724.10	-27.81	76.30	42.86	95.55	20 32 16	2124.1	-26.75	67.80
90.00	11 27 43	4471.22	8.68	187.23	35.96	62.94	12 42 14	3871.2	4.98	180.50
100.00	21 15 34	2437.99	-29.17	55.09	42.69	96.82	21 56 12	1838.0	-27.92	46.51
100.00	12 41 41	4232.57	9.89	169.04	35.31	61.65	13 52 14	3632.6	6.03	162.38
110.00	22 40 22	2172.70	-32.77	34.31	42.06	100.31	23 16 34	1572.7	-31.01	25.54
110.00	13 33 24	4070.62	13.04	154.89	33.45	58.12	14 41 14	3470.6	8.73	148.44

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-2.6571 TRA 7.9864 TC3-6.3809 BAU 2.2045 SGT11717.1 SGR 1167.5 SG3 1554.0 ST 4100.8 SR 902.0 SS 2626.6
RDE .7885 RRA -.4085 RC3 .5781 FAU .26091 RRT -.7959 RRF -.8249 RTF .9959 CRT -.8309 CRS .8869 CST -.9939
FDE-5.1812 FRA12.4523 FC3-8.7765 BSP 40413 SGB11775.1 R23 .0486 R13 -.9961 LSA 4924.2 MSA 530.8 SSA 13.6
BDE 2.7717 BRA 7.9968 BC3 6.4070 FSP 5678 SG111754.0 SG2 704.0 THA 175.45 EL1 4169.7 EL2 493.7 ALF 169.49

LAUNCH DATE OCT 9 1964 FLIGHT TIME 384.00 ARRIVAL DATE OCT 28 1965

HELIOCENTRIC CONIC DISTANCE 867.005 EARTH TO MARS

RL	149.41	LAL	-.00	LOL	15.74	VL	32.592	GAL	-8.76	AZL	88.47	HCA	269.62	SMA	185.81	ECC	.24638	INC	1.5349
RP	213.16	LAP	-1.53	LOP	285.35	VP	23.043	GAP	-11.52	AZP	90.01	TAL	313.03	TAP	222.65	RCA	140.03	APO	231.59
RC	296.904	GL	9.67	GP	5.44	ZAL	150.45	ZAP	47.60	ETS	184.55	ZAE	75.66	ETE	180.71	ZAC	87.62	ETC	259.57

V1	29.822	V2	25.748	CLP	47.37														

PLANETOCENTRIC CONIC

C3	26.391	VHL	5.137	DLA	13.76	RAL	172.54	RAD	6568.1	VEL	12.156	PTH	2.18	VHP	4.253	DPA	17.22	RAP	157.46

ECC	1.4343	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	19 50 23	2723.81	-27.81	76.28	43.72	95.56	20 35 47	2123.8	-26.75	67.78							
		90.00	11 27 57	4483.94	9.07	187.96	36.79	63.06	12 42 41	3883.9	5.39	181.22							
		100.00	21 18 58	2438.10	-29.17	55.10	43.55	96.82	21 59 36	1838.1	-27.92	46.52							
		100.00	12 42 2	4244.87	10.29	169.74	36.15	61.78	13 52 47	3644.9	6.44	163.07							
		110.00	22 43 29	2173.67	-32.79	34.39	42.92	100.26	23 19 43	1573.7	-31.02	25.61							
		110.00	13 34 1	4082.08	13.45	155.52	34.28	58.27	14 42 3	3482.1	9.16	149.05							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-2.7643	TRA	8.2480	TC3	-6.3479	BAU	2.2482	SGT	11905.3	SGR	1145.1	SG3	1477.9	ST	4197.1	SR	894.5	SS	2571.9
RDE	.7925	RRA	-.3963	RC3	.5532	FAU	.24827	RRT	-.7879	RRF	-.8179	RTF	.9957	CRT	-.8300	CRS	.8865	CST	-.9939
FDE	-5.0517	FRA	12.0307	FC3	-8.1442	BSP	41171	SGB	11960.3	R23	.0498	R13	-.9960	LSA	4974.9	MSA	529.5	SSA	13.5
BDE	2.8756	BRA	8.2575	BC3	6.3720	FSP	5425	SG	111939.6	SG2	703.2	THA	175.65	EL1	4263.1	EL2	491.2	ALF	169.83

LAUNCH DATE OCT 9 1964 FLIGHT TIME 386.00 ARRIVAL DATE OCT 30 1965

HELIOCENTRIC CONIC DISTANCE 871.065 EARTH TO MARS

RL	149.41	LAL	-.00	LOL	15.74	VL	32.596	GAL	-8.90	AZL	88.44	HCA	270.81	SMA	185.87	ECC	.24802	INC	1.5562
RP	212.87	LAP	-1.56	LOP	286.55	VP	23.085	GAP	-11.72	AZP	89.98	TAL	312.48	TAP	223.29	RCA	139.77	APO	231.97
RC	297.989	GL	9.67	GP	5.33	ZAL	150.93	ZAP	46.54	ETS	184.63	ZAE	74.33	ETE	180.85	ZAC	87.54	ETC	259.55

V1	29.822	V2	25.782	CLP	46.31														

PLANETOCENTRIC CONIC

C3	27.083	VHL	5.204	DLA	13.56	RAL	173.01	RAD	6568.1	VEL	12.184	PTH	2.19	VHP	4.342	DPA	17.07	RAP	157.55

ECC	1.4457	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	19 54 0	2723.45	-27.81	76.26	44.60	95.58	20 39 23	2123.4	-26.74	67.75							
		90.00	11 28 7	4497.15	9.48	188.71	37.65	63.19	12 43 4	3897.1	5.80	181.96							
		100.00	21 22 27	2438.17	-29.18	55.10	44.43	96.81	22 3 5	1838.2	-27.93	46.52							
		100.00	12 42 21	4257.67	10.70	170.46	37.01	61.92	13 53 18	3657.7	6.86	163.78							
		110.00	22 46 41	2174.62	-32.80	34.46	43.79	100.22	23 22 55	1574.6	-31.04	25.68							
		110.00	13 34 37	4093.97	13.88	156.18	35.14	58.44	14 42 50	3494.0	9.60	149.69							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-2.8756	TRA	8.5132	TC3	-6.3091	BAU	2.2924	SGT	12087.3	SGR	1124.2	SG3	1404.4	ST	4292.8	SR	887.3	SS	2517.8
RDE	.7970	RRA	-.3848	RC3	.5297	FAU	.23611	RRT	-.7801	RRF	-.8112	RTF	.9956	CRT	-.8294	CRS	.8864	CST	-.9938
FDE	-4.9266	FRA	11.6160	FC3	-7.5476	BSP	41873	SGB	12139.5	R23	.0511	R13	-.9958	LSA	5027.5	MSA	527.9	SSA	13.4
BDE	2.9840	BRA	8.5219	BC3	6.3313	FSP	5173	SG	112119.2	SG2	701.5	THA	175.84	EL1	4356.3	EL2	488.4	ALF	170.15

LAUNCH DATE OCT 9 1964 FLIGHT TIME 388.00 ARRIVAL DATE NOV 1 1965

HELIOCENTRIC CONIC DISTANCE 875.122 EARTH TO MARS

RL	149.41	LAL	-.00	LOL	15.74	VL	32.599	GAL	-9.05	AZL	88.42	HCA	272.01	SMA	185.93	ECC	.24973	INC	1.5776
RP	212.57	LAP	-1.58	LOP	287.75	VP	23.127	GAP	-11.93	AZP	89.94	TAL	311.90	TAP	223.91	RCA	139.50	APO	232.36
RC	299.061	GL	9.68	GP	5.23	ZAL	151.41	ZAP	45.52	ETS	184.71	ZAE	73.03	ETE	180.97	ZAC	87.47	ETC	259.52

V1	29.822	V2	25.815	CLP	45.28														

PLANETOCENTRIC CONIC

C3	27.815	VHL	5.274	DLA	13.36	RAL	173.49	RAD	6568.1	VEL	12.214	PTH	2.19	VHP	4.433	DPA	16.91	RAP	157.67

ECC	1.4578	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	19 57 41	2723.02	-27.80	76.23	45.49	95.59	20 43 5	2123.0	-26.74	67.72							
		90.00	11 28 15	4510.83	9.90	189.50	38.53	63.33	12 43 26	3910.8	6.24	182.73							
		100.00	21 26 1	2438.18	-29.18	55.11	45.32	96.81	22 6 39	1838.2	-27.93	46.53							
		100.00	12 42 37	4270.91	11.12	171.22	37.88	62.07	13 53 48	3670.9	7.30	164.52							
		110.00	22 49 57	2175.55	-32.81	34.53	44.69	100.18	23 26 12	1575.5	-31.06	25.75							
		110.00	13 35 10	4106.30	14.31	156.87	36.02	58.62	14 43 37	3506.3	10.06	150.36							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-2.9898	TRA	8.7825	TC3	-6.2633	BAU	2.3366	SGT	12262.3	SGR	1104.3	SG3	1333.2	ST	4386.8	SR	880.2	SS	2463.2
RDE	.8018	RRA	-.3741	RC3	.5073	FAU	.22436	RRT	-.7724	RRF	-.8047	RTF	.9954	CRT	-.8290	CRS	.8865	CST	-.9937
FDE	-4.8021	FRA	11.2088	FC3	-6.9833	BSP	42551	SGB	12311.9	R23	.0525	R13	-.9956	LSA	5080.3	MSA	525.9	SSA	13.3
BDE	3.0954	BRA	8.7905	BC3	6.2838	FSP	4929	SG	112292.0	SG2	699.7	THA	176.01	EL1	4447.8	EL2	485.5	ALF	170.44

LAUNCH DATE OCT 9 1964 FLIGHT TIME 390.00 ARRIVAL DATE NOV 3 1965

HELIOCENTRIC CONIC DISTANCE 879.174 EARTH TO MARS

RL	149.41	LAL	-.00	LOL	15.74	VL	32.603	GAL	-9.20	AZL	88.40	HCA	273.21	SMA	185.99	ECC	.25152	INC	1.5991
RP	212.29	LAP	-1.60	LOP	288.95	VP	23.168	GAP	-12.13	AZP	89.91	TAL	311.32	TAP	224.53	RCA	139.21	APO	232.77
RC	300.120	GL	9.67	GP	5.13	ZAL	151.90	ZAP	44.52	ETS	184.79	ZAE	71.76	ETE	181.10	ZAC	87.41	ETC	259.48

V1	29.822	V2	25.847	CLP	44.29														

PLANETOCENTRIC CONIC

C3	28.588	VHL	5.347	DLA	13.14	RAL	173.98	RAD	6568.1	VEL	12.246	PTH	2.20	VHP	4.527	DPA	16.74	RAP	157.83

ECC	1.4705	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	20 1 28	2722.55	-27.80	76.19	46.40	95.61	20 46 51	2122.6	-26.73	67.69							
		90.00	11 28 21	4524.98	10.33	190.32	39.43	63.49	12 43 46	3925.0	6.68	183.53							
		100.00	21 29 39	2438.16	-29.18	55.10	46.23	96.81	22 10 17	1838.2	-27.93	46.52							
		100.00	12 42 51	4284.61	11.56	172.00	38.78	62.24	13 54 15	3684.6	7.75	165.28							
		110.00	22 53 17	2176.47	-32.82	34.60	45.60	100.14	23 29 34	1576.5	-31.07	25.81							
		110.00	13 35 42	4119.07	14.77	157.58	36.92	58.81	14 44 21	3519.1	10.53	151.05							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-3.1071	TRA	9.0576	TC3	-6.2083	BAU	2.3800	SGT	12430.1	SGR	1085.6	SG3	1264.4	ST	4479.6	SR	873.3	SS	2408.3
RDE	.8071	RRA	-.3642	RC3	.4858	FAU	.21288	RRT	-.7650	RRF	-.7985	RTF	.9952	CRT	-.8288	CRS	.8868	CST	-.9935
FDE	-4.6792	FRA	10.8097	FC3	-6.4468	BSP	43218	SGB	12477.4	R23	.0540	R13	-.9954	LSA	5133.7	MSA	523.8	SSA	13.2
BDE	3.2102	BRA	9.0649	BC3	6.2272	FSP	4692	SG	112457.9	SG2	697.6	THA	176.17	EL1	4538.4	EL2	482.4	ALF	170.72

LAUNCH DATE OCT 9 1964 FLIGHT TIME 392.00 ARRIVAL DATE NOV 5 1965

HELIOCENTRIC CONIC DISTANCE 883.221 EARTH TO MARS

RL 149.41 LAL -.00 LOL 15.74 VL 32.606 GAL -9.36 AZL 88.38 HCA 274.41 SMA 186.05 ECC .25339 INC 1.6207 V1 29.822
RP 212.01 LAP -1.62 LOP 290.15 VP 23.209 GAP -12.33 AZP 89.88 TAL 310.71 TAP 225.12 RCA 138.91 APO 233.19 V2 25.879
RC 301.167 GL 9.66 GP 5.04 ZAL 152.41 ZAP 43.56 ETS 184.86 ZAE 70.52 ETE 181.21 ZAC 87.36 ETC 259.44 CLP 43.33

PLANETOCENTRIC CONIC

C3 29.406 VHL 5.423 DLA 12.92 RAL 174.47 RAD 6568.2 VEL 12,279 PTH 2.21 VHP 4.623 DPA 16.57 RAP 158.03 ECC 1.4839

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 5 20	2722.04	-27.80	76.16	47.33	95.63	20 50 42	2122.0	-26.73	67.65
90.00	11 28 24	4539.60	10.77	191.16	40.35	63.65	12 44 3	3939.6	7.14	184.36
100.00	21 33 22	2430.11	-29.18	55.10	47.16	96.82	22 14 0	1838.1	-27.92	46.52
100.00	12 43 3	4298.76	12.01	172.82	39.70	62.42	13 54 41	3698.8	8.22	166.07
110.00	22 56 42	2177.39	-32.83	34.67	46.53	100.10	23 32 59	1577.4	-31.09	25.88
110.00	13 36 13	4132.25	15.23	158.32	37.84	59.02	14 45 5	3532.3	11.01	151.76

DIFFERENTIAL CORRECTIONS
TDE-3.2277 TRA 9.3384 TC3-6.1479 BAU 2.4238
RDE .0127 RRA -.3552 RC3 .4654 FAU .20181
FDE-4.3574 FRA10.4191 FC3-5.9415 BSP 43842
BDE 3.3284 BRA 9.3452 BC3 6.1655 FSP 4460

MID-COURSE EXECUTION ACCURACY
SGT12592.5 SGR 1067.9 SG3 1198.1
RRT -.7579 RRF -.7926 RTF .9949
SGB12637.7 R23 .0555 R13 -.9951
SG112618.5 SG2 695.2 THA 176.31

ORBIT DETERMINATION ACCURACY
ST 4571.0 SR 866.6 SS 2353.1
CRT -.8286 CRS .8872 CST -.9934
LSA 5187.5 MSA 521.4 SSA 13.2
EL1 4627.6 EL2 479.2 ALF 170.97

LAUNCH DATE OCT 9 1964 FLIGHT TIME 394.00 ARRIVAL DATE NOV 7 1965

HELIOCENTRIC CONIC DISTANCE 887.262 EARTH TO MARS

RL 149.41 LAL -.00 LOL 15.74 VL 32.610 GAL -9.52 AZL 88.36 HCA 275.62 SMA 186.11 ECC .25535 INC 1.6424 V1 29.822
RP 211.73 LAP -1.63 LOP 291.36 VP 23.249 GAP -12.54 AZP 89.84 TAL 310.09 TAP 225.71 RCA 138.59 APO 233.64 V2 25.911
RC 302.203 GL 9.65 GP 4.94 ZAL 152.91 ZAP 42.63 ETS 184.93 ZAE 69.31 ETE 181.32 ZAC 87.32 ETC 259.39 CLP 42.39

PLANETOCENTRIC CONIC

C3 30.271 VHL 5.502 DLA 12.70 RAL 174.96 RAD 6568.2 VEL 12.314 PTH 2.22 VHP 4.722 DPA 16.38 RAP 158.26 ECC 1.4982

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 9 16	2721.51	-27.79	76.12	48.28	95.65	20 54 38	2121.5	-26.72	67.61
90.00	11 28 25	4554.67	11.22	192.04	41.29	63.83	12 44 19	3954.7	7.62	185.22
100.00	21 37 10	2430.05	-29.17	55.10	48.11	96.82	22 17 48	1838.1	-27.92	46.52
100.00	12 43 12	4313.36	12.46	173.66	40.65	62.61	13 55 6	3713.4	8.70	166.89
110.00	23 0 10	2178.32	-32.84	34.74	47.47	100.06	23 36 28	1578.3	-31.11	25.95
110.00	13 36 41	4145.85	15.70	159.09	38.79	59.24	14 45 47	3545.9	11.51	152.50

DIFFERENTIAL CORRECTIONS
TDE-3.3525 TRA 9.6238 TC3-6.0821 BAU 2.4680
RDE .8188 RRA -.3469 RC3 .4461 FAU .19117
FDE-4.4380 FRA10.0344 FC3-5.4674 BSP 44447
BDE 3.4511 BRA 9.6301 BC3 6.0985 FSP 4236

MID-COURSE EXECUTION ACCURACY
SGT12749.4 SGR 1051.3 SG3 1134.1
RRT -.7511 RRF -.7871 RTF .9947
SGB12791.6 R23 .0572 R13 -.9949
SG112772.9 SG2 692.7 THA 176.44

ORBIT DETERMINATION ACCURACY
ST 4661.3 SR 860.0 SS 2297.9
CRT -.8288 CRS .8879 CST -.9933
LSA 5242.0 MSA 518.7 SSA 13.1
EL1 4716.1 EL2 475.7 ALF 171.22

LAUNCH DATE OCT 9 1964 FLIGHT TIME 396.00 ARRIVAL DATE NOV 9 1965

HELIOCENTRIC CONIC DISTANCE 891.296 EARTH TO MARS

RL 149.41 LAL -.00 LOL 15.74 VL 32.614 GAL -9.69 AZL 88.34 HCA 276.83 SMA 186.18 ECC .25740 INC 1.6643 V1 29.822
RP 211.47 LAP -1.65 LOP 292.57 VP 23.289 GAP -12.75 AZP 89.80 TAL 309.45 TAP 226.28 RCA 138.26 APO 234.10 V2 25.941
RC 303.228 GL 9.62 GP 4.85 ZAL 153.43 ZAP 41.72 ETS 184.99 ZAE 68.13 ETE 181.43 ZAC 87.28 ETC 259.34 CLP 41.49

PLANETOCENTRIC CONIC

C3 31.186 VHL 5.584 DLA 12.46 RAL 175.46 RAD 6568.2 VEL 12,351 PTH 2.23 VHP 4.825 DPA 16.18 RAP 158.52 ECC 1.5132

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 13 17	2720.96	-27.79	76.08	49.24	95.67	20 58 38	2121.0	-26.71	67.58
90.00	11 28 23	4570.18	11.69	192.94	42.25	64.02	12 44 33	3970.2	8.10	186.10
100.00	21 41 1	2437.98	-29.17	55.09	49.07	96.82	22 21 39	1838.0	-27.92	46.51
100.00	12 43 20	4328.39	12.93	174.53	41.61	62.81	13 55 28	3728.4	9.19	167.74
110.00	23 3 42	2179.26	-32.85	34.81	48.43	100.02	23 40 1	1579.3	-31.12	26.02
110.00	13 37 8	4159.87	16.19	159.89	39.76	59.48	14 46 28	3559.9	12.02	153.26

DIFFERENTIAL CORRECTIONS
TDE-3.4815 TRA 9.9156 TC3-6.0106 BAU 2.5123
RDE .8254 RRA -.3395 RC3 .4277 FAU .18085
FDE-4.5199 FRA 9.6573 FC3-5.0205 BSP 45000
BDE 3.5779 BRA 9.9214 BC3 6.0258 FSP 4016

MID-COURSE EXECUTION ACCURACY
SGT12898.6 SGR 1035.6 SG3 1072.4
RRT -.7447 RRF -.7820 RTF .9944
SGB12940.1 R23 .0589 R13 -.9946
SG112921.7 SG2 689.9 THA 176.57

ORBIT DETERMINATION ACCURACY
ST 4750.6 SR 853.7 SS 2242.5
CRT -.8290 CRS .8887 CST -.9931
LSA 5297.1 MSA 515.8 SSA 13.0
EL1 4803.6 EL2 472.1 ALF 171.44

LAUNCH DATE OCT 9 1964 FLIGHT TIME 398.00 ARRIVAL DATE NOV 11 1965

HELIOCENTRIC CONIC DISTANCE 895.322 EARTH TO MARS

RL 149.41 LAL -.00 LOL 15.74 VL 32.618 GAL -9.87 AZL 88.31 HCA 278.05 SMA 186.25 ECC .25954 INC 1.6863 V1 29.822
RP 211.20 LAP -1.67 LOP 293.79 VP 23.328 GAP -12.96 AZP 89.76 TAL 308.79 TAP 226.83 RCA 137.91 APO 234.59 V2 25.971
RC 304.242 GL 9.60 GP 4.77 ZAL 153.96 ZAP 40.85 ETS 185.05 ZAE 66.97 ETE 181.53 ZAC 87.26 ETC 259.29 CLP 40.62

PLANETOCENTRIC CONIC

C3 32.155 VHL 5.670 DLA 12.22 RAL 175.97 RAD 6568.3 VEL 12.391 PTH 2.24 VHP 4.930 DPA 15.97 RAP 158.81 ECC 1.5292

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 17 22	2720.40	-27.79	76.04	50.22	95.69	21 2 42	2120.4	-26.71	67.54
90.00	11 28 20	4586.13	12.16	193.87	43.23	64.23	12 44 46	3986.1	8.60	187.01
100.00	21 44 57	2437.91	-29.17	55.09	50.05	96.82	22 25 35	1837.9	-27.92	46.51
100.00	12 43 26	4343.85	13.41	175.42	42.60	63.03	13 55 49	3743.8	9.69	168.61
110.00	23 7 18	2180.23	-32.86	34.88	49.41	99.98	23 43 38	1580.2	-31.14	26.09
110.00	13 37 34	4174.29	16.69	160.71	40.75	59.73	14 47 8	3574.3	12.54	154.05

DIFFERENTIAL CORRECTIONS
TDE-3.6151 TRA10.2131 TC3-5.9351 BAU 2.5575
RDE .8324 RRA -.3330 RC3 .4103 FAU .17094
FDE-4.2038 FRA 9.2870 FC3-4.6024 BSP 45532
BDE 3.7097 BRA10.2186 BC3 5.9493 FSP 3803

MID-COURSE EXECUTION ACCURACY
SGT13043.6 SGR 1020.9 SG3 1013.0
RRT -.7388 RRF -.7774 RTF .9941
SGB13083.5 R23 .0608 R13 -.9943
SG113065.4 SG2 686.9 THA 176.68

ORBIT DETERMINATION ACCURACY
ST 4839.2 SR 847.5 SS 2187.0
CRT -.8296 CRS .8898 CST -.9929
LSA 5353.1 MSA 512.7 SSA 13.0
EL1 4890.4 EL2 468.3 ALF 171.66

LAUNCH DATE OCT 10 1964 FLIGHT TIME 240.00 ARRIVAL DATE JUN 7 1965

HELIOCENTRIC CONIC DISTANCE 586.383 EARTH TO MARS

RL	149.37	LAL	-.00	LOL	16.73	VL	33.135	GAL	-8.13	AZL	92.92	HCA	192.55	SMA	195.42	ECC	.27281	INC	2.9163	V1	29.831
RP	239.11	LAP	.63	LOP	209.26	VP	20.760	GAP	9.23	AZP	87.15	TAL	320.65	TAP	153.21	RCA	142.11	APO	248.74	V2	22.975
RC	174.639	GL	-18.07	GP	15.97	ZAL	141.15	ZAP	150.07	ETS	148.83	ZAE	158.54	ETE	48.47	ZAC	104.07	ETC	255.66	CLP	154.35

PLANETOCENTRIC CONIC

C3	28.929	VHL	5.379	DLA	-9.56	RAL	156.27	RAD	6568.2	VEL	12.260	PTH	2.21	VHP	5.952	DPA	14.26	RAP	190.66	ECC	1.4761

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 42 0	2003.70	-13.96	28.55	21.95	114.89	22 15 24	1403.7	-10.49	21.59
90.00	7 18 40	5249.77	26.74	236.77	27.30	80.32	8 46 10	4649.8	25.13	228.47
100.00	22 58 39	1756.43	-15.13	9.79	21.37	116.09	23 27 56	1156.4	-11.50	2.88
100.00	8 44 42	4972.28	28.02	216.09	27.04	79.15	10 7 35	4372.3	26.24	207.75
110.00	0 0 9	1576.18	-18.24	354.41	19.66	119.42	0 26 25	976.2	-14.19	347.64
110.00	10 3 38	4725.28	31.46	196.47	26.16	75.87	11 22 23	4125.3	29.19	187.99

DIFFERENTIAL CORRECTIONS

TDE	1.8271	TRA	-3.8610	TC3	1.2713	BAU	.5823
RDE	.8510	RRA	-1.2339	RC3	.8067	FAU	.15726
FDE	-3.7290	FRA	6.5152	FC3	-4.7063	BSP	17715
BDE	2.0155	BRA	4.0534	BC3	1.5056	FSP	2600

MID-COURSE EXECUTION ACCURACY

SGT	4801.5	SGR	1830.7	SG3	824.0		
RRT	.9682	RRF	-.9952	RTF	-.9611		
SGB	5138.7	R23	-.2284	R13	-.9687		
SG1	5120.7	SG2	429.5	THA	20.41		

ORBIT DETERMINATION ACCURACY

ST	2314.2	SR	991.2	SS	2314.6
CRT	.9878	CRS	.9973	CST	.9964
LSA	3415.3	MSA	174.7	SSA	15.8
EL1	2513.5	EL2	141.9	ALF	23.01

LAUNCH DATE OCT 10 1964 FLIGHT TIME 242.00 ARRIVAL DATE JUN 9 1965

HELIOCENTRIC CONIC DISTANCE 589.903 EARTH TO MARS

RL	149.37	LAL	-.00	LOL	16.73	VL	33.105	GAL	-8.03	AZL	92.59	HCA	193.50	SMA	194.87	ECC	.27009	INC	2.5911	V1	29.831
RP	238.79	LAP	.60	LOP	210.21	VP	20.749	GAP	8.79	AZP	87.48	TAL	320.85	TAP	154.35	RCA	142.24	APO	247.50	V2	23.007
RC	176.939	GL	-16.34	GP	15.24	ZAL	141.55	ZAP	149.84	ETS	150.67	ZAE	159.42	ETE	48.54	ZAC	103.41	ETC	255.69	CLP	153.66

PLANETOCENTRIC CONIC

C3	27.748	VHL	5.268	DLA	-7.85	RAL	156.67	RAD	6568.1	VEL	12.212	PTH	2.19	VHP	5.803	DPA	13.49	RAP	190.57	ECC	1.4567

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 30 4	2048.65	-15.23	31.24	21.83	114.17	22 4 12	1448.7	-11.84	24.20
90.00	7 33 49	5184.01	25.90	232.13	26.19	78.14	9 0 13	4584.0	24.01	223.98
100.00	22 47 37	1798.44	-16.37	12.29	21.28	115.36	23 17 36	1198.4	-12.83	5.30
100.00	8 58 56	4909.46	27.14	211.64	25.88	76.96	10 20 46	4309.5	25.07	203.45
110.00	23 47 14	1611.79	-19.42	356.50	19.65	118.70	24 14 6	1011.8	-15.44	349.64
110.00	10 15 49	4668.89	30.45	192.38	24.89	73.65	11 33 38	4068.9	27.91	184.11

DIFFERENTIAL CORRECTIONS

TDE	1.7755	TRA	-3.8042	TC3	1.3306	BAU	.5777
RDE	.8042	RRA	-1.1714	RC3	.8092	FAU	.16403
FDE	-3.7517	FRA	6.8081	FC3	-5.1176	BSP	17667
BDE	1.9492	BRA	3.9805	BC3	1.5574	FSP	2751

MID-COURSE EXECUTION ACCURACY

SGT	4810.6	SGR	1773.8	SG3	870.9		
RRT	.9676	RRF	-.9945	RTF	-.9623		
SGB	5127.2	R23	-.2223	R13	-.9693		
SG1	5109.8	SG2	421.3	THA	19.78		

ORBIT DETERMINATION ACCURACY

ST	2302.5	SR	956.4	SS	2336.2
CRT	.9872	CRS	.9962	CST	.9972
LSA	3412.7	MSA	165.7	SSA	18.2
EL1	2489.2	EL2	141.2	ALF	22.37

LAUNCH DATE OCT 10 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUN 11 1965

HELIOCENTRIC CONIC DISTANCE 593.442 EARTH TO MARS

RL	149.37	LAL	-.00	LOL	16.73	VL	33.077	GAL	-7.93	AZL	92.31	HCA	194.45	SMA	194.34	ECC	.26747	INC	2.3072	V1	29.831
RP	238.47	LAP	.58	LOP	211.16	VP	20.740	GAP	8.34	AZP	87.77	TAL	321.04	TAP	155.49	RCA	142.36	APO	246.31	V2	23.040
RC	179.231	GL	-14.78	GP	14.61	ZAL	141.85	ZAP	149.51	ETS	152.36	ZAE	160.25	ETE	48.90	ZAC	102.85	ETC	255.72	CLP	152.94

PLANETOCENTRIC CONIC

C3	26.718	VHL	5.169	DLA	-6.30	RAL	157.01	RAD	6568.1	VEL	12.169	PTH	2.18	VHP	5.663	DPA	12.83	RAP	190.49	ECC	1.4397

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 19 30	2088.37	-16.32	33.65	21.75	113.47	21 54 18	1488.4	-13.01	26.53
90.00	7 47 7	5125.47	25.02	228.07	25.22	76.29	9 12 32	4525.5	22.89	220.05
100.00	22 37 51	1835.63	-17.45	14.54	21.23	114.66	23 8 27	1235.6	-13.97	7.46
100.00	9 11 27	4853.45	26.22	207.73	24.88	75.10	10 32 20	4253.5	23.91	199.69
110.00	23 39 14	1643.42	-20.44	358.38	19.66	118.01	24 6 38	1043.4	-16.54	351.43
110.00	10 26 33	4618.43	29.42	188.81	23.80	71.76	11 43 31	4018.4	26.65	180.72

DIFFERENTIAL CORRECTIONS

TDE	1.7272	TRA	-3.7468	TC3	1.3854	BAU	.5737
RDE	.7660	RRA	-1.1179	RC3	.8128	FAU	.17087
FDE	-3.7804	FRA	7.1022	FC3	-5.5368	BSP	17629
BDE	1.8894	BRA	3.9100	BC3	1.6062	FSP	2909

MID-COURSE EXECUTION ACCURACY

SGT	4814.2	SGR	1726.6	SG3	918.7		
RRT	.9670	RRF	-.9936	RTF	-.9634		
SGB	5114.4	R23	-.2159	R13	-.9700		
SG1	5097.5	SG2	415.2	THA	19.26		

ORBIT DETERMINATION ACCURACY

ST	2288.8	SR	928.1	SS	2358.4
CRT	.9864	CRS	.9949	CST	.9978
LSA	3411.2	MSA	158.6	SSA	20.6
EL1	2465.8	EL2	141.5	ALF	21.88

LAUNCH DATE OCT 10 1964 FLIGHT TIME 246.00 ARRIVAL DATE JUN 13 1965

HELIOCENTRIC CONIC DISTANCE 597.002 EARTH TO MARS

RL	149.37	LAL	-.00	LOL	16.73	VL	33.050	GAL	-7.83	AZL	92.06	HCA	195.40	SMA	193.83	ECC	.26495	INC	2.0567	V1	29.831
RP	238.14	LAP	.55	LOP	212.12	VP	20.734	GAP	7.91	AZP	88.02	TAL	321.23	TAP	156.63	RCA	142.47	APO	245.18	V2	23.073
RC	181.513	GL	-13.38	GP	14.06	ZAL	142.05	ZAP	149.09	ETS	153.92	ZAE	161.06	ETE	49.54	ZAC	102.35	ETC	255.74	CLP	152.18

PLANETOCENTRIC CONIC

C3	25.805	VHL	5.080	DLA	-4.90	RAL	157.30	RAD	6568.0	VEL	12.132	PTH	2.17	VHP	5.528	DPA	12.25	RAP	190.43	ECC	1.4247

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 10 1	2123.87	-17.27	35.82	21.70	112.80	21 45 25	1523.9	-14.03	28.64
90.00	7 58 55	5072.75	24.12	224.47	24.36	74.70	9 23 28	4472.8	21.79	216.58
100.00	22 29 3	1868.91	-18.38	16.57	21.19	114.00	23 0 12	1268.9	-14.98	9.42
100.00	9 22 34	4802.95	25.29	204.27	23.99	73.50	10 42 37	4202.9	22.78	196.36
110.00	23 32 1	1671.81	-21.34	.09	19.68	117.36	23 59 52	1071.8	-17.51	353.06
110.00	10 36 6	4578.81	28.41	185.64	22.84	70.14	11 52 19	3972.8	25.44	177.73

DIFFERENTIAL CORRECTIONS

TDE	1.7031	TRA	-3.6675	TC3	1.4690	BAU	.5808
RDE	.7378	RRA	-1.0685	RC3	.8226	FAU	.17866
FDE	-3.8332	FRA	7.3809	FC3	-5.9940	BSP	17093
BDE	1.8560	BRA	3.8200	BC3	1.6836	FSP	3036

MID-COURSE EXECUTION ACCURACY

SGT	4812.0	SGR	1689.4	SG3	968.3		
RRT	.9678	RRF	-.9927	RTF	-.9658		
SGB	5099.9	R23	-.2039	R13	-.9717		
SG1	5084.0	SG2	402.3	THA	18.89		

ORBIT DETERMINATION ACCURACY

ST	2289.8	SR	908.2	SS	2388.7
CRT	.9865	CRS	.9935	CST	.9986
LSA	3428.1	MSA	146.8	SSA	23.3
EL1	2459.5	EL2	138.2	ALF	21.44

LAUNCH DATE OCT 10 1964 FLIGHT TIME 248.00 ARRIVAL DATE JUN 15 1965

HELIOCENTRIC CONIC DISTANCE 600.575 EARTH TO MARS

RL 149.37 LAL -.00 LOL 16.73 VL 33.024 GAL -7.74 AZL 91.83 HCA 196.36 SMA 193.35 ECC .26254 INC 1.8342 V1 29.831
RP 237.81 LAP .52 LOP 213.08 VP 20.730 GAP 7.48 AZP 88.24 TAL 321.41 TAP 157.77 RCA 142.59 APO 244.11 V2 23.106
RC 183.786 GL -12.10 GP 13.58 ZAL 142.19 ZAP 148.59 ETS 155.34 ZAE 161.84 ETE 50.47 ZAC 101.92 ETC 255.75 CLP 151.40

PLANETOCENTRIC CONIC

C3 24.991 VHL 4.999 DLA -3.62 RAL 157.56 RAD 6568.0 VEL 12.098 PTH 2.17 VHP 5.400 DPA 11.74 RAP 190.38 ECC 1.4113

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 1 25	2155.94	-18.10	37.80	21.66	112.15	21 37 21	1555.9	-14.94	30.55
90.00	8 9 33	5024.87	23.23	221.25	23.60	73.33	9 33 17	4424.9	20.72	213.47
100.00	22 21 4	1899.01	-19.20	18.42	21.17	113.36	22 52 43	1299.0	-15.88	11.21
100.00	9 32 35	4757.03	24.36	201.17	23.21	72.12	10 51 52	4157.0	21.69	193.39
110.00	23 25 25	1697.53	-22.14	1.66	19.71	116.74	23 53 43	1097.5	-18.37	354.56
110.00	10 44 43	4531.27	27.42	182.82	22.00	68.74	12 0 14	3931.3	24.28	175.06

DIFFERENTIAL CORRECTIONS
TDE 1.6526 TRA-3.6155 TC3 1.5054 BAU .5740
RDE .7114 RRA-1.0295 RC3 .8280 FAU .18578
FDE-3.8728 FRA 7.6855 FC3-6.4357 BSP 17225
BDE 1.7992 BRA 3.7592 BC3 1.7181 FSP 3212

MID-COURSE EXECUTION ACCURACY
SGT 4805.5 SGR 1657.7 SG3 1018.7
RRT .9665 RRF -.9916 RTF -.9661
SGB 5083.4 R23 -.1995 R13 -.9718
SG1 5067.4 SG2 403.4 THA 18.56

ORBIT DETERMINATION ACCURACY
ST 2287.4 SR 889.5 SS 2413.0
CRT .9853 CRS .9918 CST .9989
LSA 3425.3 MSA 146.7 SSA 25.3
EL1 2431.5 EL2 141.6 ALF 21.21

LAUNCH DATE OCT 10 1964 FLIGHT TIME 250.00 ARRIVAL DATE JUN 17 1965

HELIOCENTRIC CONIC DISTANCE 604.165 EARTH TO MARS

RL 149.37 LAL -.00 LOL 16.73 VL 33.000 GAL -7.65 AZL 91.64 HCA 197.32 SMA 192.89 ECC .26021 INC 1.6355 V1 29.831
RP 237.48 LAP .49 LOP 214.04 VP 20.728 GAP 7.05 AZP 88.44 TAL 321.59 TAP 158.91 RCA 142.69 APO 243.08 V2 23.140
RC 186.049 GL -10.93 GP 13.15 ZAL 142.27 ZAP 148.02 ETS 156.66 ZAE 162.60 ETE 51.70 ZAC 101.54 ETC 255.77 CLP 150.59

PLANETOCENTRIC CONIC

C3 24.256 VHL 4.925 DLA -2.45 RAL 157.78 RAD 6568.0 VEL 12.068 PTH 2.16 VHP 5.276 DPA 11.29 RAP 190.32 ECC 1.3992

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 53 32	2185.14	-18.84	39.63	21.63	111.54	21 29 57	1585.1	-15.75	32.31
90.00	8 19 11	4980.99	22.34	218.34	22.92	72.13	9 42 11	4381.0	19.69	210.67
100.00	22 13 44	1926.43	-19.93	20.13	21.16	112.75	22 45 50	1326.4	-16.68	12.85
100.00	9 41 39	4714.94	23.45	198.37	22.51	70.92	11 0 14	4114.9	20.63	190.71
110.00	23 19 22	1720.99	-22.85	3.11	19.73	116.14	23 48 3	1121.0	-19.15	355.93
110.00	10 52 31	4493.14	26.45	180.28	21.26	67.51	12 7 24	3893.1	23.17	172.66

DIFFERENTIAL CORRECTIONS
TDE 1.6053 TRA-3.5611 TC3 1.5386 BAU .5676
RDE .6896 RRA -.9959 RC3 .8345 FAU .19300
FDE-3.9170 FRA 7.9984 FC3-6.8885 BSP 17325
BDE 1.7472 BRA 3.6977 BC3 1.7504 FSP 3399

MID-COURSE EXECUTION ACCURACY
SGT 4793.6 SGR 1632.2 SG3 1070.6
RRT .9653 RRF -.9905 RTF -.9666
SGB 5063.9 R23 -.1945 R13 -.9721
SG1 5047.7 SG2 404.8 THA 18.32

ORBIT DETERMINATION ACCURACY
ST 2244.4 SR 874.8 SS 2438.4
CRT .9841 CRS .9901 CST .9991
LSA 3424.3 MSA 147.4 SSA 27.0
EL1 2404.5 EL2 145.0 ALF 21.07

LAUNCH DATE OCT 10 1964 FLIGHT TIME 252.00 ARRIVAL DATE JUN 19 1965

HELIOCENTRIC CONIC DISTANCE 607.772 EARTH TO MARS

RL 149.37 LAL -.00 LOL 16.73 VL 32.976 GAL -7.56 AZL 91.46 HCA 198.28 SMA 192.45 ECC .25798 INC 1.4563 V1 29.831
RP 237.15 LAP .46 LOP 215.00 VP 20.728 GAP 6.63 AZP 88.62 TAL 321.77 TAP 160.05 RCA 142.80 APO 242.09 V2 23.174
RC 188.300 GL -9.85 GP 12.78 ZAL 142.30 ZAP 147.39 ETS 157.88 ZAE 163.33 ETE 53.25 ZAC 101.20 ETC 255.78 CLP 149.74

PLANETOCENTRIC CONIC

C3 23.588 VHL 4.857 DLA -1.36 RAL 157.97 RAD 6568.0 VEL 12.040 PTH 2.15 VHP 5.157 DPA 10.90 RAP 190.27 ECC 1.3882

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 46 14	2211.94	-19.50	41.31	21.60	110.94	21 23 6	1611.9	-16.48	33.94
90.00	8 27 59	4940.51	21.47	215.69	22.31	71.08	9 50 19	4340.5	18.69	208.12
100.00	22 6 57	1951.59	-20.59	21.71	21.14	112.16	22 39 28	1351.6	-17.40	14.37
100.00	9 49 57	4676.09	22.57	195.83	21.89	69.86	11 7 54	4076.1	19.62	188.27
110.00	23 13 44	1742.52	-23.49	4.46	19.76	115.58	23 42 46	1142.5	-19.85	357.21
110.00	10 59 40	4457.92	25.51	177.97	20.59	66.44	12 13 57	3857.9	22.10	170.47

DIFFERENTIAL CORRECTIONS
TDE 1.5615 TRA-3.5023 TC3 1.5721 BAU .5626
RDE .6719 RRA -.9864 RC3 .8435 FAU .20064
FDE-3.9691 FRA 8.3143 FC3-7.3641 BSP 17343
BDE 1.6999 BRA 3.6332 BC3 1.7841 FSP 3586

MID-COURSE EXECUTION ACCURACY
SGT 4775.6 SGR 1612.5 SG3 1124.4
RRT .9642 RRF -.9894 RTF -.9670
SGB 5040.5 R23 -.1891 R13 -.9724
SG1 5024.0 SG2 406.7 THA 18.16

ORBIT DETERMINATION ACCURACY
ST 2221.0 SR 863.7 SS 2466.0
CRT .9829 CRS .9882 CST .9993
LSA 3425.9 MSA 149.1 SSA 28.6
EL1 2378.4 EL2 148.4 ALF 21.00

LAUNCH DATE OCT 10 1964 FLIGHT TIME 254.00 ARRIVAL DATE JUN 21 1965

HELIOCENTRIC CONIC DISTANCE 611.394 EARTH TO MARS

RL 149.37 LAL -.00 LOL 16.73 VL 32.953 GAL -7.48 AZL 91.29 HCA 199.24 SMA 192.03 ECC .25584 INC 1.2939 V1 29.831
RP 236.81 LAP .43 LOP 215.96 VP 20.730 GAP 6.21 AZP 88.78 TAL 321.94 TAP 161.19 RCA 142.90 APO 241.16 V2 23.209
RC 190.540 GL -8.86 GP 12.45 ZAL 142.29 ZAP 146.71 ETS 159.00 ZAE 164.05 ETE 55.15 ZAC 100.89 ETC 255.79 CLP 148.87

PLANETOCENTRIC CONIC

C3 22.977 VHL 4.793 DLA -.36 RAL 158.13 RAD 6567.9 VEL 12.015 PTH 2.14 VHP 5.041 DPA 10.56 RAP 190.21 ECC 1.3781

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 39 26	2236.70	-20.10	42.89	21.57	110.38	21 16 43	1636.7	-17.15	35.46
90.00	8 36 5	4902.95	20.62	213.26	21.75	70.15	9 57 48	4302.9	17.73	205.78
100.00	22 0 37	1974.85	-21.18	23.19	21.13	111.60	22 33 32	1374.8	-18.06	15.78
100.00	9 57 36	4640.03	21.70	193.50	21.32	68.92	11 14 56	4040.0	18.64	186.04
110.00	23 8 29	1762.43	-24.07	5.71	19.78	115.04	23 37 51	1162.4	-20.49	358.40
110.00	11 6 14	4425.22	24.60	175.86	20.00	65.48	12 19 59	3825.2	21.09	168.48

DIFFERENTIAL CORRECTIONS
TDE 1.5206 TRA-3.4403 TC3 1.6040 BAU .5583
RDE .6577 RRA -.9407 RC3 .8545 FAU .20865
FDE-4.0289 FRA 8.6363 FC3-7.8616 BSP 17305
BDE 1.6567 BRA 3.5666 BC3 1.8174 FSP 3775

MID-COURSE EXECUTION ACCURACY
SGT 4751.7 SGR 1597.9 SG3 1180.1
RRT .9631 RRF -.9882 RTF -.9675
SGB 5013.2 R23 -.1835 R13 -.9728
SG1 4996.4 SG2 409.2 THA 18.07

ORBIT DETERMINATION ACCURACY
ST 2197.2 SR 855.8 SS 2495.8
CRT .9818 CRS .9862 CST .9995
LSA 3430.1 MSA 151.8 SSA 29.8
EL1 2353.1 EL2 151.7 ALF 21.02

LAUNCH DATE OCT 10 1964 FLIGHT TIME 256.00 ARRIVAL DATE JUN 23 1965

HELIOCENTRIC CONIC DISTANCE 615.031 EARTH TO MARS

RL 149.37 LAL -.00 LOL 16.73 VL 32.931 GAL -7.40 AZL 91.15 HCA 200.21 SMA 191.63 ECC .25379 INC 1.1459 V1 29.831
RP 236.46 LAP .40 LOP 216.93 VP 20.735 GAP 5.80 AZP 88.92 TAL 322.11 TAP 162.32 RCA 142.99 APO 240.26 V2 23.244
RC 192.768 GL -7.93 GP 12.15 ZAL 142.25 ZAP 145.97 ETS 160.05 ZAE 164.74 ETE 57.42 ZAC 100.62 ETC 255.80 CLP 147.97

PLANETOCENTRIC CONIC

C3 22.415 VHL 4.734 DLA .58 RAL 158.27 RAD 6567.9 VEL 11.991 PTH 2.14 VHP 4.930 DPA 10.27 RAP 190.14 ECC 1.3689

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 33 5	2259.71	-20.64	44.36	21.54	109.83	21 10 44	1659.7	-17.75	36.88
90.00	8 43 36	4867.91	19.79	211.02	21.25	69.33	10 4 44	4267.9	16.80	203.62
100.00	21 54 41	1996.46	-21.71	24.57	21.11	111.06	22 27 58	1396.5	-18.66	17.11
100.00	10 4 41	4606.39	20.86	191.35	20.81	68.09	11 21 27	4006.4	17.71	183.98
110.00	23 3 33	1780.92	-24.60	6.89	19.80	114.52	23 33 14	1180.9	-21.08	359.51
110.00	11 12 18	4394.70	23.73	173.93	19.45	64.64	12 25 33	3794.7	20.11	166.65

DIFFERENTIAL CORRECTIONS
TDE 1.4822 TRA-3.3746 TC3 1.6338 BAU .5543
RDE .6463 RRA -.9182 RC3 .8673 FAU .21703
FDE-4.0963 FRA 8.9645 FC3-8.3823 BSP 17218
BDE 1.6170 BRA 3.4973 BC3 1.8497 FSP 3968

MID-COURSE EXECUTION ACCURACY
SGT 4721.3 SGR 1587.8 SG3 1237.9
RRT .9620 RRF -.9869 RTF -.9680
SGB 4981.2 R23 -.1777 R13 -.9732
SG1 4964.1 SG2 412.1 THA 18.06

ORBIT DETERMINATION ACCURACY
ST 2172.8 SR 850.6 SS 2527.8
CRT .9808 CRS .9841 CST .9997
LSA 3436.4 MSA 155.4 SSA 30.8
EL1 2328.2 EL2 154.9 ALF 21.10

LAUNCH DATE OCT 10 1964 FLIGHT TIME 258.00 ARRIVAL DATE JUN 25 1965

HELIOCENTRIC CONIC DISTANCE 618.683 EARTH TO MARS

RL 149.37 LAL -.00 LOL 16.73 VL 32.910 GAL -7.32 AZL 91.01 HCA 201.18 SMA 191.25 ECC .25182 INC 1.0109 V1 29.831
RP 236.12 LAP .37 LOP 217.90 VP 20.741 GAP 5.40 AZP 89.06 TAL 322.28 TAP 163.46 RCA 143.09 APO 239.41 V2 23.279
RC 194.983 GL -7.07 GP 11.89 ZAL 142.19 ZAP 145.19 ETS 161.02 ZAE 165.39 ETE 60.10 ZAC 100.37 ETC 255.81 CLP 147.04

PLANETOCENTRIC CONIC

C3 21.898 VHL 4.679 DLA 1.46 RAL 158.40 RAD 6567.9 VEL 11.970 PTH 2.13 VHP 4.821 DPA 10.01 RAP 190.06 ECC 1.3604

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 27 5	2281.21	-21.13	45.75	21.52	109.30	21 5 6	1681.2	-18.30	38.21
90.00	8 50 37	4835.08	18.99	208.95	20.80	68.59	10 11 12	4235.1	15.92	201.62
100.00	21 49 6	2016.66	-22.20	25.87	21.10	110.55	22 22 43	1416.7	-19.21	18.36
100.00	10 11 17	4574.87	20.05	189.36	20.34	67.35	11 27 31	3974.9	16.81	182.07
110.00	22 58 54	1798.19	-25.08	8.00	19.81	114.03	23 28 52	1198.2	-21.62	.56
110.00	11 17 58	4366.10	22.88	172.14	18.96	63.88	12 30 44	3766.1	19.18	164.95

DIFFERENTIAL CORRECTIONS
TDE 1.4430 TRA-3.3082 TC3 1.6574 BAU .5495
RDE .6368 RRA -.8994 RC3 .8810 FAU .22559
FDE-4.1646 FRA 9.3062 FC3-8.9190 BSP 17130
BDE 1.5773 BRA 3.4283 BC3 1.8770 FSP 4174

MID-COURSE EXECUTION ACCURACY
SGT 4684.7 SGR 1581.5 SG3 1297.7
RRT .9610 RRF -.9857 RTF -.9684
SGB 4944.4 R23 -.1721 R13 -.9736
SG1 4926.9 SG2 415.8 THA 18.11

ORBIT DETERMINATION ACCURACY
ST 2145.1 SR 847.2 SS 2559.6
CRT .9797 CRS .9820 CST .9997
LSA 3441.5 MSA 160.2 SSA 31.4
EL1 2300.9 EL2 158.3 ALF 21.26

LAUNCH DATE OCT 10 1964 FLIGHT TIME 260.00 ARRIVAL DATE JUN 27 1965

HELIOCENTRIC CONIC DISTANCE 622.350 EARTH TO MARS

RL 149.37 LAL -.00 LOL 16.73 VL 32.890 GAL -7.25 AZL 90.89 HCA 202.15 SMA 190.89 ECC .24994 INC .8867 V1 29.831
RP 235.77 LAP .33 LOP 218.87 VP 20.750 GAP 5.00 AZP 89.18 TAL 322.44 TAP 164.59 RCA 143.18 APO 238.59 V2 23.315
RC 197.185 GL -6.27 GP 11.65 ZAL 142.11 ZAP 144.36 ETS 161.93 ZAE 166.01 ETE 63.23 ZAC 100.14 ETC 255.82 CLP 146.08

PLANETOCENTRIC CONIC

C3 21.418 VHL 4.628 DLA 2.28 RAL 158.51 RAD 6567.9 VEL 11.950 PTH 2.13 VHP 4.716 DPA 9.79 RAP 189.97 ECC 1.3525

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 21 25	2301.41	-21.58	47.06	21.49	108.80	20 59 46	1701.4	-18.81	39.47
90.00	8 57 10	4804.19	18.21	207.02	20.38	67.94	10 17 14	4204.2	15.06	199.76
100.00	21 43 49	2035.62	-22.65	27.10	21.09	110.05	22 17 45	1435.6	-19.71	19.54
100.00	10 17 27	4545.22	19.26	187.51	19.92	66.69	11 33 12	3945.2	15.94	180.29
110.00	22 54 30	1814.39	-25.52	9.05	19.83	113.55	23 24 44	1214.4	-22.12	1.55
110.00	11 23 16	4339.20	22.07	170.47	18.52	63.21	12 35 35	3739.2	18.29	163.37

DIFFERENTIAL CORRECTIONS
TDE 1.4175 TRA-3.2270 TC3 1.6995 BAU .5506
RDE .6310 RRA -.8814 RC3 .8993 FAU .23522
FDE-4.2551 FRA 9.6389 FC3-9.5081 BSP 16717
BDE 1.5516 BRA 3.3452 BC3 1.9228 FSP 4352

MID-COURSE EXECUTION ACCURACY
SGT 4641.2 SGR 1579.8 SG3 1360.2
RRT .9611 RRF -.9844 RTF -.9695
SGB 4902.7 R23 -.1633 R13 -.9745
SG1 4885.1 SG2 414.7 THA 18.25

ORBIT DETERMINATION ACCURACY
ST 2126.2 SR 847.4 SS 2598.3
CRT .9796 CRS .9800 CST .9998
LSA 3458.6 MSA 164.3 SSA 31.7
EL1 2283.4 EL2 158.7 ALF 21.44

LAUNCH DATE OCT 10 1964 FLIGHT TIME 262.00 ARRIVAL DATE JUN 29 1965

HELIOCENTRIC CONIC DISTANCE 626.027 EARTH TO MARS

RL 149.37 LAL -.00 LOL 16.73 VL 32.871 GAL -7.18 AZL 90.77 HCA 203.13 SMA 190.54 ECC .24813 INC .7723 V1 29.831
RP 235.42 LAP .30 LOP 219.85 VP 20.760 GAP 4.61 AZP 89.29 TAL 322.59 TAP 165.72 RCA 143.26 APO 237.82 V2 23.351
RC 199.372 GL -5.51 GP 11.44 ZAL 142.02 ZAP 143.48 ETS 162.78 ZAE 166.58 ETE 66.83 ZAC 99.93 ETC 255.83 CLP 145.08

PLANETOCENTRIC CONIC

C3 20.975 VHL 4.580 DLA 3.05 RAL 158.61 RAD 6567.9 VEL 11.931 PTH 2.12 VHP 4.615 DPA 9.61 RAP 189.87 ECC 1.3452

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 16 3	2320.47	-21.99	48.30	21.47	108.30	20 54 44	1720.5	-19.28	40.67
90.00	9 3 21	4775.08	17.46	205.21	20.00	67.35	10 22 56	4175.1	14.24	198.02
100.00	21 38 49	2053.50	-23.06	28.27	21.08	109.56	22 13 3	1453.5	-20.18	20.66
100.00	10 23 16	4517.28	18.50	185.79	19.53	66.09	11 38 33	3917.3	15.11	178.63
110.00	22 50 20	1829.67	-25.94	10.05	19.84	113.09	23 20 50	1229.7	-22.58	2.49
110.00	11 28 14	4313.88	21.28	168.93	18.11	62.60	12 40 8	3713.9	17.44	161.90

DIFFERENTIAL CORRECTIONS
TDE 1.3616 TRA-3.1725 TC3 1.6801 BAU .5360
RDE .6227 RRA -.8705 RC3 .9114 FAU .24343
FDE-4.3108 FRA10.0256 FC-10.0478 BSP 16995
BDE 1.4972 BRA 3.2898 BC3 1.9114 FSP 4623

MID-COURSE EXECUTION ACCURACY
SGT 4590.0 SGR 1578.9 SG3 1423.8
RRT .9585 RRF -.9832 RTF -.9687
SGB 4853.9 R23 -.1632 R13 -.9740
SG1 4835.1 SG2 427.6 THA 18.40

ORBIT DETERMINATION ACCURACY
ST 2079.8 SR 845.3 SS 2625.4
CRT .9774 CRS .9775 CST .9998
LSA 3449.9 MSA 173.1 SSA 32.2
EL1 2238.9 EL2 166.1 ALF 21.79

LAUNCH DATE OCT 10 1964 FLIGHT TIME 264.00 ARRIVAL DATE JUL 1 1965

HELIOCENTRIC CONIC DISTANCE 629.720 EARTH TO MARS

RL 149.37 LAL -.00 LOL 16.73 VL 32.853 GAL -7.11 AZL 90.67 HCA 204.11 SMA 190.21 ECC .24641 INC .6660 V1 29.831
RP 235.06 LAP .27 LOP 220.83 VP 20.772 GAP 4.22 AZP 89.39 TAL 322.74 TAP 166.85 RCA 143.34 APO 237.08 V2 23.387
RC 201.544 GL -4.80 GP 11.25 ZAL 141.92 ZAP 142.56 ETS 163.58 ZAE 167.09 ETE 70.94 ZAC 99.74 ETC 255.84 CLP 144.06

PLANETOCENTRIC CONIC

C3 20.562 VHL 4.535 DLA 3.79 RAL 158.70 RAD 6567.8 VEL 11.914 PTH 2.12 VHP 4.516 DPA 9.46 RAP 189.75 ECC 1.3384

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 10 56	2338.52	-22.37	49.49	21.45	107.83	20 49 55	1738.5	-19.72	41.82
90.00	9 9 11	4747.51	16.73	203.52	19.66	66.81	10 28 18	4147.5	13.45	196.38
100.00	21 34 3	2070.43	-23.44	29.38	21.06	109.10	22 8 34	1470.4	-20.62	21.72
100.00	10 28 45	4490.82	17.76	184.17	19.18	65.55	11 43 36	3890.8	14.31	177.07
110.00	22 46 22	1844.12	-26.32	11.00	19.86	112.64	23 17 6	1244.1	-23.02	3.39
110.00	11 32 56	4289.90	20.52	167.48	17.74	62.04	12 44 26	3689.9	16.62	160.53

DIFFERENTIAL CORRECTIONS
TDE 1.3275 TRA-3.0951 TC3 1.6950 BAU .5315
RDE .6189 RRA -.8586 RC3 .9304 FAU .25330
FDE-4.4003 FRA10.3917 FC-10.6651 BSP 16738
BDE 1.4646 BRA 3.2120 BC3 1.9335 FSP 4838

MID-COURSE EXECUTION ACCURACY
SGT 4531.9 SGR 1582.9 SG3 1490.6
RRT .9577 RRF -.9820 RTF -.9691
SGB 4800.3 R23 -.1576 R13 -.9744
SG1 4780.9 SG2 431.8 THA 18.65

ORBIT DETERMINATION ACCURACY
ST 2048.9 SR 847.6 SS 2662.9
CRT .9767 CRS .9754 CST .9998
LSA 3460.4 MSA 179.9 SSA 32.3
EL1 2210.9 EL2 168.6 ALF 22.14

LAUNCH DATE OCT 10 1964 FLIGHT TIME 266.00 ARRIVAL DATE JUL 3 1965

HELIOCENTRIC CONIC DISTANCE 633.425 EARTH TO MARS

RL 149.37 LAL -.00 LOL 16.73 VL 32.835 GAL -7.04 AZL 90.57 HCA 205.09 SMA 189.90 ECC .24476 INC .5677 V1 29.831
RP 234.71 LAP .24 LOP 221.81 VP 20.785 GAP 3.84 AZP 89.49 TAL 322.88 TAP 167.97 RCA 143.42 APO 236.38 V2 23.424
RC 203.699 GL -4.12 GP 11.08 ZAL 141.80 ZAP 141.60 ETS 164.34 ZAE 167.52 ETE 75.58 ZAC 99.56 ETC 255.85 CLP 143.00

PLANETOCENTRIC CONIC

C3 20.178 VHL 4.492 DLA 4.48 RAL 158.79 RAD 6567.8 VEL 11.898 PTH 2.11 VHP 4.420 DPA 9.34 RAP 189.60 ECC 1.3321

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 6 4	2355.67	-22.72	50.62	21.44	107.37	20 45 19	1755.7	-20.13	42.91
90.00	9 14 42	4721.36	16.02	201.93	19.34	66.33	10 33 24	4121.4	12.68	194.84
100.00	21 29 30	2086.52	-23.80	30.45	21.06	108.64	22 4 17	1486.5	-21.03	22.74
100.00	10 33 57	4465.74	17.05	182.65	18.86	65.07	11 48 23	3865.7	13.55	175.61
110.00	22 42 34	1857.84	-26.67	11.90	19.87	112.21	23 13 32	1257.8	-23.42	4.25
110.00	11 37 22	4267.18	19.79	166.12	17.40	61.54	12 48 29	3667.2	15.84	159.23

DIFFERENTIAL CORRECTIONS
TDE 1.2902 TRA-3.0176 TC3 1.6986 BAU .5250
RDE .6157 RRA -.8494 RC3 .9498 FAU .26331
FDE-4.4889 FRA10.7745 FC-11.2972 BSP 16521
BDE 1.4296 BRA 3.1349 BC3 1.9461 FSP 5072

MID-COURSE EXECUTION ACCURACY
SGT 4465.7 SGR 1589.3 SG3 1559.6
RRT .9567 RRF -.9808 RTF -.9693
SGB 4740.1 R23 -.1529 R13 -.9746
SG1 4719.8 SG2 437.6 THA 18.97

ORBIT DETERMINATION ACCURACY
ST 2012.9 SR 850.7 SS 2699.7
CRT .9759 CRS .9731 CST .9997
LSA 3468.1 MSA 187.6 SSA 32.2
EL1 2178.6 EL2 171.4 ALF 22.56

LAUNCH DATE OCT 10 1964 FLIGHT TIME 268.00 ARRIVAL DATE JUL 5 1965

HELIOCENTRIC CONIC DISTANCE 637.142 EARTH TO MARS

RL 149.37 LAL -.00 LOL 16.73 VL 32.818 GAL -6.98 AZL 90.48 HCA 206.07 SMA 189.60 ECC .24319 INC .4753 V1 29.831
RP 234.35 LAP .21 LOP 222.80 VP 20.800 GAP 3.46 AZP 89.57 TAL 323.02 TAP 169.10 RCA 143.49 APO 235.71 V2 23.461
RC 205.837 GL -3.48 GP 10.93 ZAL 141.68 ZAP 140.60 ETS 165.05 ZAE 167.85 ETE 80.73 ZAC 99.39 ETC 255.86 CLP 141.90

PLANETOCENTRIC CONIC

C3 19.821 VHL 4.452 DLA 5.14 RAL 158.86 RAD 6567.8 VEL 11.883 PTH 2.11 VHP 4.327 DPA 9.25 RAP 189.44 ECC 1.3262

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 1 24	2372.03	-23.05	51.71	21.42	106.92	20 40 56	1772.0	-20.52	43.95
90.00	9 19 58	4696.50	15.33	200.42	19.05	65.90	10 38 15	4096.5	11.95	193.38
100.00	21 25 10	2101.86	-24.13	31.47	21.05	108.20	22 0 12	1501.9	-21.41	23.72
100.00	10 38 54	4441.91	16.36	181.21	18.56	64.63	11 52 56	3841.9	12.81	174.22
110.00	22 38 58	1870.92	-27.01	12.77	19.89	111.80	23 10 8	1270.9	-23.81	5.07
110.00	11 41 36	4245.61	19.09	164.85	17.10	61.09	12 52 21	3645.6	15.08	158.02

DIFFERENTIAL CORRECTIONS
TDE 1.2525 TRA-2.9373 TC3 1.6942 BAU .5174
RDE .6139 RRA -.8420 RC3 .9704 FAU .27371
FDE-4.5837 FRA11.1674 FC-11.9547 BSP 16289
BDE 1.3949 BRA 3.0556 BC3 1.9524 FSP 5311

MID-COURSE EXECUTION ACCURACY
SGT 4390.7 SGR 1598.2 SG3 1630.9
RRT .9556 RRF -.9797 RTF -.9692
SGB 4672.6 R23 -.1489 R13 -.9748
SG1 4651.4 SG2 444.5 THA 19.36

ORBIT DETERMINATION ACCURACY
ST 1974.0 SR 855.2 SS 2738.0
CRT .9752 CRS .9710 CST .9996
LSA 3476.4 MSA 195.7 SSA 32.1
EL1 2144.2 EL2 174.3 ALF 23.06

LAUNCH DATE OCT 10 1964 FLIGHT TIME 270.00 ARRIVAL DATE JUL 7 1965

HELIOCENTRIC CONIC DISTANCE 640.872 EARTH TO MARS

RL 149.37 LAL -.00 LOL 16.73 VL 32.802 GAL -6.92 AZL 90.39 HCA 207.06 SMA 189.32 ECC .24168 INC .3894 V1 29.831
RP 233.98 LAP .18 LOP 223.79 VP 20.817 GAP 3.09 AZP 89.65 TAL 323.15 TAP 170.22 RCA 143.56 APO 235.07 V2 23.498
RC 207.958 GL -2.88 GP 10.80 ZAL 141.56 ZAP 139.55 ETS 165.73 ZAE 168.08 ETE 86.35 ZAC 99.23 ETC 255.88 CLP 140.78

PLANETOCENTRIC CONIC

C3 19.489 VHL 4.415 DLA 5.76 RAL 158.93 RAD 6567.8 VEL 11.869 PTH 2.11 VHP 4.237 DPA 9.18 RAP 189.26 ECC 1.3207

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 56 57	2387.68	-23.36	52.75	21.42	106.48	20 36 44	1787.7	-20.88	44.96
90.00	9 25 0	4672.83	14.67	199.00	18.79	65.51	10 42 53	4072.8	11.24	192.00
100.00	21 21 1	2116.52	-24.44	32.45	21.05	107.77	21 56 17	1516.5	-21.78	24.66
100.00	10 43 37	4419.22	15.69	179.86	18.30	64.23	11 57 16	3819.2	12.10	172.91
110.00	22 35 30	1883.40	-27.32	13.61	19.91	111.39	23 6 54	1283.4	-24.17	5.86
110.00	11 45 37	4225.11	18.41	163.65	16.82	60.67	12 56 2	3625.1	14.36	156.87

DIFFERENTIAL CORRECTIONS
TDE 1.2146 TRA-2.8542 TC3 1.6826 BAU .5089
RDE .6129 RRA -.8365 RC3 .9921 FAU .28444
FDE-4.6816 FRA11.5740 FC-12.6352 BSP 16034
BDE 1.3605 BRA 2.9742 BC3 1.9533 FSP 5561

MID-COURSE EXECUTION ACCURACY
SGT 4307.4 SGR 1609.5 SG3 1704.8
RRT .9545 RRF -.9786 RTF -.9691
SGB 4598.3 R23 -.1452 R13 -.9749
SG1 4576.1 SG2 451.6 THA 19.83

ORBIT DETERMINATION ACCURACY
ST 1932.5 SR 860.6 SS 2776.9
CRT .9746 CRS .9688 CST .9995
LSA 3484.8 MSA 204.3 SSA 31.9
EL1 2108.1 EL2 176.8 ALF 23.64

LAUNCH DATE OCT 10 1964 FLIGHT TIME 272.00 ARRIVAL DATE JUL 9 1965

HELIOCENTRIC CONIC DISTANCE 644.613 EARTH TO MARS

RL	149.37	LAL	-.00	LOL	16.73	VL	32.787	GAL	-6.87	AZL	90.31	HCA	208.05	SMA	189.04	ECC	.24025	INC	.3087
RP	233.62	LAP	.15	LOP	224.78	VP	20.836	GAP	2.72	AZP	89.73	TAL	323.28	TAP	171.33	RCA	143.63	APO	234.46
RC	210.060	GL	-2.30	GP	10.68	ZAL	141.43	ZAP	138.46	ETS	166.37	ZAE	168.17	ETE	92.33	ZAC	99.07	ETC	255.89

V1	29.831	V2	23.536	ZAC	99.07	ETC	255.89	CLP	139.61

PLANETOCENTRIC CONIC

C3	19.180	VHL	4.380	DLA	6.35	RAL	159.00	RAD	6567.8	VEL	11.856	PTH	2.10	VHP	4.149	DPA	9.14	RAP	189.05

ECC	1.3157	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	19 52 41	2402.68	-23.64	53.76	21.42	106.05	20 32 43	1802.7	-21.22	45.93							
		90.00	9 29 49	4650.27	14.03	197.66	18.56	65.15	10 47 19	4050.3	10.56	190.69							
		100.00	21 17 2	2130.58	-24.72	33.39	21.06	107.36	21 52 33	1530.6	-22.12	25.57							
		100.00	10 48 8	4397.61	15.05	178.58	18.06	63.86	12 1 26	3797.6	11.41	171.67							
		110.00	22 32 12	1895.36	-27.62	14.41	19.94	111.00	23 3 47	1295.4	-24.51	6.62							
		110.00	11 49 28	4205.58	17.75	162.51	16.56	60.30	12 59 33	3605.6	13.67	155.78							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.1745	TRA	-2.7693	TC3	1.6601	BAU	.4988	SGT	4214.7	SGR	1622.7	SG3	1780.8	ST	1886.5	SR	866.6	SS	2815.3
RDE	.6125	RRA	-.8329	RC3	1.0142	FAU	.29536	RRT	.9533	RRF	-.9776	RTF	-.9687	CRT	.9739	CRS	.9666	CST	.9993
FDE	-4.7798	FRA	11.9958	FC	-13.3318	BSP	15779	SGB	4516.3	R23	-.1423	R13	-.9748	LSA	3491.3	MSA	213.2	SSA	31.7
BDE	1.3246	BRA	2.8918	BC3	1.9454	FSP	5825	SG1	4492.8	SG2	460.0	THA	20.38	EL1	2068.2	EL2	179.5	ALF	24.30

LAUNCH DATE OCT 10 1964 FLIGHT TIME 274.00 ARRIVAL DATE JUL 11 1965

HELIOCENTRIC CONIC DISTANCE 648.365 EARTH TO MARS

RL	149.37	LAL	-.00	LOL	16.73	VL	32.773	GAL	-6.82	AZL	90.23	HCA	209.05	SMA	188.79	ECC	.23889	INC	.2332
RP	233.25	LAP	.11	LOP	225.77	VP	20.856	GAP	2.36	AZP	89.80	TAL	323.40	TAP	172.44	RCA	143.69	APO	233.89
RC	212.144	GL	-1.75	GP	10.57	ZAL	141.31	ZAP	137.33	ETS	166.99	ZAE	168.12	ETE	98.55	ZAC	98.92	ETC	255.91

V1	29.831	V2	23.574	ZAC	98.92	ETC	255.91	CLP	138.41

PLANETOCENTRIC CONIC

C3	18.893	VHL	4.347	DLA	6.92	RAL	159.07	RAD	6567.8	VEL	11.844	PTH	2.10	VHP	4.065	DPA	9.13	RAP	188.82

ECC	1.3109	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	19 48 35	2417.10	-23.91	54.73	21.42	105.64	20 28 52	1817.1	-21.54	46.87							
		90.00	9 34 26	4628.73	13.41	196.38	18.35	64.82	10 51 34	4028.7	9.91	189.45							
		100.00	21 13 14	2144.07	-25.00	34.30	21.07	106.95	21 48 58	1544.1	-22.44	26.44							
		100.00	10 52 28	4376.98	14.43	177.36	17.84	63.53	12 5 25	3777.0	10.76	170.49							
		110.00	22 29 2	1906.84	-27.89	15.19	19.97	110.61	23 0 49	1306.8	-24.83	7.36							
		110.00	11 53 9	4186.98	17.12	161.44	16.34	59.95	13 2 56	3587.0	13.00	154.75							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.1346	TRA	-2.6804	TC3	1.6303	BAU	.4881	SGT	4112.5	SGR	1637.9	SG3	1859.2	ST	1838.1	SR	873.5	SS	2854.7
RDE	.6129	RRA	-.8307	RC3	1.0374	FAU	.30666	RRT	.9520	RRF	-.9766	RTF	-.9682	CRT	.9734	CRS	.9645	CST	.9991
FDE	-4.8824	FRA	12.4288	FC	-14.0523	BSP	15488	SGB	4426.7	R23	-.1398	R13	-.9747	LSA	3498.6	MSA	222.3	SSA	31.5
BDE	1.2895	BRA	2.8061	BC3	1.9324	FSP	6097	SG1	4401.8	SG2	468.6	THA	21.01	EL1	2027.0	EL2	181.6	ALF	25.04

LAUNCH DATE OCT 10 1964 FLIGHT TIME 276.00 ARRIVAL DATE JUL 13 1965

HELIOCENTRIC CONIC DISTANCE 652.128 EARTH TO MARS

RL	149.37	LAL	-.00	LOL	16.73	VL	32.759	GAL	-6.77	AZL	90.16	HCA	210.04	SMA	188.54	ECC	.23760	INC	.1616
RP	232.88	LAP	.08	LOP	226.77	VP	20.877	GAP	2.00	AZP	89.86	TAL	323.51	TAP	173.55	RCA	143.75	APO	233.34
RC	214.210	GL	-1.22	GP	10.47	ZAL	141.18	ZAP	136.16	ETS	167.57	ZAE	167.91	ETE	104.85	ZAC	98.78	ETC	255.92

V1	29.831	V2	23.612	ZAC	98.78	ETC	255.92	CLP	137.18

PLANETOCENTRIC CONIC

C3	18.626	VHL	4.316	DLA	7.46	RAL	159.13	RAD	6567.8	VEL	11.832	PTH	2.10	VHP	3.983	DPA	9.14	RAP	188.57

ECC	1.3065	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	19 44 39	2430.98	-24.16	55.67	21.43	105.23	20 25 10	1831.0	-21.84	47.77							
		90.00	9 38 52	4608.15	12.81	195.16	18.16	64.53	10 55 40	4008.1	9.28	188.27							
		100.00	21 9 35	2157.07	-25.25	35.19	21.09	106.55	21 45 32	1557.1	-22.74	27.29							
		100.00	10 56 38	4357.29	13.83	176.21	17.65	63.23	12 9 15	3757.3	10.12	169.37							
		110.00	22 26 0	1917.89	-28.16	15.94	20.01	110.24	22 57 58	1317.9	-25.14	8.07							
		110.00	11 56 42	4169.24	16.51	160.42	16.13	59.64	13 6 11	3569.2	12.36	153.78							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.0943	TRA	-2.5877	TC3	1.5923	BAU	.4765	SGT	4000.5	SGR	1655.0	SG3	1939.8	ST	1786.8	SR	881.2	SS	2895.0
RDE	.6141	RRA	-.8299	RC3	1.0615	FAU	.31832	RRT	.9506	RRF	-.9757	RTF	-.9675	CRT	.9730	CRS	.9625	CST	.9989
FDE	-4.9898	FRA	12.8734	FC	-14.7959	BSP	15160	SGB	4329.3	R23	-.1376	R13	-.9745	LSA	3506.5	MSA	231.6	SSA	31.2
BDE	1.2548	BRA	2.7175	BC3	1.9137	FSP	6376	SG1	4302.9	SG2	477.6	THA	21.75	EL1	1983.8	EL2	183.2	ALF	25.87

LAUNCH DATE OCT 10 1964 FLIGHT TIME 278.00 ARRIVAL DATE JUL 15 1965

HELIOCENTRIC CONIC DISTANCE 655.902 EARTH TO MARS

RL	149.37	LAL	-.00	LOL	16.73	VL	32.745	GAL	-6.72	AZL	90.10	HCA	211.05	SMA	188.31	ECC	.23637	INC	.0923
RP	232.51	LAP	.05	LOP	227.77	VP	20.900	GAP	1.65	AZP	89.92	TAL	323.61	TAP	174.66	RCA	143.80	APO	232.82
RC	216.258	GL	-.72	GP	10.39	ZAL	141.06	ZAP	134.94	ETS	168.14	ZAE	167.54	ETE	111.06	ZAC	98.63	ETC	255.94

V1	29.831	V2	23.650	ZAC	98.63	ETC	255.94	CLP	135.90

PLANETOCENTRIC CONIC

C3	18.378	VHL	4.287	DLA	7.98	RAL	159.20	RAD	6567.7	VEL	11.822	PTH	2.09	VHP	3.904	DPA	9.18	RAP	188.28

ECC	1.3024	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	19 40 53	2444.37	-24.40	56.58	21.45	104.83	20 21 37	1844.4	-22.13	48.65							
		90.00	9 43 9	4588.48	12.23	194.01	18.00	64.26	10 59 38	3988.5	8.67	187.14							
		100.00	21 6 5	2169.60	-25.49	36.04	21.12	106.17	21 42 14	1569.6	-23.03	28.11							
		100.00	11 0 39	4338.48	13.25	175.11	17.48	62.96	12 12 57	3738.5	9.52	168.31							
		110.00	22 23 7	1928.53	-28.40	16.67	20.06	109.87	22 55 15	1328.5	-25.43	8.76							
		110.00	12 0 6	4152.31	15.93	159.46	15.96	59.35	13 9 18	3552.3	11.74	152.85							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.0533	TRA	-2.4908	TC3	1.5447	BAU	.4640	SGT	3877.6	SGR	1673.6	SG3	2022.7	ST	1732.2	SR	889.6	SS	2935.9
RDE	.6159	RRA	-.8302	RC3	1.0867	FAU	.33037	RRT	.9491	RRF	-.9749	RTF	-.9665	CRT	.9727	CRS	.9605	CST	.9986
FDE	-5.1012	FRA	13.3275	FC	-15.5632	BSP	14802	SGB	4223.4	R23	-.1361	R13	-.9742	LSA	3514.6	MSA	240.9	SSA	30.9
BDE	1.2202	BRA	2.6255	BC3	1.8886	FSP	6659	SG1	4195.1	SG2	487.4	THA	22.60	EL1	1938.5	EL2	184.3	ALF	26.81

LAUNCH DATE OCT 10 1964 FLIGHT TIME 280.00 ARRIVAL DATE JUL 17 1965

HELIOCENTRIC CONIC DISTANCE 659.687 EARTH TO MARS

RL 149.37 LAL -.00 LOL 16.73 VL 32.733 GAL -6.67 AZL 90.03 HCA 212.05 SMA 188.09 ECC .23521 INC .0232 V1 29.831
RP 232.14 LAP .02 LOP 228.77 VP 20.924 GAP 1.30 AZP 89.97 TAL 323.71 TAP 175.76 RCA 143.85 APO 232.33 V2 23.689
RC 218.287 GL -.24 GP 10.31 ZAL 140.94 ZAP 133.68 ETS 168.68 ZAE 167.01 ETE 117.02 ZAC 98.49 ETC 255.96 CLP 134.58

PLANETOCENTRIC CONIC

C3 18.148 VHL 4.260 DLA 8.47 RAL 159.26 RAD 6567.7 VEL 11.812 PTH 2.09 VHP 3.828 DPA 9.24 RAP 187.97 ECC 1.2987

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 37 16	2457.30	-24.62	57.46	21.48	104.44	20 18 14	1857.3	-22.40	49.50
90.00	9 47 17	4569.66	11.67	192.91	17.86	64.02	11 3 27	3969.7	8.09	186.07
100.00	21 2 43	2181.69	-25.72	36.87	21.16	105.79	21 39 5	1581.7	-23.30	28.90
100.00	11 4 31	4320.50	12.69	174.07	17.34	62.71	12 16 32	3720.5	8.93	167.30
110.00	22 20 20	1938.80	-28.64	17.38	20.11	109.51	22 52 39	1338.8	-25.71	9.43
110.00	12 3 24	4136.16	15.37	158.54	15.80	59.08	13 12 20	3536.2	11.15	151.97

DIFFERENTIAL CORRECTIONS
TDE 1.0110 TRA-2.3905 TC3 1.4861 BAU .4503
RDE .6182 RRA -.8319 RC3 1.1119 FAU .34255
FDE-5.2134 FRA13.7962 FC-16.3410 BSP 14426
BDE 1.1850 BRA 2.5311 BC3 1.8560 FSP 6956

MID-COURSE EXECUTION ACCURACY
SGT 3744.1 SGR 1693.6 SG3 2107.4
RRT .9473 RRF -.9741 RTF -.9652
SGB 4109.4 R23 -.1351 R13 -.9737
SG1 4079.1 SG2 497.8 THA 23.57

ORBIT DETERMINATION ACCURACY
ST 1673.7 SR 898.4 SS 2976.6
CRT .9726 CRS .9585 CST .9983
LSA 3522.1 MSA 250.4 SSA 30.6
EL1 1890.6 EL2 185.0 ALF 27.86

LAUNCH DATE OCT 10 1964 FLIGHT TIME 282.00 ARRIVAL DATE JUL 19 1965

HELIOCENTRIC CONIC DISTANCE 663.482 EARTH TO MARS

RL 149.37 LAL -.00 LOL 16.73 VL 32.721 GAL -6.63 AZL 89.97 HCA 213.06 SMA 187.88 ECC .23411 INC .0280 V1 29.831
RP 231.76 LAP -.02 LOP 229.78 VP 20.950 GAP .96 AZP 90.02 TAL 323.80 TAP 176.85 RCA 143.90 APO 231.87 V2 23.728
RC 220.299 GL .22 GP 10.24 ZAL 140.83 ZAP 132.38 ETS 169.21 ZAE 166.32 ETE 122.62 ZAC 98.35 ETC 255.99 CLP 133.23

PLANETOCENTRIC CONIC

C3 17.936 VHL 4.235 DLA 8.95 RAL 159.33 RAD 6567.7 VEL 11.803 PTH 2.09 VHP 3.754 DPA 9.32 RAP 187.62 ECC 1.2952

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 33 48	2469.81	-24.83	58.32	21.52	104.06	20 14 58	1869.8	-22.65	50.33
90.00	9 51 17	4551.67	11.13	191.86	17.74	63.80	11 7 9	3951.7	7.52	185.04
100.00	20 59 31	2193.39	-25.93	37.67	21.20	105.41	21 36 4	1593.4	-23.56	29.67
100.00	11 8 16	4303.32	12.15	173.08	17.21	62.48	12 19 59	3703.3	8.37	166.33
110.00	22 17 42	1948.73	-28.86	18.07	20.18	109.16	22 50 10	1348.7	-25.98	10.07
110.00	12 6 34	4120.74	14.82	157.68	15.67	58.84	13 15 15	3520.7	10.59	151.14

DIFFERENTIAL CORRECTIONS
TDE .9684 TRA-2.2854 TC3 1.4180 BAU .4359
RDE .6209 RRA -.8346 RC3 1.1376 FAU .35500
FDE-5.3283 FRA14.2746 FC-17.1355 BSP 14015
BDE 1.1503 BRA 2.4330 BC3 1.8180 FSP 7261

MID-COURSE EXECUTION ACCURACY
SGT 3599.4 SGR 1714.8 SG3 2194.0
RRT .9454 RRF -.9734 RTF -.9635
SGB 3987.0 R23 -.1345 R13 -.9732
SG1 3954.4 SG2 508.6 THA 24.68

ORBIT DETERMINATION ACCURACY
ST 1612.3 SR 907.7 SS 3017.5
CRT .9727 CRS .9566 CST .9978
LSA 3529.9 MSA 260.1 SSA 30.3
EL1 1841.0 EL2 184.6 ALF 29.03

LAUNCH DATE OCT 10 1964 FLIGHT TIME 284.00 ARRIVAL DATE JUL 21 1965

HELIOCENTRIC CONIC DISTANCE 667.288 EARTH TO MARS

RL 149.37 LAL -.00 LOL 16.73 VL 32.709 GAL -6.60 AZL 89.91 HCA 214.07 SMA 187.69 ECC .23307 INC .0857 V1 29.831
RP 231.38 LAP -.05 LOP 230.79 VP 20.977 GAP .62 AZP 90.07 TAL 323.68 TAP 177.95 RCA 143.94 APO 231.43 V2 23.768
RC 222.292 GL .67 GP 10.17 ZAL 140.72 ZAP 131.03 ETS 169.72 ZAE 165.48 ETE 127.79 ZAC 98.20 ETC 256.01 CLP 131.83

PLANETOCENTRIC CONIC

C3 17.740 VHL 4.212 DLA 9.40 RAL 159.40 RAD 6567.7 VEL 11.795 PTH 2.09 VHP 3.683 DPA 9.42 RAP 187.25 ECC 1.2920

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 30 29	2481.92	-25.03	59.15	21.57	103.69	20 11 51	1881.9	-22.90	51.13
90.00	9 55 9	4534.46	10.61	190.87	17.64	63.59	11 10 44	3934.5	6.98	184.07
100.00	20 56 26	2204.71	-26.13	38.45	21.26	105.05	21 33 11	1604.7	-23.81	30.42
100.00	11 11 54	4286.90	11.63	172.13	17.11	62.27	12 23 20	3686.9	7.83	165.41
110.00	22 15 10	1958.34	-29.08	18.73	20.25	108.82	22 47 48	1358.3	-26.23	10.71
110.00	12 9 39	4106.03	14.31	156.85	15.55	58.62	13 18 5	3506.0	10.05	150.34

DIFFERENTIAL CORRECTIONS
TDE .9247 TRA-2.1757 TC3 1.3389 BAU .4208
RDE .6241 RRA -.8381 RC3 1.1638 FAU .36773
FDE-5.4470 FRA14.7611 FC-17.9454 BSP 13575
BDE 1.1156 BRA 2.3315 BC3 1.7740 FSP 7572

MID-COURSE EXECUTION ACCURACY
SGT 3442.9 SGR 1737.0 SG3 2282.1
RRT .9431 RRF -.9727 RTF -.9614
SGB 3856.3 R23 -.1346 R13 -.9724
SG1 3821.0 SG2 520.4 THA 25.96

ORBIT DETERMINATION ACCURACY
ST 1547.0 SR 917.5 SS 3058.8
CRT .9729 CRS .9548 CST .9974
LSA 3538.1 MSA 269.6 SSA 30.0
EL1 1789.2 EL2 183.6 ALF 30.34

LAUNCH DATE OCT 10 1964 FLIGHT TIME 286.00 ARRIVAL DATE JUL 23 1965

HELIOCENTRIC CONIC DISTANCE 671.103 EARTH TO MARS

RL 149.37 LAL -.00 LOL 16.73 VL 32.699 GAL -6.56 AZL 89.86 HCA 215.08 SMA 187.50 ECC .23210 INC .1409 V1 29.831
RP 231.01 LAP -.08 LOP 231.81 VP 21.005 GAP .29 AZP 90.12 TAL 323.95 TAP 179.03 RCA 143.98 APO 231.02 V2 23.807
RC 224.266 GL 1.10 GP 10.12 ZAL 140.62 ZAP 129.64 ETS 170.22 ZAE 164.50 ETE 132.50 ZAC 98.05 ETC 256.04 CLP 130.39

PLANETOCENTRIC CONIC

C3 17.561 VHL 4.191 DLA 9.83 RAL 159.47 RAD 6567.7 VEL 11.787 PTH 2.08 VHP 3.615 DPA 9.54 RAP 186.84 ECC 1.2890

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 27 19	2493.65	-25.22	59.96	21.64	103.33	20 8 52	1893.6	-23.13	51.91
90.00	9 58 55	4518.00	10.11	189.91	17.56	63.41	11 14 13	3918.0	6.46	183.14
100.00	20 53 30	2215.67	-26.33	39.21	21.33	104.70	21 30 26	1615.7	-24.05	31.15
100.00	11 15 25	4271.21	11.13	171.24	17.03	62.08	12 26 36	3671.2	7.31	164.53
110.00	22 12 46	1967.64	-29.28	19.38	20.33	108.49	22 45 33	1367.6	-26.47	11.32
110.00	12 12 38	4092.01	13.81	156.07	15.46	58.41	13 20 50	3492.0	9.53	149.59

DIFFERENTIAL CORRECTIONS
TDE .8802 TRA-2.0609 TC3 1.2497 BAU .4052
RDE .6277 RRA -.8423 RC3 1.1906 FAU .38075
FDE-5.5681 FRA15.2541 FC-18.7706 BSP 13091
BDE 1.0811 BRA 2.2264 BC3 1.7260 FSP 7884

MID-COURSE EXECUTION ACCURACY
SGT 3274.7 SGR 1760.2 SG3 2371.7
RRT .9404 RRF -.9721 RTF -.9586
SGB 3717.8 R23 -.1353 R13 -.9715
SG1 3679.4 SG2 532.9 THA 27.44

ORBIT DETERMINATION ACCURACY
ST 1478.3 SR 927.6 SS 3100.2
CRT .9733 CRS .9531 CST .9968
LSA 3546.5 MSA 279.2 SSA 29.7
EL1 1735.8 EL2 181.4 ALF 31.80

LAUNCH DATE OCT 10 1964 FLIGHT TIME 288.00 ARRIVAL DATE JUL 25 1965

HELIOCENTRIC CONIC DISTANCE 674.926 EARTH TO MARS

RL	149.37	LAL	-.00	LOL	16.73	VL	32.688	GAL	-6.53	AZL	89.81	HCA	216.10	SMA	187.32	ECC	.23118	INC	.1936
RP	230.62	LAP	-.11	LOP	232.82	VP	21.034	GAP	-.03	AZP	90.16	TAL	324.02	TAP	180.11	RCA	144.02	APO	230.62
RC	226.222	GL	1.51	GP	10.06	ZAL	140.52	ZAP	128.21	ETS	170.70	ZAE	163.40	ETE	136.74	ZAC	97.90	ETC	256.07

V1 29.831 V2 23.847 CLP 128.91

PLANETOCENTRIC CONIC

C3	17.396	VHL	4.171	DLA	10.24	RAL	159.55	RAD	6567.7	VEL	11.780	PTH	2.08	VHP	3.550	DPA	9.69	RAP	186.40

ECC 1.2863

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 24 16	2505.02	-25.39	60.75	21.71	102.97	20 6 1	1905.0	-23.35	52.67
90.00	10 2 34	4502.27	9.63	189.01	17.50	63.24	11 17 36	3902.3	5.97	182.25
100.00	20 50 42	2226.29	-26.51	39.95	21.41	104.35	21 27 48	1626.3	-24.27	31.86
100.00	11 18 49	4256.24	10.65	170.38	16.97	61.90	12 29 46	3656.2	6.81	163.70
110.00	22 10 28	1976.65	-29.47	20.01	20.43	108.16	22 43 25	1376.7	-26.71	11.92
110.00	12 15 32	4078.63	13.33	155.33	15.39	58.23	13 23 31	3478.6	9.03	148.87

DIFFERENTIAL CORRECTIONS

TDE	.8345	TRA	-1.9415	TC3	1.1485	BAU	.3892
RDE	.6316	RRA	-.8423	RC3	1.2171	FAU	.39383
FDE	-5.6889	FRA	15.7560	FC	-19.5989	BSP	12584
BDE	1.0466	BRA	2.1183	BC3	1.6734	FSP	8205

MID-COURSE EXECUTION ACCURACY

SGT	3094.7	SGR	1784.0	SG3	2462.2		
RRT	.9370	RRF	-.9716	RTF	-.9551		
SGB	3572.1	R23	-.1365	R13	-.9704		
SG1	3530.1	SG2	546.4	THA	29.14		

ORBIT DETERMINATION ACCURACY

ST	1405.8	SR	937.9	SS	3140.9
CRT	.9739	CRS	.9514	CST	.9961
LSA	3554.8	MSA	288.9	SSA	29.4
EL1	1680.5	EL2	178.0	ALF	33.44

LAUNCH DATE OCT 10 1964 FLIGHT TIME 290.00 ARRIVAL DATE JUL 27 1965

HELIOCENTRIC CONIC DISTANCE 678.762 EARTH TO MARS

RL	149.37	LAL	-.00	LOL	16.73	VL	32.679	GAL	-6.50	AZL	89.76	HCA	217.12	SMA	187.15	ECC	.23032	INC	.2430
RP	230.24	LAP	-.15	LOP	233.84	VP	21.064	GAP	-.36	AZP	90.19	TAL	324.07	TAP	181.19	RCA	144.05	APO	230.26
RC	228.159	GL	1.90	GP	10.01	ZAL	140.43	ZAP	126.73	ETS	171.17	ZAE	162.19	ETE	140.55	ZAC	97.74	ETC	256.11

V1 29.831 V2 23.887 CLP 127.39

PLANETOCENTRIC CONIC

C3	17.247	VHL	4.153	DLA	10.64	RAL	159.63	RAD	6567.7	VEL	11.774	PTH	2.08	VHP	3.488	DPA	9.85	RAP	185.92

ECC 1.2838

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 21 23	2516.05	-25.56	61.51	21.79	102.62	20 3 19	1916.0	-23.57	53.41
90.00	10 6 6	4487.25	9.17	188.15	17.47	63.09	11 20 54	3887.2	5.49	181.40
100.00	20 48 1	2236.60	-26.68	40.66	21.50	104.01	21 25 18	1636.6	-24.49	32.55
100.00	11 22 8	4241.93	10.19	169.57	16.93	61.75	12 32 50	3641.9	6.34	162.90
110.00	22 8 18	1985.39	-29.66	20.63	20.54	107.84	22 41 23	1385.4	-26.93	12.50
110.00	12 18 21	4065.90	12.87	154.63	15.34	58.06	13 26 7	3465.9	8.56	148.19

DIFFERENTIAL CORRECTIONS

TDE	.7883	TRA	-1.8162	TC3	1.0367	BAU	.3734
RDE	.6360	RRA	-.8526	RC3	1.2439	FAU	.40719
FDE	-5.8153	FRA	16.2574	FC	-20.4394	BSP	12037
BDE	1.0129	BRA	2.0064	BC3	1.6193	FSP	8520

MID-COURSE EXECUTION ACCURACY

SGT	2902.5	SGR	1808.3	SG3	2553.4		
RRT	.9327	RRF	-.9711	RTF	-.9505		
SGB	3419.7	R23	-.1384	R13	-.9691		
SG1	3373.3	SG2	561.1	THA	31.12		

ORBIT DETERMINATION ACCURACY

ST	1329.9	SR	948.6	SS	3182.2
CRT	.9748	CRS	.9498	CST	.9952
LSA	3564.4	MSA	298.3	SSA	29.1
EL1	1624.3	EL2	173.1	ALF	35.27

LAUNCH DATE OCT 10 1964 FLIGHT TIME 292.00 ARRIVAL DATE JUL 29 1965

HELIOCENTRIC CONIC DISTANCE 682.605 EARTH TO MARS

RL	149.37	LAL	-.00	LOL	16.73	VL	32.670	GAL	-6.47	AZL	89.71	HCA	218.14	SMA	186.99	ECC	.22951	INC	.2913
RP	229.86	LAP	-.18	LOP	234.87	VP	21.096	GAP	-.67	AZP	90.23	TAL	324.12	TAP	182.26	RCA	144.08	APO	229.91
RC	230.076	GL	2.29	GP	9.97	ZAL	140.35	ZAP	125.21	ETS	171.63	ZAE	160.87	ETE	143.96	ZAC	97.58	ETC	256.15

V1 29.831 V2 23.927 CLP 125.83

PLANETOCENTRIC CONIC

C3	17.112	VHL	4.137	DLA	11.02	RAL	159.71	RAD	6567.7	VEL	11.768	PTH	2.08	VHP	3.429	DPA	10.04	RAP	185.41

ECC 1.2816

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 18 37	2526.74	-25.72	62.26	21.89	102.28	20 0 44	1926.7	-23.77	54.13
90.00	10 9 33	4472.92	8.73	187.33	17.45	62.96	11 24 6	3872.9	5.03	180.60
100.00	20 45 29	2246.59	-26.84	41.36	21.60	103.68	21 22 56	1646.6	-24.69	33.22
100.00	11 25 22	4228.30	9.75	168.80	16.90	61.60	12 35 50	3628.3	5.88	162.15
110.00	22 6 15	1993.87	-29.83	21.22	20.65	107.52	22 39 29	1393.9	-27.15	13.06
110.00	12 21 6	4053.79	12.43	153.96	15.31	57.90	13 28 39	3453.8	8.10	147.54

DIFFERENTIAL CORRECTIONS

TDE	.7405	TRA	-1.6857	TC3	.9118	BAU	.3576
RDE	.6404	RRA	-.8585	RC3	1.2698	FAU	.42036
FDE	-5.9385	FRA	16.7662	FC	-21.2675	BSP	11477
BDE	.9790	BRA	1.8918	BC3	1.5632	FSP	8850

MID-COURSE EXECUTION ACCURACY

SGT	2698.0	SGR	1832.5	SG3	2644.7		
RRT	.9272	RRF	-.9706	RTF	-.9443		
SGB	3261.5	R23	-.1407	R13	-.9676		
SG1	3210.0	SG2	577.1	THA	33.42		

ORBIT DETERMINATION ACCURACY

ST	1249.7	SR	959.1	SS	3222.2
CRT	.9760	CRS	.9482	CST	.9941
LSA	3573.3	MSA	307.8	SSA	28.8
EL1	1566.5	EL2	166.5	ALF	37.33

LAUNCH DATE OCT 10 1964 FLIGHT TIME 294.00 ARRIVAL DATE JUL 31 1965

HELIOCENTRIC CONIC DISTANCE 686.458 EARTH TO MARS

RL	149.37	LAL	-.00	LOL	16.73	VL	32.661	GAL	-6.45	AZL	89.66	HCA	219.17	SMA	186.84	ECC	.22876	INC	.3372
RP	229.47	LAP	-.21	LOP	235.89	VP	21.128	GAP	-.99	AZP	90.26	TAL	324.16	TAP	183.33	RCA	144.10	APO	229.59
RC	231.973	GL	2.66	GP	9.92	ZAL	140.28	ZAP	123.64	ETS	172.08	ZAE	159.45	ETE	147.01	ZAC	97.41	ETC	256.19

V1 29.831 V2 23.968 CLP 124.22

PLANETOCENTRIC CONIC

C3	16.990	VHL	4.122	DLA	11.38	RAL	159.81	RAD	6567.7	VEL	11.763	PTH	2.08	VHP	3.372	DPA	10.24	RAP	184.87

ECC 1.2796

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 16 0	2537.12	-25.86	62.98	22.00	101.95	19 58 17	1937.1	-23.96	54.83
90.00	10 12 54	4459.26	8.31	186.55	17.45	62.83	11 27 13	3859.3	4.60	179.83
100.00	20 43 5	2256.28	-27.00	42.04	21.72	103.35	21 20 41	1656.3	-24.89	33.87
100.00	11 28 30	4215.33	9.33	168.06	16.90	61.47	12 38 46	3615.3	5.45	161.43
110.00	22 4 19	2002.09	-30.00	21.80	20.78	107.22	22 37 41	1402.1	-27.35	13.61
110.00	12 23 46	4042.29	12.02	153.33	15.30	57.76	13 31 8	3442.3	7.67	146.93

DIFFERENTIAL CORRECTIONS

TDE	.6919	TRA	-1.5494	TC3	.7756	BAU	.3430
RDE	.6451	RRA	-.8646	RC3	1.2955	FAU	.43366
FDE	-6.0637	FRA	17.2718	FC	-22.0970	BSP	10881
BDE	.9460	BRA	1.7743	BC3	1.5100	FSP	9170

MID-COURSE EXECUTION ACCURACY

SGT	2482.0	SGR	1856.8	SG3	2735.8		
RRT	.9197	RRF	-.9701	RTF	-.9359		
SGB	3099.7	R23	-.1434	R13	-.9659		
SG1	3042.1	SG2	594.7	THA	36.13		

ORBIT DETERMINATION ACCURACY

ST	1166.1	SR	969.7	SS	3261.7
CRT	.9776	CRS	.9467	CST	.9927
LSA	3582.9	MSA	317.3	SSA	28.5
EL1	1508.4	EL2	157.9	ALF	39.63

LAUNCH DATE OCT 10 1964 FLIGHT TIME 296.00 ARRIVAL DATE AUG 2 1965

HELIOCENTRIC CONIC DISTANCE 690.320 EARTH TO MARS

RL	149.37	LAL	-.00	LOL	16.73	VL	32.653	GAL	-6.43	AZL	89.62	HCA	220.20	SMA	186.70	ECC	.22807	INC	.3808	V1	29.831
RP	229.09	LAP	-.25	LOP	236.93	VP	21.162	GAP	-1.29	AZP	90.29	TAL	324.19	TAP	184.39	RCA	144.12	APO	229.29	V2	24.009
RC	233.848	GL	3.01	GP	9.88	ZAL	140.22	ZAP	122.03	ETS	172.53	ZAE	157.94	ETE	149.73	ZAC	97.24	ETC	256.24	CLP	122.57

PLANETOCENTRIC CONIC

C3	16.882	VHL	4.109	DLA	11.72	RAL	159.90	RAD	6567.7	VEL	11.759	PTH	2.08	VHP	3.319	DPA	10.46	RAP	184.29	ECC	1.2778

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 13 31	2547.19	-26.00	63.68	22.12	101.62	19 55 58	1947.2	-24.14	55.51
90.00	10 16 10	4446.25	7.90	185.81	17.48	62.72	11 30 16	3846.3	4.18	179.19
100.00	20 40 48	2265.68	-27.14	42.70	21.85	103.03	21 18 34	1665.7	-25.08	34.51
100.00	11 31 34	4202.99	8.93	167.37	16.92	61.35	12 41 37	3603.0	5.04	160.74
110.00	22 2 29	2010.07	-30.16	22.37	20.93	106.91	22 35 59	1410.1	-27.55	14.15
110.00	12 26 22	4031.37	11.62	152.74	15.31	57.62	13 33 33	3431.4	7.26	146.35

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6452	TRA	-1.4046	TC3	.6351	BAU	.3312	SGT	2254.6	SGR	1881.4	SG3	2826.5	ST	1081.6	SR	981.4	SS	3304.2
RDE	.6509	RRA	-.8697	RC3	1.3228	FAU	.44766	RRT	.9104	RRF	-.9697	RTF	-.9249	CRT	.9800	CRS	.9456	CST	.9908
FDE	-6.2062	FRA	17.7558	FC	-22.9564	BSP	10205	SGB	2936.5	R23	-.1451	R13	-.9641	LSA	3597.7	MSA	326.7	SSA	28.0
BDE	.9165	BRA	1.6521	BC3	1.4674	FSP	9455	SG1	2872.2	SG2	611.1	THA	39.35	EL1	1453.2	EL2	145.5	ALF	42.16

LAUNCH DATE OCT 10 1964 FLIGHT TIME 298.00 ARRIVAL DATE AUG 4 1965

HELIOCENTRIC CONIC DISTANCE 694.190 EARTH TO MARS

RL	149.37	LAL	-.00	LOL	16.73	VL	32.645	GAL	-6.41	AZL	89.58	HCA	221.24	SMA	186.57	ECC	.22743	INC	.4232	V1	29.831
RP	228.70	LAP	-.28	LOP	237.96	VP	21.196	GAP	-1.60	AZP	90.32	TAL	324.20	TAP	185.44	RCA	144.14	APO	229.00	V2	24.049
RC	235.703	GL	3.35	GP	9.84	ZAL	140.17	ZAP	120.38	ETS	172.96	ZAE	156.35	ETE	152.18	ZAC	97.06	ETC	256.29	CLP	120.88

PLANETOCENTRIC CONIC

C3	16.787	VHL	4.097	DLA	12.05	RAL	160.01	RAD	6567.7	VEL	11.755	PTH	2.07	VHP	3.269	DPA	10.69	RAP	183.68	ECC	1.2763

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 11 11	2556.94	-26.14	64.37	22.26	101.30	19 53 47	1956.9	-24.31	56.17
90.00	10 19 20	4433.91	7.52	185.10	17.52	62.62	11 33 14	3833.9	3.79	178.41
100.00	20 38 40	2274.79	-27.28	43.34	21.99	102.72	21 16 35	1674.8	-25.25	35.13
100.00	11 34 32	4191.30	8.55	166.71	16.96	61.25	12 44 23	3591.3	4.64	160.10
110.00	22 0 47	2017.81	-30.31	22.92	21.09	106.62	22 34 25	1417.8	-27.74	14.68
110.00	12 28 54	4021.04	11.24	152.18	15.34	57.50	13 35 55	3421.0	6.88	145.80

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5927	TRA	-1.2580	TC3	.4708	BAU	.3200	SGT	2017.8	SGR	1904.3	SG3	2915.1	ST	989.1	SR	991.4	SS	3340.3
RDE	.6556	RRA	-.8762	RC3	1.3458	FAU	.46037	RRT	.8950	RRF	-.9692	RTF	-.9078	CRT	.9821	CRS	.9441	CST	.9884
FDE	-6.3233	FRA	18.2596	FC	-23.7415	BSP	9620	SGB	2774.9	R23	-.1480	R13	-.9621	LSA	3606.2	MSA	335.8	SSA	27.8
BDE	.8838	BRA	1.5831	BC3	1.4258	FSP	9789	SG1	2701.0	SG2	634.6	THA	43.15	EL1	1394.1	EL2	132.3	ALF	45.07

LAUNCH DATE OCT 10 1964 FLIGHT TIME 300.00 ARRIVAL DATE AUG 6 1965

HELIOCENTRIC CONIC DISTANCE 698.070 EARTH TO MARS

RL	149.37	LAL	-.00	LOL	16.73	VL	32.638	GAL	-6.39	AZL	89.54	HCA	222.27	SMA	186.45	ECC	.22684	INC	.4640	V1	29.831
RP	228.31	LAP	-.31	LOP	239.00	VP	21.231	GAP	-1.89	AZP	90.34	TAL	324.21	TAP	186.49	RCA	144.15	APO	228.74	V2	24.090
RC	237.537	GL	3.68	GP	9.79	ZAL	140.13	ZAP	118.69	ETS	173.40	ZAE	154.69	ETE	154.38	ZAC	96.87	ETC	256.34	CLP	119.15

PLANETOCENTRIC CONIC

C3	16.705	VHL	4.087	DLA	12.36	RAL	160.12	RAD	6567.7	VEL	11.751	PTH	2.07	VHP	3.222	DPA	10.94	RAP	183.03	ECC	1.2749

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 8 58	2566.40	-26.26	65.03	22.41	100.99	19 51 45	1966.4	-24.48	56.82
90.00	10 22 26	4422.20	7.15	184.44	17.58	62.53	11 36 8	3822.2	3.41	177.75
100.00	20 36 39	2283.62	-27.41	43.97	22.15	102.42	21 14 43	1683.6	-25.42	35.73
100.00	11 37 26	4180.22	8.18	166.09	17.02	61.15	12 47 6	3580.2	4.27	159.49
110.00	21 59 12	2025.32	-30.45	23.46	21.26	106.33	22 32 57	1425.3	-27.92	15.18
110.00	12 31 22	4011.28	10.88	151.65	15.39	57.39	13 38 14	3411.3	6.51	145.29

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5412	TRA	-1.1029	TC3	.3014	BAU	.3132	SGT	1772.4	SGR	1926.9	SG3	3002.1	ST	895.0	SR	1001.9	SS	3377.9
RDE	.6610	RRA	-.8816	RC3	1.3697	FAU	.47355	RRT	.8730	RRF	-.9688	RTF	-.8828	CRT	.9852	CRS	.9429	CST	.9849
FDE	-6.4528	FRA	18.7369	FC	-24.5412	BSP	8979	SGB	2618.1	R23	-.1483	R13	-.9604	LSA	3618.7	MSA	345.0	SSA	27.4
BDE	.8543	BRA	1.4119	BC3	1.4025	FSP	10083	SG1	2534.2	SG2	657.4	THA	47.74	EL1	1338.6	EL2	114.8	ALF	48.27

LAUNCH DATE OCT 10 1964 FLIGHT TIME 302.00 ARRIVAL DATE AUG 8 1965

HELIOCENTRIC CONIC DISTANCE 701.957 EARTH TO MARS

RL	149.37	LAL	-.00	LOL	16.73	VL	32.631	GAL	-6.38	AZL	89.50	HCA	223.32	SMA	186.33	ECC	.22630	INC	.5030	V1	29.831
RP	227.92	LAP	-.35	LOP	240.04	VP	21.268	GAP	-2.19	AZP	90.37	TAL	324.21	TAP	187.53	RCA	144.16	APO	228.50	V2	24.132
RC	239.350	GL	4.00	GP	9.75	ZAL	140.10	ZAP	116.96	ETS	173.82	ZAE	152.96	ETE	156.36	ZAC	96.67	ETC	256.40	CLP	117.39

PLANETOCENTRIC CONIC

C3	16.636	VHL	4.079	DLA	12.66	RAL	160.24	RAD	6567.7	VEL	11.748	PTH	2.07	VHP	3.178	DPA	11.21	RAP	182.35	ECC	1.2738

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 6 54	2575.57	-26.38	65.68	22.58	100.69	19 49 50	1975.6	-24.64	57.44
90.00	10 25 27	4411.13	6.80	183.81	17.66	62.45	11 38 58	3811.1	3.06	177.13
100.00	20 34 47	2292.18	-27.53	44.57	22.32	102.12	21 12 59	1692.2	-25.59	36.31
100.00	11 40 15	4169.75	7.84	165.50	17.10	61.06	12 49 45	3569.7	3.92	158.91
110.00	21 57 44	2032.60	-30.59	23.98	21.44	106.05	22 31 37	1432.6	-28.09	15.68
110.00	12 33 47	4002.09	10.55	151.15	15.46	57.29	13 40 30	3402.1	6.16	144.80

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4880	TRA	-.9425	TC3	.1182	BAU	.3106	SGT	1523.3	SGR	1948.2	SG3	3080.3	ST	797.3	SR	1012.1	SS	3413.8
RDE	.6665	RRA	-.8869	RC3	1.3916	FAU	.48623	RRT	.8369	RRF	-.9683	RTF	-.8425	CRT	.9887	CRS	.9417	CST	.9799
FDE	-6.5786	FRA	19.2047	FC	-25.3033	BSP	8374	SGB	2473.1	R23	-.1459	R13	-.9591	LSA	3631.5	MSA	353.9	SSA	27.1
BDE	.8260	BRA	1.2941	BC3	1.3966	FSP	10374	SG1	2376.8	SG2	683.4	THA	53.27	EL1	1285.0	EL2	94.1	ALF	51.84

LAUNCH DATE OCT 10 1964 FLIGHT TIME 304.00 ARRIVAL DATE AUG 10 1965

HELIOCENTRIC CONIC DISTANCE 705.853 EARTH TO MARS

RL	149.37	LAL	-.00	LOL	16.73	VL	32.624	GAL	-6.37	AZL	89.46	HCA	224.36	SMA	186.22	ECC	.22581	INC	.5411	V1	29.831
RP	227.53	LAP	-.38	LOP	241.08	VP	21.305	GAP	-2.48	AZP	90.39	TAL	324.20	TAP	188.56	RCA	144.17	APO	228.27	V2	24.173
RC	241.142	GL	4.31	GP	9.71	ZAL	140.08	ZAP	115.19	ETS	174.24	ZAE	151.17	ETE	158.16	ZAC	96.47	ETC	256.47	CLP	115.58

PLANETOCENTRIC CONIC

C3	16.579	VHL	4.072	DLA	12.94	RAL	160.36	RAD	6567.7	VEL	11.746	PTH	2.07	VHP	3.137	DPA	11.48	RAP	181.64	ECC	1.2728

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 4 59	2584.43	-26.49	66.30	22.76	100.39	19 48 4	1984.4	-24.78	58.05
90.00	10 28 23	4400.69	6.47	183.22	17.76	62.37	11 41 43	3800.7	2.72	176.55
100.00	20 33 2	2300.46	-27.65	45.16	22.51	101.83	21 11 23	1700.5	-25.74	36.88
100.00	11 43 1	4159.89	7.51	164.95	17.20	60.98	12 52 21	3559.9	3.59	158.37
110.00	21 56 23	2039.66	-30.72	24.49	21.64	105.78	22 30 23	1439.7	-28.26	16.16
110.00	12 36 9	3993.46	10.23	150.68	15.55	57.20	13 42 42	3393.5	5.84	144.35

DIFFERENTIAL CORRECTIONS

TDE	.4327	TRA	-.7766	TC3	-.0780	BAU	.3133
RDE	.6715	RRA	-.8918	RC3	1.4112	FAU	.49825
FDE	-6.6943	FRA	19.6606	FC	-26.0177	BSP	7829
BDE	.7988	BRA	1.1826	BC3	1.4134	FSP	10670

MID-COURSE EXECUTION ACCURACY

SGT	1277.5	SGR	1967.7	SG3	3166.8		
RRT	.7742	RRF	-.9679	RTF	-.7735		
SGB	2346.0	R23	-.1377	R13	-.9588		
SG1	2235.5	SG2	711.7	THA	59.96		

ORBIT DETERMINATION ACCURACY

ST	695.6	SR	1021.4	SS	3446.3
CRT	.9925	CRS	.9404	CST	.9723
LSA	3643.1	MSA	362.7	SSA	26.8
EL1	1233.8	EL2	70.2	ALF	55.82

LAUNCH DATE OCT 10 1964 FLIGHT TIME 306.00 ARRIVAL DATE AUG 12 1965

HELIOCENTRIC CONIC DISTANCE 709.757 EARTH TO MARS

RL	149.37	LAL	-.00	LOL	16.73	VL	32.618	GAL	-6.36	AZL	89.42	HCA	225.41	SMA	186.12	ECC	.22538	INC	.5777	V1	29.831
RP	227.14	LAP	-.41	LOP	242.13	VP	21.342	GAP	-2.76	AZP	90.41	TAL	324.18	TAP	189.59	RCA	144.17	APO	228.07	V2	24.214
RC	242.914	GL	4.61	GP	9.66	ZAL	140.08	ZAP	113.38	ETS	174.66	ZAE	149.31	ETE	159.80	ZAC	96.25	ETC	256.54	CLP	113.74

PLANETOCENTRIC CONIC

C3	16.534	VHL	4.066	DLA	13.21	RAL	160.50	RAD	6567.7	VEL	11.744	PTH	2.07	VHP	3.100	DPA	11.77	RAP	180.90	ECC	1.2721

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 3 12	2593.01	-26.59	66.91	22.96	100.11	19 46 25	1993.0	-24.93	58.64
90.00	10 31 14	4390.87	6.16	182.67	17.88	62.31	11 44 25	3790.9	2.41	176.00
100.00	20 31 26	2308.48	-27.76	45.73	22.71	101.55	21 9 54	1708.5	-25.89	37.43
100.00	11 45 42	4150.63	7.21	164.43	17.31	60.91	12 54 52	3550.6	3.28	157.86
110.00	21 55 10	2046.49	-30.85	24.98	21.85	105.51	22 29 16	1446.5	-28.41	16.63
110.00	12 38 27	3985.38	9.93	150.25	15.66	57.12	13 44 53	3385.4	5.53	143.92

DIFFERENTIAL CORRECTIONS

TDE	.3763	TRA	-.6043	TC3	-.2845	BAU	.3221
RDE	.6767	RRA	-.8959	RC3	1.4289	FAU	.50974
FDE	-6.8076	FRA	20.0922	FC	-26.6900	BSP	7341
BDE	.7743	BRA	1.0807	BC3	1.4570	FSP	10945

MID-COURSE EXECUTION ACCURACY

SGT	1048.6	SGR	1985.2	SG3	3243.0		
RRT	.6585	RRF	-.9673	RTF	-.6478		
SGB	2245.1	R23	-.1205	R13	-.9599		
SG1	2120.0	SG2	739.0	THA	68.01		

ORBIT DETERMINATION ACCURACY

ST	591.6	SR	1030.4	SS	3477.1
CRT	.9964	CRS	.9391	CST	.9596
LSA	3655.6	MSA	371.4	SSA	26.4
EL1	1187.3	EL2	43.8	ALF	60.18

LAUNCH DATE OCT 10 1964 FLIGHT TIME 308.00 ARRIVAL DATE AUG 14 1965

HELIOCENTRIC CONIC DISTANCE 713.667 EARTH TO MARS

RL	149.37	LAL	-.00	LOL	16.73	VL	32.613	GAL	-6.36	AZL	89.39	HCA	226.46	SMA	186.02	ECC	.22499	INC	.6131	V1	29.831
RP	226.75	LAP	-.44	LOP	243.18	VP	21.381	GAP	-3.04	AZP	90.42	TAL	324.15	TAP	190.61	RCA	144.17	APO	227.88	V2	24.256
RC	244.666	GL	4.90	GP	9.61	ZAL	140.08	ZAP	111.54	ETS	175.07	ZAE	147.41	ETE	161.30	ZAC	96.03	ETC	256.62	CLP	111.86

PLANETOCENTRIC CONIC

C3	16.502	VHL	4.062	DLA	13.46	RAL	160.64	RAD	6567.7	VEL	11.742	PTH	2.07	VHP	3.066	DPA	12.07	RAP	180.12	ECC	1.2716

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 1 35	2601.29	-26.69	67.50	23.17	99.83	19 44 56	2001.3	-25.06	59.21
90.00	10 34 1	4381.69	5.87	182.15	18.02	62.25	11 47 2	3781.7	2.11	175.49
100.00	20 29 58	2316.22	-27.87	46.28	22.92	101.28	21 8 35	1716.2	-26.03	37.96
100.00	11 48 18	4141.99	6.92	163.95	17.45	60.85	12 57 20	3542.0	2.98	157.38
110.00	21 54 4	2053.11	-30.97	25.46	22.08	105.25	22 28 17	1453.1	-28.57	17.09
110.00	12 40 42	3977.87	9.65	149.84	15.79	57.05	13 47 0	3377.9	5.25	143.52

DIFFERENTIAL CORRECTIONS

TDE	.3136	TRA	-.4300	TC3	-.5143	BAU	.3371
RDE	.6795	RRA	-.9018	RC3	1.4390	FAU	.51850
FDE	-6.8708	FRA	20.5504	FC	-27.2024	BSP	7051
BDE	.7484	BRA	.9990	BC3	1.5281	FSP	11305

MID-COURSE EXECUTION ACCURACY

SGT	871.3	SGR	1999.0	SG3	3313.4		
RRT	.4312	RRF	-.9667	RTF	-.4082		
SGB	2180.6	R23	-.0899	R13	-.9626		
SG1	2040.0	SG2	770.3	THA	77.55		

ORBIT DETERMINATION ACCURACY

ST	480.4	SR	1036.2	SS	3497.1
CRT	.9981	CRS	.9371	CST	.9382
LSA	3659.2	MSA	379.7	SSA	26.4
EL1	1141.9	EL2	26.6	ALF	65.15

LAUNCH DATE OCT 10 1964 FLIGHT TIME 310.00 ARRIVAL DATE AUG 16 1965

HELIOCENTRIC CONIC DISTANCE 717.588 EARTH TO MARS

RL	149.37	LAL	-.00	LOL	16.73	VL	32.608	GAL	-6.36	AZL	89.35	HCA	227.52	SMA	185.94	ECC	.22465	INC	.6473	V1	29.831
RP	226.36	LAP	-.48	LOP	244.24	VP	21.420	GAP	-3.32	AZP	90.44	TAL	324.11	TAP	191.62	RCA	144.16	APO	227.71	V2	24.297
RC	246.398	GL	5.18	GP	9.55	ZAL	140.10	ZAP	109.66	ETS	175.47	ZAE	145.45	ETE	162.67	ZAC	95.80	ETC	256.70	CLP	109.95

PLANETOCENTRIC CONIC

C3	16.480	VHL	4.060	DLA	13.70	RAL	160.80	RAD	6567.7	VEL	11.742	PTH	2.07	VHP	3.035	DPA	12.37	RAP	179.32	ECC	1.2712

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 0 5	2609.29	-26.78	68.06	23.40	99.56	19 43 34	2009.3	-25.19	59.76
90.00	10 36 43	4373.10	5.60	181.66	18.18	62.20	11 49 36	3773.1	1.83	175.01
100.00	20 28 38	2323.70	-27.97	46.82	23.16	101.01	21 7 22	1723.7	-26.16	38.48
100.00	11 50 51	4133.92	6.65	163.50	17.69	60.79	12 59 45	3533.9	2.71	156.94
110.00	21 53 4	2059.51	-31.08	25.93	22.33	105.00	22 27 24	1459.5	-28.71	17.53
110.00	12 42 54	3970.88	9.39	149.47	15.94	56.98	13 49 5	3370.9	4.98	143.16

DIFFERENTIAL CORRECTIONS

TDE	.2575	TRA	-.2438	TC3	-.7338	BAU	.3592
RDE	.6858	RRA	-.9025	RC3	1.4556	FAU	.52993
FDE	-6.9995	FRA	20.8974	FC	-27.8379	BSP	6755
BDE	.7325	BRA	.9348	BC3	1.6301	FSP	11487

MID-COURSE EXECUTION ACCURACY

SGT	782.4	SGR	2013.0	SG3	3379.6		
RRT	.0709	RRF	-.9661	RTF	-.0285		
SGB	2159.8	R23	-.0522	R13	-.9655		
SG1	2013.9	SG2	780.1	THA	88.14		

ORBIT DETERMINATION ACCURACY

ST	378.8	SR	1045.3	SS	3528.0
CRT	.9916	CRS	.9363	CST	.8915
LSA	3678.6	MSA	388.1	SSA	25.9
EL1	1110.9	EL2	46.1	ALF	70.20

LAUNCH DATE OCT 10 1964 FLIGHT TIME 312.00 ARRIVAL DATE AUG 18 1965

HELIOCENTRIC CONIC DISTANCE 721.516 EARTH TO MARS

RL 149.37 LAL -.00 LOL 16.73 VL 32.603 GAL -6.36 AZL 89.32 HCA 228.58 SMA 185.85 ECC .22436 INC .6806 V1 29.831
RP 225.97 LAP -.51 LOP 245.30 VP 21.460 GAP -3.59 AZP 90.45 TAL 324.05 TAP 192.63 RCA 144.16 APO 227.55 V2 24.339
RC 248.110 GL 5.44 GP 9.50 ZAL 140.13 ZAP 107.76 ETS 175.87 ZAE 143.45 ETE 163.93 ZAC 95.56 ETC 256.78 CLP 108.02

PLANETOCENTRIC CONIC

C3 16.471 VHL 4.058 DLA 13.93 RAL 160.96 RAD 6567.7 VEL 11.741 PTH 2.07 VHP 3.008 DPA 12.69 RAP 178.49 ECC 1.2711

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 58 44	2617.01	-26.87	68.61	23.64	99.30	19 42 21	2017.0	-25.31	60.29
90.00	10 39 21	4365.13	5.34	181.22	18.36	62.15	11 52 6	3765.1	1.58	174.56
100.00	20 27 27	2330.92	-28.06	47.33	23.40	100.76	21 6 18	1730.9	-26.29	38.98
100.00	11 53 20	4126.44	6.41	163.09	17.78	60.74	13 2 6	3526.4	2.46	156.53
110.00	21 52 13	2065.70	-31.19	26.38	22.59	104.75	22 26 38	1465.7	-28.85	17.95
110.00	12 45 3	3964.43	9.15	149.12	16.10	56.92	13 51 8	3364.4	4.74	142.82

DIFFERENTIAL CORRECTIONS
TDE .1980 TRA -.0534 TC3 -.9663 BAU .3869
RDE .6913 RRA -.9029 RC3 1.4675 FAU .53974
FDE-7.1089 FRA21.2276 FC-28.3690 BSP 6678
BDE .7191 BRA .9045 BC3 1.7570 FSP 11679

MID-COURSE EXECUTION ACCURACY
SGT 836.3 SGR 2023.8 SG3 3439.0
RRT -.3306 RRF -.9654 RTF .3863
SGB 2189.8 R23 -.0120 R13 -.9680
SG1 2045.9 SG2 780.7 THA 99.12

ORBIT DETERMINATION ACCURACY
ST 281.5 SR 1053.0 SS 3554.0
CRT .9484 CRS .9353 CST .7806
LSA 3696.1 MSA 396.2 SSA 25.5
EL1 1086.6 EL2 86.5 ALF 75.68

LAUNCH DATE OCT 10 1964 FLIGHT TIME 314.00 ARRIVAL DATE AUG 20 1965

HELIOCENTRIC CONIC DISTANCE 725.451 EARTH TO MARS

RL 149.37 LAL -.00 LOL 16.73 VL 32.598 GAL -6.36 AZL 89.29 HCA 229.64 SMA 185.78 ECC .22412 INC .7130 V1 29.831
RP 225.58 LAP -.54 LOP 246.36 VP 21.501 GAP -3.86 AZP 90.46 TAL 323.99 TAP 193.63 RCA 144.14 APO 227.41 V2 24.381
RC 249.803 GL 5.70 GP 9.43 ZAL 140.17 ZAP 105.83 ETS 176.27 ZAE 141.41 ETE 165.10 ZAC 95.31 ETC 256.87 CLP 106.05

PLANETOCENTRIC CONIC

C3 16.474 VHL 4.059 DLA 14.14 RAL 161.13 RAD 6567.7 VEL 11.741 PTH 2.07 VHP 2.984 DPA 13.00 RAP 177.64 ECC 1.2711

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 57 33	2624.43	-26.95	69.14	23.90	99.04	19 41 17	2024.4	-25.42	60.80
90.00	10 41 54	4357.77	5.11	180.80	18.56	62.11	11 54 32	3757.8	1.34	174.15
100.00	20 26 24	2337.87	-28.15	47.83	23.67	100.51	21 5 22	1737.9	-26.41	39.46
100.00	11 55 44	4119.56	6.18	162.71	17.97	60.69	13 4 24	3519.6	2.22	156.15
110.00	21 51 28	2071.68	-31.29	26.81	22.86	104.51	22 26 0	1471.7	-28.98	18.37
110.00	12 47 9	3958.52	8.93	148.80	16.29	56.87	13 53 8	3358.5	4.51	142.51

DIFFERENTIAL CORRECTIONS
TDE .1365 TRA .1417 TC3-1.2094 BAU .4202
RDE .6961 RRA -.9025 RC3 1.4759 FAU .54834
FDE-7.2020 FRA21.5300 FC-28.8170 BSP 6820
BDE .7094 BRA .9135 BC3 1.9081 FSP 11862

MID-COURSE EXECUTION ACCURACY
SGT 1021.5 SGR 2031.5 SG3 3491.4
RRT -.6061 RRF -.9647 RTF .6655
SGB 2273.9 R23 .0222 R13 -.9698
SG1 2138.9 SG2 771.7 THA 109.60

ORBIT DETERMINATION ACCURACY
ST 204.6 SR 1059.4 SS 3575.3
CRT .7566 CRS .9341 CST .4785
LSA 3712.6 MSA 404.2 SSA 25.1
EL1 1070.8 EL2 132.3 ALF 81.56

LAUNCH DATE OCT 10 1964 FLIGHT TIME 316.00 ARRIVAL DATE AUG 22 1965

HELIOCENTRIC CONIC DISTANCE 729.394 EARTH TO MARS

RL 149.37 LAL -.00 LOL 16.73 VL 32.594 GAL -6.37 AZL 89.26 HCA 230.71 SMA 185.71 ECC .22392 INC .7444 V1 29.831
RP 225.19 LAP -.58 LOP 247.43 VP 21.542 GAP -4.13 AZP 90.47 TAL 323.91 TAP 194.62 RCA 144.12 APO 227.29 V2 24.423
RC 251.477 GL 5.95 GP 9.37 ZAL 140.23 ZAP 103.88 ETS 176.66 ZAE 139.34 ETE 166.18 ZAC 95.06 ETC 256.97 CLP 104.07

PLANETOCENTRIC CONIC

C3 16.488 VHL 4.061 DLA 14.34 RAL 161.31 RAD 6567.7 VEL 11.742 PTH 2.07 VHP 2.964 DPA 13.32 RAP 176.77 ECC 1.2713

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 56 30	2631.56	-27.02	69.65	24.18	98.80	19 40 21	2031.6	-25.53	61.30
90.00	10 44 23	4351.03	4.90	180.42	18.77	62.07	11 56 54	3751.0	1.12	173.78
100.00	20 25 29	2344.56	-28.23	48.31	23.95	100.27	21 4 34	1744.6	-26.52	39.92
100.00	11 58 5	4113.27	5.97	162.36	18.18	60.66	13 6 38	3513.3	2.01	155.80
110.00	21 50 52	2077.44	-31.39	27.23	23.15	104.28	22 25 29	1477.4	-29.11	18.77
110.00	12 49 12	3953.15	8.73	148.52	16.49	56.82	13 55 5	3353.1	4.31	142.23

DIFFERENTIAL CORRECTIONS
TDE .0734 TRA .3414 TC3-1.4603 BAU .4584
RDE .7007 RRA -.9007 RC3 1.4807 FAU .55568
FDE-7.2842 FRA21.7932 FC-29.1778 BSP 7175
BDE .7045 BRA .9633 BC3 2.0796 FSP 12023

MID-COURSE EXECUTION ACCURACY
SGT 1290.1 SGR 2035.8 SG3 3535.6
RRT -.7523 RRF -.9638 RTF .8111
SGB 2410.1 R23 .0449 R13 -.9716
SG1 2288.5 SG2 756.0 THA 118.95

ORBIT DETERMINATION ACCURACY
ST 185.1 SR 1064.8 SS 3592.9
CRT .2153 CRS .9329 CST -.1467
LSA 3729.2 MSA 411.9 SSA 24.7
EL1 1065.5 EL2 180.6 ALF 87.79

LAUNCH DATE OCT 10 1964 FLIGHT TIME 318.00 ARRIVAL DATE AUG 24 1965

HELIOCENTRIC CONIC DISTANCE 733.343 EARTH TO MARS

RL 149.37 LAL -.00 LOL 16.73 VL 32.591 GAL -6.38 AZL 89.22 HCA 231.78 SMA 185.65 ECC .22377 INC .7750 V1 29.831
RP 224.80 LAP -.61 LOP 248.50 VP 21.584 GAP -4.39 AZP 90.48 TAL 323.83 TAP 195.61 RCA 144.10 APO 227.19 V2 24.465
RC 253.132 GL 6.19 GP 9.29 ZAL 140.30 ZAP 101.91 ETS 177.04 ZAE 137.23 ETE 167.19 ZAC 94.80 ETC 257.07 CLP 102.07

PLANETOCENTRIC CONIC

C3 16.513 VHL 4.064 DLA 14.52 RAL 161.50 RAD 6567.7 VEL 11.743 PTH 2.07 VHP 2.948 DPA 13.64 RAP 175.88 ECC 1.2718

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 55 36	2638.40	-27.09	70.14	24.47	98.56	19 39 34	2038.4	-25.63	61.77
90.00	10 46 48	4344.91	4.70	180.08	19.01	62.04	11 59 13	3744.9	.92	173.44
100.00	20 24 43	2350.98	-28.30	48.77	24.24	100.04	21 3 54	1751.0	-26.63	40.37
100.00	12 0 21	4107.56	5.78	162.04	18.41	60.62	13 8 49	3507.6	1.82	155.49
110.00	21 50 22	2082.99	-31.48	27.64	23.46	104.06	22 25 5	1483.0	-29.23	19.16
110.00	12 51 12	3948.31	8.55	148.26	16.71	56.78	13 57 0	3348.3	4.12	141.97

DIFFERENTIAL CORRECTIONS
TDE .0088 TRA .5457 TC3-1.7169 BAU .5008
RDE .7050 RRA -.8976 RC3 1.4823 FAU .56188
FDE-7.3559 FRA22.0151 FC-29.4569 BSP 7727
BDE .7050 BRA 1.0504 BC3 2.2683 FSP 12161

MID-COURSE EXECUTION ACCURACY
SGT 1605.9 SGR 2036.8 SG3 3571.6
RRT -.8279 RRF -.9629 RTF .8852
SGB 2593.7 R23 .0563 R13 -.9739
SG1 2486.5 SG2 737.9 THA 126.92

ORBIT DETERMINATION ACCURACY
ST 242.4 SR 1069.1 SS 3607.1
CRT -.3191 CRS .9316 CST -.6393
LSA 3746.5 MSA 419.4 SSA 24.3
EL1 1072.1 EL2 229.1 ALF 94.34

LAUNCH DATE OCT 10 1964 FLIGHT TIME 320.00 ARRIVAL DATE AUG 26 1965

HELIOCENTRIC CONIC DISTANCE 737.300 EARTH TO MARS

RL 149.37 LAL -.00 LOL 16.73 VL 32.587 GAL -6.40 AZL 89.20 HCA 232.85 SMA 185.59 ECC .22367 INC .8049 V1 29.831
RP 224.41 LAP -.64 LOP 249.58 VP 21.626 GAP -4.65 AZP 90.49 TAL 323.73 TAP 196.58 RCA 144.08 APO 227.10 V2 24.506
RC 254.766 GL 6.42 GP 9.21 ZAL 140.38 ZAP 99.92 ETS 177.42 ZAE 135.10 ETE 168.12 ZAC 94.53 ETC 257.18 CLP 100.05

PLANETOCENTRIC CONIC

C3 16.551 VHL 4.068 DLA 14.69 RAL 161.70 RAD 6567.7 VEL 11.745 PTH 2.07 VHP 2.935 DPA 13.96 RAP 174.98 ECC 1.2724

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 54 51	2644.94	-27.16	70.60	24.78	98.34	19 38 56	2044.9	-25.73	62.23
90.00	10 49 8	4339.40	4.52	179.77	19.26	62.02	12 1 27	3739.4	.75	173.13
100.00	20 24 6	2357.13	-28.38	49.21	24.56	99.82	21 3 23	1757.1	-26.73	40.80
100.00	12 2 34	4102.45	5.61	161.76	18.66	60.59	13 10 57	3502.4	1.65	155.21
110.00	21 50 0	2088.34	-31.57	28.03	23.79	103.84	22 24 49	1488.3	-29.35	19.53
110.00	12 53 9	3944.00	8.39	148.03	16.95	56.74	13 58 53	3344.0	3.96	141.75

DIFFERENTIAL CORRECTIONS
TDE -.0569 TRA .7546 TC3-1.9784 BAU .5467
RDE .7089 RRA -.8930 RC3 1.4804 FAU .56671
FDE-7.4161 FRA22.1927 FC-29.6432 BSP 8453
BDE .7112 BRA 1.1691 BC3 2.4709 FSP 12275

MID-COURSE EXECUTION ACCURACY
SGT 1950.5 SGR 2034.2 SG3 3598.7
RRT -.8688 RRF -.9618 RTF .9251
SGB 2818.3 R23 .0599 R13 -.9768
SG1 2724.4 SG2 721.1 THA 133.62

ORBIT DETERMINATION ACCURACY
ST 342.6 SR 1072.5 SS 3617.6
CRT -.5723 CRS .9302 CST -.8319
LSA 3764.5 MSA 426.9 SSA 23.9
EL1 1091.5 EL2 276.0 ALF 101.08

LAUNCH DATE OCT 10 1964 FLIGHT TIME 322.00 ARRIVAL DATE AUG 28 1965

HELIOCENTRIC CONIC DISTANCE 741.264 EARTH TO MARS

RL 149.37 LAL -.00 LOL 16.73 VL 32.584 GAL -6.41 AZL 89.17 HCA 233.93 SMA 185.54 ECC .22361 INC .8340 V1 29.831
RP 224.02 LAP -.67 LOP 250.65 VP 21.669 GAP -4.90 AZP 90.49 TAL 323.62 TAP 197.55 RCA 144.05 APO 227.02 V2 24.548
RC 256.380 GL 6.64 GP 9.13 ZAL 140.47 ZAP 97.92 ETS 177.79 ZAE 132.95 ETE 169.00 ZAC 94.25 ETC 257.29 CLP 98.02

PLANETOCENTRIC CONIC

C3 16.600 VHL 4.074 DLA 14.85 RAL 161.91 RAD 6567.7 VEL 11.747 PTH 2.07 VHP 2.925 DPA 14.27 RAP 174.06 ECC 1.2732

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 54 16	2651.20	-27.22	71.05	25.10	98.12	19 38 27	2051.2	-25.82	62.67
90.00	10 51 23	4334.51	4.37	179.50	19.53	61.99	12 3 38	3734.5	.59	172.85
100.00	20 23 38	2363.02	-28.44	49.64	24.89	99.60	21 3 1	1763.0	-26.82	41.21
100.00	12 4 43	4097.92	5.45	161.51	18.93	60.56	13 13 1	3497.9	1.49	154.96
110.00	21 49 46	2093.47	-31.65	28.41	24.12	103.63	22 24 40	1493.5	-29.46	19.89
110.00	12 55 4	3940.23	8.25	147.83	17.21	56.71	14 0 44	3340.2	3.82	141.55

DIFFERENTIAL CORRECTIONS
TDE -.1239 TRA .9669 TC3-2.2428 BAU .5958
RDE .7125 RRA -.8868 RC3 1.4751 FAU .57027
FDE-7.4637 FRA22.3226 FC-29.7405 BSP 9313
BDE .7231 BRA 1.3120 BC3 2.6844 FSP 12355

MID-COURSE EXECUTION ACCURACY
SGT 2312.8 SGR 2028.1 SG3 3616.6
RRT -.8924 RRF -.9606 RTF .9482
SGB 3076.1 R23 .0589 R13 -.9797
SG1 2993.8 SG2 706.9 THA 139.20

ORBIT DETERMINATION ACCURACY
ST 459.8 SR 1074.7 SS 3624.0
CRT -.6877 CRS .9288 CST -.9069
LSA 3782.9 MSA 434.1 SSA 23.5
EL1 1124.5 EL2 319.0 ALF 107.88

LAUNCH DATE OCT 10 1964 FLIGHT TIME 324.00 ARRIVAL DATE AUG 30 1965

HELIOCENTRIC CONIC DISTANCE 745.235 EARTH TO MARS

RL 149.37 LAL -.00 LOL 16.73 VL 32.581 GAL -6.43 AZL 89.14 HCA 235.01 SMA 185.49 ECC .22360 INC .8623 V1 29.831
RP 223.63 LAP -.71 LOP 251.74 VP 21.712 GAP -5.15 AZP 90.49 TAL 323.50 TAP 198.51 RCA 144.01 APO 226.96 V2 24.590
RC 257.974 GL 6.86 GP 9.04 ZAL 140.58 ZAP 95.92 ETS 178.16 ZAE 130.78 ETE 169.82 ZAC 93.97 ETC 257.40 CLP 95.99

PLANETOCENTRIC CONIC

C3 16.661 VHL 4.082 DLA 14.99 RAL 162.13 RAD 6567.7 VEL 11.749 PTH 2.07 VHP 2.919 DPA 14.58 RAP 173.14 ECC 1.2742

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 53 50	2657.17	-27.28	71.48	25.45	97.91	19 38 7	2057.2	-25.90	63.08
90.00	10 53 35	4330.22	4.23	179.26	19.82	61.97	12 5 45	3730.2	.45	172.62
100.00	20 23 18	2368.65	-28.51	50.05	25.23	99.40	21 2 46	1768.6	-26.91	41.61
100.00	12 6 48	4093.98	5.32	161.29	19.22	60.54	13 15 2	3494.0	1.36	154.74
110.00	21 49 40	2098.40	-31.73	28.77	24.48	103.43	22 24 38	1498.4	-29.56	20.24
110.00	12 56 55	3936.98	8.13	147.65	17.49	56.68	14 2 32	3337.0	3.69	141.38

DIFFERENTIAL CORRECTIONS
TDE -.1919 TRA 1.1829 TC3-2.5094 BAU .6474
RDE .7159 RRA -.8789 RC3 1.4666 FAU .57252
FDE-7.5043 FRA22.4003 FC-29.7485 BSP 10279
BDE .7412 BRA 1.4737 BC3 2.9065 FSP 12399

MID-COURSE EXECUTION ACCURACY
SGT 2687.7 SGR 2018.5 SG3 3625.0
RRT -.9066 RRF -.9592 RTF .9625
SGB 3361.3 R23 .0558 R13 -.9826
SG1 3288.4 SG2 696.1 THA 143.88

ORBIT DETERMINATION ACCURACY
ST 585.0 SR 1076.1 SS 3627.6
CRT -.7473 CRS .9274 CST -.9410
LSA 3803.2 MSA 441.1 SSA 23.1
EL1 1171.6 EL2 357.0 ALF 114.54

LAUNCH DATE OCT 10 1964 FLIGHT TIME 326.00 ARRIVAL DATE SEP 1 1965

HELIOCENTRIC CONIC DISTANCE 749.213 EARTH TO MARS

RL 149.37 LAL -.00 LOL 16.73 VL 32.579 GAL -6.45 AZL 89.11 HCA 236.10 SMA 185.45 ECC .22363 INC .8901 V1 29.831
RP 223.24 LAP -.74 LOP 252.82 VP 21.756 GAP -5.39 AZP 90.50 TAL 323.37 TAP 199.46 RCA 143.98 APO 226.92 V2 24.632
RC 259.547 GL 7.06 GP 8.94 ZAL 140.70 ZAP 93.91 ETS 178.52 ZAE 128.61 ETE 170.58 ZAC 93.69 ETC 257.51 CLP 93.96

PLANETOCENTRIC CONIC

C3 16.734 VHL 4.091 DLA 15.12 RAL 162.35 RAD 6567.7 VEL 11.752 PTH 2.07 VHP 2.917 DPA 14.89 RAP 172.22 ECC 1.2754

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 53 33	2662.84	-27.33	71.89	25.81	97.72	19 37 56	2062.8	-25.98	63.48
90.00	10 55 41	4326.56	4.11	179.05	20.13	61.96	12 7 48	3726.6	.33	172.41
100.00	20 23 7	2374.01	-28.57	50.43	25.60	99.20	21 2 41	1774.0	-27.00	41.98
100.00	12 8 49	4090.62	5.21	161.10	19.52	60.52	13 16 59	3490.6	1.24	154.56
110.00	21 49 41	2103.13	-31.81	29.12	24.85	103.24	22 24 44	1503.1	-29.66	20.57
110.00	12 58 44	3934.27	8.03	147.51	17.79	56.66	14 4 18	3334.3	3.59	141.24

DIFFERENTIAL CORRECTIONS
TDE -.2611 TRA 1.4020 TC3-2.7759 BAU .7011
RDE .7188 RRA -.8696 RC3 1.4544 FAU .57324
FDE-7.5255 FRA22.4329 FC-29.6560 BSP 11333
BDE .7647 BRA 1.6498 BC3 3.1338 FSP 12416

MID-COURSE EXECUTION ACCURACY
SGT 3070.7 SGR 2005.3 SG3 3623.8
RRT -.9154 RRF -.9577 RTF .9718
SGB 3667.5 R23 .0519 R13 -.9851
SG1 3602.4 SG2 687.9 THA 147.81

ORBIT DETERMINATION ACCURACY
ST 714.7 SR 1076.1 SS 3625.9
CRT -.7822 CRS .9258 CST -.9592
LSA 3822.9 MSA 448.0 SSA 22.6
EL1 1231.8 EL2 389.0 ALF 120.86

LAUNCH DATE OCT 10 1964 FLIGHT TIME 328.00 ARRIVAL DATE SEP 3 1965

HELIOCENTRIC CONIC DISTANCE 753.197 EARTH TO MARS

RL 149.37 LAL -.00 LOL 16.73 VL 32.577 GAL -6.48 AZL 89.08 HCA 237.19 SMA 185.41 ECC .22370 INC .9172 V1 29.831
RP 222.85 LAP -.77 LOP 253.91 VP 21.800 GAP -5.64 AZP 90.50 TAL 323.22 TAP 200.41 RCA 143.93 APO 226.89 V2 24.674
RC 261.100 GL 7.26 GP 8.84 ZAL 140.84 ZAP 91.90 ETS 178.86 ZAE 126.42 ETE 171.30 ZAC 93.40 ETC 257.63 CLP 91.92

PLANETOCENTRIC CONIC

C3 16.819 VHL 4.101 DLA 15.24 RAL 162.59 RAD 6567.7 VEL 11.756 PTH 2.07 VHP 2.919 DPA 15.18 RAP 171.30 ECC 1.2768

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 53 25	2668.22	-27.38	72.27	26.18	97.53	19 37 53	2068.2	-26.05	63.86
90.00	10 57 44	4323.51	4.02	178.88	20.46	61.95	12 9 47	3723.5	.23	172.24
100.00	20 23 4	2379.11	-28.62	50.80	25.98	99.01	21 2 43	1779.1	-27.08	42.34
100.00	12 10 46	4087.86	5.12	160.95	19.85	60.51	13 18 54	3487.9	1.15	154.41
110.00	21 49 50	2107.65	-31.88	29.45	25.24	103.05	22 24 57	1507.6	-29.75	20.89
110.00	13 0 30	3932.08	7.95	147.39	18.11	56.64	14 6 2	3332.1	3.51	141.12

DIFFERENTIAL CORRECTIONS
TDE -.3314 TRA 1.6232 TC3-3.0421 BAU .7568
RDE .7217 RRA -.8586 RC3 1.4395 FAU .57285
FDE-7.5444 FRA22.4109 FC-29.4861 BSP 12445
BDE .7941 BRA 1.8363 BC3 3.3656 FSP 12393

MID-COURSE EXECUTION ACCURACY
SGT 3459.0 SGR 1989.1 SG3 3613.4
RRT -.9208 RRF -.9560 RTF .9781
SGB 3990.1 R23 .0482 R13 -.9872
SG1 3951.3 SG2 682.7 THA 151.15

ORBIT DETERMINATION ACCURACY
ST 846.8 SR 1075.6 SS 3622.6
CRT -.8041 CRS .9243 CST -.9698
LSA 3845.8 MSA 454.6 SSA 22.2
EL1 1304.5 EL2 415.1 ALF 126.64

LAUNCH DATE OCT 10 1964 FLIGHT TIME 330.00 ARRIVAL DATE SEP 5 1965

HELIOCENTRIC CONIC DISTANCE 757.187 EARTH TO MARS

RL 149.37 LAL -.00 LOL 16.73 VL 32.575 GAL -6.51 AZL 89.06 HCA 238.28 SMA 185.38 ECC .22383 INC .9438 V1 29.831
RP 222.47 LAP -.80 LOP 255.00 VP 21.845 GAP -5.88 AZP 90.50 TAL 323.06 TAP 201.34 RCA 143.88 APO 226.87 V2 24.716
RC 262.633 GL 7.45 GP 8.73 ZAL 140.99 ZAP 89.90 ETS 179.20 ZAE 124.24 ETE 171.98 ZAC 93.11 ETC 257.75 CLP 89.90

PLANETOCENTRIC CONIC

C3 16.917 VHL 4.113 DLA 15.35 RAL 162.84 RAD 6567.7 VEL 11.760 PTH 2.08 VHP 2.924 DPA 15.46 RAP 170.38 ECC 1.2784

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 53 27	2673.31	-27.42	72.64	26.58	97.35	19 38 0	2073.3	-26.12	64.21
90.00	10 59 41	4321.07	3.94	178.74	20.80	61.94	12 11 42	3721.1	.15	172.11
100.00	20 23 11	2383.94	-28.67	51.15	26.38	98.84	21 2 55	1783.9	-27.15	42.68
100.00	12 12 39	4085.68	5.04	160.83	20.19	60.50	13 20 44	3485.7	1.08	154.29
110.00	21 50 6	2111.97	-31.94	29.77	25.65	102.87	22 25 18	1512.0	-29.84	21.19
110.00	13 2 13	3930.42	7.89	147.30	18.44	56.63	14 7 43	3330.4	3.44	141.03

DIFFERENTIAL CORRECTIONS
TDE -.4025 TRA 1.8471 TC3-3.3054 BAU .8137
RDE .7239 RRA -.8464 RC3 1.4207 FAU .57069
FDE-7.5417 FRA22.3464 FC-29.2055 BSP 13612
BDE .8283 BRA 2.0318 BC3 3.5978 FSP 12347

MID-COURSE EXECUTION ACCURACY
SGT 3850.5 SGR 1969.2 SG3 3593.2
RRT -.9239 RRF -.9541 RTF .9826
SGB 4324.8 R23 .0448 R13 -.9890
SG1 4271.2 SG2 679.3 THA 154.00

ORBIT DETERMINATION ACCURACY
ST 980.7 SR 1073.7 SS 3613.7
CRT -.8185 CRS .9226 CST -.9765
LSA 3867.8 MSA 461.1 SSA 21.7
EL1 1387.2 EL2 436.0 ALF 131.84

LAUNCH DATE OCT 10 1964 FLIGHT TIME 332.00 ARRIVAL DATE SEP 7 1965

HELIOCENTRIC CONIC DISTANCE 761.180 EARTH TO MARS

RL 149.37 LAL -.00 LOL 16.73 VL 32.573 GAL -6.54 AZL 89.03 HCA 239.38 SMA 185.35 ECC .22399 INC .9698 V1 29.831
RP 222.08 LAP -.83 LOP 256.10 VP 21.889 GAP -6.11 AZP 90.49 TAL 322.89 TAP 202.27 RCA 143.83 APO 226.87 V2 24.758
RC 264.145 GL 7.63 GP 8.62 ZAL 141.16 ZAP 87.91 ETS 179.53 ZAE 122.06 ETE 172.62 ZAC 92.83 ETC 257.87 CLP 87.89

PLANETOCENTRIC CONIC

C3 17.027 VHL 4.126 DLA 15.44 RAL 163.10 RAD 6567.7 VEL 11.765 PTH 2.08 VHP 2.932 DPA 15.73 RAP 169.48 ECC 1.2802

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 53 39	2678.09	-27.46	72.98	26.99	97.18	19 38 17	2078.1	-26.18	64.55
90.00	11 1 35	4319.29	3.88	178.64	21.17	61.93	12 13 34	3719.3	.10	172.01
100.00	20 23 27	2388.50	-28.72	51.48	26.79	98.67	21 3 15	1788.5	-27.22	43.00
100.00	12 14 28	4084.12	4.99	160.74	20.55	60.49	13 22 32	3484.1	1.02	154.20
110.00	21 50 31	2116.07	32.01	30.08	26.07	102.70	22 25 47	1516.1	-29.93	21.48
110.00	13 3 53	3929.31	7.84	147.24	18.80	56.62	14 9 22	3329.3	3.40	140.98

DIFFERENTIAL CORRECTIONS
TDE -.4715 TRA 2.0792 TC3-3.5582 BAU .8694
RDE .7211 RRA -.8375 RC3 1.3870 FAU .56185
FDE-7.4178 FRA22.3426 FC-28.5668 BSP 14963
BDE .8616 BRA 2.2415 BC3 3.8190 FSP 12504

MID-COURSE EXECUTION ACCURACY
SGT 4245.2 SGR 1941.2 SG3 3560.0
RRT -.9259 RRF -.9518 RTF .9854
SGB 4668.0 R23 .0417 R13 -.9900
SG1 4619.1 SG2 674.1 THA 156.52

ORBIT DETERMINATION ACCURACY
ST 1115.2 SR 1065.3 SS 3581.0
CRT -.8281 CRS .9186 CST -.9820
LSA 3870.7 MSA 467.7 SSA 21.7
EL1 1474.6 EL2 451.7 ALF 136.58

LAUNCH DATE OCT 10 1964 FLIGHT TIME 334.00 ARRIVAL DATE SEP 9 1965

HELIOCENTRIC CONIC DISTANCE 765.185 EARTH TO MARS

RL 149.37 LAL -.00 LOL 16.73 VL 32.572 GAL -6.58 AZL 89.00 HCA 240.48 SMA 185.33 ECC .22420 INC .9954 V1 29.831
RP 221.70 LAP -.87 LOP 257.20 VP 21.935 GAP -6.34 AZP 90.49 TAL 322.71 TAP 203.19 RCA 143.78 APO 226.88 V2 24.799
RC 265.639 GL 7.80 GP 8.50 ZAL 141.33 ZAP 85.93 ETS 179.85 ZAE 119.89 ETE 173.22 ZAC 92.54 ETC 257.99 CLP 85.89

PLANETOCENTRIC CONIC

C3 17.150 VHL 4.141 DLA 15.52 RAL 163.37 RAD 6567.7 VEL 11.770 PTH 2.08 VHP 2.944 DPA 15.99 RAP 168.59 ECC 1.2822

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 53 59	2682.61	-27.50	73.31	27.42	97.02	19 38 41	2082.6	-26.24	64.87
90.00	11 3 23	4318.07	3.84	178.57	21.55	61.92	12 15 21	3718.1	.06	171.94
100.00	20 23 50	2392.82	-28.76	51.80	27.22	98.51	21 3 43	1792.8	-27.29	43.31
100.00	12 16 13	4083.09	4.96	160.68	20.93	60.48	13 24 16	3483.1	.99	154.15
110.00	21 51 2	2120.00	-32.06	30.37	26.51	102.54	22 26 22	1520.0	-30.01	21.76
110.00	13 5 30	3928.68	7.82	147.21	19.17	56.62	14 10 59	3328.7	3.38	140.94

DIFFERENTIAL CORRECTIONS
TDE -.5454 TRA 2.3034 TC3-3.8135 BAU .9289
RDE .7253 RRA -.8202 RC3 1.3685 FAU .55962
FDE-7.4475 FRA22.1293 FC-28.2505 BSP 16120
BDE .9075 BRA 2.4450 BC3 4.0516 FSP 12281

MID-COURSE EXECUTION ACCURACY
SGT 4635.1 SGR 1917.9 SG3 3523.7
RRT -.9260 RRF -.9496 RTF .9880
SGB 5016.3 R23 .0394 R13 -.9915
SG1 4970.6 SG2 675.2 THA 158.62

ORBIT DETERMINATION ACCURACY
ST 1250.1 SR 1064.4 SS 3575.2
CRT -.8349 CRS .9179 CST -.9846
LSA 3905.6 MSA 473.5 SSA 21.0
EL1 1574.6 EL2 465.1 ALF 140.48

LAUNCH DATE OCT 10 1964 FLIGHT TIME 336.00 ARRIVAL DATE SEP 11 1965

HELIOCENTRIC CONIC DISTANCE 769.194 EARTH TO MARS

RL 149.37 LAL -.00 LOL 16.73 VL 32.570 GAL -6.61 AZL 88.98 HCA 241.58 SMA 185.31 ECC .22446 INC 1.0204 V1 29.831
RP 221.32 LAP -.90 LOP 258.31 VP 21.980 GAP -6.57 AZP 90.49 TAL 322.51 TAP 204.10 RCA 143.71 APO 226.90 V2 24.841
RC 267.114 GL 7.97 GP 8.38 ZAL 141.52 ZAP 83.97 ETS 180.16 ZAE 117.73 ETE 173.78 ZAC 92.25 ETC 258.12 CLP 83.91

PLANETOCENTRIC CONIC

C3 17.285 VHL 4.158 DLA 15.58 RAL 163.65 RAD 6567.7 VEL 11.776 PTH 2.08 VHP 2.960 DPA 16.23 RAP 167.71 ECC 1.2845

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 54 28	2686.85	-27.54	73.61	27.86	96.88	19 39 15	2086.8	-26.30	65.16
90.00	11 5 8	4317.47	3.82	178.54	21.95	61.92	12 17 5	3717.5	.04	171.91
100.00	20 24 23	2396.89	-28.80	52.09	27.67	98.36	21 4 20	1796.9	-27.35	43.59
100.00	12 17 54	4082.66	4.94	160.66	21.33	60.48	13 25 57	3482.7	.97	154.12
110.00	21 51 41	2123.73	-32.12	30.64	26.97	102.38	22 27 5	1523.7	-30.08	22.02
110.00	13 7 5	3928.58	7.82	147.21	19.56	56.62	14 12 34	3328.6	3.37	140.94

DIFFERENTIAL CORRECTIONS
TDE -.6202 TRA 2.5289 TC3-4.0632 BAU .9890
RDE .7284 RRA -.8025 RC3 1.3449 FAU .55504
FDE-7.4475 FRA21.8915 FC-27.8000 BSP 17305
BDE .9567 BRA 2.6532 BC3 4.2800 FSP 12073

MID-COURSE EXECUTION ACCURACY
SGT 5023.6 SGR 1891.1 SG3 3478.2
RRT -.9253 RRF -.9472 RTF .9899
SGB 5367.8 R23 .0378 R13 -.9926
SG1 5324.9 SG2 676.7 THA 160.47

ORBIT DETERMINATION ACCURACY
ST 1385.3 SR 1061.8 SS 3562.9
CRT -.8398 CRS .9168 CST -.9866
LSA 3938.4 MSA 479.2 SSA 20.4
EL1 1679.4 EL2 475.5 ALF 143.88

LAUNCH DATE OCT 10 1964 FLIGHT TIME 338.00 ARRIVAL DATE SEP 13 1965

HELIOCENTRIC CONIC DISTANCE 773.210 EARTH TO MARS

RL 149.37 LAL -.00 LOL 16.73 VL 32.570 GAL -6.66 AZL 88.95 HCA 242.69 SMA 185.29 ECC .22476 INC 1.0451 V1 29.831
RP 220.94 LAP -.93 LOP 259.41 VP 22.026 GAP -6.80 AZP 90.48 TAL 322.30 TAP 205.00 RCA 143.65 APO 226.94 V2 24.883
RC 268.570 GL 8.12 GP 8.25 ZAL 141.73 ZAP 82.03 ETS 180.46 ZAE 115.58 ETE 174.31 ZAC 91.96 ETC 258.23 CLP 81.95

PLANETOCENTRIC CONIC

C3 17.434 VHL 4.175 DLA 15.64 RAL 163.94 RAD 6567.7 VEL 11.782 PTH 2.08 VHP 2.979 DPA 16.45 RAP 166.86 ECC 1.2869

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 55 7	2690.79	-27.57	73.90	28.33	96.74	19 39 58	2090.8	-26.35	65.44
90.00	11 6 47	4317.49	3.82	178.54	22.36	61.92	12 18 45	3717.5	.04	171.91
100.00	20 25 5	2400.70	-28.84	52.37	28.14	98.22	21 5 5	1800.7	-27.40	43.86
100.00	12 19 31	4082.81	4.95	160.67	21.74	60.48	13 27 34	3482.8	.98	154.13
110.00	21 52 28	2127.26	-32.17	30.91	27.44	102.24	22 27 55	1527.3	-30.15	22.28
110.00	13 8 37	3929.01	7.83	147.23	19.97	56.62	14 14 6	3329.0	3.39	140.96

DIFFERENTIAL CORRECTIONS
TDE -.6955 TRA 2.7563 TC3-4.3040 BAU 1.0491
RDE .7305 RRA -.7844 RC3 1.3175 FAU .54857
FDE-7.4198 FRA21.6290 FC-27.2416 BSP 18512
BDE 1.0087 BRA 2.8657 BC3 4.5011 FSP 11872

MID-COURSE EXECUTION ACCURACY
SGT 5408.8 SGR 1861.4 SG3 3424.6
RRT -.9239 RRF -.9445 RTF .9913
SGB 5720.1 R23 .0366 R13 -.9935
SG1 5679.7 SG2 678.5 THA 162.10

ORBIT DETERMINATION ACCURACY
ST 1520.1 SR 1057.6 SS 3544.2
CRT -.8431 CRS .9153 CST -.9882
LSA 3969.3 MSA 484.8 SSA 19.8
EL1 1787.6 EL2 483.6 ALF 146.87

LAUNCH DATE OCT 10 1964 FLIGHT TIME 340.00 ARRIVAL DATE SEP 15 1965

HELIOCENTRIC CONIC DISTANCE 777.230 EARTH TO MARS

RL 149.37 LAL -.00 LOL 16.73 VL 32.569 GAL -6.70 AZL 88.93 HCA 243.81 SMA 185.28 ECC .22511 INC 1.0694 V1 29.831
RP 220.56 LAP -.96 LOP 260.53 VP 22.071 GAP -7.03 AZP 90.47 TAL 322.08 TAP 205.89 RCA 143.57 APO 226.99 V2 24.924
RC 270.009 GL 8.28 GP 8.12 ZAL 141.95 ZAP 80.12 ETS 180.74 ZAE 113.46 ETE 174.81 ZAC 91.68 ETC 258.35 CLP 80.02

PLANETOCENTRIC CONIC

C3 17.596 VHL 4.195 DLA 15.68 RAL 164.24 RAD 6567.7 VEL 11.789 PTH 2.08 VHP 3.001 DPA 16.66 RAP 166.03 ECC 1.2896

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 55 56	2694.45	-27.60	74.16	28.81	96.61	19 40 50	2094.5	-26.40	65.70
90.00	11 8 22	4318.13	3.84	178.58	22.80	61.92	12 20 21	3718.1	.06	171.94
100.00	20 25 55	2404.26	-28.88	52.63	28.62	98.09	21 5 59	1804.3	-27.46	44.11
100.00	12 21 4	4083.55	4.97	160.71	22.18	60.49	13 29 8	3483.6	1.00	154.17
110.00	21 53 22	2130.61	-32.22	31.16	27.93	102.10	22 28 53	1530.6	-30.22	22.51
110.00	13 10 6	3929.96	7.87	147.28	20.40	56.63	14 15 36	3330.0	3.42	141.01

DIFFERENTIAL CORRECTIONS
TDE -.7714 TRA 2.9838 TC3-4.5356 BAU 1.1091
RDE .7321 RRA -.7658 RC3 1.2872 FAU .54053
FDE-7.3736 FRA21.3363 FC-26.5946 BSP 19726
BDE 1.0635 BRA 3.0805 BC3 4.7147 FSP 11657

MID-COURSE EXECUTION ACCURACY
SGT 5788.6 SGR 1829.4 SG3 3363.5
RRT -.9218 RRF -.9415 RTF .9924
SGB 6070.8 R23 .0357 R13 -.9942
SG1 6032.5 SG2 680.3 THA 163.54

ORBIT DETERMINATION ACCURACY
ST 1654.1 SR 1052.3 SS 3521.0
CRT -.8453 CRS .9136 CST -.9894
LSA 4000.0 MSA 490.0 SSA 19.3
EL1 1898.2 EL2 489.9 ALF 149.48

LAUNCH DATE OCT 10 1964 FLIGHT TIME 342.00 ARRIVAL DATE SEP 17 1965

HELIOCENTRIC CONIC DISTANCE 781.255 EARTH TO MARS

RL 149.37 LAL -.00 LOL 16.73 VL 32.569 GAL -6.75 AZL 88.91 HCA 244.92 SMA 185.28 ECC .22550 INC 1.0933 V1 29.831
RP 220.18 LAP -.99 LOP 261.64 VP 22.117 GAP -7.25 AZP 90.46 TAL 321.85 TAP 206.77 RCA 143.50 APO 227.06 V2 24.965
RC 271.430 GL 8.42 GP 7.99 ZAL 142.18 ZAP 78.23 ETS 181.02 ZAE 111.36 ETE 175.28 ZAC 91.40 ETC 258.47 CLP 78.11

PLANETOCENTRIC CONIC

C3 17.772 VHL 4.216 DLA 15.71 RAL 164.55 RAD 6567.7 VEL 11.796 PTH 2.09 VHP 3.027 DPA 16.85 RAP 165.23 ECC 1.2925

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 56 54	2697.83	-27.62	74.41	29.31	96.49	19 41 51	2097.8	-26.44	65.94
90.00	11 9 53	4319.38	3.88	178.65	23.25	61.93	12 21 53	3719.4	.10	172.01
100.00	20 26 54	2407.57	-28.91	52.87	29.12	97.96	21 7 2	1807.6	-27.50	44.35
100.00	12 22 34	4084.88	5.02	160.78	22.63	60.49	13 30 39	3484.9	1.05	154.24
110.00	21 54 24	2133.77	-32.26	31.39	28.44	101.96	22 29 58	1533.8	-30.28	22.74
110.00	13 11 33	3931.44	7.92	147.36	20.84	56.64	14 17 4	3331.4	3.48	141.09

DIFFERENTIAL CORRECTIONS
TDE -.8480 TRA 3.2122 TC3-4.7573 BAU 1.1690
RDE .7334 RRA -.7467 RC3 1.2546 FAU .53121
FDE-7.3141 FRA21.0157 FC-25.8766 BSP 20938
BDE 1.1212 BRA 3.2979 BC3 4.9200 FSP 11432

MID-COURSE EXECUTION ACCURACY
SGT 6163.2 SGR 1795.6 SG3 3295.9
RRT -.9193 RRF -.9383 RTF .9933
SGB 6419.4 R23 .0351 R13 -.9947
SG1 6383.0 SG2 682.4 THA 164.83

ORBIT DETERMINATION ACCURACY
ST 1787.2 SR 1046.2 SS 3494.3
CRT -.8466 CRS .9118 CST -.9904
LSA 4031.6 MSA 495.0 SSA 18.9
EL1 2010.9 EL2 494.9 ALF 151.77

LAUNCH DATE OCT 10 1964 FLIGHT TIME 344.00 ARRIVAL DATE SEP 19 1965

DISTANCE 785.286

HELIOCENTRIC CONIC

RL 149.37 LAL -.00 LOL 16.73 VL 32.568 GAL -6.80 AZL 88.88 HCA 246.04 SMA 185.27 ECC .22594 INC 1.1168 V1 29.831
RP 219.81 LAP -1.02 LOP 262.76 VP 22.164 GAP -7.47 AZP 90.45 TAL 321.60 TAP 207.64 RCA 143.41 APO 227.13 V2 25.006
RC 272.833 GL 8.55 GP 7.86 ZAL 142.42 ZAP 76.38 ETS 181.28 ZAE 109.29 ETE 175.72 ZAC 91.13 ETC 258.58 CLP 76.24

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 17.963 VHL 4.238 DLA 15.73 RAL 164.87 RAD 6567.7 VEL 11.804 PTH 2.09 VHP 3.057 DPA 17.03 RAP 164.46 ECC 1.2956

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 58 0	2700.94	-27.65	74.63	29.83	96.38	19 43 1	2100.9	-26.48	66.16
90.00	11 11 19	4321.24	3.94	178.75	23.73	61.94	12 23 21	3721.2	.16	172.12
100.00	20 28 2	2410.63	-28.94	53.09	29.64	97.85	21 8 12	1810.6	-27.55	44.57
100.00	12 23 59	4086.78	5.08	160.89	23.10	60.50	13 32 6	3486.8	1.11	154.35
110.00	21 55 34	2136.75	-32.30	31.62	28.96	101.84	22 31 11	1536.7	-30.34	22.95
110.00	13 12 56	3933.43	8.00	147.46	21.31	56.65	14 18 30	3333.4	3.56	141.19

DIFFERENTIAL CORRECTIONS

TDE -.9254 TRA 3.4408 TC3-4.9682 BAU 1.2286
RDE .7345 RRA -.7271 RC3 1.2205 FAU .52092
FDE-7.2440 FRA20.6652 FC-25.1059 BSP 22142
BDE 1.1815 BRA 3.5167 BC3 5.1159 FSP 11192

MID-COURSE EXECUTION ACCURACY

SGT 6530.8 SGR 1760.4 SG3 3222.5
RRT -.9162 RRF -.9348 RTF .9940
SGB 6763.9 R23 .0348 R13 -.9952
SG1 6729.1 SG2 684.6 THA 165.98

ORBIT DETERMINATION ACCURACY

ST 1919.0 SR 1039.6 SS 3464.7
CRT -.8472 CRS .9100 CST -.9912
LSA 4064.1 MSA 499.8 SSA 18.4
EL1 2124.7 EL2 498.8 ALF 153.79

LAUNCH DATE OCT 10 1964 FLIGHT TIME 346.00 ARRIVAL DATE SEP 21 1965

DISTANCE 789.321

HELIOCENTRIC CONIC

RL 149.37 LAL -.00 LOL 16.73 VL 32.569 GAL -6.85 AZL 88.86 HCA 247.17 SMA 185.27 ECC .22642 INC 1.1400 V1 29.831
RP 219.44 LAP -1.05 LOP 263.89 VP 22.210 GAP -7.68 AZP 90.44 TAL 321.34 TAP 208.50 RCA 143.32 APO 227.22 V2 25.047
RC 274.220 GL 8.68 GP 7.72 ZAL 142.68 ZAP 74.55 ETS 181.54 ZAE 107.24 ETE 176.14 ZAC 90.86 ETC 258.68 CLP 74.41

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 18.169 VHL 4.262 DLA 15.73 RAL 165.20 RAD 6567.7 VEL 11.813 PTH 2.09 VHP 3.089 DPA 17.18 RAP 163.73 ECC 1.2990

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 59 16	2703.79	-27.67	74.84	30.36	96.28	19 44 20	2103.8	-26.51	66.36
90.00	11 12 41	4323.71	4.02	178.89	24.22	61.95	12 24 45	3723.7	.24	172.25
100.00	20 29 18	2413.46	-28.96	53.30	30.18	97.74	21 9 31	1813.5	-27.59	44.77
100.00	12 25 21	4089.27	5.16	161.03	23.59	60.52	13 33 30	3489.3	1.20	154.48
110.00	21 56 51	2139.55	-32.34	31.82	29.51	101.72	22 32 30	1539.6	-30.39	23.15
110.00	13 14 17	3935.94	8.09	147.60	21.79	56.67	14 19 53	3335.9	3.65	141.32

DIFFERENTIAL CORRECTIONS

TDE-1.0031 TRA 3.6697 TC3-5.1661 BAU 1.2874
RDE .7353 RRA -.7071 RC3 1.1848 FAU .50952
FDE-7.1603 FRA20.2914 FC-24.2786 BSP 23337
+ BDE 1.2437 BRA 3.7372 BC3 5.3002 FSP 10937

MID-COURSE EXECUTION ACCURACY

SGT 6890.3 SGR 1724.0 SG3 3143.8
RRT -.9127 RRF -.9310 RTF .9945
SGB 7102.7 R23 .0347 R13 -.9956
SG1 7069.4 SG2 686.8 THA 167.01

ORBIT DETERMINATION ACCURACY

ST 2049.2 SR 1032.3 SS 3431.3
CRT -.8472 CRS .9080 CST -.9918
LSA 4096.9 MSA 504.3 SSA 18.0
EL1 2238.9 EL2 501.9 ALF 155.58

LAUNCH DATE OCT 10 1964 FLIGHT TIME 348.00 ARRIVAL DATE SEP 23 1965

DISTANCE 793.362

HELIOCENTRIC CONIC

RL 149.37 LAL -.00 LOL 16.73 VL 32.569 GAL -6.91 AZL 88.84 HCA 248.29 SMA 185.28 ECC .22695 INC 1.1628 V1 29.831
RP 219.07 LAP -1.08 LOP 265.01 VP 22.256 GAP -7.90 AZP 90.43 TAL 321.06 TAP 209.36 RCA 143.23 APO 227.33 V2 25.088
RC 275.589 GL 8.80 GP 7.58 ZAL 142.96 ZAP 72.76 ETS 181.78 ZAE 105.23 ETE 176.53 ZAC 90.61 ETC 258.79 CLP 72.61

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 18.390 VHL 4.288 DLA 15.72 RAL 165.54 RAD 6567.7 VEL 11.823 PTH 2.09 VHP 3.125 DPA 17.32 RAP 163.03 ECC 1.3026

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 0 41	2706.36	-27.69	75.02	30.91	96.19	19 45 48	2106.4	-26.54	66.54
90.00	11 13 58	4326.79	4.12	179.06	24.73	61.96	12 26 5	3726.8	.34	172.42
100.00	20 30 43	2416.06	-28.99	53.49	30.73	97.65	21 10 59	1816.1	-27.63	44.95
100.00	12 26 38	4092.33	5.27	161.20	24.09	60.53	13 34 51	3492.3	1.30	154.65
110.00	21 58 15	2142.18	-32.38	32.02	30.06	101.61	22 33 57	1542.2	-30.44	23.34
110.00	13 15 36	3938.96	8.21	147.76	22.29	56.70	14 21 15	3339.0	3.77	141.48

DIFFERENTIAL CORRECTIONS

TDE-1.0823 TRA 3.8976 TC3-5.3534 BAU 1.3461
RDE .7363 RRA -.6866 RC3 1.1486 FAU .49756
FDE-7.0749 FRA19.8899 FC-23.4236 BSP 24500
BDE 1.3090 BRA 3.9576 BC3 5.4752 FSP 10661

MID-COURSE EXECUTION ACCURACY

SGT 7241.6 SGR 1687.1 SG3 3061.0
RRT -.9086 RRF -.9269 RTF .9950
SGB 7435.5 R23 .0347 R13 -.9959
SG1 7403.5 SG2 689.1 THA 167.94

ORBIT DETERMINATION ACCURACY

ST 2178.1 SR 1024.9 SS 3397.0
CRT -.8469 CRS .9061 CST -.9923
LSA 4132.2 MSA 508.4 SSA 17.5
EL1 2353.8 EL2 504.3 ALF 157.16

LAUNCH DATE OCT 10 1964 FLIGHT TIME 350.00 ARRIVAL DATE SEP 25 1965

DISTANCE 797.406

HELIOCENTRIC CONIC

RL 149.37 LAL -.00 LOL 16.73 VL 32.569 GAL -6.97 AZL 88.81 HCA 249.42 SMA 185.29 ECC .22753 INC 1.1855 V1 29.831
RP 218.70 LAP -1.11 LOP 266.15 VP 22.302 GAP -8.11 AZP 90.42 TAL 320.78 TAP 210.20 RCA 143.13 APO 227.45 V2 25.128
RC 276.940 GL 8.92 GP 7.44 ZAL 143.24 ZAP 71.01 ETS 182.01 ZAE 103.25 ETE 176.90 ZAC 90.35 ETC 258.88 CLP 70.85

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 18.627 VHL 4.316 DLA 15.71 RAL 165.89 RAD 6567.8 VEL 11.833 PTH 2.10 VHP 3.164 DPA 17.44 RAP 162.37 ECC 1.3065

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 2 15	2708.68	-27.70	75.19	31.48	96.10	19 47 24	2108.7	-26.57	66.71
90.00	11 15 11	4330.47	4.24	179.27	25.25	61.98	12 27 22	3730.5	.46	172.63
100.00	20 32 16	2418.42	-29.01	53.66	31.31	97.56	21 12 34	1818.4	-27.66	45.12
100.00	12 27 52	4095.96	5.39	161.40	24.62	60.55	13 36 8	3496.0	1.43	154.85
110.00	21 59 46	2144.65	-32.41	32.21	30.64	101.50	22 35 31	1544.6	-30.49	23.52
110.00	13 16 51	3942.51	8.34	147.95	22.81	56.73	14 22 34	3342.5	3.90	141.67

DIFFERENTIAL CORRECTIONS

TDE-1.1591 TRA 4.1292 TC3-5.5220 BAU 1.3026
RDE .7363 RRA -.6668 RC3 1.1096 FAU .48386
FDE-6.9596 FRA19.4901 FC-22.4890 BSP 25724
BDE 1.3732 BRA 4.1827 BC3 5.6323 FSP 10420

MID-COURSE EXECUTION ACCURACY

SGT 7583.7 SGR 1648.7 SG3 2973.7
RRT -.9042 RRF -.9223 RTF .9953
SGB 7760.8 R23 .0347 R13 -.9961
SG1 7730.0 SG2 690.9 THA 168.79

ORBIT DETERMINATION ACCURACY

ST 2303.7 SR 1016.1 SS 3355.7
CRT -.8457 CRS .9037 CST -.9927
LSA 4163.8 MSA 512.5 SSA 17.2
EL1 2466.3 EL2 506.4 ALF 158.60

LAUNCH DATE OCT 10 1964 FLIGHT TIME 352.00 ARRIVAL DATE SEP 27 1965

HELIOCENTRIC CONIC DISTANCE 801.455 EARTH TO MARS

RL	149.37	LAL	-.00	LOL	16.73	VL	32.570	GAL	-7.04	AZL	88.79	HCA	250.56	SMA	185.30	ECC	.22815	INC	1.2078	V1	29.831
RP	218.34	LAP	-1.14	LOP	267.28	VP	22.349	GAP	-8.32	AZP	90.40	TAL	320.47	TAP	211.03	RCA	143.02	APO	227.58	V2	25.168
RC	278.273	GL	9.02	GP	7.30	ZAL	143.54	ZAP	69.30	ETS	182.22	ZAE	101.31	ETE	177.25	ZAC	90.11	ETC	258.98	CLP	69.12

PLANETOCENTRIC CONIC

C3	18.880	VHL	4.345	DLA	15.68	RAL	166.25	RAD	6567.8	VEL	11.843	PTH	2.10	VHP	3.206	DPA	17.54	RAP	161.75	ECC	1.3107

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 3 58	2710.76	-27.72	75.34	32.07	96.03	19 49 9	2110.8	-26.60	66.85
90.00	11 16 20	4334.74	4.37	179.51	25.80	62.00	12 28 35	3734.7	.59	172.87
100.00	20 33 57	2420.58	-29.03	53.82	31.89	97.48	21 14 17	1820.6	-27.69	45.27
100.00	12 29 2	4100.16	5.53	161.63	25.16	60.58	13 37 22	3500.2	1.57	155.08
110.00	22 1 24	2146.95	-32.44	32.38	31.23	101.41	22 37 11	1547.0	-30.53	23.68
110.00	13 18 4	3946.55	8.49	148.16	23.35	56.76	14 23 51	3346.5	4.06	141.88

DIFFERENTIAL CORRECTIONS

TDE	-1.2425	TRA	4.3541	TC3	-5.6882	BAU	1.4611
RDE	.7381	RRA	-.6454	RC3	1.0740	FAU	.47152
FDE	-6.8802	FRA	19.0365	FC	-21.6219	BSP	26771
BDE	1.4451	BRA	4.4016	BC3	5.7887	FSP	10082

MID-COURSE EXECUTION ACCURACY

SGT	7917.0	SGR	1612.3	SG3	2885.2		
RRT	-.8993	RRF	-.9177	RTF	.9956		
SGB	8079.5	R23	.0354	R13	-.9963		
SG1	8049.7	SG2	693.6	THA	169.54		

ORBIT DETERMINATION ACCURACY

ST	2430.3	SR	1009.1	SS	3321.2
CRT	-.8453	CRS	.9024	CST	-.9930
LSA	4205.8	MSA	515.9	SSA	16.8
EL1	2582.1	EL2	507.5	ALF	159.85

LAUNCH DATE OCT 10 1964 FLIGHT TIME 354.00 ARRIVAL DATE SEP 29 1965

HELIOCENTRIC CONIC DISTANCE 805.508 EARTH TO MARS

RL	149.37	LAL	-.00	LOL	16.73	VL	32.571	GAL	-7.11	AZL	88.77	HCA	251.70	SMA	185.31	ECC	.22883	INC	1.2299	V1	29.831
RP	217.98	LAP	-1.17	LOP	268.42	VP	22.395	GAP	-8.53	AZP	90.39	TAL	320.16	TAP	211.86	RCA	142.91	APO	227.72	V2	25.208
RC	279.589	GL	9.12	GP	7.16	ZAL	143.85	ZAP	67.63	ETS	182.43	ZAE	99.40	ETE	177.57	ZAC	89.88	ETC	259.06	CLP	67.44

PLANETOCENTRIC CONIC

C3	19.150	VHL	4.376	DLA	15.63	RAL	166.61	RAD	6567.8	VEL	11.855	PTH	2.10	VHP	3.250	DPA	17.62	RAP	161.18	ECC	1.3152

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 5 49	2712.59	-27.73	75.47	32.68	95.96	19 51 2	2112.6	-26.62	66.98
90.00	11 17 24	4339.61	4.53	179.78	26.36	62.02	12 29 44	3739.6	.75	173.14
100.00	20 35 46	2422.51	-29.04	53.96	32.50	97.40	21 16 9	1822.5	-27.71	45.41
100.00	12 30 8	4104.93	5.69	161.89	25.72	60.60	13 38 33	3504.9	1.73	155.34
110.00	22 3 9	2149.10	-32.47	32.54	31.84	101.32	22 38 58	1549.1	-30.57	23.84
110.00	13 19 15	3951.10	8.66	148.41	23.90	56.80	14 25 6	3351.1	4.23	142.12

DIFFERENTIAL CORRECTIONS

TDE	-1.3242	TRA	4.5821	TC3	-5.8353	BAU	1.5173
RDE	.7390	RRA	-.6248	RC3	1.0364	FAU	.45775
FDE	-6.7749	FRA	18.5887	FC	-20.6938	BSP	27868
BDE	1.5165	BRA	4.6245	BC3	5.9266	FSP	9781

MID-COURSE EXECUTION ACCURACY

SGT	8240.1	SGR	1575.0	SG3	2793.6		
RRT	-.8940	RRF	-.9127	RTF	.9959		
SGB	8389.3	R23	.0358	R13	-.9965		
SG1	8360.4	SG2	695.6	THA	170.23		

ORBIT DETERMINATION ACCURACY

ST	2553.9	SR	1001.0	SS	3280.7
CRT	-.8442	CRS	.9005	CST	-.9932
LSA	4244.7	MSA	510.1	SSA	16.4
EL1	2695.6	EL2	508.3	ALF	160.99

LAUNCH DATE OCT 10 1964 FLIGHT TIME 356.00 ARRIVAL DATE OCT 1 1965

HELIOCENTRIC CONIC DISTANCE 809.565 EARTH TO MARS

RL	149.37	LAL	-.00	LOL	16.73	VL	32.572	GAL	-7.18	AZL	88.75	HCA	252.84	SMA	185.33	ECC	.22955	INC	1.2518	V1	29.831
RP	217.62	LAP	-1.20	LOP	269.56	VP	22.441	GAP	-8.73	AZP	90.37	TAL	319.83	TAP	212.67	RCA	142.79	APO	227.88	V2	25.248
RC	280.887	GL	9.21	GP	7.02	ZAL	144.18	ZAP	66.00	ETS	182.63	ZAE	97.52	ETE	177.88	ZAC	89.65	ETC	259.14	CLP	65.80

PLANETOCENTRIC CONIC

C3	19.438	VHL	4.409	DLA	15.58	RAL	166.99	RAD	6567.8	VEL	11.867	PTH	2.11	VHP	3.298	DPA	17.68	RAP	160.64	ECC	1.3199

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 7 49	2714.19	-27.74	75.59	33.30	95.91	19 53 3	2114.2	-26.64	67.10
90.00	11 18 24	4345.08	4.71	180.09	26.94	62.04	12 30 49	3745.1	.93	173.44
100.00	20 37 44	2424.24	-29.06	54.09	33.12	97.34	21 18 8	1824.2	-27.74	45.53
100.00	12 31 11	4110.26	5.87	162.19	26.30	60.64	13 39 41	3510.3	1.91	155.64
110.00	22 5 2	2151.10	-32.50	32.69	32.47	101.23	22 40 53	1551.1	-30.61	23.98
110.00	13 20 22	3956.17	8.85	148.68	24.48	56.85	14 26 18	3356.2	4.42	142.38

DIFFERENTIAL CORRECTIONS

TDE	-1.4068	TRA	4.8103	TC3	-5.9692	BAU	1.5728
RDE	.7400	RRA	-.6045	RC3	.9990	FAU	.44368
FDE	-6.6642	FRA	18.1318	FC	-19.7608	BSP	28936
BDE	1.5895	BRA	4.8481	BC3	6.0522	FSP	9472

MID-COURSE EXECUTION ACCURACY

SGT	8553.5	SGR	1538.1	SG3	2700.6		
RRT	-.8883	RRF	-.9074	RTF	.9960		
SGB	8690.7	R23	.0364	R13	-.9966		
SG1	8662.7	SG2	697.4	THA	170.86		

ORBIT DETERMINATION ACCURACY

ST	2675.4	SR	992.6	SS	3238.4
CRT	-.8429	CRS	.8987	CST	-.9935
LSA	4284.6	MSA	522.0	SSA	16.1
EL1	2807.9	EL2	508.9	ALF	162.02

LAUNCH DATE OCT 10 1964 FLIGHT TIME 358.00 ARRIVAL DATE OCT 3 1965

HELIOCENTRIC CONIC DISTANCE 813.625 EARTH TO MARS

RL	149.37	LAL	-.00	LOL	16.73	VL	32.573	GAL	-7.26	AZL	88.73	HCA	253.99	SMA	185.35	ECC	.23033	INC	1.2735	V1	29.831
RP	217.27	LAP	-1.22	LOP	270.71	VP	22.487	GAP	-8.94	AZP	90.35	TAL	319.48	TAP	213.47	RCA	142.66	APO	228.05	V2	25.287
RC	282.167	GL	9.30	GP	6.89	ZAL	144.51	ZAP	64.40	ETS	182.81	ZAE	95.69	ETE	178.17	ZAC	89.43	ETC	259.21	CLP	64.20

PLANETOCENTRIC CONIC

C3	19.745	VHL	4.444	DLA	15.52	RAL	167.37	RAD	6567.8	VEL	11.880	PTH	2.11	VHP	3.349	DPA	17.73	RAP	160.15	ECC	1.3249

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 9 57	2715.56	-27.75	75.69	33.94	95.86	19 55 13	2115.6	-26.65	67.19
90.00	11 19 20	4351.35	4.90	180.43	27.54	62.08	12 31 51	3751.1	1.12	173.78
100.00	20 39 49	2425.78	-29.07	54.20	33.77	97.28	21 20 15	1825.8	-27.76	45.64
100.00	12 32 10	4116.15	6.06	162.52	26.90	60.67	13 40 46	3516.1	2.11	155.96
110.00	22 7 0	2152.96	-32.52	32.83	33.11	101.15	22 42 53	1553.0	-30.65	24.11
110.00	13 21 27	3961.73	9.05	148.98	25.07	56.90	14 27 29	3361.7	4.63	142.68

DIFFERENTIAL CORRECTIONS

TDE	-1.4905	TRA	5.0391	TC3	-6.0889	BAU	1.6272
RDE	.7411	RRA	-.5844	RC3	.9617	FAU	.42925
FDE	-6.5503	FRA	17.6682	FC	-18.8209	BSP	29987
BDE	1.6646	BRA	5.0729	BC3	6.1644	FSP	9163

MID-COURSE EXECUTION ACCURACY

SGT	8857.0	SGR	1501.7	SG3	2606.5		
RRT	-.8823	RRF	-.9018	RTF	.9962		
SGB	8983.4	R23	.0370	R13	-.9967		
SG1	8956.2	SG2	699.2	THA	171.44		

ORBIT DETERMINATION ACCURACY

ST	2795.1	SR	984.3	SS	3194.9
CRT	-.8416	CRS	.8970	CST	-.9936
LSA	4325.9	MSA	524.7	SSA	15.8
EL1	2919.3	EL2	509.1	ALF	162.96

LAUNCH DATE OCT 10 1964 FLIGHT TIME 360.00 ARRIVAL DATE OCT 5 1965

DISTANCE 817.688

HELIOCENTRIC CONIC

RL 149.37 LAL -.00 LOL 16.73 VL 32.575 GAL -7.34 AZL 88.70 HCA 255.14 SMA 185.38 ECC .23115 INC 1.2950 V1 29.831
RP 216.91 LAP -1.25 LOP 271.86 VP 22.533 GAP -9.14 AZP 90.33 TAL 319.12 TAP 214.26 RCA 142.53 APO 228.23 V2 25.327
RC 283.431 GL 9.38 GP 6.75 ZAL 144.86 ZAP 62.85 ETS 182.99 ZAE 93.90 ETE 178.44 ZAC 89.23 ETC 259.28 CLP 62.65

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 20.071 VHL 4.480 DLA 15.44 RAL 167.77 RAD 6567.8 VEL 11.893 PTH 2.11 VHP 3.403 DPA 17.76 RAP 159.71 ECC 1.3303

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 12 14	2716.72	-27.76	75.77	34.60	95.82	19 57 30	2116.7	-26.67	67.28
90.00	11 20 12	4357.76	5.11	180.80	28.15	62.11	12 32 50	3757.8	1.34	174.15
100.00	20 42 2	2427.12	-29.08	54.30	34.42	97.23	21 22 29	1827.1	-27.78	45.74
100.00	12 33 5	4122.59	6.28	162.87	27.51	60.71	13 41 47	3522.6	2.33	156.31
110.00	22 9 6	2154.68	-32.55	32.96	33.78	101.08	22 45 1	1554.7	-30.68	24.24
110.00	13 22 30	3967.79	9.28	149.30	25.68	56.95	14 28 38	3367.8	4.86	142.99

DIFFERENTIAL CORRECTIONS

TDE-1.5757 TRA 5.2679 TC3-6.1960 BAU 1.6810
RDE .7424 RRA -.5646 RC3 .9250 FAU .41474
FDE-6.4343 FRA17.1993 FC-17.8896 BSP 30989
BDE 1.7418 BRA 5.2981 BC3 6.2647 FSP 8845

MID-COURSE EXECUTION ACCURACY

SGT 9150.7 SGR 1466.2 SG3 2512.1
RRT -.8759 RRF -.8959 RTF .9963
SGB 9267.4 R23 .0377 R13 -.9967
SG1 9240.9 SG2 700.6 THA 171.96

ORBIT DETERMINATION ACCURACY

ST 2913.0 SR 976.0 SS 3150.4
CRT -.8402 CRS .8953 CST -.9937
LSA 4368.7 MSA 526.9 SSA 15.5
EL1 3029.7 EL2 508.9 ALF 163.81

LAUNCH DATE OCT 10 1964 FLIGHT TIME 362.00 ARRIVAL DATE OCT 7 1965

DISTANCE 821.754

HELIOCENTRIC CONIC

RL 149.37 LAL -.00 LOL 16.73 VL 32.576 GAL -7.42 AZL 88.68 HCA 256.29 SMA 185.41 ECC .23203 INC 1.3163 V1 29.831
RP 216.57 LAP -1.28 LOP 273.01 VP 22.579 GAP -9.34 AZP 90.31 TAL 318.75 TAP 215.04 RCA 142.39 APO 228.43 V2 25.365
RC 284.679 GL 9.45 GP 6.61 ZAL 145.22 ZAP 61.34 ETS 183.15 ZAE 92.14 ETE 178.70 ZAC 89.03 ETC 259.34 CLP 61.13

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 20.417 VHL 4.518 DLA 15.35 RAL 168.17 RAD 6567.8 VEL 11.908 PTH 2.12 VHP 3.459 DPA 17.77 RAP 159.31 ECC 1.3360

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 14 38	2717.67	-27.77	75.84	35.27	95.78	19 59 55	2117.7	-26.68	67.34
90.00	11 21 0	4364.96	5.34	181.21	28.79	62.15	12 33 45	3765.0	1.57	174.55
100.00	20 44 22	2428.29	-29.09	54.38	35.10	97.19	21 24 50	1828.3	-27.79	45.82
100.00	12 33 57	4129.58	6.51	163.26	28.15	60.76	13 42 46	3529.6	2.56	156.70
110.00	22 11 18	2156.28	-32.57	33.08	34.45	101.01	22 47 14	1556.3	-30.71	24.35
110.00	13 23 30	3974.35	9.52	149.65	26.31	57.01	14 29 44	3374.4	5.11	143.34

DIFFERENTIAL CORRECTIONS

TDE-1.6616 TRA 5.4980 TC3-6.2885 BAU 1.7335
RDE .7438 RRA -.5454 RC3 .8888 FAU .40004
FDE-6.3133 FRA16.7296 FC-16.9630 BSP 31985
BDE 1.8205 BRA 5.5250 BC3 6.3510 FSP 8533

MID-COURSE EXECUTION ACCURACY

SGT 9434.0 SGR 1431.4 SG3 2417.7
RRT -.8691 RRF -.8898 RTF .9963
SGB 9542.0 R23 .0385 R13 -.9968
SG1 9516.2 SG2 701.9 THA 172.45

ORBIT DETERMINATION ACCURACY

ST 3028.6 SR 967.7 SS 3104.1
CRT -.8387 CRS .8937 CST -.9939
LSA 4411.9 MSA 528.8 SSA 15.2
EL1 3138.5 EL2 508.5 ALF 164.58

LAUNCH DATE OCT 10 1964 FLIGHT TIME 364.00 ARRIVAL DATE OCT 9 1965

DISTANCE 825.823

HELIOCENTRIC CONIC

RL 149.37 LAL -.00 LOL 16.73 VL 32.578 GAL -7.51 AZL 88.66 HCA 257.45 SMA 185.44 ECC .23296 INC 1.3376 V1 29.831
RP 216.22 LAP -1.31 LOP 274.17 VP 22.625 GAP -9.54 AZP 90.29 TAL 318.36 TAP 215.81 RCA 142.24 APO 228.64 V2 25.404
RC 285.910 GL 9.52 GP 6.48 ZAL 145.60 ZAP 59.88 ETS 183.31 ZAE 90.42 ETE 178.94 ZAC 88.85 ETC 259.39 CLP 59.66

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 20.784 VHL 4.559 DLA 15.25 RAL 168.58 RAD 6567.8 VEL 11.923 PTH 2.12 VHP 3.519 DPA 17.77 RAP 158.95 ECC 1.3420

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 17 10	2718.43	-27.77	75.89	35.97	95.76	20 2 28	2118.4	-26.69	67.40
90.00	11 21 43	4372.73	5.59	181.64	29.44	62.19	12 34 36	3772.7	1.82	174.99
100.00	20 46 49	2429.28	-29.10	54.45	35.79	97.15	21 27 19	1829.3	-27.81	45.89
100.00	12 34 45	4137.12	6.76	163.68	28.80	60.81	13 43 42	3537.1	2.82	157.11
110.00	22 13 36	2157.75	-32.59	33.19	35.15	100.95	22 49 34	1557.8	-30.73	24.46
110.00	13 24 27	3981.41	9.78	150.03	26.96	57.08	14 30 49	3381.4	5.38	143.71

DIFFERENTIAL CORRECTIONS

TDE-1.7492 TRA 5.7291 TC3-6.3671 BAU 1.7850
RDE .7454 RRA -.5266 RC3 .8533 FAU .38526
FDE-6.1916 FRA16.2595 FC-16.0476 BSP 32949
BDE 1.9014 BRA 5.7532 BC3 6.4240 FSP 8223

MID-COURSE EXECUTION ACCURACY

SGT 9707.5 SGR 1397.7 SG3 2323.6
RRT -.8620 RRF -.8834 RTF .9964
SGB 9807.6 R23 .0393 R13 -.9968
SG1 9782.3 SG2 703.0 THA 172.89

ORBIT DETERMINATION ACCURACY

ST 3142.6 SR 959.4 SS 3057.2
CRT -.8372 CRS .8922 CST -.9939
LSA 4456.6 MSA 530.4 SSA 15.0
EL1 3246.3 EL2 507.9 ALF 165.29

LAUNCH DATE OCT 10 1964 FLIGHT TIME 366.00 ARRIVAL DATE OCT 11 1965

DISTANCE 829.893

HELIOCENTRIC CONIC

RL 149.37 LAL -.00 LOL 16.73 VL 32.580 GAL -7.60 AZL 88.64 HCA 258.61 SMA 185.47 ECC .23395 INC 1.3586 V1 29.831
RP 215.88 LAP -1.33 LOP 275.33 VP 22.671 GAP -9.74 AZP 90.27 TAL 317.96 TAP 216.57 RCA 142.08 APO 228.86 V2 25.442
RC 287.127 GL 9.58 GP 6.35 ZAL 145.98 ZAP 58.45 ETS 183.46 ZAE 88.74 ETE 179.17 ZAC 88.67 ETC 259.43 CLP 58.23

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 21.173 VHL 4.601 DLA 15.15 RAL 169.00 RAD 6567.9 VEL 11.940 PTH 2.12 VHP 3.581 DPA 17.75 RAP 158.64 ECC 1.3485

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 19 49	2719.00	-27.78	75.94	36.68	95.74	20 5 8	2119.0	-26.69	67.44
90.00	11 22 23	4381.07	5.85	182.11	30.11	62.24	12 35 25	3781.1	2.09	175.45
100.00	20 49 24	2430.11	-29.11	54.52	36.51	97.12	21 29 54	1830.1	-27.82	45.95
100.00	12 35 30	4145.19	7.03	164.13	29.47	60.87	13 44 35	3545.2	3.09	157.56
110.00	22 16 1	2159.12	-32.60	33.29	35.86	100.89	22 52 0	1559.1	-30.76	24.56
110.00	13 25 23	3988.95	10.06	150.44	27.63	57.16	14 31 51	3388.9	5.66	144.11

DIFFERENTIAL CORRECTIONS

TDE-1.8301 TRA 5.9617 TC3-6.4339 BAU 1.8359
RDE .7472 RRA -.5085 RC3 .8189 FAU .37064
FDE-6.0685 FRA15.7912 FC-15.1551 BSP 33880
BDE 1.9842 BRA 5.9833 BC3 6.4858 FSP 7913

MID-COURSE EXECUTION ACCURACY

SGT 9972.0 SGR 1365.2 SG3 2230.7
RRT -.8547 RRF -.8767 RTF .9964
SGB10065.0 R23 .0401 R13 -.9968
SG110040.4 SG2 703.8 THA 173.29

ORBIT DETERMINATION ACCURACY

ST 3254.7 SR 951.2 SS 3009.4
CRT -.8358 CRS .8908 CST -.9940
LSA 4502.4 MSA 531.7 SSA 14.7
EL1 3352.8 EL2 507.0 ALF 165.95

LAUNCH DATE OCT 10 1964 FLIGHT TIME 368.00 ARRIVAL DATE OCT 13 1965

HELIOCENTRIC CONIC DISTANCE 833.966 EARTH TO MARS

RL	149.37	LAL	-.00	LOL	16.73	VL	32.582	GAL	-7.70	AZL	88.62	HCA	259.78	SMA	185.50	ECC	.23499	INC	1.3796	V1	29.831
RP	215.54	LAP	-1.36	LOP	276.50	VP	22.716	GAP	-9.94	AZP	90.24	TAL	317.54	TAP	217.31	RCA	141.91	APO	229.10	V2	25.480
RC	288.329	GL	9.63	GP	6.22	ZAL	146.38	ZAP	57.07	ETS	183.60	ZAE	87.11	ETE	179.38	ZAC	88.50	ETC	259.47	CLP	56.85

PLANETOCENTRIC CONIC

C3	21.585	VHL	4.646	DLA	15.03	RAL	169.42	RAD	6567.9	VEL	11.957	PTH	2.13	VHP	3.645	DPA	17.71	RAP	158.37	ECC	1.3552

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 22 36	2719.40	-27.78	75.96	37.40	95.72	20 7 56	2119.4	-26.70	67.46
90.00	11 23 0	4389.96	6.13	182.62	30.80	62.30	12 36 10	3790.0	2.38	175.95
100.00	20 52 6	2430.79	-29.11	54.57	37.23	97.09	21 32 37	1830.8	-27.83	46.00
100.00	12 36 11	4153.80	7.31	164.61	30.16	60.94	13 45 25	3553.8	3.38	158.03
110.00	22 18 31	2160.38	-32.62	33.39	36.59	100.83	22 54 32	1560.4	-30.78	24.65
110.00	13 26 15	3996.97	10.36	150.87	28.32	57.24	14 32 52	3397.0	5.97	144.53

DIFFERENTIAL CORRECTIONS					MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-1.9282	TRA	6.1961	TC3	-6.4865	BAU	1.8855	SGT10226.4	SGR 1333.7	SG3 2138.7	ST 3364.7	SR 943.1 SS 2960.3
RDE	.7491	RRA	-.4910	RC3	.7851	FAU	.35599	RRT -.8471	RRF -.8699	RTF .9964	CRT -.8343	CRS .8894 CST -.9940
FDE	-5.9426	FRA	15.3268	FC	-14.2780	BSP	34804	SGB10313.0	R23 .0410	R13 -.9968	LSA 4548.6	MSA 532.6 SSA 14.6
BDE	2.0686	BRA	6.2155	BC3	6.5339	FSP	7611	SG110288.9	SG2 704.4	THA 173.67	EL1 3457.5	EL2 506.0 ALF 166.55

LAUNCH DATE OCT 10 1964 FLIGHT TIME 370.00 ARRIVAL DATE OCT 15 1965

HELIOCENTRIC CONIC DISTANCE 838.039 EARTH TO MARS

RL	149.37	LAL	-.00	LOL	16.73	VL	32.584	GAL	-7.80	AZL	88.60	HCA	260.95	SMA	185.54	ECC	.23609	INC	1.4005	V1	29.831
RP	215.21	LAP	-1.38	LOP	277.67	VP	22.761	GAP	-10.13	AZP	90.22	TAL	317.10	TAP	218.05	RCA	141.74	APO	229.35	V2	25.517
RC	289.516	GL	9.68	GP	6.10	ZAL	146.79	ZAP	55.72	ETS	183.73	ZAE	85.50	ETE	179.58	ZAC	88.35	ETC	259.50	CLP	55.50

PLANETOCENTRIC CONIC

C3	22.022	VHL	4.693	DLA	14.90	RAL	169.85	RAD	6567.9	VEL	11.975	PTH	2.13	VHP	3.713	DPA	17.66	RAP	158.15	ECC	1.3624

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 25 31	2719.63	-27.78	75.98	38.15	95.71	20 10 50	2119.6	-26.70	67.48
90.00	11 23 32	4399.48	6.43	183.15	31.51	62.36	12 36 52	3799.4	2.68	176.48
100.00	20 54 54	2431.33	-29.12	54.60	37.98	97.07	21 35 26	1831.3	-27.83	46.04
100.00	12 36 50	4162.93	7.62	165.12	30.87	61.01	13 46 13	3562.9	3.69	158.53
110.00	22 21 8	2161.55	-32.64	33.47	37.34	100.78	22 57 9	1561.5	-30.80	24.73
110.00	13 27 6	4005.48	10.67	151.33	29.02	57.33	14 33 51	3405.5	6.29	144.98

DIFFERENTIAL CORRECTIONS					MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-2.0201	TRA	6.4324	TC3	-6.5264	BAU	1.9341	SGT10471.3	SGR 1303.5	SG3 2048.2	ST 3472.9	SR 935.1 SS 2910.8
RDE	.7514	RRA	-.4741	RC3	.7524	FAU	.34148	RRT -.8393	RRF -.8629	RTF .9964	CRT -.8329	CRS .8882 CST -.9940
FDE	-5.8169	FRA	14.8665	FC	-13.4245	BSP	35687	SGB10552.1	R23 .0419	R13 -.9967	LSA 4596.0	MSA 533.3 SSA 14.4
BDE	2.1553	BRA	6.4498	BC3	6.5696	FSP	7310	SG110528.5	SG2 704.8	THA 174.01	EL1 3561.0	EL2 504.7 ALF 167.10

LAUNCH DATE OCT 10 1964 FLIGHT TIME 372.00 ARRIVAL DATE OCT 17 1965

HELIOCENTRIC CONIC DISTANCE 842.114 EARTH TO MARS

RL	149.37	LAL	-.00	LOL	16.73	VL	32.587	GAL	-7.91	AZL	88.58	HCA	262.12	SMA	185.58	ECC	.23724	INC	1.4213	V1	29.831
RP	214.88	LAP	-1.41	LOP	278.84	VP	22.806	GAP	-10.33	AZP	90.19	TAL	316.66	TAP	218.77	RCA	141.56	APO	229.61	V2	25.554
RC	290.691	GL	9.72	GP	5.97	ZAL	147.20	ZAP	54.42	ETS	183.85	ZAE	83.94	ETE	179.77	ZAC	88.20	ETC	259.52	CLP	54.19

PLANETOCENTRIC CONIC

C3	22.484	VHL	4.742	DLA	14.76	RAL	170.29	RAD	6567.9	VEL	11.994	PTH	2.14	VHP	3.783	DPA	17.60	RAP	157.97	ECC	1.3700

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 28 32	2719.71	-27.78	75.99	38.91	95.71	20 13 51	2119.7	-26.70	67.49
90.00	11 24 2	4409.38	6.74	183.71	32.24	62.43	12 37 31	3809.4	3.00	177.03
100.00	20 57 49	2431.74	-29.12	54.63	38.74	97.06	21 38 21	1831.7	-27.84	46.07
100.00	12 37 25	4172.58	7.93	165.66	31.60	61.09	13 46 58	3572.6	4.02	159.06
110.00	22 23 50	2162.63	-32.65	33.55	38.10	100.74	22 59 53	1562.6	-30.82	24.81
110.00	13 27 54	4014.46	11.00	151.82	29.75	57.43	14 34 48	3414.5	6.63	145.45

DIFFERENTIAL CORRECTIONS					MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-2.1130	TRA	6.6710	TC3	-6.5536	BAU	1.9818	SGT10706.7	SGR 1274.4	SG3 1959.3	ST 3578.8	SR 927.1 SS 2860.0
RDE	.7538	RRA	-.4579	RC3	.7207	FAU	.32716	RRT -.8313	RRF -.8557	RTF .9963	CRT -.8315	CRS .8870 CST -.9940
FDE	-5.6891	FRA	14.4113	FC	-12.5974	BSP	36568	SGB10782.2	R23 .0429	R13 -.9966	LSA 4643.5	MSA 533.7 SSA 14.2
BDE	2.2435	BRA	6.6867	BC3	6.5931	FSP	7019	SG110759.2	SG2 704.9	THA 174.32	EL1 3662.5	EL2 503.3 ALF 167.61

LAUNCH DATE OCT 10 1964 FLIGHT TIME 374.00 ARRIVAL DATE OCT 19 1965

HELIOCENTRIC CONIC DISTANCE 846.189 EARTH TO MARS

RL	149.37	LAL	-.00	LOL	16.73	VL	32.589	GAL	-8.02	AZL	88.56	HCA	263.29	SMA	185.63	ECC	.23846	INC	1.4421	V1	29.831
RP	214.56	LAP	-1.43	LOP	280.02	VP	22.850	GAP	-10.53	AZP	90.17	TAL	316.19	TAP	219.48	RCA	141.36	APO	229.89	V2	25.590
RC	291.851	GL	9.76	GP	5.85	ZAL	147.63	ZAP	53.15	ETS	183.96	ZAE	82.41	ETE	179.95	ZAC	88.07	ETC	259.53	CLP	52.92

PLANETOCENTRIC CONIC

C3	22.972	VHL	4.793	DLA	14.61	RAL	170.74	RAD	6567.9	VEL	12.015	PTH	2.14	VHP	3.855	DPA	17.52	RAP	157.84	ECC	1.3781

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 31 39	2719.66	-27.78	75.98	39.69	95.71	20 16 59	2119.7	-26.70	67.48
90.00	11 24 27	4419.89	7.08	184.31	32.99	62.51	12 38 7	3819.9	3.34	177.62
100.00	21 0 51	2432.03	-29.13	54.66	39.52	97.05	21 41 23	1832.0	-27.84	46.09
100.00	12 37 57	4182.75	8.27	166.23	32.34	61.17	13 47 40	3582.7	4.36	159.63
110.00	22 26 38	2163.63	-32.66	33.63	38.88	100.70	23 2 41	1563.6	-30.84	24.88
110.00	13 28 40	4023.92	11.35	152.33	30.49	57.54	14 35 44	3423.9	6.98	145.96

DIFFERENTIAL CORRECTIONS					MID-COURSE EXECUTION ACCURACY				ORBIT DETERMINATION ACCURACY			
TDE	-2.2085	TRA	6.9127	TC3	-6.5697	BAU	2.0288	SGT10934.2	SGR 1246.8	SG3 1872.5	ST 3683.6	SR 919.4 SS 2809.1
RDE	.7566	RRA	-.4425	RC3	.6902	FAU	.31308	RRT -.8232	RRF -.8484	RTF .9963	CRT -.8302	CRS .8860 CST -.9940
FDE	-5.5626	FRA	13.9634	FC	-11.7989	BSP	37427	SGB11005.1	R23 .0438	R13 -.9966	LSA 4692.6	MSA 533.7 SSA 14.1
BDE	2.3345	BRA	6.9269	BC3	6.6058	FSP	6732	SG110982.5	SG2 704.8	THA 174.62	EL1 3763.4	EL2 501.7 ALF 168.08

LAUNCH DATE OCT 10 1964 FLIGHT TIME 376.00 ARRIVAL DATE OCT 21 1965

HELIOCENTRIC CONIC DISTANCE 850.264 EARTH TO MARS

RL 149.37 LAL -.00 LOL 16.73 VL 32.592 GAL -8.13 AZL 88.54 HCA 264.47 SMA 185.67 ECC .23974 INC 1.4628 V1 29.831
RP 214.24 LAP -1.46 LOP 281.20 VP 22.894 GAP -10.72 AZP 90.14 TAL 315.71 TAP 220.18 RCA 141.16 APO 230.19 V2 25.626
RC 292.998 GL 9.79 GP 5.73 ZAL 148.07 ZAP 51.92 ETS 184.07 ZAE 80.92 ETE 180.12 ZAC 87.95 ETC 259.54 CLP 51.70

PLANETOCENTRIC CONIC

C3 23.489 VHL 4.847 DLA 14.45 RAL 171.19 RAD 6568.0 VEL 12.036 PTH 2.15 VHP 3.931 DPA 17.43 RAP 157.74 ECC 1.3866

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 34 54	2719.47	-27.78	75.97	40.49	95.72	20 20 13	2119.5	-26.70	67.47
90.00	11 24 50	4430.93	7.42	184.93	33.75	62.59	12 38 41	3830.9	3.69	178.24
100.00	21 3 58	2432.21	-29.13	54.67	40.32	97.04	21 44 30	1832.2	-27.85	46.10
100.00	12 38 26	4193.42	8.62	166.83	33.11	61.27	13 48 20	3593.4	4.72	160.21
110.00	22 29 31	2164.56	-32.67	33.70	39.68	100.66	23 5 35	1564.6	-30.86	24.95
110.00	13 29 23	4033.84	11.71	152.87	31.26	57.65	14 36 37	3433.8	7.36	146.48

DIFFERENTIAL CORRECTIONS
TDE-2.3056 TRA 7.1569 TC3-6.5745 BAU 2.0750
RDE .7596 RRA -.4277 RC3 .6608 FAU -.29924
FDE-5.4362 FRA13.5213 FC-11.0290 BSP 38246
BDE 2.4275 BRA 7.1697 BC3 6.6076 FSP 6451

MID-COURSE EXECUTION ACCURACY
SGT11152.6 SGR 1220.4 SG3 1787.6
RRT -.8149 RRF -.8411 RTF .9962
SGB11219.2 R23 .0449 R13 -.9965
SG111197.1 SG2 704.4 THA 174.88

ORBIT DETERMINATION ACCURACY
ST 3786.4 SR 911.8 SS 2757.5
CRT -.8290 CRS .8852 CST -.9940
LSA 4742.0 MSA 533.5 SSA 14.0
EL1 3862.4 EL2 499.9 ALF 168.52

LAUNCH DATE OCT 10 1964 FLIGHT TIME 378.00 ARRIVAL DATE OCT 23 1965

HELIOCENTRIC CONIC DISTANCE 854.338 EARTH TO MARS

RL 149.37 LAL -.00 LOL 16.73 VL 32.595 GAL -8.25 AZL 88.52 HCA 265.66 SMA 185.72 ECC .24109 INC 1.4835 V1 29.831
RP 213.93 LAP -1.48 LOP 282.38 VP 22.938 GAP -10.92 AZP 90.11 TAL 315.22 TAP 220.87 RCA 140.95 APO 230.50 V2 25.662
RC 294.131 GL 9.81 GP 5.62 ZAL 148.52 ZAP 50.73 ETS 184.18 ZAE 79.47 ETE 180.28 ZAC 87.83 ETC 259.54 CLP 50.50

PLANETOCENTRIC CONIC

C3 24.036 VHL 4.903 DLA 14.28 RAL 171.65 RAD 6568.0 VEL 12.059 PTH 2.16 VHP 4.009 DPA 17.33 RAP 157.69 ECC 1.3956

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 38 14	2719.17	-27.78	75.95	41.30	95.73	20 23 33	2119.2	-26.69	67.45
90.00	11 25 9	4442.49	7.78	185.59	34.54	62.69	12 39 11	3842.5	4.06	178.89
100.00	21 7 11	2432.30	-29.13	54.68	41.13	97.04	21 47 44	1832.3	-27.85	46.11
100.00	12 38 53	4204.60	8.98	167.46	33.90	61.37	13 48 57	3604.6	5.09	160.83
110.00	22 32 29	2165.43	-32.68	33.77	40.49	100.62	23 8 34	1565.4	-30.88	25.01
110.00	13 30 5	4044.22	12.09	153.44	32.04	57.78	14 37 29	3444.2	7.75	147.03

DIFFERENTIAL CORRECTIONS
TDE-2.4052 TRA 7.4050 TC3-6.5686 BAU 2.1205
RDE .7630 RRA -.4138 RC3 .6326 FAU .28572
FDE-5.3101 FRA13.0875 FC-10.2912 BSP 39052
BDE 2.5233 BRA 7.4165 BC3 6.5990 FSP 6177

MID-COURSE EXECUTION ACCURACY
SGT11363.5 SGR 1195.3 SG3 1705.0
RRT -.8067 RRF -.8338 RTF .9961
SGB11426.2 R23 .0459 R13 -.9964
SG111404.5 SG2 703.8 THA 175.13

ORBIT DETERMINATION ACCURACY
ST 3887.8 SR 904.3 SS 2705.5
CRT -.8279 CRS .8844 CST -.9939
LSA 4792.5 MSA 532.9 SSA 13.9
EL1 3960.5 EL2 497.8 ALF 168.92

LAUNCH DATE OCT 10 1964 FLIGHT TIME 380.00 ARRIVAL DATE OCT 25 1965

HELIOCENTRIC CONIC DISTANCE 858.411 EARTH TO MARS

RL 149.37 LAL -.00 LOL 16.73 VL 32.598 GAL -8.38 AZL 88.50 HCA 266.84 SMA 185.77 ECC .24250 INC 1.5043 V1 29.831
RP 213.62 LAP -1.50 LOP 283.57 VP 22.982 GAP -11.12 AZP 90.08 TAL 314.70 TAP 221.55 RCA 140.72 APO 230.82 V2 25.697
RC 295.251 GL 9.83 GP 5.51 ZAL 148.98 ZAP 49.58 ETS 184.27 ZAE 78.04 ETE 180.44 ZAC 87.73 ETC 259.54 CLP 49.35

PLANETOCENTRIC CONIC

C3 24.614 VHL 4.961 DLA 14.41 RAL 172.11 RAD 6568.0 VEL 12.083 PTH 2.16 VHP 4.089 DPA 17.21 RAP 157.67 ECC 1.4051

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 41 41	2718.77	-27.78	75.92	42.14	95.74	20 26 59	2118.8	-26.69	67.42
90.00	11 25 25	4454.55	8.16	186.28	35.34	62.79	12 39 40	3854.6	4.45	179.56
100.00	21 10 30	2432.29	-29.13	54.67	41.96	97.04	21 51 3	1832.3	-27.85	46.11
100.00	12 39 17	4216.26	9.36	168.12	34.70	61.48	13 49 33	3616.3	5.48	161.48
110.00	22 35 32	2166.26	-32.69	33.83	41.32	100.58	23 11 38	1566.3	-30.89	25.07
110.00	13 30 44	4055.06	12.48	154.03	32.85	57.92	14 38 20	3455.1	8.15	147.61

DIFFERENTIAL CORRECTIONS
TDE-2.5069 TRA 7.6562 TC3-6.5524 BAU 2.1653
RDE .7667 RRA -.4006 RC3 .6055 FAU .27251
FDE-5.1855 FRA12.6600 FC3-9.5850 BSP 39829
BDE 2.6215 BRA 7.6667 BC3 6.5803 FSP 5908

MID-COURSE EXECUTION ACCURACY
SGT11565.8 SGR 1171.5 SG3 1624.6
RRT -.7984 RRF -.8265 RTF .9960
SGB11625.0 R23 .0471 R13 -.9962
SG111603.7 SG2 703.0 THA 175.36

ORBIT DETERMINATION ACCURACY
ST 3987.5 SR 897.1 SS 2653.1
CRT -.8270 CRS .8839 CST -.9939
LSA 4843.7 MSA 532.1 SSA 13.8
EL1 4057.0 EL2 495.7 ALF 169.30

LAUNCH DATE OCT 10 1964 FLIGHT TIME 382.00 ARRIVAL DATE OCT 27 1965

HELIOCENTRIC CONIC DISTANCE 862.483 EARTH TO MARS

RL 149.37 LAL -.00 LOL 16.73 VL 32.601 GAL -8.51 AZL 88.47 HCA 268.03 SMA 185.83 ECC .24398 INC 1.5250 V1 29.831
RP 213.31 LAP -1.52 LOP 284.76 VP 23.025 GAP -11.31 AZP 90.05 TAL 314.18 TAP 222.21 RCA 140.49 APO 231.16 V2 25.731
RC 296.356 GL 9.84 GP 5.40 ZAL 149.45 ZAP 48.46 ETS 184.36 ZAE 76.66 ETE 180.58 ZAC 87.63 ETC 259.52 CLP 48.23

PLANETOCENTRIC CONIC

C3 25.225 VHL 5.022 DLA 13.92 RAL 172.59 RAD 6568.0 VEL 12.108 PTH 2.17 VHP 4.172 DPA 17.09 RAP 157.70 ECC 1.4151

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 45 13	2718.27	-27.77	75.88	42.99	95.76	20 30 31	2118.3	-26.68	67.39
90.00	11 25 38	4467.12	8.55	187.00	36.17	62.90	12 40 6	3867.1	4.85	180.27
100.00	21 13 55	2432.21	-29.13	54.67	42.81	97.04	21 54 27	1832.2	-27.85	46.10
100.00	12 39 37	4228.41	9.76	168.80	35.53	61.60	13 50 6	3628.4	5.89	162.15
110.00	22 38 40	2167.04	-32.70	33.89	42.17	100.55	23 14 47	1567.0	-30.90	25.13
110.00	13 31 22	4066.35	12.89	154.65	33.67	58.06	14 39 8	3466.4	8.57	148.21

DIFFERENTIAL CORRECTIONS
TDE-2.6104 TRA 7.9123 TC3-6.5257 BAU 2.2093
RDE .7706 RRA -.3882 RC3 .5795 FAU .25957
FDE-5.0600 FRA12.2419 FC3-8.9086 BSP 40604
BDE 2.7218 BRA 7.9219 BC3 6.5514 FSP 5649

MID-COURSE EXECUTION ACCURACY
SGT11760.8 SGR 1148.8 SG3 1546.6
RRT -.7902 RRF -.8193 RTF .9959
SGB11816.7 R23 .0482 R13 -.9961
SG111795.9 SG2 702.0 THA 175.57

ORBIT DETERMINATION ACCURACY
ST 4085.3 SR 889.9 SS 2599.9
CRT -.8261 CRS .8834 CST -.9938
LSA 4894.8 MSA 531.0 SSA 13.7
EL1 4151.9 EL2 493.4 ALF 169.65

LAUNCH DATE OCT 10 1964 FLIGHT TIME 384.00 ARRIVAL DATE OCT 29 1965

HELIOCENTRIC CONIC DISTANCE 866.552 EARTH TO MARS

RL 149.37 LAL -.00 LOL 16.73 VL 32.604 GAL -8.64 AZL 88.45 HCA 269.22 SMA 185.88 ECC .24553 INC 1.5457 V1 29.831
RP 213.01 LAP -1.55 LOP 285.95 VP 23.067 GAP -11.51 AZP 90.02 TAL 313.63 TAP 222.86 RCA 140.24 APO 231.52 V2 25.765
RC 297.448 GL 9.84 GP 5.29 ZAL 149.93 ZAP 47.37 ETS 184.45 ZAE 75.30 ETE 180.72 ZAC 87.55 ETC 259.51 CLP 47.15

PLANETOCENTRIC CONIC

C3 25.871 VHL 5.086 DLA 13.72 RAL 173.06 RAD 6568.0 VEL 12.135 PTH 2.17 VHP 4.258 DPA 16.95 RAP 157.76 ECC 1.4258

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 48 51	2717.70	-27.77	75.84	43.85	95.78	20 34 8	2117.7	-26.68	67.34
90.00	11 25 49	4480.18	8.95	187.74	37.01	63.02	12 40 29	3880.2	5.27	181.00
100.00	21 17 25	2432.07	-29.13	54.66	43.68	97.04	21 57 57	1832.1	-27.84	46.09
100.00	12 39 56	4241.04	10.16	169.52	36.37	61.74	13 50 37	3641.0	6.31	162.85
110.00	22 41 53	2167.79	-32.71	33.94	43.03	100.52	23 18 0	1567.8	-30.92	25.18
110.00	13 31 58	4078.09	13.31	155.30	34.52	58.22	14 39 56	3478.1	9.01	148.84

DIFFERENTIAL CORRECTIONS
TDE-2.7180 TRA 8.1708 TC3-6.4920 BAU 2.2536
RDE .7751 RRA -.3765 RC3 .5548 FAU .24711
FDE-4.9392 FRA11.8284 FC3-8.2692 BSP 41318
BDE 2.8264 BRA 8.1794 BC3 6.5156 FSP 5392

MID-COURSE EXECUTION ACCURACY
SGT11948.0 SGR 1127.6 SG3 1470.9
RRT -.7821 RRF -.8123 RTF .9957
SGB12001.1 R23 .0495 R13 -.9959
SG111980.6 SG2 700.7 THA 175.76

ORBIT DETERMINATION ACCURACY
ST 4182.4 SR 883.0 SS 2547.3
CRT -.8255 CRS .8833 CST -.9937
LSA 4947.8 MSA 529.7 SSA 13.6
EL1 4246.4 EL2 490.8 ALF 169.98

LAUNCH DATE OCT 10 1964 FLIGHT TIME 386.00 ARRIVAL DATE OCT 31 1965

HELIOCENTRIC CONIC DISTANCE 870.619 EARTH TO MARS

RL 149.37 LAL -.00 LOL 16.73 VL 32.608 GAL -8.78 AZL 88.43 HCA 270.42 SMA 185.94 ECC .24715 INC 1.5665 V1 29.831
RP 212.72 LAP -1.57 LOP 287.15 VP 23.109 GAP -11.71 AZP 89.99 TAL 313.07 TAP 223.49 RCA 139.98 APO 231.89 V2 25.798
RC 298.526 GL 9.84 GP 5.19 ZAL 150.42 ZAP 46.32 ETS 184.53 ZAE 73.98 ETE 180.85 ZAC 87.47 ETC 259.48 CLP 46.10

PLANETOCENTRIC CONIC

C3 26.554 VHL 5.153 DLA 13.52 RAL 173.54 RAD 6568.1 VEL 12.163 PTH 2.18 VHP 4.346 DPA 16.80 RAP 157.86 ECC 1.4370

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 52 34	2717.06	-27.76	75.79	44.74	95.80	20 37 51	2117.1	-26.67	67.30
90.00	11 25 57	4493.73	9.37	188.52	37.88	63.16	12 40 50	3893.7	5.70	181.77
100.00	21 21 0	2431.87	-29.12	54.64	44.56	97.05	22 1 32	1831.9	-27.84	46.08
100.00	12 40 12	4254.19	10.59	170.26	37.24	61.88	13 51 6	3654.2	6.74	163.58
110.00	22 45 10	2168.52	-32.72	34.00	43.91	100.49	23 21 18	1568.5	-30.93	25.24
110.00	13 32 31	4090.27	13.74	155.98	35.38	58.39	14 40 42	3490.3	9.46	149.49

DIFFERENTIAL CORRECTIONS
TDE-2.8281 TRA 8.4345 TC3-6.4494 BAU 2.2973
RDE .7798 RRA -.3656 RC3 .5312 FAU .23496
FDE-4.8180 FRA11.4242 FC3-7.6603 BSP 42028
BDE 2.9337 BRA 8.4424 BC3 6.4712 FSP 5143

MID-COURSE EXECUTION ACCURACY
SGT12128.5 SGR 1107.4 SG3 1397.7
RRT -.7742 RRF -.8054 RTF .9955
SGB12179.0 R23 .0508 R13 -.9958
SG112158.9 SG2 699.2 THA 175.94

ORBIT DETERMINATION ACCURACY
ST 4278.0 SR 876.3 SS 2494.0
CRT -.8251 CRS .8832 CST -.9937
LSA 5001.0 MSA 527.9 SSA 13.5
EL1 4339.4 EL2 488.1 ALF 170.28

LAUNCH DATE OCT 10 1964 FLIGHT TIME 388.00 ARRIVAL DATE NOV 2 1965

HELIOCENTRIC CONIC DISTANCE 874.681 EARTH TO MARS

RL 149.37 LAL -.00 LOL 16.73 VL 32.611 GAL -8.93 AZL 88.41 HCA 271.62 SMA 186.00 ECC .24886 INC 1.5874 V1 29.831
RP 212.43 LAP -1.59 LOP 288.35 VP 23.151 GAP -11.91 AZP 89.96 TAL 312.50 TAP 224.12 RCA 139.71 APO 232.28 V2 25.831
RC 299.592 GL 9.84 GP 5.09 ZAL 150.91 ZAP 45.30 ETS 184.60 ZAE 72.68 ETE 180.97 ZAC 87.41 ETC 259.45 CLP 45.08

PLANETOCENTRIC CONIC

C3 27.276 VHL 5.223 DLA 13.31 RAL 174.03 RAD 6568.1 VEL 12.192 PTH 2.19 VHP 4.437 DPA 16.64 RAP 158.00 ECC 1.4489

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 56 22	2716.37	-27.76	75.74	45.64	95.83	20 41 39	2116.4	-26.66	67.25
90.00	11 26 2	4507.75	9.80	189.32	38.77	63.30	12 41 9	3907.7	6.14	182.56
100.00	21 24 39	2431.63	-29.12	54.63	45.46	97.06	22 5 11	1831.6	-27.84	46.06
100.00	12 40 26	4267.71	11.02	171.04	38.13	62.04	13 51 33	3667.7	7.19	164.34
110.00	22 48 31	2169.23	-32.73	34.05	44.81	100.45	23 24 40	1569.2	-30.94	25.29
110.00	13 33 3	4102.88	14.19	156.68	36.27	58.57	14 41 26	3502.9	9.93	150.17

DIFFERENTIAL CORRECTIONS
TDE-2.9411 TRA 8.7029 TC3-6.3989 BAU 2.3407
RDE .7850 RRA -.3555 RC3 .5087 FAU .22319
FDE-4.6982 FRA11.0274 FC3-7.0842 BSP 42712
BDE 3.0440 BRA 8.7102 BC3 6.4190 FSP 4902

MID-COURSE EXECUTION ACCURACY
SGT12302.0 SGR 1088.4 SG3 1326.9
RRT -.7664 RRF -.7988 RTF .9953
SGB12350.1 R23 .0522 R13 -.9956
SG112330.4 SG2 697.5 THA 176.11

ORBIT DETERMINATION ACCURACY
ST 4372.0 SR 869.7 SS 2440.4
CRT -.8247 CRS .8834 CST -.9936
LSA 5054.6 MSA 526.1 SSA 13.5
EL1 4431.1 EL2 485.3 ALF 170.57

LAUNCH DATE OCT 10 1964 FLIGHT TIME 390.00 ARRIVAL DATE NOV 4 1965

HELIOCENTRIC CONIC DISTANCE 878.740 EARTH TO MARS

RL 149.37 LAL -.00 LOL 16.73 VL 32.615 GAL -9.08 AZL 88.39 HCA 272.82 SMA 186.06 ECC .25064 INC 1.6083 V1 29.831
RP 212.15 LAP -1.61 LOP 289.55 VP 23.192 GAP -12.11 AZP 89.92 TAL 311.90 TAP 224.72 RCA 139.43 APO 232.69 V2 25.863
RC 300.645 GL 9.83 GP 5.00 ZAL 151.42 ZAP 44.32 ETS 184.67 ZAE 71.42 ETE 181.09 ZAC 87.35 ETC 259.41 CLP 44.09

PLANETOCENTRIC CONIC

C3 28.039 VHL 5.295 DLA 13.08 RAL 174.52 RAD 6568.1 VEL 12.223 PTH 2.20 VHP 4.531 DPA 16.47 RAP 158.17 ECC 1.4614

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 0 15	2715.63	-27.75	75.69	46.55	95.86	20 45 31	2115.6	-26.65	67.20
90.00	11 26 4	4522.23	10.24	190.16	39.67	63.46	12 41 27	3922.2	6.60	183.38
100.00	21 28 24	2431.36	-29.12	54.61	46.38	97.07	22 8 55	1831.4	-27.84	46.04
100.00	12 40 37	4281.73	11.47	171.84	39.03	62.20	13 51 59	3681.7	7.66	165.12
110.00	22 51 57	2169.94	-32.74	34.11	45.73	100.42	23 28 7	1569.9	-30.96	25.34
110.00	13 33 33	4115.92	14.65	157.41	37.18	58.77	14 42 9	3515.9	10.41	150.88

DIFFERENTIAL CORRECTIONS
TDE-3.0577 TRA 8.9767 TC3-6.3412 BAU 2.3841
RDE .7905 RRA -.3462 RC3 .4873 FAU .21178
FDE-4.5799 FRA10.6382 FC3-6.5390 BSP 43374
BDE 3.1583 BRA 8.9833 BC3 6.3599 FSP 4667

MID-COURSE EXECUTION ACCURACY
SGT12469.4 SGR 1070.4 SG3 1258.5
RRT -.7590 RRF -.7925 RTF .9951
SGB12515.2 R23 .0536 R13 -.9953
SG112495.9 SG2 695.5 THA 176.26

ORBIT DETERMINATION ACCURACY
ST 4465.1 SR 863.2 SS 2386.5
CRT -.8246 CRS .8837 CST -.9934
LSA 5109.1 MSA 523.9 SSA 13.4
EL1 4522.1 EL2 482.2 ALF 170.84

LAUNCH DATE OCT 10 1964 FLIGHT TIME 392.00 ARRIVAL DATE NOV 6 1965

HELIOCENTRIC CONIC DISTANCE 882.793 EARTH TO MARS

RL 149.37 LAL -.00 LOL 16.73 VL 32.619 GAL -9.24 AZL 88.37 HCA 274.03 SMA 186.12 ECC .25250 INC 1.6293 V1 29.831
RP 211.87 LAP -1.63 LOP 290.76 VP 23.232 GAP -12.31 AZP 89.89 TAL 311.29 TAP 225.32 RCA 139.13 APO 233.12 V2 25.895
RC 301.687 GL 9.81 GP 4.90 ZAL 151.93 ZAP 43.36 ETS 184.74 ZAE 70.19 ETE 181.20 ZAC 87.30 ETC 259.37 CLP 43.14

PLANETOCENTRIC CONIC

C3 28.846 VHL 5.371 DLA 12.85 RAL 175.02 RAD 6568.2 VEL 12.256 PTH 2.21 VHP 4.627 DPA 16.29 RAP 158.37 ECC 1.4747

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 4 13	2714.85	-27.75	75.64	47.49	95.88	20 49 28	2114.9	-26.64	67.14
90.00	11 26 5	4537.18	10.70	191.02	40.60	63.62	12 41 42	3937.2	7.07	184.22
100.00	21 32 13	2431.07	-29.12	54.59	47.31	97.08	22 12 44	1831.1	-27.83	46.02
100.00	12 40 46	4296.20	11.92	172.67	39.96	62.38	13 52 22	3696.2	8.13	165.93
110.00	22 55 26	2170.65	-32.75	34.16	46.66	100.39	23 31 37	1570.6	-30.97	25.39
110.00	13 34 2	4129.38	15.13	158.16	38.11	58.98	14 42 51	3529.4	10.91	151.60

DIFFERENTIAL CORRECTIONS
TDE-3.1779 TRA 9.2555 TC3-6.2781 BAU 2.4278
RDE .7964 RRA -.3377 RC3 .4670 FAU .20080
FDE-4.4636 FRA10.2562 FC3-6.0265 BSP 43990
BDE 3.2761 BRA 9.2617 BC3 6.2954 FSP 4436

MID-COURSE EXECUTION ACCURACY
SGT12630.8 SGR 1053.6 SG3 1192.6
RRT -.7518 RRF -.7866 RTF .9949
SGB12674.7 R23 .0551 R13 -.9951
SG112655.7 SG2 693.3 THA 176.40

ORBIT DETERMINATION ACCURACY
ST 4556.8 SR 857.0 SS 2332.6
CRT -.8246 CRS .8843 CST -.9933
LSA 5164.1 MSA 521.5 SSA 13.3
EL1 4611.9 EL2 479.0 ALF 171.09

LAUNCH DATE OCT 10 1964 FLIGHT TIME 394.00 ARRIVAL DATE NOV 8 1965

HELIOCENTRIC CONIC DISTANCE 886.841 EARTH TO MARS

RL 149.37 LAL -.00 LOL 16.73 VL 32.622 GAL -9.40 AZL 88.35 HCA 275.24 SMA 186.19 ECC .25444 INC 1.6505 V1 29.831
RP 211.60 LAP -1.64 LOP 291.97 VP 23.272 GAP -12.52 AZP 89.85 TAL 310.66 TAP 225.90 RCA 138.81 APO 233.56 V2 25.926
RC 302.717 GL 9.79 GP 4.81 ZAL 152.45 ZAP 42.43 ETS 184.81 ZAE 68.98 ETE 181.31 ZAC 87.26 ETC 259.32 CLP 42.21

PLANETOCENTRIC CONIC

C3 29.700 VHL 5.450 DLA 12.62 RAL 175.52 RAD 6568.2 VEL 12.291 PTH 2.21 VHP 4.726 DPA 16.10 RAP 158.61 ECC 1.4888

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 8 15	2714.06	-27.74	75.58	48.44	95.91	20 53 29	2114.1	-26.63	67.09
90.00	11 26 3	4552.58	11.16	191.92	41.55	63.81	12 41 55	3952.6	7.55	185.10
100.00	21 36 6	2430.76	-29.11	54.56	48.26	97.09	22 16 36	1830.8	-27.83	46.00
100.00	12 40 53	4311.11	12.39	173.53	40.91	62.58	13 52 45	3711.1	8.62	166.77
110.00	22 59 0	2171.37	-32.76	34.21	47.61	100.36	23 35 11	1571.4	-30.98	25.44
110.00	13 34 29	4143.26	15.61	158.95	39.06	59.20	14 43 32	3543.3	11.41	152.36

DIFFERENTIAL CORRECTIONS
TDE-3.3021 TRA 9.5403 TC3-6.2086 BAU 2.4716
RDE .8028 RRA -.3300 RC3 .4476 FAU .19018
FDE-4.3488 FRA 9.8812 FC3-5.5437 BSP 44592
BDE 3.3983 BRA 9.5460 BC3 6.2247 FSP 4213

MID-COURSE EXECUTION ACCURACY
SGT12786.3 SGR 1037.7 SG3 1129.0
RRT -.7451 RRF -.7811 RTF .9946
SGB12828.3 R23 .0568 R13 -.9948
SG112809.7 SG2 690.9 THA 176.53

ORBIT DETERMINATION ACCURACY
ST 4647.8 SR 850.9 SS 2278.5
CRT -.8249 CRS .8851 CST -.9932
LSA 5219.9 MSA 518.8 SSA 13.2
EL1 4701.0 EL2 475.6 ALF 171.32

LAUNCH DATE OCT 10 1964 FLIGHT TIME 396.00 ARRIVAL DATE NOV 10 1965

HELIOCENTRIC CONIC DISTANCE 890.881 EARTH TO MARS

RL 149.37 LAL -.00 LOL 16.73 VL 32.626 GAL -9.57 AZL 88.33 HCA 276.45 SMA 186.25 ECC .25648 INC 1.6718 V1 29.831
RP 211.33 LAP -1.66 LOP 293.18 VP 23.311 GAP -12.73 AZP 89.81 TAL 310.02 TAP 226.47 RCA 138.48 APO 234.02 V2 25.956
RC 303.736 GL 9.77 GP 4.72 ZAL 152.98 ZAP 41.53 ETS 184.87 ZAE 67.81 ETE 181.41 ZAC 87.23 ETC 259.27 CLP 41.31

PLANETOCENTRIC CONIC

C3 30.603 VHL 5.532 DLA 12.37 RAL 176.03 RAD 6568.2 VEL 12.328 PTH 2.22 VHP 4.828 DPA 15.89 RAP 158.88 ECC 1.5037

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 12 22	2713.25	-27.74	75.52	49.41	95.94	20 57 35	2113.3	-26.62	67.03
90.00	11 25 59	4568.41	11.64	192.84	42.52	64.00	12 42 7	3968.4	8.05	186.00
100.00	21 40 3	2430.45	-29.11	54.54	49.23	97.11	22 20 33	1830.5	-27.82	45.97
100.00	12 40 59	4326.44	12.87	174.41	41.89	62.79	13 53 5	3726.4	9.12	167.63
110.00	23 2 37	2172.11	-32.77	34.27	48.57	100.33	23 38 49	1572.1	-31.00	25.50
110.00	13 34 54	4157.55	16.11	159.76	40.04	59.44	14 44 12	3557.6	11.93	153.14

DIFFERENTIAL CORRECTIONS
TDE-3.4299 TRA 9.8313 TC3-6.1329 BAU 2.5153
RDE .8096 RRA -.3231 RC3 .4292 FAU .17990
FDE-4.2346 FRA 9.5133 FC3-5.0890 BSP 45153
BDE 3.5241 BRA 9.8366 BC3 6.1479 FSP 3996

MID-COURSE EXECUTION ACCURACY
SGT12935.7 SGR 1022.7 SG3 1067.6
RRT -.7387 RRF -.7760 RTF .9943
SGB12976.0 R23 .0585 R13 -.9945
SG112957.8 SG2 688.2 THA 176.65

ORBIT DETERMINATION ACCURACY
ST 4737.2 SR 844.9 SS 2223.9
CRT -.8252 CRS .8860 CST -.9930
LSA 5275.8 MSA 516.0 SSA 13.2
EL1 4788.7 EL2 472.0 ALF 171.54

LAUNCH DATE OCT 10 1964 FLIGHT TIME 398.00 ARRIVAL DATE NOV 12 1965

HELIOCENTRIC CONIC DISTANCE 894.914 EARTH TO MARS

RL 149.37 LAL -.00 LOL 16.73 VL 32.630 GAL -9.75 AZL 88.31 HCA 277.67 SMA 186.32 ECC .25861 INC 1.6932 V1 29.831
RP 211.08 LAP -1.68 LOP 294.39 VP 23.350 GAP -12.94 AZP 89.77 TAL 309.35 TAP 227.02 RCA 138.14 APO 234.51 V2 25.986
RC 304.746 GL 9.74 GP 4.64 ZAL 153.51 ZAP 40.66 ETS 184.92 ZAE 66.66 ETE 181.51 ZAC 87.21 ETC 259.22 CLP 40.44

PLANETOCENTRIC CONIC

C3 31.559 VHL 5.618 DLA 12.12 RAL 176.54 RAD 6568.3 VEL 12.367 PTH 2.23 VHP 4.933 DPA 15.68 RAP 159.18 ECC 1.5194

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 16 32	2712.44	-27.73	75.46	50.39	95.97	21 1 45	2112.4	-26.62	66.97
90.00	11 25 53	4584.68	12.12	193.79	43.51	64.21	12 42 17	3984.7	8.55	186.92
100.00	21 44 4	2430.15	-29.11	54.52	50.21	97.12	22 24 34	1830.1	-27.82	45.95
100.00	12 41 2	4342.21	13.36	175.33	42.88	63.01	13 53 24	3742.2	9.64	168.52
110.00	23 6 17	2172.87	-32.78	34.33	49.56	100.30	23 42 30	1572.9	-31.01	25.55
110.00	13 35 18	4172.24	16.62	160.59	41.04	59.69	14 44 51	3572.2	12.47	153.94

DIFFERENTIAL CORRECTIONS
TDE-3.5622 TRA10.1279 TC3-6.0537 BAU 2.5601
RDE .8168 RRA -.3169 RC3 .4118 FAU .17005
FDE-4.1220 FRA 9.1509 FC3-4.6647 BSP 45680
BDE 3.6547 BRA10.1328 BC3 6.0677 FSP 3784

MID-COURSE EXECUTION ACCURACY
SGT13079.7 SGR 1008.6 SG3 1008.6
RRT -.7327 RRF -.7714 RTF .9940
SGB13118.5 R23 .0604 R13 -.9942
SG113100.6 SG2 685.3 THA 176.76

ORBIT DETERMINATION ACCURACY
ST 4825.6 SR 839.0 SS 2169.1
CRT -.8258 CRS .8872 CST -.9928
LSA 5332.2 MSA 512.9 SSA 13.1
EL1 4875.6 EL2 468.3 ALF 171.75

LAUNCH DATE OCT 11 1964 FLIGHT TIME 240.00 ARRIVAL DATE JUN 8 1965

HELIOCENTRIC CONIC DISTANCE 585.601 EARTH TO MARS

RL	149.32	LAL	.00	LOL	17.71	VL	33.139	GAL	-7.95	AZL	92.97	HCA	192.04	SMA	195.35	ECC	.27129	INC	2.9702
RP	238.95	LAP	.62	LOP	209.74	VP	20.772	GAP	9.11	AZP	87.10	TAL	321.38	TAP	153.42	RCA	142.36	APO	248.35
RC	175.790	GL	-18.66	GP	16.28	ZAL	140.28	ZAP	149.81	ETS	148.50	ZAE	158.33	ETE	49.12	ZAC	104.44	ETC	255.62

V1	29.840	V2	22.991	CLP	154.22														

PLANETOCENTRIC CONIC

C3	28.260	VHL	5.316	DLA	-10.19	RAL	156.28	RAD	6568.1	VEL	12.233	PTH	2.20	VHP	5.929	DPA	14.39	RAP	191.10

DPA	14.39	RAP	191.10	ECC	1.4651														

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 43 13	1977.12	-13.19	26.98	21.55	115.29	22 16 10	1377.1	-9.68	20.06
90.00	7 9 40	5264.65	26.91	237.82	27.15	80.83	8 37 25	4664.7	25.36	229.49
100.00	22 59 31	1730.99	-14.37	8.29	20.96	116.50	23 28 22	1131.0	-10.69	1.43
100.00	8 36 4	4986.02	28.20	217.08	26.90	79.64	9 59 10	4386.0	26.48	208.70
110.00	0 0 13	1553.20	-17.47	353.07	19,23	119.86	0 26 6	953.2	-13.37	346.37
110.00	9 55 47	4736.57	31.64	197.29	26.05	76.33	11 14 43	4136.6	29.44	188.78

DIFFERENTIAL CORRECTIONS

TDE	1.8180	TRA	-3.7720	TC3	1.3131	BAU	.5899
RDE	.8590	RRA	-1.2316	RC3	.8450	FAU	.15787
FDE	-3.7531	FRA	6.3862	FC3	-4.8365	BSP	17708
BDE	2.0107	BRA	3.9680	BC3	1.5615	FSP	2616

MID-COURSE EXECUTION ACCURACY

SGT	4780.2	SGR	1866.4	SG3	827.4		
RRT	.9684	RRF	-.9957	RTF	-.9610		
SGB	5131.7	R23	-.2297	R13	-.9689		
SG1	5113.2	SG2	435.4	THA	20.87		

ORBIT DETERMINATION ACCURACY

ST	2318.8	SR	1010.7	SS	2335.6		
CRT	.9885	CRS	.9978	CST	.9962		
LSA	3438.3	MSA	176.7	SSA	14.8		
EL1	2525.6	EL2	140.6	ALF	23.39		

LAUNCH DATE OCT 11 1964 FLIGHT TIME 242.00 ARRIVAL DATE JUN 10 1965

HELIOCENTRIC CONIC DISTANCE 589.126 EARTH TO MARS

RL	149.32	LAL	.00	LOL	17.71	VL	33.110	GAL	-7.85	AZL	92.63	HCA	192.99	SMA	194.80	ECC	.26859	INC	2.6270
RP	238.63	LAP	.59	LOP	210.69	VP	20.761	GAP	8.66	AZP	87.44	TAL	321.58	TAP	154.57	RCA	142.48	APO	247.12
RC	178.086	GL	-16.80	GP	15.49	ZAL	140.73	ZAP	149.62	ETS	150.42	ZAE	159.26	ETE	49.14	ZAC	103.73	ETC	255.66

V1	29.840	V2	23.024	CLP	153.53														

PLANETOCENTRIC CONIC

C3	27.057	VHL	5.202	DLA	-8.36	RAL	156.72	RAD	6568.1	VEL	12.183	PTH	2.19	VHP	5.779	DPA	13.57	RAP	190.99

DPA	13.57	RAP	190.99	ECC	1.4453														

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 30 23	2025.76	-14.58	29.87	21.43	114.54	22 4 8	1425.8	-11.15	22.87
90.00	7 26 2	5194.35	26.05	232.86	25.99	78.48	8 52 36	4594.4	24.20	224.68
100.00	22 47 40	1776.42	-15.73	10.98	20.87	115.75	23 17 16	1176.4	-12.14	4.03
100.00	8 51 25	4918.93	27.28	212.30	25.69	77.28	10 13 24	4318.9	25.26	204.09
110.00	23 46 40	1591.66	-18.76	355.31	19.22	119.11	24 13 12	991.7	-14.73	348.51
110.00	10 8 54	4676.45	30.59	192.92	24.72	73.94	11 26 51	4076.4	28.09	184.62

DIFFERENTIAL CORRECTIONS

TDE	1.7629	TRA	-3.7154	TC3	1.3779	BAU	.5851
RDE	.8073	RRA	-1.1658	RC3	.8472	FAU	.16491
FDE	-3.7694	FRA	6.6799	FC3	-5.2767	BSP	17621
BDE	1.9389	BRA	3.8940	BC3	1.6175	FSP	2765

MID-COURSE EXECUTION ACCURACY

SGT	4789.1	SGR	1803.4	SG3	875.5		
RRT	.9679	RRF	-.9950	RTF	-.9622		
SGB	5117.4	R23	-.2239	R13	-.9695		
SG1	5099.7	SG2	426.0	THA	20.17		

ORBIT DETERMINATION ACCURACY

ST	2304.8	SR	971.1	SS	2354.8		
CRT	.9878	CRS	.9967	CST	.9970		
LSA	3431.1	MSA	166.7	SSA	17.2		
EL1	2497.2	EL2	139.3	ALF	22.67		

LAUNCH DATE OCT 11 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUN 12 1965

HELIOCENTRIC CONIC DISTANCE 592.670 EARTH TO MARS

RL	149.32	LAL	.00	LOL	17.71	VL	33.082	GAL	-7.75	AZL	92.33	HCA	193.94	SMA	194.27	ECC	.26600	INC	2.3294
RP	238.31	LAP	.56	LOP	211.64	VP	20.753	GAP	8.22	AZP	87.74	TAL	321.77	TAP	155.71	RCA	142.60	APO	245.95
RC	180.373	GL	-15.14	GP	14.81	ZAL	141.05	ZAP	149.31	ETS	152.18	ZAE	160.13	ETE	49.47	ZAC	103.12	ETC	255.68

V1	29.840	V2	23.056	CLP	152.81														

PLANETOCENTRIC CONIC

C3	26.018	VHL	5.101	DLA	-6.72	RAL	157.09	RAD	6568.1	VEL	12.141	PTH	2.18	VHP	5.637	DPA	12.86	RAP	190.90

DPA	12.86	RAP	190.90	ECC	1.4282														

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 19 7	2068.47	-15.78	32.44	21.35	113.82	21 53 35	1468.5	-12.42	25.36
90.00	7 40 16	5132.22	25.13	228.54	24.98	76.50	9 5 48	4532.2	23.03	220.50
100.00	22 37 15	1816.40	-16.90	13.37	20.82	115.03	23 7 31	1216.4	-13.38	6.34
100.00	9 4 49	4859.52	26.32	208.15	24.65	75.30	10 25 48	4259.5	24.05	200.09
110.00	23 38 10	1625.69	-19.87	357.32	19.24	118.40	24 5 15	1025.7	-15.92	350.42
110.00	10 20 24	4623.00	29.52	189.13	23.58	71.93	11 37 27	4023.0	26.77	181.02

DIFFERENTIAL CORRECTIONS

TDE	1.7311	TRA	-3.6597	TC3	1.4350	BAU	.5801
RDE	.7650	RRA	-1.1102	RC3	.8496	FAU	.17187
FDE	-3.7904	FRA	6.9774	FC3	-5.7189	BSP	17589
BDE	1.8743	BRA	3.8244	BC3	1.6676	FSP	2928

MID-COURSE EXECUTION ACCURACY

SGT	4792.9	SGR	1751.1	SG3	924.3		
RRT	.9673	RRF	-.9942	RTF	-.9633		
SGB	5102.7	R23	-.2178	R13	-.9701		
SG1	5085.5	SG2	418.7	THA	19.60		

ORBIT DETERMINATION ACCURACY

ST	2288.7	SR	938.6	SS	2374.1		
CRT	.9871	CRS	.9955	CST	.9977		
LSA	3424.9	MSA	158.6	SSA	19.7		
EL1	2469.8	EL2	139.1	ALF	22.11		

LAUNCH DATE OCT 11 1964 FLIGHT TIME 246.00 ARRIVAL DATE JUN 14 1965

HELIOCENTRIC CONIC DISTANCE 596.234 EARTH TO MARS

RL	149.32	LAL	.00	LOL	17.71	VL	33.055	GAL	-7.66	AZL	92.07	HCA	194.89	SMA	193.77	ECC	.26350	INC	2.0684
RP	237.98	LAP	.53	LOP	212.60	VP	20.747	GAP	7.78	AZP	88.00	TAL	321.97	TAP	156.86	RCA	142.71	APO	244.83
RC	182.651	GL	-13.65	GP	14.23	ZAL	141.27	ZAP	148.90	ETS	153.78	ZAE	160.98	ETE	50.08	ZAC	102.59	ETC	255.71

V1	29.840	V2	23.089	CLP	152.05														

PLANETOCENTRIC CONIC

C3	25.104	VHL	5.010	DLA	-5.24	RAL	157.41	RAD	6568.0	VEL	12.103	PTH	2.17	VHP	5.502	DPA	12.25	RAP	190.81

DPA	12.25	RAP	190.81	ECC	1.4132														

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 9 4	2106.44	-16.81	34.75	21.30	113.13	21 44 10	1506.4	-13.53	27.60
90.00	7 52 51	5076.59	24.19	224.73	24.09	74.82	9 17 27	4476.6	21.87	216.83
100.00	22 27 56	1852.01	-17.91	15.53	20.79	114.34	22 58 48	1252.0	-14.47	8.43
100.00	9 16 40	4806.25	25.35	204.49	23.73	73.61	10 36 46	4206.3	22.86	196.58
110.00	23 30 31	1656.09	-20.85	359.14	19.27	117.72	23 58 7	1056.1	-16.97	352.16
110.00	10 30 34	4574.95	28.46	185.79	22.59	70.21	11 46 49	3974.9	25.50	177.87

DIFFERENTIAL CORRECTIONS

TDE	1.6821	TRA	-3.5830	TC3	1.5193	BAU	.5856
RDE	.7332	RRA	-1.0594	RC3	.8577	FAU	.17964
FDE	-3.8323	FRA	7.2604	FC3	-6.1951	BSP	17094
BDE	1.8350	BRA	3.7363	BC3	1.7447	FSP	3067

MID-COURSE EXECUTION ACCURACY

SGT	4790.3	SGR	1709.3	SG3	974.7		
RRT	.9681	RRF	-.9933	RTF	-.9657		
SGB	5086.1	R23	-.2062	R13	-.9718		
SG1	5070.0	SG2	404.7	THA	19.18		

ORBIT DETERMINATION ACCURACY

ST	2286.0	SR	914.8	SS	2400.1		
CRT	.9872	CRS	.9941	CST	.9985		
LSA	3435.3	MSA	145.8	SSA	22.6		
EL1	2458.5	EL2	135.6	ALF	21.62		

LAUNCH DATE OCT 11 1964 FLIGHT TIME 248.00 ARRIVAL DATE JUN 16 1965

HELIOCENTRIC CONIC DISTANCE 599.813 EARTH TO MARS

RL 149.32 LAL .00 LOL 17.71 VL 33.029 GAL -7.57 AZL 91.84 HCA 195.85 SMA 193.29 ECC .26111 INC 1.8378 V1 29.840
RP 237.65 LAP .50 LOP 213.56 VP 20.744 GAP 7.35 AZP 88.23 TAL 322.15 TAP 158.00 RCA 142.82 APO 243.76 V2 23.123
RC 184.919 GL -12.30 GP 13.71 ZAL 141.41 ZAP 148.41 ETS 155.26 ZAE 161.79 ETE 51.00 ZAC 102.12 ETC 255.72 CLP 151.26

PLANETOCENTRIC CONIC

C3 24.294 VHL 4.929 DLA -3.89 RAL 157.68 RAD 6568.0 VEL 12.069 PTH 2.16 VHP 5.372 DPA 11.71 RAP 190.74 ECC 1.3998

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 0 0	2140.60	-17.71	36.85	21.27	112.46	21 35 41	1540.6	-14.51	29.63
90.00	8 4 6	5026.31	23.25	221.35	23.32	73.37	9 27 52	4426.3	20.75	213.57
100.00	22 19 31	1884.08	-18.80	17.50	20.78	113.68	22 50 55	1284.1	-15.44	10.32
100.00	9 27 15	4758.06	24.38	201.24	22.93	72.15	10 46 34	4158.1	21.72	193.46
110.00	23 23 35	1683.51	-21.71	.81	19.31	117.08	23 51 39	1083.5	-17.90	353.74
110.00	10 39 41	4531.39	27.42	182.83	21.74	68.74	11 55 12	3931.4	24.28	175.07

DIFFERENTIAL CORRECTIONS
TDE 1.6289 TRA-3.5324 TC3 1.5562 BAU .5777
RDE .7040 RRA-1.0192 RC3 .8615 FAU .18674
FDE-3.8629 FRA 7.5682 FC3-6.6544 BSP 17240
BDE 1.7746 BRA 3.6765 BC3 1.7787 FSP .3253

MID-COURSE EXECUTION ACCURACY
SGT 4783.0 SGR 1673.7 SG3 1025.8
RRT .9668 RRF -.9923 RTF -.9660
SGB 5067.4 R23 -.2018 R13 -.9719
SG1 5051.2 SG2 404.7 THA 18.82

ORBIT DETERMINATION ACCURACY
ST 2261.0 SR 892.9 SS 2420.8
CRT .9860 CRS .9926 CST .9988
LSA 3427.6 MSA 144.7 SSA 24.8
EL1 2427.0 EL2 138.6 ALF 21.35

LAUNCH DATE OCT 11 1964 FLIGHT TIME 250.00 ARRIVAL DATE JUN 18 1965

HELIOCENTRIC CONIC DISTANCE 603.407 EARTH TO MARS

RL 149.32 LAL .00 LOL 17.71 VL 33.005 GAL -7.48 AZL 91.63 HCA 196.81 SMA 192.83 ECC .25881 INC 1.6317 V1 29.840
RP 237.31 LAP .47 LOP 214.52 VP 20.742 GAP 6.93 AZP 88.44 TAL 322.34 TAP 159.15 RCA 142.93 APO 242.74 V2 23.157
RC 187.176 GL -11.07 GP 13.26 ZAL 141.49 ZAP 147.85 ETS 156.61 ZAE 162.57 ETE 52.23 ZAC 101.71 ETC 255.74 CLP 150.45

PLANETOCENTRIC CONIC

C3 23.567 VHL 4.855 DLA -2.66 RAL 157.92 RAD 6568.0 VEL 12.039 PTH 2.15 VHP 5.248 DPA 11.24 RAP 190.68 ECC 1.3879

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 51 43	2171.59	-18.50	38.78	21.25	111.83	21 27 55	1571.6	-15.38	31.49
90.00	8 14 15	4980.44	22.33	218.30	22.63	72.12	9 37 15	4380.4	19.67	210.64
100.00	22 11 49	1913.19	-19.58	19.30	20.78	113.05	22 43 43	1313.2	-16.29	12.05
100.00	9 36 50	4714.07	23.44	198.31	22.23	70.89	10 55 24	4114.1	20.61	190.65
110.00	23 17 14	1708.45	-22.47	2.34	19.35	116.46	23 45 42	1108.5	-18.73	355.20
110.00	10 47 55	4491.57	26.41	180.17	20.98	67.46	12 2 47	3891.6	23.12	172.56

DIFFERENTIAL CORRECTIONS
TDE 1.5817 TRA-3.4765 TC3 1.5947 BAU .5721
RDE .6810 RRA -.9834 RC3 .8686 FAU .19437
FDE-3.9065 FRA 7.8738 FC3-7.1402 BSP 17271
BDE 1.7221 BRA 3.6129 BC3 1.8159 FSP 3429

MID-COURSE EXECUTION ACCURACY
SGT 4770.1 SGR 1645.4 SG3 1078.7
RRT .9656 RRF -.9912 RTF -.9664
SGB 5045.9 R23 -.1970 R13 -.9721
SG1 5029.6 SG2 405.7 THA 18.55

ORBIT DETERMINATION ACCURACY
ST 2237.3 SR 876.4 SS 2445.7
CRT .9848 CRS .9908 CST .9991
LSA 3425.4 MSA 144.9 SSA 26.7
EL1 2398.6 EL2 141.8 ALF 21.17

LAUNCH DATE OCT 11 1964 FLIGHT TIME 252.00 ARRIVAL DATE JUN 20 1965

HELIOCENTRIC CONIC DISTANCE 607.018 EARTH TO MARS

RL 149.32 LAL .00 LOL 17.71 VL 32.981 GAL -7.39 AZL 91.45 HCA 197.77 SMA 192.40 ECC .25660 INC 1.4475 V1 29.840
RP 236.98 LAP .44 LOP 215.48 VP 20.743 GAP 6.51 AZP 88.62 TAL 322.52 TAP 160.29 RCA 143.03 APO 241.77 V2 23.191
RC 189.421 GL -9.94 GP 12.86 ZAL 141.53 ZAP 147.23 ETS 157.86 ZAE 163.33 ETE 53.79 ZAC 101.35 ETC 255.75 CLP 149.60

PLANETOCENTRIC CONIC

C3 22.909 VHL 4.786 DLA -1.52 RAL 158.12 RAD 6567.9 VEL 12.012 PTH 2.14 VHP 5.129 DPA 10.83 RAP 190.61 ECC 1.3770

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 44 6	2199.93	-19.21	40.56	21.24	111.21	21 20 45	1599.9	-16.16	33.21
90.00	8 23 30	4938.28	21.42	215.55	22.01	71.02	9 45 48	4338.3	18.63	207.98
100.00	22 4 44	1939.82	-20.28	20.97	20.78	112.44	22 37 4	1559.8	-17.07	13.66
100.00	9 45 33	4673.62	22.51	195.66	21.60	69.79	11 3 27	4073.6	19.55	188.12
110.00	23 11 21	1731.28	-23.16	3.76	19.39	115.88	23 40 12	1131.3	-19.49	356.54
110.00	10 55 25	4454.93	25.43	177.78	20.31	66.35	12 9 40	3854.9	22.01	170.29

DIFFERENTIAL CORRECTIONS
TDE 1.5340 TRA-3.4211 TC3 1.6250 BAU .5654
RDE .6611 RRA -.9535 RC3 .8757 FAU .20190
FDE-3.9482 FRA 8.1944 FC3-7.6297 BSP 17349
BDE 1.6704 BRA 3.5515 BC3 1.8459 FSP 3630

MID-COURSE EXECUTION ACCURACY
SGT 4751.3 SGR 1622.6 SG3 1133.0
RRT .9644 RRF -.9901 RTF -.9668
SGB 5020.7 R23 -.1919 R13 -.9724
SG1 5004.2 SG2 407.4 THA 18.36

ORBIT DETERMINATION ACCURACY
ST 2210.1 SR 862.7 SS 2469.2
CRT .9836 CRS .9889 CST .9993
LSA 3421.1 MSA 146.3 SSA 28.3
EL1 2368.1 EL2 145.3 ALF 21.09

LAUNCH DATE OCT 11 1964 FLIGHT TIME 254.00 ARRIVAL DATE JUN 22 1965

HELIOCENTRIC CONIC DISTANCE 610.645 EARTH TO MARS

RL 149.32 LAL .00 LOL 17.71 VL 32.959 GAL -7.31 AZL 91.28 HCA 198.74 SMA 191.98 ECC .25449 INC 1.2807 V1 29.840
RP 236.64 LAP .41 LOP 216.45 VP 20.746 GAP 6.10 AZP 88.79 TAL 322.69 TAP 161.43 RCA 143.13 APO 240.84 V2 23.226
RC 191.655 GL -8.90 GP 12.50 ZAL 141.52 ZAP 146.55 ETS 159.02 ZAE 164.06 ETE 55.71 ZAC 101.02 ETC 255.77 CLP 148.72

PLANETOCENTRIC CONIC

C3 22.309 VHL 4.723 DLA -.47 RAL 158.30 RAD 6567.9 VEL 11.987 PTH 2.14 VHP 5.013 DPA 10.48 RAP 190.53 ECC 1.3672

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 37 1	2226.04	-19.84	42.21	21.22	110.62	21 14 7	1626.0	-16.86	34.80
90.00	8 31 59	4899.28	20.53	213.03	21.46	70.06	9 53 39	4299.3	17.63	205.55
100.00	21 58 8	1964.36	-20.91	22.52	20.78	111.86	22 30 52	1364.4	-17.76	15.15
100.00	9 53 33	4636.19	21.61	193.25	21.03	68.83	11 10 49	4036.2	18.54	185.80
110.00	23 5 52	1752.31	-23.78	5.08	19.43	115.32	23 35 5	1152.3	-20.17	357.79
110.00	11 2 18	4421.00	24.48	175.59	19.71	65.37	12 15 59	3821.0	20.95	168.23

DIFFERENTIAL CORRECTIONS
TDE 1.4933 TRA-3.3583 TC3 1.6607 BAU .5615
RDE .6458 RRA -.9265 RC3 .8865 FAU .21012
FDE-4.0043 FRA 8.5125 FC3-8.1541 BSP 17272
BDE 1.6270 BRA 3.4837 BC3 1.8825 FSP 3819

MID-COURSE EXECUTION ACCURACY
SGT 4726.4 SGR 1605.7 SG3 1189.6
RRT .9634 RRF -.9889 RTF -.9674
SGB 4991.7 R23 -.1861 R13 -.9728
SG1 4975.0 SG2 408.9 THA 18.25

ORBIT DETERMINATION ACCURACY
ST 2185.7 SR 853.3 SS 2497.5
CRT .9825 CRS .9870 CST .9995
LSA 3423.4 MSA 148.3 SSA 29.7
EL1 2341.6 EL2 148.3 ALF 21.07

LAUNCH DATE OCT 11 1964 FLIGHT TIME 256.00 ARRIVAL DATE JUN 24 1965

HELIOCENTRIC CONIC DISTANCE 614.287 EARTH TO MARS

RL	149.32	LAL	.00	LOL	17.71	VL	32.937	GAL	-7.23	AZL	91.13	HCA	199.70	SMA	191.59	ECC	.25246	INC	1.1294	V1	29.840
RP	236.29	LAP	.38	LOP	217.42	VP	20.751	GAP	5.69	AZP	88.94	TAL	322.86	TAP	162.57	RCA	143.22	APO	239.96	V2	23.261
RC	193.877	GL	-7.93	GP	12.19	ZAL	141.48	ZAP	145.81	ETS	160.09	ZAE	164.77	ETE	58.02	ZAC	100.73	ETC	255.78	CLP	-147.81

PLANETOCENTRIC CONIC

C3	21.760	VHL	4.665	DLA	.50	RAL	158.45	RAD	6567.9	VEL	11.964	PTH	2.13	VHP	4.902	DPA	10.17	RAP	190.45	ECC	1.3581

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 30 24	2250.25	-20.42	43.75	21.21	110.06	21 7 54	1650.2	-17.50	36.29
90.00	8 39 50	4863.00	19.68	210.71	20.96	69.22	10 0 53	4263.0	16.67	203.32
100.00	21 51 58	1987.11	-21.48	23.97	20.78	111.30	22 25 5	1387.1	-18.40	16.54
100.00	10 0 56	4601.37	20.74	191.03	20.52	67.97	11 17 38	4001.4	17.57	183.67
110.00	23 0 45	1771.81	-24.34	6.31	19.46	114.78	23 30 17	1171.8	-20.79	358.96
110.00	11 8 39	4389.43	23.57	173.59	19.17	64.50	12 21 48	3789.4	19.94	166.33

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.4520	TRA	-3.2957	TC3	1.6879	BAU	.5562	SGT	4695.5	SGR	1593.3	SG3	1248.0	ST	2158.2	SR	846.2	SS	2526.2
RDE	.6330	RRA	-.9035	RC3	.8983	FAU	.21851	RRT	.9623	RRF	-.9877	RTF	-.9678	CRT	.9814	CRS	.9849	CST	.9996
FDE	-4.0630	FRA	8.8423	FC3	-8.6934	BSP	17221	SGB	4958.5	R23	-.1807	R13	-.9731	LSA	3425.1	MSA	152.0	SSA	30.8
BDE	1.5840	BRA	3.4173	BC3	1.9121	FSP	4021	SG1	4941.3	SG2	411.9	THA	18.21	EL1	2313.2	EL2	151.7	ALF	21.14

LAUNCH DATE OCT 11 1964 FLIGHT TIME 258.00 ARRIVAL DATE JUN 26 1965

HELIOCENTRIC CONIC DISTANCE 617.943 EARTH TO MARS

RL	149.32	LAL	.00	LOL	17.71	VL	32.916	GAL	-7.15	AZL	90.99	HCA	200.68	SMA	191.21	ECC	.25051	INC	.9911	V1	29.840
RP	235.94	LAP	.35	LOP	218.39	VP	20.758	GAP	5.29	AZP	89.07	TAL	323.03	TAP	163.71	RCA	143.31	APO	239.11	V2	23.297
RC	196.086	GL	-7.04	GP	11.91	ZAL	141.41	ZAP	145.03	ETS	161.08	ZAE	165.44	ETE	60.75	ZAC	100.47	ETC	255.79	CLP	146.87

PLANETOCENTRIC CONIC

C3	21.254	VHL	4.610	DLA	1.42	RAL	158.59	RAD	6567.9	VEL	11.943	PTH	2.13	VHP	4.794	DPA	9.90	RAP	190.36	ECC	1.3498

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 24 11	2272.82	-20.94	45.20	21.20	109.51	21 2 3	1672.8	-18.09	37.69
90.00	8 47 7	4829.10	18.84	208.57	20.51	68.46	10 7 37	4229.1	15.75	201.26
100.00	21 46 11	2008.32	-22.00	25.33	20.78	110.76	22 19 39	1408.3	-18.98	17.84
100.00	10 7 49	4568.83	19.89	188.98	20.06	67.21	11 23 57	3968.8	16.63	181.70
110.00	22 55 56	1789.98	-24.85	7.47	19.49	114.26	23 25 46	1190.0	-21.36	.06
110.00	11 14 33	4359.93	22.70	171.75	18.68	63.73	12 27 12	3759.9	18.98	164.59

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.4148	TRA	-3.2272	TC3	1.7165	BAU	.5524	SGT	4657.5	SGR	1585.4	SG3	1308.7	ST	2131.4	SR	842.0	SS	2558.0
RDE	.6232	RRA	-.8832	RC3	.9125	FAU	.22742	RRT	.9614	RRF	-.9864	RTF	-.9683	CRT	.9804	CRS	.9828	CST	.9997
FDE	-4.1320	FRA	9.1752	FC3	-9.2635	BSP	17058	SGB	4920.0	R23	-.1748	R13	-.9735	LSA	3430.7	MSA	156.2	SSA	31.5
BDE	1.5460	BRA	3.3459	BC3	1.9440	FSP	4219	SG1	4902.5	SG2	414.6	THA	18.26	EL1	2286.5	EL2	154.6	ALF	21.28

LAUNCH DATE OCT 11 1964 FLIGHT TIME 260.00 ARRIVAL DATE JUN 28 1965

HELIOCENTRIC CONIC DISTANCE 621.615 EARTH TO MARS

RL	149.32	LAL	.00	LOL	17.71	VL	32.896	GAL	-7.08	AZL	90.86	HCA	201.65	SMA	190.85	ECC	.24865	INC	.8645	V1	29.840
RP	235.59	LAP	.32	LOP	219.36	VP	20.767	GAP	4.89	AZP	89.20	TAL	323.19	TAP	164.85	RCA	143.40	APO	238.31	V2	23.333
RC	198.280	GL	-6.20	GP	11.66	ZAL	141.33	ZAP	144.19	ETS	162.01	ZAE	166.07	ETE	63.94	ZAC	100.22	ETC	255.80	CLP	145.90

PLANETOCENTRIC CONIC

C3	20.787	VHL	4.559	DLA	2.27	RAL	158.70	RAD	6567.8	VEL	11.923	PTH	2.12	VHP	4.689	DPA	9.67	RAP	190.26	ECC	1.3421

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 18 18	2293.97	-21.41	46.57	21.19	108.98	20 56 32	1694.0	-18.63	39.01
90.00	8 53 56	4797.27	18.03	206.59	20.10	67.79	10 13 53	4197.3	14.87	199.34
100.00	21 40 42	2028.19	-22.48	26.62	20.78	110.24	22 14 31	1428.2	-19.52	19.07
100.00	10 14 13	4538.28	19.07	187.08	19.84	66.54	11 29 52	3938.3	15.74	179.88
110.00	22 51 23	1806.99	-25.32	8.57	19.52	113.77	23 21 30	1207.0	-21.89	1.10
110.00	11 20 2	4332.24	21.85	170.05	18.24	63.04	12 32 15	3732.2	18.06	162.97

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.3892	TRA	-3.1455	TC3	1.7622	BAU	.5539	SGT	4613.0	SGR	1582.1	SG3	1372.0	ST	2111.6	SR	841.3	SS	2595.3
RDE	.6168	RRA	-.8642	RC3	.9312	FAU	.23733	RRT	.9615	RRF	-.9852	RTF	-.9695	CRT	.9803	CRS	.9807	CST	.9998
FDE	-4.2194	FRA	9.5022	FC3	-9.8844	BSP	16608	SGB	4876.8	R23	-.1657	R13	-.9745	LSA	3446.1	MSA	160.1	SSA	31.8
BDE	1.5200	BRA	3.2620	BC3	1.9931	FSP	4394	SG1	4859.3	SG2	412.8	THA	18.39	EL1	2267.7	EL2	154.8	ALF	21.44

LAUNCH DATE OCT 11 1964 FLIGHT TIME 262.00 ARRIVAL DATE JUN 30 1965

HELIOCENTRIC CONIC DISTANCE 625.299 EARTH TO MARS

RL	149.32	LAL	.00	LOL	17.71	VL	32.877	GAL	-7.01	AZL	90.75	HCA	202.63	SMA	190.51	ECC	.24686	INC	.7480	V1	29.840
RP	235.24	LAP	.29	LOP	220.34	VP	20.777	GAP	4.50	AZP	89.31	TAL	323.35	TAP	165.98	RCA	143.48	APO	237.54	V2	23.369
RC	200.460	GL	-5.42	GP	11.44	ZAL	141.23	ZAP	143.31	ETS	162.88	ZAE	166.64	ETE	67.62	ZAC	100.00	ETC	255.81	CLP	144.90

PLANETOCENTRIC CONIC

C3	20.355	VHL	4.512	DLA	3.07	RAL	158.81	RAD	6567.8	VEL	11.905	PTH	2.12	VHP	4.587	DPA	9.48	RAP	190.14	ECC	1.3350

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 12 45	2313.89	-21.85	47.87	21.17	108.48	20 51 19	1713.9	-19.12	40.26
90.00	9 0 20	4767.31	17.25	204.74	19.72	67.19	10 19 47	4167.3	14.02	197.56
100.00	21 35 32	2046.89	-22.91	27.84	20.78	109.74	22 9 39	1446.9	-20.01	20.24
100.00	10 20 14	4509.54	18.29	185.31	19.25	65.93	11 35 24	3909.5	14.88	178.17
110.00	22 47 4	1823.00	-25.76	9.61	19.54	113.29	23 17 27	1223.0	-22.38	2.08
110.00	11 25 12	4306.20	21.04	168.46	17.84	62.42	12 36 58	3706.2	17.18	161.46

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.3513	TRA	-3.0742	TC3	1.7772	BAU	.5481	SGT	4561.0	SGR	1581.3	SG3	1437.1	ST	2079.2	SR	840.7	SS	2628.8
RDE	.6104	RRA	-.8498	RC3	.9478	FAU	.24685	RRT	.9605	RRF	-.9840	RTF	-.9697	CRT	.9794	CRS	.9785	CST	.9998
FDE	-4.2964	FRA	9.8571	FC3	-10.4987	BSP	16451	SGB	4827.3	R23	-.1605	R13	-.9748	LSA	3451.3	MSA	167.0	SSA	32.0
BDE	1.4828	BRA	3.1895	BC3	2.0142	FSP	4612	SG1	4809.3	SG2	417.3	THA	18.56	EL1	2237.2	EL2	157.9	ALF	21.72

LAUNCH DATE OCT 11 1964 FLIGHT TIME 264.00 ARRIVAL DATE JUL 2 1965

HELIOCENTRIC CONIC DISTANCE 628.993 EARTH TO MARS

RL 149.32 LAL .00 LOL 17.71 VL 32.859 GAL -6.95 AZL 90.64 HCA 203.61 SMA 190.18 ECC .24516 INC .6405 V1 29.840
RP 234.89 LAP .26 LOP 221.32 VP 20.790 GAP 4.11 AZP 89.41 TAL 323.50 TAP 167.11 RCA 143.56 APO 236.81 V2 23.405
RC 202.623 GL -4.68 GP 11.24 ZAL 141.12 ZAP 142.39 ETS 163.69 ZAE 167.15 ETE 71.82 ZAC 99.80 ETC 255.82 CLP 143.87

PLANETOCENTRIC CONIC

C3 19.956 VHL 4.467 DLA 3.83 RAL 158.91 RAD 6567.8 VEL 11.889 PTH 2.11 VHP 4.489 DPA 9.32 RAP 190.01 ECC 1.3284

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 7 29	2332.71	-22.25	49.11	21.17	107.98	20 46 22	1732.7	-19.58	41.45
90.00	9 6 22	4739.04	16.50	203.00	19.39	66.66	10 25 21	4139.0	13.20	195.88
100.00	21 30 37	2064.56	-23.31	29.00	20.78	109.26	22 5 2	1464.6	-20.47	21.35
100.00	10 25 55	4482.43	17.52	183.66	18.91	65.39	11 40 37	3882.4	14.06	176.58
110.00	22 42 59	1838.11	-26.16	10.60	19.57	112.83	23 13 37	1238.1	-22.84	3.02
110.00	11 30 3	4281.65	20.26	166.99	17.48	61.86	12 41 25	3681.6	16.34	160.06

DIFFERENTIAL CORRECTIONS
TDE 1.2956 TRA-3.0183 TC3 1.7501 BAU .5326
RDE .6030 RRA -.8406 RC3 .9606 FAU .25545
FDE-4.3505 FRA10.2535 FC-11.0821 BSP .16692
BDE 1.4290 BRA 3.1332 BC3 1.9964 FSP .4897

MID-COURSE EXECUTION ACCURACY
SGT 4501.1 SGR 1581.9 SG3 1503.7
RRT .9578 RRF -.9827 RTF -.9688
SGB 4771.0 R23 -.1608 R13 -.9742
SG1 4751.5 SG2 430.8 THA 18.76

ORBIT DETERMINATION ACCURACY
ST 2029.3 SR 839.0 SS 2654.9
CRT .9771 CRS .9759 CST .9998
LSA 3440.7 MSA 176.1 SSA 32.5
EL1 2189.7 EL2 165.3 ALF 22.13

LAUNCH DATE OCT 11 1964 FLIGHT TIME 266.00 ARRIVAL DATE JUL 4 1965

HELIOCENTRIC CONIC DISTANCE 632.702 EARTH TO MARS

RL 149.32 LAL .00 LOL 17.71 VL 32.842 GAL -6.88 AZL 90.54 HCA 204.59 SMA 189.87 ECC .24353 INC .5407 V1 29.840
RP 234.53 LAP .22 LOP 222.30 VP 20.804 GAP 3.73 AZP 89.51 TAL 323.65 TAP 168.24 RCA 143.63 APO 236.11 V2 23.442
RC 204.770 GL -3.99 GP 11.06 ZAL 141.00 ZAP 141.42 ETS 164.45 ZAE 167.58 ETE 76.57 ZAC 99.61 ETC 255.84 CLP 142.80

PLANETOCENTRIC CONIC

C3 19.584 VHL 4.425 DLA 4.54 RAL 158.99 RAD 6567.8 VEL 11.873 PTH 2.11 VHP 4.393 DPA 9.20 RAP 189.86 ECC 1.3223

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 2 28	2350.58	-22.62	50.29	21.16	107.50	20 41 39	1750.6	-20.01	42.58
90.00	9 12 5	4712.25	15.77	201.38	19.08	66.17	10 30 37	4112.2	12.42	194.30
100.00	21 25 57	2084.33	-23.68	30.10	20.78	108.79	22 0 38	1481.3	-20.90	22.41
100.00	10 31 17	4456.73	16.79	182.10	18.59	64.90	11 45 34	3856.7	13.27	175.08
110.00	22 39 5	1852.43	-26.53	11.54	19.60	112.39	23 9 57	1252.4	-23.26	3.91
110.00	11 34 38	4258.40	19.51	165.60	17.15	61.36	12 45 37	3658.4	15.53	158.74

DIFFERENTIAL CORRECTIONS
TDE 1.2595 TRA-2.9404 TC3 1.7556 BAU .5265
RDE .5996 RRA -.8305 RC3 .9803 FAU .26574
FDE-4.4374 FRA10.6294 FC-11.7469 BSP .16432
BDE 1.3949 BRA 3.0554 BC3 2.0107 FSP .5126

MID-COURSE EXECUTION ACCURACY
SGT 4433.7 SGR 1587.1 SG3 1573.5
RRT .9569 RRF -.9815 RTF -.9690
SGB 4709.2 R23 -.1558 R13 -.9745
SG1 4688.9 SG2 436.0 THA 19.08

ORBIT DETERMINATION ACCURACY
ST 1993.4 SR 841.5 SS 2691.0
CRT .9764 CRS .9737 CST .9997
LSA 3447.9 MSA 183.7 SSA 32.4
EL1 2157.2 EL2 167.9 ALF 22.54

LAUNCH DATE OCT 11 1964 FLIGHT TIME 268.00 ARRIVAL DATE JUL 6 1965

HELIOCENTRIC CONIC DISTANCE 636.424 EARTH TO MARS

RL 149.32 LAL .00 LOL 17.71 VL 32.825 GAL -6.82 AZL 90.45 HCA 205.58 SMA 189.58 ECC .24198 INC .4477 V1 29.840
RP 234.17 LAP .19 LOP 223.29 VP 20.820 GAP 3.35 AZP 89.60 TAL 323.78 TAP 169.36 RCA 143.70 APO 235.45 V2 23.479
RC 206.900 GL -3.33 GP 10.91 ZAL 140.87 ZAP 140.41 ETS 165.18 ZAE 167.91 ETE 81.82 ZAC 99.43 ETC 255.85 CLP 141.70

PLANETOCENTRIC CONIC

C3 19.239 VHL 4.386 DLA 5.22 RAL 159.07 RAD 6567.8 VEL 11.858 PTH 2.10 VHP 4.301 DPA 9.10 RAP 189.69 ECC 1.3166

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 57 40	2367.58	-22.96	51.41	21.16	107.04	20 37 8	1767.6	-20.41	43.67
90.00	9 17 30	4686.82	15.06	199.84	18.80	65.74	10 35 37	4086.8	11.66	192.82
100.00	21 21 29	2097.28	-24.03	31.16	20.79	108.34	21 56 26	1497.3	-21.30	23.43
100.00	10 36 23	4432.35	16.08	180.64	18.31	64.46	11 50 15	3832.4	12.51	173.67
110.00	22 35 22	1866.05	-26.88	12.45	19.63	111.95	23 6 28	1266.0	-23.67	4.76
110.00	11 38 59	4236.35	18.78	164.30	16.85	60.90	12 49 36	3636.4	14.76	157.50

DIFFERENTIAL CORRECTIONS
TDE 1.2219 TRA-2.8608 TC3 1.7503 BAU .5186
RDE .5973 RRA -.8225 RC3 1.0008 FAU .27628
FDE-4.5270 FRA11.0179 FC-12.4320 BSP .16191
BDE 1.3600 BRA 2.9766 BC3 2.0163 FSP .5369

MID-COURSE EXECUTION ACCURACY
SGT 4357.3 SGR 1594.8 SG3 1645.6
RRT .9558 RRF -.9804 RTF -.9690
SGB 4640.0 R23 -.1517 R13 -.9746
SG1 4618.8 SG2 442.5 THA 19.47

ORBIT DETERMINATION ACCURACY
ST 1953.7 SR 845.1 SS 2727.4
CRT .9757 CRS .9714 CST .9996
LSA 3454.3 MSA 192.0 SSA 32.3
EL1 2121.8 EL2 170.6 ALF 23.04

LAUNCH DATE OCT 11 1964 FLIGHT TIME 270.00 ARRIVAL DATE JUL 8 1965

HELIOCENTRIC CONIC DISTANCE 640.157 EARTH TO MARS

RL 149.32 LAL .00 LOL 17.71 VL 32.809 GAL -6.76 AZL 90.36 HCA 206.57 SMA 189.30 ECC .24050 INC .3615 V1 29.840
RP 233.80 LAP .16 LOP 224.28 VP 20.837 GAP 2.98 AZP 89.68 TAL 323.92 TAP 170.49 RCA 143.77 APO 234.82 V2 23.517
RC 209.011 GL -2.71 GP 10.76 ZAL 140.74 ZAP 139.35 ETS 165.86 ZAE 168.11 ETE 87.54 ZAC 99.25 ETC 255.86 CLP 140.56

PLANETOCENTRIC CONIC

C3 18.918 VHL 4.350 DLA 5.86 RAL 159.15 RAD 6567.8 VEL 11.845 PTH 2.10 VHP 4.211 DPA 9.03 RAP 189.50 ECC 1.3113

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 53 6	2383.82	-23.28	52.50	21.16	106.59	20 32 49	1783.8	-20.79	44.71
90.00	9 22 41	4662.64	14.38	198.39	18.55	65.34	10 40 23	4062.6	10.94	191.41
100.00	21 17 13	2112.51	-24.35	32.18	20.80	107.89	21 52 25	1512.5	-21.68	24.40
100.00	10 41 15	4409.19	15.39	179.26	18.05	64.06	11 54 44	3809.2	11.78	172.34
110.00	22 31 49	1879.04	-27.21	13.32	19.66	111.53	23 3 8	1279.0	-24.04	5.58
110.00	11 43 8	4215.43	18.08	163.08	16.57	60.49	12 53 23	3615.4	14.02	156.33

DIFFERENTIAL CORRECTIONS
TDE 1.1827 TRA-2.7796 TC3 1.7347 BAU .5092
RDE .5955 RRA -.8167 RC3 1.0217 FAU .28696
FDE-4.6163 FRA11.4232 FC-13.1319 BSP .15948
BDE 1.3242 BRA 2.8971 BC3 2.0132 FSP .5630

MID-COURSE EXECUTION ACCURACY
SGT 4272.3 SGR 1604.6 SG3 1720.0
RRT .9546 RRF -.9793 RTF -.9687
SGB 4563.7 R23 -.1482 R13 -.9747
SG1 4541.5 SG2 449.9 THA 19.93

ORBIT DETERMINATION ACCURACY
ST 1910.2 SR 849.4 SS 2763.5
CRT .9749 CRS .9691 CST .9995
LSA 3459.2 MSA 200.8 SSA 32.1
EL1 2083.3 EL2 173.3 ALF 23.61

LAUNCH DATE OCT 11 1964 FLIGHT TIME 280.00 ARRIVAL DATE JUL 18 1965

HELIOCENTRIC CONIC DISTANCE 658.993 EARTH TO MARS

RL 149.32 LAL .00 LOL 17.71 VL 32.740 GAL -6.52 AZL 90.00 HCA 211.56 SMA 188.09 ECC .23412 INC .0000 V1 29.840
RP 231.95 LAP .00 LOP 229.28 VP 20.946 GAP 1.21 AZP 90.00 TAL 324.48 TAP 176.04 RCA 144.05 APO 232.12 V2 23.709
RC 219.295 GL -.01 GP 10.24 ZAL 140.10 ZAP 133.43 ETS 168.83 ZAE 166.91 ETE 118.39 ZAC 98.47 ETC 255.95 CLP 134.32

PLANETOCENTRIC CONIC

C3 17.627 VHL 4.198 DLA 8.64 RAL 159.48 RAD 6567.7 VEL 11.790 PTH 2.08 VHP 3.804 DPA 9.07 RAP 188.15 ECC 1.2901

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 32 56	2455.78	-24.60	57.36	21.27	104.49	20 13 52	1855.8	-22.37	49.40
90.00	9 45 32	4557.63	11.31	192.21	17.65	63.87	11 1 29	3957.6	7.71	185.38
100.00	20 58 29	2179.89	-25.68	36.74	20.95	105.84	21 34 49	1579.9	-23.26	28.78
100.00	11 2 40	4308.75	12.32	173.39	17.13	62.55	12 14 29	3708.7	8.55	166.63
110.00	22 16 17	1936.39	-28.58	17.21	19.91	109.60	22 48 34	1336.4	-25.65	9.27
110.00	12 1 21	4125.01	14.97	157.92	15.60	58.91	13 10 6	3525.0	10.75	151.37

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .9806 TRA-2.3206 TC3 1.5255 BAU .4490 SGT 3700.2 SGR 1683.5 SG3 2126.2 ST 1647.9 SR 884.1 SS 2956.2
RDE .5992 RRA -.8089 RC3 1.1416 FAU .34593 RRT .9469 RRF -.9746 RTF -.9645 CRT .9727 CRS .9583 CST .9982
FDE-5.1251 FRA13.6146 FC-16.9897 BSP 14287 SGB 4065.2 R23 -.1384 R13 -.9734 LSA 3489.1 MSA 247.8 SSA 30.8
BDE 1.1491 BRA 2.4575 BC3 1.9053 FSP 7033 SG1 4034.8 SG2 496.4 THA 23.69 EL1 1861.2 EL2 181.5 ALF 27.85

LAUNCH DATE OCT 11 1964 FLIGHT TIME 282.00 ARRIVAL DATE JUL 20 1965

HELIOCENTRIC CONIC DISTANCE 662.792 EARTH TO MARS

RL 149.32 LAL .00 LOL 17.71 VL 32.729 GAL -6.48 AZL 89.94 HCA 212.57 SMA 187.88 ECC .23303 INC .0585 V1 29.840
RP 231.57 LAP -.03 LOP 230.29 VP 20.972 GAP .87 AZP 90.05 TAL 324.56 TAP 177.14 RCA 144.10 APO 231.66 V2 23.748
RC 221.297 GL .47 GP 10.16 ZAL 139.98 ZAP 132.12 ETS 169.36 ZAE 166.19 ETE 123.94 ZAC 98.32 ETC 255.98 CLP 132.95

PLANETOCENTRIC CONIC

C3 17.424 VHL 4.174 DLA 9.12 RAL 159.55 RAD 6567.7 VEL 11.782 PTH 2.08 VHP 3.731 DPA 9.15 RAP 187.79 ECC 1.2868

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 29 24	2468.65	-24.81	58.24	21.32	104.10	20 10 33	1868.6	-22.63	50.25
90.00	9 49 37	4539.37	10.76	191.15	17.54	63.65	11 5 16	3939.4	7.14	184.35
100.00	20 55 12	2191.93	-25.91	37.57	21.00	105.46	21 31 44	1591.9	-23.53	29.57
100.00	11 6 30	4291.32	11.77	172.39	17.02	62.32	12 18 1	3691.3	7.97	165.66
110.00	22 13 35	1946.62	-28.82	17.92	19.98	109.24	22 46 2	1346.6	-25.92	9.94
110.00	12 4 36	4109.39	14.42	157.04	15.47	58.67	13 13 5	3509.4	10.17	150.52

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .9383 TRA-2.2168 TC3 1.4537 BAU .4343 SGT 3553.7 SGR 1703.8 SG3 2213.5 ST 1585.8 SR 892.9 SS 2996.0
RDE .6016 RRA -.8109 RC3 1.1676 FAU .35862 RRT .9448 RRF -.9739 RTF -.9628 CRT .9727 CRS .9563 CST .9977
FDE-5.2361 FRA14.0850 FC-17.8188 BSP 13860 SGB 3941.0 R23 -.1380 R13 -.9728 LSA 3495.8 MSA 257.5 SSA 30.5
BDE 1.1146 BRA 2.3604 BC3 1.8646 FSP 7336 SG1 3908.2 SG2 507.6 THA 24.82 EL1 1810.8 EL2 181.3 ALF 29.03

LAUNCH DATE OCT 11 1964 FLIGHT TIME 284.00 ARRIVAL DATE JUL 22 1965

HELIOCENTRIC CONIC DISTANCE 666.602 EARTH TO MARS

RL 149.32 LAL .00 LOL 17.71 VL 32.717 GAL -6.44 AZL 89.88 HCA 213.58 SMA 187.68 ECC .23201 INC .1166 V1 29.840
RP 231.20 LAP -.06 LOP 231.30 VP 20.999 GAP .53 AZP 90.10 TAL 324.65 TAP 178.23 RCA 144.14 APO 231.23 V2 23.788
RC 223.281 GL .92 GP 10.09 ZAL 139.87 ZAP 130.76 ETS 169.87 ZAE 165.32 ETE 129.05 ZAC 98.17 ETC 256.00 CLP 131.54

PLANETOCENTRIC CONIC

C3 17.237 VHL 4.152 DLA 9.58 RAL 159.62 RAD 6567.7 VEL 11.774 PTH 2.08 VHP 3.661 DPA 9.26 RAP 187.41 ECC 1.2837

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 26 1	2481.09	-25.02	59.09	21.38	103.72	20 7 22	1881.1	-22.88	51.07
90.00	9 53 34	4521.93	10.23	190.14	17.45	63.45	11 8 56	3921.9	6.59	183.36
100.00	20 52 4	2203.56	-26.11	38.37	21.07	105.09	21 28 48	1603.6	-23.79	30.34
100.00	11 10 12	4274.69	11.24	171.44	16.92	62.12	12 21 27	3674.7	7.43	164.73
110.00	22 11 1	1956.50	-29.04	18.60	20.06	108.89	22 43 38	1356.5	-26.18	10.58
110.00	12 7 44	4094.51	13.90	156.21	15.37	58.45	13 15 59	3494.5	9.62	149.72

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .8952 TRA-2.1083 TC3 1.3705 BAU .4188 SGT 3395.3 SGR 1725.0 SG3 2302.2 ST 1520.2 SR 902.0 SS 3035.6
RDE .6045 RRA -.8138 RC3 1.1938 FAU .37148 RRT .9424 RRF -.9731 RTF -.9605 CRT .9729 CRS .9544 CST .9972
FDE-5.3487 FRA14.5641 FC-18.6583 BSP 13404 SGB 3808.4 R23 -.1381 R13 -.9720 LSA 3502.5 MSA 267.3 SSA 30.2
BDE 1.0802 BRA 2.2599 BC3 1.8175 FSP 7649 SG1 3772.8 SG2 519.5 THA 26.12 EL1 1758.5 EL2 180.2 ALF 30.35

LAUNCH DATE OCT 11 1964 FLIGHT TIME 286.00 ARRIVAL DATE JUL 24 1965

HELIOCENTRIC CONIC DISTANCE 670.421 EARTH TO MARS

RL 149.32 LAL .00 LOL 17.71 VL 32.707 GAL -6.41 AZL 89.83 HCA 214.60 SMA 187.50 ECC .23105 INC .1720 V1 29.840
RP 230.82 LAP -.10 LOP 232.31 VP 21.027 GAP .21 AZP 90.14 TAL 324.72 TAP 179.32 RCA 144.18 APO 230.82 V2 23.827
RC 225.247 GL 1.35 GP 10.03 ZAL 139.76 ZAP 129.36 ETS 170.37 ZAE 164.32 ETE 133.68 ZAC 98.01 ETC 256.03 CLP 130.09

PLANETOCENTRIC CONIC

C3 17.065 VHL 4.131 DLA 10.02 RAL 159.70 RAD 6567.7 VEL 11.766 PTH 2.08 VHP 3.594 DPA 9.38 RAP 186.99 ECC 1.2808

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 22 47	2493.13	-25.21	59.92	21.45	103.34	20 4 20	1893.1	-23.12	51.87
90.00	9 57 24	4505.27	9.73	189.18	17.38	63.27	11 12 29	3905.3	6.06	182.42
100.00	20 49 5	2214.81	-26.31	39.15	21.14	104.72	21 25 59	1614.8	-24.03	31.09
100.00	11 13 47	4258.82	10.74	170.53	16.85	61.93	12 24 46	3658.8	6.90	163.84
110.00	22 8 34	1966.06	-29.24	19.27	20.15	108.54	22 41 20	1366.1	-26.43	11.21
110.00	12 10 47	4080.34	13.39	155.43	15.29	58.25	13 18 47	3480.3	9.09	148.96

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .8512 TRA-1.9951 TC3 1.2757 BAU .4027 SGT 3225.0 SGR 1747.0 SG3 2392.2 ST 1451.1 SR 911.5 SS 3075.1
RDE .6077 RRA -.8175 RC3 1.2200 FAU .38450 RRT .9394 RRF -.9725 RTF -.9576 CRT .9734 CRS .9525 CST .9966
FDE-5.4625 FRA15.0521 FC-19.5066 BSP 12912 SGB 3667.8 R23 -.1389 R13 -.9710 LSA 3509.3 MSA 277.2 SSA 29.9
BDE 1.0459 BRA 2.1560 BC3 1.7652 FSP 7966 SG1 3629.0 SG2 532.2 THA 27.62 EL1 1704.3 EL2 177.9 ALF 31.83

LAUNCH DATE OCT 11 1964 FLIGHT TIME 272.00 ARRIVAL DATE JUL 18 1965

HELIOCENTRIC CONIC DISTANCE 643.902 EARTH TO MARS

RL 149.32 LAL .00 LOL 17.71 VL 32.794 GAL -6.71 AZL 90.28 HCA 207.56 SMA 189.03 ECC .23909 INC .2799 V1 29.840
RP 233.44 LAP .13 LOP 225.27 VP 20.856 GAP 2.62 AZP 89.75 TAL 324.04 TAP 171.60 RCA 143.83 APO 234.22 V2 23.555
RC 211.104 GL -2.11 GP 10.63 ZAL 140.61 ZAP 138.25 ETS 166.51 ZAE 168.19 ETE 93.61 ZAC 99.09 ETC 255.88 CLP 139.39

PLANETOCENTRIC CONIC

C3 18.620 VHL 4.315 DLA 6.47 RAL 159.22 RAD 6567.8 VEL 11.832 PTH 2.10 VHP 4.124 DPA 8.99 RAP 189.28 ECC 1.3064

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 48 43	2399.37	-23.58	53.54	21.17	106.15	20 28 42	1799.4	-21.14	45.72
90.00	9 27 37	4639.62	13.72	197.02	18.32	64.99	10 44 57	4039.6	10.24	190.08
100.00	21 13 8	2127.08	-24.65	35.16	20.82	107.46	21 48 35	1527.1	-22.03	25.34
100.00	10 45 53	4387.15	14.73	177.96	17.82	63.69	11 59 0	3787.1	11.08	171.07
110.00	22 28 25	1891.46	-27.52	14.15	19.70	111.13	22 59 57	1291.5	-24.40	6.37
110.00	11 47 5	4195.53	17.41	161.93	16.33	60.11	12 57 1	3595.5	13.31	155.23

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.1429 TRA-2.6952 TC3 1.7110 BAU .4990 SGT 4177.9 SGR 1616.8 SG3 1796.8 ST 1863.4 SR 854.7 SS 2800.8
RDE .5948 RRA -.8123 RC3 1.0440 FAU .29813 RRT .9532 RRF -.9782 RTF -.9683 CRT .9742 CRS .9669 CST .9993
FDE-4.7111 FRA11.8376 FC-13.8614 BSP 15680 SGB 4479.8 R23 -.1454 R13 -.9746 LSA 3464.4 MSA 209.8 SSA 31.9
BDE 1.2884 BRA 2.8149 BC3 2.0044 FSP 5893 SG1 4456.3 SG2 458.3 THA 20.47 EL1 2042.5 EL2 176.0 ALF 24.27

LAUNCH DATE OCT 11 1964 FLIGHT TIME 274.00 ARRIVAL DATE JUL 12 1965

HELIOCENTRIC CONIC DISTANCE 647.659 EARTH TO MARS

RL 149.32 LAL .00 LOL 17.71 VL 32.780 GAL -6.66 AZL 90.20 HCA 208.56 SMA 188.77 ECC .23775 INC .2037 V1 29.840
RP 233.07 LAP .10 LOP 226.27 VP 20.876 GAP 2.26 AZP 89.82 TAL 324.16 TAP 172.72 RCA 143.89 APO 233.65 V2 23.593
RC 213.179 GL -1.55 GP 10.52 ZAL 140.48 ZAP 137.11 ETS 167.13 ZAE 168.11 ETE 99.90 ZAC 98.93 ETC 255.89 CLP 138.18

PLANETOCENTRIC CONIC

C3 18.343 VHL 4.283 DLA 7.05 RAL 159.28 RAD 6567.7 VEL 11.821 PTH 2.09 VHP 4.040 DPA 8.97 RAP 189.04 ECC 1.3019

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 44 31	2414.29	-23.86	54.54	21.18	105.72	20 24 45	1814.3	-21.47	46.68
90.00	9 32 22	4617.67	13.09	195.73	18.12	64.66	10 49 19	4017.7	9.57	188.81
100.00	21 9 14	2141.06	-24.94	34.10	20.84	107.04	21 44 55	1541.1	-22.37	26.25
100.00	10 50 20	4366.14	14.10	176.73	17.61	63.36	12 3 6	3766.1	10.41	169.88
110.00	22 25 11	1903.36	-27.81	14.06	19.74	110.73	22 56 54	1303.4	-24.73	7.13
110.00	11 50 52	4176.60	16.77	160.84	16.11	59.77	13 0 29	3576.6	12.62	154.18

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.1040 TRA-2.6066 TC3 1.6798 BAU .4881 SGT 4074.0 SGR 1631.0 SG3 1875.9 ST 1815.0 SR 861.2 SS 2839.4
RDE .5951 RRA -.8094 RC3 1.0674 FAU .30964 RRT .9519 RRF -.9772 RTF -.9678 CRT .9737 CRS .9647 CST .9991
FDE-4.8115 FRA12.2639 FC-14.6140 BSP 15363 SGB 4388.4 R23 -.1428 R13 -.9745 LSA 3471.2 MSA 219.1 SSA 31.6
BDE 1.2541 BRA 2.7294 BC3 1.9902 FSP 6163 SG1 4363.5 SG2 466.6 THA 21.11 EL1 2001.0 EL2 178.0 ALF 25.01

LAUNCH DATE OCT 11 1964 FLIGHT TIME 276.00 ARRIVAL DATE JUL 14 1965

HELIOCENTRIC CONIC DISTANCE 651.426 EARTH TO MARS

RL 149.32 LAL .00 LOL 17.71 VL 32.766 GAL -6.61 AZL 90.13 HCA 209.56 SMA 188.53 ECC .23647 INC .1327 V1 29.840
RP 232.70 LAP .07 LOP 227.27 VP 20.898 GAP 1.90 AZP 89.89 TAL 324.27 TAP 173.83 RCA 143.95 APO 233.12 V2 23.631
RC 215.236 GL -1.01 GP 10.42 ZAL 140.35 ZAP 135.93 ETS 167.72 ZAE 167.88 ETE 106.24 ZAC 98.78 ETC 255.91 CLP 136.93

PLANETOCENTRIC CONIC

C3 18.086 VHL 4.253 DLA 7.60 RAL 159.35 RAD 6567.7 VEL 11.810 PTH 2.09 VHP 3.959 DPA 8.98 RAP 188.77 ECC 1.2976

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 40 29	2428.63	-24.12	55.51	21.21	105.30	20 20 58	1828.6	-21.79	47.62
90.00	9 36 55	4596.73	12.48	194.49	17.94	64.37	10 53 32	3996.7	8.92	187.61
100.00	21 5 29	2154.49	-25.20	35.01	20.87	106.63	21 41 24	1554.5	-22.68	27.12
100.00	10 54 36	4346.11	13.48	175.56	17.43	63.07	12 7 2	3746.1	9.76	168.74
110.00	22 22 5	1914.79	-28.08	15.73	19.79	110.34	22 54 0	1314.8	-25.05	7.87
110.00	11 54 30	4158.57	16.15	159.81	15.92	59.45	13 3 48	3558.6	11.97	153.19

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.0631 TRA-2.5156 TC3 1.6375 BAU .4758 SGT 3960.1 SGR 1646.9 SG3 1957.3 ST 1762.2 SR 868.1 SS 2877.5
RDE .5957 RRA -.8082 RC3 1.0912 FAU .32137 RRT .9504 RRF -.9763 RTF -.9670 CRT .9732 CRS .9625 CST .9988
FDE-4.9113 FRA12.7046 FC-15.3834 BSP 15041 SGB 4288.9 R23 -.1408 R13 -.9742 LSA 3476.4 MSA 228.6 SSA 31.4
BDE 1.2186 BRA 2.6422 BC3 1.9678 FSP 6448 SG1 4262.4 SG2 476.0 THA 21.85 EL1 1956.2 EL2 179.8 ALF 25.85

LAUNCH DATE OCT 11 1964 FLIGHT TIME 278.00 ARRIVAL DATE JUL 16 1965

HELIOCENTRIC CONIC DISTANCE 655.204 EARTH TO MARS

RL 149.32 LAL .00 LOL 17.71 VL 32.753 GAL -6.56 AZL 90.06 HCA 210.56 SMA 188.30 ECC .23526 INC .0641 V1 29.840
RP 232.32 LAP .03 LOP 228.27 VP 20.921 GAP 1.55 AZP 89.94 TAL 324.38 TAP 174.94 RCA 144.00 APO 232.60 V2 23.670
RC 217.275 GL -.50 GP 10.32 ZAL 140.22 ZAP 134.70 ETS 168.29 ZAE 167.48 ETE 112.45 ZAC 98.62 ETC 255.93 CLP 135.64

PLANETOCENTRIC CONIC

C3 17.848 VHL 4.225 DLA 8.13 RAL 159.42 RAD 6567.7 VEL 11.800 PTH 2.09 VHP 3.880 DPA 9.02 RAP 188.47 ECC 1.2937

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 36 38	2442.45	-24.37	56.45	21.24	104.89	20 17 21	1842.5	-22.08	48.52
90.00	9 41 18	4576.73	11.88	193.32	17.78	64.11	10 57 35	3976.7	8.31	186.47
100.00	21 1 54	2167.42	-25.45	35.89	20.90	106.23	21 36 2	1567.4	-22.98	27.96
100.00	10 58 43	4326.99	12.89	174.45	17.27	62.79	12 10 50	3727.0	9.14	167.66
110.00	22 19 7	1925.79	-28.34	16.49	19.84	109.97	22 51 13	1325.8	-25.36	8.58
110.00	11 57 59	4141.39	15.55	158.84	15.75	59.17	13 7 1	3541.4	11.35	152.26

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.0223 TRA-2.4198 TC3 1.5866 BAU .4629 SGT 3835.3 SGR 1664.4 SG3 2040.7 ST 1706.8 SR 875.8 SS 2916.6
RDE .5972 RRA -.8079 RC3 1.1161 FAU .33351 RRT .9487 RRF -.9754 RTF -.9659 CRT .9729 CRS .9604 CST .9985
FDE-5.0169 FRA13.1532 FC-16.1776 BSP 14670 SGB 4180.9 R23 -.1393 R13 -.9739 LSA 3482.7 MSA 238.2 SSA 31.1
BDE 1.1839 BRA 2.5511 BC3 1.9399 FSP 6735 SG1 4152.6 SG2 485.8 THA 22.71 EL1 1909.8 EL2 180.9 ALF 26.79

LAUNCH DATE OCT 11 1964 FLIGHT TIME 288.00 ARRIVAL DATE JUL 26 1965

HELIOCENTRIC CONIC DISTANCE 674.249 EARTH TO MARS

RL	149.32	LAL	.00	LOL	17.71	VL	32.697	GAL	-6.37	AZL	89.78	HCA	215.62	SMA	187.32	ECC	.23015	INC	.2236
RP	230.43	LAP	-.13	LOP	233.33	VP	21.057	GAP	-.12	AZP	90.18	TAL	324.78	TAP	180.40	RCA	144.21	APO	230.44
RC	227.193	GL	1.77	GP	9.97	ZAL	139.66	ZAP	127.92	ETS	170.85	ZAE	163.18	ETE	137.85	ZAC	97.85	ETC	256.07

V1 29.840 V2 23.867 CLP 128.60

PLANETOCENTRIC CONIC

C3	16.908	VHL	4.112	DLA	10.43	RAL	159.78	RAD	6567.7	VEL	11.760	PTH	2.08	VHP	3.529	DPA	9.52	RAP	186.54

ECC 1.2783

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 19 42	2504.78	-25.39	60.73	21.53	102.98	20 1 26	1904.8	-23.35	52.65
90.00	10 1 7	4489.36	9.24	188.27	17.33	63.11	11 15 56	3889.4	5.56	181.52
100.00	20 46 13	2225.70	-26.50	39.90	21.23	104.37	21 23 19	1625.7	-24.26	31.82
100.00	11 17 16	4243.67	10.25	169.67	16.79	61.77	12 27 59	3643.7	6.40	163.00
110.00	22 6 15	1975.30	-29.44	19.92	20.25	108.21	22 39 10	1375.3	-26.67	11.83
110.00	12 13 44	4066.84	12.90	154.68	15.22	58.07	13 21 31	3466.8	8.59	148.24

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8065	TRA	-1.8767	TC3	1.1698	BAU	.3864	SGT	3042.7	SGR	1769.8	SG3	2483.2	ST	1378.4	SR	921.3	SS	3115.1
RDE	.6115	RRA	-.8216	RC3	1.2467	FAU	.39782	RRT	.9357	RRF	-.9719	RTF	-.9538	CRT	.9740	CRS	.9507	CST	.9958
FDE	-5.5805	FRA	15.5425	FC	-20.3694	BSP	12393	SGB	3520.0	R23	-.1403	R13	-.9699	LSA	3517.0	MSA	286.9	SSA	29.6
BDE	1.0121	BRA	2.0487	BC3	1.7096	FSP	8284	SG1	3477.4	SG2	546.2	THA	29.35	EL1	1648.8	EL2	174.5	ALF	33.49

LAUNCH DATE OCT 11 1964 FLIGHT TIME 290.00 ARRIVAL DATE JUL 28 1965

HELIOCENTRIC CONIC DISTANCE 678.088 EARTH TO MARS

RL	149.32	LAL	.00	LOL	17.71	VL	32.687	GAL	-6.35	AZL	89.73	HCA	216.64	SMA	187.16	ECC	.22930	INC	.2734
RP	230.05	LAP	-.16	LOP	234.35	VP	21.088	GAP	-.44	AZP	90.22	TAL	324.84	TAP	181.48	RCA	144.24	APO	230.07
RC	229.120	GL	2.17	GP	9.92	ZAL	139.57	ZAP	126.43	ETS	171.32	ZAE	161.94	ETE	141.58	ZAC	97.69	ETC	256.10

V1 29.840 V2 23.907 CLP 127.07

PLANETOCENTRIC CONIC

C3	16.766	VHL	4.095	DLA	10.84	RAL	159.86	RAD	6587.7	VEL	11.754	PTH	2.07	VHP	3.468	DPA	9.69	RAP	186.05

ECC 1.2759

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 16 45	2516.07	-25.56	61.51	21.62	102.62	19 58 41	1916.1	-23.57	53.41
90.00	10 4 43	4474.19	8.77	187.40	17.30	62.97	11 19 17	3874.2	5.07	180.67
100.00	20 43 31	2236.25	-26.67	40.64	21.33	104.02	21 20 47	1636.2	-24.48	32.52
100.00	11 20 38	4229.24	9.78	168.85	16.76	61.61	12 31 8	3629.2	5.92	162.20
110.00	22 4 3	1984.25	-29.63	20.54	20.37	107.88	22 37 7	1384.3	-26.90	12.42
110.00	12 16 36	4054.00	12.44	153.98	15.18	57.90	13 24 10	3454.0	8.11	147.55

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.7608	TRA	-1.7529	TC3	1.0516	BAU	.3701	SGT	2848.1	SGR	1792.9	SG3	2574.6	ST	1302.0	SR	931.3	SS	3154.5
RDE	.6154	RRA	-.8263	RC3	1.2732	FAU	.41119	RRT	.9311	RRF	-.9713	RTF	-.9488	CRT	.9749	CRS	.9490	CST	.9949
FDE	-5.6992	FRA	16.0367	FC	-21.2331	BSP	11842	SGB	3365.4	R23	-.1424	R13	-.9685	LSA	3524.8	MSA	296.6	SSA	29.3
BDE	.9785	BRA	1.9379	BC3	1.6513	FSP	8605	SG1	3318.3	SG2	561.3	THA	31.38	EL1	1591.8	EL2	169.5	ALF	35.35

LAUNCH DATE OCT 11 1964 FLIGHT TIME 292.00 ARRIVAL DATE JUL 30 1965

HELIOCENTRIC CONIC DISTANCE 681.935 EARTH TO MARS

RL	149.32	LAL	.00	LOL	17.71	VL	32.678	GAL	-6.32	AZL	89.68	HCA	217.67	SMA	187.00	ECC	.22851	INC	.3211
RP	229.67	LAP	-.20	LOP	235.38	VP	21.119	GAP	-.75	AZP	90.25	TAL	324.88	TAP	182.55	RCA	144.27	APO	229.73
RC	231.027	GL	2.56	GP	9.87	ZAL	139.49	ZAP	124.89	ETS	171.78	ZAE	160.59	ETE	144.91	ZAC	97.52	ETC	256.14

V1 29.840 V2 23.948 CLP 125.49

PLANETOCENTRIC CONIC

C3	16.637	VHL	4.079	DLA	11.22	RAL	159.95	RAD	6567.7	VEL	11.748	PTH	2.07	VHP	3.409	DPA	9.87	RAP	185.53

ECC 1.2738

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 13 57	2527.00	-25.72	62.27	21.73	102.27	19 56 4	1927.0	-23.77	54.15
90.00	10 8 13	4459.73	8.32	186.57	17.29	62.84	11 22 33	3859.7	4.61	179.86
100.00	20 40 56	2246.46	-26.84	41.35	21.44	103.68	21 18 23	1646.5	-24.69	33.21
100.00	11 23 55	4215.50	9.34	168.07	16.75	61.47	12 34 11	3615.5	5.46	161.44
110.00	22 1 58	1992.92	-29.81	21.16	20.49	107.56	22 35 11	1392.9	-27.12	13.00
110.00	12 19 23	4041.80	12.00	153.31	15.16	57.75	13 26 45	3441.8	7.66	146.90

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.7142	TRA	-1.6240	TC3	.9213	BAU	.3542	SGT	2642.0	SGR	1816.2	SG3	2666.1	ST	1222.2	SR	941.5	SS	3193.6
RDE	.6197	RRA	-.8314	RC3	1.2991	FAU	.42456	RRT	.9251	RRF	-.9708	RTF	-.9421	CRT	.9762	CRS	.9473	CST	.9937
FDE	-5.8192	FRA	16.5334	FC	-22.0928	BSP	11261	SGB	3206.0	R23	-.1449	R13	-.9669	LSA	3533.3	MSA	306.2	SSA	28.9
BDE	.9456	BRA	1.8244	BC3	1.5926	FSP	8927	SG1	3153.5	SG2	577.9	THA	33.74	EL1	1534.2	EL2	162.8	ALF	37.43

LAUNCH DATE OCT 11 1964 FLIGHT TIME 294.00 ARRIVAL DATE AUG 1 1965

HELIOCENTRIC CONIC DISTANCE 685.792 EARTH TO MARS

RL	149.32	LAL	.00	LOL	17.71	VL	32.669	GAL	-6.30	AZL	89.63	HCA	218.70	SMA	186.85	ECC	.22778	INC	.3665
RP	229.28	LAP	-.23	LOP	236.41	VP	21.152	GAP	-1.06	AZP	90.29	TAL	324.92	TAP	183.62	RCA	144.29	APO	229.41
RC	232.913	GL	2.93	GP	9.82	ZAL	139.42	ZAP	123.32	ETS	172.23	ZAE	159.15	ETE	147.88	ZAC	97.35	ETC	256.18

V1 29.840 V2 23.988 CLP 123.88

PLANETOCENTRIC CONIC

C3	16.522	VHL	4.065	DLA	11.58	RAL	160.04	RAD	6567.7	VEL	11.743	PTH	2.07	VHP	3.353	DPA	10.07	RAP	184.98

ECC 1.2719

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 11 18	2537.58	-25.87	63.01	21.84	101.93	19 53 36	1937.6	-23.97	54.86
90.00	10 11 37	4445.96	7.89	185.79	17.31	62.72	11 25 43	3846.0	4.17	179.08
100.00	20 38 30	2256.34	-27.00	42.04	21.56	103.35	21 16 6	1656.3	-24.89	33.88
100.00	11 27 6	4202.43	8.91	167.34	16.76	61.35	12 37 9	3602.4	5.02	160.71
110.00	22 0 0	2001.31	-29.98	21.75	20.63	107.24	22 33 21	1401.3	-27.33	13.56
110.00	12 22 6	4030.23	11.58	152.68	15.16	57.61	13 29 16	3430.2	7.22	146.29

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6660	TRA	-1.4898	TC3	.7780	BAU	.3393	SGT	2424.2	SGR	1839.3	SG3	2757.5	ST	1138.1	SR	951.4	SS	3231.1
RDE	.6240	RRA	-.8369	RC3	1.3245	FAU	.43792	RRT	.9169	RRF	-.9703	RTF	-.9330	CRT	.9777	CRS	.9456	CST	.9922
FDE	-5.9357	FRA	17.0318	FC	-22.9464	BSP	10669	SGB	3043.0	R23	-.1478	R13	-.9651	LSA	3541.2	MSA	315.8	SSA	28.6
BDE	.9126	BRA	1.7088	BC3	1.5361	FSP	9255	SG1	2983.9	SG2	596.5	THA	36.52	EL1	1475.4	EL2	154.1	ALF	39.78

LAUNCH DATE OCT 11 1964 FLIGHT TIME 296.00 ARRIVAL DATE AUG 3 1965

HELIOCENTRIC CONIC DISTANCE 689.658 EARTH TO MARS

RL 149.32 LAL .00 LOL 17.71 VL 32.661 GAL -6.28 AZL 89.59 HCA 219.73 SMA 186.71 ECC .22710 INC .4103 V1 29.840
RP 228.89 LAP -.26 LOP 237.44 VP 21.186 GAP -1.37 AZP 90.32 TAL 324.95 TAP 184.68 RCA 144.31 APO 229.12 V2 24.029
RC 234.778 GL 3.29 GP 9.77 ZAL 139.36 ZAP 121.70 ETS 172.67 ZAE 157.62 ETE 150.54 ZAC 97.17 ETC 256.23 CLP 122.22

PLANETOCENTRIC CONIC

C3 16.420 VHL 4.052 DLA 11.93 RAL 160.14 RAD 6567.7 VEL 11.739 PTH 2.07 VHP 3.301 DPA 10.29 RAP 184.39 ECC 1.2702

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 8 47	2547.84	-26.01	63.73	21.97	101.60	19 51 15	1947.8	-24.15	55.55
90.00	10 14 56	4432.87	7.48	185.04	17.34	62.61	11 28 49	3832.9	3.75	178.35
100.00	20 36 12	2265.92	-27.15	42.72	21.70	103.02	21 13 58	1665.9	-25.08	34.52
100.00	11 30 12	4190.02	8.51	166.64	16.79	61.24	12 40 2	3590.0	4.60	160.03
110.00	21 58 10	2009.44	-30.14	22.33	20.78	106.94	22 31 39	1409.4	-27.53	14.11
110.00	12 24 44	4019.26	11.18	152.08	15.18	57.48	13 31 43	3419.3	6.81	145.71

DIFFERENTIAL CORRECTIONS
TDE .6202 TRA-1.3468 TC3 .6298 BAU .3273
RDE .6295 RRA -.8413 RC3 1.3514 FAU .45195
FDE-6.0722 FRA17.5060 FC-23.8287 BSP 9983
BDE .8837 BRA 1.5880 BC3 1.4909 FSP 9538

MID-COURSE EXECUTION ACCURACY
SGT 2195.0 SGR 1862.8 SG3 2848.2
RRT .9064 RRF -.9698 RTF -.9208
SGB 2878.8 R23 -.1497 R13 -.9633
SG1 2812.6 SG2 614.1 THA 39.85

ORBIT DETERMINATION ACCURACY
ST 1053.6 SR 962.5 SS 3272.2
CRT .9802 CRS .9444 CST .9901
LSA 3554.9 MSA 325.4 SSA 28.2
EL1 1420.0 EL2 141.5 ALF 42.36

LAUNCH DATE OCT 11 1964 FLIGHT TIME 298.00 ARRIVAL DATE AUG 5 1965

HELIOCENTRIC CONIC DISTANCE 693.532 EARTH TO MARS

RL 149.32 LAL .00 LOL 17.71 VL 32.654 GAL -6.26 AZL 89.55 HCA 220.77 SMA 186.58 ECC .22647 INC .4524 V1 29.840
RP 228.51 LAP -.30 LOP 238.48 VP 21.220 GAP -1.67 AZP 90.34 TAL 324.96 TAP 185.73 RCA 144.33 APO 228.84 V2 24.070
RC 236.623 GL 3.64 GP 9.72 ZAL 139.31 ZAP 120.03 ETS 173.11 ZAE 156.01 ETE 152.93 ZAC 96.98 ETC 256.28 CLP 120.52

PLANETOCENTRIC CONIC

C3 16.331 VHL 4.041 DLA 12.26 RAL 160.25 RAD 6567.7 VEL 11.735 PTH 2.07 VHP 3.251 DPA 10.52 RAP 183.77 ECC 1.2688

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 6 25	2557.76	-26.15	64.42	22.12	101.28	19 49 3	1957.8	-24.33	56.23
90.00	10 18 9	4420.46	7.09	184.34	17.39	62.51	11 31 50	3820.5	3.36	177.65
100.00	20 34 2	2275.19	-27.29	43.37	21.85	102.71	21 11 58	1675.2	-25.26	35.15
100.00	11 33 13	4178.27	8.12	165.98	16.83	61.13	12 42 52	3578.3	4.21	159.38
110.00	21 56 27	2017.32	-30.30	22.89	20.95	106.64	22 30 4	1417.3	-27.72	14.64
110.00	12 27 18	4008.90	10.80	151.52	15.22	57.37	13 34 7	3408.9	6.42	145.16

DIFFERENTIAL CORRECTIONS
TDE .5689 TRA-1.2019 TC3 .4591 BAU .3163
RDE .6339 RRA -.8470 RC3 1.3741 FAU .46474
FDE-6.1843 FRA17.9986 FC-24.6368 BSP 9392
BDE .8517 BRA 1.4704 BC3 1.4488 FSP 9869

MID-COURSE EXECUTION ACCURACY
SGT 1956.8 SGR 1884.6 SG3 2936.7
RRT .8895 RRF -.9693 RTF -.9021
SGB 2716.7 R23 -.1522 R13 -.9612
SG1 2640.7 SG2 638.2 THA 43.79

ORBIT DETERMINATION ACCURACY
ST 961.4 SR 972.0 SS 3307.2
CRT .9825 CRS .9428 CST .9874
LSA 3562.9 MSA 334.7 SSA 27.9
EL1 1361.2 EL2 127.9 ALF 45.32

LAUNCH DATE OCT 11 1964 FLIGHT TIME 300.00 ARRIVAL DATE AUG 7 1965

HELIOCENTRIC CONIC DISTANCE 697.416 EARTH TO MARS

RL 149.32 LAL .00 LOL 17.71 VL 32.646 GAL -6.24 AZL 89.51 HCA 221.80 SMA 186.46 ECC .22590 INC .4931 V1 29.840
RP 228.12 LAP -.33 LOP 239.52 VP 21.256 GAP -1.97 AZP 90.37 TAL 324.97 TAP 186.78 RCA 144.34 APO 228.58 V2 24.111
RC 238.446 GL 3.97 GP 9.68 ZAL 139.27 ZAP 118.33 ETS 173.54 ZAE 154.33 ETE 155.07 ZAC 96.79 ETC 256.34 CLP 118.78

PLANETOCENTRIC CONIC

C3 16.254 VHL 4.032 DLA 12.58 RAL 160.36 RAD 6567.7 VEL 11.732 PTH 2.07 VHP 3.205 DPA 10.77 RAP 183.11 ECC 1.2675

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 4 12	2567.37	-26.27	65.10	22.28	100.96	19 46 59	1967.4	-24.50	56.88
90.00	10 21 17	4408.70	6.72	183.68	17.46	62.43	11 34 46	3808.7	2.98	177.00
100.00	20 32 1	2284.16	-27.42	44.00	22.01	102.40	21 10 5	1684.2	-25.44	35.76
100.00	11 36 9	4167.15	7.75	165.36	16.90	61.04	12 45 37	3567.1	3.83	158.76
110.00	21 54 51	2024.94	-30.45	23.43	21.12	106.35	22 28 36	1424.9	-27.91	15.16
110.00	12 29 48	3999.13	10.44	150.99	15.28	57.26	13 36 27	3399.1	6.05	144.64

DIFFERENTIAL CORRECTIONS
TDE .5184 TRA-1.0492 TC3 .2817 BAU .3097
RDE .6389 RRA -.8519 RC3 1.3973 FAU .47785
FDE-6.3045 FRA18.4685 FC-25.4514 BSP 8758
BDE .8228 BRA 1.3515 BC3 1.4254 FSP 10169

MID-COURSE EXECUTION ACCURACY
SGT 1711.2 SGR 1905.9 SG3 3023.5
RRT .8646 RRF -.9688 RTF -.8741
SGB 2561.4 R23 -.1521 R13 -.9595
SG1 2474.3 SG2 662.3 THA 48.56

ORBIT DETERMINATION ACCURACY
ST 867.7 SR 981.9 SS 3342.8
CRT .9856 CRS .9414 CST .9835
LSA 3573.8 MSA 344.1 SSA 27.5
EL1 1305.7 EL2 110.1 ALF 48.58

LAUNCH DATE OCT 11 1964 FLIGHT TIME 302.00 ARRIVAL DATE AUG 9 1965

HELIOCENTRIC CONIC DISTANCE 701.307 EARTH TO MARS

RL 149.32 LAL .00 LOL 17.71 VL 32.640 GAL -6.23 AZL 89.47 HCA 222.85 SMA 186.35 ECC .22537 INC .5317 V1 29.840
RP 227.73 LAP -.36 LOP 240.56 VP 21.292 GAP -2.26 AZP 90.39 TAL 324.97 TAP 187.82 RCA 144.35 APO 228.34 V2 24.152
RC 240.248 GL 4.29 GP 9.63 ZAL 139.24 ZAP 116.59 ETS 173.96 ZAE 152.58 ETE 157.01 ZAC 96.58 ETC 256.40 CLP 117.00

PLANETOCENTRIC CONIC

C3 16.190 VHL 4.024 DLA 12.87 RAL 160.49 RAD 6567.6 VEL 11.729 PTH 2.07 VHP 3.162 DPA 11.04 RAP 182.42 ECC 1.2664

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 2 8	2576.66	-26.39	65.75	22.45	100.65	19 45 4	1976.7	-24.65	57.52
90.00	10 24 20	4397.60	6.37	183.05	17.55	62.35	11 37 38	3797.6	2.62	176.38
100.00	20 30 8	2292.83	-27.54	44.62	22.19	102.10	21 8 21	1692.8	-25.60	36.36
100.00	11 39 1	4156.66	7.41	164.77	16.99	60.96	12 48 18	3556.7	3.48	158.19
110.00	21 53 23	2032.32	-30.59	23.96	21.32	106.06	22 27 16	1432.3	-28.08	15.66
110.00	12 32 15	3989.93	10.10	150.49	15.35	57.17	13 38 45	3389.9	5.70	144.16

DIFFERENTIAL CORRECTIONS
TDE .4661 TRA -.8913 TC3 .0901 BAU .3077
RDE .6440 RRA -.8564 RC3 1.4186 FAU .49050
FDE-6.4229 FRA18.9246 FC-26.2295 BSP 8160
BDE .7950 BRA 1.2360 BC3 1.4215 FSP 10462

MID-COURSE EXECUTION ACCURACY
SGT 1463.1 SGR 1925.9 SG3 3107.2
RRT .8234 RRF -.9683 RTF -.8284
SGB 2418.6 R23 -.1485 R13 -.9584
SG1 2318.2 SG2 689.9 THA 54.34

ORBIT DETERMINATION ACCURACY
ST 770.1 SR 991.5 SS 3377.0
CRT .9892 CRS .9400 CST .9780
LSA 3585.3 MSA 353.1 SSA 27.2
EL1 1252.3 EL2 89.2 ALF 52.24

LAUNCH DATE OCT 11 1964 FLIGHT TIME 304.00 ARRIVAL DATE AUG 11 1965

HELIOCENTRIC CONIC DISTANCE 705.207 EARTH TO MARS

RL	149.32	LAL	.00	LOL	17.71	VL	32.633	GAL	-6.22	AZL	89.43	HCA	223.90	SMA	186.24	ECC	.22490	INC	.5694
RP	227.34	LAP	-.39	LOP	241.61	VP	21.330	GAP	-2.55	AZP	90.41	TAL	324.96	TAP	188.85	RCA	144.35	APO	228.12
RC	242.030	GL	4.60	GP	9.58	ZAL	139.22	ZAP	114.81	ETS	174.38	ZAE	150.76	ETE	158.76	ZAC	96.37	ETC	256.46

V1	29.840	V2	24.193	CLP	115.18														

PLANETOCENTRIC CONIC

C3	16.137	VHL	4.017	DLA	13.16	RAL	160.62	RAD	6567.6	VEL	11.727	PTH	2.07	VHP	3.122	DPA	11.31	RAP	181.70

ECC	1.2656	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	19 0 12	2585.64	-26.50	66.39	22.64	100.35	19 43 18	1985.6	-24.80	58.13							
		90.00	10 27 18	4387.15	6.04	182.46	17.66	62.28	11 40 25	3787.1	2.29	175.79							
		100.00	20 28 23	2301.22	-27.66	45.21	22.38	101.81	21 6 45	1701.2	-25.75	36.93							
		100.00	11 41 48	4146.80	7.08	164.22	17.09	60.88	12 50 55	3546.8	3.15	157.64							
		110.00	21 52 2	2039.46	-30.72	24.48	21.52	105.79	22 26 2	1439.5	-28.25	16.15							
		110.00	12 34 38	3981.31	9.78	150.03	15.45	57.08	13 40 59	3381.3	5.38	143.71							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4123	TRA	-.7276	TC3	-.1140	BAU	.3111	SGT	1220.6	SGR	1944.2	SG3	3187.3	ST	669.3	SR	1000.4	SS	3408.5
RDE	.6489	RRA	-.8607	RC3	1.4376	FAU	.50248	RRT	.7509	RRF	-.9677	RTF	-.7491	CRT	.9932	CRS	.9386	CST	.9693
FDE	-6.5334	FRA	19.3700	FC	-26.9570	BSP	7618	SGB	2295.6	R23	-.1380	R13	-.9584	LSA	3596.5	MSA	362.0	SSA	26.9
BDE	.7688	BRA	1.1270	BC3	1.4421	FSP	10752	SG1	2180.1	SG2	718.9	THA	61.36	EL1	1201.9	EL2	64.9	ALF	56.28

LAUNCH DATE OCT 11 1964 FLIGHT TIME 306.00 ARRIVAL DATE AUG 13 1965

HELIOCENTRIC CONIC DISTANCE 709.115 EARTH TO MARS

RL	149.32	LAL	.00	LOL	17.71	VL	32.628	GAL	-6.22	AZL	89.39	HCA	224.95	SMA	186.14	ECC	.22447	INC	.6057
RP	226.95	LAP	-.43	LOP	242.66	VP	21.368	GAP	-2.83	AZP	90.43	TAL	324.93	TAP	189.88	RCA	144.36	APO	227.92
RC	243.792	GL	4.90	GP	9.53	ZAL	139.21	ZAP	112.99	ETS	174.79	ZAE	148.89	ETE	160.36	ZAC	96.15	ETC	256.53

V1	29.840	V2	24.235	CLP	113.33														

PLANETOCENTRIC CONIC

C3	16.096	VHL	4.012	DLA	13.43	RAL	160.75	RAD	6567.6	VEL	11.725	PTH	2.07	VHP	3.085	DPA	11.60	RAP	180.95

ECC	1.2649	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	18 58 25	2594.30	-26.61	67.00	22.84	100.06	19 41 39	1994.3	-24.95	58.73							
		90.00	10 30 11	4377.33	5.73	181.90	17.79	62.22	11 43 9	3777.3	1.97	175.24							
		100.00	20 26 47	2309.31	-27.77	45.79	22.59	101.52	21 5 17	1709.3	-25.90	37.49							
		100.00	11 44 30	4137.55	6.78	163.71	17.22	60.82	12 53 28	3537.6	2.83	157.14							
		110.00	21 50 49	2046.37	-30.85	24.97	21.74	105.52	22 24 56	1446.4	-28.41	16.62							
		110.00	12 36 58	3973.26	9.48	149.59	15.57	57.00	13 43 11	3373.3	5.07	143.28							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3575	TRA	-.5578	TC3	-.3286	BAU	.3209	SGT	1000.4	SGR	1960.5	SG3	3262.9	ST	566.6	SR	1008.9	SS	3438.3
RDE	.6538	RRA	-.8641	RC3	1.4546	FAU	.51391	RRT	.6159	RRF	-.9672	RTF	-.6032	CRT	.9969	CRS	.9372	CST	.9548
FDE	-6.6414	FRA	19.7906	FC	-27.6403	BSP	7148	SGB	2201.0	R23	-.1174	R13	-.9600	LSA	3608.7	MSA	370.9	SSA	26.6
BDE	.7452	BRA	1.0285	BC3	1.4912	FSP	11026	SG1	2070.6	SG2	746.2	THA	69.82	EL1	1156.5	EL2	38.7	ALF	60.72

LAUNCH DATE OCT 11 1964 FLIGHT TIME 308.00 ARRIVAL DATE AUG 15 1965

HELIOCENTRIC CONIC DISTANCE 713.029 EARTH TO MARS

RL	149.32	LAL	.00	LOL	17.71	VL	32.622	GAL	-6.21	AZL	89.36	HCA	226.00	SMA	186.05	ECC	.22410	INC	.6407
RP	226.56	LAP	-.46	LOP	243.71	VP	21.406	GAP	-3.11	AZP	90.45	TAL	324.90	TAP	190.90	RCA	144.35	APO	227.74
RC	245.534	GL	5.19	GP	9.47	ZAL	139.22	ZAP	111.14	ETS	175.20	ZAE	146.97	ETE	161.82	ZAC	95.92	ETC	256.61

V1	29.840	V2	24.277	CLP	111.44														

PLANETOCENTRIC CONIC

C3	16.068	VHL	4.008	DLA	13.68	RAL	160.90	RAD	6567.6	VEL	11.724	PTH	2.07	VHP	3.052	DPA	11.90	RAP	180.17

ECC	1.2644	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	18 56 48	2602.65	-26.71	67.59	23.06	99.78	19 40 10	2002.6	-25.08	59.30							
		90.00	10 33 0	4368.18	5.44	181.39	17.94	62.17	11 45 48	3768.2	1.67	174.73							
		100.00	20 25 20	2317.11	-27.88	46.34	22.81	101.25	21 3 51	1717.1	-26.04	38.02							
		100.00	11 47 8	4128.94	6.49	163.23	17.36	60.76	12 55 57	3528.9	2.54	156.66							
		110.00	21 49 44	2053.03	-30.97	25.46	21.98	105.25	22 23 57	1453.0	-28.56	17.08							
		110.00	12 39 14	3965.79	9.20	149.19	15.71	56.93	13 45 20	3365.8	4.79	142.89							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2963	TRA	-.3860	TC3	-.5667	BAU	.3372	SGT	841.6	SGR	1972.9	SG3	3332.2	ST	456.7	SR	1014.2	SS	3456.5
RDE	.6563	RRA	-.8691	RC3	1.4639	FAU	.52263	RRT	.3555	RRF	-.9665	RTF	-.3298	CRT	.9979	CRS	.9349	CST	.9297
FDE	-6.6965	FRA	20.2357	FC	-28.1589	BSP	6880	SGB	2144.9	R23	-.0819	R13	-.9631	LSA	3611.1	MSA	379.3	SSA	26.6
BDE	.7201	BRA	.9510	BC3	1.5697	FSP	11383	SG1	1999.5	SG2	776.1	THA	79.83	EL1	1111.9	EL2	27.0	ALF	65.78

LAUNCH DATE OCT 11 1964 FLIGHT TIME 310.00 ARRIVAL DATE AUG 17 1965

HELIOCENTRIC CONIC DISTANCE 716.954 EARTH TO MARS

RL	149.32	LAL	.00	LOL	17.71	VL	32.617	GAL	-6.21	AZL	89.33	HCA	227.06	SMA	185.96	ECC	.22377	INC	.6747
RP	226.17	LAP	-.49	LOP	244.77	VP	21.446	GAP	-3.38	AZP	90.46	TAL	324.86	TAP	191.91	RCA	144.35	APO	227.57
RC	247.256	GL	5.47	GP	9.41	ZAL	139.24	ZAP	109.25	ETS	175.60	ZAE	145.00	ETE	163.16	ZAC	95.69	ETC	256.69

V1	29.840	V2	24.318	CLP	109.53														

PLANETOCENTRIC CONIC

C3	16.050	VHL	4.006	DLA	13.92	RAL	161.06	RAD	6567.6	VEL	11.723	PTH	2.07	VHP	3.022	DPA	12.20	RAP	179.36

ECC	1.2641	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	18 55 19	2610.70	-26.80	68.16	23.29	99.51	19 38 49	2010.7	-25.21	59.86							
		90.00	10 35 43	4359.62	5.17	180.91	18.10	62.12	11 48 23	3759.6	1.40	174.26							
		100.00	20 24 1	2324.64	-27.98	46.88	23.05	100.98	21 2 45	1724.6	-26.18	38.54							
		100.00	11 49 42	4120.91	6.22	162.78	17.53	60.70	12 58 23	3520.9	2.27	156.22							
		110.00	21 48 46	2059.47	-31.08	25.92	22.23	105.00	22 23 5	1459.5	-28.71	17.52							
		110.00	12 41 27	3958.85	8.95	148.82	15.86	56.87	13 47 26	3358.8	4.52	142.52							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2416	TRA	-.2026	TC3	-.7947	BAU	.3604	SGT	783.6	SGR	1985.8	SG3	3397.5	ST	357.4	SR	1022.9	SS	3486.7
RDE	.6624	RRA	-.8693	RC3	1.4796	FAU	.53389	RRT	-.0290	RRF	-.9658	RTF	.0737	CRT	.9875	CRS	.9341	CST	.8740
FDE	-6.8205	FRA	20.5721	FC	-28.7977	BSP	6624	SGB	2134.8	R23	-.0406	R13	-.9660	LSA	3630.4	MSA	387.8	SSA	26.1
BDE	.7051	BRA	.8926	BC3	1.6795	FSP	11559	SG1	1985.9	SG2	783.2	THA	90.78	EL1	1082.3	EL2	53.3	ALF	70.91

LAUNCH DATE OCT 11 1964 FLIGHT TIME 312.00 ARRIVAL DATE AUG 19 1965

HELIOCENTRIC CONIC DISTANCE 720.886 EARTH TO MARS

RL 149.32 LAL .00 LOL 17.71 VL 32.612 GAL -6.22 AZL 89.29 HCA 228.12 SMA 185.88 ECC .22349 INC .7078 V1 29.840
RP 225.78 LAP -.53 LOP 245.83 VP 21.486 GAP -3.66 AZP 90.47 TAL 324.00 TAP 192.92 RCA 144.34 APO 227.42 V2 24.360
RC 248.959 GL 5.74 GP 9.35 ZAL 139.28 ZAP 107.34 ETS 176.00 ZAE 142.99 ETE 164.39 ZAC 95.44 ETC 256.78 CLP 107.58

PLANETOCENTRIC CONIC

C3 16.044 VHL 4.006 DLA 14.14 RAL 161.22 RAD 6567.6 VEL 11.723 PTH 2.07 VHP 2.996 DPA 12.51 RAP 178.52 ECC 1.2640

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 53 59	2618.44	-26.88	68.71	23.54	99.25	19 37 37	2018.4	-25.33	60.39
90.00	10 38 22	4351.71	4.92	180.46	18.29	62.08	11 50 54	3751.7	1.14	173.81
100.00	20 22 50	2331.88	-28.07	47.40	23.31	100.72	21 1 42	1731.9	-26.30	39.04
100.00	11 52 12	4113.50	5.97	162.37	17.71	60.66	13 0 45	3513.5	2.02	155.81
110.00	21 47 55	2065.68	-31.19	26.37	22.50	104.75	22 22 21	1465.7	-28.85	17.95
110.00	12 43 37	3952.46	8.71	148.48	16.03	56.81	13 49 29	3352.5	4.28	142.19

DIFFERENTIAL CORRECTIONS
TDE .1838 TRA -.0153 TC3-1.0362 BAU .3893
RDE .6675 RRA -.8693 RC3 1.4903 FAU .54347
FDE-6.9205 FRA20.8952 FC-29.3252 BSP 6600
BDE .6923 BRA .8694 BC3 1.8151 FSP 11754

MID-COURSE EXECUTION ACCURACY
SGT 871.1 SGR 1995.3 SG3 3455.9
RRT -.4091 RRF -.9651 RTF .4650
SGB 2177.2 R23 .0011 R13 -.9681
SG1 2032.5 SG2 780.3 THA 101.91

ORBIT DETERMINATION ACCURACY
ST 264.2 SR 1030.0 SS 3510.8
CRT .9288 CRS .9329 CST .7388
LSA 3646.8 MSA 396.2 SSA 25.6
EL1 1059.1 EL2 95.2 ALF 76.49

LAUNCH DATE OCT 11 1964 FLIGHT TIME 314.00 ARRIVAL DATE AUG 21 1965

HELIOCENTRIC CONIC DISTANCE 724.826 EARTH TO MARS

RL 149.32 LAL .00 LOL 17.71 VL 32.608 GAL -6.22 AZL 89.26 HCA 229.18 SMA 185.80 ECC .22326 INC .7396 V1 29.840
RP 225.38 LAP -.56 LOP 246.90 VP 21.527 GAP -3.92 AZP 90.48 TAL 324.73 TAP 193.92 RCA 144.32 APO 227.29 V2 24.402
RC 250.643 GL 6.00 GP 9.29 ZAL 139.32 ZAP 105.41 ETS 176.39 ZAE 140.93 ETE 165.53 ZAC 95.19 ETC 256.87 CLP 105.61

PLANETOCENTRIC CONIC

C3 16.050 VHL 4.006 DLA 14.35 RAL 161.40 RAD 6567.6 VEL 11.723 PTH 2.07 VHP 2.973 DPA 12.83 RAP 177.66 ECC 1.2641

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 52 49	2625.87	-26.96	69.24	23.81	98.99	19 36 34	2025.9	-25.44	60.91
90.00	10 40 56	4344.43	4.68	180.05	18.49	62.04	11 53 21	3744.4	.91	173.41
100.00	20 21 49	2338.84	-28.16	47.90	23.58	100.47	21 0 48	1738.8	-26.42	39.53
100.00	11 54 37	4106.69	5.75	161.99	17.91	60.62	13 3 4	3506.7	1.79	155.44
110.00	21 47 12	2071.67	-31.29	26.81	22.78	104.51	22 21 44	1471.7	-28.98	18.37
110.00	12 45 43	3946.63	8.49	148.17	16.23	56.76	13 51 30	3346.6	4.06	141.88

DIFFERENTIAL CORRECTIONS
TDE .1238 TRA .1764 TC3-1.2877 BAU .4238
RDE .6721 RRA -.8683 RC3 1.4975 FAU .55182
FDE-7.0076 FRA21.1857 FC-29.7661 BSP 6796
BDE .6834 BRA .8860 BC3 1.9750 FSP 11934

MID-COURSE EXECUTION ACCURACY
SGT 1078.8 SGR 2001.7 SG3 3506.8
RRT -.6491 RRF -.9642 RTF .7075
SGB 2273.9 R23 .0341 R13 -.9696
SG1 2140.4 SG2 767.5 THA 112.30

ORBIT DETERMINATION ACCURACY
ST 196.0 SR 1036.0 SS 3531.0
CRT .6849 CRS .9316 CST .3784
LSA 3662.7 MSA 404.1 SSA 25.2
EL1 1044.8 EL2 141.6 ALF 82.48

LAUNCH DATE OCT 11 1964 FLIGHT TIME 316.00 ARRIVAL DATE AUG 23 1965

HELIOCENTRIC CONIC DISTANCE 728.773 EARTH TO MARS

RL 149.32 LAL .00 LOL 17.71 VL 32.604 GAL -6.23 AZL 89.23 HCA 230.25 SMA 185.74 ECC .22307 INC .7707 V1 29.840
RP 224.99 LAP -.59 LOP 247.97 VP 21.568 GAP -4.18 AZP 90.49 TAL 324.66 TAP 194.91 RCA 144.30 APO 227.17 V2 24.444
RC 252.307 GL 6.24 GP 9.21 ZAL 139.38 ZAP 103.45 ETS 176.77 ZAE 138.85 ETE 166.58 ZAC 94.93 ETC 256.96 CLP 103.63

PLANETOCENTRIC CONIC

C3 16.066 VHL 4.008 DLA 14.55 RAL 161.58 RAD 6567.6 VEL 11.724 PTH 2.07 VHP 2.953 DPA 13.15 RAP 176.79 ECC 1.2644

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 51 47	2633.00	-27.04	69.75	24.09	98.75	19 35 40	2033.0	-25.55	61.40
90.00	10 43 26	4337.78	4.47	179.68	18.72	62.01	11 55 43	3737.8	.69	173.04
100.00	20 20 56	2345.52	-28.24	48.38	23.86	100.23	21 0 1	1745.5	-26.54	39.99
100.00	11 56 58	4100.49	5.54	161.65	18.13	60.58	13 5 19	3500.5	1.58	155.10
110.00	21 46 37	2077.42	-31.39	27.23	23.07	104.28	22 21 14	1477.4	-29.11	18.77
110.00	12 47 47	3941.35	8.29	147.89	16.44	56.72	13 53 28	3341.4	3.86	141.61

DIFFERENTIAL CORRECTIONS
TDE .0629 TRA .3731 TC3-1.5466 BAU .4630
RDE .6765 RRA -.8660 RC3 1.5012 FAU .55893
FDE-7.0840 FRA21.4375 FC-30.1181 BSP 7208
BDE .6794 BRA .9430 BC3 2.1554 FSP 12089

MID-COURSE EXECUTION ACCURACY
SGT 1359.8 SGR 2004.7 SG3 3549.5
RRT -.7740 RRF -.9633 RTF .8319
SGB 2422.4 R23 .0539 R13 -.9714
SG1 2303.6 SG2 749.3 THA 121.39

ORBIT DETERMINATION ACCURACY
ST 191.8 SR 1040.9 SS 3547.4
CRT .1111 CRS .9303 CST -.2574
LSA 3678.9 MSA 412.2 SSA 24.8
EL1 1041.2 EL2 190.6 ALF 88.79

LAUNCH DATE OCT 11 1964 FLIGHT TIME 318.00 ARRIVAL DATE AUG 25 1965

HELIOCENTRIC CONIC DISTANCE 732.727 EARTH TO MARS

RL 149.32 LAL .00 LOL 17.71 VL 32.600 GAL -6.24 AZL 89.20 HCA 231.33 SMA 185.67 ECC .22293 INC .8008 V1 29.840
RP 224.60 LAP -.63 LOP 249.04 VP 21.610 GAP -4.44 AZP 90.50 TAL 324.57 TAP 195.89 RCA 144.28 APO 227.07 V2 24.485
RC 253.951 GL 6.48 GP 9.14 ZAL 139.45 ZAP 101.47 ETS 177.15 ZAE 136.73 ETE 167.56 ZAC 94.66 ETC 257.06 CLP 101.62

PLANETOCENTRIC CONIC

C3 16.094 VHL 4.012 DLA 14.73 RAL 161.78 RAD 6567.6 VEL 11.725 PTH 2.07 VHP 2.938 DPA 13.46 RAP 175.89 ECC 1.2649

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 50 56	2639.81	-27.11	70.24	24.39	98.52	19 34 55	2039.8	-25.65	61.87
90.00	10 45 51	4331.76	4.28	179.34	18.96	61.98	11 58 2	3731.8	.50	172.70
100.00	20 20 12	2351.92	-28.32	48.84	24.17	100.00	20 59 24	1751.9	-26.64	40.44
100.00	11 59 15	4094.89	5.35	161.34	18.37	60.55	13 7 30	3494.9	1.39	154.79
110.00	21 46 10	2082.95	-31.48	27.64	23.39	104.06	22 20 52	1483.0	-29.23	19.15
110.00	12 49 47	3936.62	8.12	147.63	16.67	56.68	13 55 24	3336.6	3.68	141.36

DIFFERENTIAL CORRECTIONS
TDE .0001 TRA .5740 TC3-1.8116 BAU .5063
RDE .6806 RRA -.8624 RC3 1.5020 FAU .56500
FDE-7.1511 FRA21.6475 FC-30.3919 BSP 7808
BDE .6806 BRA 1.0359 BC3 2.3533 FSP 12220

MID-COURSE EXECUTION ACCURACY
SGT 1682.7 SGR 2004.7 SG3 3584.1
RRT -.8393 RRF -.9623 RTF .8960
SGB 2617.3 R23 .0626 R13 -.9739
SG1 2513.5 SG2 729.7 THA 129.08

ORBIT DETERMINATION ACCURACY
ST 258.0 SR 1045.0 SS 3560.7
CRT -.3659 CRS .9289 CST -.6823
LSA 3696.0 MSA 419.7 SSA 24.5
EL1 1049.5 EL2 239.1 ALF 95.44

LAUNCH DATE OCT 11 1964 FLIGHT TIME 320.00 ARRIVAL DATE AUG 27 1965

HELIOCENTRIC CONIC DISTANCE 736.688 EARTH TO MARS
RL 149.32 LAL .00 LOL 17.71 VL 32.597 GAL -6.26 AZL 89.17 HCA 232.40 SMA 185.62 ECC .22283 INC .8302 V1 29.840
RP 224.21 LAP -.66 LOP 250.11 VP 21.653 GAP -4.70 AZP 90.51 TAL 324.47 TAP 196.87 RCA 144.26 APO 226.98 V2 24.527
RC 255.576 GL 6.71 GP 9.05 ZAL 139.54 ZAP 99.48 ETS 177.52 ZAE 134.59 ETE 168.48 ZAC 94.39 ETC 257.17 CLP 99.60
PLANETOCENTRIC CONIC
C3 16.134 VHL 4.017 DLA 14.89 RAL 161.98 RAD 6567.6 VEL 11.727 PTH 2.07 VHP 2.925 DPA 13.78 RAP 174.99 ECC 1.2655

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 50 13	2646.32	-27.17	70.70	24.71	98.29	19 34 20	2046.3	-25.75	62.33
90.00	10 48 11	4326.37	4.11	179.04	19.22	61.96	12 0 17	3726.4	.32	172.40
100.00	20 19 37	2358.03	-28.39	49.28	24.49	99.78	20 58 55	1758.0	-26.74	40.86
100.00	12 1 28	4089.89	5.19	161.06	18.63	60.52	13 9 38	3489.9	1.22	154.52
110.00	21 45 50	2088.26	-31.57	28.03	23.72	103.84	22 20 38	1488.3	-29.35	19.52
110.00	12 51 45	3932.42	7.96	147.41	16.92	56.65	13 57 17	3332.4	3.52	141.14

DIFFERENTIAL CORRECTIONS
TDE -.0636 TRA .7792 TC3-2.0806 BAU .5531
RDE .6844 RRA -.8573 RC3 1.4990 FAU .56964
FDE-7.2068 FRA21.8133 FC-30.5666 BSP 8576
BDE .6874 BRA 1.1585 BC3 2.5643 FSP 12318

MID-COURSE EXECUTION ACCURACY
SGT 2030.9 SGR 2001.1 SG3 3609.5
RRT -.8751 RRF -.9611 RTF .9312
SGB 2851.1 R23 .0639 R13 -.9769
SG1 2760.7 SG2 712.3 THA 135.48

ORBIT DETERMINATION ACCURACY
ST 360.3 SR 1048.1 SS 3570.2
CRT -.5863 CRS .9274 CST -.8455
LSA 3713.7 MSA 427.2 SSA 24.0
EL1 1070.8 EL2 285.6 ALF 102.28

LAUNCH DATE OCT 11 1964 FLIGHT TIME 322.00 ARRIVAL DATE AUG 29 1965

HELIOCENTRIC CONIC DISTANCE 740.656 EARTH TO MARS
RL 149.32 LAL .00 LOL 17.71 VL 32.594 GAL -6.27 AZL 89.14 HCA 233.48 SMA 185.57 ECC .22278 INC .8589 V1 29.840
RP 223.82 LAP -.69 LOP 251.19 VP 21.696 GAP -4.95 AZP 90.51 TAL 324.35 TAP 197.84 RCA 144.23 APO 226.91 V2 24.569
RC 257.180 GL 6.93 GP 8.97 ZAL 139.64 ZAP 97.48 ETS 177.89 ZAE 132.44 ETE 169.33 ZAC 94.11 ETC 257.28 CLP 97.57
PLANETOCENTRIC CONIC
C3 16.185 VHL 4.023 DLA 15.05 RAL 162.20 RAD 6567.6 VEL 11.729 PTH 2.07 VHP 2.917 DPA 14.09 RAP 174.07 ECC 1.2664

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 49 40	2652.52	-27.23	71.15	25.04	98.08	19 33 53	2052.5	-25.83	62.76
90.00	10 50 26	4321.61	3.95	178.77	19.50	61.94	12 2 28	3721.6	.17	172.14
100.00	20 19 11	2363.87	-28.45	49.70	24.82	99.57	20 58 35	1763.9	-26.84	41.27
100.00	12 3 37	4085.50	5.04	160.82	18.90	60.50	13 11 43	3485.5	1.07	154.28
110.00	21 45 38	2093.35	-31.65	28.40	24.06	103.64	22 20 32	1493.4	-29.45	19.88
110.00	12 53 39	3928.77	7.82	147.22	17.19	56.62	13 59 8	3328.8	3.38	140.95

DIFFERENTIAL CORRECTIONS
TDE -.1286 TRA .9880 TC3-2.3535 BAU .6030
RDE .6879 RRA -.8508 RC3 1.4924 FAU .57289
FDE-7.2507 FRA21.9347 FC-30.6437 BSP 9473
BDE .6998 BRA 1.3038 BC3 2.7868 FSP 12394

MID-COURSE EXECUTION ACCURACY
SGT 2396.3 SGR 1994.0 SG3 3625.7
RRT -.8960 RRF -.9598 RTF .9518
SGB 3117.5 R23 .0616 R13 -.9799
SG1 3038.2 SG2 698.3 THA 140.83

ORBIT DETERMINATION ACCURACY
ST 477.3 SR 1050.1 SS 3576.0
CRT -.6903 CRS .9258 CST -.9117
LSA 3732.2 MSA 434.5 SSA 23.6
EL1 1105.9 EL2 327.9 ALF 109.17

LAUNCH DATE OCT 11 1964 FLIGHT TIME 324.00 ARRIVAL DATE AUG 31 1965

HELIOCENTRIC CONIC DISTANCE 744.631 EARTH TO MARS
RL 149.32 LAL .00 LOL 17.71 VL 32.591 GAL -6.29 AZL 89.11 HCA 234.57 SMA 185.52 ECC .22277 INC .8869 V1 29.840
RP 223.44 LAP -.72 LOP 252.28 VP 21.739 GAP -5.20 AZP 90.51 TAL 324.23 TAP 198.80 RCA 144.19 APO 226.85 V2 24.611
RC 258.763 GL 7.15 GP 8.87 ZAL 139.76 ZAP 95.47 ETS 178.25 ZAE 130.26 ETE 170.13 ZAC 93.83 ETC 257.39 CLP 95.53
PLANETOCENTRIC CONIC
C3 16.247 VHL 4.031 DLA 15.19 RAL 162.42 RAD 6567.7 VEL 11.732 PTH 2.07 VHP 2.912 DPA 14.40 RAP 173.15 ECC 1.2674

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 49 17	2658.41	-27.29	71.57	25.39	97.87	19 33 36	2058.4	-25.92	63.17
90.00	10 52 37	4317.48	3.82	178.54	19.80	61.92	12 4 35	3717.5	.04	171.91
100.00	20 18 54	2369.42	-28.52	50.10	25.18	99.37	20 58 23	1769.4	-26.93	41.66
100.00	12 5 42	4081.70	4.91	160.61	19.20	60.48	13 13 43	3481.7	.94	154.07
110.00	21 45 34	2098.22	-31.73	28.76	24.43	103.44	22 20 33	1498.2	-29.56	20.22
110.00	12 55 31	3925.66	7.71	147.05	17.48	56.59	14 0 56	3325.7	3.26	140.79

DIFFERENTIAL CORRECTIONS
TDE -.1945 TRA 1.2003 TC3-2.6270 BAU .6552
RDE .6912 RRA -.8428 RC3 1.4827 FAU .57488
FDE-7.2863 FRA22.0063 FC-30.6319 BSP 10470
BDE .7181 BRA 1.4666 BC3 3.0166 FSP 12432

MID-COURSE EXECUTION ACCURACY
SGT 2772.5 SGR 1983.7 SG3 3632.6
RRT -.9087 RRF -.9584 RTF .9648
SGB 3409.1 R23 .0574 R13 -.9827
SG1 3339.0 SG2 687.7 THA 145.29

ORBIT DETERMINATION ACCURACY
ST 601.5 SR 1051.3 SS 3578.8
CRT -.7456 CRS .9243 CST -.9429
LSA 3752.2 MSA 441.6 SSA 23.2
EL1 1155.0 EL2 364.9 ALF 115.87

LAUNCH DATE OCT 11 1964 FLIGHT TIME 326.00 ARRIVAL DATE SEP 2 1965

HELIOCENTRIC CONIC DISTANCE 748.613 EARTH TO MARS
RL 149.32 LAL .00 LOL 17.71 VL 32.589 GAL -6.32 AZL 89.09 HCA 235.65 SMA 185.48 ECC .22281 INC .9143 V1 29.840
RP 223.05 LAP -.75 LOP 253.37 VP 21.783 GAP -5.44 AZP 90.52 TAL 324.09 TAP 199.75 RCA 144.15 APO 226.81 V2 24.653
RC 260.326 GL 7.35 GP 8.77 ZAL 139.89 ZAP 93.46 ETS 178.59 ZAE 128.08 ETE 170.88 ZAC 93.54 ETC 257.51 CLP 93.50
PLANETOCENTRIC CONIC
C3 16.322 VHL 4.040 DLA 15.32 RAL 162.66 RAD 6567.7 VEL 11.735 PTH 2.07 VHP 2.910 DPA 14.70 RAP 172.23 ECC 1.2686

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 49 3	2663.99	-27.34	71.97	25.75	97.68	19 33 27	2064.0	-25.99	63.56
90.00	10 54 44	4313.97	3.71	178.34	20.12	61.91	12 6 38	3714.0	-.08	171.71
100.00	20 18 46	2374.69	-28.57	50.48	25.55	99.18	20 58 20	1774.7	-27.01	42.03
100.00	12 7 42	4078.50	4.80	160.43	19.51	60.46	13 15 41	3478.5	.83	153.89
110.00	21 45 38	2102.87	-31.80	29.10	24.81	103.25	22 20 41	1502.9	-29.65	20.55
110.00	12 57 19	3923.09	7.61	146.91	17.78	56.57	14 2 42	3323.1	3.16	140.65

DIFFERENTIAL CORRECTIONS
TDE -.2616 TRA 1.4156 TC3-2.9008 BAU .7095
RDE .6941 RRA -.8333 RC3 1.4693 FAU .57533
FDE-7.3058 FRA22.0310 FC-30.5164 BSP 11551
BDE .7417 BRA 1.6426 BC3 3.2517 FSP 12444

MID-COURSE EXECUTION ACCURACY
SGT 3156.6 SGR 1969.7 SG3 3629.6
RRT -.9165 RRF -.9567 RTF .9733
SGB 3720.7 R23 .0529 R13 -.9852
SG1 3658.0 SG2 679.9 THA 149.05

ORBIT DETERMINATION ACCURACY
ST 729.8 SR 1051.3 SS 3576.9
CRT -.7785 CRS .9226 CST -.9600
LSA 3772.3 MSA 448.6 SSA 22.7
EL1 1217.1 EL2 395.7 ALF 122.19

LAUNCH DATE OCT 11 1964 FLIGHT TIME 328.00 ARRIVAL DATE SEP 4 1965

HELIOCENTRIC CONIC DISTANCE 752.601 EARTH TO MARS

RL 149.32 LAL .00 LOL 17.71 VL 32.587 GAL -6.34 AZL 89.06 HCA 236.75 SMA 185.45 ECC .22290 INC .9410 V1 29.840
RP 222.66 LAP -.79 LOP 254.46 VP 21.827 GAP -5.68 AZP 90.52 TAL 323.94 TAP 200.69 RCA 144.11 APO 226.78 V2 24.695
RC 261.869 GL 7.55 GP 8.67 ZAL 140.03 ZAP 91.45 ETS 178.94 ZAE 125.89 ETE 171.58 ZAC 93.25 ETC 257.62 CLP 91.47

PLANETOCENTRIC CONIC

C3 16.408 VHL 4.051 DLA 15.43 RAL 162.90 RAD 6567.7 VEL 11.738 PTH 2.07 VHP 2.912 DPA 14.99 RAP 171.31 ECC 1.2700

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 48 59	2669.27	-27.39	72.35	26.14	97.49	19 33 29	2069.3	-26.07	63.93
90.00	10 56 45	4311.10	3.62	178.18	20.45	61.90	12 8 36	3711.1	-.17	171.55
100.00	20 18 47	2379.69	-28.63	50.85	25.93	98.99	20 58 27	1779.7	-27.09	42.38
100.00	12 9 39	4075.91	4.72	160.29	19.84	60.45	13 17 35	3475.9	.75	153.75
110.00	21 45 50	2107.31	-31.87	29.43	25.20	103.07	22 20 57	1507.3	-29.75	20.86
110.00	12 59 5	3921.06	7.53	146.81	18.11	56.56	14 4 26	3321.1	3.09	140.54

DIFFERENTIAL CORRECTIONS
TDE -.3298 TRA 1.6330 TC3-3.1733 BAU .7656
RDE .6968 RRA -.8223 RC3 1.4527 FAU .57441
FDE-7.3178 FRA22.0045 FC-30.3081 BSP 12681
BDE .7709 BRA 1.8283 BC3 3.4901 FSP 12417

MID-COURSE EXECUTION ACCURACY
SGT 3545.2 SGR 1952.5 SG3 3617.0
RRT -.9212 RRF -.9550 RTF .9791
SGB 4047.3 R23 .0488 R13 -.9874
SG1 3990.6 SG2 675.0 THA 152.24

ORBIT DETERMINATION ACCURACY
ST 860.4 SR 1050.6 SS 3572.2
CRT -.7995 CRS .9209 CST -.9701
LSA 3794.3 MSA 455.2 SSA 22.3
EL1 1291.2 EL2 420.5 ALF 127.94

LAUNCH DATE OCT 11 1964 FLIGHT TIME 330.00 ARRIVAL DATE SEP 6 1965

HELIOCENTRIC CONIC DISTANCE 756.596 EARTH TO MARS

RL 149.32 LAL .00 LOL 17.71 VL 32.585 GAL -6.37 AZL 89.03 HCA 237.84 SMA 185.41 ECC .22302 INC .9672 V1 29.840
RP 222.28 LAP -.82 LOP 255.55 VP 21.872 GAP -5.92 AZP 90.51 TAL 323.78 TAP 201.62 RCA 144.06 APO 226.77 V2 24.737
RC 263.392 GL 7.73 GP 8.56 ZAL 140.18 ZAP 89.45 ETS 179.27 ZAE 123.71 ETE 172.24 ZAC 92.96 ETC 257.74 CLP 89.44

PLANETOCENTRIC CONIC

C3 16.506 VHL 4.063 DLA 15.53 RAL 163.16 RAD 6567.7 VEL 11.743 PTH 2.07 VHP 2.918 DPA 15.27 RAP 170.40 ECC 1.2716

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 49 5	2674.23	-27.43	72.71	26.54	97.32	19 33 39	2074.2	-26.13	64.28
90.00	10 58 42	4308.86	3.55	178.06	20.80	61.89	12 10 31	3708.9	-.24	171.42
100.00	20 18 57	2384.41	-28.68	51.19	26.34	98.82	20 58 41	1784.4	-27.16	42.71
100.00	12 11 31	4073.91	4.65	160.18	20.19	60.44	13 19 25	3473.9	.68	153.64
110.00	21 46 10	2111.53	-31.94	29.74	25.61	102.89	22 21 21	1511.5	-29.83	21.16
110.00	13 0 48	3919.56	7.48	146.73	18.45	56.55	14 6 7	3319.6	3.03	140.47

DIFFERENTIAL CORRECTIONS
TDE -.3988 TRA 1.8526 TC3-3.4427 BAU .8229
RDE .6993 RRA -.8099 RC3 1.4330 FAU .57208
FDE-7.3182 FRA21.9316 FC-30.0061 BSP 13858
BDE .8050 BRA 2.0219 BC3 3.7291 FSP 12362

MID-COURSE EXECUTION ACCURACY
SGT 3936.4 SGR 1932.3 SG3 3595.2
RRT -.9238 RRF -.9530 RTF .9833
SGB 4385.1 R23 .0452 R13 -.9891
SG1 4333.3 SG2 672.1 THA 154.96

ORBIT DETERMINATION ACCURACY
ST 992.6 SR 1048.9 SS 3563.9
CRT -.8135 CRS .9192 CST -.9765
LSA 3817.5 MSA 461.7 SSA 21.8
EL1 1375.3 EL2 440.3 ALF 133.06

LAUNCH DATE OCT 11 1964 FLIGHT TIME 332.00 ARRIVAL DATE SEP 8 1965

HELIOCENTRIC CONIC DISTANCE 760.598 EARTH TO MARS

RL 149.32 LAL .00 LOL 17.71 VL 32.583 GAL -6.40 AZL 89.01 HCA 238.94 SMA 185.39 ECC .22320 INC .9927 V1 29.840
RP 221.89 LAP -.85 LOP 256.85 VP 21.917 GAP -6.15 AZP 90.51 TAL 323.61 TAP 202.55 RCA 144.01 APO 226.77 V2 24.779
RC 264.895 GL 7.91 GP 8.45 ZAL 140.36 ZAP 87.46 ETS 179.59 ZAE 121.53 ETE 172.86 ZAC 92.67 ETC 257.86 CLP 87.43

PLANETOCENTRIC CONIC

C3 16.616 VHL 4.076 DLA 15.61 RAL 163.42 RAD 6567.7 VEL 11.747 PTH 2.07 VHP 2.928 DPA 15.53 RAP 169.50 ECC 1.2735

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 49 20	2678.89	-27.47	73.04	26.96	97.16	19 33 59	2078.9	-26.19	64.61
90.00	11 0 34	4307.24	3.49	177.97	21.18	61.88	12 12 22	3707.2	-.29	171.33
100.00	20 19 16	2388.86	-28.72	51.51	26.76	98.66	20 59 5	1788.9	-27.23	43.03
100.00	12 13 19	4072.51	4.60	160.10	20.56	60.43	13 21 12	3472.5	.63	153.56
110.00	21 46 37	2115.54	-32.00	30.04	26.04	102.72	22 21 53	1515.5	-29.92	21.44
110.00	13 2 27	3918.59	7.44	146.87	18.81	56.54	14 7 46	3318.6	2.99	140.42

DIFFERENTIAL CORRECTIONS
TDE -.4687 TRA 2.0738 TC3-3.7080 BAU .8813
RDE .7015 RRA -.7962 RC3 1.4106 FAU .56848
FDE-7.3073 FRA21.8123 FC-29.6193 BSP 15060
BDE .8436 BRA 2.2214 BC3 3.9672 FSP 12269

MID-COURSE EXECUTION ACCURACY
SGT 4328.1 SGR 1909.2 SG3 3564.5
RRT -.9249 RRF -.9508 RTF .9863
SGB 4730.5 R23 .0422 R13 -.9906
SG1 4682.7 SG2 670.8 THA 157.31

ORBIT DETERMINATION ACCURACY
ST 1125.5 SR 1046.4 SS 3552.3
CRT -.8230 CRS .9174 CST -.9809
LSA 3842.0 MSA 468.1 SSA 21.3
EL1 1467.6 EL2 455.8 ALF 137.53

LAUNCH DATE OCT 11 1964 FLIGHT TIME 334.00 ARRIVAL DATE SEP 10 1965

HELIOCENTRIC CONIC DISTANCE 764.602 EARTH TO MARS

RL 149.32 LAL .00 LOL 17.71 VL 32.582 GAL -6.44 AZL 88.98 HCA 240.04 SMA 185.37 ECC .22341 INC 1.0179 V1 29.840
RP 221.51 LAP -.88 LOP 257.75 VP 21.962 GAP -6.38 AZP 90.51 TAL 323.42 TAP 203.46 RCA 143.95 APO 226.78 V2 24.820
RC 266.379 GL 8.08 GP 8.33 ZAL 140.54 ZAP 85.49 ETS 179.90 ZAE 119.36 ETE 173.44 ZAC 92.38 ETC 257.98 CLP 85.44

PLANETOCENTRIC CONIC

C3 16.739 VHL 4.091 DLA 15.69 RAL 163.70 RAD 6567.7 VEL 11.753 PTH 2.07 VHP 2.940 DPA 15.78 RAP 168.61 ECC 1.2755

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 49 45	2683.24	-27.51	73.35	27.39	97.00	19 34 29	2083.2	-26.25	64.91
90.00	11 2 22	4306.28	3.46	177.91	21.57	61.88	12 14 8	3706.3	-.32	171.28
100.00	20 19 45	2393.02	-28.77	51.81	27.20	98.50	20 59 38	1793.0	-27.29	43.32
100.00	12 15 3	4071.73	4.58	160.06	20.95	60.43	13 22 55	3471.7	.60	153.52
110.00	21 47 13	2119.33	-32.05	30.32	26.49	102.57	22 22 33	1519.3	-29.99	21.71
110.00	13 4 4	3918.18	7.43	146.65	19.19	56.54	14 9 23	3318.2	2.98	140.39

DIFFERENTIAL CORRECTIONS
TDE -.5369 TRA 2.3009 TC3-3.9614 BAU .9386
RDE .7008 RRA -.7840 RC3 1.3784 FAU .56035
FDE-7.2211 FRA21.7103 FC-28.9814 BSP 16385
BDE .8828 BRA 2.4308 BC3 4.1944 FSP 12282

MID-COURSE EXECUTION ACCURACY
SGT 4719.6 SGR 1880.4 SG3 3522.3
RRT -.9252 RRF -.9482 RTF .9884
SGB 5080.4 R23 .0395 R13 -.9916
SG1 5036.2 SG2 668.6 THA 159.39

ORBIT DETERMINATION ACCURACY
ST 1258.2 SR 1039.8 SS 3525.1
CRT -.8291 CRS .9141 CST -.9844
LSA 3855.5 MSA 474.3 SSA 21.1
EL1 1563.8 EL2 467.8 ALF 141.51

LAUNCH DATE OCT 11 1964 FLIGHT TIME 336.00 ARRIVAL DATE SEP 12 1965

HELIOCENTRIC CONIC DISTANCE 768.617 EARTH TO MARS

RL 149.32 LAL .00 LOL 17.71 VL 32.581 GAL -6.48 AZL 88.96 HCA 241.15 SMA 185.35 ECC .22367 INC 1.0425 V1 29.840
RP 221.13 LAP -.91 LOP 258.86 VP 22.007 GAP -6.61 AZP 90.50 TAL 323.22 TAP 204.37 RCA 143.89 APO 226.81 V2 24.862
RC 267.844 GL 8.24 GP 8.20 ZAL 140.74 ZAP 83.53 ETS 180.20 ZAE 117.20 ETE 173.99 ZAC 92.10 ETC 258.10 CLP 83.46

PLANETOCENTRIC CONIC

C3 16.874 VHL 4.108 DLA 15.75 RAL 163.99 RAD 6567.7 VEL 11.758 PTH 2.08 VHP 2.957 DPA 16.02 RAP 167.74 ECC 1.2777

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 50 20	2687.30	-27.54	73.65	27.85	96.86	19 35 7	2087.3	-26.30	65.20
90.00	11 4 5	4305.91	3.45	177.89	21.97	61.88	12 15 51	3705.9	-.34	171.26
100.00	20 20 22	2396.93	-28.80	52.10	27.65	98.36	21 0 19	1796.9	-27.35	43.60
100.00	12 16 43	4071.51	4.57	160.04	21.36	60.43	13 24 35	3471.5	.60	153.51
110.00	21 47 56	2122.93	-32.11	30.59	26.95	102.42	22 23 19	1522.9	-30.06	21.97
110.00	13 5 38	3918.28	7.43	146.66	19.59	56.54	14 10 57	3318.3	2.98	140.40

DIFFERENTIAL CORRECTIONS
TDE -.6097 TRA 2.5224 TC3-4.2160 BAU .9989
RDE .7038 RRA -.7667 RC3 1.3539 FAU .55553
FDE-7.2186 FRA21.4730 FC-28.5020 BSP 17576
BDE .9312 BRA 2.6364 BC3 4.4281 FSP 12070

MID-COURSE EXECUTION ACCURACY
SGT 5107.2 SGR 1853.5 SG3 3475.5
RRT -.9242 RRF -.9457 RTF .9902
SGB 5433.1 R23 .0377 R13 -.9927
SG1 5391.6 SG2 670.3 THA 161.16

ORBIT DETERMINATION ACCURACY
ST 1391.6 SR 1037.3 SS 3512.3
CRT -.8340 CRS .9129 CST -.9864
LSA 3888.2 MSA 480.0 SSA 20.5
EL1 1668.8 EL2 477.3 ALF 144.84

LAUNCH DATE OCT 11 1964 FLIGHT TIME 338.00 ARRIVAL DATE SEP 14 1965

HELIOCENTRIC CONIC DISTANCE 772.636 EARTH TO MARS

RL 149.32 LAL .00 LOL 17.71 VL 32.580 GAL -6.52 AZL 88.93 HCA 242.26 SMA 185.34 ECC .22398 INC 1.0667 V1 29.840
RP 220.75 LAP -.94 LOP 259.97 VP 22.053 GAP -6.84 AZP 90.50 TAL 323.01 TAP 205.27 RCA 143.82 APO 226.85 V2 24.903
RC 269.292 GL 8.40 GP 8.08 ZAL 140.95 ZAP 81.60 ETS 180.49 ZAE 115.06 ETE 174.50 ZAC 91.81 ETC 258.22 CLP 81.51

PLANETOCENTRIC CONIC

C3 17.022 VHL 4.126 DLA 15.80 RAL 164.28 RAD 6567.7 VEL 11.765 PTH 2.08 VHP 2.977 DPA 16.24 RAP 166.90 ECC 1.2801

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 51 4	2691.07	-27.57	73.92	28.32	96.73	19 39 55	2091.1	-26.35	65.46
90.00	11 5 43	4306.17	3.46	177.91	22.40	61.88	12 17 29	3706.2	-.33	171.28
100.00	20 21 8	2400.58	-28.84	52.36	28.13	98.22	21 1 9	1800.6	-27.40	43.85
100.00	12 18 19	4071.89	4.58	160.07	21.78	60.43	13 26 11	3471.9	.61	153.53
110.00	21 48 47	2126.33	-32.16	30.84	27.43	102.28	22 24 14	1526.3	-30.13	22.21
110.00	13 7 10	3918.91	7.45	146.69	20.01	56.54	14 12 29	3318.9	3.00	140.43

DIFFERENTIAL CORRECTIONS
TDE -.6828 TRA 2.7453 TC3-4.4620 BAU 1.0593
RDE .7061 RRA -.7489 RC3 1.3257 FAU .54886
FDE-7.1919 FRA21.2099 FC-27.9150 BSP 18781
BDE .9822 BRA 2.8456 BC3 4.6548 FSP 11859

MID-COURSE EXECUTION ACCURACY
SGT 5491.2 SGR 1823.9 SG3 3420.6
RRT -.9226 RRF -.9428 RTF .9916
SGB 5786.1 R23 .0365 R13 -.9935
SG1 5747.0 SG2 672.3 THA 162.72

ORBIT DETERMINATION ACCURACY
ST 1524.5 SR 1033.4 SS 3493.8
CRT -.8372 CRS .9114 CST -.9880
LSA 3919.5 MSA 485.5 SSA 20.0
EL1 1776.7 EL2 484.9 ALF 147.73

LAUNCH DATE OCT 11 1964 FLIGHT TIME 340.00 ARRIVAL DATE SEP 16 1965

HELIOCENTRIC CONIC DISTANCE 776.661 EARTH TO MARS

RL 149.32 LAL .00 LOL 17.71 VL 32.580 GAL -6.57 AZL 88.91 HCA 243.37 SMA 185.33 ECC .22433 INC 1.0905 V1 29.840
RP 220.37 LAP -.97 LOP 261.08 VP 22.099 GAP -7.06 AZP 90.49 TAL 322.78 TAP 206.16 RCA 143.75 APO 226.90 V2 24.945
RC 270.721 GL 8.55 GP 7.95 ZAL 141.18 ZAP 79.69 ETS 180.77 ZAE 112.94 ETE 174.99 ZAC 91.53 ETC 258.33 CLP 79.59

PLANETOCENTRIC CONIC

C3 17.184 VHL 4.145 DLA 15.83 RAL 164.59 RAD 6567.7 VEL 11.771 PTH 2.08 VHP 3.000 DPA 16.45 RAP 166.08 ECC 1.2828

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 51 57	2694.54	-27.60	74.17	28.80	96.60	19 36 52	2094.5	-26.40	65.71
90.00	11 7 16	4307.06	3.49	177.96	22.84	61.88	12 19 3	3707.1	-.30	171.32
100.00	20 22 3	2403.95	-28.87	52.61	28.62	98.10	21 2 7	1804.0	-27.45	44.09
100.00	12 19 51	4072.87	4.61	160.12	22.22	60.43	13 27 44	3472.9	.64	153.58
110.00	21 49 46	2129.53	-32.20	31.08	27.93	102.14	22 25 15	1529.5	-30.20	22.44
110.00	13 8 38	3920.06	7.50	146.75	20.45	56.55	14 13 58	3320.1	3.05	140.49

DIFFERENTIAL CORRECTIONS
TDE -.7567 TRA 2.9689 TC3-4.6977 BAU 1.1194
RDE .7080 RRA -.7308 RC3 1.2945 FAU .54060
FDE-7.1489 FRA20.9191 FC-27.2363 BSP 19993
BDE 1.0362 BRA 3.0575 BC3 4.8728 FSP 11638

MID-COURSE EXECUTION ACCURACY
SGT 5870.0 SGR 1792.1 SG3 3358.3
RRT -.9203 RRF -.9397 RTF .9926
SGB 6137.4 R23 .0356 R13 -.9942
SG1 6100.3 SG2 674.5 THA 164.11

ORBIT DETERMINATION ACCURACY
ST 1656.8 SR 1028.5 SS 3471.3
CRT -.8394 CRS .9097 CST -.9892
LSA 3951.1 MSA 490.8 SSA 19.5
EL1 1887.3 EL2 490.8 ALF 150.27

LAUNCH DATE OCT 11 1964 FLIGHT TIME 342.00 ARRIVAL DATE SEP 18 1965

HELIOCENTRIC CONIC DISTANCE 780.692 EARTH TO MARS

RL 149.32 LAL .00 LOL 17.71 VL 32.579 GAL -6.62 AZL 88.89 HCA 244.49 SMA 185.32 ECC .22472 INC 1.1140 V1 29.840
RP 220.00 LAP -1.01 LOP 262.20 VP 22.145 GAP -7.28 AZP 90.48 TAL 322.55 TAP 207.04 RCA 143.68 APO 226.97 V2 24.986
RC 272.134 GL 8.69 GP 7.81 ZAL 141.42 ZAP 77.81 ETS 181.04 ZAE 110.84 ETE 175.45 ZAC 91.25 ETC 258.45 CLP 77.69

PLANETOCENTRIC CONIC

C3 17.359 VHL 4.166 DLA 15.86 RAL 164.91 RAD 6567.7 VEL 11.779 PTH 2.08 VHP 3.026 DPA 16.63 RAP 165.29 ECC 1.2857

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 53 0	2697.71	-27.62	74.40	29.31	96.49	19 37 58	2097.7	-26.44	65.93
90.00	11 8 45	4308.57	3.54	178.04	23.31	61.89	12 20 34	3708.6	-.25	171.41
100.00	20 23 8	2407.07	-28.90	52.83	29.13	97.98	21 3 15	1807.1	-27.50	44.31
100.00	12 21 19	4074.45	4.67	160.21	22.68	60.44	13 29 13	3474.4	.70	153.67
110.00	21 50 52	2132.53	-32.24	31.30	28.44	102.02	22 26 25	1532.5	-30.25	22.65
110.00	13 10 3	3921.75	7.56	146.84	20.90	56.56	14 15 25	3321.8	3.11	140.58

DIFFERENTIAL CORRECTIONS
TDE -.8311 TRA 3.1933 TC3-4.9224 BAU 1.1792
RDE .7095 RRA -.7121 RC3 1.2611 FAU .53106
FDE-7.0917 FRA20.6002 FC-26.4856 BSP 21212
BDE 1.0927 BRA 3.2717 BC3 5.0814 FSP 11412

MID-COURSE EXECUTION ACCURACY
SGT 6242.6 SGR 1758.5 SG3 3289.4
RRT -.9175 RRF -.9363 RTF .9934
SGB 6485.6 R23 .0351 R13 -.9948
SG1 6450.2 SG2 676.8 THA 165.34

ORBIT DETERMINATION ACCURACY
ST 1788.0 SR 1022.8 SS 3445.1
CRT -.8405 CRS .9078 CST -.9902
LSA 3983.1 MSA 495.9 SSA 19.0
EL1 1999.4 EL2 495.5 ALF 152.49

LAUNCH DATE OCT 11 1964 FLIGHT TIME 344.00 ARRIVAL DATE SEP 20 1965

HELIOCENTRIC CONIC DISTANCE 784.727 EARTH TO MARS

RL 149.32 LAL .00 LOL 17.71 VL 32.579 GAL -6.67 AZL 88.86 HCA 245.61 SMA 185.32 ECC .22516 INC 1.1371 V1 29.840
RP 219.62 LAP -1.04 LOP 263.32 VP 22.191 GAP -7.50 AZP 90.47 TAL 322.29 TAP 207.91 RCA 143.59 APO 227.05 V2 25.027
RC 273.529 GL 8.82 GP 7.68 ZAL 141.68 ZAP 75.96 ETS 181.29 ZAE 108.77 ETE 175.88 ZAC 90.98 ETC 258.56 CLP 75.83

PLANETOCENTRIC CONIC

C3 17.548 VHL 4.189 DLA 15.87 RAL 165.24 RAD 6567.7 VEL 11.787 PTH 2.08 VHP 3.056 DPA 16.80 RAP 164.53 ECC 1.2888

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 54 13	2700.60	-27.65	74.61	29.83	96.39	19 39 13	2100.6	-26.47	66.13
90.00	11 10 9	4310.71	3.61	178.16	23.79	61.89	12 22 0	3710.7	-.18	171.53
100.00	20 24 20	2409.94	-28.93	53.04	29.65	97.87	21 4 30	1809.9	-27.54	44.52
100.00	12 22 42	4076.61	4.74	160.33	23.16	60.45	13 30 39	3476.6	.77	153.79
110.00	21 52 6	2135.34	-32.28	31.51	28.97	101.90	22 27 42	1535.3	-30.31	22.85
110.00	13 11 26	3923.97	7.64	146.96	21.37	56.58	14 16 50	3324.0	3.20	140.70

DIFFERENTIAL CORRECTIONS
TDE -.9066 TRA 3.4178 TC3-5.1361 BAU 1.2388
RDE .7108 RRA -.6930 RC3 1.2260 FAU .52043
FDE-7.0233 FRA20.2554 FC-25.6752 BSP 22408
BDE 1.1520 BRA 3.4873 BC3 5.2804 FSP 11163

MID-COURSE EXECUTION ACCURACY
SGT 6608.4 SGR 1723.7 SG3 3214.9
RRT -.9143 RRF -.9326 RTF .9941
SGB 6829.5 R23 .0347 R13 -.9952
SG1 6795.7 SG2 679.1 THA 166.45

ORBIT DETERMINATION ACCURACY
ST 1918.3 SR 1016.6 SS 3415.8
CRT -.8412 CRS .9059 CST -.9910
LSA 4016.2 MSA 500.5 SSA 18.5
EL1 2112.8 EL2 499.1 ALF 154.44

LAUNCH DATE OCT 11 1964 FLIGHT TIME 346.00 ARRIVAL DATE SEP 22 1965

HELIOCENTRIC CONIC DISTANCE 788.767 EARTH TO MARS

RL 149.32 LAL .00 LOL 17.71 VL 32.579 GAL -6.72 AZL 88.84 HCA 246.74 SMA 185.32 ECC .22565 INC 1.1598 V1 29.840
RP 219.25 LAP -1.07 LOP 264.45 VP 22.237 GAP -7.71 AZP 90.46 TAL 322.03 TAP 208.77 RCA 143.50 APO 227.14 V2 25.067
RC 274.906 GL 8.94 GP 7.54 ZAL 141.95 ZAP 74.14 ETS 181.54 ZAE 106.73 ETE 176.28 ZAC 90.72 ETC 258.66 CLP 74.00

PLANETOCENTRIC CONIC

C3 17.752 VHL 4.213 DLA 15.86 RAL 165.57 RAD 6567.7 VEL 11.796 PTH 2.09 VHP 3.089 DPA 16.96 RAP 163.80 ECC 1.2922

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 55 34	2703.22	-27.66	74.79	30.37	96.30	19 40 38	2103.2	-26.50	66.32
90.00	11 11 29	4313.47	3.69	178.32	24.28	61.91	12 23 22	3713.5	-.09	171.68
100.00	20 25 42	2412.56	-28.95	53.23	30.19	97.78	21 5 55	1812.6	-27.58	44.70
100.00	12 24 2	4079.36	4.83	160.48	23.66	60.46	13 32 2	3479.4	.86	153.94
110.00	21 53 28	2137.97	-32.32	31.71	29.52	101.79	22 29 6	1538.0	-30.36	23.04
110.00	13 12 46	3926.71	7.75	147.11	21.86	56.60	14 18 13	3326.7	3.30	140.84

DIFFERENTIAL CORRECTIONS
TDE -.9823 TRA 3.6422 TC3-5.3370 BAU 1.2977
RDE .7119 RRA -.6735 RC3 1.1896 FAU .50889
FDE-6.9445 FRA19.8840 FC-24.8175 BSP 23598
BDE 1.2131 BRA 3.7040 BC3 5.4679 FSP 10904

MID-COURSE EXECUTION ACCURACY
SGT 6965.8 SGR 1687.8 SG3 3135.2
RRT -.9105 RRF -.9286 RTF .9946
SGB 7167.4 R23 .0345 R13 -.9956
SG1 7134.9 SG2 681.5 THA 167.44

ORBIT DETERMINATION ACCURACY
ST 2046.6 SR 1009.8 SS 3383.4
CRT -.8412 CRS .9039 CST -.9916
LSA 4049.7 MSA 505.0 SSA 18.1
EL1 2226.3 EL2 502.0 ALF 156.17

LAUNCH DATE OCT 11 1964 FLIGHT TIME 348.00 ARRIVAL DATE SEP 24 1965

HELIOCENTRIC CONIC DISTANCE 792.812 EARTH TO MARS

RL 149.32 LAL .00 LOL 17.71 VL 32.580 GAL -6.78 AZL 88.82 HCA 247.87 SMA 185.33 ECC .22618 INC 1.1822 V1 29.840
RP 218.89 LAP -1.10 LOP 265.58 VP 22.283 GAP -7.92 AZP 90.45 TAL 321.75 TAP 209.62 RCA 143.41 APO 227.25 V2 25.108
RC 276.266 GL 9.06 GP 7.40 ZAL 142.23 ZAP 72.36 ETS 181.77 ZAE 104.73 ETE 176.66 ZAC 90.46 ETC 258.76 CLP 72.21

PLANETOCENTRIC CONIC

C3 17.971 VHL 4.239 DLA 15.85 RAL 165.92 RAD 6567.7 VEL 11.805 PTH 2.09 VHP 3.125 DPA 17.09 RAP 163.12 ECC 1.2958

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 57 5	2705.56	-27.68	74.96	30.93	96.21	19 42 11	2105.6	-26.53	66.48
90.00	11 12 44	4316.84	3.80	178.51	24.80	61.92	12 24 41	3716.8	.02	171.87
100.00	20 27 12	2414.93	-28.98	53.41	30.75	97.69	21 7 27	1814.9	-27.61	44.87
100.00	12 25 18	4082.69	4.94	160.66	24.17	60.48	13 33 21	3482.7	.98	154.12
110.00	21 54 57	2140.42	-32.36	31.89	30.08	101.68	22 30 37	1540.4	-30.41	23.21
110.00	13 14 3	3929.97	7.87	147.28	22.37	56.63	14 19 33	3330.0	3.42	141.01

DIFFERENTIAL CORRECTIONS
TDE-1.0593 TRA 3.8669 TC3-5.5258 BAU 1.3562
RDE .7130 RRA -.6538 RC3 1.1527 FAU .49670
FDE-6.8606 FRA19.4916 FC-23.9278 BSP 24762
BDE 1.2769 BRA 3.9218 BC3 5.6448 FSP 10627

MID-COURSE EXECUTION ACCURACY
SGT 7315.5 SGR 1651.5 SG3 3051.6
RRT -.9062 RRF -.9243 RTF .9951
SGB 7499.6 R23 .0346 R13 -.9959
SG1 7468.3 SG2 684.0 THA 168.34

ORBIT DETERMINATION ACCURACY
ST 2173.9 SR 1002.8 SS 3349.3
CRT -.8408 CRS .9019 CST -.9921
LSA 4085.4 MSA 509.1 SSA 17.7
EL1 2340.4 EL2 504.2 ALF 157.71

LAUNCH DATE OCT 11 1964 FLIGHT TIME 350.00 ARRIVAL DATE SEP 26 1965

HELIOCENTRIC CONIC DISTANCE 796.861 EARTH TO MARS

RL 149.32 LAL .00 LOL 17.71 VL 32.580 GAL -6.84 AZL 88.80 HCA 249.00 SMA 185.34 ECC .22676 INC 1.2044 V1 29.840
RP 218.52 LAP -1.12 LOP 266.71 VP 22.329 GAP -8.13 AZP 90.43 TAL 321.46 TAP 210.46 RCA 143.31 APO 227.36 V2 25.148
RC 277.609 GL 9.17 GP 7.27 ZAL 142.52 ZAP 70.62 ETS 181.99 ZAE 102.75 ETE 177.02 ZAC 90.21 ETC 258.86 CLP 70.46

PLANETOCENTRIC CONIC

C3 18.206 VHL 4.267 DLA 15.82 RAL 166.28 RAD 6567.7 VEL 11.815 PTH 2.09 VHP 3.165 DPA 17.20 RAP 162.47 ECC 1.2996

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 58 45	2707.63	-27.70	75.11	31.51	96.14	19 43 53	2107.6	-26.56	66.63
90.00	11 13 54	4320.82	3.93	178.73	25.34	61.93	12 25 55	3720.8	.15	172.09
100.00	20 28 51	2417.07	-29.00	53.56	31.33	97.61	21 9 8	1817.1	-27.64	45.02
100.00	12 26 30	4086.61	5.08	160.88	24.70	60.50	13 34 36	3486.6	1.11	154.34
110.00	21 56 33	2142.69	-32.39	32.06	30.67	101.59	22 32 16	1542.7	-30.45	23.38
110.00	13 15 17	3933.75	8.01	147.48	22.90	56.66	14 20 51	3333.8	3.57	141.21

DIFFERENTIAL CORRECTIONS
TDE-1.1351 TRA 4.0939 TC3-5.6965 BAU 1.4127
RDE .7136 RRA -.6344 RC3 1.1137 FAU .48313
FDE-6.7565 FRA19.0934 FC-22.9744 BSP 25963
BDE 1.3408 BRA 4.1427 BC3 5.8044 FSP 10368

MID-COURSE EXECUTION ACCURACY
SGT 7655.2 SGR 1614.2 SG3 2964.0
RRT -.9015 RRF -.9196 RTF .9954
SGB 7823.6 R23 .0346 R13 -.9961
SG1 7793.4 SG2 686.1 THA 169.15

ORBIT DETERMINATION ACCURACY
ST 2298.4 SR 994.8 SS 3310.4
CRT -.8398 CRS .8996 CST -.9925
LSA 4119.2 MSA 513.2 SSA 17.3
EL1 2452.8 EL2 506.2 ALF 159.09

LAUNCH DATE OCT 11 1964 FLIGHT TIME 352.00 ARRIVAL DATE SEP 28 1965

HELIOCENTRIC CONIC DISTANCE 800.915 EARTH TO MARS

RL 149.32 LAL .00 LOL 17.71 VL 32.581 GAL -6.91 AZL 88.77 HCA 250.14 SMA 185.35 ECC .22739 INC 1.2263 V1 29.840
RP 218.16 LAP -1.15 LOP 267.85 VP 22.376 GAP -8.34 AZP 90.42 TAL 321.15 TAP 211.29 RCA 143.20 APO 227.50 V2 25.188
RC 278.933 GL 9.27 GP 7.13 ZAL 142.83 ZAP 68.92 ETS 182.21 ZAE 100.82 ETE 177.36 ZAC 89.97 ETC 258.95 CLP 68.75

PLANETOCENTRIC CONIC

C3 18.456 VHL 4.296 DLA 15.79 RAL 166.64 RAD 6567.7 VEL 11.825 PTH 2.09 VHP 3.207 DPA 17.30 RAP 161.87 ECC 1.3037

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 0 34	2709.45	-27.71	75.24	32.10	96.08	19 45 44	2109.4	-26.58	66.76
90.00	11 15 0	4325.40	4.08	178.99	25.89	61.95	12 27 6	3725.4	.29	172.35
100.00	20 30 38	2418.98	-29.01	53.70	31.93	97.54	21 10 57	1819.0	-27.67	45.16
100.00	12 27 37	4091.10	5.23	161.13	25.25	60.53	13 35 49	3491.1	1.26	154.58
110.00	21 58 16	2144.80	-32.42	32.22	31.26	101.50	22 34 1	1544.8	-30.49	23.53
110.00	13 16 29	3938.05	8.17	147.71	23.45	56.69	14 22 7	3338.0	3.73	141.43

DIFFERENTIAL CORRECTIONS
TDE-1.2155 TRA 4.3164 TC3-5.8616 BAU 1.4705
RDE .7153 RRA -.6141 RC3 1.0769 FAU .47028
FDE-6.6731 FRA18.6573 FC-22.0594 BSP 27036
BDE 1.4104 BRA 4.3599 BC3 5.9597 FSP 10049

MID-COURSE EXECUTION ACCURACY
SGT 7986.3 SGR 1578.2 SG3 2874.8
RRT -.8964 RRF -.9148 RTF .9957
SGB 8140.7 R23 .0351 R13 -.9963
SG1 8111.6 SG2 688.7 THA 169.88

ORBIT DETERMINATION ACCURACY
ST 2423.1 SR 988.0 SS 3275.2
CRT -.8392 CRS .8980 CST -.9928
LSA 4160.2 MSA 516.6 SSA 16.9
EL1 2567.2 EL2 507.2 ALF 160.31

LAUNCH DATE OCT 11 1964 FLIGHT TIME 354.00 ARRIVAL DATE SEP 30 1965

HELIOCENTRIC CONIC DISTANCE 804.973 EARTH TO MARS

RL 149.32 LAL .00 LOL 17.71 VL 32.582 GAL -6.98 AZL 88.75 HCA 251.28 SMA 185.37 ECC .22806 INC 1.2479 V1 29.840
RP 217.80 LAP -1.18 LOP 268.99 VP 22.422 GAP -8.54 AZP 90.40 TAL 320.83 TAP 212.11 RCA 143.09 APO 227.64 V2 25.228
RC 280.240 GL 9.37 GP 6.99 ZAL 143.15 ZAP 67.26 ETS 182.41 ZAE 98.91 ETE 177.67 ZAC 89.74 ETC 259.03 CLP 67.08

PLANETOCENTRIC CONIC

C3 18.724 VHL 4.327 DLA 15.74 RAL 167.02 RAD 6567.8 VEL 11.837 PTH 2.10 VHP 3.253 DPA 17.38 RAP 161.30 ECC 1.3081

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 2 32	2711.01	-27.72	75.36	32.72	96.02	19 47 43	2111.0	-26.60	66.87
90.00	11 16 2	4330.59	4.24	179.28	26.46	61.98	12 28 13	3730.6	.46	172.64
100.00	20 32 34	2420.68	-29.03	53.83	32.54	97.47	21 12 55	1820.7	-27.69	45.28
100.00	12 28 41	4096.16	5.40	161.41	25.82	60.55	13 36 58	3496.2	1.43	154.86
110.00	22 0 6	2146.74	-32.44	32.37	31.88	101.42	22 35 52	1546.7	-30.53	23.67
110.00	13 17 38	3942.86	8.35	147.97	24.01	56.73	14 23 21	3342.9	3.92	141.69

DIFFERENTIAL CORRECTIONS
TDE-1.2952 TRA 4.5411 TC3-6.0098 BAU 1.5267
RDE .7166 RRA -.5943 RC3 1.0390 FAU .45646
FDE-6.5722 FRA18.2185 FC-21.1052 BSP 28119
BDE 1.4802 BRA 4.5798 BC3 6.0990 FSP 9741

MID-COURSE EXECUTION ACCURACY
SGT 8307.7 SGR 1541.8 SG3 2782.9
RRT -.8909 RRF -.9096 RTF .9959
SGB 8449.5 R23 .0356 R13 -.9965
SG1 8421.2 SG2 690.9 THA 170.55

ORBIT DETERMINATION ACCURACY
ST 2545.2 SR 980.4 SS 3235.5
CRT -.8380 CRS .8962 CST -.9931
LSA 4199.7 MSA 519.8 SSA 16.5
EL1 2679.7 EL2 508.1 ALF 161.42

LAUNCH DATE OCT 11 1964 FLIGHT TIME 356.00 ARRIVAL DATE OCT 2 1965

HELIOCENTRIC CONIC DISTANCE 809.035 EARTH TO MARS

RL 149.32 LAL .00 LOL 17.71 VL 32.583 GAL -7.05 AZL 88.73 HCA 252.43 SMA 185.39 ECC .22878 INC 1.2694 V1 29.840
RP 217.44 LAP -1.21 LOP 270.14 VP 22.468 GAP -8.75 AZP 90.38 TAL 320.49 TAP 212.92 RCA 142.97 APO 227.80 V2 25.268
RC 281.529 GL 9.46 GP 6.85 ZAL 143.49 ZAP 65.63 ETS 182.59 ZAE 97.05 ETE 177.97 ZAC 89.52 ETC 259.11 CLP 65.45

PLANETOCENTRIC CONIC

C3 19.009 VHL 4.360 DLA 15.67 RAL 167.40 RAD 6567.8 VEL 11.849 PTH 2.10 VHP 3.301 DPA 17.44 RAP 160.78 ECC 1.3128

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 4 38	2712.34	-27.73	75.45	33.35	95.97	19 49 51	2112.3	-26.61	66.96
90.00	11 16 59	4336.38	4.43	179.60	27.05	62.00	12 29 16	3736.4	.65	172.96
100.00	20 34 37	2422.16	-29.04	53.93	33.17	97.42	21 14 59	1822.2	-27.71	45.38
100.00	12 29 42	4101.79	5.58	161.72	26.41	60.59	13 38 3	3501.8	1.62	155.17
110.00	22 2 4	2148.54	-32.47	32.50	32.51	101.34	22 37 53	1548.5	-30.56	23.80
110.00	13 18 44	3948.18	8.55	148.25	24.59	56.78	14 24 32	3348.2	4.12	141.96

DIFFERENTIAL CORRECTIONS
TDE-1.3766 TRA 4.7662 TC3-6.1436 BAU 1.5819
RDE .7180 RRA -.5747 RC3 1.0012 FAU .44225
FDE-6.4692 FRA17.7714 FC-20.1416 BSP 29181
BDE 1.5526 BRA 4.8007 BC3 6.2247 FSP 9430

MID-COURSE EXECUTION ACCURACY
SGT 8619.3 SGR 1505.9 SG3 2689.7
RRT -.8850 RRF -.9040 RTF .9961
SGB 8749.8 R23 .0361 R13 -.9966
SG1 8722.3 SG2 693.0 THA 171.15

ORBIT DETERMINATION ACCURACY
ST 2666.0 SR 972.8 SS 3195.0
CRT -.8369 CRS .8944 CST -.9933
LSA 4241.3 MSA 522.6 SSA 16.2
EL1 2792.0 EL2 508.5 ALF 162.42

LAUNCH DATE OCT 11 1964 FLIGHT TIME 358.00 ARRIVAL DATE OCT 4 1965

HELIOCENTRIC CONIC DISTANCE 813.100 EARTH TO MARS

RL 149.32 LAL .00 LOL 17.71 VL 32.584 GAL -7.13 AZL 88.71 HCA 253.57 SMA 185.41 ECC .22956 INC 1.2906 V1 29.840
RP 217.09 LAP -1.24 LOP 271.28 VP 22.514 GAP -8.95 AZP 90.37 TAL 320.14 TAP 213.72 RCA 142.85 APO 227.97 V2 25.307
RC 282.801 GL 9.54 GP 6.72 ZAL 143.84 ZAP 64.05 ETS 182.77 ZAE 95.22 ETE 178.25 ZAC 89.31 ETC 259.18 CLP 63.86

PLANETOCENTRIC CONIC

C3 19.312 VHL 4.395 DLA 15.60 RAL 167.79 RAD 6567.8 VEL 11.861 PTH 2.10 VHP 3.352 DPA 17.48 RAP 160.30 ECC 1.3178

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 6 53	2713.44	-27.74	75.53	33.99	95.93	19 52 7	2113.4	-26.63	67.04
90.00	11 17 52	4342.76	4.63	179.96	27.65	62.03	12 30 15	3742.8	.85	173.32
100.00	20 36 49	2423.44	-29.05	54.03	33.82	97.37	21 17 12	1823.4	-27.73	45.47
100.00	12 30 38	4107.99	5.79	162.06	27.02	60.62	13 39 6	3508.0	1.83	155.51
110.00	22 4 9	2150.18	-32.49	32.62	33.16	101.27	22 39 59	1550.2	-30.59	23.91
110.00	13 19 47	3954.01	8.77	148.56	25.19	56.83	14 25 41	3354.0	4.34	142.27

DIFFERENTIAL CORRECTIONS
TDE-1.4587 TRA 4.9914 TC3-6.2642 BAU 1.6364
RDE .7195 RRA -.5554 RC3 .9638 FAU .42790
FDE-6.3609 FRA17.3178 FC-19.1820 BSP 30208
BDE 1.6264 BRA 5.0222 BC3 6.3379 FSP 9115

MID-COURSE EXECUTION ACCURACY
SGT 8920.8 SGR 1470.6 SG3 2595.7
RRT -.8787 RRF -.8982 RTF .9962
SGB 9041.2 R23 .0368 R13 -.9967
SG1 9014.5 SG2 694.8 THA 171.71

ORBIT DETERMINATION ACCURACY
ST 2784.4 SR 965.1 SS 3152.7
CRT -.8355 CRS .8927 CST -.9935
LSA 4283.4 MSA 525.2 SSA 15.9
EL1 2902.7 EL2 508.6 ALF 163.32

LAUNCH DATE OCT 11 1964 FLIGHT TIME 360.00 ARRIVAL DATE OCT 6 1965

HELIOCENTRIC CONIC DISTANCE 817.168 EARTH TO MARS
RL 149.32 LAL .00 LOL 17.71 VL 32.586 GAL -7.21 AZL 88.69 HCA 254.73 SMA 185.43 ECC .23038 INC 1.3116 V1 29.840
RP 216.74 LAP -1.27 LOP 272.44 VP 22.560 GAP -9.15 AZP 90.35 TAL 319.78 TAP 214.51 RCA 142.71 APO 228.15 V2 25.346
RC 284.057 GL 9.61 GP 6.58 ZAL 144.20 ZAP 62.51 ETS 182.94 ZAE 93.44 ETE 178.52 ZAC 89.10 ETC 259.24 CLP 62.31

PLANETOCENTRIC CONIC
C3 19.634 VHL 4.431 DLA 15.52 RAL 168.19 RAD 6567.8 VEL 11.875 PTH 2.11 VHP 3.406 DPA 17.51 RAP 159.87 ECC 1.3231

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 9 16	2714.31	-27.74	75.60	34.66	95.90	19 54 31	2114.3	-26.64	67.10
90.00	11 18 41	4349.72	4.85	180.35	28.28	62.07	12 31 11	3749.7	1.08	173.70
100.00	20 39 8	2424.52	-29.06	54.11	34.48	97.33	21 19 32	1824.5	-27.74	45.55
100.00	12 31 31	4114.74	6.02	162.44	27.64	60.66	13 40 6	3514.7	2.06	155.88
110.00	22 6 20	2151.69	-32.51	32.73	33.83	101.21	22 42 11	1551.7	-30.62	24.02
110.00	13 20 48	3960.34	9.00	148.90	25.81	56.88	14 26 49	3360.3	4.58	142.60

DIFFERENTIAL CORRECTIONS
TDE-1.5423 TRA 5.2170 TC3-6.3705 BAU 1.6898
RDE .7211 RRA -.5364 RC3 .9269 FAU .41330
FDE-6.2505 FRA16.8592 FC-18.2237 BSP 31217
BDE 1.7025 BRA 5.2445 BC3 6.4376 FSP 8800

MID-COURSE EXECUTION ACCURACY
SGT 9212.2 SGR 1436.1 SG3 2501.1
RRT -.8720 RRF -.8921 RTF .9963
SGB 9323.5 R23 .0375 R13 -.9967
SG1 9297.4 SG2 696.5 THA 172.21

ORBIT DETERMINATION ACCURACY
ST 2901.2 SR 957.4 SS 3109.3
CRT -.8342 CRS .8911 CST -.9936
LSA 4327.0 MSA 527.4 SSA 15.6
EL1 3012.5 EL2 508.5 ALF 164.14

LAUNCH DATE OCT 11 1964 FLIGHT TIME 362.00 ARRIVAL DATE OCT 8 1965

HELIOCENTRIC CONIC DISTANCE 821.239 EARTH TO MARS
RL 149.32 LAL .00 LOL 17.71 VL 32.588 GAL -7.29 AZL 88.67 HCA 255.88 SMA 185.46 ECC .23126 INC 1.3325 V1 29.840
RP 216.39 LAP -1.29 LOP 273.59 VP 22.606 GAP -9.35 AZP 90.33 TAL 319.40 TAP 215.28 RCA 142.57 APO 228.35 V2 25.385
RC 285.296 GL 9.68 GP 6.45 ZAL 144.57 ZAP 61.01 ETS 183.10 ZAE 91.69 ETE 178.76 ZAC 88.91 ETC 259.30 CLP 60.81

PLANETOCENTRIC CONIC
C3 19.976 VHL 4.469 DLA 15.42 RAL 168.60 RAD 6567.8 VEL 11.889 PTH 2.11 VHP 3.463 DPA 17.52 RAP 159.48 ECC 1.3288

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 11 47	2714.97	-27.75	75.64	35.34	95.88	19 57 2	2115.0	-26.65	67.15
90.00	11 19 26	4357.26	5.09	180.77	28.92	62.11	12 32 4	3757.3	1.32	174.12
100.00	20 41 35	2425.42	-29.07	54.17	35.17	97.29	21 22 0	1825.4	-27.75	45.62
100.00	12 32 20	4122.05	6.26	162.84	28.28	60.71	13 41 2	3522.1	2.31	156.28
110.00	22 8 37	2153.06	-32.53	32.84	34.51	101.15	22 44 30	1553.1	-30.65	24.12
110.00	13 21 47	3967.17	9.26	149.27	26.45	56.95	14 27 54	3367.2	4.84	142.96

DIFFERENTIAL CORRECTIONS
TDE-1.6267 TRA 5.4445 TC3-6.4617 BAU 1.7420
RDE .7228 RRA -.5180 RC3 .8904 FAU .39852
FDE-6.1358 FRA16.4012 FC-17.2711 BSP 32206
BDE 1.7801 BRA 5.4691 BC3 6.5228 FSP 8489

MID-COURSE EXECUTION ACCURACY
SGT 9493.8 SGR 1402.4 SG3 2406.7
RRT -.8650 RRF -.8857 RTF .9964
SGB 9596.8 R23 .0382 R13 -.9968
SG1 9571.4 SG2 697.9 THA 172.68

ORBIT DETERMINATION ACCURACY
ST 3016.0 SR 949.7 SS 3064.4
CRT -.8328 CRS .8895 CST -.9937
LSA 4371.3 MSA 529.3 SSA 15.3
EL1 3120.9 EL2 508.1 ALF 164.90

LAUNCH DATE OCT 11 1964 FLIGHT TIME 364.00 ARRIVAL DATE OCT 10 1965

HELIOCENTRIC CONIC DISTANCE 825.313 EARTH TO MARS
RL 149.32 LAL .00 LOL 17.71 VL 32.590 GAL -7.38 AZL 88.65 HCA 257.04 SMA 185.49 ECC .23218 INC 1.3533 V1 29.840
RP 216.05 LAP -1.32 LOP 274.75 VP 22.651 GAP -9.55 AZP 90.30 TAL 319.01 TAP 216.05 RCA 142.43 APO 228.56 V2 25.423
RC 286.520 GL 9.74 GP 6.32 ZAL 144.95 ZAP 59.55 ETS 183.25 ZAE 89.98 ETE 179.00 ZAC 88.73 ETC 259.34 CLP 59.35

PLANETOCENTRIC CONIC
C3 20.339 VHL 4.510 DLA 15.32 RAL 169.02 RAD 6567.8 VEL 11.905 PTH 2.12 VHP 3.523 DPA 17.51 RAP 159.14 ECC 1.3347

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 14 26	2715.44	-27.75	75.68	36.04	95.86	19 59 42	2115.4	-26.65	67.18
90.00	11 20 7	4365.38	5.35	181.23	29.58	62.15	12 32 52	3765.4	1.58	174.58
100.00	20 44 9	2426.14	-29.08	54.23	35.87	97.27	21 24 35	1826.1	-27.76	45.67
100.00	12 33 6	4129.91	6.52	163.28	28.94	60.76	13 41 56	3529.9	2.58	156.72
110.00	22 11 1	2154.31	-32.54	32.93	35.21	101.09	22 46 56	1554.3	-30.67	24.21
110.00	13 22 43	3974.50	9.53	149.66	27.11	57.02	14 28 57	3374.5	5.12	143.35

DIFFERENTIAL CORRECTIONS
TDE-1.7128 TRA 5.6730 TC3-6.5392 BAU 1.7932
RDE .7248 RRA -.5000 RC3 .8547 FAU .38373
FDE-6.0198 FRA15.9430 FC-16.3336 BSP 33161
BDE 1.8599 BRA 5.6950 BC3 6.5948 FSP 8177

MID-COURSE EXECUTION ACCURACY
SGT 9765.5 SGR 1369.7 SG3 2312.8
RRT -.8577 RRF -.8791 RTF .9964
SGB 9861.1 R23 .0390 R13 -.9968
SG1 9836.3 SG2 699.1 THA 173.11

ORBIT DETERMINATION ACCURACY
ST 3129.3 SR 942.1 SS 3018.7
CRT -.8314 CRS .8880 CST -.9938
LSA 4417.0 MSA 530.9 SSA 15.1
EL1 3228.3 EL2 507.5 ALF 165.58

LAUNCH DATE OCT 11 1964 FLIGHT TIME 366.00 ARRIVAL DATE OCT 12 1965

HELIOCENTRIC CONIC DISTANCE 829.388 EARTH TO MARS
RL 149.32 LAL .00 LOL 17.71 VL 32.592 GAL -7.48 AZL 88.63 HCA 258.20 SMA 185.53 ECC .23317 INC 1.3738 V1 29.840
RP 215.71 LAP -1.34 LOP 275.92 VP 22.697 GAP -9.75 AZP 90.28 TAL 318.60 TAP 216.81 RCA 142.27 APO 228.79 V2 25.461
RC 287.729 GL 9.80 GP 6.19 ZAL 145.35 ZAP 58.14 ETS 183.39 ZAE 88.31 ETE 179.22 ZAC 88.56 ETC 259.39 CLP 57.93

PLANETOCENTRIC CONIC
C3 20.723 VHL 4.552 DLA 15.20 RAL 169.45 RAD 6567.8 VEL 11.921 PTH 2.12 VHP 3.585 DPA 17.49 RAP 158.84 ECC 1.3411

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 17 13	2715.71	-27.75	75.70	36.76	95.85	20 2 28	2115.7	-26.65	67.20
90.00	11 20 44	4374.06	5.63	181.72	30.26	62.20	12 33 38	3774.1	1.86	175.06
100.00	20 46 50	2426.70	-29.08	54.27	36.58	97.25	21 27 17	1826.7	-27.77	45.71
100.00	12 33 48	4138.30	6.80	163.75	29.62	60.82	13 42 46	3538.3	2.86	157.18
110.00	22 13 31	2155.45	-32.56	33.02	35.93	101.04	22 49 27	1555.5	-30.69	24.29
110.00	13 23 36	3982.32	9.82	150.08	27.79	57.09	14 29 58	3382.3	5.41	143.76

DIFFERENTIAL CORRECTIONS
TDE-1.8004 TRA 5.9027 TC3-6.6035 BAU 1.8436
RDE .7269 RRA -.4826 RC3 .8200 FAU .36903
FDE-5.9021 FRA15.4867 FC-15.4166 BSP 34095
BDE 1.9416 BRA 5.9224 BC3 6.6542 FSP 7870

MID-COURSE EXECUTION ACCURACY
SGT10027.4 SGR 1338.2 SG3 2219.9
RRT -.8502 RRF -.8722 RTF .9964
SGB10116.3 R23 .0398 R13 -.9968
SG110092.0 SG2 700.1 THA 173.50

ORBIT DETERMINATION ACCURACY
ST 3240.6 SR 934.5 SS 2972.0
CRT -.8300 CRS .8866 CST -.9938
LSA 4463.6 MSA 532.0 SSA 14.9
EL1 3334.4 EL2 506.6 ALF 166.22

LAUNCH DATE OCT 11 1964 FLIGHT TIME 368.00 ARRIVAL DATE OCT 14 1965

HELIOCENTRIC CONIC DISTANCE 833.466 EARTH TO MARS

RL	149.32	LAL	.00	LOL	17.71	VL	32.594	GAL	-7.57	AZL	88.61	HCA	259.37	SMA	185.56	ECC	.23420	INC	1.3944
RP	215.38	LAP	-1.37	LOP	277.08	VP	22.742	GAP	-9.94	AZP	90.26	TAL	318.18	TAP	217.55	RCA	142.10	APO	229.02
RC	288.924	GL	9.85	GP	6.06	ZAL	145.76	ZAP	56.76	ETS	183.53	ZAE	86.68	ETE	179.43	ZAC	88.40	ETC	259.42

V1 29.840 V2 25.498 CLP 56.55

PLANETOCENTRIC CONIC

C3	21.131	VHL	4.597	DLA	15.07	RAL	169.88	RAD	6567.9	VEL	11.938	PTH	2.12	VHP	3.650	DPA	17.45	RAP	158.59

ECC 1.3478

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 20 7	2715.81	-27.76	75.70	37.49	95.85	20 5 22	2115.8	-26.65	67.21
90.00	11 21 17	4383.30	5.92	182.24	30.96	62.26	12 34 21	3783.3	2.16	175.58
100.00	20 49 38	2427.11	-29.08	54.30	37.32	97.23	21 30 5	1827.1	-27.78	45.74
100.00	12 34 27	4147.24	7.10	164.25	30.32	60.89	13 43 34	3547.2	3.16	157.67
110.00	22 16 8	2156.48	-32.57	33.09	36.67	101.00	22 52 4	1556.5	-30.71	24.37
110.00	13 24 27	3990.62	10.12	150.53	28.48	57.18	14 30 58	3390.6	5.73	144.20

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.8889	TRA	6.1349	TC3	-6.6539	BAU	1.8928	SGT	10279.9	SGR	1307.8	SG3	2128.2	ST	3349.8	SR	926.9	SS	2924.1
RDE	.7292	RRA	-.4659	RC3	.7862	FAU	.35438	RRT	-.8423	RRF	-.8652	RTF	.9964	CRT	-.8285	CRS	.8853	CST	-.9939
FDE	-5.7816	FRA	15.0345	FC	-14.5189	BSP	35012	SGB	10362.8	R23	.0407	R13	-.9967	LSA	4510.7	MSA	533.0	SSA	14.7
BDE	2.0248	BRA	6.1526	BC3	6.7001	FSP	7569	SG1	10339.1	SG2	700.8	THA	173.86	EL1	3438.7	EL2	505.6	ALF	166.80

LAUNCH DATE OCT 11 1964 FLIGHT TIME 370.00 ARRIVAL DATE OCT 16 1965

HELIOCENTRIC CONIC DISTANCE 837.545 EARTH TO MARS

RL	149.32	LAL	.00	LOL	17.71	VL	32.596	GAL	-7.68	AZL	88.59	HCA	260.54	SMA	185.60	ECC	.23530	INC	1.4148
RP	215.05	LAP	-1.40	LOP	278.25	VP	22.787	GAP	-10.14	AZP	90.23	TAL	317.74	TAP	218.28	RCA	141.93	APO	229.28
RC	290.105	GL	9.89	GP	5.94	ZAL	146.18	ZAP	55.43	ETS	183.65	ZAE	85.09	ETE	179.62	ZAC	88.24	ETC	259.45

V1 29.840 V2 25.535 CLP 55.21

PLANETOCENTRIC CONIC

C3	21.562	VHL	4.643	DLA	14.93	RAL	170.32	RAD	6567.9	VEL	11.956	PTH	2.13	VHP	3.717	DPA	17.40	RAP	158.38

ECC 1.3549

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 23 8	2715.75	-27.75	75.70	38.24	95.85	20 8 24	2115.7	-26.65	67.21
90.00	11 21 47	4393.08	6.23	182.79	31.68	62.32	12 35 0	3793.1	2.48	176.12
100.00	20 52 33	2427.37	-29.09	54.31	38.07	97.22	21 33 0	1827.4	-27.78	45.75
100.00	12 35 3	4156.70	7.41	164.77	31.03	60.96	13 44 19	3556.7	3.48	158.19
110.00	22 18 50	2157.42	-32.58	33.16	37.42	100.96	22 54 47	1557.4	-30.73	24.43
110.00	13 25 16	3999.41	10.45	151.00	29.19	57.27	14 31 55	3399.4	6.06	144.66

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.9793	TRA	6.3689	TC3	-6.6925	BAU	1.9414	SGT	10523.5	SGR	1278.6	SG3	2038.0	ST	3457.3	SR	919.5	SS	2875.6
RDE	.7318	RRA	-.4498	RC3	.7535	FAU	.33991	RRT	-.8343	RRF	-.8579	RTF	.9964	CRT	-.8272	CRS	.8841	CST	-.9939
FDE	-5.6610	FRA	14.5858	FC	-13.6479	BSP	35895	SGB	10600.9	R23	.0416	R13	-.9967	LSA	4558.7	MSA	533.7	SSA	14.5
BDE	2.1102	BRA	6.3847	BC3	6.7348	FSP	7270	SG1	10577.7	SG2	701.3	THA	174.19	EL1	3541.7	EL2	504.3	ALF	167.33

LAUNCH DATE OCT 11 1964 FLIGHT TIME 372.00 ARRIVAL DATE OCT 18 1965

HELIOCENTRIC CONIC DISTANCE 841.625 EARTH TO MARS

RL	149.32	LAL	.00	LOL	17.71	VL	32.599	GAL	-7.78	AZL	88.56	HCA	261.72	SMA	185.65	ECC	.23645	INC	1.4351
RP	214.72	LAP	-1.42	LOP	279.43	VP	22.831	GAP	-10.33	AZP	90.21	TAL	317.29	TAP	219.00	RCA	141.75	APO	229.54
RC	291.272	GL	9.93	GP	5.82	ZAL	146.61	ZAP	54.13	ETS	183.77	ZAE	83.53	ETE	179.80	ZAC	88.10	ETC	259.47

V1 29.840 V2 25.572 CLP 53.92

PLANETOCENTRIC CONIC

C3	22.018	VHL	4.692	DLA	14.78	RAL	170.77	RAD	6567.9	VEL	11.975	PTH	2.13	VHP	3.787	DPA	17.34	RAP	158.21

ECC 1.3624

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 26 16	2715.53	-27.75	75.68	39.01	95.86	20 11 31	2115.5	-26.65	67.19
90.00	11 22 13	4403.42	6.56	183.38	32.41	62.39	12 35 36	3803.4	2.81	176.70
100.00	20 55 35	2427.50	-29.09	54.32	38.84	97.22	21 36 2	1827.5	-27.78	45.76
100.00	12 35 35	4166.68	7.74	165.33	31.77	61.04	13 45 2	3566.7	3.82	158.74
110.00	22 21 37	2158.26	-32.59	33.23	38.18	100.92	22 57 36	1558.3	-30.74	24.50
110.00	13 26 2	4008.68	10.79	151.50	29.93	57.37	14 32 51	3408.7	6.41	145.15

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-2.0724	TRA	6.6049	TC3	-6.7189	BAU	1.9892	SGT	10758.0	SGR	1250.8	SG3	1949.6	ST	3563.8	SR	912.3	SS	2827.1
RDE	.7347	RRA	-.4343	RC3	.7219	FAU	.32569	RRT	-.8261	RRF	-.8506	RTF	.9963	CRT	-.8260	CRS	.8831	CST	-.9939
FDE	-5.5427	FRA	14.1415	FC	-12.8059	BSP	36744	SGB	10830.5	R23	.0426	R13	-.9966	LSA	4608.7	MSA	533.9	SSA	14.4
BDE	2.1988	BRA	6.6191	BC3	6.7576	FSP	6974	SG1	10807.8	SG2	701.6	THA	174.49	EL1	3644.2	EL2	502.8	ALF	167.82

LAUNCH DATE OCT 11 1964 FLIGHT TIME 374.00 ARRIVAL DATE OCT 20 1965

HELIOCENTRIC CONIC DISTANCE 845.705 EARTH TO MARS

RL	149.32	LAL	.00	LOL	17.71	VL	32.601	GAL	-7.89	AZL	88.54	HCA	262.89	SMA	185.69	ECC	.23766	INC	1.4554
RP	214.40	LAP	-1.44	LOP	280.61	VP	22.876	GAP	-10.53	AZP	90.18	TAL	316.82	TAP	219.71	RCA	141.56	APO	229.82
RC	292.426	GL	9.96	GP	5.70	ZAL	147.05	ZAP	52.87	ETS	183.88	ZAE	82.01	ETE	179.98	ZAC	87.97	ETC	259.48

V1 29.840 V2 25.608 CLP 52.66

PLANETOCENTRIC CONIC

C3	22.501	VHL	4.743	DLA	14.63	RAL	171.22	RAD	6567.9	VEL	11.995	PTH	2.14	VHP	3.860	DPA	17.26	RAP	158.09

ECC 1.3703

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 29 30	2715.17	-27.75	75.66	39.80	95.87	20 14 46	2115.2	-26.65	67.17
90.00	11 22 36	4414.28	6.90	183.99	33.17	62.47	12 36 10	3814.3	3.16	177.31
100.00	20 58 42	2427.51	-29.09	54.33	39.62	97.22	21 39 10	1827.5	-27.78	45.76
100.00	12 36 5	4177.18	8.08	165.92	32.53	61.12	13 45 42	3577.2	4.17	159.32
110.00	22 24 31	2159.03	-32.60	33.28	38.97	100.89	23 0 30	1559.0	-30.76	24.55
110.00	13 26 46	4018.42	11.15	152.03	30.68	57.47	14 33 44	3418.4	6.78	145.66

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-2.1661	TRA	6.8444	TC3	-6.7314	BAU	2.0355	SGT	10983.1	SGR	1224.2	SG3	1863.0	ST	3667.7	SR	905.1	SS	2777.1
RDE	.7377	RRA	-.4196	RC3	.6913	FAU	.31158	RRT	-.8178	RRF	-.8431	RTF	.9963	CRT	-.8248	CRS	.8821	CST	-.9939
FDE	-5.4208	FRA	13.7052	FC	-11.9885	BSP	37610	SGB	11051.2	R23	.0436	R13	-.9966	LSA	4658.2	MSA	534.0	SSA	14.2
BDE	2.2882	BRA	6.8573	BC3	6.7668	FSP	6693	SG1	11028.9	SG2	701.6	THA	174.77	EL1	3744.4	EL2	501.3	ALF	168.28

LAUNCH DATE OCT 11 1964 FLIGHT TIME 376.00 ARRIVAL DATE OCT 22 1965

HELIOCENTRIC CONIC DISTANCE 849.785 EARTH TO MARS

RL 149.32 LAL .00 LOL 17.71 VL 32.604 GAL -8.01 AZL 88.52 HCA 264.07 SMA 185.74 ECC .23894 INC 1.4756 V1 29.840
RP 214.08 LAP -1.47 LOP 281.79 VP 22.920 GAP -10.72 AZP 90.15 TAL 316.33 TAP 220.41 RCA 141.36 APO 230.12 V2 25.644
RC 293.566 GL 9.98 GP 5.58 ZAL 147.50 ZAP 51.65 ETS 183.98 ZAE 80.53 ETE 180.14 ZAC 87.85 ETC 259.49 CLP 51.44

PLANETOCENTRIC CONIC

C3 23.011 VHL 4.797 DLA 14.46 RAL 171.68 RAD 6567.9 VEL 12.016 PTH 2.14 VHP 3.936 DPA 17.17 RAP 158.00 ECC 1.3787

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 32 52	2714.69	-27.75	75.62	40.60	95.89	20 18 6	2114.7	-26.64	67.13
90.00	11 22 55	4425.67	7.26	184.64	33.94	62.55	12 36 41	3825.7	3.52	177.95
100.00	21 1 56	2427.42	-29.09	54.32	40.43	97.22	21 42 24	1827.4	-27.78	45.76
100.00	12 36 31	4188.18	8.45	166.54	33.30	61.22	13 46 20	3588.2	4.54	159.93
110.00	22 27 29	2159.73	-32.61	33.34	39.77	100.86	23 3 29	1559.7	-30.77	24.60
110.00	13 27 28	4028.63	11.52	152.59	31.45	57.59	14 34 36	3428.6	7.16	146.20

DIFFERENTIAL CORRECTIONS
TDE-2.2623 TRA 7.0868 TC3-6.7337 BAU 2.0815
RDE .7411 RRA -.4056 RC3 .6619 FAU .29781
FDE-5.2997 FRA13.2749 FC-11.2043 BSP 38416
BDE 2.3806 BRA 7.0984 BC3 6.7661 FSP 6411

MID-COURSE EXECUTION ACCURACY
SGT11200.4 SGR 1198.8 SG3 1778.5
RRT -.8094 RRF -.8356 RTF .9962
SGB11264.4 R23 .0446 R13 -.9965
SG111242.5 SG2 701.4 THA 175.03

ORBIT DETERMINATION ACCURACY
ST 3770.4 SR 898.0 SS 2726.7
CRT -.8237 CRS .8813 CST -.9939
LSA 4708.7 MSA 533.7 SSA 14.1
EL1 3843.6 EL2 499.5 ALF 168.71

LAUNCH DATE OCT 11 1964 FLIGHT TIME 378.00 ARRIVAL DATE OCT 24 1965

HELIOCENTRIC CONIC DISTANCE 853.865 EARTH TO MARS

RL 149.32 LAL .00 LOL 17.71 VL 32.607 GAL -8.13 AZL 88.50 HCA 265.26 SMA 185.79 ECC .24028 INC 1.4958 V1 29.840
RP 213.77 LAP -1.49 LOP 282.97 VP 22.963 GAP -10.92 AZP 90.12 TAL 315.83 TAP 221.09 RCA 141.15 APO 230.43 V2 25.679
RC 294.693 GL 10.00 GP 5.47 ZAL 147.96 ZAP 50.47 ETS 184.08 ZAE 79.08 ETE 180.30 ZAC 87.74 ETC 259.48 CLP 50.26

PLANETOCENTRIC CONIC

C3 23.551 VHL 4.853 DLA 14.28 RAL 172.15 RAD 6568.0 VEL 12.039 PTH 2.15 VHP 4.013 DPA 17.06 RAP 157.96 ECC 1.3876

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 36 19	2714.09	-27.74	75.58	41.42	95.91	20 21 33	2114.1	-26.63	67.09
90.00	11 23 11	4437.58	7.63	185.31	34.73	62.65	12 37 9	3837.6	3.91	178.61
100.00	21 5 16	2427.22	-29.08	54.30	41.24	97.23	21 45 43	1827.2	-27.78	45.74
100.00	12 36 55	4199.69	8.82	167.18	34.09	61.32	13 46 55	3599.7	4.93	160.56
110.00	22 30 33	2160.37	-32.62	33.39	40.59	100.83	23 6 34	1560.4	-30.78	24.65
110.00	13 28 7	4039.30	11.91	153.17	32.25	57.72	14 35 27	3439.3	7.56	146.77

DIFFERENTIAL CORRECTIONS
TDE-2.3605 TRA 7.3327 TC3-6.7244 BAU 2.1266
RDE .7448 RRA -.3923 RC3 .6337 FAU .28428
FDE-5.1794 FRA12.8518 FC-10.4504 BSP 39227
BDE 2.4752 BRA 7.3432 BC3 6.7542 FSP 6140

MID-COURSE EXECUTION ACCURACY
SGT11409.2 SGR 1174.7 SG3 1696.2
RRT -.8009 RRF -.8282 RTF .9961
SGB11469.5 R23 .0456 R13 -.9963
SG111448.0 SG2 701.0 THA 175.27

ORBIT DETERMINATION ACCURACY
ST 3871.4 SR 891.1 SS 2675.9
CRT -.8228 CRS .8807 CST -.9938
LSA 4760.0 MSA 533.1 SSA 14.0
EL1 3941.3 EL2 497.5 ALF 169.10

LAUNCH DATE OCT 11 1964 FLIGHT TIME 380.00 ARRIVAL DATE OCT 26 1965

HELIOCENTRIC CONIC DISTANCE 857.944 EARTH TO MARS

RL 149.32 LAL .00 LOL 17.71 VL 32.610 GAL -8.25 AZL 88.48 HCA 266.45 SMA 185.84 ECC .24168 INC 1.5160 V1 29.840
RP 213.46 LAP -1.51 LOP 284.16 VP 23.006 GAP -11.11 AZP 90.09 TAL 315.32 TAP 221.76 RCA 140.92 APO 230.75 V2 25.714
RC 295.805 GL 10.01 GP 5.36 ZAL 148.43 ZAP 49.33 ETS 184.17 ZAE 77.67 ETE 180.45 ZAC 87.64 ETC 259.48 CLP 49.11

PLANETOCENTRIC CONIC

C3 24.121 VHL 4.911 DLA 14.09 RAL 172.62 RAD 6568.0 VEL 12.062 PTH 2.16 VHP 4.094 DPA 16.94 RAP 157.96 ECC 1.3970

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 39 52	2713.40	-27.74	75.53	42.26	95.93	20 25 6	2113.4	-26.63	67.04
90.00	11 23 24	4450.00	8.02	186.02	35.55	62.75	12 37 34	3850.0	4.30	179.31
100.00	21 8 42	2426.95	-29.08	54.28	42.08	97.24	21 49 9	1826.9	-27.78	45.72
100.00	12 37 16	4211.68	9.21	167.86	34.91	61.44	13 47 28	3611.7	5.33	161.22
110.00	22 33 42	2160.97	-32.63	33.43	41.43	100.81	23 9 43	1561.0	-30.79	24.69
110.00	13 28 45	4050.43	12.31	153.78	33.06	57.86	14 36 16	3450.4	7.98	147.36

DIFFERENTIAL CORRECTIONS
TDE-2.4614 TRA 7.5829 TC3-6.7051 BAU 2.1711
RDE .7488 RRA -.3798 RC3 .6066 FAU .27112
FDE-5.0604 FRA12.4364 FC3-9.7308 BSP 40002
BDE 2.5727 BRA 7.5924 BC3 6.7325 FSP 5873

MID-COURSE EXECUTION ACCURACY
SGT11610.9 SGR 1151.9 SG3 1616.3
RRT -.7925 RRF -.8207 RTF .9960
SGB11667.9 R23 .0468 R13 -.9962
SG111646.8 SG2 700.3 THA 175.49

ORBIT DETERMINATION ACCURACY
ST 3971.3 SR 884.4 SS 2624.9
CRT -.8219 CRS .8802 CST -.9938
LSA 4812.5 MSA 532.3 SSA 13.9
EL1 4038.3 EL2 495.4 ALF 169.47

LAUNCH DATE OCT 11 1964 FLIGHT TIME 382.00 ARRIVAL DATE OCT 28 1965

HELIOCENTRIC CONIC DISTANCE 862.021 EARTH TO MARS

RL 149.32 LAL .00 LOL 17.71 VL 32.613 GAL -8.38 AZL 88.46 HCA 267.64 SMA 185.89 ECC .24315 INC 1.5362 V1 29.840
RP 213.16 LAP -1.53 LOP 285.35 VP 23.049 GAP -11.30 AZP 90.06 TAL 314.78 TAP 222.42 RCA 140.69 APO 231.09 V2 25.748
RC 296.904 GL 10.02 GP 5.25 ZAL 148.91 ZAP 48.21 ETS 184.26 ZAE 76.29 ETE 180.59 ZAC 87.55 ETC 259.46 CLP 48.00

PLANETOCENTRIC CONIC

C3 24.724 VHL 4.972 DLA 13.90 RAL 173.10 RAD 6568.0 VEL 12.087 PTH 2.16 VHP 4.177 DPA 16.81 RAP 157.99 ECC 1.4069

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 43 31	2712.61	-27.73	75.47	43.11	95.96	20 28 44	2112.6	-26.62	66.98
90.00	11 23 35	4462.92	8.42	186.76	36.38	62.86	12 37 57	3862.9	4.72	180.03
100.00	21 12 12	2426.59	-29.08	54.26	42.94	97.25	21 52 39	1826.6	-27.77	45.70
100.00	12 37 34	4224.16	9.62	168.56	35.74	61.56	13 47 59	3624.2	5.75	161.92
110.00	22 36 55	2161.52	-32.64	33.47	42.28	100.79	23 12 57	1561.5	-30.80	24.73
110.00	13 29 21	4062.01	12.73	154.42	33.89	58.00	14 37 3	3462.0	8.41	147.98

DIFFERENTIAL CORRECTIONS
TDE-2.5650 TRA 7.8361 TC3-6.6770 BAU 2.2154
RDE .7532 RRA -.3680 RC3 .5808 FAU .25833
FDE-4.9427 FRA12.0271 FC3-9.0455 BSP 40755
BDE 2.6733 BRA 7.8447 BC3 6.7022 FSP 5613

MID-COURSE EXECUTION ACCURACY
SGT11804.5 SGR 1130.3 SG3 1538.7
RRT -.7842 RRF -.8134 RTF .9958
SGB11858.5 R23 .0479 R13 -.9961
SG111837.9 SG2 699.4 THA 175.69

ORBIT DETERMINATION ACCURACY
ST 4069.6 SR 877.9 SS 2573.5
CRT -.8213 CRS .8799 CST -.9937
LSA 4865.5 MSA 531.2 SSA 13.8
EL1 4133.9 EL2 493.0 ALF 169.81

LAUNCH DATE OCT 11 1964 FLIGHT TIME 384.00 ARRIVAL DATE OCT 30 1965

HELIOCENTRIC CONIC DISTANCE 866.096 EARTH TO MARS

RL 149.32 LAL .00 LOL 17.71 VL 32.616 GAL -8.52 AZL 88.44 HCA 268.83 SMA 185.95 ECC .24470 INC 1.5564 V1 29.840
RP 212.87 LAP -1.56 LOP 286.55 VP 23.091 GAP -11.50 AZP 90.03 TAL 314.23 TAP 223.07 RCA 140.45 APO 231.45 V2 25.782
RC 297.989 GL 10.02 GP 5.15 ZAL 149.40 ZAP 47.14 ETS 184.34 ZAE 74.94 ETE 180.72 ZAC 87.47 ETC 259.44 CLP 46.92

PLANETOCENTRIC CONIC

C3 25.362 VHL 5.036 DLA 13.69 RAL 173.58 RAD 6568.0 VEL 12.114 PTH 2.17 VHP 4.263 DPA 16.67 RAP 158.07 ECC 1.4174

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 47 16	2711.75	-27.73	75.41	43.98	95.99	20 32 28	2111.7	-26.61	66.92
90.00	11 23 42	4476.33	8.84	187.52	37.23	62.99	12 38 18	3876.3	5.14	180.79
100.00	21 15 49	2426.18	-29.08	54.23	43.81	97.27	21 56 15	1826.2	-27.77	45.67
100.00	12 37 50	4237.12	10.04	169.30	36.59	61.70	13 48 27	3637.1	6.18	162.64
110.00	22 40 14	2162.04	-32.64	33.51	43.15	100.76	23 16 16	1562.0	-30.81	24.77
110.00	13 29 55	4074.03	13.16	155.08	34.75	58.16	14 37 49	3474.0	8.86	148.62

DIFFERENTIAL CORRECTIONS
TDE-2.6704 TRA 8.0942 TC3-6.6385 BAU 2.2588
RDE .7578 RRA -.3570 RC3 .5560 FAU .24581
FDE-4.8236 FRA11.6264 FC3-8.3907 BSP 41493
BDE 2.7758 BRA 8.1021 BC3 6.6617 FSP 5361

MID-COURSE EXECUTION ACCURACY
SGT11990.5 SGR 1109.8 SG3 1463.4
RRT -.7760 RRF -.8062 RTF .9957
SGB12041.8 R23 .0491 R13 -.9959
SG112021.5 SG2 698.2 THA 175.88

ORBIT DETERMINATION ACCURACY
ST 4166.0 SR 871.4 SS 2521.1
CRT -.8207 CRS .8797 CST -.9936
LSA 4918.3 MSA 529.8 SSA 13.7
EL1 4227.8 EL2 490.6 ALF 170.13

LAUNCH DATE OCT 11 1964 FLIGHT TIME 386.00 ARRIVAL DATE NOV 1 1965

HELIOCENTRIC CONIC DISTANCE 870.169 EARTH TO MARS

RL 149.32 LAL .00 LOL 17.71 VL 32.620 GAL -8.66 AZL 88.42 HCA 270.03 SMA 186.01 ECC .24631 INC 1.5767 V1 29.840
RP 212.57 LAP -1.58 LOP 287.75 VP 23.133 GAP -11.70 AZP 90.00 TAL 313.67 TAP 223.70 RCA 140.19 APO 231.82 V2 25.815
RC 299.061 GL 10.01 GP 5.05 ZAL 149.90 ZAP 46.09 ETS 184.42 ZAE 73.62 ETE 180.84 ZAC 87.40 ETC 259.42 CLP 45.88

PLANETOCENTRIC CONIC

C3 26.036 VHL 5.103 DLA 13.48 RAL 174.07 RAD 6568.1 VEL 12.141 PTH 2.18 VHP 4.351 DPA 16.52 RAP 158.18 ECC 1.4285

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 51 5	2710.82	-27.72	75.34	44.87	96.03	20 36 16	2110.8	-26.60	66.86
90.00	11 23 47	4490.22	9.26	188.32	38.11	63.12	12 38 37	3890.2	5.58	181.57
100.00	21 19 30	2425.72	-29.07	54.19	44.69	97.28	21 59 55	1825.7	-27.76	45.64
100.00	12 38 4	4250.54	10.47	170.06	37.47	61.84	13 48 54	3650.5	6.63	163.38
110.00	22 43 36	2162.54	-32.65	33.55	44.03	100.74	23 19 39	1562.5	-30.82	24.80
110.00	13 30 26	4086.50	13.61	155.77	35.62	58.34	14 38 33	3486.5	9.32	149.29

DIFFERENTIAL CORRECTIONS
TDE-2.7795 TRA 8.3565 TC3-6.5920 BAU 2.3020
RDE .7628 RRA -.3467 RC3 .5324 FAU .23370
FDE-4.7082 FRA11.2324 FC3-7.7708 BSP 42207
BDE 2.8823 BRA 8.3637 BC3 6.6135 FSP 5116

MID-COURSE EXECUTION ACCURACY
SGT12169.7 SGR 1090.5 SG3 1390.6
RRT -.7679 RRF -.7993 RTF .9955
SGB12218.5 R23 .0504 R13 -.9957
SG112198.6 SG2 696.9 THA 176.05

ORBIT DETERMINATION ACCURACY
ST 4261.6 SR 865.1 SS 2469.2
CRT -.8203 CRS .8798 CST -.9935
LSA 4972.7 MSA 528.2 SSA 13.6
EL1 4321.1 EL2 487.9 ALF 170.42

LAUNCH DATE OCT 11 1964 FLIGHT TIME 388.00 ARRIVAL DATE NOV 3 1965

HELIOCENTRIC CONIC DISTANCE 874.238 EARTH TO MARS

RL 149.32 LAL .00 LOL 17.71 VL 32.623 GAL -8.80 AZL 88.40 HCA 271.23 SMA 186.07 ECC .24800 INC 1.5970 V1 29.840
RP 212.29 LAP -1.60 LOP 288.95 VP 23.174 GAP -11.90 AZP 89.97 TAL 313.09 TAP 224.32 RCA 139.92 APO 232.21 V2 25.847
RC 300.120 GL 10.00 GP 4.95 ZAL 150.41 ZAP 45.08 ETS 184.49 ZAE 72.33 ETE 180.96 ZAC 87.34 ETC 259.38 CLP 44.87

PLANETOCENTRIC CONIC

C3 26.749 VHL 5.172 DLA 13.26 RAL 174.57 RAD 6568.1 VEL 12.171 PTH 2.18 VHP 4.442 DPA 16.36 RAP 158.32 ECC 1.4402

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 55 0	2709.84	-27.71	75.27	45.78	96.06	20 40 10	2109.8	-26.58	66.79
90.00	11 23 49	4504.58	9.70	189.14	39.00	63.27	12 38 53	3904.6	6.04	182.38
100.00	21 23 16	2425.21	-29.07	54.16	45.60	97.30	22 3 41	1825.2	-27.75	45.60
100.00	12 38 15	4264.45	10.92	170.85	38.36	62.00	13 49 19	3664.4	7.09	164.16
110.00	22 47 3	2163.03	-32.65	33.58	44.94	100.72	23 23 6	1563.0	-30.83	24.84
110.00	13 30 56	4099.39	14.07	156.48	36.52	58.52	14 39 16	3499.4	9.80	149.98

DIFFERENTIAL CORRECTIONS
TDE-2.8916 TRA 8.6242 TC3-6.5380 BAU 2.3451
RDE .7683 RRA -.3372 RC3 .5099 FAU .22197
FDE-4.5932 FRA10.8460 FC3-7.1843 BSP 42891
BDE 2.9919 BRA 8.6308 BC3 6.5579 FSP 4875

MID-COURSE EXECUTION ACCURACY
SGT12342.8 SGR 1072.3 SG3 1320.3
RRT -.7601 RRF -.7926 RTF .9953
SGB12389.3 R23 .0518 R13 -.9955
SG112369.8 SG2 695.3 THA 176.21

ORBIT DETERMINATION ACCURACY
ST 4355.9 SR 859.0 SS 2416.6
CRT -.8201 CRS .8801 CST -.9934
LSA 5027.4 MSA 526.3 SSA 13.6
EL1 4413.2 EL2 485.1 ALF 170.70

LAUNCH DATE OCT 11 1964 FLIGHT TIME 390.00 ARRIVAL DATE NOV 5 1965

HELIOCENTRIC CONIC DISTANCE 878.302 EARTH TO MARS

RL 149.32 LAL .00 LOL 17.71 VL 32.627 GAL -8.96 AZL 88.38 HCA 272.44 SMA 186.13 ECC .24977 INC 1.6173 V1 29.840
RP 212.01 LAP -1.62 LOP 290.15 VP 23.215 GAP -12.09 AZP 89.93 TAL 312.49 TAP 224.92 RCA 139.64 APO 232.62 V2 25.879
RC 301.167 GL 9.99 GP 4.86 ZAL 150.92 ZAP 44.10 ETS 184.56 ZAE 71.08 ETE 181.08 ZAC 87.28 ETC 259.35 CLP 43.89

PLANETOCENTRIC CONIC

C3 27.502 VHL 5.244 DLA 13.03 RAL 175.07 RAD 6568.1 VEL 12.202 PTH 2.19 VHP 4.535 DPA 16.19 RAP 158.50 ECC 1.4526

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 59 0	2708.82	-27.71	75.20	46.70	96.10	20 44 8	2108.8	-26.57	66.72
90.00	11 23 49	4519.41	10.16	190.00	39.92	63.43	12 39 8	3919.4	6.51	183.22
100.00	21 27 6	2424.68	-29.06	54.12	46.52	97.32	22 7 31	1824.7	-27.74	45.56
100.00	12 38 23	4278.79	11.37	171.67	39.28	62.17	13 49 42	3678.8	7.56	164.96
110.00	22 50 34	2163.51	-32.66	33.62	45.86	100.70	23 26 37	1563.5	-30.84	24.87
110.00	13 31 25	4112.72	14.54	157.23	37.44	58.72	14 39 58	3512.7	10.29	150.70

DIFFERENTIAL CORRECTIONS
TDE-3.0079 TRA 8.8960 TC3-6.4781 BAU 2.3886
RDE .7741 RRA -.3284 RC3 .4886 FAU .21068
FDE-4.4807 FRA10.4657 FC3-6.6319 BSP 43521
BDE 3.1059 BRA 8.9020 BC3 6.4965 FSP 4639

MID-COURSE EXECUTION ACCURACY
SGT12509.3 SGR 1055.2 SG3 1252.3
RRT -.7526 RRF -.7863 RTF .9951
SGB12553.8 R23 .0532 R13 -.9953
SG112534.6 SG2 693.4 THA 176.36

ORBIT DETERMINATION ACCURACY
ST 4449.4 SR 853.1 SS 2364.2
CRT -.8202 CRS .8806 CST -.9933
LSA 5083.3 MSA 524.1 SSA 13.5
EL1 4504.7 EL2 482.1 ALF 170.96

LAUNCH DATE OCT 11 1964 FLIGHT TIME 392.00 ARRIVAL DATE NOV 7 1965

HELIOCENTRIC CONIC DISTANCE 882.362 EARTH TO MARS

RL 149.32 LAL .00 LOL 17.71 VL 32.631 GAL -9.11 AZL 88.36 HCA 273.64 SMA 186.19 ECC .25162 INC 1.6378 V1 29.840
RP 211.73 LAP -1.63 LOP 291.36 VP 23.255 GAP -12.30 AZP 89.90 TAL 311.87 TAP 225.52 RCA 139.34 APO 233.04 V2 25.911
RC 302.203 GL 9.97 GP 4.77 ZAL 151.45 ZAP 43.15 ETS 184.62 ZAE 69.85 ETE 181.19 ZAC 87.24 ETC 259.30 CLP 42.94

PLANETOCENTRIC CONIC

C3 28.299 VHL 5.320 DLA 12.79 RAL 175.57 RAD 6568.1 VEL 12.234 PTH 2.20 VHP 4.631 DPA 16.01 RAP 158.71 ECC 1.4657

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 3 4	2707.78	-27.70	75.12	47.64	96.13	20 48 11	2107.8	-26.56	66.64
90.00	11 23 46	4534.69	10.62	190.88	40.85	63.60	12 39 21	3934.7	6.99	184.08
100.00	21 31 1	2424.13	-29.06	54.08	47.46	97.34	22 11 25	1824.1	-27.74	45.52
100.00	12 38 30	4293.58	11.84	172.52	40.22	62.35	13 50 4	3693.6	8.05	165.78
110.00	22 54 9	2164.00	-32.67	33.66	46.79	100.68	23 30 13	1564.0	-30.85	24.91
110.00	13 31 52	4126.47	15.03	158.00	38.38	58.93	14 40 38	3526.5	10.80	151.45

DIFFERENTIAL CORRECTIONS
TDE-3.1270 TRA 9.1738 TC3-6.4102 BAU 2.4317
RDE .7803 RRA -.3204 RC3 .4683 FAU .19970
FDE-4.3686 FRA10.0932 FC3-6.1093 BSP 44152
BDE 3.2229 BRA 9.1794 BC3 6.4273 FSP 4412

MID-COURSE EXECUTION ACCURACY
SGT12669.3 SGR 1039.1 SG3 1186.7
RRT -.7454 RRF -.7803 RTF .9949
SGB12711.8 R23 .0548 R13 -.9951
SG112693.0 SG2 691.4 THA 176.49

ORBIT DETERMINATION ACCURACY
ST 4541.3 SR 847.2 SS 2311.2
CRT -.8203 CRS .8812 CST -.9932
LSA 5139.1 MSA 521.7 SSA 13.4
EL1 4594.8 EL2 478.9 ALF 171.20

LAUNCH DATE OCT 11 1964 FLIGHT TIME 394.00 ARRIVAL DATE NOV 9 1965

HELIOCENTRIC CONIC DISTANCE 886.416 EARTH TO MARS

RL 149.32 LAL .00 LOL 17.71 VL 32.635 GAL -9.28 AZL 88.34 HCA 274.86 SMA 186.26 ECC .25356 INC 1.6584 V1 29.840
RP 211.47 LAP -1.65 LOP 292.57 VP 23.295 GAP -12.50 AZP 89.86 TAL 311.24 TAP 226.09 RCA 139.03 APO 233.49 V2 25.941
RC 303.228 GL 9.94 GP 4.68 ZAL 151.98 ZAP 42.23 ETS 184.68 ZAE 68.65 ETE 181.29 ZAC 87.20 ETC 259.26 CLP 42.02

PLANETOCENTRIC CONIC

C3 29.142 VHL 5.398 DLA 12.54 RAL 176.08 RAD 6568.2 VEL 12.269 PTH 2.21 VHP 4.730 DPA 15.81 RAP 158.96 ECC 1.4796

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 7 12	2706.71	-27.69	75.05	48.60	96.17	20 52 19	2106.7	-26.55	66.57
90.00	11 23 41	4550.42	11.10	191.79	41.81	63.78	12 39 32	3950.4	7.48	184.97
100.00	21 35 0	2423.57	-29.05	54.04	48.41	97.36	22 15 23	1823.6	-27.73	45.48
100.00	12 38 35	4308.80	12.32	173.39	41.18	62.55	13 50 24	3708.8	8.55	166.64
110.00	22 57 47	2164.51	-32.67	33.70	47.75	100.66	23 33 52	1564.5	-30.86	24.95
110.00	13 32 17	4140.63	15.52	158.80	39.34	59.16	14 41 17	3540.6	11.32	152.21

DIFFERENTIAL CORRECTIONS
TDE-3.2498 TRA 9.4580 TC3-6.3360 BAU 2.4747
RDE .7869 RRA -.3132 RC3 .4489 FAU .18909
FDE-4.2576 FRA 9.7275 FC3-5.6174 BSP 44752
BDE 3.3438 BRA 9.4631 BC3 6.3519 FSP 4191

MID-COURSE EXECUTION ACCURACY
SGT12823.7 SGR 1023.9 SG3 1123.4
RRT -.7386 RRF -.7748 RTF .9946
SGB12864.5 R23 -.0564 R13 -.9948
SG112846.0 SG2 689.1 THA 176.62

ORBIT DETERMINATION ACCURACY
ST 4632.2 SR 841.5 SS 2257.9
CRT -.8206 CRS .8821 CST -.9930
LSA 5195.5 MSA 519.2 SSA 13.3
EL1 4683.9 EL2 475.6 ALF 171.43

LAUNCH DATE OCT 11 1964 FLIGHT TIME 396.00 ARRIVAL DATE NOV 11 1965

HELIOCENTRIC CONIC DISTANCE 890.463 EARTH TO MARS

RL 149.32 LAL .00 LOL 17.71 VL 32.639 GAL -9.45 AZL 88.32 HCA 276.07 SMA 186.33 ECC .25558 INC 1.6791 V1 29.840
RP 211.20 LAP -1.67 LOP 293.79 VP 23.334 GAP -12.70 AZP 89.82 TAL 310.59 TAP 226.66 RCA 138.70 APO 233.95 V2 25.971
RC 304.242 GL 9.91 GP 4.59 ZAL 152.52 ZAP 41.34 ETS 184.74 ZAE 67.48 ETE 181.39 ZAC 87.18 ETC 259.20 CLP 41.13

PLANETOCENTRIC CONIC

C3 30.034 VHL 5.480 DLA 12.29 RAL 176.59 RAD 6568.2 VEL 12.305 PTH 2.22 VHP 4.832 DPA 15.61 RAP 159.23 ECC 1.4943

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 11 24	2705.64	-27.68	74.97	49.57	96.21	20 56 30	2105.6	-26.53	66.49
90.00	11 23 35	4566.59	11.58	192.73	42.79	63.98	12 39 41	3966.6	7.99	185.89
100.00	21 39 2	2423.02	-29.05	54.00	49.39	97.38	22 19 26	1823.0	-27.72	45.44
100.00	12 38 38	4324.45	12.81	174.30	42.16	62.76	13 50 42	3724.5	9.06	167.52
110.00	23 1 29	2165.04	-32.68	33.74	48.72	100.63	23 37 34	1565.0	-30.87	24.98
110.00	13 32 40	4155.20	16.03	159.62	40.32	59.40	14 41 56	3555.2	11.85	153.01

DIFFERENTIAL CORRECTIONS
TDE-3.3773 TRA 9.7474 TC3-6.2579 BAU 2.5186
RDE .7940 RRA -.3067 RC3 .4306 FAU .17892
FDE-4.1483 FRA 9.3679 FC3-5.1575 BSP 45305
BDE 3.4693 BRA 9.7522 BC3 6.2727 FSP 3974

MID-COURSE EXECUTION ACCURACY
SGT12972.7 SGR 1009.7 SG3 1062.5
RRT -.7322 RRF -.7697 RTF .9943
SGB13011.9 R23 .0582 R13 -.9945
SG112993.8 SG2 686.5 THA 176.73

ORBIT DETERMINATION ACCURACY
ST 4722.2 SR 836.0 SS 2204.5
CRT -.8212 CRS .8831 CST -.9929
LSA 5252.7 MSA 516.3 SSA 13.3
EL1 4772.4 EL2 472.1 ALF 171.65

LAUNCH DATE OCT 11 1964 FLIGHT TIME 398.00 ARRIVAL DATE NOV 13 1965

HELIOCENTRIC CONIC DISTANCE 894.502 EARTH TO MARS

RL 149.32 LAL .00 LOL 17.71 VL 32.643 GAL -9.63 AZL 88.30 HCA 277.29 SMA 186.40 ECC .25770 INC 1.7000 V1 29.840
RP 210.95 LAP -1.69 LOP 295.00 VP 23.372 GAP -12.91 AZP 89.78 TAL 309.92 TAP 227.21 RCA 138.36 APO 234.43 V2 26.001
RC 305.247 GL 9.88 GP 4.51 ZAL 153.07 ZAP 40.48 ETS 184.79 ZAE 66.34 ETE 181.49 ZAC 87.16 ETC 259.15 CLP 40.27

PLANETOCENTRIC CONIC

C3 30.978 VHL 5.566 DLA 12.03 RAL 177.11 RAD 6568.2 VEL 12.343 PTH 2.23 VHP 4.937 DPA 15.40 RAP 159.54 ECC 1.5098

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 15 41	2704.58	-27.67	74.89	50.56	96.25	21 0 45	2104.6	-26.52	66.42
90.00	11 23 26	4583.19	12.07	193.70	43.79	64.19	12 39 49	3983.2	8.51	186.84
100.00	21 43 9	2422.47	-29.04	53.96	50.37	97.41	22 23 32	1822.5	-27.71	45.41
100.00	12 38 39	4340.53	13.31	175.23	43.16	62.99	13 50 59	3740.5	9.58	168.42
110.00	23 5 15	2165.60	-32.69	33.78	49.70	100.61	23 41 20	1565.6	-30.88	25.03
110.00	13 33 3	4170.16	16.55	160.47	41.33	59.65	14 42 33	3570.2	12.39	153.83

DIFFERENTIAL CORRECTIONS
TDE-3.5095 TRA10.0430 TC3-6.1753 BAU 2.5632
RDE .8015 RRA -.3010 RC3 .4132 FAU .16910
FDE-4.0409 FRA 9.0143 FC3-4.7259 BSP 45827
BDE 3.5999 BRA10.0475 BC3 6.1891 FSP 3764

MID-COURSE EXECUTION ACCURACY
SGT13116.5 SGR 996.3 SG3 1003.9
RRT -.7263 RRF -.7652 RTF .9940
SGB13154.2 R23 .0600 R13 -.9942
SG113136.5 SG2 683.8 THA 176.83

ORBIT DETERMINATION ACCURACY
ST 4811.6 SR 830.6 SS 2151.0
CRT -.8220 CRS .8845 CST -.9927
LSA 5310.8 MSA 513.1 SSA 13.2
EL1 4860.3 EL2 468.4 ALF 171.85

LAUNCH DATE OCT 12 1964 FLIGHT TIME 240.00 ARRIVAL DATE JUN 9 1965

HELIOCENTRIC CONIC DISTANCE 584.815 EARTH TO MARS

RL	149.28	LAL	.00	LOL	18.70	VL	33.143	GAL	-7.78	AZL	93.03	HCA	191.52	SMA	195.28	ECC	.26977	INC	3.0279	V1	29.848
RP	238.79	LAP	.60	LOP	210.21	VP	20.783	GAP	8.98	AZP	87.03	TAL	322.12	TAP	153.64	RCA	142.60	APO	247.96	V2	23.007
RC	176.939	GL	-19.28	GP	16.60	ZAL	139.39	ZAP	149.54	ETS	148.16	ZAE	158.11	ETE	49.81	ZAC	104.83	ETC	255.58	CLP	154.09

PLANETOCENTRIC CONIC

C3	27.616	VHL	5.255	DLA	-10.86	RAL	156.25	RAD	6568.1	VEL	12.206	PTH	2.19	VHP	5.906	DPA	14.54	RAP	191.55	ECC	1.4545

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 44 37	1949.49	-12.38	25.35	21.14	115.67	22 17 6	1349.5	-8.83	18.48
90.00	7 0 14	5280.80	27.08	238.97	26.99	81.38	8 28 15	4680.8	25.61	230.61
100.00	23 0 31	1704.58	-13.56	6.75	20.55	116.90	23 28 56	1104.6	-9.84	359.93
100.00	8 27 0	5000.94	28.37	218.15	26.75	80.18	9 50 21	4400.9	26.73	209.74
110.00	0 0 23	1529.42	-16.66	351.71	18.80	120.29	0 25 53	929.4	-12.51	345.05
110.00	9 47 34	4748.86	31.83	198.20	25.93	76.83	11 6 43	4148.9	29.70	189.64

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	1.8154	TRA	-3.6779	TC3	1.3631	BAU	.6007	SGT	4758.4	SGR	1905.3	SG3	831.2	ST	2328.1	SR	1034.1	SS	2362.5
RDE	.8708	RRA	-1.2273	RC3	.8886	FAU	.15897	RRT	.9685	RRF	-.9962	RTF	-.9608	CRT	.9891	CRS	.9982	CST	.9960
FDE	-3.7910	FRA	6.2430	FC3	-4.9835	BSP	17559	SGB	5125.6	R23	-.2308	R13	-.9692	LSA	3469.7	MSA	179.1	SSA	13.8
BDE	2.0135	BRA	3.8773	BC3	1.6271	FSP	2608	SG1	5106.6	SG2	442.0	THA	21.36	EL1	2543.6	EL2	139.4	ALF	23.79

LAUNCH DATE OCT 12 1964 FLIGHT TIME 242.00 ARRIVAL DATE JUN 11 1965

HELIOCENTRIC CONIC DISTANCE 588.345 EARTH TO MARS

RL	149.28	LAL	.00	LOL	18.70	VL	33.114	GAL	-7.68	AZL	92.67	HCA	192.47	SMA	194.73	ECC	.26710	INC	2.6659	V1	29.848
RP	238.47	LAP	.58	LOP	211.16	VP	20.773	GAP	8.53	AZP	87.40	TAL	322.32	TAP	154.79	RCA	142.72	APO	246.74	V2	23.040
RC	179.231	GL	-17.29	GP	15.75	ZAL	139.88	ZAP	149.38	ETS	150.16	ZAE	159.09	ETE	49.78	ZAC	104.06	ETC	255.62	CLP	153.40

PLANETOCENTRIC CONIC

C3	26.386	VHL	5.137	DLA	-8.90	RAL	156.74	RAD	6568.1	VEL	12.156	PTH	2.18	VHP	5.754	DPA	13.67	RAP	191.41	ECC	1.4343

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 30 45	2002.23	-13.91	28.46	21.00	114.91	22 4 8	1402.2	-10.44	21.51
90.00	7 17 56	5205.43	26.20	233.63	25.77	78.84	8 44 42	4605.4	24.39	225.43
100.00	22 47 46	1753.80	-15.05	9.64	20.44	116.13	23 16 59	1153.8	-11.42	2.73
100.00	8 43 37	4929.09	27.43	213.02	25.48	77.63	10 5 46	4329.1	25.45	204.78
110.00	23 46 7	1571.05	-18.07	354.11	18.78	119.52	24 12 18	971.1	-14.00	347.36
110.00	10 1 45	4684.60	30.74	193.51	24.53	74.26	11 19 49	4084.6	28.28	185.18

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	1.7505	TRA	-3.6273	TC3	1.4249	BAU	.5921	SGT	4767.2	SGR	1834.5	SG3	880.1	ST	2307.3	SR	986.9	SS	2373.9
RDE	.8112	RRA	-1.1604	RC3	.8869	FAU	.16573	RRT	.9680	RRF	-.9955	RTF	-.9620	CRT	.9885	CRS	.9973	CST	.9968
FDE	-3.7878	FRA	6.5511	FC3	-5.4375	BSP	17594	SGB	5107.9	R23	-.2254	R13	-.9697	LSA	3450.3	MSA	168.0	SSA	16.3
BDE	1.9293	BRA	3.8084	BC3	1.6784	FSP	2783	SG1	5089.7	SG2	431.0	THA	20.59	EL1	2505.7	EL2	137.6	ALF	22.99

LAUNCH DATE OCT 12 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUN 13 1965

HELIOCENTRIC CONIC DISTANCE 591.894 EARTH TO MARS

RL	149.28	LAL	.00	LOL	18.70	VL	33.086	GAL	-7.58	AZL	92.35	HCA	193.43	SMA	194.21	ECC	.26453	INC	2.3529	V1	29.848
RP	238.14	LAP	.55	LOP	212.12	VP	20.766	GAP	8.09	AZP	87.71	TAL	322.52	TAP	155.94	RCA	142.83	APO	245.58	V2	23.073
RC	181.513	GL	-15.52	GP	15.02	ZAL	140.22	ZAP	149.10	ETS	151.98	ZAE	160.01	ETE	50.06	ZAC	103.40	ETC	255.65	CLP	152.67

PLANETOCENTRIC CONIC

C3	25.335	VHL	5.033	DLA	-7.15	RAL	157.14	RAD	6568.0	VEL	12.112	PTH	2.17	VHP	5.611	DPA	12.91	RAP	191.29	ECC	1.4170

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 18 43	2048.23	-15.22	31.22	20.93	114.17	21 52 51	1448.2	-11.82	24.18
90.00	7 33 14	5139.33	25.24	229.03	24.72	76.72	8 58 53	4539.3	23.17	220.97
100.00	22 36 38	1796.86	-16.33	12.20	20.39	115.39	23 6 35	1196.9	-12.78	5.21
100.00	8 58 0	4865.93	26.43	208.59	24.39	75.51	10 19 6	4265.9	24.18	200.52
110.00	23 37 3	1607.67	-19.29	356.25	18.81	118.78	24 3 51	1007.7	-15.30	349.41
110.00	10 14 4	4627.87	29.62	189.47	23.34	72.11	11 31 12	4027.9	26.89	181.35

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	1.6969	TRA	-3.5702	TC3	1.4892	BAU	.5875	SGT	4770.2	SGR	1776.9	SG3	930.1	ST	2289.8	SR	950.5	SS	2391.9
RDE	.7654	RRA	-1.1014	RC3	.8895	FAU	.17308	RRT	.9675	RRF	-.9948	RTF	-.9631	CRT	.9878	CRS	.9961	CST	.9975
FDE	-3.8055	FRA	6.8455	FC3	-5.9145	BSP	17491	SGB	5090.4	R23	-.2196	R13	-.9702	LSA	3441.2	MSA	158.9	SSA	18.8
BDE	1.8616	BRA	3.7362	BC3	1.7346	FSP	2938	SG1	5072.8	SG2	422.6	THA	19.96	EL1	2475.4	EL2	136.9	ALF	22.37

LAUNCH DATE OCT 12 1964 FLIGHT TIME 246.00 ARRIVAL DATE JUN 15 1965

HELIOCENTRIC CONIC DISTANCE 595.463 EARTH TO MARS

RL	149.28	LAL	.00	LOL	18.70	VL	33.060	GAL	-7.48	AZL	92.08	HCA	194.38	SMA	193.71	ECC	.26206	INC	2.0805	V1	29.848
RP	237.81	LAP	.52	LOP	213.08	VP	20.761	GAP	7.66	AZP	87.98	TAL	322.71	TAP	157.09	RCA	142.95	APO	244.47	V2	23.106
RC	183.786	GL	-13.94	GP	14.39	ZAL	140.46	ZAP	148.71	ETS	153.65	ZAE	160.89	ETE	50.65	ZAC	102.82	ETC	255.68	CLP	151.91

PLANETOCENTRIC CONIC

C3	24.419	VHL	4.942	DLA	-5.58	RAL	157.49	RAD	6568.0	VEL	12.075	PTH	2.16	VHP	5.474	DPA	12.26	RAP	191.19	ECC	1.4019

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 8 3	2088.90	-16.33	33.68	20.89	113.46	21 42 52	1488.9	-13.02	26.57
90.00	7 46 39	5080.53	24.26	225.00	23.81	74.93	9 11 19	4480.5	21.96	217.09
100.00	22 26 45	1835.01	-17.43	14.50	20.38	114.68	22 57 20	1235.0	-13.95	7.43
100.00	9 10 38	4809.65	25.42	204.72	23.45	73.71	10 30 47	4209.7	22.94	196.80
110.00	23 28 57	1640.27	-20.34	358.19	18.85	118.08	23 56 18	1040.3	-16.43	351.25
110.00	10 24 55	4577.16	28.51	185.94	22.32	70.29	11 41 12	3977.2	25.56	178.01

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	1.6635	TRA	-3.4965	TC3	1.5748	BAU	.5915	SGT	4768.1	SGR	1730.3	SG3	981.4	ST	2283.7	SR	922.5	SS	2413.8
RDE	.7297	RRA	-1.0492	RC3	.8960	FAU	.18090	RRT	.9683	RRF	-.9939	RTF	-.9656	CRT	.9879	CRS	.9948	CST	.9984
FDE	-3.8372	FRA	7.1329	FC3	-6.4134	BSP	17037	SGB	5072.3	R23	-.2083	R13	-.9719	LSA	3445.5	MSA	145.1	SSA	21.9
BDE	1.8165	BRA	3.6505	BC3	1.8118	FSP	3087	SG1	5055.9	SG2	407.5	THA	19.49	EL1	2459.4	EL2	133.1	ALF	21.82

LAUNCH DATE OCT 12 1964 FLIGHT TIME 248.00 ARRIVAL DATE JUN 17 1965

HELIOCENTRIC CONIC DISTANCE 599.046 EARTH TO MARS

RL 149.28 LAL .00 LOL 18.70 VL 33.034 GAL -7.39 AZL 91.84 HCA 195.34 SMA 193.23 ECC .25969 INC 1.8406 V1 29.848
RP 237.48 LAP .49 LOP 214.04 VP 20.758 GAP 7.23 AZP 88.22 TAL 322.90 TAP 158.24 RCA 143.05 APO 243.42 V2 23.140
RC 186.049 GL -12.51 GP 13.84 ZAL 140.61 ZAP 148.23 ETS 155.18 ZAE 161.74 ETE 51.56 ZAC 102.32 ETC 255.70 CLP 151.12

PLANETOCENTRIC CONIC

C3 23.613 VHL 4.859 DLA -4.16 RAL 157.79 RAD 6568.0 VEL 12.041 PTH 2.15 VHP 5.345 DPA 11.69 RAP 191.10 ECC 1.3886

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 58 29	2125.31	-17.31	35.91	20.87	112.77	21 33 54	1525.3	-14.07	28.72
90.00	7 58 35	5027.66	23.28	221.44	23.02	73.41	9 22 22	4427.7	20.79	213.65
100.00	22 17 52	1869.20	-18.39	16.58	20.38	113.99	22 49 2	1269.2	-14.99	9.44
100.00	9 21 52	4759.00	24.40	201.30	22.64	72.18	10 41 11	4159.0	21.74	193.52
110.00	23 21 39	1669.55	-21.27	359.96	18.90	117.41	23 49 28	1069.5	-17.43	352.93
110.00	10 34 35	4531.42	27.42	182.83	21.45	68.74	11 50 7	3931.4	24.28	175.07

DIFFERENTIAL CORRECTIONS
TDE 1.6074 TRA-3.4470 TC3 1.6133 BAU .5830
RDE .6979 RRA-1.0073 RC3 .8987 FAU .18816
FDE-3.8610 FRA 7.4405 FC3-6.8984 BSP 17179
BDE 1.7523 BRA 3.5911 BC3 1.8468 FSP 3275

MID-COURSE EXECUTION ACCURACY
SGT 4759.8 SGR 1690.6 SG3 1033.4
RRT .9670 RRF -.9929 RTF -.9659
SGB 5051.2 R23 -.2043 R13 -.9719
SG1 5034.7 SG2 407.0 THA 19.09

ORBIT DETERMINATION ACCURACY
ST 2255.8 SR 897.5 SS 2431.6
CRT .9867 CRS .9933 CST .9987
LSA 3433.0 MSA 143.4 SSA 24.1
EL1 2424.0 EL2 135.9 ALF 21.50

LAUNCH DATE OCT 12 1964 FLIGHT TIME 250.00 ARRIVAL DATE JUN 19 1965

HELIOCENTRIC CONIC DISTANCE 602.646 EARTH TO MARS

RL 149.28 LAL .00 LOL 18.70 VL 33.010 GAL -7.31 AZL 91.63 HCA 196.30 SMA 192.78 ECC .25742 INC 1.6274 V1 29.848
RP 237.15 LAP .46 LOP 215.00 VP 20.757 GAP 6.81 AZP 88.44 TAL 323.09 TAP 159.39 RCA 143.16 APO 242.41 V2 23.174
RC 188.300 GL -11.21 GP 13.36 ZAL 140.70 ZAP 147.68 ETS 156.57 ZAE 162.55 ETE 52.79 ZAC 101.88 ETC 255.72 CLP 150.30

PLANETOCENTRIC CONIC

C3 22.893 VHL 4.785 DLA -2.86 RAL 158.04 RAD 6567.9 VEL 12.011 PTH 2.14 VHP 5.220 DPA 11.20 RAP 191.02 ECC 1.3768

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 49 47	2158.22	-18.16	37.94	20.86	112.11	21 25 45	1558.2	-15.01	30.69
90.00	8 9 18	4979.65	22.31	218.25	22.32	72.10	9 32 18	4379.6	19.65	210.59
100.00	22 9 47	1900.13	-19.23	18.49	20.39	113.33	22 41 28	1300.1	-15.91	11.27
100.00	9 31 58	4712.97	23.41	198.24	21.92	70.86	10 50 31	4113.0	20.58	190.58
110.00	23 14 58	1696.07	-22.09	1.58	18.96	116.77	23 43 15	1096.1	-18.32	354.47
110.00	10 43 17	4489.79	26.36	180.06	20.68	67.41	11 58 7	3889.8	23.07	172.45

DIFFERENTIAL CORRECTIONS
TDE 1.5580 TRA-3.3918 TC3 1.6536 BAU .5769
RDE .6726 RRA -.9703 RC3 .9048 FAU .19590
FDE-3.8972 FRA 7.7466 FC3-7.4080 BSP 17211
BDE 1.6970 BRA 3.5279 BC3 1.8849 FSP 3457

MID-COURSE EXECUTION ACCURACY
SGT 4745.8 SGR 1658.8 SG3 1087.1
RRT .9659 RRF -.9919 RTF -.9663
SGB 5027.4 R23 -.1995 R13 -.9721
SG1 5010.9 SG2 407.1 THA 18.78

ORBIT DETERMINATION ACCURACY
ST 2229.7 SR 878.2 SS 2453.3
CRT .9855 CRS .9916 CST .9990
LSA 3426.4 MSA 142.7 SSA 26.2
EL1 2392.4 EL2 138.8 ALF 21.29

LAUNCH DATE OCT 12 1964 FLIGHT TIME 252.00 ARRIVAL DATE JUN 21 1965

HELIOCENTRIC CONIC DISTANCE 606.262 EARTH TO MARS

RL 149.28 LAL .00 LOL 18.70 VL 32.986 GAL -7.22 AZL 91.44 HCA 197.26 SMA 192.35 ECC .25524 INC 1.4372 V1 29.848
RP 236.81 LAP .43 LOP 215.96 VP 20.758 GAP 6.39 AZP 88.63 TAL 323.27 TAP 160.54 RCA 143.25 APO 241.44 V2 23.209
RC 190.540 GL -10.02 GP 12.94 ZAL 140.73 ZAP 147.06 ETS 157.86 ZAE 163.33 ETE 54.36 ZAC 101.49 ETC 255.73 CLP 149.44

PLANETOCENTRIC CONIC

C3 22.245 VHL 4.716 DLA -1.67 RAL 158.26 RAD 6567.9 VEL 11.984 PTH 2.14 VHP 5.100 DPA 10.77 RAP 190.94 ECC 1.3661

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 41 48	2188.21	-18.92	39.82	20.86	111.47	21 18 16	1588.2	-15.84	32.50
90.00	8 19 1	4935.69	21.36	215.38	21.70	70.96	9 41 17	4335.7	18.57	207.82
100.00	22 2 22	1928.33	-19.98	20.25	20.41	112.71	22 34 30	1328.3	-16.73	12.96
100.00	9 41 8	4670.81	22.44	195.48	21.28	69.72	10 58 59	4070.8	19.48	187.94
110.00	23 8 50	1720.27	-22.83	3.07	19.02	116.16	23 37 30	1120.3	-19.12	355.89
110.00	10 51 10	4451.63	25.34	177.56	20.00	66.25	12 5 22	3851.6	21.91	170.09

DIFFERENTIAL CORRECTIONS
TDE 1.5113 TRA-3.3351 TC3 1.6890 BAU .5708
RDE .6517 RRA -.9387 RC3 .9119 FAU .20374
FDE-3.9372 FRA 8.0618 FC3-7.9292 BSP 17224
BDE 1.6459 BRA 3.4647 BC3 1.9194 FSP 3652

MID-COURSE EXECUTION ACCURACY
SGT 4726.4 SGR 1633.4 SG3 1142.4
RRT .9647 RRF -.9908 RTF -.9667
SGB 5000.6 R23 -.1943 R13 -.9724
SG1 4984.0 SG2 407.6 THA 18.57

ORBIT DETERMINATION ACCURACY
ST 2202.7 SR 862.8 SS 2475.9
CRT .9844 CRS .9898 CST .9993
LSA 3421.3 MSA 143.2 SSA 28.1
EL1 2361.4 EL2 141.8 ALF 21.17

LAUNCH DATE OCT 12 1964 FLIGHT TIME 254.00 ARRIVAL DATE JUN 23 1965

HELIOCENTRIC CONIC DISTANCE 609.893 EARTH TO MARS

RL 149.28 LAL .00 LOL 18.70 VL 32.964 GAL -7.14 AZL 91.27 HCA 198.23 SMA 191.94 ECC .25314 INC 1.2660 V1 29.848
RP 236.46 LAP .40 LOP 216.93 VP 20.762 GAP 5.98 AZP 88.80 TAL 323.45 TAP 161.68 RCA 143.35 APO 240.53 V2 23.244
RC 192.768 GL -8.93 GP 12.56 ZAL 140.72 ZAP 146.38 ETS 159.04 ZAE 164.08 ETE 56.30 ZAC 101.15 ETC 255.75 CLP 148.56

PLANETOCENTRIC CONIC

C3 21.656 VHL 4.654 DLA -.57 RAL 158.45 RAD 6567.9 VEL 11.960 PTH 2.13 VHP 4.985 DPA 10.39 RAP 190.85 ECC 1.3564

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 34 25	2215.76	-19.60	41.58	20.86	110.86	21 11 20	1615.8	-16.59	34.17
90.00	8 27 55	4895.17	20.44	212.76	21.15	69.96	9 49 30	4295.2	17.53	205.30
100.00	21 55 29	1954.23	-20.66	21.88	20.42	112.10	22 28 3	1354.2	-17.48	14.53
100.00	9 49 31	4631.94	21.50	192.98	20.72	68.72	11 6 43	4031.9	18.42	185.54
110.00	23 3 8	1742.52	-23.49	4.46	19.07	115.58	23 32 10	1142.5	-19.85	357.21
110.00	10 58 23	4416.42	24.35	175.30	19.40	65.24	12 11 59	3816.4	20.81	167.95

DIFFERENTIAL CORRECTIONS
TDE 1.4670 TRA-3.2755 TC3 1.7217 BAU .5653
RDE .6345 RRA -.9111 RC3 .9211 FAU .21193
FDE-3.9840 FRA 8.3821 FC3-8.4725 BSP 17200
BDE 1.5984 BRA 3.3998 BC3 1.9526 FSP 3853

MID-COURSE EXECUTION ACCURACY
SGT 4700.6 SGR 1613.7 SG3 1199.6
RRT .9636 RRF -.9896 RTF -.9672
SGB 4969.9 R23 -.1889 R13 -.9727
SG1 4953.0 SG2 409.2 THA 18.43

ORBIT DETERMINATION ACCURACY
ST 2174.5 SR 851.0 SS 2500.4
CRT .9832 CRS .9878 CST .9995
LSA 3418.0 MSA 145.1 SSA 29.6
EL1 2330.6 EL2 144.9 ALF 21.13

LAUNCH DATE OCT 12 1964 FLIGHT TIME 256.00 ARRIVAL DATE JUN 25 1965

HELIOCENTRIC CONIC DISTANCE 613.539 EARTH TO MARS

RL	149.28	LAL	.00	LOL	18.70	VL	32.942	GAL	-7.06	AZL	91.11	HCA	199.20	SMA	191.55	ECC	.25113	INC	1.1106	V1	29.848
RP	236.12	LAP	.37	LOP	217.90	VP	20.767	GAP	5.57	AZP	88.95	TAL	323.62	TAP	162.83	RCA	143.44	APO	239.65	V2	23.279
RC	194.983	GL	-7.93	GP	12.23	ZAL	140.68	ZAP	145.65	ETS	160.14	ZAE	164.80	ETE	58.65	ZAC	100.84	ETC	255.76	CLP	147.64

PLANETOCENTRIC CONIC

C3	21.118	VHL	4.595	DLA	.45	RAL	158.61	RAD	6567.9	VEL	11.937	PTH	2.12	VHP	4.873	DPA	10.07	RAP	190.76	ECC	1.3476

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 27 32	2241.23	-20.21	43.18	20.86	110.27	21 4 53	1641.2	-17.26	35.74
90.00	8 36 6	4857.60	19.54	210.37	20.65	69.09	9 57 4	4257.6	16.53	202.99
100.00	21 49 5	1978.18	-21.26	23.40	20.43	111.52	22 22 3	1378.2	-18.15	15.99
100.00	9 57 14	4595.88	20.59	190.68	20.21	67.84	11 13 50	3995.9	17.41	183.34
110.00	22 57 48	1763.08	-24.09	5.76	19.12	115.02	23 27 11	1163.1	-20.51	358.44
110.00	11 5 1	4383.75	23.41	173.24	18.86	64.35	12 18 4	3783.8	19.76	165.99

DIFFERENTIAL CORRECTIONS

TDE	1.4275	TRA	-3.2103	TC3	1.7554	BAU	.5613	SGT	4668.2	SGR	1599.3	SG3	1258.9	ST	2147.5	SR	842.9	SS	2528.5
RDE	.6212	RRA	-.8866	RC3	.9333	FAU	.22070	RRT	.9627	RRF	-.9884	RTF	-.9677	CRT	.9822	CRS	.9857	CST	.9996
FDE	-4.0422	FRA	8.7037	FC3	-9.0474	BSP	17064	SGB	4934.5	R23	-.1830	R13	-.9732	LSA	3419.4	MSA	147.9	SSA	30.8
BDE	1.5568	BRA	3.3305	BC3	1.9881	FSP	4045	SG1	4917.4	SG2	410.8	THA	18.39	EL1	2302.3	EL2	147.7	ALF	21.17

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

LAUNCH DATE OCT 12 1964 FLIGHT TIME 258.00 ARRIVAL DATE JUN 27 1965

HELIOCENTRIC CONIC DISTANCE 617.200 EARTH TO MARS

RL	149.28	LAL	.00	LOL	18.70	VL	32.922	GAL	-6.99	AZL	90.97	HCA	200.17	SMA	191.17	ECC	.24921	INC	.9697	V1	29.848
RP	235.77	LAP	.33	LOP	218.87	VP	20.775	GAP	5.17	AZP	89.09	TAL	323.79	TAP	163.97	RCA	143.53	APO	238.81	V2	23.315
RC	197.185	GL	-7.00	GP	11.93	ZAL	140.61	ZAP	144.86	ETS	161.15	ZAE	165.49	ETE	61.43	ZAC	100.55	ETC	255.77	CLP	146.70

PLANETOCENTRIC CONIC

C3	20.625	VHL	4.542	DLA	1.39	RAL	158.75	RAD	6567.8	VEL	11.917	PTH	2.12	VHP	4.765	DPA	9.79	RAP	190.65	ECC	1.3394

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 21 5	2264.92	-20.76	44.70	20.87	109.70	20 58 50	1664.9	-17.88	37.20
90.00	8 43 42	4822.58	18.68	208.17	20.20	68.32	10 4 4	4222.6	15.57	200.87
100.00	21 43 4	2000.45	-21.81	24.83	20.45	110.96	22 16 25	1400.5	-18.77	17.36
100.00	10 4 24	4562.28	19.72	188.57	19.75	67.07	11 20 26	3962.3	16.44	181.31
110.00	22 52 48	1782.19	-24.63	6.97	19.16	114.49	23 22 30	1182.2	-21.12	359.59
110.00	11 11 9	4353.31	22.50	171.34	18.38	63.56	12 23 42	3753.3	18.76	164.20

DIFFERENTIAL CORRECTIONS

TDE	1.3865	TRA	-3.1458	TC3	1.7785	BAU	.5554	SGT	4629.2	SGR	1588.9	SG3	1320.1	ST	2116.7	SR	836.7	SS	2556.2
RDE	.6098	RRA	-.8662	RC3	.9458	FAU	.22949	RRT	.9616	RRF	-.9872	RTF	-.9681	CRT	.9811	CRS	.9835	CST	.9997
FDE	-4.1005	FRA	9.0401	FC3	-9.6325	BSP	16976	SGB	4894.3	R23	-.1777	R13	-.9735	LSA	3419.1	MSA	152.4	SSA	31.6
BDE	1.5146	BRA	3.2629	BC3	2.0143	FSP	4259	SG1	4876.8	SG2	414.0	THA	18.40	EL1	2271.0	EL2	151.0	ALF	21.29

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

LAUNCH DATE OCT 12 1964 FLIGHT TIME 260.00 ARRIVAL DATE JUN 29 1965

HELIOCENTRIC CONIC DISTANCE 620.876 EARTH TO MARS

RL	149.28	LAL	.00	LOL	18.70	VL	32.902	GAL	-6.92	AZL	90.84	HCA	201.15	SMA	190.82	ECC	.24737	INC	.8409	V1	29.848
RP	235.42	LAP	.30	LOP	219.85	VP	20.784	GAP	4.78	AZP	89.22	TAL	323.96	TAP	165.11	RCA	143.61	APO	238.02	V2	23.351
RC	199.372	GL	-6.13	GP	11.67	ZAL	140.52	ZAP	144.02	ETS	162.10	ZAE	166.13	ETE	64.69	ZAC	100.30	ETC	255.79	CLP	145.72

PLANETOCENTRIC CONIC

C3	20.171	VHL	4.491	DLA	2.28	RAL	158.88	RAD	6567.8	VEL	11.898	PTH	2.11	VHP	4.661	DPA	9.55	RAP	190.54	ECC	1.3320

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 15 0	2287.07	-21.26	46.13	20.87	109.16	20 53 7	1687.1	-18.45	38.58
90.00	8 50 46	4789.78	17.84	206.12	19.79	67.64	10 10 36	4189.8	14.65	198.90
100.00	21 37 24	2021.27	-22.31	26.17	20.46	110.43	22 11 6	1421.3	-19.33	18.64
100.00	10 11 3	4530.81	18.87	186.62	19.33	66.38	11 26 34	3930.8	15.52	179.43
110.00	22 48 5	1800.05	-25.13	8.12	19.20	113.97	23 18 5	1200.0	-21.68	.67
110.00	11 16 52	4324.80	21.62	169.59	17.94	62.86	12 28 56	3724.8	17.81	162.54

DIFFERENTIAL CORRECTIONS

TDE	1.3574	TRA	-3.0678	TC3	1.8198	BAU	.5552	SGT	4583.9	SGR	1583.7	SG3	1384.2	ST	2093.3	SR	834.2	SS	2590.2
RDE	.6021	RRA	-.8470	RC3	.9633	FAU	.23937	RRT	.9615	RRF	-.9859	RTF	-.9691	CRT	.9807	CRS	.9814	CST	.9998
FDE	-4.1786	FRA	9.3684	FC	-10.2739	BSP	16584	SGB	4849.7	R23	-.1692	R13	-.9743	LSA	3429.5	MSA	156.5	SSA	32.0
BDE	1.4850	BRA	3.1825	BC3	2.0590	FSP	4446	SG1	4832.1	SG2	412.8	THA	18.52	EL1	2248.3	EL2	151.7	ALF	21.45

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

LAUNCH DATE OCT 12 1964 FLIGHT TIME 262.00 ARRIVAL DATE JUL 1 1965

HELIOCENTRIC CONIC DISTANCE 624.563 EARTH TO MARS

RL	149.28	LAL	.00	LOL	18.70	VL	32.883	GAL	-6.85	AZL	90.72	HCA	202.13	SMA	190.48	ECC	.24561	INC	.7221	V1	29.848
RP	235.06	LAP	.27	LOP	220.83	VP	20.795	GAP	4.39	AZP	89.33	TAL	324.12	TAP	166.24	RCA	143.69	APO	237.26	V2	23.387
RC	201.544	GL	-5.32	GP	11.44	ZAL	140.41	ZAP	143.13	ETS	162.98	ZAE	166.71	ETE	68.45	ZAC	100.06	ETC	255.80	CLP	144.71

PLANETOCENTRIC CONIC

C3	19.752	VHL	4.444	DLA	3.11	RAL	158.99	RAD	6567.8	VEL	11.880	PTH	2.11	VHP	4.560	DPA	9.35	RAP	190.41	ECC	1.3251

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 9 16	2307.88	-21.72	47.48	20.87	108.63	20 47 44	1707.9	-18.97	39.88
90.00	8 57 24	4758.98	17.03	204.22	19.43	67.03	10 16 43	4159.0	13.78	197.06
100.00	21 32 4	2040.83	-22.77	27.44	20.47	109.91	22 6 5	1440.8	-19.85	19.86
100.00	10 17 18	4501.27	18.05	184.81	18.96	65.76	11 32 19	3901.3	14.63	177.69
110.00	22 43 38	1816.81	-25.59	9.21	19.24	113.48	23 13 55	1216.8	-22.19	1.70
110.00	11 22 12	4298.05	20.78	167.97	17.55	62.23	12 33 50	3698.1	16.90	160.99

DIFFERENTIAL CORRECTIONS

TDE	1.3130	TRA	-3.0031	TC3	1.8227	BAU	.5462	SGT	4530.3	SGR	1580.7	SG3	1449.7	ST	2054.4	SR	831.7	SS	2619.3
RDE	.5943	RRA	-.8327	RC3	.9780	FAU	.24869	RRT	.9599	RRF	-.9847	RTF	-.9689	CRT	.9793	CRS	.9791	CST	.9998
FDE	-4.2431	FRA	9.7280	FC	-10.9003	BSP	16553	SGB	4798.1	R23	-.1659	R13	-.9743	LSA	3427.1	MSA	163.9	SSA	32.4
BDE	1.4412	BRA	3.1164	BC3	2.0685	FSP	4681	SG1	4779.7	SG2	420.1	THA	18.67	EL1	2210.9	EL2	156.4	ALF	21.74

MID-COURSE EXECUTION ACCURACY

ORBIT DETERMINATION ACCURACY

LAUNCH DATE OCT 12 1964 FLIGHT TIME 264.00 ARRIVAL DATE JUL 3 1965

HELIOCENTRIC CONIC DISTANCE 628.263 EARTH TO MARS

RL 149.28 LAL .00 LOL 18.70 VL 32.865 GAL -6.78 AZL 90.61 HCA 203.11 SMA 190.15 ECC .24393 INC .6133 V1 29.848
RP 234.71 LAP .24 LOP 221.81 VP 20.808 GAP 4.00 AZP 89.44 TAL 324.27 TAP 167.38 RCA 143.77 APO 236.54 V2 23.424
RC 203.699 GL -4.55 GP 11.23 ZAL 140.30 ZAP 142.20 ETS 163.81 ZAE 167.22 ETE 72.76 ZAC 99.85 ETC 255.81 CLP 143.67

PLANETOCENTRIC CONIC

C3 19.364 VHL 4.400 DLA 3.89 RAL 159.09 RAD 6567.8 VEL 11.864 PTH 2.10 VHP 4.462 DPA 9.19 RAP 190.27 ECC 1.3187

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 3 50	2327.52	-22.14	48.76	20.87	108.12	20 42 37	1727.5	-19.46	41.12
90.00	9 3 39	4729.95	16.25	202.45	19.10	66.49	10 22 28	4130.0	12.94	195.34
100.00	21 27 0	2059.27	-23.19	28.65	20.49	109.41	22 1 19	1459.3	-20.33	21.02
100.00	10 23 10	4473.43	17.27	183.11	18.62	65.21	11 37 43	3873.4	13.78	176.05
110.00	22 39 25	1832.60	-26.01	10.24	19.28	113.00	23 9 58	1232.6	-22.67	2.68
110.00	11 27 14	4272.86	19.98	166.46	17.19	61.67	12 38 27	3672.9	16.03	159.56

DIFFERENTIAL CORRECTIONS
TDE 1.2681 TRA-2.9366 TC3 1.8171 BAU .5361
RDE .5877 RRA -.8211 RC3 .9935 FAU .25816
FDE-4.3072 FRA10.1028 FC-11.5419 BSP 16516
BDE 1.3977 BRA 3.0492 BC3 2.0710 FSP 4935

MID-COURSE EXECUTION ACCURACY
SGT 4468.9 SGR 1580.7 SG3 1517.5
RRT .9582 RRF -.9835 RTF -.9687
SGB 4740.2 R23 -.1629 R13 -.9742
SG1 4720.8 SG2 428.0 THA 18.88

ORBIT DETERMINATION ACCURACY
ST 2012.5 SR 830.5 SS 2648.1
CRT .9779 CRS .9766 CST .9998
LSA 3423.7 MSA 171.9 SSA 32.6
EL1 2171.2 EL2 160.9 ALF 22.10

LAUNCH DATE OCT 12 1964 FLIGHT TIME 266.00 ARRIVAL DATE JUL 5 1965

HELIOCENTRIC CONIC DISTANCE 631.976 EARTH TO MARS

RL 149.28 LAL .00 LOL 18.70 VL 32.848 GAL -6.72 AZL 90.51 HCA 204.09 SMA 189.85 ECC .24232 INC .5125 V1 29.848
RP 234.35 LAP .21 LOP 222.80 VP 20.822 GAP 3.62 AZP 89.53 TAL 324.41 TAP 168.51 RCA 143.84 APO 235.85 V2 23.461
RC 205.837 GL -3.84 GP 11.04 ZAL 140.17 ZAP 141.23 ETS 164.58 ZAE 167.64 ETE 77.60 ZAC 99.64 ETC 255.82 CLP 142.59

PLANETOCENTRIC CONIC

C3 19.005 VHL 4.359 DLA 4.63 RAL 159.18 RAD 6567.8 VEL 11.848 PTH 2.10 VHP 4.367 DPA 9.06 RAP 190.11 ECC 1.3128

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 58 39	2346.11	-22.53	49.99	20.88	107.62	20 37 46	1746.1	-19.91	42.30
90.00	9 9 32	4702.50	15.50	200.79	18.80	66.00	10 27 55	4102.5	12.13	193.73
100.00	21 22 18	2076.73	-23.58	29.80	20.50	108.92	21 56 47	1476.7	-20.78	22.12
100.00	10 28 42	4447.11	16.51	181.53	18.31	64.72	11 42 50	3847.1	12.97	174.52
110.00	22 35 24	1847.55	-26.41	11.22	19.32	112.54	23 6 12	1247.5	-23.12	3.60
110.00	11 31 58	4249.06	19.20	165.05	16.87	61.16	12 42 47	3649.1	15.20	158.21

DIFFERENTIAL CORRECTIONS
TDE 1.2288 TRA-2.8625 TC3 1.8149 BAU .5279
RDE .5834 RRA -.8110 RC3 1.0117 FAU .26830
FDE-4.3839 FRA10.4810 FC-12.2219 BSP 16321
BDE 1.3602 BRA 2.9752 BC3 2.0779 FSP 5180

MID-COURSE EXECUTION ACCURACY
SGT 4399.9 SGR 1584.1 SG3 1587.9
RRT .9570 RRF -.9822 RTF -.9687
SGB 4676.4 R23 -.1587 R13 -.9744
SG1 4656.2 SG2 434.2 THA 19.19

ORBIT DETERMINATION ACCURACY
ST 1973.0 SR 831.6 SS 2680.8
CRT .9769 CRS .9742 CST .9997
LSA 3425.9 MSA 179.9 SSA 32.6
EL1 2134.7 EL2 164.2 ALF 22.52

LAUNCH DATE OCT 12 1964 FLIGHT TIME 268.00 ARRIVAL DATE JUL 7 1965

HELIOCENTRIC CONIC DISTANCE 635.702 EARTH TO MARS

RL 149.28 LAL .00 LOL 18.70 VL 32.832 GAL -6.66 AZL 90.42 HCA 205.08 SMA 189.55 ECC .24079 INC .4184 V1 29.848
RP 233.98 LAP .18 LOP 223.79 VP 20.839 GAP 3.25 AZP 89.62 TAL 324.55 TAP 169.64 RCA 143.91 APO 235.20 V2 23.498
RC 207.958 GL -3.16 GP 10.87 ZAL 140.04 ZAP 140.21 ETS 165.31 ZAE 167.96 ETE 82.97 ZAC 99.45 ETC 255.84 CLP 141.48

PLANETOCENTRIC CONIC

C3 18.671 VHL 4.321 DLA 5.32 RAL 159.26 RAD 6567.8 VEL 11.834 PTH 2.10 VHP 4.274 DPA 8.95 RAP 189.93 ECC 1.3073

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 53 44	2363.79	-22.89	51.16	20.89	107.14	20 33 7	1763.8	-20.32	43.43
90.00	9 15 8	4676.49	14.77	199.22	18.53	65.57	10 33 4	4076.5	11.35	192.21
100.00	21 17 35	2093.32	-23.95	30.90	20.52	108.45	21 52 28	1493.3	-21.20	23.18
100.00	10 33 58	4422.19	15.78	180.03	18.04	64.28	11 47 40	3822.2	12.19	173.08
110.00	22 31 35	1861.73	-26.77	12.16	19.36	112.09	23 2 37	1261.7	-23.54	4.49
110.00	11 36 27	4226.54	18.46	163.73	16.58	60.70	12 46 54	3626.5	14.41	156.95

DIFFERENTIAL CORRECTIONS
TDE 1.1904 TRA-2.7848 TC3 1.8075 BAU .5195
RDE .5804 RRA -.8025 RC3 1.0319 FAU .27897
FDE-4.4674 FRA10.8669 FC-12.9350 BSP 16086
BDE 1.3243 BRA 2.8981 BC3 2.0813 FSP 5428

MID-COURSE EXECUTION ACCURACY
SGT 4322.6 SGR 1590.5 SG3 1660.8
RRT .9558 RRF -.9811 RTF -.9686
SGB 4605.9 R23 -.1548 R13 -.9745
SG1 4584.8 SG2 441.0 THA 19.56

ORBIT DETERMINATION ACCURACY
ST 1931.7 SR 834.2 SS 2715.2
CRT .9760 CRS .9718 CST .9996
LSA 3429.7 MSA 188.4 SSA 32.5
EL1 2097.4 EL2 167.1 ALF 23.01

LAUNCH DATE OCT 12 1964 FLIGHT TIME 270.00 ARRIVAL DATE JUL 9 1965

HELIOCENTRIC CONIC DISTANCE 639.439 EARTH TO MARS

RL 149.28 LAL .00 LOL 18.70 VL 32.816 GAL -6.60 AZL 90.33 HCA 206.07 SMA 189.27 ECC .23933 INC .3304 V1 29.848
RP 233.62 LAP .15 LOP 224.78 VP 20.856 GAP 2.88 AZP 89.70 TAL 324.69 TAP 170.76 RCA 143.98 APO 234.57 V2 23.536
RC 210.060 GL -2.52 GP 10.72 ZAL 139.90 ZAP 139.14 ETS 166.00 ZAE 168.15 ETE 88.80 ZAC 99.27 ETC 255.85 CLP 140.33

PLANETOCENTRIC CONIC

C3 18.361 VHL 4.285 DLA 5.98 RAL 159.34 RAD 6567.7 VEL 11.821 PTH 2.09 VHP 4.185 DPA 8.88 RAP 189.72 ECC 1.3022

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 49 1	2380.64	-23.22	52.28	20.90	106.68	20 28 42	1780.6	-20.72	44.51
90.00	9 20 27	4651.79	14.07	197.75	18.28	65.17	10 37 59	4051.8	10.61	190.78
100.00	21 13 12	2109.13	-24.28	31.95	20.54	107.99	21 48 21	1509.1	-21.59	24.19
100.00	10 38 58	4398.53	15.08	178.63	[illegible].79	63.88	11 52 16	3798.5	11.44	171.72
110.00	22 27 56	1875.23	-27.12	13.06	19.40	111.66	22 59 11	1275.2	-23.93	5.34
110.00	11 40 43	4205.19	17.74	162.49	16.32	60.29	12 50 48	3605.2	13.65	155.76

DIFFERENTIAL CORRECTIONS
TDE 1.1523 TRA-2.7034 TC3 1.7927 BAU .5104
RDE .5786 RRA -.7957 RC3 1.0534 FAU .29002
FDE-4.5559 FRA11.2623 FC-13.6746 BSP 15812
BDE 1.2894 BRA 2.8180 BC3 2.0793 FSP 5681

MID-COURSE EXECUTION ACCURACY
SGT 4236.0 SGR 1599.4 SG3 1736.0
RRT .9546 RRF -.9799 RTF -.9684
SGB 4527.9 R23 -.1512 R13 -.9745
SG1 4505.7 SG2 448.1 THA 20.03

ORBIT DETERMINATION ACCURACY
ST 1888.1 SR 838.0 SS 2750.7
CRT .9753 CRS .9695 CST .9995
LSA 3434.1 MSA 197.2 SSA 32.3
EL1 2058.7 EL2 169.7 ALF 23.58

LAUNCH DATE OCT 12 1964 FLIGHT TIME 272.00 ARRIVAL DATE JUL 11 1965

HELIOCENTRIC CONIC DISTANCE 643.189 EARTH TO MARS

RL 149.28 LAL .00 LOL 18.70 VL 32.801 GAL -6.55 AZL 90.25 HCA 207.07 SMA 189.01 ECC .23794 INC .2489 V1 29.848
RP 233.25 LAP .11 LOP 225.77 VP 20.876 GAP 2.52 AZP 89.78 TAL 324.81 TAP 171.88 RCA 144.04 APO 233.98 V2 23.574
RC 212.144 GL -1.91 GP 10.58 ZAL 139.76 ZAP 138.04 ETS 166.66 ZAE 168.21 ETE 94.96 ZAC 99.10 ETC 255.87 CLP 139.15

PLANETOCENTRIC CONIC

C3 18.074 VHL 4.251 DLA 6.61 RAL 159.41 RAD 6567.7 VEL 11.809 PTH 2.09 VHP 4.099 DPA 8.84 RAP 189.49 ECC 1.2975

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 44 31	2396.75	-23.53	53.36	20.92	106.22	20 24 28	1796.7	-21.08	45.55
90.00	9 25 32	4628.31	13.40	196.35	18.06	64.82	10 42 40	4028.3	9.89	189.43
100.00	21 9 1	2124.23	-24.60	32.97	20.56	107.55	21 44 25	1524.2	-21.96	25.16
100.00	10 43 44	4376.05	14.40	177.31	17.57	63.52	11 56 40	3776.1	10.73	170.44
110.00	22 24 27	1888.12	-27.44	13.93	19.45	111.24	22 55 55	1288.1	-24.30	6.16
110.00	11 44 46	4184.93	17.05	161.32	16.08	59.91	12 54 31	3584.9	12.93	154.64

DIFFERENTIAL CORRECTIONS

TDE 1.1131 TRA-2.6191 TC3 1.7683 BAU .5001
RDE .5775 RRA -.7908 RC3 1.0756 FAU .30134
FDE-4.6457 FRA11.6713 FC-14.4341 BSP 15519
BDE 1.2540 BRA 2.7359 BC3 2.0697 FSP 5948

MID-COURSE EXECUTION ACCURACY

SGT 4139.8 SGR 1610.3 SG3 1813.5
RRT .9533 RRF -.9789 RTF -.9680
SGB 4441.9 R23 -.1480 R13 -.9745
SG1 4418.5 SG2 455.8 THA 20.57

ORBIT DETERMINATION ACCURACY

ST 1840.9 SR 842.7 SS 2786.2
CRT .9746 CRS .9671 CST .9993
LSA 3437.8 MSA 206.4 SSA 32.1
EL1 2017.3 EL2 172.1 ALF 24.23

LAUNCH DATE OCT 12 1964 FLIGHT TIME 274.00 ARRIVAL DATE JUL 13 1965

HELIOCENTRIC CONIC DISTANCE 646.949 EARTH TO MARS

RL 149.28 LAL .00 LOL 18.70 VL 32.787 GAL -6.50 AZL 90.17 HCA 208.07 SMA 188.76 ECC .23661 INC .1726 V1 29.848
RP 232.88 LAP .08 LOP 226.77 VP 20.896 GAP 2.16 AZP 89.85 TAL 324.93 TAP 173.00 RCA 144.10 APO 233.42 V2 23.612
RC 214.210 GL -1.34 GP 10.46 ZAL 139.63 ZAP 136.89 ETS 167.28 ZAE 168.11 ETE 101.32 ZAC 98.93 ETC 255.88 CLP 137.93

PLANETOCENTRIC CONIC

C3 17.807 VHL 4.220 DLA 7.20 RAL 159.49 RAD 6567.7 VEL 11.798 PTH 2.09 VHP 4.015 DPA 8.82 RAP 189.24 ECC 1.2931

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 40 13	2412.18	-23.82	54.40	20.94	105.78	20 20 25	1812.2	-21.43	46.55
90.00	9 30 24	4605.95	12.75	195.03	17.87	64.50	10 47 10	4005.9	9.21	188.14
100.00	21 5 0	2138.70	-24.89	33.94	20.60	107.11	21 40 39	1538.7	-22.31	26.09
100.00	10 48 18	4354.66	13.74	176.05	17.37	63.19	12 0 52	3754.7	10.04	169.23
110.00	22 21 8	1900.46	-27.74	14.76	19.50	110.83	22 52 49	1300.5	-24.65	6.95
110.00	11 48 39	4165.67	16.39	160.22	15.87	59.57	12 58 5	3565.7	12.23	153.58

DIFFERENTIAL CORRECTIONS

TDE 1.0729 TRA-2.5329 TC3 1.7318 BAU .4882
RDE .5771 RRA -.7876 RC3 1.0982 FAU .31205
FDE-4.7371 FRA12.0960 FC-15.2098 BSP 15222
BDE 1.2183 BRA 2.6525 BC3 2.0507 FSP 6228

MID-COURSE EXECUTION ACCURACY

SGT 4034.2 SGR 1623.2 SG3 1893.3
RRT .9518 RRF -.9778 RTF -.9674
SGB 4348.5 R23 -.1457 R13 -.9743
SG1 4323.6 SG2 464.6 THA 21.21

ORBIT DETERMINATION ACCURACY

ST 1790.4 SR 848.1 SS 2822.1
CRT .9740 CRS .9648 CST .9990
LSA 3441.1 MSA 216.0 SSA 31.8
EL1 1973.4 EL2 174.4 ALF 24.98

LAUNCH DATE OCT 12 1964 FLIGHT TIME 276.00 ARRIVAL DATE JUL 15 1965

HELIOCENTRIC CONIC DISTANCE 650.721 EARTH TO MARS

RL 149.28 LAL .00 LOL 18.70 VL 32.773 GAL -6.45 AZL 90.10 HCA 209.07 SMA 188.52 ECC .23536 INC .0999 V1 29.848
RP 232.51 LAP .05 LOP 227.77 VP 20.919 GAP 1.81 AZP 89.91 TAL 325.05 TAP 174.11 RCA 144.15 APO 232.89 V2 23.650
RC 216.258 GL -.78 GP 10.35 ZAL 139.49 ZAP 135.69 ETS 167.88 ZAE 167.84 ETE 107.69 ZAC 98.77 ETC 255.90 CLP 136.67

PLANETOCENTRIC CONIC

C3 17.560 VHL 4.190 DLA 7.77 RAL 159.55 RAD 6567.7 VEL 11.787 PTH 2.08 VHP 3.934 DPA 8.82 RAP 188.96 ECC 1.2890

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 36 6	2427.00	-24.09	55.40	20.97	105.35	20 16 33	1827.0	-21.75	47.51
90.00	9 35 4	4584.64	12.12	193.78	17.70	64.21	10 51 29	3984.6	8.55	186.92
100.00	21 1 11	2152.58	-25.16	34.88	20.63	106.69	21 37 3	1552.6	-22.64	26.99
100.00	10 52 40	4334.29	13.12	174.87	17.19	62.90	12 4 54	3734.3	9.38	168.07
110.00	22 17 58	1912.29	-28.02	15.56	19.56	110.43	22 49 50	1312.3	-24.98	7.71
110.00	11 52 22	4147.35	15.76	159.18	15.69	59.27	13 1 30	3547.3	11.56	152.58

DIFFERENTIAL CORRECTIONS

TDE 1.0329 TRA-2.4422 TC3 1.6878 BAU .4758
RDE .5775 RRA -.7856 RC3 1.1222 FAU .32483
FDE-4.8341 FRA12.5281 FC-16.0142 BSP 14877
BDE 1.1834 BRA 2.5654 BC3 2.0268 FSP 6511

MID-COURSE EXECUTION ACCURACY

SGT 3918.3 SGR 1638.1 SG3 1975.3
RRT .9502 RRF -.9768 RTF -.9665
SGB 4246.9 R23 -.1437 R13 -.9740
SG1 4220.4 SG2 473.8 THA 21.96

ORBIT DETERMINATION ACCURACY

ST 1737.4 SR 854.5 SS 2859.1
CRT .9735 CRS .9625 CST .9988
LSA 3445.5 MSA 225.6 SSA 31.5
EL1 1928.1 EL2 176.0 ALF 25.81

LAUNCH DATE OCT 12 1964 FLIGHT TIME 278.00 ARRIVAL DATE JUL 17 1965

HELIOCENTRIC CONIC DISTANCE 654.503 EARTH TO MARS

RL 149.28 LAL .00 LOL 18.70 VL 32.760 GAL -6.40 AZL 90.03 HCA 210.07 SMA 188.29 ECC .23417 INC .0313 V1 29.848
RP 232.14 LAP .02 LOP 228.77 VP 20.942 GAP 1.46 AZP 89.97 TAL 325.15 TAP 175.22 RCA 144.20 APO 232.38 V2 23.689
RC 218.287 GL -.26 GP 10.25 ZAL 139.36 ZAP 134.46 ETS 168.45 ZAE 167.41 ETE 113.91 ZAC 98.61 ETC 255.92 CLP 135.38

PLANETOCENTRIC CONIC

C3 17.332 VHL 4.163 DLA 8.31 RAL 159.62 RAD 6567.7 VEL 11.778 PTH 2.08 VHP 3.856 DPA 8.86 RAP 188.66 ECC 1.2852

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 32 9	2441.25	-24.35	56.37	21.01	104.93	20 12 50	1841.2	-22.06	48.44
90.00	9 39 33	4564.31	11.51	192.60	17.56	63.95	10 55 38	3964.3	7.92	185.76
100.00	20 57 31	2165.92	-25.42	35.79	20.68	106.28	21 33 37	1565.9	-22.95	27.86
100.00	10 56 53	4314.87	12.51	173.74	17.04	62.63	12 8 47	3714.9	8.75	166.98
110.00	22 14 56	1923.65	-28.29	16.34	19.63	110.04	22 47 0	1323.6	-25.30	8.44
110.00	11 55 57	4129.91	15.15	158.19	15.53	58.98	13 4 47	3529.9	10.93	151.63

DIFFERENTIAL CORRECTIONS

TDE .9920 TRA-2.3482 TC3 1.6322 BAU .4622
RDE .5786 RRA -.7849 RC3 1.1468 FAU .33706
FDE-4.9334 FRA12.9731 FC-16.8366 BSP 14510
BDE 1.1484 BRA 2.4759 BC3 1.9948 FSP 6803

MID-COURSE EXECUTION ACCURACY

SGT 3791.8 SGR 1654.6 SG3 2059.5
RRT .9484 RRF -.9759 RTF -.9653
SGB 4137.1 R23 -.1424 R13 -.9736
SG1 4108.7 SG2 484.0 THA 22.82

ORBIT DETERMINATION ACCURACY

ST 1680.9 SR 861.5 SS 2896.5
CRT .9731 CRS .9602 CST .9984
LSA 3449.8 MSA 235.4 SSA 31.2
EL1 1880.5 EL2 177.3 ALF 26.76

LAUNCH DATE OCT 12 1964 FLIGHT TIME 280.00 ARRIVAL DATE JUL 19 1965

HELIOCENTRIC CONIC DISTANCE 658.296 EARTH TO MARS

RL 149.28 LAL .00 LOL 18.70 VL 32.748 GAL -6.36 AZL 89.97 HCA 211.08 SMA 188.08 ECC .23304 INC .0305 V1 29.848
RP 231.76 LAP -.02 LOP 229.78 VP 20.967 GAP 1.11 AZP 90.03 TAL 325.25 TAP 176.33 RCA 144.25 APO 231.91 V2 23.728
RC 220.299 GL .24 GP 10.16 ZAL 139.23 ZAP 133.18 ETS 168.99 ZAE 166.81 ETE 119.81 ZAC 98.45 ETC 255.94 CLP 134.04

PLANETOCENTRIC CONIC

C3 17.120 VHL 4.138 DLA 8.82 RAL 159.69 RAD 6567.7 VEL 11.769 PTH 2.08 VHP 3.781 DPA 8.91 RAP 188.32 ECC 1.2818

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 28 23	2454.97	-24.58	57.30	21.06	104.51	20 9 18	1855.0	-22.35	49.35
90.00	9 43 53	4544.92	10.93	191.47	17.43	63.72	10 59 38	3944.9	7.31	184.66
100.00	20 54 1	2178.77	-25.66	36.67	20.73	105.88	21 30 20	1578.8	-23.24	28.71
100.00	11 0 56	4296.35	11.93	172.68	16.91	62.39	12 12 32	3696.4	8.14	165.94
110.00	22 12 3	1934.58	-28.54	17.09	19.70	109.66	22 44 18	1334.6	-25.60	9.15
110.00	11 59 23	4113.31	14.56	157.26	15.39	58.73	13 7 56	3513.3	10.32	150.73

DIFFERENTIAL CORRECTIONS
TDE .9501 TRA-2.2503 TC3 1.5663 BAU .4477
RDE .5800 RRA -.7854 RC3 1.1718 FAU .34954
FDE-5.0334 FRA13.4286 FC-17.6755 BSP 14116
BDE 1.1132 BRA 2.3834 BC3 1.9561 FSP 7106

MID-COURSE EXECUTION ACCURACY
SGT 3654.4 SGR 1672.4 SG3 2145.5
RRT .9464 RRF -.9751 RTF -.9639
SGB 4018.9 R23 -.1416 R13 -.9731
SG1 3988.3 SG2 494.7 THA 23.81

ORBIT DETERMINATION ACCURACY
ST 1620.9 SR 868.9 SS 2933.6
CRT .9729 CRS .9580 CST .9980
LSA 3453.6 MSA 245.3 SSA 30.9
EL1 1830.5 EL2 178.0 ALF 27.83

LAUNCH DATE OCT 12 1964 FLIGHT TIME 282.00 ARRIVAL DATE JUL 21 1965

HELIOCENTRIC CONIC DISTANCE 662.099 EARTH TO MARS

RL 149.28 LAL .00 LOL 18.70 VL 32.736 GAL -6.32 AZL 89.91 HCA 212.09 SMA 187.87 ECC .23198 INC .0893 V1 29.848
RP 231.38 LAP -.05 LOP 230.79 VP 20.994 GAP .78 AZP 90.08 TAL 325.34 TAP 177.42 RCA 144.29 APO 231.46 V2 23.768
RC 222.292 GL .72 GP 10.08 ZAL 139.11 ZAP 131.85 ETS 169.52 ZAE 166.05 ETE 125.31 ZAC 98.29 ETC 255.97 CLP 132.66

PLANETOCENTRIC CONIC

C3 16.925 VHL 4.114 DLA 9.31 RAL 159.76 RAD 6567.7 VEL 11.760 PTH 2.08 VHP 3.708 DPA 8.99 RAP 187.95 ECC 1.2785

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 24 46	2468.21	-24.81	58.21	21.11	104.11	20 5 54	1868.2	-22.62	50.22
90.00	9 48 3	4526.40	10.37	190.40	17.33	63.50	11 3 30	3926.4	6.73	183.61
100.00	20 50 40	2191.15	-25.89	37.52	20.80	105.49	21 27 11	1591.2	-23.51	29.52
100.00	11 4 50	4278.70	11.37	171.66	16.81	62.17	12 16 9	3678.7	7.56	164.95
110.00	22 9 18	1945.11	-28.78	17.82	19.78	109.29	22 41 43	1345.1	-25.88	9.84
110.00	12 2 42	4097.50	14.00	156.38	15.27	58.49	13 11 0	3497.5	9.73	149.88

DIFFERENTIAL CORRECTIONS
TDE .9089 TRA-2.1473 TC3 1.4909 BAU .4328
RDE .5824 RRA -.7866 RC3 1.1979 FAU .36243
FDE-5.1418 FRA13.8891 FC-18.5384 BSP 13670
BDE 1.0795 BRA 2.2868 BC3 1.9125 FSP 7406

MID-COURSE EXECUTION ACCURACY
SGT 3505.8 SGR 1691.6 SG3 2233.3
RRT .9442 RRF -.9743 RTF -.9620
SGB 3892.6 R23 -.1413 R13 -.9724
SG1 3859.5 SG2 506.0 THA 24.95

ORBIT DETERMINATION ACCURACY
ST 1558.9 SR 877.3 SS 2972.5
CRT .9729 CRS .9559 CST .9976
LSA 3459.7 MSA 255.1 SSA 30.6
EL1 1779.9 EL2 177.7 ALF 29.02

LAUNCH DATE OCT 12 1964 FLIGHT TIME 284.00 ARRIVAL DATE JUL 23 1965

HELIOCENTRIC CONIC DISTANCE 665.912 EARTH TO MARS

RL 149.28 LAL .00 LOL 18.70 VL 32.725 GAL -6.29 AZL 89.85 HCA 213.10 SMA 187.68 ECC .23097 INC .1472 V1 29.848
RP 231.01 LAP -.08 LOP 231.81 VP 21.021 GAP .44 AZP 90.12 TAL 325.42 TAP 178.52 RCA 144.33 APO 231.03 V2 23.807
RC 224.266 GL 1.18 GP 10.01 ZAL 138.99 ZAP 130.48 ETS 170.03 ZAE 165.15 ETE 130.34 ZAC 98.13 ETC 255.99 CLP 131.24

PLANETOCENTRIC CONIC

C3 16.746 VHL 4.092 DLA 9.78 RAL 159.83 RAD 6567.7 VEL 11.753 PTH 2.07 VHP 3.639 DPA 9.09 RAP 187.56 ECC 1.2756

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 21 19	2480.99	-25.01	59.09	21.18	103.72	20 2 40	1881.0	-22.88	51.07
90.00	9 52 5	4508.74	9.83	189.38	17.25	63.31	11 7 14	3908.7	6.17	182.61
100.00	20 47 29	2203.11	-26.11	38.34	20.87	105.10	21 24 12	1603.1	-23.78	30.31
100.00	11 8 37	4261.86	10.83	170.70	16.72	61.97	12 19 39	3661.9	7.00	164.01
110.00	22 6 41	1955.27	-29.01	18.52	19.87	108.93	22 39 16	1355.3	-26.15	10.50
110.00	12 5 54	4082.45	13.46	155.54	15.18	58.28	13 13 57	3482.5	9.17	149.07

DIFFERENTIAL CORRECTIONS
TDE .8660 TRA-2.0404 TC3 1.4017 BAU .4166
RDE .5849 RRA -.7889 RC3 1.2238 FAU .37541
FDE-5.2482 FRA14.3622 FC-19.4076 BSP 13217
BDE 1.0450 BRA 2.1876 BC3 1.8608 FSP 7722

MID-COURSE EXECUTION ACCURACY
SGT 3345.2 SGR 1711.8 SG3 2322.6
RRT .9415 RRF -.9735 RTF -.9595
SGB 3757.7 R23 -.1418 R13 -.9715
SG1 3721.8 SG2 518.5 THA 26.27

ORBIT DETERMINATION ACCURACY
ST 1492.5 SR 885.8 SS 3010.6
CRT .9730 CRS .9538 CST .9970
LSA 3464.8 MSA 265.1 SSA 30.3
EL1 1726.6 EL2 176.7 ALF 30.36

LAUNCH DATE OCT 12 1964 FLIGHT TIME 286.00 ARRIVAL DATE JUL 25 1965

HELIOCENTRIC CONIC DISTANCE 669.736 EARTH TO MARS

RL 149.28 LAL .00 LOL 18.70 VL 32.715 GAL -6.25 AZL 89.80 HCA 214.32 SMA 187.50 ECC .23003 INC .2025 V1 29.848
RP 230.62 LAP -.11 LOP 232.82 VP 21.050 GAP .12 AZP 90.17 TAL 325.49 TAP 179.61 RCA 144.37 APO 230.63 V2 23.847
RC 226.222 GL 1.62 GP 9.94 ZAL 138.88 ZAP 129.07 ETS 170.53 ZAE 164.12 ETE 134.89 ZAC 97.96 ETC 256.02 CLP 129.78

PLANETOCENTRIC CONIC

C3 16.582 VHL 4.072 DLA 10.22 RAL 159.91 RAD 6567.7 VEL 11.746 PTH 2.07 VHP 3.572 DPA 9.21 RAP 187.13 ECC 1.2729

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 18 1	2493.34	-25.21	59.94	21.26	103.34	19 59 35	1893.3	-23.13	51.89
90.00	9 55 59	4491.88	9.32	188.41	17.19	63.14	11 10 51	3891.9	5.64	181.66
100.00	20 44 26	2214.65	-26.31	39.14	20.95	104.73	21 21 21	1614.6	-24.03	31.08
100.00	11 12 16	4245.79	10.32	169.79	16.66	61.79	12 23 2	3645.8	6.47	163.12
110.00	22 4 11	1965.08	-29.22	19.20	19.97	108.58	22 36 56	1365.1	-26.41	11.15
110.00	12 9 0	4068.13	12.95	154.75	15.10	58.09	13 16 48	3468.1	8.64	148.31

DIFFERENTIAL CORRECTIONS
TDE .8225 TRA-1.9289 TC3 1.3016 BAU .4001
RDE .5879 RRA -.7920 RC3 1.2501 FAU .38862
FDE-5.3562 FRA14.8424 FC-20.2888 BSP 12719
BDE 1.0110 BRA 2.0852 BC3 1.8047 FSP 8041

MID-COURSE EXECUTION ACCURACY
SGT 3173.1 SGR 1732.9 SG3 2413.2
RRT .9383 RRF -.9728 RTF -.9564
SGB 3615.4 R23 -.1428 R13 -.9705
SG1 3576.1 SG2 531.8 THA 27.80

ORBIT DETERMINATION ACCURACY
ST 1422.9 SR 894.7 SS 3048.5
CRT .9734 CRS .9518 CST .9964
LSA 3470.2 MSA 275.1 SSA 30.0
EL1 1671.7 EL2 174.5 ALF 31.86

LAUNCH DATE OCT 12 1964 FLIGHT TIME 288.00 ARRIVAL DATE JUL 27 1965

HELIOCENTRIC CONIC DISTANCE 673.568 EARTH TO MARS

RL	149.28	LAL	.00	LOL	18.70	VL	32.705	GAL	-6.22	AZL	89.74	HCA	215.14	SMA	187.32	ECC	.22914	INC	.2544	V1	29.848
RP	230.24	LAP	-.15	LOP	233.84	VP	21.080	GAP	-.21	AZP	90.21	TAL	325.55	TAP	180.69	RCA	144.40	APO	230.25	V2	23.887
RC	228.159	GL	2.05	GP	9.87	ZAL	138.78	ZAP	127.61	ETS	171.01	ZAE	162.95	ETE	138.97	ZAC	97.80	ETC	256.06	CLP	128.28

PLANETOCENTRIC CONIC

C3	16.433	VHL	4.054	DLA	10.65	RAL	159.99	RAD	6567.7	VEL	11.740	PTH	2.07	VHP	3.508	DPA	9.36	RAP	186.67	ECC	1.2704

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 14 53	2505.27	-25.40	60.76	21.34	102.96	19 56 38	1905.3	-23.36	52.69
90.00	9 59 46	4475.80	8.82	187.49	17.15	62.98	11 14 22	3875.8	5.13	180.76
100.00	20 41 32	2225.80	-26.50	39.91	21.05	104.36	21 18 38	1625.8	-24.26	31.82
100.00	11 15 48	4230.50	9.82	168.92	16.61	61.63	12 26 19	3630.5	5.96	162.27
110.00	22 1 50	1974.56	-29.43	19.86	20.08	108.23	22 34 44	1374.6	-26.65	11.78
110.00	12 12 0	4054.52	12.46	154.00	15.05	57.91	13 19 35	3454.5	8.13	147.58

DIFFERENTIAL CORRECTIONS

TDE	.7785	TRA	-1.8118	TC3	1.1903	BAU	.3834														
RDE	.5913	RRA	-.7955	RC3	1.2765	FAU	.40202														
FDE	-5.4681	FRA	15.3240	FC	-21.1795	BSP	12184														
BDE	.9776	BRA	1.9788	BC3	1.7454	FSP	8359														

MID-COURSE EXECUTION ACCURACY

SGT	2988.6	SGR	1754.5	SG3	2504.5						
RRT	.9344	RRF	-.9722	RTF	-.9523						
SGB	3465.5	R23	-.1443	R13	-.9693						
SG1	3422.2	SG2	546.0	THA	29.57						

ORBIT DETERMINATION ACCURACY

ST	1350.1	SR	903.9	SS	3086.8						
CRT	.9741	CRS	.9498	CST	.9955						
LSA	3476.5	MSA	285.0	SSA	29.7						
EL1	1615.7	EL2	170.9	ALF	33.54						

LAUNCH DATE OCT 12 1964 FLIGHT TIME 290.00 ARRIVAL DATE JUL 29 1965

HELIOCENTRIC CONIC DISTANCE 677.410 EARTH TO MARS

RL	149.28	LAL	.00	LOL	18.70	VL	32.695	GAL	-6.19	AZL	89.70	HCA	216.16	SMA	187.16	ECC	.22831	INC	.3047	V1	29.848
RP	229.86	LAP	-.18	LOP	234.87	VP	21.111	GAP	-.52	AZP	90.25	TAL	325.61	TAP	181.77	RCA	144.43	APO	229.89	V2	23.927
RC	230.076	GL	2.46	GP	9.81	ZAL	138.69	ZAP	126.11	ETS	171.48	ZAE	161.68	ETE	142.62	ZAC	97.63	ETC	256.09	CLP	126.74

PLANETOCENTRIC CONIC

C3	16.298	VHL	4.037	DLA	11.05	RAL	160.08	RAD	6567.7	VEL	11.734	PTH	2.07	VHP	3.447	DPA	9.52	RAP	186.17	ECC	1.2682

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 11 54	2516.81	-25.57	61.56	21.44	102.60	19 53 50	1916.8	-23.58	53.46
90.00	10 3 27	4460.48	8.34	186.62	17.13	62.84	11 17 47	3860.5	4.64	179.90
100.00	20 38 47	2236.58	-26.68	40.66	21.15	104.01	21 16 4	1636.6	-24.49	32.55
100.00	11 19 14	4215.94	9.35	168.10	16.59	61.48	12 29 30	3615.9	5.47	161.46
110.00	21 59 36	1983.71	-29.62	20.51	20.20	107.90	22 32 39	1383.7	-26.89	12.39
110.00	12 14 55	4041.58	11.99	153.29	15.02	57.75	13 22 17	3441.6	7.65	146.89

DIFFERENTIAL CORRECTIONS

TDE	.7329	TRA	-1.6905	TC3	1.0639	BAU	.3663														
RDE	.5947	RRA	-.7998	RC3	1.3020	FAU	.41526														
FDE	-5.5763	FRA	15.8158	FC	-22.0585	BSP	11644														
BDE	.9438	BRA	1.8702	BC3	1.6814	FSP	8693														

MID-COURSE EXECUTION ACCURACY

SGT	2792.1	SGR	1776.3	SG3	2596.2						
RRT	.9292	RRF	-.9715	RTF	-.9469						
SGB	3309.2	R23	-.1467	R13	-.9678						
SG1	3261.1	SG2	562.1	THA	31.64						

ORBIT DETERMINATION ACCURACY

ST	1273.0	SR	913.1	SS	3123.8						
CRT	.9749	CRS	.9479	CST	.9945						
LSA	3482.0	MSA	295.0	SSA	29.4						
EL1	1557.8	EL2	166.1	ALF	35.43						

LAUNCH DATE OCT 12 1964 FLIGHT TIME 292.00 ARRIVAL DATE JUL 31 1965

HELIOCENTRIC CONIC DISTANCE 681.262 EARTH TO MARS

RL	149.28	LAL	.00	LOL	18.70	VL	32.686	GAL	-6.17	AZL	89.65	HCA	217.19	SMA	187.01	ECC	.22754	INC	.3521	V1	29.848
RP	229.47	LAP	-.21	LOP	235.89	VP	21.143	GAP	-.84	AZP	90.28	TAL	325.65	TAP	182.84	RCA	144.46	APO	229.56	V2	23.968
RC	231.973	GL	2.85	GP	9.76	ZAL	138.61	ZAP	124.57	ETS	171.94	ZAE	160.31	ETE	145.87	ZAC	97.45	ETC	256.13	CLP	125.15

PLANETOCENTRIC CONIC

C3	16.176	VHL	4.022	DLA	11.44	RAL	160.17	RAD	6567.6	VEL	11.729	PTH	2.07	VHP	3.389	DPA	9.70	RAP	185.64	ECC	1.2662

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 9 3	2527.98	-25.73	62.34	21.56	102.24	19 51 11	1928.0	-23.79	54.21
90.00	10 7 0	4445.90	7.89	185.79	17.13	62.72	11 21 6	3845.9	4.17	179.08
100.00	20 36 10	2247.01	-26.85	41.39	21.27	103.66	21 13 37	1647.0	-24.70	33.25
100.00	11 22 34	4202.09	8.90	167.32	16.59	61.35	12 32 36	3602.1	5.01	160.69
110.00	21 57 29	1992.57	-29.80	21.13	20.33	107.57	22 30 42	1392.6	-27.11	12.98
110.00	12 17 45	4029.30	11.54	152.62	15.00	57.60	13 24 54	3429.3	7.19	146.24

DIFFERENTIAL CORRECTIONS

TDE	.6870	TRA	-1.5633	TC3	.9275	BAU	.3503				
RDE	.5986	RRA	-.8043	RC3	1.3278	FAU	.42877				
FDE	-5.6888	FRA	16.3044	FC	-22.9481	BSP	11058				
BDE	.9112	BRA	1.7580	BC3	1.6197	FSP	9019				

MID-COURSE EXECUTION ACCURACY

SGT	2584.0	SGR	1798.5	SG3	2688.1						
RRT	.9226	RRF	-.9709	RTF	-.9397						
SGB	3148.3	R23	-.1494	R13	-.9661						
SG1	3094.5	SG2	579.3	THA	34.06						

ORBIT DETERMINATION ACCURACY

ST	1192.9	SR	922.6	SS	3161.1						
CRT	.9762	CRS	.9460	CST	.9932						
LSA	3489.0	MSA	304.9	SSA	29.1						
EL1	1499.6	EL2	159.2	ALF	37.55						

LAUNCH DATE OCT 12 1964 FLIGHT TIME 294.00 ARRIVAL DATE AUG 2 1965

HELIOCENTRIC CONIC DISTANCE 685.123 EARTH TO MARS

RL	149.28	LAL	.00	LOL	18.70	VL	32.678	GAL	-6.15	AZL	89.60	HCA	218.22	SMA	186.86	ECC	.22682	INC	.3969	V1	29.848
RP	229.09	LAP	-.25	LOP	236.93	VP	21.176	GAP	-1.15	AZP	90.31	TAL	325.69	TAP	183.91	RCA	144.48	APO	229.24	V2	24.009
RC	233.848	GL	3.22	GP	9.70	ZAL	138.53	ZAP	122.98	ETS	172.39	ZAE	158.84	ETE	148.77	ZAC	97.27	ETC	256.17	CLP	123.52

PLANETOCENTRIC CONIC

C3	16.067	VHL	4.008	DLA	11.81	RAL	160.26	RAD	6567.6	VEL	11.724	PTH	2.07	VHP	3.334	DPA	9.90	RAP	185.07	ECC	1.2644

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 6 22	2538.77	-25.89	63.09	21.68	101.89	19 48 41	1938.8	-23.99	54.94
90.00	10 10 28	4432.03	7.46	185.00	17.15	62.60	11 24 20	3832.0	3.73	178.30
100.00	20 33 42	2257.09	-27.01	42.10	21.40	103.32	21 11 19	1657.1	-24.91	33.93
100.00	11 25 48	4188.94	8.47	166.58	16.60	61.23	12 35 37	3588.9	4.57	159.97
110.00	21 55 30	2001.13	-29.98	21.74	20.48	107.25	22 28 52	1401.1	-27.33	13.55
110.00	12 20 30	4017.67	11.12	151.99	15.01	57.47	13 27 27	3417.7	6.75	145.62

DIFFERENTIAL CORRECTIONS

TDE	.6405	TRA	-1.4302	TC3	.7785	BAU	.3354				
RDE	.6029	RRA	-.8087	RC3	1.3533	FAU	.44237				
FDE	-5.8058	FRA	16.7873	FC	-23.8362	BSP	10435				
BDE	.8797	BRA	1.6430	BC3	1.5613	FSP	9333				

MID-COURSE EXECUTION ACCURACY

SGT	2364.3	SGR	1820.6	SG3	2779.6						
RRT	.9137	RRF	-.9704	RTF	-.9298						
SGB	2984.0	R23	-.1523	R13	-.9642						
SG1	2923.4	SG2	598.5	THA	36.93						

ORBIT DETERMINATION ACCURACY

ST	1109.6	SR	932.4	SS	3198.7						
CRT	.9779	CRS	.9443	CST	.9916						
LSA	3497.5	MSA	314.5	SSA	28.8						
EL1	1441.5	EL2	150.2	ALF	39.93						

LAUNCH DATE OCT 12 1964 FLIGHT TIME 296.00 ARRIVAL DATE AUG 4 1965

HELIOCENTRIC CONIC — DISTANCE 688.993 — EARTH TO MARS

RL 149.28 LAL .00 LOL 18.70 VL 32.670 GAL -6.13 AZL 89.56 HCA 219.26 SMA 186.72 ECC .22615 INC .4405 V1 29.848
RP 228.70 LAP -.28 LOP 237.96 VP 21.210 GAP -1.45 AZP 90.34 TAL 325.71 TAP 184.97 RCA 144.50 APO 228.95 V2 24.049
RC 235.703 GL 3.59 GP 9.65 ZAL 138.47 ZAP 121.35 ETS 172.83 ZAE 157.28 ETE 151.37 ZAC 97.09 ETC 256.22 CLP 121.85

PLANETOCENTRIC CONIC

C3 15.971 VHL 3.996 DLA 12.16 RAL 160.37 RAD 6567.6 VEL 11.720 PTH 2.06 VHP 3.282 DPA 10.12 RAP 184.48 ECC 1.2628

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 3 50	2549.21	-26.03	63.83	21.82	101.56	19 46 19	1949.2	-24.18	55.65
90.00	10 13 49	4418.86	7.04	184.25	17.19	62.50	11 27 28	3818.9	3.30	177.56
100.00	20 31 23	2266.84	-27.16	42.78	21.54	102.99	21 9 10	1666.8	-25.10	34.59
100.00	11 28 57	4176.46	8.06	165.88	16.64	61.12	12 38 33	3576.5	4.15	159.28
110.00	21 53 39	2009.41	-30.14	22.32	20.63	106.94	22 27 8	1409.4	-27.53	14.11
110.00	12 23 10	4006.66	10.71	151.39	15.04	57.34	13 29 57	3406.7	6.33	145.04

DIFFERENTIAL CORRECTIONS
TDE .5954 TRA-1.2894 TC3 .6226 BAU .3231
RDE .6080 RRA -.8126 RC3 1.3794 FAU .45632
FDE-5.9322 FRA17.2536 FC-24.7360 BSP 9756
BDE .8510 BRA 1.5241 BC3 1.5134 FSP 9623

MID-COURSE EXECUTION ACCURACY
SGT 2133.6 SGR 1842.7 SG3 2870.1
RRT .9020 RRF -.9698 RTF -.9164
SGB 2819.2 R23 -.1543 R13 -.9623
SG1 2750.9 SG2 617.0 THA 40.37

ORBIT DETERMINATION ACCURACY
ST 1025.1 SR 942.7 SS 3237.4
CRT .9804 CRS .9429 CST .9892
LSA 3509.2 MSA 324.3 SSA 28.3
EL1 1385.9 EL2 137.4 ALF 42.55

LAUNCH DATE OCT 12 1964 FLIGHT TIME 298.00 ARRIVAL DATE AUG 6 1965

HELIOCENTRIC CONIC — DISTANCE 692.871 — EARTH TO MARS

RL 149.28 LAL .00 LOL 18.70 VL 32.662 GAL -6.11 AZL 89.52 HCA 220.30 SMA 186.59 ECC .22554 INC .4822 V1 29.848
RP 228.31 LAP -.31 LOP 239.00 VP 21.245 GAP -1.75 AZP 90.37 TAL 325.73 TAP 186.02 RCA 144.51 APO 228.68 V2 24.090
RC 237.537 GL 3.93 GP 9.60 ZAL 138.42 ZAP 119.67 ETS 173.26 ZAE 155.65 ETE 153.69 ZAC 96.89 ETC 256.27 CLP 120.14

PLANETOCENTRIC CONIC

C3 15.887 VHL 3.986 DLA 12.49 RAL 160.48 RAD 6567.6 VEL 11.716 PTH 2.06 VHP 3.234 DPA 10.36 RAP 183.84 ECC 1.2615

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 1 26	2559.30	-26.17	64.53	21.97	101.23	19 44 6	1959.3	-24.35	56.33
90.00	10 17 5	4406.39	6.65	183.54	17.25	62.41	11 30 31	3806.4	2.90	176.87
100.00	20 29 12	2276.26	-27.30	43.45	21.70	102.67	21 7 8	1676.3	-25.28	35.23
100.00	11 32 0	4164.66	7.67	165.22	16.70	61.02	12 41 25	3564.7	3.75	158.63
110.00	21 51 56	2017.41	-30.30	22.09	20.81	106.64	22 25 33	1417.4	-27.73	14.65
110.00	12 25 46	3996.27	10.33	150.83	15.09	57.23	13 32 23	3396.3	5.94	144.49

DIFFERENTIAL CORRECTIONS
TDE .5452 TRA-1.1465 TC3 .4440 BAU .3123
RDE .6121 RRA -.8177 RC3 1.4016 FAU .46012
FDE-6.0373 FRA17.7367 FC-25.5637 BSP 9162
BDE .8197 BRA 1.4083 BC3 1.4703 FSP 9057

MID-COURSE EXECUTION ACCURACY
SGT 1804.9 SGR 1863.3 SG3 2958.6
RRT .8831 RRF -.9803 RTF -.8956
SGB 2657.2 R23 -.1567 R13 -.9603
SG1 2578.4 SG2 642.4 THA 44.46

ORBIT DETERMINATION ACCURACY
ST 933.1 SR 951.7 SS 3270.8
CRT .9828 CRS .9411 CST .9863
LSA 3516.0 MSA 333.8 SSA 28.1
EL1 1327.1 EL2 123.5 ALF 45.57

LAUNCH DATE OCT 12 1964 FLIGHT TIME 300.00 ARRIVAL DATE AUG 8 1965

HELIOCENTRIC CONIC — DISTANCE 696.759 — EARTH TO MARS

RL 149.28 LAL .00 LOL 18.70 VL 32.655 GAL -6.10 AZL 89.48 HCA 221.34 SMA 186.47 ECC .22497 INC .5224 V1 29.848
RP 227.92 LAP -.35 LOP 240.04 VP 21.280 GAP -2.04 AZP 90.39 TAL 325.74 TAP 187.07 RCA 144.52 APO 228.43 V2 24.132
RC 239.350 GL 4.27 GP 9.55 ZAL 138.38 ZAP 117.96 ETS 173.69 ZAE 153.95 ETE 155.78 ZAC 96.69 ETC 256.33 CLP 118.39

PLANETOCENTRIC CONIC

C3 15.816 VHL 3.977 DLA 12.81 RAL 160.59 RAD 6567.6 VEL 11.713 PTH 2.06 VHP 3.188 DPA 10.61 RAP 183.18 ECC 1.2603

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 59 12	2569.05	-26.29	65.22	22.13	100.91	19 42 1	1969.1	-24.52	57.00
90.00	10 20 15	4394.59	6.28	182.88	17.33	62.33	11 33 30	3794.6	2.52	176.21
100.00	20 27 10	2285.36	-27.44	44.09	21.87	102.36	21 5 15	1685.4	-25.46	35.85
100.00	11 34 59	4153.51	7.30	164.60	16.77	60.93	12 44 12	3553.5	3.37	158.01
110.00	21 50 20	2025.15	-30.45	23.45	20.99	106.34	22 24 5	1425.1	-27.91	15.17
110.00	12 28 18	3986.49	9.97	150.31	15.15	57.13	13 34 45	3386.5	5.57	143.98

DIFFERENTIAL CORRECTIONS
TDE .4958 TRA -.9961 TC3 .2587 BAU .3061
RDE .6169 RRA -.8218 RC3 1.4244 FAU .48231
FDE-6.1532 FRA18.1942 FC-26.4010 BSP 8524
BDE .7915 BRA 1.2913 BC3 1.4477 FSP 10250

MID-COURSE EXECUTION ACCURACY
SGT 1648.7 SGR 1803.5 SG3 3045.1
RRT .8549 RRF -.9687 RTF -.8641
SGB 2503.2 R23 -.1559 R13 -.9586
SG1 2412.4 SG2 667.9 THA 49.44

ORBIT DETERMINATION ACCURACY
ST 839.8 SR 961.1 SS 3305.5
CRT .9861 CRS .9396 CST .9820
LSA 3526.6 MSA 343.2 SSA 27.7
EL1 1271.9 EL2 105.5 ALF 48.91

LAUNCH DATE OCT 12 1964 FLIGHT TIME 302.00 ARRIVAL DATE AUG 10 1965

HELIOCENTRIC CONIC — DISTANCE 700.654 — EARTH TO MARS

RL 149.28 LAL .00 LOL 18.70 VL 32.649 GAL -6.09 AZL 89.44 HCA 222.38 SMA 186.36 ECC .22446 INC .5610 V1 29.848
RP 227.53 LAP -.38 LOP 241.08 VP 21.317 GAP -2.33 AZP 90.41 TAL 325.73 TAP 188.11 RCA 144.53 APO 228.19 V2 24.173
RC 241.142 GL 4.59 GP 9.50 ZAL 138.35 ZAP 116.20 ETS 174.11 ZAE 152.18 ETE 157.66 ZAC 96.48 ETC 256.39 CLP 116.60

PLANETOCENTRIC CONIC

C3 15.756 VHL 3.969 DLA 13.11 RAL 160.72 RAD 6567.6 VEL 11.711 PTH 2.06 VHP 3.146 DPA 10.87 RAP 182.48 ECC 1.2593

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 57 7	2578.46	-26.41	65.88	22.31	100.59	19 40 6	1978.5	-24.68	57.64
90.00	10 23 21	4383.47	5.93	182.25	17.43	62.26	11 36 24	3783.5	2.17	175.59
100.00	20 25 17	2294.15	-27.56	44.71	22.06	102.05	21 3 31	1694.1	-25.62	36.45
100.00	11 37 52	4143.01	6.96	164.01	16.87	60.86	12 46 55	3543.0	3.02	157.44
110.00	21 48 51	2032.62	-30.59	23.98	21.19	106.05	22 22 44	1432.6	-28.09	15.68
110.00	12 30 47	3977.30	9.63	149.81	15.24	57.04	13 37 4	3377.3	5.22	143.49

DIFFERENTIAL CORRECTIONS
TDE .4450 TRA -.8403 TC3 .0585 BAU .3046
RDE .6217 RRA -.8257 RC3 1.4448 FAU .49484
FDE-6.2636 FRA18.6429 FC-27.1898 BSP 7930
BDE .7645 BRA 1.1781 BC3 1.4460 FSP 10544

MID-COURSE EXECUTION ACCURACY
SGT 1402.0 SGR 1902.2 SG3 3128.4
RRT .8076 RRF -.9682 RTF -.8120
SGB 2363.1 R23 -.1509 R13 -.9577
SG1 2258.1 SG2 696.6 THA 55.50

ORBIT DETERMINATION ACCURACY
ST 743.1 SR 970.1 SS 3338.1
CRT .9899 CRS .9381 CST .9757
LSA 3537.1 MSA 352.6 SSA 27.4
EL1 1219.1 EL2 83.9 ALF 52.62

LAUNCH DATE OCT 12 1964 FLIGHT TIME 304.00 ARRIVAL DATE AUG 12 1965

HELIOCENTRIC CONIC DISTANCE 704.558 EARTH TO MARS

RL	149.28	LAL	.00	LOL	18.70	VL	32.642	GAL	-6.08	AZL	89.40	HCA	223.43	SMA	186.26	ECC	.22400	INC	.5982
RP	227.14	LAP	-.41	LOP	242.13	VP	21.355	GAP	-2.62	AZP	90.43	TAL	325.72	TAP	189.15	RCA	144.53	APO	227.98
RC	242.914	GL	4.91	GP	9.44	ZAL	138.33	ZAP	114.41	ETS	174.52	ZAE	150.35	ETE	159.37	ZAC	96.26	ETC	256.46

V1 29.848 V2 24.214 CLP 114.77

PLANETOCENTRIC CONIC

C3	15.708	VHL	3.963	DLA	13.39	RAL	160.85	RAD	6567.6	VEL	11.709	PTH	2.06	VHP	3.106	DPA	11.14	RAP	181.74

ECC 1.2585

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 55 11	2587.54	-26.53	66.52	22.51	100.29	19 38 19	1987.5	-24.84	58.26
90.00	10 26 20	4373.01	5.59	181.66	17.55	62.20	11 39 13	3773.0	1.83	175.00
100.00	20 23 32	2302.62	-27.68	45.31	22.26	101.76	21 1 55	1702.6	-25.78	37.03
100.00	11 40 41	4133.15	6.63	163.46	16.98	60.79	12 49 34	3533.2	2.68	156.89
110.00	21 47 31	2039.84	-30.73	24.50	21.40	105.77	22 21 31	1439.8	-28.26	16.17
110.00	12 33 11	3968.70	9.31	149.35	15.34	56.96	13 39 20	3368.7	4.90	143.04

DIFFERENTIAL CORRECTIONS

TDE	.3925	TRA	-.6789	TC3	-.1535	BAU	.3090
RDE	.6263	RRA	-.8292	RC3	1.4634	FAU	.50688
FDE	-6.3686	FRA	19.0737	FC	-27.9363	BSP	7394
BDE	.7391	BRA	1.0717	BC3	1.4714	FSP	10828

MID-COURSE EXECUTION ACCURACY

SGT	1163.9	SGR	1919.3	SG3	3207.9		
RRT	.7233	RRF	-.9676	RTF	-.7203		
SGB	2244.6	RZ3	-.1377	RZ3	-.9582		
SG1	2123.9	SG2	726.3	THA	62.89		

ORBIT DETERMINATION ACCURACY

ST	643.1	SR	978.6	SS	3368.4
CRT	.9939	CRS	.9365	CST	.9658
LSA	3547.6	MSA	361.6	SSA	27.1
EL1	1169.5	EL2	59.3	ALF	56.75

LAUNCH DATE OCT 12 1964 FLIGHT TIME 306.00 ARRIVAL DATE AUG 14 1965

HELIOCENTRIC CONIC DISTANCE 708.470 EARTH TO MARS

RL	149.28	LAL	.00	LOL	18.70	VL	32.637	GAL	-6.07	AZL	89.37	HCA	224.48	SMA	186.16	ECC	.22359	INC	.6341
RP	226.75	LAP	-.44	LOP	243.18	VP	21.393	GAP	-2.90	AZP	90.45	TAL	325.69	TAP	190.18	RCA	144.53	APO	227.78
RC	244.666	GL	5.21	GP	9.39	ZAL	138.33	ZAP	112.58	ETS	174.93	ZAE	148.46	ETE	160.93	ZAC	96.04	ETC	256.53

V1 29.848 V2 24.256 CLP 112.91

PLANETOCENTRIC CONIC

C3	15.671	VHL	3.959	DLA	13.66	RAL	160.99	RAD	6567.6	VEL	11.707	PTH	2.06	VHP	3.071	DPA	11.43	RAP	180.98

ECC 1.2579

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 53 25	2596.28	-26.63	67.14	22.72	100.00	19 36 41	1996.3	-24.98	58.86
90.00	10 29 15	4363.21	5.28	181.11	17.68	62.14	11 41 58	3763.2	1.51	174.46
100.00	20 21 56	2310.79	-27.79	45.89	22.47	101.47	21 0 27	1710.8	-25.93	37.59
100.00	11 43 25	4123.93	6.32	162.95	17.11	60.72	12 52 9	3523.9	2.37	156.39
110.00	21 46 18	2046.80	-30.86	25.01	21.63	105.50	22 20 25	1446.8	-28.42	16.65
110.00	12 35 32	3960.69	9.02	148.92	15.47	56.89	13 41 33	3360.7	4.59	142.62

DIFFERENTIAL CORRECTIONS

TDE	.3388	TRA	-.5118	TC3	-.3770	BAU	.3200
RDE	.6309	RRA	-.8319	RC3	1.4798	FAU	.51853
FDE	-6.4693	FRA	19.4815	FC	-28.6341	BSP	6947
BDE	.7161	BRA	.9767	BC3	1.5271	FSP	11097

MID-COURSE EXECUTION ACCURACY

SGT	954.2	SGR	1934.4	SG3	3282.8		
RRT	.5648	RRF	-.9669	RTF	-.5500		
SGB	2157.0	RZ3	-.1128	RZ3	-.9603		
SG1	2021.0	SG2	753.7	THA	71.82		

ORBIT DETERMINATION ACCURACY

ST	541.1	SR	986.5	SS	3396.5
CRT	.9974	CRS	.9350	CST	.9492
LSA	3558.7	MSA	370.5	SSA	26.7
EL1	1124.7	EL2	34.2	ALF	61.29

LAUNCH DATE OCT 12 1964 FLIGHT TIME 308.00 ARRIVAL DATE AUG 16 1965

HELIOCENTRIC CONIC DISTANCE 712.389 EARTH TO MARS

RL	149.28	LAL	.00	LOL	18.70	VL	32.631	GAL	-6.07	AZL	89.33	HCA	225.54	SMA	186.07	ECC	.22322	INC	.6686
RP	226.36	LAP	-.48	LOP	244.24	VP	21.432	GAP	-3.18	AZP	90.47	TAL	325.66	TAP	191.19	RCA	144.53	APO	227.60
RC	246.398	GL	5.50	GP	9.33	ZAL	138.34	ZAP	110.72	ETS	175.33	ZAE	146.52	ETE	162.35	ZAC	95.80	ETC	256.60

V1 29.848 V2 24.297 CLP 111.01

PLANETOCENTRIC CONIC

C3	15.647	VHL	3.956	DLA	13.91	RAL	161.15	RAD	6567.6	VEL	11.706	PTH	2.06	VHP	3.038	DPA	11.73	RAP	180.19

ECC 1.2575

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 51 48	2604.69	-26.73	67.74	22.94	99.71	19 35 12	2004.7	-25.11	59.44
90.00	10 32 5	4354.09	4.99	180.60	17.84	62.09	11 44 39	3754.1	1.22	173.95
100.00	20 20 29	2318.64	-27.90	46.45	22.70	101.19	20 59 8	1718.6	-26.07	38.13
100.00	11 46 4	4115.36	6.04	162.47	17.27	60.67	12 54 39	3515.4	2.08	155.92
110.00	21 45 14	2053.51	-30.98	25.49	21.87	105.24	22 19 27	1453.5	-28.58	17.11
110.00	12 37 49	3953.27	8.74	148.52	15.62	56.82	13 43 43	3353.3	4.31	142.23

DIFFERENTIAL CORRECTIONS

TDE	.2794	TRA	-.3427	TC3	-.6245	BAU	.3375
RDE	.6332	RRA	-.8364	RC3	1.4877	FAU	.52673
FDE	-6.5175	FRA	19.9181	FC	-29.1442	BSP	6708
BDE	.6921	BRA	.9039	BC3	1.6135	FSP	11456

MID-COURSE EXECUTION ACCURACY

SGT	818.1	SGR	1945.3	SG3	3350.9		
RRT	.2688	RRF	-.9661	RTF	-.2404		
SGB	2110.4	RZ3	-.0720	RZ3	-.9637		
SG1	1960.1	SG2	782.1	THA	82.32		

ORBIT DETERMINATION ACCURACY

ST	433.0	SR	991.3	SS	3413.5
CRT	.9972	CRS	.9326	CST	.9195
LSA	3560.6	MSA	379.1	SSA	26.8
EL1	1081.4	EL2	29.5	ALF	66.44

LAUNCH DATE OCT 12 1964 FLIGHT TIME 310.00 ARRIVAL DATE AUG 18 1965

HELIOCENTRIC CONIC DISTANCE 716.318 EARTH TO MARS

RL	149.28	LAL	.00	LOL	18.70	VL	32.626	GAL	-6.07	AZL	89.30	HCA	226.60	SMA	185.98	ECC	.22291	INC	.7025
RP	225.97	LAP	-.51	LOP	245.30	VP	21.472	GAP	-3.45	AZP	90.48	TAL	325.61	TAP	192.21	RCA	144.52	APO	227.44
RC	248.110	GL	5.77	GP	9.27	ZAL	138.36	ZAP	108.83	ETS	175.73	ZAE	144.53	ETE	163.65	ZAC	95.56	ETC	256.68

V1 29.848 V2 24.339 CLP 109.09

PLANETOCENTRIC CONIC

C3	15.632	VHL	3.954	DLA	14.15	RAL	161.31	RAD	6567.6	VEL	11.705	PTH	2.06	VHP	3.009	DPA	12.03	RAP	179.38

ECC 1.2573

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 50 20	2612.78	-26.82	68.31	23.18	99.44	19 33 52	2012.8	-25.24	60.00
90.00	10 34 49	4345.59	4.72	180.12	18.02	62.05	11 47 15	3745.6	.94	173.47
100.00	20 19 11	2326.21	-28.00	46.99	22.95	100.93	20 57 57	1726.2	-26.20	38.65
100.00	11 48 39	4107.39	5.77	162.03	17.44	60.62	12 57 6	3507.4	1.81	155.48
110.00	21 44 16	2059.98	-31.09	25.96	22.13	104.98	22 18 36	1460.0	-28.72	17.56
110.00	12 40 3	3946.38	8.46	148.15	15.78	56.76	13 45 50	3346.4	4.05	141.87

DIFFERENTIAL CORRECTIONS

TDE	.2263	TRA	-.1620	TC3	-.8606	BAU	.3619
RDE	.6390	RRA	-.8359	RC3	1.5024	FAU	.53787
FDE	-6.6340	FRA	20.2423	FC	-29.7876	BSP	6498
BDE	.6779	BRA	.8515	BC3	1.7314	FSP	11630

MID-COURSE EXECUTION ACCURACY

SGT	793.2	SGR	1956.9	SG3	3415.2		
RRT	-.1303	RRF	-.9654	RTF	.1771		
SGB	2141.6	RZ3	-.0273	RZ3	-.9664		
SG1	1960.2	SG2	785.2	THA	93.60		

ORBIT DETERMINATION ACCURACY

ST	336.5	SR	999.6	SS	3442.0
CRT	.9815	CRS	.9316	CST	.8523
LSA	3578.9	MSA	387.8	SSA	26.2
EL1	1052.9	EL2	61.1	ALF	71.65

LAUNCH DATE OCT 12 1964 FLIGHT TIME 312.00 ARRIVAL DATE AUG 20 1965

HELIOCENTRIC CONIC DISTANCE 720.254 EARTH TO MARS

RL 149.28 LAL .00 LOL 18.70 VL 32.622 GAL -6.07 AZL 89.26 HCA 227.66 SMA 185.90 ECC .22264 INC .7349 V1 29.848
RP 225.58 LAP -.54 LOP 246.36 VP 21.512 GAP -3.72 AZP 90.50 TAL 325.55 TAP 193.21 RCA 144.51 APO 227.29 V2 24.381
RC 249.803 GL 6.04 GP 9.20 ZAL 138.40 ZAP 106.91 ETS 176.12 ZAE 142.51 ETE 164.85 ZAC 95.31 ETC 256.77 CLP 107.14

PLANETOCENTRIC CONIC

C3 15.630 VHL 3.953 DLA 14.37 RAL 161.48 RAD 6567.6 VEL 11.705 PTH 2.06 VHP 2.983 DPA 12.34 RAP 178.54 ECC 1.2572

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 49 1	2620.54	-26.91	68.86	23.44	99.18	19 32 41	2020.5	-25.36	60.54
90.00	10 37 29	4337.74	4.47	179.68	18.21	62.91	11 49 47	3737.7	.69	173.04
100.00	20 18 2	2333.47	-28.09	47.51	23.21	100.67	20 56 55	1733.5	-26.33	39.15
100.00	11 51 9	4100.05	5.53	161.62	17.63	60.58	12 59 29	3500.0	1.56	155.08
110.00	21 43 27	2066.20	-31.20	26.41	22.40	104.73	22 17 53	1466.2	-28.86	17.99
110.00	12 42 14	3940.08	8.25	147.82	15.96	56.71	13 47 54	3340.1	3.81	141.54

DIFFERENTIAL CORRECTIONS
TDE .1700 TRA .0220 TC3-1.1113 BAU .3922
RDE .6439 RRA -.8353 RC3 1.5124 FAU .54739
FDE-6.7293 FRA20.5525 FC-30.3202 BSP 6526
BDE .6660 BRA .8356 BC3 1.8769 FSP 11816

MID-COURSE EXECUTION ACCURACY
SGT 913.2 SGR 1965.4 SG3 3472.5
RRT -.4803 RRF -.9646 RTF .5361
SGB 2167.2 R23 .0152 R13 -.9681
SG1 2022.6 SG2 778.3 THA 104.82

ORBIT DETERMINATION ACCURACY
ST 248.0 SR 1006.3 SS 3465.2
CRT .9027 CRS .9303 CST .6878
LSA 3595.1 MSA 396.2 SSA 25.8
EL1 1031.2 EL2 104.1 ALF 77.32

LAUNCH DATE OCT 12 1964 FLIGHT TIME 314.00 ARRIVAL DATE AUG 22 1965

HELIOCENTRIC CONIC DISTANCE 724.198 EARTH TO MARS

RL 149.28 LAL .00 LOL 18.70 VL 32.617 GAL -6.08 AZL 89.23 HCA 228.73 SMA 185.83 ECC .22241 INC .7664 V1 29.848
RP 225.19 LAP -.58 LOP 247.43 VP 21.553 GAP -3.98 AZP 90.51 TAL 325.48 TAP 194.21 RCA 144.50 APO 227.16 V2 24.423
RC 251.477 GL 6.30 GP 9.13 ZAL 138.45 ZAP 104.97 ETS 176.50 ZAE 140.44 ETE 165.96 ZAC 95.05 ETC 256.86 CLP 105.16

PLANETOCENTRIC CONIC

C3 15.638 VHL 3.954 DLA 14.58 RAL 161.66 RAD 6567.6 VEL 11.706 PTH 2.06 VHP 2.961 DPA 12.65 RAP 177.67 ECC 1.2574

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 47 52	2627.98	-26.99	69.39	23.71	98.92	19 31 40	2028.0	-25.48	61.05
90.00	10 40 4	4330.54	4.24	179.27	18.42	61.98	11 52 15	3730.5	.46	172.63
100.00	20 17 2	2340.43	-28.18	48.01	23.48	100.42	20 56 2	1740.4	-26.45	39.64
100.00	11 53 35	4093.32	5.30	161.25	17.84	60.54	13 1 49	3493.3	1.34	154.71
110.00	21 42 46	2072.18	-31.30	26.85	22.69	104.49	22 17 18	1472.2	-29.00	18.40
110.00	12 44 21	3934.34	8.03	147.51	16.16	56.66	13 49 55	3334.3	3.59	141.24

DIFFERENTIAL CORRECTIONS
TDE .1122 TRA .2109 TC3-1.3710 BAU .4278
RDE .6485 RRA -.8336 RC3 1.5190 FAU .55573
FDE-6.8138 FRA20.8275 FC-30.7861 BSP 6779
BDE .6581 BRA .8598 BC3 2.0462 FSP 11985

MID-COURSE EXECUTION ACCURACY
SGT 1141.0 SGR 1970.7 SG3 3522.1
RRT -.6867 RRF -.9637 RTF .7444
SGB 2277.1 R23 .0456 R13 -.9693
SG1 2146.0 SG2 761.7 THA 115.05

ORBIT DETERMINATION ACCURACY
ST 190.9 SR 1012.1 SS 3484.8
CRT .6008 CRS .9289 CST .2673
LSA 3611.1 MSA 404.3 SSA 25.4
EL1 1018.7 EL2 151.6 ALF 83.39

LAUNCH DATE OCT 12 1964 FLIGHT TIME 316.00 ARRIVAL DATE AUG 24 1965

HELIOCENTRIC CONIC DISTANCE 728.149 EARTH TO MARS

RL 149.28 LAL .00 LOL 18.70 VL 32.613 GAL -6.09 AZL 89.20 HCA 229.80 SMA 185.76 ECC .22223 INC .7971 V1 29.848
RP 224.80 LAP -.61 LOP 248.50 VP 21.594 GAP -4.24 AZP 90.51 TAL 325.40 TAP 195.20 RCA 144.48 APO 227.05 V2 24.465
RC 253.132 GL 6.55 GP 9.05 ZAL 138.52 ZAP 103.00 ETS 176.88 ZAE 138.34 ETE 166.99 ZAC 94.79 ETC 256.96 CLP 103.17

PLANETOCENTRIC CONIC

C3 15.657 VHL 3.957 DLA 14.77 RAL 161.85 RAD 6567.6 VEL 11.706 PTH 2.06 VHP 2.943 DPA 12.97 RAP 176.79 ECC 1.2577

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 46 53	2635.08	-27.06	69.90	24.00	98.68	19 30 48	2035.1	-25.58	61.54
90.00	10 42 34	4323.99	4.03	178.91	18.66	61.95	11 54 38	3724.0	.25	172.27
100.00	20 16 11	2347.09	-28.26	48.49	23.78	100.18	20 55 18	1747.1	-26.56	40.10
100.00	11 55 57	4087.22	5.10	160.91	18.07	60.51	13 4 4	3487.2	1.13	154.37
110.00	21 42 12	2077.92	-31.40	27.27	22.99	104.26	22 16 50	1477.9	-29.12	18.80
110.00	12 46 25	3929.15	7.84	147.24	16.38	56.62	13 51 54	3329.2	3.39	140.97

DIFFERENTIAL CORRECTIONS
TDE .0528 TRA .4042 TC3-1.6388 BAU .4681
RDE .6526 RRA -.8310 RC3 1.5214 FAU .56255
FDE-6.8840 FRA21.0712 FC-31.1051 BSP 7248
BDE .6548 BRA .9240 BC3 2.2361 FSP 12139

MID-COURSE EXECUTION ACCURACY
SGT 1433.2 SGR 1972.6 SG3 3563.3
RRT -.7931 RRF -.9627 RTF .8503
SGB 2438.3 R23 .0624 R13 -.9712
SG1 2322.9 SG2 741.2 THA 123.86

ORBIT DETERMINATION ACCURACY
ST 200.8 SR 1016.7 SS 3500.2
CRT .0150 CRS .9274 CST -.3564
LSA 3627.0 MSA 412.4 SSA 25.0
EL1 1016.7 EL2 200.8 ALF 89.82

LAUNCH DATE OCT 12 1964 FLIGHT TIME 318.00 ARRIVAL DATE AUG 26 1965

HELIOCENTRIC CONIC DISTANCE 732.107 EARTH TO MARS

RL 149.28 LAL .00 LOL 18.70 VL 32.610 GAL -6.10 AZL 89.17 HCA 230.87 SMA 185.70 ECC .22210 INC .8269 V1 29.848
RP 224.41 LAP -.64 LOP 249.58 VP 21.636 GAP -4.50 AZP 90.52 TAL 325.31 TAP 196.18 RCA 144.46 APO 226.95 V2 24.506
RC 254.766 GL 6.79 GP 8.97 ZAL 138.59 ZAP 101.02 ETS 177.26 ZAE 136.22 ETE 167.94 ZAC 94.52 ETC 257.06 CLP 101.16

PLANETOCENTRIC CONIC

C3 15.687 VHL 3.961 DLA 14.95 RAL 162.05 RAD 6567.6 VEL 11.708 PTH 2.06 VHP 2.928 DPA 13.29 RAP 175.89 ECC 1.2582

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 46 3	2641.86	-27.13	70.38	24.31	98.44	19 30 5	2041.9	-25.68	62.02
90.00	10 44 59	4318.09	3.84	178.58	18.91	61.92	11 56 57	3718.1	.06	171.94
100.00	20 15 29	2353.45	-28.33	48.95	24.09	99.95	20 54 42	1753.4	-26.67	40.54
100.00	11 58 14	4081.74	4.91	160.61	18.32	60.48	13 6 16	3481.7	.94	154.07
110.00	21 41 47	2083.42	-31.49	27.67	23.31	104.04	22 16 31	1483.4	-29.24	19.19
110.00	12 48 26	3924.53	7.67	146.99	16.62	56.59	13 53 50	3324.5	3.22	140.73

DIFFERENTIAL CORRECTIONS
TDE -.0078 TRA .6018 TC3-1.9121 BAU .5124
RDE .6565 RRA -.8270 RC3 1.5207 FAU .56824
FDE-6.9437 FRA21.2724 FC-31.3593 BSP 7902
BDE .6565 BRA 1.0228 BC3 2.4431 FSP 12265

MID-COURSE EXECUTION ACCURACY
SGT 1762.4 SGR 1971.3 SG3 3596.2
RRT -.8494 RRF -.9616 RTF .9057
SGB 2644.3 R23 .0682 R13 -.9739
SG1 2544.1 SG2 720.8 THA 131.24

ORBIT DETERMINATION ACCURACY
ST 274.3 SR 1020.4 SS 3512.0
CRT -.4029 CRS .9258 CST -.7168
LSA 3643.3 MSA 420.2 SSA 24.6
EL1 1026.7 EL2 249.5 ALF 96.57

LAUNCH DATE OCT 12 1964 FLIGHT TIME 320.00 ARRIVAL DATE AUG 28 1965

HELIOCENTRIC CONIC DISTANCE 736.072 EARTH TO MARS

RL 149.28 LAL .00 LOL 18.70 VL 32.607 GAL -6.12 AZL 89.14 HCA 231.95 SMA 185.65 ECC .22201 INC .8559 V1 29.848
RP 224.02 LAP -.67 LOP 250.65 VP 21.679 GAP -4.75 AZP 90.53 TAL 325.21 TAP 197.16 RCA 144.43 APO 226.86 V2 24.548
RC 256.380 GL 7.02 GP 8.89 ZAL 138.69 ZAP 99.02 ETS 177.62 ZAE 134.07 ETE 168.83 ZAC 94.24 ETC 257.16 CLP 99.13

PLANETOCENTRIC CONIC

C3 15.729 VHL 3.966 DLA 15.11 RAL 162.26 RAD 6567.6 VEL 11.710 PTH 2.06 VHP 2.916 DPA 13.60 RAP 174.99 ECC 1.2589

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 45 23	2648.32	-27.19	70.85	24.63	98.22	19 29 32	2048.3	-25.77	62.47
90.00	10 47 20	4312.83	3.67	178.28	19.18	61.90	11 59 12	3712.8	-.11	171.65
100.00	20 14 57	2359.51	-28.40	49.39	24.41	99.73	20 54 16	1759.5	-26.77	40.97
100.00	12 0 27	4076.87	4.75	160.34	18.58	60.45	13 8 24	3476.9	.78	153.80
110.00	21 41 30	2088.69	-31.58	28.06	23.65	103.83	22 16 19	1488.7	-29.35	19.55
110.00	12 50 23	3920.46	7.51	146.77	16.88	56.55	13 55 44	3320.5	3.06	140.51

DIFFERENTIAL CORRECTIONS
TDE -.0697 TRA .8033 TC3-2.1900 BAU .5601
RDE .6601 RRA -.8216 RC3 1.5163 FAU .57257
FDE-6.9942 FRA21.4300 FC-31.5147 BSP 8711
BDE .6638 BRA 1.1491 BC3 2.6637 FSP 12360

MID-COURSE EXECUTION ACCURACY
SGT 2114.8 SGR 1966.7 SG3 3619.9
RRT -.8808 RRF -.9603 RTF .9366
SGB 2888.0 R23 .0677 R13 -.9770
SG1 2801.0 SG2 703.2 THA 137.36

ORBIT DETERMINATION ACCURACY
ST 378.0 SR 1023.2 SS 3520.7
CRT -.5970 CRS .9242 CST -.8569
LSA 3660.8 MSA 427.7 SSA 24.2
EL1 1050.0 EL2 295.5 ALF 103.53

LAUNCH DATE OCT 12 1964 FLIGHT TIME 322.00 ARRIVAL DATE AUG 30 1965

HELIOCENTRIC CONIC DISTANCE 740.045 EARTH TO MARS

RL 149.28 LAL .00 LOL 18.70 VL 32.604 GAL -6.13 AZL 89.12 HCA 233.03 SMA 185.60 ECC .22197 INC .8842 V1 29.848
RP 223.63 LAP -.71 LOP 251.74 VP 21.722 GAP -5.00 AZP 90.53 TAL 325.09 TAP 198.13 RCA 144.40 APO 226.80 V2 24.590
RC 257.974 GL 7.23 GP 8.80 ZAL 138.79 ZAP 97.02 ETS 177.98 ZAE 131.91 ETE 169.66 ZAC 93.96 ETC 257.27 CLP 97.10

PLANETOCENTRIC CONIC

C3 15.782 VHL 3.973 DLA 15.26 RAL 162.48 RAD 6567.6 VEL 11.712 PTH 2.06 VHP 2.909 DPA 13.91 RAP 174.07 ECC 1.2597

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 44 53	2654.45	-27.25	71.28	24.97	98.01	19 29 8	2054.4	-25.86	62.89
90.00	10 49 35	4308.22	3.53	178.02	19.47	61.89	12 1 23	3708.2	-.26	171.39
100.00	20 14 33	2365.28	-28.47	49.80	24.76	99.52	20 53 59	1765.3	-26.86	41.37
100.00	12 2 36	4072.62	4.61	160.11	18.87	60.43	13 10 29	3472.6	.63	153.57
110.00	21 41 21	2093.71	-31.66	28.43	24.00	103.62	22 16 14	1493.7	-29.46	19.91
110.00	12 52 18	3916.94	7.38	146.59	17.16	56.53	13 57 35	3316.9	2.93	140.33

DIFFERENTIAL CORRECTIONS
TDE -.1324 TRA 1.0085 TC3-2.4696 BAU .6106
RDE .6636 RRA -.8149 RC3 1.5085 FAU .57552
FDE-7.0349 FRA21.5413 FC-31.5715 BSP 9648
BDE .6766 BRA 1.2966 BC3 2.8939 FSP 12429

MID-COURSE EXECUTION ACCURACY
SGT 2481.9 SGR 1958.7 SG3 3634.2
RRT -.8992 RRF -.9590 RTF .9551
SGB 3161.7 R23 .0637 R13 -.9801
SG1 3085.6 SG2 689.3 THA 142.44

ORBIT DETERMINATION ACCURACY
ST 494.5 SR 1025.1 SS 3525.9
CRT -.6909 CRS .9225 CST -.9156
LSA 3679.3 MSA 435.2 SSA 23.8
EL1 1087.0 EL2 337.1 ALF 110.49

LAUNCH DATE OCT 12 1964 FLIGHT TIME 324.00 ARRIVAL DATE SEP 1 1965

HELIOCENTRIC CONIC DISTANCE 744.024 EARTH TO MARS

RL 149.28 LAL .00 LOL 18.70 VL 32.601 GAL -6.15 AZL 89.09 HCA 234.12 SMA 185.55 ECC .22197 INC .9417 V1 29.848
RP 223.24 LAP -.74 LOP 252.82 VP 21.766 GAP -5.25 AZP 90.53 TAL 324.96 TAP 199.08 RCA 144.37 APO 226.74 V2 24.632
RC 259.547 GL 7.45 GP 8.70 ZAL 138.91 ZAP 95.01 ETS 178.33 ZAE 129.73 ETE 170.44 ZAC 93.68 ETC 257.39 CLP 95.07

PLANETOCENTRIC CONIC

C3 15.846 VHL 3.981 DLA 15.40 RAL 162.71 RAD 6567.6 VEL 11.715 PTH 2.06 VHP 2.904 DPA 14.21 RAP 173.15 ECC 1.2608

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 44 33	2660.25	-27.31	71.70	25.33	97.81	19 28 53	2060.2	-25.94	63.30
90.00	10 51 46	4304.25	3.40	177.80	19.77	61.87	12 3 30	3704.2	-.39	171.17
100.00	20 14 19	2370.75	-28.53	50.20	25.12	99.32	20 53 50	1770.7	-26.95	41.75
100.00	12 4 41	4068.98	4.48	159.91	19.17	60.41	13 12 30	3469.0	.51	153.37
110.00	21 41 20	2098.51	-31.73	28.78	24.37	103.43	22 16 18	1498.5	-29.56	20.24
110.00	12 54 9	3913.98	7.27	146.43	17.45	56.51	13 59 23	3314.0	2.82	140.17

DIFFERENTIAL CORRECTIONS
TDE -.1963 TRA 1.2168 TC3-2.7514 BAU .6636
RDE .6668 RRA -.8066 RC3 1.4976 FAU .57725
FDE-7.0660 FRA21.6037 FC-31.5387 BSP 10668
BDE .6951 BRA 1.4599 BC3 3.1326 FSP 12459

MID-COURSE EXECUTION ACCURACY
SGT 2859.8 SGR 1947.5 SG3 3639.2
RRT -.9104 RRF -.9574 RTF .9669
SGB 3459.9 R23 .0508 R13 -.9829
SG1 3392.6 SG2 679.1 THA 146.69

ORBIT DETERMINATION ACCURACY
ST 617.4 SR 1026.1 SS 3527.8
CRT -.7425 CRS .9209 CST -.9444
LSA 3699.1 MSA 442.4 SSA 23.3
EL1 1138.0 EL2 372.9 ALF 117.24

LAUNCH DATE OCT 12 1964 FLIGHT TIME 326.00 ARRIVAL DATE SEP 3 1965

HELIOCENTRIC CONIC DISTANCE 748.011 EARTH TO MARS

RL 149.28 LAL .00 LOL 18.70 VL 32.599 GAL -6.18 AZL 89.06 HCA 235.21 SMA 185.52 ECC .22202 INC .9386 V1 29.848
RP 222.85 LAP -.77 LOP 253.91 VP 21.810 GAP -5.49 AZP 90.54 TAL 324.82 TAP 200.03 RCA 144.33 APO 226.70 V2 24.674
RC 261.100 GL 7.65 GP 8.60 ZAL 139.05 ZAP 93.00 ETS 178.67 ZAE 127.54 ETE 171.17 ZAC 93.39 ETC 257.50 CLP 93.03

PLANETOCENTRIC CONIC

C3 15.921 VHL 3.990 DLA 15.52 RAL 162.95 RAD 6567.6 VEL 11.718 PTH 2.06 VHP 2.904 DPA 14.51 RAP 172.23 ECC 1.2620

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 44 23	2665.72	-27.36	72.09	25.70	97.62	19 28 49	2065.7	-26.02	63.68
90.00	10 53 51	4300.92	3.29	177.61	20.10	61.86	12 5 32	3700.9	-.50	170.98
100.00	20 14 15	2375.92	-28.59	50.57	25.49	99.13	20 53 51	1775.9	-27.03	42.12
100.00	12 6 41	4065.96	4.38	159.74	19.49	60.40	13 14 27	3466.0	.41	153.21
110.00	21 41 27	2103.08	-31.81	29.12	24.76	103.24	22 16 30	1503.1	-29.66	20.56
110.00	12 55 58	3911.56	7.18	146.30	17.77	56.49	14 1 9	3311.6	2.72	140.05

DIFFERENTIAL CORRECTIONS
TDE -.2613 TRA 1.4281 TC3-3.0325 BAU .7185
RDE .6696 RRA -.7970 RC3 1.4830 FAU .57740
FDE-7.0826 FRA21.6219 FC-31.3973 BSP 11767
BDE .7188 BRA 1.6355 BC3 3.3757 FSP 12460

MID-COURSE EXECUTION ACCURACY
SGT 3244.6 SGR 1932.8 SG3 3634.5
RRT -.9173 RRF -.9557 RTF .9747
SGB 3776.6 R23 .0538 R13 -.9854
SG1 3716.4 SG2 671.8 THA 150.28

ORBIT DETERMINATION ACCURACY
ST 744.1 SR 1026.0 SS 3525.4
CRT -.7739 CRS .9190 CST -.9605
LSA 3719.2 MSA 449.3 SSA 22.9
EL1 1201.9 EL2 402.3 ALF 123.55

LAUNCH DATE OCT 12 1964 FLIGHT TIME 328.00 ARRIVAL DATE SEP 5 1965

HELIOCENTRIC CONIC DISTANCE 752.004 EARTH TO MARS

RL	149.28	LAL	.00	LOL	18.70	VL	32.597	GAL	-6.21	AZL	89.03	HCA	236.30	SMA	185.48	ECC	.22211	INC	.9649
RP	222.47	LAP	-.80	LOP	255.00	VP	21.854	GAP	-5.73	AZP	90.54	TAL	324.67	TAP	200.97	RCA	144.28	APO	226.68
RC	262.633	GL	7.84	GP	8.49	ZAL	139.20	ZAP	90.99	ETS	179.01	ZAE	125.35	ETE	171.85	ZAC	93.10	ETC	257.62

V1 29.848 V2 24.716 CLP 91.00

PLANETOCENTRIC CONIC

C3 16.008 VHL 4.001 DLA 15.63 RAL 163.20 RAD 6567.6 VEL 11.721 PTH 2.07 VHP 2.907 DPA 14.79 RAP 171.31 ECC 1.2634

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 44 23	2670.87	-27.40	72.46	26.09	97.44	19 28 53	2070.9	-26.09	64.04
90.00	10 55 52	4298.24	3.21	177.46	20.44	61.85	12 7 30	3698.2	-.58	170.83
100.00	20 14 19	2380.81	-28.64	50.93	25.89	98.95	20 54 0	1780.8	-27.11	42.46
100.00	12 8 36	4063.54	4.30	159.60	19.84	60.39	13 16 20	3463.5	.33	153.07
110.00	21 41 42	2107.42	-31.87	29.44	25.16	103.06	22 16 49	1507.4	-29.75	20.87
110.00	12 57 43	3909.70	7.11	146.20	18.10	56.48	14 2 53	3309.7	2.65	139.95

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3272	TRA	1.6416	TC3	-3.3118	BAU	.7750	SGT	3633.4	SGR	1915.1	SG3	3620.1	ST	873.0	SR	1025.3	SS	3520.4
RDE	.6724	RRA	-.7859	RC3	1.4652	FAU	.57616	RRT	-.9214	RRF	-.9538	RTF	.9801	CRT	-.7940	CRS	.9173	CST	-.9701
FDE	-7.0929	FRA	21.5892	FC	-31.1604	BSP	12921	SGB	4107.2	R23	.0493	R13	-.9875	LSA	3741.4	MSA	456.1	SSA	22.4
BDE	.7477	BRA	1.8200	BC3	3.6214	FSP	12433	SG1	4052.6	SG2	667.4	THA	153.32	EL1	1277.5	EL2	426.0	ALF	129.25

LAUNCH DATE OCT 12 1964 FLIGHT TIME 330.00 ARRIVAL DATE SEP 7 1965

HELIOCENTRIC CONIC DISTANCE 756.003 EARTH TO MARS

RL	149.28	LAL	.00	LOL	18.70	VL	32.595	GAL	-6.24	AZL	89.01	HCA	237.40	SMA	185.45	ECC	.22224	INC	.9907
RP	222.08	LAP	-.83	LOP	256.10	VP	21.899	GAP	-5.96	AZP	90.53	TAL	324.51	TAP	201.91	RCA	144.24	APO	226.67
RC	264.145	GL	8.02	GP	8.38	ZAL	139.36	ZAP	88.99	ETS	179.33	ZAE	123.16	ETE	172.49	ZAC	92.81	ETC	257.73

V1 29.848 V2 24.758 CLP 88.98

PLANETOCENTRIC CONIC

C3 16.106 VHL 4.013 DLA 15.72 RAL 163.46 RAD 6567.6 VEL 11.726 PTH 2.07 VHP 2.913 DPA 15.07 RAP 170.40 ECC 1.2651

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 44 32	2675.70	-27.44	72.81	26.50	97.27	19 29 8	2075.7	-26.15	64.38
90.00	10 57 48	4296.20	3.14	177.35	20.80	61.84	12 9 24	3696.2	-.65	170.72
100.00	20 14 33	2385.40	-28.69	51.26	26.30	98.78	20 54 19	1785.4	-27.18	42.78
100.00	12 10 28	4061.74	4.24	159.51	20.19	60.38	13 18 10	3461.7	.26	152.97
110.00	21 42 5	2111.53	-31.94	29.74	25.58	102.89	22 17 17	1511.5	-29.83	21.16
110.00	12 59 25	3908.37	7.06	146.13	18.45	56.47	14 4 34	3308.4	2.60	139.88

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3939	TRA	1.8575	TC3	-3.5875	BAU	.8327	SGT	4024.6	SGR	1894.3	SG3	3596.6	ST	1003.4	SR	1023.5	SS	3511.3
RDE	.6747	RRA	-.7737	RC3	1.4443	FAU	.57351	RRT	-.9235	RRF	-.9517	RTF	.9840	CRT	-.8074	CRS	.9153	CST	-.9764
FDE	-7.0882	FRA	21.5141	FC	-30.8273	BSP	14108	SGB	4448.1	R23	.0455	R13	-.9893	LSA	3764.2	MSA	462.7	SSA	22.0
BDE	.7813	BRA	2.0122	BC3	3.8673	FSP	12366	SG1	4398.2	SG2	664.8	THA	155.92	EL1	1362.6	EL2	444.7	ALF	134.29

LAUNCH DATE OCT 12 1964 FLIGHT TIME 332.00 ARRIVAL DATE SEP 9 1965

HELIOCENTRIC CONIC DISTANCE 760.008 EARTH TO MARS

RL	149.28	LAL	.00	LOL	18.70	VL	32.594	GAL	-6.27	AZL	88.98	HCA	238.50	SMA	185.43	ECC	.22242	INC	1.0158
RP	221.70	LAP	-.87	LOP	257.20	VP	21.943	GAP	-6.20	AZP	90.53	TAL	324.33	TAP	202.83	RCA	144.18	APO	226.67
RC	265.639	GL	8.20	GP	8.27	ZAL	139.54	ZAP	87.00	ETS	179.65	ZAE	120.98	ETE	173.10	ZAC	92.51	ETC	257.85

V1 29.848 V2 24.799 CLP 86.97

PLANETOCENTRIC CONIC

C3 16.217 VHL 4.027 DLA 15.80 RAL 163.73 RAD 6567.7 VEL 11.730 PTH 2.07 VHP 2.923 DPA 15.33 RAP 169.50 ECC 1.2669

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 44 52	2680.21	-27.48	73.14	26.92	97.11	19 29 32	2080.2	-26.21	64.70
90.00	10 59 39	4294.81	3.09	177.27	21.18	61.84	12 11 14	3694.8	-.69	170.64
100.00	20 14 57	2389.70	-28.73	51.57	26.73	98.62	20 54 47	1789.7	-27.24	43.09
100.00	12 12 15	4060.55	4.20	159.44	20.57	60.38	13 19 56	3460.5	.22	152.91
110.00	21 42 37	2115.42	-32.00	30.03	26.01	102.73	22 17 52	1515.4	-29.91	21.44
110.00	13 1 5	3907.60	7.03	146.09	18.82	56.46	14 6 12	3307.6	2.57	139.84

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.4619	TRA	2.0743	TC3	-3.8587	BAU	.8915	SGT	4415.8	SGR	1870.9	SG3	3563.9	ST	1134.6	SR	1021.2	SS	3499.8
RDE	.6771	RRA	-.7600	RC3	1.4206	FAU	.56956	RRT	-.9243	RRF	-.9494	RTF	.9868	CRT	-.8169	CRS	.9135	CST	-.9807
FDE	-7.0782	FRA	21.3892	FC	-30.4062	BSP	15322	SGB	4795.7	R23	.0424	R13	-.9907	LSA	3789.3	MSA	468.9	SSA	21.5
BDE	.8196	BRA	2.2092	BC3	4.1119	FSP	12269	SG1	4749.6	SG2	663.8	THA	158.17	EL1	1455.9	EL2	459.1	ALF	138.68

LAUNCH DATE OCT 12 1964 FLIGHT TIME 334.00 ARRIVAL DATE SEP 11 1965

HELIOCENTRIC CONIC DISTANCE 764.018 EARTH TO MARS

RL	149.28	LAL	.00	LOL	18.70	VL	32.592	GAL	-6.31	AZL	88.96	HCA	239.61	SMA	185.41	ECC	.22264	INC	1.0405
RP	221.32	LAP	-.90	LOP	258.31	VP	21.989	GAP	-6.42	AZP	90.53	TAL	324.14	TAP	203.74	RCA	144.13	APO	226.68
RC	267.114	GL	8.37	GP	8.15	ZAL	139.73	ZAP	85.03	ETS	179.95	ZAE	118.81	ETE	173.66	ZAC	92.22	ETC	257.97

V1 29.848 V2 24.841 CLP 84.98

PLANETOCENTRIC CONIC

C3 16.339 VHL 4.042 DLA 15.87 RAL 164.02 RAD 6567.7 VEL 11.736 PTH 2.07 VHP 2.937 DPA 15.58 RAP 168.62 ECC 1.2689

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 45 22	2684.39	-27.52	73.44	27.36	96.96	19 30 6	2084.4	-26.27	64.99
90.00	11 1 25	4294.08	3.07	177.23	21.58	61.84	12 12 59	3694.1	-.72	170.60
100.00	20 15 30	2393.71	-28.77	51.86	27.17	98.48	20 55 24	1793.7	-27.30	43.37
100.00	12 13 58	4059.99	4.18	159.41	20.97	60.37	13 21 38	3460.0	.21	152.88
110.00	21 43 16	2119.08	-32.05	30.30	26.47	102.58	22 18 35	1519.1	-29.99	21.69
110.00	13 2 41	3907.38	7.02	146.08	19.21	56.46	14 7 48	3307.4	2.56	139.83

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.5275	TRA	2.2978	TC3	-4.1166	BAU	.9489	SGT	4806.3	SGR	1841.7	SG3	3520.0	ST	1265.3	SR	1014.7	SS	3471.9
RDE	.6764	RRA	-.7481	RC3	1.3871	FAU	.56109	RRT	-.9243	RRF	-.9466	RTF	.9888	CRT	-.8226	CRS	.9099	CST	-.9842
FDE	-6.9877	FRA	21.2881	FC	-29.7290	BSP	16660	SGB	5147.0	R23	.0394	R13	-.9917	LSA	3802.4	MSA	475.3	SSA	21.3
BDE	.8577	BRA	2.4165	BC3	4.3441	FSP	12276	SG1	5104.3	SG2	661.9	THA	160.15	EL1	1552.2	EL2	470.3	ALF	142.57

LAUNCH DATE OCT 12 1964 FLIGHT TIME 336.00 ARRIVAL DATE SEP 13 1965

HELIOCENTRIC CONIC DISTANCE 768.037 EARTH TO MARS

RL	149.28	LAL	.00	LOL	18.70	VL	32.591	GAL	-6.34	AZL	88.94	HCA	240.71	SMA	185.39	ECC	.22290	INC	1.0647	V1	29.848
RP	220.94	LAP	-.93	LOP	259.41	VP	22.034	GAP	-6.65	AZP	90.52	TAL	323.93	TAP	204.65	RCA	144.07	APO	226.71	V2	24.883
RC	268.570	GL	8.53	GP	8.02	ZAL	139.94	ZAP	83.08	ETS	180.24	ZAE	116.65	ETE	174.20	ZAC	91.94	ETC	258.09	CLP	83.01

PLANETOCENTRIC CONIC

C3	16.474	VHL	4.059	DLA	15.93	RAL	164.31	RAD	6567.7	VEL	11.741	PTH	2.07	VHP	2.954	DPA	15.81	RAP	167.76	ECC	1.2711

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 46 1	2688.27	-27.55	73.72	27.82	96.83	19 30 49	2088.3	-26.32	65.26
90.00	11 3 6	4293.95	3.07	177.22	22.00	61.84	12 14 40	3694.0	-.72	170.59
100.00	20 16 12	2397.45	-28.81	52.13	27.63	98.34	20 56 9	1797.4	-27.36	43.63
100.00	12 15 37	4060.00	4.18	159.41	21.38	60.37	13 23 17	3460.0	.21	152.88
110.00	21 44 4	2122.54	-32.10	30.56	26.93	102.43	22 19 26	1522.5	-30.06	21.94
110.00	13 4 14	3907.68	7.03	146.10	19.62	56.46	14 9 22	3307.7	2.57	139.85

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.5983	TRA	2.5147	TC3	-4.3769	BAU	1.0096	SGT	5192.7	SGR	1814.8	SG3	3471.7	ST	1396.8	SR	1012.5	SS	3459.5
RDE	.6796	RRA	-.7309	RC3	1.3617	FAU	.55602	RRT	-.9230	RRF	-.9439	RTF	.9905	CRT	-.8275	CRS	.9087	CST	-.9862
FDE	-6.9875	FRA	21.0480	FC	-29.2194	BSP	17847	SGB	5500.7	R23	.0377	R13	-.9928	LSA	3835.7	MSA	480.9	SSA	20.7
BDE	.9054	BRA	2.6188	BC3	4.5839	FSP	12057	SG1	5460.5	SG2	663.9	THA	161.84	EL1	1657.3	EL2	479.1	ALF	145.79

LAUNCH DATE OCT 12 1964 FLIGHT TIME 338.00 ARRIVAL DATE SEP 15 1965

HELIOCENTRIC CONIC DISTANCE 772.061 EARTH TO MARS

RL	149.28	LAL	.00	LOL	18.70	VL	32.591	GAL	-6.39	AZL	88.91	HCA	241.83	SMA	185.38	ECC	.22321	INC	1.0884	V1	29.848
RP	220.56	LAP	-.96	LOP	260.53	VP	22.080	GAP	-6.87	AZP	90.51	TAL	323.72	TAP	205.55	RCA	144.00	APO	226.76	V2	24.924
RC	270.009	GL	8.68	GP	7.89	ZAL	140.16	ZAP	81.15	ETS	180.52	ZAE	114.52	ETE	174.70	ZAC	91.65	ETC	258.21	CLP	81.07

PLANETOCENTRIC CONIC

C3	16.622	VHL	4.077	DLA	15.97	RAL	164.62	RAD	6567.7	VEL	11.748	PTH	2.07	VHP	2.975	DPA	16.03	RAP	166.92	ECC	1.2736

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 46 50	2691.83	-27.58	73.97	28.30	96.70	19 31 42	2091.8	-26.36	65.52
90.00	11 4 43	4294.47	3.08	177.25	22.43	61.84	12 16 17	3694.5	-.71	170.62
100.00	20 17 3	2400.91	-28.84	52.38	28.11	98.21	20 57 4	1800.9	-27.41	43.88
100.00	12 17 11	4060.63	4.20	159.44	21.81	60.38	13 24 52	3460.6	.23	152.91
110.00	21 44 59	2125.78	-32.15	30.80	27.42	102.30	22 20 25	1525.8	-30.12	22.17
110.00	13 5 45	3908.51	7.06	146.14	20.05	56.47	14 10 53	3308.5	2.61	139.89

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.6693	TRA	2.7336	TC3	-4.6264	BAU	1.0699	SGT	5575.2	SGR	1785.3	SG3	3415.3	ST	1527.9	SR	1008.9	SS	3441.8
RDE	.6821	RRA	-.7136	RC3	1.3324	FAU	.54901	RRT	-.9211	RRF	-.9410	RTF	.9918	CRT	-.8306	CRS	.9071	CST	-.9877
FDE	-6.9641	FRA	20.7851	FC	-28.5946	BSP	19056	SGB	5854.0	R23	.0364	R13	-.9936	LSA	3868.0	MSA	486.5	SSA	20.1
BDE	.9557	BRA	2.8252	BC3	4.8145	FSP	11838	SG1	5816.0	SG2	666.2	THA	163.34	EL1	1765.2	EL2	486.3	ALF	148.60

LAUNCH DATE OCT 12 1964 FLIGHT TIME 340.00 ARRIVAL DATE SEP 17 1965

HELIOCENTRIC CONIC DISTANCE 776.090 EARTH TO MARS

RL	149.28	LAL	.00	LOL	18.70	VL	32.590	GAL	-6.43	AZL	88.89	HCA	242.94	SMA	185.37	ECC	.22357	INC	1.1118	V1	29.848
RP	220.18	LAP	-.99	LOP	261.64	VP	22.126	GAP	-7.09	AZP	90.51	TAL	323.49	TAP	206.43	RCA	143.93	APO	226.81	V2	24.965
RC	271.430	GL	8.82	GP	7.76	ZAL	140.40	ZAP	79.25	ETS	180.80	ZAE	112.40	ETE	175.17	ZAC	91.37	ETC	258.32	CLP	79.15

PLANETOCENTRIC CONIC

C3	16.782	VHL	4.097	DLA	16.00	RAL	164.93	RAD	6567.7	VEL	11.754	PTH	2.07	VHP	2.998	DPA	16.23	RAP	166.11	ECC	1.2762

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 47 49	2695.09	-27.60	74.21	28.80	96.58	19 32 44	2095.1	-26.40	65.75
90.00	11 6 14	4295.63	3.12	177.32	22.88	61.84	12 17 50	3695.6	-.67	170.69
100.00	20 18 3	2404.09	-28.87	52.62	28.61	98.09	20 58 7	1804.1	-27.45	44.10
100.00	12 18 41	4061.86	4.24	159.51	22.26	60.38	13 26 23	3461.9	.27	152.98
110.00	21 46 2	2128.82	-32.19	31.02	27.92	102.17	22 21 31	1528.8	-30.18	22.39
110.00	13 7 12	3909.89	7.12	146.21	20.49	56.48	14 12 22	3309.9	2.66	139.96

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.7411	TRA	2.9530	TC3	-4.8660	BAU	1.1301	SGT	5952.2	SGR	1753.7	SG3	3351.6	ST	1658.3	SR	1004.3	SS	3419.3
RDE	.6841	RRA	-.6958	RC3	1.3003	FAU	.54048	RRT	-.9186	RRF	-.9377	RTF	.9928	CRT	-.8328	CRS	.9053	CST	-.9890
FDE	-6.9214	FRA	20.4958	FC	-27.8810	BSP	20270	SGB	6205.1	R23	.0355	R13	-.9943	LSA	3899.8	MSA	491.7	SSA	19.6
BDE	1.0086	BRA	3.0338	BC3	5.0367	FSP	11615	SG1	6169.0	SG2	668.6	THA	164.67	EL1	1875.3	EL2	491.7	ALF	151.06

LAUNCH DATE OCT 12 1964 FLIGHT TIME 342.00 ARRIVAL DATE SEP 19 1965

HELIOCENTRIC CONIC DISTANCE 780.125 EARTH TO MARS

RL	149.28	LAL	.00	LOL	18.70	VL	32.590	GAL	-6.48	AZL	88.87	HCA	244.06	SMA	185.37	ECC	.22397	INC	1.1349	V1	29.848
RP	219.81	LAP	-1.02	LOP	262.76	VP	22.172	GAP	-7.31	AZP	90.50	TAL	323.25	TAP	207.31	RCA	143.85	APO	226.88	V2	25.006
RC	272.833	GL	8.96	GP	7.63	ZAL	140.65	ZAP	77.38	ETS	181.06	ZAE	110.31	ETE	175.61	ZAC	91.10	ETC	258.43	CLP	77.26

PLANETOCENTRIC CONIC

C3	16.957	VHL	4.118	DLA	16.01	RAL	165.26	RAD	6567.7	VEL	11.762	PTH	2.08	VHP	3.026	DPA	16.41	RAP	165.33	ECC	1.2791

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 48 58	2698.05	-27.63	74.42	29.31	96.48	19 33 56	2098.0	-26.44	65.95
90.00	11 7 41	4297.42	3.18	177.42	23.35	61.85	12 19 19	3697.4	-.61	170.79
100.00	20 19 13	2407.00	-28.90	52.83	29.13	97.98	20 59 20	1807.0	-27.50	44.31
100.00	12 20 7	4063.69	4.31	159.61	22.73	60.39	13 27 51	3463.7	.33	153.08
110.00	21 47 13	2131.65	-32.23	31.23	28.44	102.05	22 22 45	1531.7	-30.24	22.59
110.00	13 8 36	3911.81	7.19	146.31	20.95	56.49	14 13 48	3311.8	2.73	140.06

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.8131	TRA	3.1734	TC3	-5.0942	BAU	1.1899	SGT	6323.2	SGR	1720.4	SG3	3281.6	ST	1787.5	SR	998.9	SS	3393.0
RDE	.6857	RRA	-.6777	RC3	1.2660	FAU	.53066	RRT	-.9156	RRF	-.9341	RTF	.9936	CRT	-.8339	CRS	.9033	CST	-.9900
FDE	-6.8637	FRA	20.1819	FC	-27.0935	BSP	21485	SGB	6553.1	R23	.0349	R13	-.9948	LSA	3931.7	MSA	496.8	SSA	19.1
BDE	1.0636	BRA	3.2449	BC3	5.2491	FSP	11383	SG1	6518.7	SG2	671.1	THA	165.86	EL1	1986.7	EL2	496.1	ALF	153.21

LAUNCH DATE OCT 12 1964 FLIGHT TIME 344.00 ARRIVAL DATE SEP 21 1965

HELIOCENTRIC CONIC DISTANCE 784.165 EARTH TO MARS

RL 149.28 LAL .00 LOL 18.70 VL 32.590 GAL -6.53 AZL 88.84 HCA 245.19 SMA 185.37 ECC .22441 INC 1.1574 V1 29.848
RP 219.44 LAP -1.05 LOP 263.89 VP 22.218 GAP -7.53 AZP 90.49 TAL 322.99 TAP 208.18 RCA 143.77 APO 226.96 V2 25.047
RC 274.220 GL 9.09 GP 7.50 ZAL 140.91 ZAP 75.53 ETS 181.30 ZAE 108.25 ETE 176.03 ZAC 90.83 ETC 258.54 CLP 75.41

PLANETOCENTRIC CONIC

C3 17.145 VHL 4.141 DLA 16.02 RAL 165.59 RAD 6567.7 VEL 11.770 PTH 2.08 VHP 3.056 DPA 16.58 RAP 164.59 ECC 1.2822

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 50 16	2700.70	-27.65	74.61	29.84	96.39	19 35 17	2100.7	-26.47	66.14
90.00	11 9 3	4299.84	3.26	177.55	23.84	61.86	12 20 43	3699.8	-.53	170.92
100.00	20 20 31	2409.65	-28.93	53.02	29.66	97.88	21 0 41	1809.7	-27.53	44.50
100.00	12 21 29	4066.13	4.39	159.75	23.22	60.40	13 29 15	3466.1	.41	153.21
110.00	21 48 32	2134.28	-32.27	31.43	28.98	101.94	22 24 6	1534.3	-30.29	22.78
110.00	13 9 58	3914.26	7.28	146.44	21.43	56.51	14 15 12	3314.3	2.83	140.19

DIFFERENTIAL CORRECTIONS
TDE -.8865 TRA 3.3939 TC3-5.3106 BAU 1.2495
RDE .6873 RRA -.6592 RC3 1.2304 FAU .51994
FDE-6.8005 FRA19.8409 FC-26.2550 BSP 22672
BDE 1.1218 BRA 3.4574 BC3 5.4513 FSP 11126

MID-COURSE EXECUTION ACCURACY
SGT 6687.3 SGR 1686.2 SG3 3206.3
RRT -.9121 RRF -.9302 RTF .9942
SGB 6896.6 R23 .0345 R13 -.9952
SG1 6863.6 SG2 673.7 THA 166.92

ORBIT DETERMINATION ACCURACY
ST 1916.0 SR 993.2 SS 3364.9
CRT -.8345 CRS .9014 CST -.9907
LSA 3965.9 MSA 501.5 SSA 18.7
EL1 2099.5 EL2 499.4 ALF 155.10

LAUNCH DATE OCT 12 1964 FLIGHT TIME 346.00 ARRIVAL DATE SEP 23 1965

HELIOCENTRIC CONIC DISTANCE 788.210 EARTH TO MARS

RL 149.28 LAL .00 LOL 18.70 VL 32.590 GAL -6.59 AZL 88.82 HCA 246.32 SMA 185.37 ECC .22490 INC 1.1797 V1 29.848
RP 219.07 LAP -1.08 LOP 265.01 VP 22.264 GAP -7.74 AZP 90.47 TAL 322.72 TAP 209.04 RCA 143.68 APO 227.06 V2 25.088
RC 275.589 GL 9.21 GP 7.36 ZAL 141.19 ZAP 73.73 ETS 181.54 ZAE 106.21 ETE 176.42 ZAC 90.57 ETC 258.64 CLP 73.59

PLANETOCENTRIC CONIC

C3 17.347 VHL 4.165 DLA 16.01 RAL 165.93 RAD 6567.7 VEL 11.778 PTH 2.08 VHP 3.090 DPA 16.73 RAP 163.87 ECC 1.2855

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 51 44	2703.07	-27.66	74.78	30.39	96.30	19 36 47	2103.1	-26.50	66.31
90.00	11 10 20	4302.90	3.35	177.72	24.35	61.87	12 22 3	3702.9	-.43	171.09
100.00	20 21 59	2412.04	-28.95	53.20	30.21	97.80	21 2 11	1812.0	-27.57	44.67
100.00	12 22 47	4069.16	4.49	159.91	23.72	60.42	13 30 36	3469.2	.52	153.38
110.00	21 49 58	2136.72	-32.30	31.61	29.53	101.84	22 25 35	1536.7	-30.34	22.95
110.00	13 11 16	3917.24	7.39	146.60	21.93	56.53	14 16 34	3317.2	2.94	140.35

DIFFERENTIAL CORRECTIONS
TDE -.9608 TRA 3.6146 TC3-5.5142 BAU 1.3084
RDE .6888 RRA -.6403 RC3 1.1936 FAU .50826
FDE-6.7280 FRA19.4755 FC-25.3660 BSP 23856
BDE 1.1822 BRA 3.6708 BC3 5.6419 FSP 10863

MID-COURSE EXECUTION ACCURACY
SGT 7043.1 SGR 1651.1 SG3 3126.0
RRT -.9081 RRF -.9260 RTF .9947
SGB 7234.0 R23 .0344 R13 -.9956
SG1 7202.3 SG2 676.3 THA 167.87

ORBIT DETERMINATION ACCURACY
ST 2043.2 SR 987.1 SS 3334.0
CRT -.8346 CRS .8994 CST -.9914
LSA 4001.0 MSA 505.8 SSA 18.2
EL1 2212.9 EL2 502.0 ALF 156.77

LAUNCH DATE OCT 12 1964 FLIGHT TIME 348.00 ARRIVAL DATE SEP 25 1965

HELIOCENTRIC CONIC DISTANCE 792.260 EARTH TO MARS

RL 149.28 LAL .00 LOL 18.70 VL 32.591 GAL -6.65 AZL 88.80 HCA 247.45 SMA 185.38 ECC .22543 INC 1.2017 V1 29.848
RP 218.70 LAP -1.11 LOP 266.15 VP 22.310 GAP -7.95 AZP 90.46 TAL 322.44 TAP 209.88 RCA 143.59 APO 227.17 V2 25.128
RC 276.940 GL 9.32 GP 7.22 ZAL 141.49 ZAP 71.96 ETS 181.77 ZAE 104.21 ETE 176.79 ZAC 90.31 ETC 258.74 CLP 71.81

PLANETOCENTRIC CONIC

C3 17.564 VHL 4.191 DLA 15.98 RAL 166.29 RAD 6567.7 VEL 11.788 PTH 2.08 VHP 3.126 DPA 16.86 RAP 163.20 ECC 1.2891

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 53 21	2705.16	-27.68	74.93	30.95	96.23	19 38 26	2105.2	-26.53	66.46
90.00	11 11 33	4306.58	3.47	177.93	24.87	61.88	12 23 19	3706.6	-.31	171.30
100.00	20 23 35	2414.19	-28.97	53.35	30.77	97.72	21 3 49	1814.2	-27.60	44.82
100.00	12 24 0	4072.78	4.61	160.11	24.24	60.43	13 31 53	3472.8	.64	153.58
110.00	21 51 32	2138.98	-32.34	31.78	30.10	101.74	22 27 11	1539.0	-30.38	23.11
110.00	13 12 32	3920.75	7.52	146.79	22.45	56.56	14 17 53	3320.7	3.07	140.53

DIFFERENTIAL CORRECTIONS
TDE-1.0352 TRA 3.8358 TC3-5.7037 BAU 1.3665
RDE .6901 RRA -.6213 RC3 1.1558 FAU .49577
FDE-6.6446 FRA19.0932 FC-24.4370 BSP 25027
BDE 1.2442 BRA 3.8858 BC3 5.8197 FSP 10588

MID-COURSE EXECUTION ACCURACY
SGT 7390.3 SGR 1615.4 SG3 3041.7
RRT -.9036 RRF -.9215 RTF .9951
SGB 7564.8 R23 .0344 R13 -.9959
SG1 7534.2 SG2 678.9 THA 168.74

ORBIT DETERMINATION ACCURACY
ST 2168.4 SR 980.5 SS 3300.1
CRT -.8341 CRS .8973 CST -.9919
LSA 4036.5 MSA 510.0 SSA 17.8
EL1 2325.7 EL2 504.2 ALF 158.26

LAUNCH DATE OCT 12 1964 FLIGHT TIME 350.00 ARRIVAL DATE SEP 27 1965

HELIOCENTRIC CONIC DISTANCE 796.314 EARTH TO MARS

RL 149.28 LAL .00 LOL 18.70 VL 32.591 GAL -6.71 AZL 88.78 HCA 248.58 SMA 185.39 ECC .22601 INC 1.2234 V1 29.848
RP 218.34 LAP -1.14 LOP 267.28 VP 22.356 GAP -8.16 AZP 90.45 TAL 322.14 TAP 210.72 RCA 143.49 APO 227.29 V2 25.168
RC 278.273 GL 9.43 GP 7.08 ZAL 141.79 ZAP 70.22 ETS 181.98 ZAE 102.25 ETE 177.14 ZAC 90.07 ETC 258.83 CLP 70.07

PLANETOCENTRIC CONIC

C3 17.796 VHL 4.219 DLA 15.95 RAL 166.65 RAD 6567.7 VEL 11.797 PTH 2.09 VHP 3.166 DPA 16.97 RAP 162.56 ECC 1.2929

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 55 8	2706.96	-27.69	75.06	31.54	96.16	19 40 15	2107.0	-26.55	66.58
90.00	11 12 41	4310.87	3.61	178.17	25.41	61.90	12 24 32	3710.9	-.18	171.54
100.00	20 25 20	2416.08	-28.99	53.49	31.36	97.64	21 5 36	1816.1	-27.63	44.95
100.00	12 25 10	4076.99	4.75	160.35	24.78	60.45	13 33 7	3477.0	.78	153.81
110.00	21 53 14	2141.05	-32.36	31.94	30.69	101.66	22 28 55	1541.0	-30.42	23.26
110.00	13 13 45	3924.78	7.67	147.00	22.98	56.59	14 19 10	3324.8	3.23	140.74

DIFFERENTIAL CORRECTIONS
TDE-1.1103 TRA 4.0576 TC3-5.8788 BAU 1.4237
RDE .6914 RRA -.6023 RC3 1.1171 FAU .48245
FDE-6.5531 FRA18.6944 FC-23.4700 BSP 26179
BDE 1.3080 BRA 4.1020 BC3 5.9840 FSP 10306

MID-COURSE EXECUTION ACCURACY
SGT 7728.3 SGR 1579.2 SG3 2953.7
RRT -.8986 RRF -.9167 RTF .9954
SGB 7888.0 R23 .0345 R13 -.9961
SG1 7858.5 SG2 681.3 THA 169.52

ORBIT DETERMINATION ACCURACY
ST 2291.9 SR 973.5 SS 3263.7
CRT -.8333 CRS .8952 CST -.9923
LSA 4072.8 MSA 513.9 SSA 17.4
EL1 2438.1 EL2 505.9 ALF 159.59

LAUNCH DATE OCT 12 1964 FLIGHT TIME 352.00 ARRIVAL DATE SEP 29 1965

HELIOCENTRIC CONIC DISTANCE 800.373 EARTH TO MARS

RL 149.28 LAL .00 LOL 18.70 VL 32.592 GAL -6.78 AZL 88.76 HCA 249.72 SMA 185.40 ECC .22664 INC 1.2448 V1 29.848
RP 217.98 LAP -1.17 LOP 268.42 VP 22.402 GAP -8.36 AZP 90.43 TAL 321.83 TAP 211.55 RCA 143.38 APO 227.42 V2 25.208
RC 279.589 GL 9.53 GP 6.95 ZAL 142.11 ZAP 68.53 ETS 182.18 ZAE 100.32 ETE 177.46 ZAC 89.83 ETC 258.92 CLP 68.36

PLANETOCENTRIC CONIC

C3 18.044 VHL 4.248 DLA 15.90 RAL 167.03 RAD 6567.7 VEL 11.808 PTH 2.09 VHP 3.209 DPA 17.06 RAP 161.97 ECC 1.2970

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 57 3	2708.51	-27.70	75.18	32.14	96.11	19 42 12	2108.5	-26.57	66.69
90.00	11 13 44	4315.78	3.77	178.45	25.97	61.91	12 25 40	3715.8	-.02	171.81
100.00	20 27 13	2417.74	-29.00	53.61	31.96	97.58	21 7 31	1817.7	-27.65	45.07
100.00	12 26 15	4081.78	4.91	160.61	25.34	60.48	13 34 17	3481.8	.94	154.07
110.00	21 55 3	2142.95	-32.39	32.08	31.30	101.58	22 30 46	1542.9	-30.46	23.40
110.00	13 14 55	3929.34	7.85	147.25	23.54	56.62	14 20 25	3329.3	3.40	140.98

DIFFERENTIAL CORRECTIONS
TDE-1.1881 TRA 4.2777 TC3-6.0426 BAU 1.4808
RDE .6931 RRA -.5830 RC3 1.0792 FAU .46915
FDE-6.4676 FRA18.2726 FC-22.5091 BSP 27273
BDE 1.3755 BRA 4.3173 BC3 6.1382 FSP 9997

MID-COURSE EXECUTION ACCURACY
SGT 8057.1 SGR 1543.7 SG3 2863.7
RRT -.8933 RRF -.9116 RTF .9957
SGB 8203.6 R23 .0349 R13 -.9963
SG1 8175.1 SG2 683.9 THA 170.22

ORBIT DETERMINATION ACCURACY
ST 2414.8 SR 966.9 SS 3228.1
CRT -.8325 CRS .8934 CST -.9926
LSA 4113.2 MSA 517.3 SSA 17.0
EL1 2551.3 EL2 507.0 ALF 160.78

LAUNCH DATE OCT 12 1964 FLIGHT TIME 354.00 ARRIVAL DATE OCT 1 1965

HELIOCENTRIC CONIC DISTANCE 804.435 EARTH TO MARS

RL 149.28 LAL .00 LOL 18.70 VL 32.593 GAL -6.85 AZL 88.73 HCA 250.86 SMA 185.42 ECC .22731 INC 1.2660 V1 29.848
RP 217.62 LAP -1.20 LOP 269.56 VP 22.449 GAP -8.56 AZP 90.42 TAL 321.50 TAP 212.37 RCA 143.27 APO 227.57 V2 25.248
RC 280.887 GL 9.62 GP 6.81 ZAL 142.44 ZAP 66.88 ETS 182.38 ZAE 98.42 ETE 177.77 ZAC 89.60 ETC 259.00 CLP 66.70

PLANETOCENTRIC CONIC

C3 18.309 VHL 4.279 DLA 15.85 RAL 167.41 RAD 6567.7 VEL 11.819 PTH 2.09 VHP 3.255 DPA 17.14 RAP 161.42 ECC 1.3013

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 59 8	2709.79	-27.71	75.27	32.76	96.06	19 44 18	2109.8	-26.58	66.78
90.00	11 14 43	4321.30	3.94	178.76	26.55	61.94	12 26 44	3721.3	.16	172.12
100.00	20 29 15	2419.18	-29.01	53.72	32.58	97.53	21 9 34	1819.2	-27.67	45.17
100.00	12 27 17	4087.15	5.09	160.91	25.92	60.51	13 35 24	3487.2	1.13	154.37
110.00	21 56 59	2144.68	-32.41	32.21	31.92	101.50	22 32 44	1544.7	-30.49	23.52
110.00	13 16 2	3934.41	8.04	147.52	24.11	56.66	14 21 37	3334.4	3.59	141.24

DIFFERENTIAL CORRECTIONS
TDE-1.2662 TRA 4.4990 TC3-6.1911 BAU 1.5367
RDE .6947 RRA -.5640 RC3 1.0409 FAU .45519
FDE-6.3722 FRA17.8442 FC-21.5236 BSP 28362
BDE 1.4442 BRA 4.5342 BC3 6.2780 FSP 9693

MID-COURSE EXECUTION ACCURACY
SGT 8376.3 SGR 1508.3 SG3 2771.5
RRT -.8875 RRF -.9061 RTF .9959
SGB 8511.0 R23 .0354 R13 -.9965
SG1 8483.3 SG2 686.3 THA 170.86

ORBIT DETERMINATION ACCURACY
ST 2535.6 SR 959.9 SS 3189.7
CRT -.8315 CRS .8916 CST -.9929
LSA 4153.8 MSA 520.5 SSA 16.7
EL1 2663.3 EL2 507.7 ALF 161.84

LAUNCH DATE OCT 12 1964 FLIGHT TIME 356.00 ARRIVAL DATE OCT 3 1965

HELIOCENTRIC CONIC DISTANCE 808.502 EARTH TO MARS

RL 149.28 LAL .00 LOL 18.70 VL 32.594 GAL -6.92 AZL 88.71 HCA 252.01 SMA 185.44 ECC .22803 INC 1.2869 V1 29.848
RP 217.27 LAP 1.22 LOP 270.71 VP 22.495 GAP -8.77 AZP 90.40 TAL 321.16 TAP 213.17 RCA 143.15 APO 227.73 V2 25.287
RC 282.167 GL 9.70 GP 6.67 ZAL 142.79 ZAP 65.26 ETS 182.56 ZAE 96.57 ETE 178.06 ZAC 89.38 ETC 259.07 CLP 65.08

PLANETOCENTRIC CONIC

C3 18.591 VHL 4.312 DLA 15.78 RAL 167.80 RAD 6567.8 VEL 11.831 PTH 2.10 VHP 3.304 DPA 17.19 RAP 160.91 ECC 1.3060

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 1 21	2710.83	-27.72	75.34	33.39	96.03	19 46 32	2110.8	-26.60	66.86
90.00	11 15 37	4327.43	4.14	179.10	27.15	61.96	12 27 45	3727.4	.36	172.46
100.00	20 31 25	2420.39	-29.02	53.81	33.22	97.48	21 11 45	1820.4	-27.69	45.26
100.00	12 28 15	4093.10	5.29	161.24	26.51	60.54	13 36 28	3493.1	1.33	154.69
110.00	21 59 2	2146.25	-32.43	32.33	32.55	101.44	22 34 48	1546.3	-30.52	23.63
110.00	13 17 7	3940.00	8.24	147.81	24.70	56.71	14 22 47	3340.0	3.81	141.54

DIFFERENTIAL CORRECTIONS
TDE-1.3455 TRA 4.7211 TC3-6.3246 BAU 1.5916
RDE .6964 RRA -.5452 RC3 1.0026 FAU .44084
FDE-6.2729 FRA17.4089 FC-20.5289 BSP 29420
BDE 1.5150 BRA 4.7525 BC3 6.4036 FSP 9382

MID-COURSE EXECUTION ACCURACY
SGT 8685.8 SGR 1473.3 SG3 2678.1
RRT -.8813 RRF -.9004 RTF .9961
SGB 8809.9 R23 .0359 R13 -.9966
SG1 8782.9 SG2 688.4 THA 171.44

ORBIT DETERMINATION ACCURACY
ST 2654.9 SR 952.9 SS 3150.0
CRT -.8303 CRS .8898 CST -.9931
LSA 4195.8 MSA 523.3 SSA 16.3
EL1 2774.6 EL2 508.2 ALF 162.81

LAUNCH DATE OCT 12 1964 FLIGHT TIME 358.00 ARRIVAL DATE OCT 5 1965

HELIOCENTRIC CONIC DISTANCE 812.572 EARTH TO MARS

RL 149.28 LAL .00 LOL 18.70 VL 32.596 GAL -7.00 AZL 88.69 HCA 253.16 SMA 185.46 ECC .22881 INC 1.3077 V1 29.848
RP 216.91 LAP -1.25 LOP 271.86 VP 22.541 GAP -8.97 AZP 90.38 TAL 320.81 TAP 213.97 RCA 143.03 APO 227.90 V2 25.327
RC 283.431 GL 9.78 GP 6.54 ZAL 143.15 ZAP 63.69 ETS 182.73 ZAE 94.75 ETE 178.33 ZAC 89.17 ETC 259.14 CLP 63.51

PLANETOCENTRIC CONIC

C3 18.891 VHL 4.346 DLA 15.70 RAL 168.20 RAD 6567.8 VEL 11.844 PTH 2.10 VHP 3.355 DPA 17.23 RAP 160.45 ECC 1.3109

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 3 43	2711.63	-27.73	75.40	34.04	96.00	19 48 54	2111.6	-26.61	66.91
90.00	11 16 27	4334.15	4.36	179.48	27.76	61.99	12 28 42	3734.1	.58	172.83
100.00	20 33 43	2421.40	-29.03	53.88	33.87	97.45	21 14 4	1821.4	-27.70	45.33
100.00	12 29 9	4099.61	5.51	161.60	27.13	60.57	13 37 28	3499.6	1.55	155.05
110.00	22 1 12	2147.67	-32.45	32.43	33.21	101.38	22 36 59	1547.7	-30.55	23.73
110.00	13 18 9	3946.11	8.47	148.14	25.31	56.76	14 23 55	3346.1	4.04	141.86

DIFFERENTIAL CORRECTIONS
TDE-1.4260 TRA 4.9433 TC3-6.4444 BAU 1.6457
RDE .6982 RRA -.5267 RC3 .9649 FAU .42634
FDE-6.1706 FRA16.9657 FC-19.5384 BSP 30451
BDE 1.5877 BRA 4.9713 BC3 6.5163 FSP 9069

MID-COURSE EXECUTION ACCURACY
SGT 8985.2 SGR 1439.0 SG3 2583.8
RRT -.8748 RRF -.8943 RTF .9962
SGB 9099.7 R23 .0365 R13 -.9967
SG1 9073.5 SG2 690.5 THA 171.98

ORBIT DETERMINATION ACCURACY
ST 2772.3 SR 945.8 SS 3108.9
CRT -.8290 CRS .8881 CST -.9933
LSA 4238.9 MSA 525.9 SSA 16.0
EL1 2884.7 EL2 508.3 ALF 163.69

LAUNCH DATE OCT 12 1964 FLIGHT TIME 360.00 ARRIVAL DATE OCT 7 1965

HELIOCENTRIC CONIC DISTANCE 816.645 EARTH TO MARS

RL 149.28 LAL .00 LOL 18.70 VL 32.597 GAL -7.08 AZL 88.67 HCA 254.31 SMA 185.49 ECC .22963 INC 1.3283 V1 29.848
RP 216.57 LAP -1.28 LOP 273.01 VP 22.586 GAP -9.17 AZP 90.36 TAL 320.44 TAP 214.76 RCA 142.90 APO 228.08 V2 25.365
RC 284.679 GL 9.85 GP 6.41 ZAL 143.52 ZAP 62.16 ETS 182.89 ZAE 92.97 ETE 178.59 ZAC 88.97 ETC 259.20 CLP 61.97

PLANETOCENTRIC CONIC

C3 19.209 VHL 4.383 DLA 15.60 RAL 168.61 RAD 6567.8 VEL 11.857 PTH 2.10 VHP 3.410 DPA 17.26 RAP 160.03 ECC 1.3161

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 6 13	2712.21	-27.73	75.44	34.72	95.98	19 51 25	2112.2	-26.61	66.96
90.00	11 17 13	4341.46	4.59	179.89	28.40	62.03	12 29 35	3741.5	.81	173.24
100.00	20 36 8	2422.21	-29.04	53.94	34.54	97.42	21 16 31	1822.2	-27.71	45.39
100.00	12 29 59	4106.69	5.75	161.99	27.76	60.62	13 38 26	3506.7	1.79	155.44
110.00	22 3 29	2148.95	-32.47	32.53	33.88	101.32	22 39 17	1548.9	-30.57	23.83
110.00	13 19 8	3952.71	8.72	148.49	25.94	56.82	14 25 1	3352.7	4.29	142.20

DIFFERENTIAL CORRECTIONS
TDE-1.5077 TRA 5.1661 TC3-6.5494 BAU 1.6987
RDE .7001 RRA -.5085 RC3 .9278 FAU .41168
FDE-6.0640 FRA16.5191 FC-18.5540 BSP 31453
BDE 1.6623 BRA 5.1911 BC3 6.6148 FSP 8753

MID-COURSE EXECUTION ACCURACY
SGT 9274.2 SGR 1405.5 SG3 2489.3
RRT -.8679 RRF -.8880 RTF .9963
SGB 9380.1 R23 .0372 R13 -.9967
SG1 9354.6 SG2 692.2 THA 172.47

ORBIT DETERMINATION ACCURACY
ST 2887.8 SR 938.6 SS 3066.3
CRT -.8277 CRS .8864 CST -.9934
LSA 4283.0 MSA 528.0 SSA 15.7
EL1 2993.8 EL2 508.1 ALF 164.48

LAUNCH DATE OCT 12 1964 FLIGHT TIME 362.00 ARRIVAL DATE OCT 9 1965

HELIOCENTRIC CONIC DISTANCE 820.721 EARTH TO MARS

RL 149.28 LAL .00 LOL 18.70 VL 32.599 GAL -7.17 AZL 88.65 HCA 255.47 SMA 185.52 ECC .23050 INC 1.3487 V1 29.848
RP 216.22 LAP -1.31 LOP 274.17 VP 22.632 GAP -9.36 AZP 90.34 TAL 320.06 TAP 215.53 RCA 142.76 APO 228.28 V2 25.404
RC 285.910 GL 9.92 GP 6.28 ZAL 143.90 ZAP 60.67 ETS 183.05 ZAE 91.23 ETE 178.83 ZAC 88.79 ETC 259.25 CLP 60.48

PLANETOCENTRIC CONIC

C3 19.547 VHL 4.421 DLA 15.50 RAL 169.03 RAD 6567.8 VEL 11.871 PTH 2.11 VHP 3.467 DPA 17.27 RAP 159.65 ECC 1.3217

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 8 51	2712.57	-27.73	75.47	35.40	95.96	19 54 4	2112.6	-26.62	66.98
90.00	11 17 55	4349.35	4.84	180.33	29.05	62.07	12 30 24	3749.3	1.07	173.68
100.00	20 38 42	2422.82	-29.05	53.98	35.23	97.39	21 19 5	1822.8	-27.72	45.43
100.00	12 30 45	4114.33	6.00	162.41	28.41	60.66	13 39 20	3514.3	2.05	155.86
110.00	22 5 52	2150.09	-32.49	32.61	34.57	101.27	22 41 42	1550.1	-30.59	23.91
110.00	13 20 5	3959.83	8.98	148.87	26.59	56.88	14 26 5	3359.8	4.56	142.58

DIFFERENTIAL CORRECTIONS
TDE-1.5911 TRA 5.3903 TC3-6.6406 BAU 1.7509
RDE .7022 RRA -.4908 RC3 .8913 FAU .39698
FDE-5.9575 FRA16.0716 FC-17.5819 BSP 32424
BDE 1.7392 BRA 5.4126 BC3 6.7002 FSP 8439

MID-COURSE EXECUTION ACCURACY
SGT 9554.0 SGR 1373.0 SG3 2395.1
RRT -.8606 RRF -.8814 RTF .9964
SGB 9652.2 R23 .0380 R13 -.9968
SG1 9627.2 SG2 693.8 THA 172.91

ORBIT DETERMINATION ACCURACY
ST 3002.0 SR 931.7 SS 3023.3
CRT -.8264 CRS .8849 CST -.9935
LSA 4328.9 MSA 529.9 SSA 15.5
EL1 3102.0 EL2 507.7 ALF 165.21

LAUNCH DATE OCT 12 1964 FLIGHT TIME 364.00 ARRIVAL DATE OCT 11 1965

HELIOCENTRIC CONIC DISTANCE 824.800 EARTH TO MARS

RL 149.28 LAL .00 LOL 18.70 VL 32.601 GAL -7.26 AZL 88.63 HCA 256.63 SMA 185.55 ECC .23143 INC 1.3690 V1 29.848
RP 215.88 LAP -1.33 LOP 275.33 VP 22.678 GAP -9.56 AZP 90.32 TAL 319.66 TAP 216.29 RCA 142.61 APO 228.49 V2 25.442
RC 287.127 GL 9.97 GP 6.15 ZAL 144.30 ZAP 59.23 ETS 183.19 ZAE 89.53 ETE 179.05 ZAC 88.61 ETC 259.30 CLP 59.03

PLANETOCENTRIC CONIC

C3 19.905 VHL 4.462 DLA 15.38 RAL 169.46 RAD 6567.8 VEL 11.886 PTH 2.11 VHP 3.527 DPA 17.26 RAP 159.32 ECC 1.3276

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 11 37	2712.73	-27.73	75.48	36.11	95.96	19 56 50	2112.7	-26.62	66.99
90.00	11 18 33	4357.82	5.11	180.81	29.72	62.11	12 31 11	3757.8	1.34	174.16
100.00	20 41 23	2423.26	-29.05	54.01	35.94	97.38	21 21 46	1823.3	-27.73	45.46
100.00	12 31 28	4122.51	6.28	162.87	29.08	60.71	13 40 11	3522.5	2.32	156.31
110.00	22 8 22	2151.10	-32.50	32.69	35.28	101.23	22 44 13	1551.1	-30.61	23.98
110.00	13 20 59	3967.44	9.27	149.28	27.25	56.95	14 27 6	3367.4	4.85	142.98

DIFFERENTIAL CORRECTIONS
TDE-1.6755 TRA 5.6163 TC3-6.7170 BAU 1.8020
RDE .7045 RRA -.4737 RC3 .8556 FAU .38217
FDE-5.8466 FRA15.6254 FC-16.6215 BSP 33375
BDE 1.8176 BRA 5.6362 BC3 6.7713 FSP 8128

MID-COURSE EXECUTION ACCURACY
SGT 9824.0 SGR 1341.4 SG3 2301.4
RRT -.8531 RRF -.8745 RTF .9964
SGB 9915.2 R23 .0387 R13 -.9968
SG1 9890.8 SG2 695.2 THA 173.32

ORBIT DETERMINATION ACCURACY
ST 3114.2 SR 924.6 SS 2978.7
CRT -.8250 CRS .8835 CST -.9936
LSA 4375.3 MSA 531.4 SSA 15.2
EL1 3208.7 EL2 507.1 ALF 165.88

LAUNCH DATE OCT 12 1964 FLIGHT TIME 366.00 ARRIVAL DATE OCT 13 1965

HELIOCENTRIC CONIC DISTANCE 828.881 EARTH TO MARS

RL 149.28 LAL .00 LOL 18.70 VL 32.603 GAL -7.35 AZL 88.61 HCA 257.80 SMA 185.59 ECC .23241 INC 1.3890 V1 29.848
RP 215.54 LAP -1.36 LOP 276.50 VP 22.723 GAP -9.75 AZP 90.29 TAL 319.25 TAP 217.05 RCA 142.45 APO 228.72 V2 25.480
RC 288.329 GL 10.02 GP 6.02 ZAL 144.71 ZAP 57.82 ETS 183.33 ZAE 87.87 ETE 179.27 ZAC 88.44 ETC 259.34 CLP 57.62

PLANETOCENTRIC CONIC

C3 20.285 VHL 4.504 DLA 15.26 RAL 169.89 RAD 6567.8 VEL 11.902 PTH 2.11 VHP 3.589 DPA 17.23 RAP 159.04 ECC 1.3338

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 14 31	2712.69	-27.73	75.48	36.83	95.96	19 59 44	2112.7	-26.62	66.99
90.00	11 19 7	4366.86	5.40	181.31	30.40	62.16	12 31 53	3766.9	1.63	174.66
100.00	20 44 11	2423.54	-29.05	54.03	36.66	97.37	21 24 34	1823.5	-27.73	45.48
100.00	12 32 8	4131.24	6.57	163.35	29.77	60.77	13 40 59	3531.2	2.62	156.79
110.00	22 10 58	2152.00	-32.51	32.76	36.00	101.19	22 46 50	1552.0	-30.63	24.05
110.00	13 21 50	3975.54	9.57	149.72	27.94	57.03	14 28 6	3375.5	5.16	143.40

DIFFERENTIAL CORRECTIONS
TDE-1.7621 TRA 5.8433 TC3-6.7801 BAU 1.8522
RDE .7070 RRA -.4571 RC3 .8209 FAU .36750
FDE-5.7360 FRA15.1803 FC-15.6841 BSP 34292
BDE 1.8987 BRA 5.8612 BC3 6.8296 FSP 7820

MID-COURSE EXECUTION ACCURACY
SGT10084.3 SGR 1311.1 SG3 2208.7
RRT -.8453 RRF -.8674 RTF .9964
SGB10169.2 R23 .0396 R13 -.9968
SG110145.3 SG2 696.3 THA 173.70

ORBIT DETERMINATION ACCURACY
ST 3225.2 SR 917.7 SS 2933.6
CRT -.8238 CRS .8822 CST -.9937
LSA 4423.4 MSA 532.5 SSA 15.0
EL1 3314.8 EL2 506.2 ALF 166.49

LAUNCH DATE OCT 12 1964 FLIGHT TIME 368.00 ARRIVAL DATE OCT 15 1965

HELIOCENTRIC CONIC DISTANCE 832.963 EARTH TO MARS

RL 149.28 LAL .00 LOL 18.70 VL 32.605 GAL -7.45 AZL 88.59 HCA 258.97 SMA 185.62 ECC .23344 INC 1.4091 V1 29.848
RP 215.21 LAP -1.38 LOP 277.67 VP 22.768 GAP -9.95 AZP 90.27 TAL 318.82 TAP 217.79 RCA 142.29 APO 228.96 V2 25.517
RC 289.516 GL 10.07 GP 5.90 ZAL 145.13 ZAP 56.45 ETS 183.45 ZAE 86.25 ETE 179.47 ZAC 88.28 ETC 259.37 CLP 56.25

PLANETOCENTRIC CONIC

C3 20.687 VHL 4.548 DLA 15.12 RAL 170.33 RAD 6567.8 VEL 11.919 PTH 2.12 VHP 3.654 DPA 17.19 RAP 158.80 ECC 1.3405

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 17 32	2712.48	-27.73	75.46	37.57	95.97	20 2 44	2112.5	-26.62	66.97
90.00	11 19 37	4376.46	5.70	181.85	31.11	62.22	12 32 33	3776.5	1.94	175.20
100.00	20 47 6	2423.66	-29.05	54.04	37.40	97.36	21 27 29	1823.7	-27.73	45.49
100.00	12 32 44	4140.51	6.87	163.87	30.47	60.84	13 41 45	3540.5	2.93	157.30
110.00	22 13 40	2152.79	-32.52	32.82	36.74	101.16	22 49 32	1552.8	-30.64	24.10
110.00	13 22 39	3984.14	9.89	150.18	28.64	57.11	14 29 4	3384.1	5.48	143.85

DIFFERENTIAL CORRECTIONS
TDE-1.8491 TRA 6.0729 TC3-6.8281 BAU 1.9010
RDE .7096 RRA -.4411 RC3 .7869 FAU .35279
FDE-5.6205 FRA14.7399 FC-14.7636 BSP 35200
BDE 1.9806 BRA 6.0889 BC3 6.8733 FSP 7519

MID-COURSE EXECUTION ACCURACY
SGT10334.6 SGR 1201.7 SG3 2117.1
RRT -.8372 RRF -.8601 RTF .9964
SGB10413.7 R23 .0404 R13 -.9967
SG110390.4 SG2 697.2 THA 174.05

ORBIT DETERMINATION ACCURACY
ST 3333.5 SR 910.7 SS 2886.7
CRT -.8224 CRS .8809 CST -.9937
LSA 4471.0 MSA 533.5 SSA 14.8
EL1 3418.5 EL2 505.2 ALF 167.05

LAUNCH DATE OCT 12 1964 FLIGHT TIME 370.00 ARRIVAL DATE OCT 17 1965

HELIOCENTRIC CONIC DISTANCE 837.048 EARTH TO MARS

RL 149.28 LAL .00 LOL 18.70 VL 32.608 GAL -7.55 AZL 88.57 HCA 260.14 SMA 185.66 ECC .23453 INC 1.4290 V1 29.848
RP 214.88 LAP -1.41 LOP 278.84 VP 22.813 GAP -10.14 AZP 90.24 TAL 318.38 TAP 218.52 RCA 142.12 APO 229.21 V2 25.554
RC 290.691 GL 10.10 GP 5.77 ZAL 145.56 ZAP 55.13 ETS 183.57 ZAE 84.67 ETE 179.66 ZAC 88.14 ETC 259.40 CLP 54.92

PLANETOCENTRIC CONIC

C3 21.113 VHL 4.595 DLA 14.97 RAL 170.78 RAD 6567.9 VEL 11.937 PTH 2.12 VHP 3.722 DPA 17.14 RAP 158.60 ECC 1.3475

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 20 40	2712.10	-27.73	75.44	38.33	95.98	20 5 52	2112.1	-26.61	66.95
90.00	11 20 3	4386.61	6.03	182.43	31.83	62.28	12 33 10	3786.6	2.27	175.76
100.00	20 50 7	2423.63	-29.05	54.04	38.16	97.36	21 30 31	1823.6	-27.73	45.49
100.00	12 33 17	4150.31	7.20	164.42	31.20	60.91	13 42 27	3550.3	3.26	157.84
110.00	22 16 28	2153.49	-32.53	32.87	37.50	101.13	22 52 21	1553.5	-30.66	24.15
110.00	13 23 26	3993.22	10.22	150.67	29.36	57.20	14 29 59	3393.2	5.83	144.33

DIFFERENTIAL CORRECTIONS
TDE-1.9384 TRA 6.3050 TC3-6.8637 BAU 1.9490
RDE .7125 RRA -.4258 RC3 .7541 FAU .33832
FDE-5.5065 FRA14.3039 FC-13.8726 BSP 36090
BDE 2.0652 BRA 6.3193 BC3 6.9050 FSP 7224

MID-COURSE EXECUTION ACCURACY
SGT10576.3 SGR 1253.7 SG3 2027.3
RRT -.8289 RRF -.8527 RTF .9964
SGB10650.4 R23 .0413 R13 -.9967
SG110627.5 SG2 697.8 THA 174.36

ORBIT DETERMINATION ACCURACY
ST 3440.7 SR 903.9 SS 2839.8
CRT -.8212 CRS .8798 CST -.9937
LSA 4520.5 MSA 534.1 SSA 14.7
EL1 3521.6 EL2 504.0 ALF 167.57

LAUNCH DATE OCT 12 1964 FLIGHT TIME 372.00 ARRIVAL DATE OCT 19 1965

HELIOCENTRIC CONIC DISTANCE 841.133 EARTH TO MARS

RL 149.28 LAL .00 LOL 18.78 VL 32.610 GAL -7.66 AZL 88.55 HCA 261.32 SMA 185.71 ECC .23568 INC 1.4488 V1 29.848
RP 214.56 LAP -1.43 LOP 280.02 VP 22.857 GAP -10.33 AZP 90.22 TAL 317.92 TAP 219.23 RCA 141.94 APO 229.47 V2 25.590
RC 291.851 GL 10.14 GP 5.66 ZAL 146.00 ZAP 53.84 ETS 183.69 ZAE 83.12 ETE 179.83 ZAC 88.00 ETC 259.41 CLP 53.64

PLANETOCENTRIC CONIC

C3 21.564 VHL 4.644 DLA 14.82 RAL 171.23 RAD 6567.9 VEL 11.956 PTH 2.13 VHP 3.793 DPA 17.07 RAP 158.44 ECC 1.3549

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 23 56	2711.57	-27.73	75.40	39.11	96.00	20 9 7	2111.6	-26.60	66.91
90.00	11 20 26	4397.30	6.36	183.03	32.58	62.35	12 33 43	3797.3	2.61	176.36
100.00	20 53 16	2423.47	-29.05	54.03	38.93	97.37	21 33 39	1823.5	-27.73	45.48
100.00	12 33 47	4160.64	7.54	164.99	31.94	60.99	13 43 8	3560.6	3.61	158.41
110.00	22 19 21	2154.09	-32.54	32.91	38.27	101.10	22 55 15	1554.1	-30.67	24.20
110.00	13 24 11	4002.78	10.57	151.18	30.11	57.30	14 30 53	3402.8	6.19	144.84

DIFFERENTIAL CORRECTIONS
TDE-2.0300 TRA 6.5392 TC3-6.8866 BAU 1.9962
RDE .7157 RRA -.4111 RC3 .7224 FAU .32404
FDE-5.3926 FRA13.8727 FC-13.0096 BSP 36949
BDE 2.1524 BRA 6.5521 BC3 6.9244 FSP 6934

MID-COURSE EXECUTION ACCURACY
SGT10808.9 SGR 1226.9 SG3 1939.2
RRT -.8205 RRF -.8451 RTF .9963
SGB10878.4 R23 .0422 R13 -.9966
SG110855.9 SG2 698.2 THA 174.66

ORBIT DETERMINATION ACCURACY
ST 3546.7 SR 897.2 SS 2792.3
CRT -.8201 CRS .8788 CST -.9937
LSA 4571.1 MSA 534.3 SSA 14.5
EL1 3623.7 EL2 502.5 ALF 168.05

LAUNCH DATE OCT 12 1964 FLIGHT TIME 374.00 ARRIVAL DATE OCT 21 1965

HELIOCENTRIC CONIC DISTANCE 845.218 EARTH TO MARS

RL 149.28 LAL .00 LOL 18.70 VL 32.613 GAL -7.77 AZL 88.53 HCA 262.49 SMA 185.75 ECC .23689 INC 1.4686 V1 29.848
RP 214.24 LAP -1.46 LOP 281.20 VP 22.901 GAP -10.53 AZP 90.19 TAL 317.44 TAP 219.94 RCA 141.75 APO 229.75 V2 25.626
RC 292.998 GL 10.16 GP 5.54 ZAL 146.45 ZAP 52.59 ETS 183.79 ZAE 81.61 ETE 180.00 ZAC 87.87 ETC 259.43 CLP 52.39

PLANETOCENTRIC CONIC

C3 22.040 VHL 4.695 DLA 14.65 RAL 171.70 RAD 6567.9 VEL 11.976 PTH 2.13 VHP 3.865 DPA 16.99 RAP 158.33 ECC 1.3627

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 27 17	2710.91	-27.72	75.35	39.90	96.02	20 12 28	2110.9	-26.60	66.86
90.00	11 20 45	4408.53	6.72	183.67	33.34	62.43	12 34 14	3808.5	2.97	176.99
100.00	20 56 30	2423.20	-29.05	54.01	39.72	97.38	21 36 53	1823.2	-27.72	45.46
100.00	12 34 14	4171.47	7.90	165.60	32.70	61.08	13 43 45	3571.5	3.98	159.00
110.00	22 22 20	2154.62	-32.55	32.95	39.06	101.08	22 58 15	1554.6	-30.68	24.23
110.00	13 24 53	4012.82	10.94	151.73	30.87	57.41	14 31 46	3412.8	6.57	145.37

DIFFERENTIAL CORRECTIONS
TDE-2.1227 TRA 6.7765 TC3-6.8973 BAU 2.0425
RDE .7191 RRA -.3970 RC3 .6919 FAU .31001
FDE-5.2770 FRA13.4470 FC-12.1772 BSP 37790
BDE 2.2412 BRA 6.7881 BC3 6.9319 FSP 6649

MID-COURSE EXECUTION ACCURACY
SGT11032.7 SGR 1201.3 SG3 1852.9
RRT -.8120 RRF -.8375 RTF .9963
SGB11097.9 R23 .0432 R13 -.9965
SG111075.9 SG2 698.4 THA 174.93

ORBIT DETERMINATION ACCURACY
ST 3650.3 SR 890.6 SS 2743.7
CRT -.8190 CRS .8779 CST -.9937
LSA 4621.7 MSA 534.4 SSA 14.4
EL1 3723.9 EL2 500.9 ALF 168.49

LAUNCH DATE OCT 12 1964 FLIGHT TIME 376.00 ARRIVAL DATE OCT 23 1965

HELIOCENTRIC CONIC DISTANCE 849.304 EARTH TO MARS

RL 149.28 LAL .00 LOL 18.70 VL 32.616 GAL -7.88 AZL 88.51 HCA 263.68 SMA 185.80 ECC .23816 INC 1.4883 V1 29.848
RP 213.93 LAP -1.48 LOP 282.38 VP 22.945 GAP -10.72 AZP 90.16 TAL 316.95 TAP 220.63 RCA 141.55 APO 230.05 V2 25.662
RC 294.131 GL 10.18 GP 5.43 ZAL 146.92 ZAP 51.38 ETS 183.89 ZAE 80.13 ETE 180.16 ZAC 87.76 ETC 259.43 CLP 51.18

PLANETOCENTRIC CONIC

C3 22.544 VHL 4.748 DLA 14.47 RAL 172.17 RAD 6567.9 VEL 11.997 PTH 2.14 VHP 3.941 DPA 16.90 RAP 158.26 ECC 1.3710

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 30 46	2710.11	-27.72	75.29	40.71	96.05	20 15 56	2110.1	-26.59	66.81
90.00	11 21 1	4420.28	7.09	184.33	34.12	62.51	12 34 42	3820.3	3.35	177.64
100.00	20 59 51	2422.81	-29.05	53.98	40.53	97.39	21 40 14	1822.8	-27.72	45.43
100.00	12 34 37	4182.82	8.27	166.23	33.49	61.17	13 44 20	3582.8	4.36	159.63
110.00	22 25 25	2155.07	-32.55	32.99	39.87	101.06	23 1 20	1555.1	-30.69	24.27
110.00	13 25 33	4023.32	11.33	152.30	31.65	57.53	14 32 36	3423.3	6.96	145.92

DIFFERENTIAL CORRECTIONS
TDE-2.2181 TRA 7.0166 TC3-6.8973 BAU 2.0884
RDE .7229 RRA -.3837 RC3 .6626 FAU .29629
FDE-5.1629 FRA13.0276 FC-11.3783 BSP 38594
BDE 2.3330 BRA 7.0270 BC3 6.9290 FSP 6370

MID-COURSE EXECUTION ACCURACY
SGT11248.5 SGR 1177.1 SG3 1768.9
RRT -.8034 RRF -.8298 RTF .9962
SGB11309.9 R23 .0442 R13 -.9964
SG111288.3 SG2 698.4 THA 175.18

ORBIT DETERMINATION ACCURACY
ST 3753.0 SR 884.2 SS 2694.9
CRT -.8181 CRS .8773 CST -.9937
LSA 4673.7 MSA 534.0 SSA 14.2
EL1 3823.3 EL2 499.1 ALF 168.90

LAUNCH DATE OCT 12 1964 FLIGHT TIME 378.00 ARRIVAL DATE OCT 25 1965

HELIOCENTRIC CONIC DISTANCE 853.390 EARTH TO MARS

RL 149.28 LAL .00 LOL 18.70 VL 32.619 GAL -8.00 AZL 88.49 HCA 264.86 SMA 185.85 ECC .23949 INC 1.5080 V1 29.848
RP 213.62 LAP -1.50 LOP 283.57 VP 22.988 GAP -10.91 AZP 90.13 TAL 316.45 TAP 221.31 RCA 141.34 APO 230.36 V2 25.697
RC 295.251 GL 10.19 GP 5.32 ZAL 147.39 ZAP 50.21 ETS 183.98 ZAE 78.69 ETE 180.31 ZAC 87.65 ETC 259.43 CLP 50.00

PLANETOCENTRIC CONIC

C3 23.077 VHL 4.804 DLA 14.28 RAL 172.64 RAD 6567.9 VEL 12.019 PTH 2.15 VHP 4.019 DPA 16.79 RAP 158.23 ECC 1.3798

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 34 20	2709.20	-27.71	75.23	41.54	96.08	20 19 29	2109.2	-26.58	66.74
90.00	11 21 14	4432.56	7.47	185.03	34.92	62.61	12 35 7	3832.6	3.74	178.33
100.00	21 3 17	2422.33	-29.04	53.95	41.36	97.41	21 43 40	1822.3	-27.71	45.40
100.00	12 34 58	4194.66	8.66	166.90	34.29	61.28	13 44 53	3594.7	4.76	160.28
110.00	22 28 35	2155.47	-32.56	33.02	40.69	101.04	23 4 30	1555.5	-30.69	24.29
110.00	13 26 10	4034.29	11.73	152.90	32.45	57.66	14 33 25	3434.3	7.37	146.50

DIFFERENTIAL CORRECTIONS
TDE-2.3152 TRA 7.2614 TC3-6.8844 BAU 2.1329
RDE .7268 RRA -.3711 RC3 .6344 FAU .28281
FDE-5.0477 FRA12.6169 FC-10.6097 BSP 39397
BDE 2.4266 BRA 7.2709 BC3 6.9135 FSP 6099

MID-COURSE EXECUTION ACCURACY
SGT11456.2 SGR 1154.0 SG3 1687.1
RRT -.7948 RRF -.8221 RTF .9961
SGB11514.2 R23 .0453 R13 -.9963
SG111493.0 SG2 698.0 THA 175.41

ORBIT DETERMINATION ACCURACY
ST 3853.9 SR 877.8 SS 2645.3
CRT -.8172 CRS .8767 CST -.9937
LSA 4726.1 MSA 533.5 SSA 14.1
EL1 3921.3 EL2 497.2 ALF 169.28

LAUNCH DATE OCT 12 1964 FLIGHT TIME 380.00 ARRIVAL DATE OCT 27 1965

HELIOCENTRIC CONIC DISTANCE 857.474 EARTH TO MARS

RL 149.28 LAL .00 LOL 18.70 VL 32.622 GAL -8.13 AZL 88.47 HCA 266.05 SMA 185.90 ECC .24089 INC 1.5276 V1 29.848
RP 213.31 LAP -1.52 LOP 284.76 VP 23.031 GAP -11.10 AZP 90.11 TAL 315.93 TAP 221.98 RCA 141.12 APO 230.68 V2 25.731
RC 296.356 GL 10.20 GP 5.21 ZAL 147.87 ZAP 49.07 ETS 184.07 ZAE 77.28 ETE 180.45 ZAC 87.56 ETC 259.42 CLP 48.87

PLANETOCENTRIC CONIC

C3 23.640 VHL 4.862 DLA 14.09 RAL 173.12 RAD 6568.0 VEL 12.042 PTH 2.15 VHP 4.099 DPA 16.67 RAP 158.24 ECC 1.3891

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 38 0	2708.20	-27.70	75.15	42.38	96.12	20 23 9	2108.2	-26.56	66.67
90.00	11 21 24	4445.33	7.87	185.75	35.75	62.71	12 35 30	3845.3	4.15	179.05
100.00	21 6 49	2421.76	-29.04	53.91	42.20	97.43	21 47 11	1821.8	-27.70	45.36
100.00	12 35 16	4207.00	9.06	167.59	35.11	61.39	13 45 23	3607.0	5.17	160.97
110.00	22 31 49	2155.82	-32.56	33.04	41.53	101.03	23 7 45	1555.8	-30.70	24.32
110.00	13 26 46	4045.71	12.14	153.52	33.27	57.80	14 34 12	3445.7	7.80	147.11

DIFFERENTIAL CORRECTIONS
TDE-2.4155 TRA 7.5091 TC3-6.8622 BAU 2.1772
RDE .7312 RRA -.3592 RC3 .6074 FAU .26968
FDE-4.9348 FRA12.2118 FC3-9.8761 BSP 40173
BDE 2.5237 BRA 7.5177 BC3 6.8890 FSP 5835

MID-COURSE EXECUTION ACCURACY
SGT11656.0 SGR 1132.1 SG3 1607.5
RRT -.7863 RRF -.8146 RTF .9960
SGB11710.8 R23 .0464 R13 -.9962
SG111690.1 SG2 697.5 THA 175.62

ORBIT DETERMINATION ACCURACY
ST 3953.9 SR 871.7 SS 2595.7
CRT -.8166 CRS .8763 CST -.9936
LSA 4779.9 MSA 532.6 SSA 14.0
EL1 4018.5 EL2 495.1 ALF 169.63

LAUNCH DATE OCT 12 1964 FLIGHT TIME 382.00 ARRIVAL DATE OCT 29 1965

HELIOCENTRIC CONIC DISTANCE 861.557 EARTH TO MARS

RL 149.28 LAL .00 LOL 18.70 VL 32.625 GAL -8.26 AZL 88.45 HCA 267.25 SMA 185.96 ECC .24235 INC 1.5474 V1 29.848
RP 213.01 LAP -1.55 LOP 285.95 VP 23.073 GAP -11.30 AZP 90.07 TAL 315.39 TAP 222.64 RCA 140.89 APO 231.02 V2 25.765
RC 297.448 GL 10.20 GP 5.11 ZAL 148.37 ZAP 47.97 ETS 184.15 ZAE 75.91 ETE 180.59 ZAC 87.47 ETC 259.40 CLP 47.76

PLANETOCENTRIC CONIC

C3 24.236 VHL 4.923 DLA 13.88 RAL 173.61 RAD 6568.0 VEL 12.067 PTH 2.16 VHP 4.182 DPA 16.54 RAP 158.28 ECC 1.3989

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 41 46	2707.11	-27.69	75.08	43.24	96.16	20 26 53	2107.1	-26.55	66.59
90.00	11 21 31	4458.61	8.29	186.51	36.59	62.83	12 35 50	3858.6	4.58	179.79
100.00	21 10 27	2421.13	-29.03	53.86	43.06	97.46	21 50 48	1821.1	-27.70	45.31
100.00	12 35 32	4219.82	9.48	168.32	35.95	61.52	13 45 52	3619.8	5.60	161.68
110.00	22 35 8	2156.13	-32.57	33.07	42.39	101.02	23 11 4	1556.1	-30.70	24.34
110.00	13 27 20	4057.58	12.57	154.17	34.11	57.95	14 34 57	3457.6	8.25	147.74

DIFFERENTIAL CORRECTIONS
TDE-2.5176 TRA 7.7610 TC3-6.8297 BAU 2.2209
RDE .7358 RRA -.3481 RC3 .5815 FAU .25687
FDE-4.8214 FRA11.8136 FC3-9.1760 BSP 40932
BDE 2.6269 BRA 7.7688 BC3 6.8545 FSP 5579

MID-COURSE EXECUTION ACCURACY
SGT11848.0 SGR 1111.4 SG3 1530.3
RRT -.7778 RRF -.8071 RTF .9958
SGB11900.0 R23 .0476 R13 -.9960
SG111879.6 SG2 696.7 THA 175.81

ORBIT DETERMINATION ACCURACY
ST 4051.9 SR 865.6 SS 2545.2
CRT -.8160 CRS .8761 CST -.9936
LSA 4833.5 MSA 531.4 SSA 13.9
EL1 4113.9 EL2 492.8 ALF 169.97

LAUNCH DATE OCT 12 1964 FLIGHT TIME 384.00 ARRIVAL DATE OCT 31 1965

HELIOCENTRIC CONIC DISTANCE 865.638 EARTH TO MARS

RL	149.28	LAL	.00	LOL	18.70	VL	32.628	GAL	-8.39	AZL	88.43	HCA	268.44	SMA	186.01	ECC	.24388	INC	1.5670
RP	212.72	LAP	-1.57	LOP	287.15	VP	23.115	GAP	-11.49	AZP	90.04	TAL	314.84	TAP	223.28	RCA	140.65	APO	231.38
RC	298.526	GL	10.20	GP	5.00	ZAL	148.87	ZAP	46.90	ETS	184.23	ZAE	74.57	ETE	180.72	ZAC	87.39	ETC	259.38

V1 29.848 V2 25.798 CLP 46.70

PLANETOCENTRIC CONIC

C3	24.865	VHL	4.986	DLA	13.67	RAL	174.10	RAD	6568.0	VEL	12.093	PTH	2.16	VHP	4.268	DPA	16.40	RAP	158.37

ECC 1.4092

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 45 38	2705.94	-27.68	74.99	44.12	96.20	20 30 44	2105.9	-26.54	66.51
90.00	11 21 36	4472.38	8.71	187.30	37.45	62.95	12 36 8	3872.4	5.02	180.57
100.00	21 14 9	2420.44	-29.03	53.81	43.93	97.48	21 54 30	1820.4	-27.69	45.26
100.00	12 35 45	4233.12	9.91	169.07	36.81	61.65	13 46 18	3633.1	6.04	162.41
110.00	22 38 32	2156.41	-32.57	33.09	43.26	101.00	23 14 29	1556.4	-30.71	24.36
110.00	13 27 52	4069.90	13.01	154.85	34.97	58.11	14 35 42	3469.9	8.71	148.40

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-2.6231	TRA	8.0171	TC3	-6.7893	BAU	2.2645	SGT	12033.4	SGR	1092.0	SG3	1455.6	ST	4149.0	SR	859.8	SS	2494.8
RDE	.7408	RRA	-.3376	RC3	.5569	FAU	.24451	RRT	-.7695	RRF	-.7999	RTF	.9957	CRT	-.8157	CRS	.8761	CST	-.9935
FDE	-4.7100	FRA	11.4226	FC3	-8.5133	BSP	41646	SGB	12082.9	R23	.0488	R13	-.9959	LSA	4888.4	MSA	530.0	SSA	13.9
BDE	2.7257	BRA	8.0242	BC3	6.8121	FSP	5326	SG1	12062.8	SG2	695.7	THA	175.99	EL1	4208.7	EL2	490.3	ALF	170.27

LAUNCH DATE OCT 12 1964 FLIGHT TIME 386.00 ARRIVAL DATE NOV 2 1965

HELIOCENTRIC CONIC DISTANCE 869.716 EARTH TO MARS

RL	149.28	LAL	.00	LOL	18.70	VL	32.632	GAL	-8.54	AZL	88.41	HCA	269.64	SMA	186.07	ECC	.24549	INC	1.5867
RP	212.43	LAP	-1.59	LOP	288.35	VP	23.157	GAP	-11.69	AZP	90.01	TAL	314.26	TAP	223.91	RCA	140.39	APO	231.75
RC	299.592	GL	10.19	GP	4.91	ZAL	149.38	ZAP	45.86	ETS	184.30	ZAE	73.26	ETE	180.84	ZAC	87.32	ETC	259.35

V1 29.848 V2 25.831 CLP 45.66

PLANETOCENTRIC CONIC

C3	25.531	VHL	5.053	DLA	13.44	RAL	174.60	RAD	6568.0	VEL	12.121	PTH	2.17	VHP	4.356	DPA	16.25	RAP	158.49

ECC 1.4202

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 49 34	2704.72	-27.68	74.90	45.01	96.24	20 34 39	2104.7	-26.52	66.43
90.00	11 21 37	4486.62	9.15	188.11	38.33	63.09	12 36 24	3886.6	5.47	181.37
100.00	21 17 57	2419.69	-29.02	53.75	44.83	97.51	21 58 17	1819.7	-27.68	45.21
100.00	12 35 56	4246.87	10.35	169.85	37.70	61.80	13 46 43	3646.9	6.50	163.18
110.00	22 42 0	2156.68	-32.57	33.11	44.15	100.99	23 17 57	1556.7	-30.71	24.38
110.00	13 28 22	4082.66	13.47	155.56	35.86	58.28	14 36 24	3482.7	9.18	149.09

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-2.7315	TRA	8.2788	TC3	-6.7391	BAU	2.3074	SGT	12212.2	SGR	1073.6	SG3	1383.2	ST	4245.0	SR	854.0	SS	2443.9
RDE	.7462	RRA	-.3280	RC3	.5333	FAU	.23242	RRT	-.7613	RRF	-.7928	RTF	.9955	CRT	-.8154	CRS	.8763	CST	-.9934
FDE	-4.5991	FRA	11.0398	FC3	-7.8812	BSP	42356	SGB	12259.3	R23	.0501	R13	-.9957	LSA	4943.9	MSA	528.4	SSA	13.8
BDE	2.8315	BRA	8.2853	BC3	6.7602	FSP	5082	SG1	12239.6	SG2	694.5	THA	176.16	EL1	4302.5	EL2	487.7	ALF	170.56

LAUNCH DATE OCT 12 1964 FLIGHT TIME 388.00 ARRIVAL DATE NOV 4 1965

HELIOCENTRIC CONIC DISTANCE 873.791 EARTH TO MARS

RL	149.28	LAL	.00	LOL	18.70	VL	32.635	GAL	-8.68	AZL	88.39	HCA	270.85	SMA	186.13	ECC	.24717	INC	1.6065
RP	212.15	LAP	-1.61	LOP	289.55	VP	23.198	GAP	-11.88	AZP	89.98	TAL	313.68	TAP	224.52	RCA	140.13	APO	232.14
RC	300.645	GL	10.17	GP	4.81	ZAL	149.90	ZAP	44.86	ETS	184.37	ZAE	71.98	ETE	180.96	ZAC	87.27	ETC	259.32

V1 29.848 V2 25.863 CLP 44.66

PLANETOCENTRIC CONIC

C3	26.234	VHL	5.122	DLA	13.21	RAL	175.10	RAD	6568.1	VEL	12.149	PTH	2.18	VHP	4.447	DPA	16.08	RAP	158.64

ECC 1.4317

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 53 36	2703.45	-27.67	74.81	45.92	96.29	20 38 39	2103.4	-26.51	66.34
90.00	11 21 37	4501.34	9.61	188.96	39.23	63.23	12 36 38	3901.3	5.94	182.20
100.00	21 21 49	2418.92	-29.01	53.70	45.74	97.54	22 2 8	1818.9	-27.67	45.15
100.00	12 36 4	4261.11	10.81	170.66	38.60	61.96	13 47 5	3661.1	6.98	163.97
110.00	22 45 33	2156.93	-32.58	33.13	45.06	100.98	23 21 30	1556.9	-30.72	24.40
110.00	13 28 50	4095.85	13.94	156.29	36.76	58.47	14 37 6	3495.9	9.67	149.79

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-2.8427	TRA	8.5444	TC3	-6.6815	BAU	2.3502	SGT	12383.4	SGR	1056.2	SG3	1313.2	ST	4339.3	SR	848.3	SS	2392.4
RDE	.7518	RRA	-.3190	RC3	.5109	FAU	.22076	RRT	-.7535	RRF	-.7861	RTF	.9953	CRT	-.8154	CRS	.8766	CST	-.9933
FDE	-4.4889	FRA	10.6626	FC3	-7.2852	BSP	43026	SGB	12428.4	R23	.0514	R13	-.9955	LSA	4999.5	MSA	526.5	SSA	13.7
BDE	2.9404	BRA	8.5504	BC3	6.7010	FSP	4843	SG1	12409.1	SG2	693.0	THA	176.31	EL1	4394.8	EL2	484.9	ALF	170.83

LAUNCH DATE OCT 12 1964 FLIGHT TIME 390.00 ARRIVAL DATE NOV 6 1965

HELIOCENTRIC CONIC DISTANCE 877.862 EARTH TO MARS

RL	149.28	LAL	.00	LOL	18.70	VL	32.639	GAL	-8.83	AZL	88.37	HCA	272.05	SMA	186.20	ECC	.24893	INC	1.6263
RP	211.87	LAP	-1.63	LOP	290.76	VP	23.238	GAP	-12.08	AZP	89.94	TAL	313.07	TAP	225.13	RCA	139.85	APO	232.55
RC	301.687	GL	10.15	GP	4.72	ZAL	150.43	ZAP	43.89	ETS	184.44	ZAE	70.73	ETE	181.07	ZAC	87.22	ETC	259.28

V1 29.848 V2 25.895 CLP 43.69

PLANETOCENTRIC CONIC

C3	26.978	VHL	5.194	DLA	12.97	RAL	175.61	RAD	6568.1	VEL	12.180	PTH	2.19	VHP	4.540	DPA	15.91	RAP	158.83

ECC 1.4440

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 57 42	2702.14	-27.66	74.72	46.85	96.33	20 42 44	2102.1	-26.49	66.24
90.00	11 21 33	4516.52	10.07	189.83	40.16	63.39	12 36 50	3916.5	6.42	183.05
100.00	21 25 46	2418.12	-29.00	53.64	46.66	97.57	22 6 4	1818.1	-27.65	45.10
100.00	12 36 10	4275.78	11.28	171.50	39.52	62.13	13 47 26	3675.8	7.46	164.79
110.00	22 49 9	2157.19	-32.58	33.15	45.99	100.97	23 25 6	1557.2	-30.72	24.42
110.00	13 29 16	4109.47	14.43	157.05	37.69	58.67	14 37 46	3509.5	10.17	150.53

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-2.9582	TRA	8.8150	TC3	-6.6179	BAU	2.3934	SGT	12549.1	SGR	1040.0	SG3	1245.7	ST	4433.1	SR	842.9	SS	2341.3
RDE	.7580	RRA	-.3107	RC3	.4897	FAU	.20953	RRT	-.7459	RRF	-.7798	RTF	.9951	CRT	-.8156	CRS	.8773	CST	-.9932
FDE	-4.3818	FRA	10.2919	FC3	-6.7239	BSP	43666	SGB	12592.2	R23	.0529	R13	-.9953	LSA	5056.7	MSA	524.3	SSA	13.6
BDE	3.0538	BRA	8.8205	BC3	6.6360	FSP	4609	SG1	12573.2	SG2	691.4	THA	176.45	EL1	4486.8	EL2	481.9	ALF	171.08

LAUNCH DATE OCT 12 1964 FLIGHT TIME 392.00 ARRIVAL DATE NOV 8 1965

HELIOCENTRIC CONIC DISTANCE 881.927 EARTH TO MARS

RL 149.28 LAL .00 LOL 18.70 VL 32.643 GAL -8.99 AZL 88.35 HCA 273.26 SMA 186.26 ECC .25077 INC 1.6462 V1 29.848
RP 211.60 LAP -1.64 LOP 291.97 VP 23.278 GAP -12.28 AZP 89.91 TAL 312.45 TAP 225.71 RCA 139.55 APO 232.97 V2 25.926
RC 302.717 GL 10.12 GP 4.63 ZAL 150.96 ZAP 42.95 ETS 184.50 ZAE 69.51 ETE 181.17 ZAC 87.18 ETC 259.24 CLP 42.74

PLANETOCENTRIC CONIC

C3 27.765 VHL 5.269 DLA 12.72 RAL 176.12 RAD 6568.1 VEL 12.212 PTH 2.19 VHP 4.636 DPA 15.72 RAP 159.05 ECC 1.4569

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 1 52	2700.82	-27.65	74.62	47.80	96.38	20 46 53	2100.8	-26.47	66.15
90.00	11 21 28	4532.14	10.54	190.73	41.10	63.57	12 37 0	3932.1	6.91	183.94
100.00	21 29 47	2417.30	-29.00	53.58	47.61	97.60	22 10 4	1817.3	-27.64	45.04
100.00	12 36 14	4290.89	11.76	172.36	40.47	62.32	13 47 45	3690.9	7.96	165.63
110.00	22 52 49	2157.45	-32.58	33.17	46.93	100.96	23 28 47	1557.5	-30.73	24.44
110.00	13 29 41	4123.50	14.92	157.83	38.64	58.88	14 38 25	3523.5	10.69	151.29

DIFFERENTIAL CORRECTIONS
TDE-3.0762 TRA 9.0922 TC3-6.5459 BAU 2.4360
RDE .7644 RRA -.3033 RC3 .4693 FAU .19857
FDE-4.2734 FRA 9.9293 FC3-6.1917 BSP 44300
BDE 3.1697 BRA 9.0972 BC3 6.5627 FSP 4385

MID-COURSE EXECUTION ACCURACY
SGT12708.3 SGR 1024.6 SG3 1180.5
RRT -.7387 RRF -.7737 RTF .9948
SGB12749.6 R23 .0544 R13 -.9950
SG112730.9 SG2 689.4 THA 176.58

ORBIT DETERMINATION ACCURACY
ST 4525.1 SR 837.5 SS 2289.1
CRT -.8158 CRS .8780 CST -.9931
LSA 5113.3 MSA 521.9 SSA 13.5
EL1 4577.0 EL2 478.8 ALF 171.32

LAUNCH DATE OCT 12 1964 FLIGHT TIME 394.00 ARRIVAL DATE NOV 10 1965

HELIOCENTRIC CONIC DISTANCE 885.987 EARTH TO MARS

RL 149.28 LAL .00 LOL 18.70 VL 32.647 GAL -9.16 AZL 88.33 HCA 274.47 SMA 186.33 ECC .25270 INC 1.6663 V1 29.848
RP 211.33 LAP -1.66 LOP 293.18 VP 23.318 GAP -12.48 AZP 89.87 TAL 311.82 TAP 226.29 RCA 139.24 APO 233.41 V2 25.956
RC 303.736 GL 10.09 GP 4.54 ZAL 151.51 ZAP 42.03 ETS 184.55 ZAE 68.32 ETE 181.27 ZAC 87.15 ETC 259.19 CLP 41.83

PLANETOCENTRIC CONIC

C3 28.597 VHL 5.348 DLA 12.47 RAL 176.64 RAD 6568.1 VEL 12.246 PTH 2.20 VHP 4.735 DPA 15.53 RAP 159.30 ECC 1.4706

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 6 7	2699.48	-27.64	74.52	48.76	96.43	20 51 6	2099.5	-26.46	66.06
90.00	11 21 20	4548.21	11.03	191.66	42.07	63.75	12 37 9	3948.2	7.41	184.85
100.00	21 33 51	2416.49	-28.99	53.52	48.57	97.63	22 14 8	1816.5	-27.63	44.98
100.00	12 36 17	4306.44	12.25	173.26	41.44	62.52	13 48 3	3706.4	8.47	166.50
110.00	22 56 33	2157.74	-32.59	33.19	47.88	100.95	23 32 31	1557.7	-30.73	24.46
110.00	13 30 5	4137.95	15.43	158.65	39.61	59.11	14 39 3	3537.9	11.22	152.07

DIFFERENTIAL CORRECTIONS
TDE-3.1983 TRA 9.3750 TC3-6.4682 BAU 2.4788
RDE .7713 RRA -.2965 RC3 .4500 FAU .18803
FDE-4.1671 FRA 9.5726 FC3-5.6925 BSP 44892
BDE 3.2899 BRA 9.3797 BC3 6.4838 FSP 4165

MID-COURSE EXECUTION ACCURACY
SGT12861.8 SGR 1010.2 SG3 1117.7
RRT -.7319 RRF -.7682 RTF .9946
SGB12901.4 R23 .0560 R13 -.9947
SG112883.1 SG2 687.2 THA 176.70

ORBIT DETERMINATION ACCURACY
ST 4616.3 SR 832.2 SS 2237.0
CRT -.8163 CRS .8790 CST -.9929
LSA 5170.7 MSA 519.4 SSA 13.5
EL1 4666.5 EL2 475.6 ALF 171.54

LAUNCH DATE OCT 12 1964 FLIGHT TIME 396.00 ARRIVAL DATE NOV 12 1965

HELIOCENTRIC CONIC DISTANCE 890.041 EARTH TO MARS

RL 149.28 LAL .00 LOL 18.70 VL 32.651 GAL -9.33 AZL 88.31 HCA 275.69 SMA 186.40 ECC .25471 INC 1.6863 V1 29.848
RP 211.08 LAP -1.68 LOP 294.39 VP 23.356 GAP -12.68 AZP 89.83 TAL 311.16 TAP 226.85 RCA 138.92 APO 233.88 V2 25.986
RC 304.746 GL 10.06 GP 4.46 ZAL 152.06 ZAP 41.15 ETS 184.61 ZAE 67.15 ETE 181.37 ZAC 87.12 ETC 259.14 CLP 40.95

PLANETOCENTRIC CONIC

C3 29.477 VHL 5.429 DLA 12.20 RAL 177.16 RAD 6568.2 VEL 12.282 PTH 2.21 VHP 4.837 DPA 15.33 RAP 159.59 ECC 1.4851

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 10 25	2698.14	-27.63	74.43	49.74	96.48	20 55 23	2098.1	-26.44	65.96
90.00	11 21 11	4564.72	11.53	192.62	43.06	63.96	12 37 16	3964.7	7.93	185.79
100.00	21 38 0	2415.68	-28.98	53.46	49.54	97.66	22 18 16	1815.7	-27.62	44.92
100.00	12 36 17	4322.41	12.75	174.18	42.43	62.73	13 48 19	3722.4	8.99	167.40
110.00	23 0 20	2158.05	-32.59	33.21	48.86	100.93	23 36 18	1558.1	-30.74	24.48
110.00	13 30 26	4152.80	15.95	159.49	40.60	59.36	14 39 39	3552.8	11.76	152.88

DIFFERENTIAL CORRECTIONS
TDE-3.3256 TRA 9.6633 TC3-6.3866 BAU 2.5226
RDE .7786 RRA -.2905 RC3 .4318 FAU .17792
FDE-4.0631 FRA 9.2212 FC3-5.2255 BSP 45436
BDE 3.4155 BRA 9.6677 BC3 6.4012 FSP 3949

MID-COURSE EXECUTION ACCURACY
SGT13010.4 SGR 996.7 SG3 1057.2
RRT -.7255 RRF -.7632 RTF .9943
SGB13048.5 R23 .0578 R13 -.9944
SG113030.5 SG2 684.9 THA 176.81

ORBIT DETERMINATION ACCURACY
ST 4707.2 SR 827.2 SS 2184.9
CRT -.8170 CRS .8802 CST -.9928
LSA 5229.6 MSA 516.5 SSA 13.4
EL1 4755.9 EL2 472.1 ALF 171.75

LAUNCH DATE OCT 12 1964 FLIGHT TIME 398.00 ARRIVAL DATE NOV 14 1965

HELIOCENTRIC CONIC DISTANCE 894.086 EARTH TO MARS

RL 149.28 LAL .00 LOL 18.70 VL 32.655 GAL -9.50 AZL 88.29 HCA 276.91 SMA 186.47 ECC .25681 INC 1.7066 V1 29.848
RP 210.82 LAP -1.69 LOP 295.61 VP 23.394 GAP -12.89 AZP 89.79 TAL 310.49 TAP 227.39 RCA 138.58 APO 234.36 V2 26.015
RC 305.746 GL 10.02 GP 4.38 ZAL 152.61 ZAP 40.29 ETS 184.66 ZAE 66.01 ETE 181.46 ZAC 87.11 ETC 259.08 CLP 40.09

PLANETOCENTRIC CONIC

C3 30.409 VHL 5.514 DLA 11.93 RAL 177.68 RAD 6568.2 VEL 12.320 PTH 2.22 VHP 4.941 DPA 15.11 RAP 159.90 ECC 1.5004

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 14 48	2696.81	-27.62	74.33	50.73	96.52	20 59 44	2096.8	-26.42	65.87
90.00	11 20 59	4581.64	12.03	193.61	44.07	64.17	12 37 21	3981.6	8.46	186.75
100.00	21 42 12	2414.89	-28.98	53.40	50.54	97.69	22 22 27	1814.9	-27.61	44.87
100.00	12 36 16	4338.80	13.26	175.13	43.44	62.96	13 48 34	3738.8	9.53	168.33
110.00	23 4 11	2158.40	-32.60	33.24	49.85	100.92	23 40 9	1558.4	-30.75	24.51
110.00	13 30 47	4168.05	16.47	160.35	41.62	59.62	14 40 15	3568.1	12.32	153.71

DIFFERENTIAL CORRECTIONS
TDE-3.4563 TRA 9.9581 TC3-6.2994 BAU 2.5665
RDE .7863 RRA -.2853 RC3 .4144 FAU .16813
FDE-3.9589 FRA 8.8764 FC3-4.7867 BSP 45966
BDE 3.5447 BRA 9.9622 BC3 6.3130 FSP 3741

MID-COURSE EXECUTION ACCURACY
SGT13152.9 SGR 984.0 SG3 998.8
RRT -.7196 RRF -.7586 RTF .9939
SGB13189.7 R23 .0596 R13 -.9941
SG113172.0 SG2 682.2 THA 176.91

ORBIT DETERMINATION ACCURACY
ST 4796.4 SR 822.2 SS 2132.1
CRT -.8179 CRS .8816 CST -.9926
LSA 5288.0 MSA 513.4 SSA 13.3
EL1 4843.7 EL2 468.4 ALF 171.94

LAUNCH DATE OCT 13 1964 FLIGHT TIME 240.00 ARRIVAL DATE JUN 10 1965

HELIOCENTRIC CONIC DISTANCE 584.026 EARTH TO MARS

RL	149.24	LAL	.00	LOL	19.69	VL	33.147	GAL	-7.60	AZL	93.09	HCA	191.01	SMA	195.20	ECC	.26826	INC	5.0921	V1	29.857
RP	238.63	LAP	.59	LOP	210.69	VP	20.795	GAP	8.84	AZP	86.96	TAL	322.86	TAP	153.87	RCA	142.84	APO	247.57	V2	23.024
RC	178.086	GL	-19.94	GP	16.95	ZAL	138.46	ZAP	149.24	ETS	147.81	ZAE	157.87	ETE	50.55	ZAC	105.24	ETC	255.54	CLP	153.94

PLANETOCENTRIC CONIC

C3	26.999	VHL	5.196	DLA	-11.55	RAL	156.20	RAD	6568.1	VEL	12.181	PTH	2.19	VHP	5.884	DPA	14.71	RAP	192.00	ECC	1.4443

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 46 13	1920.62	-11.52	23.66	20.72	116.05	22 18 14	1320.6	-7.93	16.83
90.00	6 50 17	5298.42	27.25	240.23	26.81	81.99	8 18 36	4698.4	25.86	231.84
100.00	23 1 43	1677.04	-12.70	5.15	20.12	117.29	23 29 40	1077.0	-8.95	358.37
100.00	8 17 29	5017.23	28.56	219.33	26.59	80.77	9 41 6	4417.2	26.99	210.88
110.00	0 0 40	1504.72	-15.80	350.30	18.35	120.71	0 25 45	904.7	-11.61	343.70
110.00	9 38 56	4762.32	32.04	199.19	25.81	77.39	10 58 19	4162.3	29.97	190.59

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	1.8074	TRA	-3.5901	TC3	1.4039	BAU	.6079	SGT	4735.7	SGR	1945.3	SG3	834.2	ST	2333.1	SR	1057.1	SS	2384.4
RDE	.8817	RRA	-1.2262	RC3	.9302	FAU	.15932	RRT	.9687	RRF	-.9966	RTF	-.9607	CRT	.9896	CRS	.9986	CST	.9958
FDE	-3.8166	FRA	6.1121	FC3	-5.1088	BSP	17595	SGB	5119.7	R23	-.2313	R13	-.9695	LSA	3494.7	MSA	181.3	SSA	12.9
BDE	2.0110	BRA	3.7937	BC3	1.6841	FSP	2633	SG1	5100.0	SG2	448.3	THA	21.88	EL1	2557.6	EL2	138.5	ALF	24.23

LAUNCH DATE OCT 13 1964 FLIGHT TIME 242.00 ARRIVAL DATE JUN 12 1965

HELIOCENTRIC CONIC DISTANCE 587.561 EARTH TO MARS

RL	149.24	LAL	.00	LOL	19.69	VL	33.118	GAL	-7.50	AZL	92.71	HCA	191.96	SMA	194.66	ECC	.26562	INC	2.7081	V1	29.857
RP	238.31	LAP	.56	LOP	211.64	VP	20.786	GAP	8.40	AZP	87.35	TAL	323.07	TAP	155.03	RCA	142.95	APO	246.36	V2	23.056
RC	180.373	GL	-17.81	GP	16.03	ZAL	139.00	ZAP	149.13	ETS	149.90	ZAE	158.92	ETE	50.45	ZAC	104.40	ETC	255.58	CLP	153.26

PLANETOCENTRIC CONIC

C3	25.737	VHL	5.073	DLA	-9.46	RAL	156.73	RAD	6568.0	VEL	12.129	PTH	2.17	VHP	5.729	DPA	13.77	RAP	191.83	ECC	1.4236

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 31 13	1977.98	-13.21	27.03	20.57	115.27	22 4 11	1378.0	-9.70	20.11
90.00	7 9 32	5217.35	26.35	234.47	25.53	79.24	8 36 29	4617.3	24.60	226.24
100.00	22 47 55	1730.53	-14.35	8.27	20.00	116.51	23 16 46	1130.5	-10.68	1.40
100.00	8 35 30	4940.03	27.59	213.80	25.25	78.01	9 57 51	4340.0	25.66	205.53
110.00	23 45 36	1549.89	-17.36	352.88	18.32	119.92	24 11 26	949.9	-13.25	346.18
110.00	9 54 18	4693.44	30.90	194.15	24.33	74.60	11 12 32	4093.4	28.48	185.79

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	1.7392	TRA	-3.5387	TC3	1.4734	BAU	.5993	SGT	4744.4	SGR	1867.4	SG3	884.6	ST	2310.3	SR	1004.2	SS	2394.2
RDE	.8164	RRA	-1.1550	RC3	.9288	FAU	.16653	RRT	.9682	RRF	-.9960	RTF	-.9619	CRT	.9891	CRS	.9977	CST	.9966
FDE	-3.8085	FRA	6.4199	FC3	-5.6016	BSP	17562	SGB	5098.6	R23	-.2265	R13	-.9699	LSA	3471.2	MSA	169.4	SSA	15.3
BDE	1.9213	BRA	3.7225	BC3	1.7417	FSP	2801	SG1	5079.9	SG2	436.2	THA	21.02	EL1	2515.5	EL2	136.0	ALF	23.33

LAUNCH DATE OCT 13 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUN 14 1965

HELIOCENTRIC CONIC DISTANCE 591.114 EARTH TO MARS

RL	149.24	LAL	.00	LOL	19.69	VL	33.090	GAL	-7.40	AZL	92.38	HCA	192.91	SMA	194.14	ECC	.26308	INC	2.3787	V1	29.857
RP	237.98	LAP	.53	LOP	212.60	VP	20.779	GAP	7.96	AZP	87.68	TAL	323.27	TAP	156.18	RCA	143.07	APO	245.21	V2	23.089
RC	182.651	GL	-15.92	GP	15.24	ZAL	139.37	ZAP	148.88	ETS	151.79	ZAE	159.89	ETE	50.69	ZAC	103.68	ETC	255.62	CLP	152.53

PLANETOCENTRIC CONIC

C3	24.671	VHL	4.967	DLA	-7.59	RAL	157.17	RAD	6568.0	VEL	12.085	PTH	2.16	VHP	5.584	DPA	12.97	RAP	191.69	ECC	1.4060

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 18 19	2027.61	-14.64	29.98	20.49	114.51	21 52 6	1427.6	-11.21	22.98
90.00	7 25 59	5146.85	25.36	229.55	24.44	76.96	8 51 46	4546.9	23.31	221.48
100.00	22 36 0	1776.97	-15.74	11.01	19.95	115.74	23 5 37	1177.0	-12.15	4.06
100.00	8 50 59	4872.73	26.55	209.07	24.12	75.73	10 12 11	4272.7	24.32	200.97
110.00	23 35 55	1589.39	-18.68	355.18	18.35	119.16	24 2 24	989.4	-14.65	348.38
110.00	10 7 34	4633.07	29.73	189.84	23.09	72.30	11 24 47	4033.1	27.02	181.69

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	1.6802	TRA	-3.4838	TC3	1.5400	BAU	.5933	SGT	4747.0	SGR	1803.4	SG3	935.7	ST	2288.7	SR	962.2	SS	2407.6
RDE	.7653	RRA	-1.0936	RC3	.9297	FAU	.17400	RRT	.9677	RRF	-.9953	RTF	-.9630	CRT	.9884	CRS	.9967	CST	.9974
FDE	-3.8148	FRA	6.7189	FC3	-6.1057	BSP	17481	SGB	5078.0	R23	-.2211	R13	-.9704	LSA	3454.7	MSA	159.4	SSA	17.9
BDE	1.8463	BRA	3.6514	BC3	1.7989	FSP	2965	SG1	5060.1	SG2	426.7	THA	20.33	EL1	2479.1	EL2	134.9	ALF	22.64

LAUNCH DATE OCT 13 1964 FLIGHT TIME 246.00 ARRIVAL DATE JUN 16 1965

HELIOCENTRIC CONIC DISTANCE 594.689 EARTH TO MARS

RL	149.24	LAL	.00	LOL	19.69	VL	33.064	GAL	-7.31	AZL	92.09	HCA	193.87	SMA	193.64	ECC	.26063	INC	2.0936	V1	29.857
RP	237.65	LAP	.50	LOP	213.56	VP	20.774	GAP	7.53	AZP	87.97	TAL	323.47	TAP	157.34	RCA	143.17	APO	244.11	V2	23.123
RC	184.919	GL	-14.23	GP	14.56	ZAL	139.63	ZAP	148.51	ETS	153.52	ZAE	160.81	ETE	51.25	ZAC	103.06	ETC	255.65	CLP	151.77

PLANETOCENTRIC CONIC

C3	23.751	VHL	4.873	DLA	-5.93	RAL	157.55	RAD	6568.0	VEL	12.047	PTH	2.15	VHP	5.447	DPA	12.28	RAP	191.57	ECC	1.3909

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 6 58	2071.23	-15.85	32.60	20.46	113.77	21 41 29	1471.2	-12.50	25.53
90.00	7 40 19	5084.58	24.33	225.28	23.50	75.05	9 5 4	4484.6	22.04	217.35
100.00	22 25 30	1817.89	-16.94	13.46	19.94	115.00	22 55 48	1217.9	-13.43	6.43
100.00	9 4 28	4813.16	25.48	204.96	23.15	73.82	10 24 41	4213.2	23.02	197.03
110.00	23 27 19	1624.35	-19.83	357.24	18.41	118.43	23 54 23	1024.4	-15.88	350.35
110.00	10 19 9	4579.46	28.56	186.10	22.03	70.37	11 35 28	3979.5	25.62	178.16

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	1.6441	TRA	-3.4105	TC3	1.6305	BAU	.5969	SGT	4744.7	SGR	1751.8	SG3	988.1	ST	2280.5	SR	930.3	SS	2426.8
RDE	.7262	RRA	-1.0390	RC3	.9355	FAU	.18204	RRT	.9685	RRF	-.9944	RTF	-.9655	CRT	.9885	CRS	.9954	CST	.9983
FDE	-3.8401	FRA	7.0067	FC3	-6.6356	BSP	16996	SGB	5057.8	R23	-.2100	R13	-.9720	LSA	3454.6	MSA	144.4	SSA	21.1
BDE	1.7973	BRA	3.5653	BC3	1.8799	FSP	3113	SG1	5041.1	SG2	410.3	THA	19.81	EL1	2459.5	EL2	130.5	ALF	22.03

LAUNCH DATE OCT 13 1964 FLIGHT TIME 248.00 ARRIVAL DATE JUN 18 1965

HELIOCENTRIC CONIC DISTANCE 598.276 EARTH TO MARS

RL 149.24 LAL .00 LOL 19.69 VL 33.039 GAL -7.22 AZL 91.84 HCA 194.83 SMA 193.17 ECC .25829 INC 1.8439 V1 29.857
RP 237.31 LAP .47 LOP 214.52 VP 20.772 GAP 7.11 AZP 88.22 TAL 323.66 TAP 158.49 RCA 143.28 APO 243.07 V2 23.157
RC 187.176 GL -12.72 GP 13.98 ZAL 139.79 ZAP 148.05 ETS 155.10 ZAE 161.69 ETE 52.14 ZAC 102.53 ETC 255.67 CLP 150.97

PLANETOCENTRIC CONIC

C3 22.947 VHL 4.790 DLA -4.42 RAL 157.87 RAD 6567.9 VEL 12.014 PTH 2.14 VHP 5.316 DPA 11.68 RAP 191.46 ECC 1.3776

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 56 51	2110.09	-16.90	34.97	20.45	113.06	21 32 1	1510.1	-13.64	27.82
90.00	7 53 0	5028.91	23.30	221.52	22.69	73.44	9 16 48	4428.9	20.81	213.73
100.00	22 16 7	1854.38	-17.97	15.68	19.96	114.29	22 47 2	1254.4	-14.54	8.56
100.00	9 16 25	4759.85	24.42	201.36	22.31	72.20	10 35 44	4159.8	21.76	193.57
110.00	23 19 36	1655.63	-20.83	359.11	18.48	117.73	23 47 12	1055.6	-16.96	352.13
110.00	10 29 25	4531.36	27.42	182.83	21.13	68.74	11 44 56	3931.4	24.28	175.06

DIFFERENTIAL CORRECTIONS
TDE 1.5855 TRA-3.3622 TC3 1.6712 BAU .5878
RDE .6917 RRA -.9954 RC3 .9371 FAU .18947
FDE-3.8569 FRA 7.3147 FC3-7.1485 BSP 17138
BDE 1.7298 BRA 3.5064 BC3 1.9160 FSP 3305

MID-COURSE EXECUTION ACCURACY
SGT 4735.9 SGR 1707.8 SG3 1041.1
RRT .9673 RRF -.9935 RTF -.9657
SGB 5034.4 R23 -.2064 R13 -.9720
SG1 5017.7 SG2 409.1 THA 19.36

ORBIT DETERMINATION ACCURACY
ST 2250.1 SR 901.9 SS 2441.6
CRT .9873 CRS .9939 CST .9986
LSA 3437.6 MSA 142.0 SSA 23.5
EL1 2420.5 EL2 133.1 ALF 21.66

LAUNCH DATE OCT 13 1964 FLIGHT TIME 250.00 ARRIVAL DATE JUN 20 1965

HELIOCENTRIC CONIC DISTANCE 601.881 EARTH TO MARS

RL 149.24 LAL .00 LOL 19.69 VL 33.015 GAL -7.13 AZL 91.62 HCA 195.79 SMA 192.73 ECC .25604 INC 1.6235 V1 29.857
RP 236.98 LAP .44 LOP 215.48 VP 20.771 GAP 6.68 AZP 88.44 TAL 323.85 TAP 159.64 RCA 143.38 APO 242.07 V2 23.191
RC 189.421 GL -11.35 GP 13.46 ZAL 139.89 ZAP 147.50 ETS 156.54 ZAE 162.53 ETE 53.37 ZAC 102.05 ETC 255.69 CLP 150.14

PLANETOCENTRIC CONIC

C3 22.233 VHL 4.715 DLA -3.06 RAL 158.14 RAD 6567.9 VEL 11.984 PTH 2.14 VHP 5.191 DPA 11.15 RAP 191.36 ECC 1.3659

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 47 43	2145.06	-17.02	37.13	20.46	112.37	21 23 28	1545.1	-14.64	29.90
90.00	8 4 19	4978.60	22.29	218.18	21.98	72.07	9 27 18	4378.6	19.63	210.52
100.00	22 7 38	1887.26	-18.88	17.70	19.98	113.61	22 39 5	1287.3	-15.53	10.51
100.00	9 27 5	4711.63	23.38	198.15	21.59	70.82	10 45 37	4111.6	20.55	190.50
110.00	23 12 36	1683.86	-21.72	.83	18.55	117.07	23 40 40	1083.9	-17.91	353.76
110.00	10 38 36	4487.80	26.31	179.93	20.35	67.34	11 53 24	3887.8	23.01	172.32

DIFFERENTIAL CORRECTIONS
TDE 1.5319 TRA-3.3103 TC3 1.7096 BAU .5800
RDE .6634 RRA -.9578 RC3 .9408 FAU .19712
FDE-3.8807 FRA 7.6265 FC3-7.6756 BSP 17218
BDE 1.6694 BRA 3.4461 BC3 1.9514 FSP 3502

MID-COURSE EXECUTION ACCURACY
SGT 4721.3 SGR 1672.0 SG3 1095.5
RRT .9661 RRF -.9925 RTF -.9661
SGB 5008.6 R23 -.2019 R13 -.9722
SG1 4991.9 SG2 408.5 THA 19.02

ORBIT DETERMINATION ACCURACY
ST 2219.9 SR 879.1 SS 2458.2
CRT .9861 CRS .9923 CST .9989
LSA 3423.9 MSA 140.7 SSA 25.8
EL1 2383.7 EL2 135.9 ALF 21.41

LAUNCH DATE OCT 13 1964 FLIGHT TIME 252.00 ARRIVAL DATE JUN 22 1965

HELIOCENTRIC CONIC DISTANCE 605.501 EARTH TO MARS

RL 149.24 LAL .00 LOL 19.69 VL 32.991 GAL -7.05 AZL 91.43 HCA 196.76 SMA 192.30 ECC .25388 INC 1.4268 V1 29.857
RP 236.64 LAP .41 LOP 216.45 VP 20.773 GAP 6.27 AZP 88.63 TAL 324.04 TAP 160.79 RCA 143.48 APO 241.12 V2 23.226
RC 191.655 GL -10.11 GP 13.01 ZAL 139.92 ZAP 146.89 ETS 157.86 ZAE 163.34 ETE 54.95 ZAC 101.64 ETC 255.71 CLP 149.28

PLANETOCENTRIC CONIC

C3 21.594 VHL 4.647 DLA -1.81 RAL 158.38 RAD 6567.9 VEL 11.957 PTH 2.13 VHP 5.072 DPA 10.70 RAP 191.26 ECC 1.3554

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 39 21	2176.82	-18.63	39.10	20.47	111.71	21 15 38	1576.8	-15.52	31.81
90.00	8 14 33	4932.74	21.30	215.19	21.36	70.88	9 36 46	4332.7	18.49	207.63
100.00	21 59 51	1917.13	-19.69	19.55	20.01	112.96	22 31 48	1317.1	-16.41	12.29
100.00	9 36 44	4667.65	22.37	195.28	20.95	69.64	10 54 32	4067.7	19.39	187.74
110.00	23 6 10	1709.54	-22.50	2.40	18.63	116.44	23 34 40	1109.5	-18.77	355.26
110.00	10 46 54	4448.01	25.24	177.33	19.67	66.14	12 1 2	3848.0	21.80	169.87

DIFFERENTIAL CORRECTIONS
TDE 1.4860 TRA-3.2514 TC3 1.7517 BAU .5750
RDE .6414 RRA -.9241 RC3 .9483 FAU .20538
FDE-3.9195 FRA 7.9340 FC3-8.2338 BSP 17156
BDE 1.6185 BRA 3.3801 BC3 1.9919 FSP 3688

MID-COURSE EXECUTION ACCURACY
SGT 4700.4 SGR 1643.7 SG3 1151.8
RRT .9651 RRF -.9914 RTF -.9666
SGB 4979.5 R23 -.1965 R13 -.9725
SG1 4962.8 SG2 408.0 THA 18.78

ORBIT DETERMINATION ACCURACY
ST 2192.5 SR 862.0 SS 2479.8
CRT .9851 CRS .9905 CST .9992
LSA 3417.5 MSA 140.2 SSA 27.8
EL1 2351.8 EL2 138.4 ALF 21.25

LAUNCH DATE OCT 13 1964 FLIGHT TIME 254.00 ARRIVAL DATE JUN 24 1965

HELIOCENTRIC CONIC DISTANCE 609.137 EARTH TO MARS

RL 149.24 LAL .00 LOL 19.69 VL 32.969 GAL -6.97 AZL 91.25 HCA 197.73 SMA 191.89 ECC .25181 INC 1.2507 V1 29.857
RP 236.29 LAP .38 LOP 217.42 VP 20.777 GAP 5.86 AZP 88.81 TAL 324.22 TAP 161.94 RCA 143.57 APO 240.21 V2 23.261
RC 193.877 GL -8.96 GP 12.61 ZAL 139.91 ZAP 146.21 ETS 159.08 ZAE 164.11 ETE 56.92 ZAC 101.27 ETC 255.73 CLP 148.39

PLANETOCENTRIC CONIC

C3 21.016 VHL 4.584 DLA -.66 RAL 158.58 RAD 6567.9 VEL 11.933 PTH 2.12 VHP 4.956 DPA 10.31 RAP 191.16 ECC 1.3459

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 31 38	2205.89	-19.36	40.93	20.49	111.08	21 8 24	1605.9	-16.32	33.57
90.00	8 23 52	4890.61	20.33	212.47	20.81	69.86	9 45 23	4290.6	17.41	205.02
100.00	21 52 41	1944.49	-20.40	21.26	20.04	112.33	22 25 5	1344.5	-17.20	13.94
100.00	9 45 31	4627.25	21.39	192.68	20.38	68.60	11 2 38	4027.2	18.29	185.25
110.00	23 0 13	1733.06	-23.21	3.87	18.70	115.83	23 29 6	1133.1	-19.54	356.65
110.00	10 54 28	4411.44	24.21	174.99	19.07	65.10	12 7 59	3811.4	20.65	167.65

DIFFERENTIAL CORRECTIONS
TDE 1.4411 TRA-3.1918 TC3 1.7867 BAU .5695
RDE .6229 RRA -.8955 RC3 .9569 FAU .21377
FDE-3.9612 FRA 8.2519 FC3-8.8058 BSP 17103
BDE 1.5700 BRA 3.3151 BC3 2.0268 FSP 3889

MID-COURSE EXECUTION ACCURACY
SGT 4673.7 SGR 1621.3 SG3 1209.8
RRT .9640 RRF -.9903 RTF -.9671
SGB 4946.9 R23 -.1911 R13 -.9728
SG1 4930.0 SG2 408.7 THA 18.62

ORBIT DETERMINATION ACCURACY
ST 2163.0 SR 848.3 SS 2502.1
CRT .9839 CRS .9885 CST .9994
LSA 3411.4 MSA 141.5 SSA 29.5
EL1 2319.1 EL2 141.2 ALF 21.18

LAUNCH DATE OCT 13 1964 FLIGHT TIME 256.00 ARRIVAL DATE JUN 26 1965

HELIOCENTRIC CONIC DISTANCE 612.788 EARTH TO MARS

RL 149.24 LAL .00 LOL 19.69 VL 32.948 GAL -6.89 AZL 91.09 HCA 198.70 SMA 191.50 ECC .24983 INC 1.0921 V1 29.857
RP 235.94 LAP .35 LOP 218.39 VP 20.783 GAP 5.46 AZP 88.97 TAL 324.39 TAP 163.09 RCA 143.66 APO 239.34 V2 23.297
RC 196.086 GL -7.91 GP 12.26 ZAL 139.86 ZAP 145.47 ETS 160.20 ZAE 164.85 ETE 59.31 ZAC 100.94 ETC 255.74 CLP 147.47

PLANETOCENTRIC CONIC

C3 20.491 VHL 4.527 DLA .40 RAL 158.75 RAD 6567.8 VEL 11.911 PTH 2.12 VHP 4.845 DPA 9.97 RAP 191.05 ECC 1.3372

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 24 29	2232.69	-20.00	42.63	20.51	110.47	21 1 41	1632.7	-17.04	35.21
90.00	8 32 26	4851.68	19.40	210.00	20.31	68.96	9 53 17	4251.7	16.37	202.63
100.00	21 46 0	1969.71	-21.05	22.86	20.07	111.73	22 18 50	1369.7	-17.91	15.47
100.00	9 53 35	4589.90	20.44	190.31	19.87	67.70	11 10 5	3989.9	17.24	182.98
110.00	22 54 41	1754.74	-23.85	5.23	18.76	115.25	23 23 56	1154.7	-20.25	357.94
110.00	11 1 24	4377.62	23.23	172.85	18.53	64.18	12 14 22	3777.6	19.56	165.63

DIFFERENTIAL CORRECTIONS
TDE 1.3978 TRA-3.1303 TC3 1.8159 BAU .5636
RDE .6078 RRA -.8708 RC3 .9671 FAU .22241
FDE-4.0082 FRA 8.5775 FC3-9.3967 BSP 17021
BDE 1.5242 BRA 3.2491 BC3 2.0574 FSP 4096

MID-COURSE EXECUTION ACCURACY
SGT 4640.3 SGR 1604.1 SG3 1269.8
RRT .9629 RRF -.9891 RTF -.9675
SGB 4909.7 R23 -.1857 R13 -.9731
SG1 4892.5 SG2 410.4 THA 18.55

ORBIT DETERMINATION ACCURACY
ST 2132.0 SR 837.8 SS 2525.8
CRT .9828 CRS .9864 CST .9996
LSA 3406.7 MSA 144.4 SSA 30.8
EL1 2286.2 EL2 144.3 ALF 21.20

LAUNCH DATE OCT 13 1964 FLIGHT TIME 258.00 ARRIVAL DATE JUN 28 1965

HELIOCENTRIC CONIC DISTANCE 616.453 EARTH TO MARS

RL 149.24 LAL .00 LOL 19.69 VL 32.927 GAL -6.82 AZL 90.95 HCA 199.67 SMA 191.13 ECC .24793 INC .9478 V1 29.857
RP 235.59 LAP .32 LOP 219.36 VP 20.791 GAP 5.06 AZP 89.11 TAL 324.56 TAP 164.23 RCA 143.74 APO 238.52 V2 23.333
RC 198.280 GL -6.94 GP 11.95 ZAL 139.79 ZAP 144.68 ETS 161.24 ZAE 165.55 ETE 62.14 ZAC 100.64 ETC 255.78 CLP 146.51

PLANETOCENTRIC CONIC

C3 20.010 VHL 4.473 DLA 1.39 RAL 158.90 RAD 6567.8 VEL 11.891 PTH 2.11 VHP 4.737 DPA 9.68 RAP 190.94 ECC 1.3293

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 17 47	2257.56	-20.59	44.22	20.52	109.88	20 55 25	1657.6	-17.69	36.74
90.00	8 40 20	4815.48	18.50	207.72	19.87	68.17	10 0 36	4215.5	15.37	200.44
100.00	21 39 46	1993.10	-21.63	24.36	20.10	111.15	22 12 59	1393.1	-18.56	16.90
100.00	10 1 2	4555.18	19.53	188.13	19.42	66.91	11 16 57	3955.2	16.24	180.89
110.00	22 49 30	1774.85	-24.42	6.50	18.82	114.69	23 19 5	1174.8	-20.89	359.14
110.00	11 7 48	4346.19	22.28	170.90	18.06	63.38	12 20 14	3746.2	18.53	163.78

DIFFERENTIAL CORRECTIONS
TDE 1.3576 TRA-3.0647 TC3 1.8438 BAU .5586
RDE .5958 RRA -.8491 RC3 .9799 FAU .23157
FDE-4.0644 FRA 8.9070 FC-10.0187 BSP 16879
BDE 1.4826 BRA 3.1802 BC3 2.0880 FSP 4304

MID-COURSE EXECUTION ACCURACY
SGT 4600.3 SGR 1592.0 SG3 1332.0
RRT .9619 RRF -.9879 RTF -.9679
SGB 4868.0 R23 -.1800 R13 -.9735
SG1 4850.5 SG2 412.7 THA 18.55

ORBIT DETERMINATION ACCURACY
ST 2100.9 SR 830.4 SS 2552.4
CRT .9817 CRS .9842 CST .9997
LSA 3405.2 MSA 148.5 SSA 31.7
EL1 2254.2 EL2 147.3 ALF 21.30

LAUNCH DATE OCT 13 1964 FLIGHT TIME 260.00 ARRIVAL DATE JUN 30 1965

HELIOCENTRIC CONIC DISTANCE 620.133 EARTH TO MARS

RL 149.24 LAL .00 LOL 19.69 VL 32.908 GAL -6.75 AZL 90.82 HCA 200.65 SMA 190.78 ECC .24611 INC .8160 V1 29.857
RP 235.24 LAP .29 LOP 220.34 VP 20.801 GAP 4.66 AZP 89.24 TAL 324.73 TAP 165.38 RCA 143.83 APO 237.73 V2 23.369
RC 200.460 GL -6.04 GP 11.67 ZAL 139.69 ZAP 143.84 ETS 162.20 ZAE 166.19 ETE 65.48 ZAC 100.37 ETC 255.77 CLP 145.53

PLANETOCENTRIC CONIC

C3 19.568 VHL 4.424 DLA 2.31 RAL 159.04 RAD 6567.8 VEL 11.872 PTH 2.11 VHP 4.633 DPA 9.43 RAP 190.81 ECC 1.3220

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 11 30	2280.75	-21.12	45.72	20.54	109.32	20 49 30	1680.8	-18.29	38.18
90.00	8 47 41	4781.68	17.63	205.62	19.47	67.48	10 7 23	4181.7	14.43	198.41
100.00	21 33 55	2014.91	-22.16	25.76	20.13	110.59	22 7 29	1414.9	-19.16	18.25
100.00	10 7 57	4522.75	18.65	186.12	19.01	66.21	11 23 20	3922.7	15.28	178.96
110.00	22 44 37	1793.59	-24.95	7.70	18.88	114.16	23 14 31	1193.6	-21.48	.28
110.00	11 13 44	4316.84	21.37	169.11	17.63	62.67	12 25 41	3716.8	17.54	162.08

DIFFERENTIAL CORRECTIONS
TDE 1.3263 TRA-2.9891 TC3 1.8819 BAU .5571
RDE .5873 RRA -.8291 RC3 .9966 FAU .24155
FDE-4.1367 FRA 9.2328 FC-10.6865 BSP 16525
BDE 1.4505 BRA 3.1020 BC3 2.1295 FSP 4495

MID-COURSE EXECUTION ACCURACY
SGT 4553.8 SGR 1584.7 SG3 1396.7
RRT .9616 RRF -.9866 RTF -.9688
SGB 4821.6 R23 -.1723 R13 -.9742
SG1 4804.0 SG2 412.2 THA 18.64

ORBIT DETERMINATION ACCURACY
ST 2074.8 SR 826.6 SS 2584.1
CRT .9812 CRS .9821 CST .9998
LSA 3411.9 MSA 152.7 SSA 32.2
EL1 2228.5 EL2 148.4 ALF 21.45

LAUNCH DATE OCT 13 1964 FLIGHT TIME 262.00 ARRIVAL DATE JUL 2 1965

HELIOCENTRIC CONIC DISTANCE 623.824 EARTH TO MARS

RL 149.24 LAL .00 LOL 19.69 VL 32.889 GAL -6.68 AZL 90.70 HCA 201.63 SMA 190.44 ECC .24437 INC .6959 V1 29.857
RP 234.89 LAP .26 LOP 221.32 VP 20.812 GAP 4.27 AZP 89.35 TAL 324.89 TAP 166.52 RCA 143.90 APO 236.98 V2 23.405
RC 202.623 GL -5.20 GP 11.43 ZAL 139.58 ZAP 142.95 ETS 163.10 ZAE 166.78 ETE 69.33 ZAC 100.12 ETC 255.78 CLP 144.51

PLANETOCENTRIC CONIC

C3 19.162 VHL 4.577 DLA 3.17 RAL 159.16 RAD 6567.8 VEL 11.855 PTH 2.10 VHP 4.532 DPA 9.22 RAP 190.67 ECC 1.3154

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 5 34	2302.50	-21.60	47.13	20.55	108.77	20 43 56	1702.5	-18.84	39.54
90.00	8 54 34	4750.00	16.79	203.67	19.11	66.86	10 13 44	4150.0	13.52	196.53
100.00	21 28 23	2035.36	-22.64	27.09	20.16	110.05	22 2 18	1435.4	-19.71	19.52
100.00	10 14 25	4492.38	17.81	184.26	18.65	65.59	11 29 18	3892.4	14.36	177.16
110.00	22 40 1	1811.14	-25.44	8.84	18.93	113.65	23 10 13	1211.1	-22.02	1.35
110.00	11 19 17	4289.36	20.51	167.45	17.24	62.03	12 30 46	3689.4	16.60	160.50

DIFFERENTIAL CORRECTIONS
TDE 1.2789 TRA-2.9277 TC3 1.8788 BAU .5464
RDE .5783 RRA -.8148 RC3 1.0096 FAU .25074
FDE-4.1899 FRA 9.5953 FC-11.3283 BSP 16543
BDE 1.4036 BRA 3.0389 BC3 2.1329 FSP 4747

MID-COURSE EXECUTION ACCURACY
SGT 4498.6 SGR 1579.5 SG3 1462.8
RRT .9598 RRF -.9854 RTF -.9685
SGB 4767.8 R23 -.1695 R13 -.9741
SG1 4749.3 SG2 419.9 THA 18.78

ORBIT DETERMINATION ACCURACY
ST 2032.3 SR 822.3 SS 2609.1
CRT .9796 CRS .9796 CST .9998
LSA 3404.0 MSA 160.4 SSA 32.7
EL1 2187.0 EL2 153.4 ALF 21.74

LAUNCH DATE OCT 13 1964 FLIGHT TIME 264.00 ARRIVAL DATE JUL 4 1965

HELIOCENTRIC CONIC DISTANCE 627.529 EARTH TO MARS

RL 149.24 LAL .00 LOL 19.69 VL 32.871 GAL -6.62 AZL 90.59 HCA 202.61 SMA 190.12 ECC .24271 INC .5850 V1 29.857
RP 234.53 LAP .22 LOP 222.30 VP 20.826 GAP 3.89 AZP 89.46 TAL 325.04 TAP 167.65 RCA 143.98 APO 236.27 V2 23.442
RC 204.770 GL -4.41 GP 11.20 ZAL 139.45 ZAP 142.01 ETS 163.93 ZAE 167.29 ETE 73.74 ZAC 99.89 ETC 255.80 CLP 143.46

PLANETOCENTRIC CONIC

C3 18.787 VHL 4.334 DLA 3.97 RAL 159.26 RAD 6567.8 VEL 11.839 PTH 2.10 VHP 4.434 DPA 9.05 RAP 190.52 ECC 1.3092

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 59 57	2322.97	-22.04	48.47	20.57	108.24	20 38 40	1723.0	-19.35	40.83
90.00	9 1 1	4720.20	15.99	201.86	18.79	66.31	10 19 41	4120.2	12.65	194.77
100.00	21 23 9	2054.60	-23.09	28.34	20.18	109.53	21 57 24	1454.6	-20.21	20.73
100.00	10 20 30	4463.81	16.99	182.53	18.32	65.03	11 34 54	3863.8	13.49	175.49
110.00	22 35 40	1827.65	-25.88	9.91	18.98	113.15	23 6 8	1227.6	-22.52	2.37
110.00	11 24 28	4263.53	19.67	165.91	16.89	61.46	12 35 32	3663.5	15.71	159.03

DIFFERENTIAL CORRECTIONS
TDE 1.2348 TRA-2.8610 TC3 1.8742 BAU .5366
RDE .5714 RRA -.8022 RC3 1.0253 FAU .26052
FDE-4.2523 FRA 9.9628 FC-12.0055 BSP 16472
BDE 1.3607 BRA 2.9714 BC3 2.1364 FSP 4996

MID-COURSE EXECUTION ACCURACY
SGT 4435.8 SGR 1578.2 SG3 1531.5
RRT .9581 RRF -.9841 RTF -.9683
SGB 4708.2 R23 -.1665 R13 -.9740
SG1 4688.7 SG2 427.7 THA 18.99

ORBIT DETERMINATION ACCURACY
ST 1990.1 SR 820.4 SS 2637.0
CRT .9782 CRS .9771 CST .9998
LSA 3399.7 MSA 168.3 SSA 32.9
EL1 2146.8 EL2 157.9 ALF 22.09

LAUNCH DATE OCT 13 1964 FLIGHT TIME 266.00 ARRIVAL DATE JUL 6 1965

HELIOCENTRIC CONIC DISTANCE 631.247 EARTH TO MARS

RL 149.24 LAL .00 LOL 19.69 VL 32.854 GAL -6.55 AZL 90.48 HCA 203.60 SMA 189.82 ECC .24112 INC .4831 V1 29.857
RP 234.17 LAP .19 LOP 223.29 VP 20.841 GAP 3.51 AZP 89.56 TAL 325.19 TAP 168.79 RCA 144.05 APO 235.59 V2 23.479
RC 206.900 GL -3.67 GP 11.01 ZAL 139.32 ZAP 141.03 ETS 164.72 ZAE 167.71 ETE 78.70 ZAC 99.67 ETC 255.81 CLP 142.37

PLANETOCENTRIC CONIC

C3 18.439 VHL 4.294 DLA 4.73 RAL 159.36 RAD 6567.7 VEL 11.825 PTH 2.09 VHP 4.339 DPA 8.91 RAP 190.34 ECC 1.3035

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 54 37	2342.33	-22.45	49.74	20.59	107.73	20 33 40	1742.3	-19.82	42.06
90.00	9 7 6	4692.07	15.21	200.16	18.50	65.82	10 25 18	4092.1	11.82	193.12
100.00	21 18 11	2072.79	-23.50	29.54	20.21	109.03	21 52 44	1472.8	-20.68	21.87
100.00	10 26 13	4436.85	16.21	180.91	18.02	64.54	11 40 10	3836.8	12.65	173.93
110.00	22 31 32	1843.23	-26.29	10.94	19.03	112.67	23 2 15	1243.2	-22.99	3.34
110.00	11 29 22	4239.16	18.87	164.47	16.58	60.96	12 40 1	3639.2	14.86	157.65

DIFFERENTIAL CORRECTIONS
TDE 1.1986 TRA-2.7845 TC3 1.8784 BAU .5298
RDE .5670 RRA -.7909 RC3 1.0443 FAU .27108
FDE-4.3288 FRA10.3307 FC-12.7276 BSP 16195
BDE 1.3259 BRA 2.8946 BC3 2.1491 FSP 5233

MID-COURSE EXECUTION ACCURACY
SGT 4365.6 SGR 1580.5 SG3 1602.8
RRT .9572 RRF -.9829 RTF -.9685
SGB 4642.9 R23 -.1613 R13 -.9743
SG1 4622.7 SG2 432.1 THA 19.29

ORBIT DETERMINATION ACCURACY
ST 1952.1 SR 821.0 SS 2669.3
CRT .9774 CRS .9747 CST .9997
LSA 3402.6 MSA 176.1 SSA 32.8
EL1 2111.7 EL2 160.3 ALF 22.48

LAUNCH DATE OCT 13 1964 FLIGHT TIME 268.00 ARRIVAL DATE JUL 8 1965

HELIOCENTRIC CONIC DISTANCE 634.977 EARTH TO MARS

RL 149.24 LAL .00 LOL 19.69 VL 32.838 GAL -6.50 AZL 90.39 HCA 204.59 SMA 189.53 ECC .23961 INC .3885 V1 29.857
RP 233.80 LAP .16 LOP 224.28 VP 20.857 GAP 3.14 AZP 89.65 TAL 325.33 TAP 169.92 RCA 144.11 APO 234.94 V2 23.517
RC 209.011 GL -2.98 GP 10.83 ZAL 139.18 ZAP 140.00 ETS 165.46 ZAE 168.02 ETE 84.19 ZAC 99.47 ETC 255.82 CLP 141.25

PLANETOCENTRIC CONIC

C3 18.117 VHL 4.256 DLA 5.45 RAL 159.44 RAD 6567.7 VEL 11.811 PTH 2.09 VHP 4.248 DPA 8.80 RAP 190.15 ECC 1.2982

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 49 33	2360.70	-22.83	50.96	20.61	107.23	20 28 53	1760.7	-20.25	43.23
90.00	9 12 52	4665.46	14.46	198.56	18.24	65.39	10 30 37	4065.5	11.02	191.57
100.00	21 13 28	2090.03	-23.87	30.68	20.24	108.54	21 48 18	1490.0	-21.12	22.97
100.00	10 31 38	4411.36	15.46	179.39	17.75	64.09	11 45 9	3811.4	11.85	172.46
110.00	22 27 36	1858.00	-26.68	11.91	19.09	112.21	22 58 34	1258.0	-23.43	4.26
110.00	11 33 59	4216.16	18.11	163.12	16.30	60.50	12 44 15	3616.2	14.04	156.37

DIFFERENTIAL CORRECTIONS
TDE 1.1596 TRA-2.7075 TC3 1.8687 BAU .5208
RDE .5634 RRA -.7820 RC3 1.0637 FAU .28180
FDE-4.4049 FRA10.7133 FC-13.4665 BSP 15951
BDE 1.2892 BRA 2.8182 BC3 2.1502 FSP 5486

MID-COURSE EXECUTION ACCURACY
SGT 4286.2 SGR 1585.4 SG3 1676.3
RRT .9560 RRF -.9817 RTF -.9684
SGB 4570.0 R23 -.1573 R13 -.9744
SG1 4548.9 SG2 438.4 THA 19.66

ORBIT DETERMINATION ACCURACY
ST 1909.3 SR 822.5 SS 2701.0
CRT .9765 CRS .9722 CST .9996
LSA 3403.2 MSA 184.8 SSA 32.7
EL1 2072.5 EL2 163.2 ALF 22.97

LAUNCH DATE OCT 13 1964 FLIGHT TIME 270.00 ARRIVAL DATE JUL 10 1965

HELIOCENTRIC CONIC DISTANCE 638.719 EARTH TO MARS

RL 149.24 LAL .00 LOL 19.69 VL 32.823 GAL -6.44 AZL 90.30 HCA 205.58 SMA 189.25 ECC .23817 INC .2994 V1 29.857
RP 233.44 LAP .13 LOP 225.27 VP 20.876 GAP 2.78 AZP 89.73 TAL 325.46 TAP 171.04 RCA 144.18 APO 234.33 V2 23.555
RC 211.104 GL -2.32 GP 10.67 ZAL 139.04 ZAP 138.93 ETS 166.15 ZAE 168.19 ETE 90.12 ZAC 99.28 ETC 255.84 CLP 140.10

PLANETOCENTRIC CONIC

C3 17.818 VHL 4.221 DLA 6.13 RAL 159.52 RAD 6567.7 VEL 11.798 PTH 2.09 VHP 4.159 DPA 8.73 RAP 189.94 ECC 1.2932

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 44 43	2378.18	-23.17	52.12	20.63	106.75	20 24 21	1778.2	-20.66	44.35
90.00	9 18 21	4640.24	13.74	197.06	18.00	65.00	10 35 41	4040.2	10.26	190.11
100.00	21 8 58	2106.44	-24.22	31.77	20.27	108.07	21 44 4	1506.4	-21.53	24.01
100.00	10 36 47	4387.21	14.74	177.96	17.51	63.69	11 49 54	3787.2	11.08	171.08
110.00	22 23 52	1872.03	-27.04	12.85	19.14	111.76	22 55 4	1272.0	-23.84	5.14
110.00	11 38 22	4194.38	17.37	161.86	16.05	60.09	12 48 16	3594.4	13.26	155.16

DIFFERENTIAL CORRECTIONS
TDE 1.1211 TRA-2.6274 TC3 1.8508 BAU .5110
RDE .5612 RRA -.7746 RC3 1.0849 FAU .29303
FDE-4.4891 FRA11.1033 FC-14.2372 BSP 15672
BDE 1.2537 BRA 2.7392 BC3 2.1453 FSP 5741

MID-COURSE EXECUTION ACCURACY
SGT 4197.8 SGR 1592.9 SG3 1752.3
RRT .9546 RRF -.9806 RTF -.9680
SGB 4489.9 R23 -.1540 R13 -.9743
SG1 4467.7 SG2 445.9 THA 20.12

ORBIT DETERMINATION ACCURACY
ST 1864.3 SR 825.6 SS 2735.0
CRT .9757 CRS .9697 CST .9994
LSA 3405.7 MSA 193.8 SSA 32.5
EL1 2032.2 EL2 166.0 ALF 23.54

LAUNCH DATE OCT 13 1964 FLIGHT TIME 272.00 ARRIVAL DATE JUL 12 1965

HELIOCENTRIC CONIC DISTANCE 642.472 EARTH TO MARS

RL	149.24	LAL	.00	LOL	19.69	VL	32.808	GAL	-6.39	AZL	90.22	HCA	206.58	SMA	188.99	ECC	.23680	INC	.2179
RP	233.07	LAP	.10	LOP	226.27	VP	20.895	GAP	2.41	AZP	89.81	TAL	325.59	TAP	172.17	RCA	144.24	APO	233.74
RC	213.179	GL	-1.70	GP	10.52	ZAL	138.89	ZAP	137.81	ETS	166.81	ZAE	168.23	ETE	96.38	ZAC	99.10	ETC	255.86

V1	29.857	V2	23.593	CLP	138.91														

PLANETOCENTRIC CONIC

C3	17.542	VHL	4.188	DLA	6.77	RAL	159.60	RAD	6567.7	VEL	11.787	PTH	2.08	VHP	4.073	DPA	8.68	RAP	189.70
ECC	1.2887																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 40 6	2394.86	-23.50	53.23	20.66	106.28	20 20 0	1794.9	-21.04	45.42
90.00	9 23 34	4616.29	13.05	195.64	17.80	64.64	10 40 30	4016.3	9.53	188.74
100.00	21 4 40	2122.08	-24.55	32.82	20.31	107.61	21 40 2	1522.1	-21.91	25.02
100.00	10 41 41	4364.30	14.04	176.62	17.30	63.34	11 54 25	3764.3	10.35	169.77
110.00	22 20 18	1885.40	-27.37	13.74	19.20	111.33	22 51 43	1285.4	-24.23	5.99
110.00	11 42 32	4173.74	16.67	160.68	15.82	59.72	12 52 6	3573.7	12.52	154.02

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.0811	TRA	-2.5456	TC3	1.8214	BAU	.4998	SGT	4100.3	SGR	1602.5	SG3	1830.5	ST	1815.5	SR	829.3	SS	2767.9
RDE	.5595	RRA	-.7694	RC3	1.1063	FAU	.30435	RRT	.9531	RRF	-.9794	RTF	-.9676	CRT	.9749	CRS	.9672	CST	.9992
FDE	-4.5706	FRA	11.5114	FC	-15.0206	BSP	15392	SGB	4402.3	R23	-.1512	R13	-.9742	LSA	3406.3	MSA	203.3	SSA	32.3
BDE	1.2173	BRA	2.6593	BC3	2.1310	FSP	6016	SG1	4378.8	SG2	454.0	THA	20.66	EL1	1988.8	EL2	168.6	ALF	24.19

LAUNCH DATE OCT 13 1964 FLIGHT TIME 274.00 ARRIVAL DATE JUL 14 1965

HELIOCENTRIC CONIC DISTANCE 646.237 EARTH TO MARS

RL	149.24	LAL	.00	LOL	19.69	VL	32.794	GAL	-6.34	AZL	90.14	HCA	207.58	SMA	188.74	ECC	.23550	INC	.1406
RP	232.70	LAP	.07	LOP	227.27	VP	20.917	GAP	2.06	AZP	89.88	TAL	325.71	TAP	173.29	RCA	144.29	APO	233.19
RC	215.236	GL	-1.11	GP	10.40	ZAL	138.75	ZAP	136.65	ETS	167.44	ZAE	168.10	ETE	102.81	ZAC	98.92	ETC	255.87

V1	29.857	V2	23.631	CLP	137.67														

PLANETOCENTRIC CONIC

C3	17.286	VHL	4.158	DLA	7.38	RAL	159.67	RAD	6567.7	VEL	11.776	PTH	2.08	VHP	3.990	DPA	8.66	RAP	189.43
ECC	1.2845																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 35 41	2410.81	-23.80	54.31	20.69	105.82	20 15 52	1810.8	-21.40	46.46
90.00	9 28 33	4593.52	12.38	194.30	17.61	64.33	10 45 7	3993.5	8.83	187.43
100.00	21 0 34	2137.05	-24.86	33.83	20.35	107.16	21 36 11	1537.0	-22.27	25.99
100.00	10 46 22	4342.52	13.37	175.35	17.11	63.01	11 58 44	3742.5	9.65	168.54
110.00	22 16 53	1898.18	-27.68	14.61	19.26	110.90	22 48 32	1298.2	-24.59	6.80
110.00	11 46 31	4154.15	15.99	159.56	15.62	59.38	12 55 45	3554.1	11.81	152.95

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.0416	TRA	-2.4598	TC3	1.7835	BAU	.4878	SGT	3992.9	SGR	1614.4	SG3	1911.2	ST	1764.6	SR	834.1	SS	2802.7
RDE	.5589	RRA	-.7655	RC3	1.1291	FAU	.31613	RRT	.9516	RRF	-.9784	RTF	-.9669	CRT	.9742	CRS	.9647	CST	.9990
FDE	-4.6590	FRA	11.9279	FC	-15.0331	BSP	15071	SGB	4306.9	R23	-.1488	R13	-.9740	LSA	3408.6	MSA	212.9	SSA	32.0
BDE	1.1821	BRA	2.5761	BC3	2.1109	FSP	6294	SG1	4282.0	SG2	462.8	THA	21.30	EL1	1944.4	EL2	170.8	ALF	24.93

LAUNCH DATE OCT 13 1964 FLIGHT TIME 276.00 ARRIVAL DATE JUL 16 1965

HELIOCENTRIC CONIC DISTANCE 650.012 EARTH TO MARS

RL	149.24	LAL	.00	LOL	19.69	VL	32.780	GAL	-6.29	AZL	90.07	HCA	208.58	SMA	188.50	ECC	.23426	INC	.0671
RP	232.32	LAP	.03	LOP	228.27	VP	20.939	GAP	1.71	AZP	89.94	TAL	325.82	TAP	174.40	RCA	144.35	APO	232.66
RC	217.275	GL	-.54	GP	10.28	ZAL	138.61	ZAP	135.45	ETS	168.04	ZAE	167.80	ETE	109.21	ZAC	98.75	ETC	255.89

V1	29.857	V2	23.670	CLP	136.41														

PLANETOCENTRIC CONIC

C3	17.048	VHL	4.129	DLA	7.95	RAL	159.74	RAD	6567.7	VEL	11.766	PTH	2.08	VHP	3.909	DPA	8.66	RAP	189.14
ECC	1.2806																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 31 28	2426.11	-24.08	55.34	20.73	105.37	20 11 54	1826.1	-21.73	47.45
90.00	9 33 20	4571.84	11.74	193.04	17.45	64.05	10 49 32	3971.8	8.15	186.19
100.00	20 56 39	2151.38	-25.14	34.80	20.40	106.73	21 32 30	1551.4	-22.61	26.92
100.00	10 50 51	4321.80	12.73	174.14	16.95	62.72	12 2 52	3721.8	8.97	167.37
110.00	22 13 39	1910.41	-27.98	15.43	19.33	110.49	22 45 29	1310.4	-24.93	7.59
110.00	11 50 20	4135.54	15.34	158.51	15.44	59.07	12 59 15	3535.5	11.13	151.94

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.0017	TRA	-2.3701	TC3	1.7359	BAU	.4750	SGT	3874.9	SGR	1628.1	SG3	1993.9	ST	1710.7	SR	839.8	SS	2837.9
RDE	.5590	RRA	-.7629	RC3	1.1529	FAU	.32827	RRT	.9499	RRF	-.9774	RTF	-.9659	CRT	.9737	CRS	.9623	CST	.9987
FDE	-4.7505	FRA	12.3535	FC	-16.6700	BSP	14729	SGB	4203.1	R23	-.1470	R13	-.9737	LSA	3411.0	MSA	222.8	SSA	31.7
BDE	1.1471	BRA	2.4899	BC3	2.0839	FSP	6580	SG1	4176.5	SG2	472.2	THA	22.05	EL1	1897.9	EL2	172.5	ALF	25.78

LAUNCH DATE OCT 13 1964 FLIGHT TIME 278.00 ARRIVAL DATE JUL 18 1965

HELIOCENTRIC CONIC DISTANCE 653.799 EARTH TO MARS

RL	149.24	LAL	.00	LOL	19.69	VL	32.767	GAL	-6.25	AZL	90.00	HCA	209.58	SMA	188.28	ECC	.23309	INC	.0099
RP	231.95	LAP	.00	LOP	229.28	VP	20.963	GAP	1.36	AZP	90.00	TAL	325.93	TAP	175.51	RCA	144.39	APO	232.17
RC	219.295	GL	-.01	GP	10.17	ZAL	138.47	ZAP	134.20	ETS	168.61	ZAE	167.33	ETE	115.41	ZAC	98.58	ETC	255.91

V1	29.857	V2	23.709	CLP	135.10														

PLANETOCENTRIC CONIC

C3	16.829	VHL	4.102	DLA	8.50	RAL	159.81	RAD	6567.7	VEL	11.756	PTH	2.08	VHP	3.832	DPA	8.69	RAP	188.83
ECC	1.2770																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 27 26	2440.80	-24.34	56.34	20.78	104.94	20 8 7	1840.8	-22.05	48.41
90.00	9 37 56	4551.19	11.12	191.84	17.32	63.79	10 53 47	3951.2	7.51	185.02
100.00	20 52 54	2165.14	-25.41	35.74	20.45	106.50	21 28 59	1565.1	-22.93	27.81
100.00	10 55 9	4302.08	12.11	173.01	16.80	62.46	12 6 51	3702.1	8.33	166.26
110.00	22 10 33	1922.14	-28.26	16.24	19.40	110.09	22 42 35	1322.1	-25.26	8.34
110.00	11 53 59	4117.85	14.72	157.51	15.29	58.80	13 2 37	3517.9	10.48	150.98

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.9607	TRA	-2.2774	TC3	1.6757	BAU	.4607	SGT	3746.2	SGR	1643.2	SG3	2078.6	ST	1653.2	SR	845.9	SS	2872.6
RDE	.5595	RRA	-.7618	RC3	1.1769	FAU	.34054	RRT	.9480	RRF	-.9764	RTF	-.9647	CRT	.9733	CRS	.9599	CST	.9983
FDE	-4.8411	FRA	12.7944	FC	-17.5180	BSP	14358	SGB	4090.7	R23	-.1457	R13	-.9732	LSA	3412.6	MSA	232.9	SSA	31.4
BDE	1.1118	BRA	2.4014	BC3	2.0477	FSP	6880	SG1	4062.2	SG2	482.3	THA	22.92	EL1	1848.9	EL2	173.8	ALF	26.73

LAUNCH DATE OCT 13 1964 FLIGHT TIME 280.00 ARRIVAL DATE JUL 20 1965

HELIOCENTRIC CONIC DISTANCE 657.596 EARTH TO MARS

RL 149.24 LAL .00 LOL 19.69 VL 32.755 GAL -6.20 AZL 89.94 HCA 210.59 SMA 188.07 ECC .23198 INC .0618 V1 29.857
RP 231.57 LAP -.03 LOP 230.29 VP 20.989 GAP 1.02 AZP 90.05 TAL 326.03 TAP 176.62 RCA 144.44 APO 231.70 V2 23.748
RC 221.297 GL .50 GP 10.08 ZAL 138.34 ZAP 132.91 ETS 169.16 ZAE 166.70 ETE 121.28 ZAC 98.41 ETC 255.93 CLP 133.75

PLANETOCENTRIC CONIC

C3 16.627 VHL 4.078 DLA 9.03 RAL 159.88 RAD 6567.7 VEL 11.748 PTH 2.07 VHP 3.757 DPA 8.74 RAP 188.48 ECC 1.2736

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 23 35	2454.94	-24.58	57.30	20.84	104.52	20 4 30	1854.9	-22.35	49.34
90.00	9 42 21	4531.51	10.53	190.69	17.20	63.56	10 57 53	3931.5	6.89	183.90
100.00	20 49 20	2178.37	-25.66	36.64	20.51	105.89	21 25 38	1578.4	-23.23	28.68
100.00	10 59 17	4283.30	11.52	171.93	16.69	62.22	12 10 41	3683.3	7.71	165.21
110.00	22 7 36	1933.41	-28.52	17.01	19.48	109.70	22 39 50	1333.4	-25.56	9.07
110.00	11 57 30	4101.03	14.13	156.58	15.16	58.54	13 5 51	3501.0	9.86	150.07

DIFFERENTIAL CORRECTIONS
TDE .9197 TRA-2.1806 TC3 1.6058 BAU .4459
RDE .5608 RRA -.7616 RC3 1.2019 FAU .35323
FDE-4.9378 FRA13.2419 FC-18.3919 BSP 13948
BDE 1.0772 BRA 2.3097 BC3 2.0058 FSP 7182

MID-COURSE EXECUTION ACCURACY
SGT 3606.9 SGR 1660.0 SG3 2165.3
RRT .9459 RRF -.9755 RTF -.9631
SGB 3970.6 R23 -.1451 R13 -.9726
SG1 3939.8 SG2 493.3 THA 23.92

ORBIT DETERMINATION ACCURACY
ST 1593.0 SR 852.9 SS 2908.8
CRT .9730 CRS .9575 CST .9979
LSA 3415.6 MSA 242.9 SSA 31.1
EL1 1798.5 EL2 174.5 ALF 27.80

LAUNCH DATE OCT 13 1964 FLIGHT TIME 282.00 ARRIVAL DATE JUL 22 1965

HELIOCENTRIC CONIC DISTANCE 661.403 EARTH TO MARS

RL 149.24 LAL .00 LOL 19.69 VL 32.744 GAL -6.17 AZL 89.88 HCA 211.60 SMA 187.87 ECC .23093 INC .1225 V1 29.857
RP 231.20 LAP -.06 LOP 231.30 VP 21.015 GAP .68 AZP 90.11 TAL 326.11 TAP 177.72 RCA 144.48 APO 231.25 V2 23.788
RC 223.281 GL .99 GP 9.99 ZAL 138.21 ZAP 131.57 ETS 169.69 ZAE 165.91 ETE 126.71 ZAC 98.24 ETC 255.96 CLP 132.36

PLANETOCENTRIC CONIC

C3 16.441 VHL 4.055 DLA 9.53 RAL 159.96 RAD 6567.7 VEL 11.740 PTH 2.07 VHP 3.685 DPA 8.82 RAP 188.10 ECC 1.2706

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 19 54	2468.54	-24.81	58.23	20.90	104.10	20 1 2	1868.5	-22.63	50.24
90.00	9 46 37	4512.74	9.95	189.61	17.11	63.35	11 1 50	3912.7	6.30	182.84
100.00	20 45 55	2191.11	-25.89	37.51	20.59	105.49	21 22 26	1591.1	-23.51	29.52
100.00	11 3 17	4265.41	10.95	170.91	16.59	62.01	12 14 22	3665.4	7.12	164.21
110.00	22 4 48	1944.25	-28.76	17.76	19.57	109.32	22 37 12	1344.2	-25.86	9.78
110.00	12 0 53	4085.03	13.56	155.69	15.06	58.32	13 8 58	3485.0	9.27	149.21

DIFFERENTIAL CORRECTIONS
TDE .8785 TRA-2.0790 TC3 1.5248 BAU .4303
RDE .5627 RRA -.7622 RC3 1.2276 FAU .36619
FDE-5.0381 FRA13.6967 FC-19.2831 BSP 13504
BDE 1.0432 BRA 2.2143 BC3 1.9576 FSP 7489

MID-COURSE EXECUTION ACCURACY
SGT 3456.0 SGR 1678.1 SG3 2253.6
RRT .9434 RRF -.9746 RTF -.9611
SGB 3841.8 R23 -.1450 R13 -.9719
SG1 3808.5 SG2 504.9 THA 25.08

ORBIT DETERMINATION ACCURACY
ST 1530.0 SR 860.5 SS 2945.4
CRT .9729 CRS .9553 CST .9974
LSA 3419.4 MSA 253.0 SSA 30.8
EL1 1746.7 EL2 174.2 ALF 29.00

LAUNCH DATE OCT 13 1964 FLIGHT TIME 284.00 ARRIVAL DATE JUL 24 1965

HELIOCENTRIC CONIC DISTANCE 665.220 EARTH TO MARS

RL 149.24 LAL .00 LOL 19.69 VL 32.733 GAL -6.13 AZL 89.82 HCA 212.62 SMA 187.67 ECC .22995 INC .1808 V1 29.857
RP 230.82 LAP -.10 LOP 232.31 VP 21.043 GAP .35 AZP 90.15 TAL 326.19 TAP 178.81 RCA 144.52 APO 230.83 V2 23.827
RC 225.247 GL 1.46 GP 9.91 ZAL 138.09 ZAP 130.19 ETS 170.20 ZAE 164.97 ETE 131.66 ZAC 98.08 ETC 255.99 CLP 130.93

PLANETOCENTRIC CONIC

C3 16.270 VHL 4.034 DLA 10.00 RAL 160.03 RAD 6567.7 VEL 11.733 PTH 2.07 VHP 3.616 DPA 8.92 RAP 187.69 ECC 1.2678

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 16 23	2481.66	-25.03	59.13	20.98	103.70	19 57 44	1881.7	-22.89	51.11
90.00	9 50 44	4494.85	9.41	188.58	17.04	63.17	11 5 39	3894.8	5.73	181.83
100.00	20 42 40	2203.38	-26.11	38.36	20.67	105.09	21 19 23	1603.4	-23.78	30.33
100.00	11 7 8	4248.36	10.40	169.93	16.51	61.82	12 17 56	3648.4	6.55	163.26
110.00	22 2 8	1954.68	-29.00	18.48	19.67	108.95	22 34 43	1354.7	-26.14	10.46
110.00	12 4 9	4069.83	13.01	154.85	14.97	58.11	13 11 59	3469.8	8.70	148.40

DIFFERENTIAL CORRECTIONS
TDE .8362 TRA-1.9734 TC3 1.4310 BAU .4137
RDE .5649 RRA -.7639 RC3 1.2532 FAU .37928
FDE-5.1383 FRA14.1623 FC-20.1820 BSP 13031
BDE 1.0091 BRA 2.1161 BC3 1.9022 FSP 7807

MID-COURSE EXECUTION ACCURACY
SGT 3293.2 SGR 1697.1-SG3 2343.4
RRT .9405 RRF -.9738 RTF -.9584
SGB 3704.8 R23 -.1455 R13 -.9710
SG1 3668.5 SG2 517.5 THA 26.43

ORBIT DETERMINATION ACCURACY
ST 1463.3 SR 868.4 SS 2981.8
CRT .9730 CRS .9530 CST .9968
LSA 3422.9 MSA 263.2 SSA 30.5
EL1 1692.7 EL2 173.1 ALF 30.36

LAUNCH DATE OCT 13 1964 FLIGHT TIME 286.00 ARRIVAL DATE JUL 26 1965

HELIOCENTRIC CONIC DISTANCE 669.049 EARTH TO MARS

RL 149.24 LAL .00 LOL 19.69 VL 32.722 GAL -6.10 AZL 89.76 HCA 213.64 SMA 187.49 ECC .22902 INC .2347 V1 29.857
RP 230.43 LAP -.13 LOP 233.33 VP 21.072 GAP .03 AZP 90.20 TAL 326.27 TAP 179.91 RCA 144.55 APO 230.43 V2 23.867
RC 227.193 GL 1.91 GP 9.84 ZAL 137.98 ZAP 128.77 ETS 170.70 ZAE 163.90 ETE 136.13 ZAC 97.91 ETC 256.02 CLP 129.46

PLANETOCENTRIC CONIC

C3 16.114 VHL 4.014 DLA 10.45 RAL 160.11 RAD 6567.6 VEL 11.726 PTH 2.07 VHP 3.550 DPA 9.04 RAP 187.25 ECC 1.2652

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 13 1	2494.32	-25.23	60.01	21.06	103.31	19 54 36	1894.3	-23.15	51.95
90.00	9 54 42	4477.80	8.88	187.61	16.99	63.00	11 9 20	3877.8	5.19	180.87
100.00	20 39 34	2215.21	-26.32	39.18	20.76	104.71	21 16 29	1615.2	-24.04	31.12
100.00	11 10 51	4232.14	9.88	169.01	16.46	61.64	12 21 23	3632.1	6.01	162.36
110.00	21 59 36	1964.74	-29.22	19.18	19.78	108.59	22 32 21	1364.7	-26.40	11.13
110.00	12 7 18	4055.37	12.49	154.05	14.91	57.92	13 14 54	3455.4	8.16	147.63

DIFFERENTIAL CORRECTIONS
TDE .7933 TRA-1.8629 TC3 1.3262 BAU .3970
RDE .5676 RRA -.7662 RC3 1.2794 FAU .39269
FDE-5.2414 FRA14.6319 FC-21.0982 BSP 12517
BDE .9754 BRA 2.0143 BC3 1.8428 FSP 8123

MID-COURSE EXECUTION ACCURACY
SGT 3118.7 SGR 1717.1 SG3 2434.4
RRT .9371 RRF -.9731 RTF -.9551
SGB 3560.2 R23 -.1467 R13 -.9699
SG1 3520.3 SG2 531.1 THA 27.98

ORBIT DETERMINATION ACCURACY
ST 1393.2 SR 876.7 SS 3018.2
CRT .9734 CRS .9508 CST .9961
LSA 3426.9 MSA 273.4 SSA 30.2
EL1 1637.2 EL2 171.0 ALF 31.88

LAUNCH DATE OCT 13 1964 FLIGHT TIME 288.00 ARRIVAL DATE JUL 28 1965

HELIOCENTRIC CONIC DISTANCE 672.884 EARTH TO MARS

RL	149.24	LAL	.00	LOL	19.69	VL	32.712	GAL	-6.07	AZL	89.71	HCA	214.66	SMA	187.32	ECC	.22815	INC	.2868
RP	230.05	LAP	-.16	LOP	234.36	VP	21.102	GAP	-.29	AZP	90.24	TAL	326.33	TAP	180.99	RCA	144.59	APO	230.06
RC	229.120	GL	2.34	GP	9.77	ZAL	137.87	ZAP	127.30	ETS	171.18	ZAE	162.71	ETE	140.12	ZAC	97.73	ETC	256.05

V1 29.857 V2 23.907 CLP 127.94

PLANETOCENTRIC CONIC

C3	15.972	VHL	3.996	DLA	10.88	RAL	160.19	RAD	6567.6	VEL	11.720	PTH	2.06	VHP	3.487	DPA	9.19	RAP	186.78

ECC 1.2629

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 9 50	2506.54	-25.42	60.85	21.16	102.92	19 51 36	1906.5	-23.38	52.77
90.00	9 58 34	4461.56	8.38	186.68	16.96	62.85	11 12 55	3861.6	4.67	179.96
100.00	20 36 37	2226.63	-26.51	39.97	20.86	104.34	21 13 44	1626.6	-24.28	31.88
100.00	11 14 27	4216.69	9.38	168.14	16.42	61.49	12 24 44	3616.7	5.50	161.50
110.00	21 57 12	1974.45	-29.42	19.86	19.90	108.24	22 30 7	1374.4	-26.65	11.77
110.00	12 10 21	4041.64	11.99	153.30	14.86	57.75	13 17 43	3441.6	7.65	146.90

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.7494	TRA	-1.7482	TC3	1.2066	BAU	.3795	SGT	2932.2	SGR	1737.5	SG3	2526.1	ST	1319.6	SR	885.2	SS	3054.3
RDE	.5705	RRA	-.7695	RC3	1.3050	FAU	.40603	RRT	.9327	RRF	-.9724	RTF	-.9506	CRT	.9740	CRS	.9487	CST	.9952
FDE	-5.3436	FRA	15.1114	FC	-22.0085	BSP	11990	SGB	3408.4	R23	-.1487	R13	-.9686	LSA	3431.1	MSA	283.6	SSA	29.9
BDE	.9419	BRA	1.9100	BC3	1.7773	FSP	8452	SG1	3364.3	SG2	546.3	THA	29.79	EL1	1580.2	EL2	167.6	ALF	33.59

LAUNCH DATE OCT 13 1964 FLIGHT TIME 290.00 ARRIVAL DATE JUL 30 1965

HELIOCENTRIC CONIC DISTANCE 676.730 EARTH TO MARS

RL	149.24	LAL	.00	LOL	19.69	VL	32.703	GAL	-6.04	AZL	89.66	HCA	215.69	SMA	187.16	ECC	.22733	INC	.3362
RP	229.67	LAP	-.20	LOP	235.38	VP	21.134	GAP	-.61	AZP	90.27	TAL	326.38	TAP	182.07	RCA	144.61	APO	229.71
RC	231.027	GL	2.75	GP	9.70	ZAL	137.78	ZAP	125.79	ETS	171.65	ZAE	161.41	ETE	143.68	ZAC	97.56	ETC	256.09

V1 29.857 V2 23.948 CLP 126.39

PLANETOCENTRIC CONIC

C3	15.843	VHL	3.980	DLA	11.29	RAL	160.28	RAD	6567.6	VEL	11.714	PTH	2.06	VHP	3.427	DPA	9.35	RAP	186.27

ECC 1.2607

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 6 48	2518.33	-25.59	61.67	21.26	102.55	19 48 46	1918.3	-23.61	53.56
90.00	10 2 18	4446.09	7.90	185.80	16.95	62.72	11 16 24	3846.1	4.18	179.09
100.00	20 33 49	2237.65	-26.70	40.74	20.97	103.97	21 11 7	1637.7	-24.51	32.62
100.00	11 17 57	4202.01	8.90	167.31	16.41	61.34	12 27 59	3602.0	5.00	160.69
110.00	21 54 57	1983.81	-29.62	20.51	20.03	107.90	22 28 0	1383.8	-26.89	12.39
110.00	12 13 19	4028.62	11.52	152.59	14.84	57.59	13 20 28	3428.6	7.16	146.20

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.7056	TRA	-1.6278	TC3	1.0762	BAU	.3625	SGT	2734.1	SGR	1758.5	SG3	2618.4	ST	1243.4	SR	894.2	SS	3091.0
RDE	.5740	RRA	-.7728	RC3	1.3310	FAU	.41965	RRT	.9272	RRF	-.9717	RTF	-.9448	CRT	.9750	CRS	.9466	CST	.9941
FDE	-5.4509	FRA	15.5889	FC	-22.9315	BSP	11418	SGB	3250.0	R23	-.1511	R13	-.9670	LSA	3437.0	MSA	293.6	SSA	29.6
BDE	.9096	BRA	1.8020	BC3	1.7117	FSP	8774	SG1	3201.7	SG2	562.6	THA	31.91	EL1	1522.9	EL2	162.4	ALF	35.50

LAUNCH DATE OCT 13 1964 FLIGHT TIME 292.00 ARRIVAL DATE AUG 1 1965

HELIOCENTRIC CONIC DISTANCE 680.586 EARTH TO MARS

RL	149.24	LAL	.00	LOL	19.69	VL	32.694	GAL	-6.02	AZL	89.62	HCA	216.72	SMA	187.01	ECC	.22658	INC	.3832
RP	229.28	LAP	-.23	LOP	236.41	VP	21.166	GAP	-.92	AZP	90.31	TAL	326.43	TAP	183.14	RCA	144.64	APO	229.38
RC	232.913	GL	3.15	GP	9.64	ZAL	137.70	ZAP	124.23	ETS	172.10	ZAE	160.01	ETE	146.85	ZAC	97.37	ETC	256.12

V1 29.857 V2 23.988 CLP 124.79

PLANETOCENTRIC CONIC

C3	15.728	VHL	3.966	DLA	11.68	RAL	160.37	RAD	6567.6	VEL	11.709	PTH	2.06	VHP	3.369	DPA	9.53	RAP	185.73

ECC 1.2588

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 3 55	2529.73	-25.76	62.46	21.38	102.19	19 46 5	1929.7	-23.82	54.33
90.00	10 5 55	4431.39	7.44	184.96	16.96	62.60	11 19 46	3831.4	3.71	178.27
100.00	20 31 11	2248.29	-26.87	41.48	21.10	103.62	21 8 39	1648.3	-24.73	33.33
100.00	11 21 20	4188.06	8.44	166.53	16.41	61.22	12 31 8	3588.1	4.54	159.92
110.00	21 52 49	1992.85	-29.81	21.15	20.17	107.56	22 26 2	1392.8	-27.12	12.99
110.00	12 16 11	4016.27	11.07	151.92	14.83	57.45	13 23 8	3416.3	6.70	145.55

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6606	TRA	-1.5021	TC3	.9323	BAU	.3461	SGT	2523.6	SGR	1779.4	SG3	2710.4	ST	1163.3	SR	903.1	SS	3126.8
RDE	.5776	RRA	-.7766	RC3	1.3563	FAU	.43321	RRT	.9199	RRF	-.9711	RTF	-.9370	CRT	.9763	CRS	.9447	CST	.9927
FDE	-5.5576	FRA	16.0672	FC	-23.8460	BSP	10820	SGB	3087.9	R23	-.1541	R13	-.9652	LSA	3442.8	MSA	303.7	SSA	29.2
BDE	.8775	BRA	1.6910	BC3	1.6458	FSP	9097	SG1	3032.8	SG2	580.6	THA	34.41	EL1	1464.5	EL2	155.4	ALF	37.66

LAUNCH DATE OCT 13 1964 FLIGHT TIME 294.00 ARRIVAL DATE AUG 3 1965

HELIOCENTRIC CONIC DISTANCE 684.451 EARTH TO MARS

RL	149.24	LAL	.00	LOL	19.69	VL	32.686	GAL	-6.00	AZL	89.57	HCA	217.75	SMA	186.87	ECC	.22587	INC	.4285
RP	228.89	LAP	-.26	LOP	237.44	VP	21.199	GAP	-1.23	AZP	90.34	TAL	326.46	TAP	184.21	RCA	144.66	APO	229.07
RC	234.778	GL	3.53	GP	9.58	ZAL	137.62	ZAP	122.63	ETS	172.55	ZAE	158.51	ETE	149.68	ZAC	97.19	ETC	256.17

V1 29.857 V2 24.029 CLP 123.15

PLANETOCENTRIC CONIC

C3	15.625	VHL	3.953	DLA	12.05	RAL	160.47	RAD	6567.6	VEL	11.705	PTH	2.06	VHP	3.315	DPA	9.73	RAP	185.15

ECC 1.2572

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 1 12	2540.73	-25.91	63.23	21.51	101.83	19 43 32	1940.7	-24.02	55.07
90.00	10 9 25	4417.43	7.00	184.17	16.99	62.49	11 23 3	3817.4	3.26	177.48
100.00	20 28 41	2258.56	-27.03	42.20	21.24	103.27	21 6 20	1658.6	-24.94	34.03
100.00	11 24 37	4174.83	8.01	165.79	16.44	61.10	12 34 12	3574.8	4.09	158.19
110.00	21 50 49	2001.57	-29.99	21.77	20.32	107.23	22 24 10	1401.6	-27.34	13.58
110.00	12 18 59	4004.58	10.64	151.28	14.85	57.32	13 25 43	3404.6	6.26	144.93

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6145	TRA	-1.3712	TC3	.7752	BAU	.3308	SGT	2302.0	SGR	1800.1	SG3	2801.7	ST	1079.6	SR	911.9	SS	3161.2
RDE	.5813	RRA	-.7806	RC3	1.3808	FAU	.44668	RRT	.9100	RRF	-.9704	RTF	-.9262	CRT	.9780	CRS	.9427	CST	.9908
FDE	-5.6612	FRA	16.5455	FC	-24.7487	BSP	10210	SGB	2922.3	R23	-.1572	R13	-.9632	LSA	3448.3	MSA	313.7	SSA	28.9
BDE	.8459	BRA	1.5778	BC3	1.5835	FSP	9427	SG1	2859.9	SG2	600.7	THA	37.37	EL1	1405.6	EL2	146.2	ALF	40.08

LAUNCH DATE OCT 13 1964 FLIGHT TIME 296.00 ARRIVAL DATE AUG 5 1965

DISTANCE 688.325

HELIOCENTRIC CONIC

RL 149.24 LAL .00 LOL 19.69 VL 32.678 GAL -5.98 AZL 89.53 HCA 218.79 SMA 186.73 ECC .22522 INC .4717 V1 29.857
RP 228.51 LAP -.30 LOP 238.48 VP 21.234 GAP -1.53 AZP 90.37 TAL 326.49 TAP 185.27 RCA 144.68 APO 228.79 V2 24.070
RC 236.623 GL 3.89 GP 9.53 ZAL 137.56 ZAP 120.98 ETS 172.99 ZAE 156.93 ETE 152.20 ZAC 96.99 ETC 256.22 CLP 121.46

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 15.535 VHL 3.941 DLA 12.41 RAL 160.58 RAD 6567.6 VEL 11.701 PTH 2.06 VHP 3.264 DPA 9.95 RAP 184.54 ECC 1.2557

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 58 38	2551.35	-26.06	63.97	21.66	101.49	19 41 9	1951.4	-24.21	55.79
90.00	10 12 50	4404.18	6.58	183.42	17.03	62.40	11 26 14	3804.2	2.83	176.74
100.00	20 26 20	2268.48	-27.18	42.90	21.39	102.94	21 4 9	1668.5	-25.13	34.70
100.00	11 27 48	4162.29	7.59	165.09	16.49	61.00	12 37 11	3562.3	3.67	158.50
110.00	21 48 57	2009.99	-30.16	22.37	20.48	106.92	22 22 27	1410.0	-27.54	14.15
110.00	12 21 41	3993.54	10.23	150.69	14.89	57.21	13 28 15	3393.5	5.84	144.35

DIFFERENTIAL CORRECTIONS

TDE .5707 TRA-1.2323 TC3 .6128 BAU .3187
RDE .5862 RRA -.7839 RC3 1.4067 FAU .46079
FDE-5.7840 FRA17.0020 FC-25.6791 BSP 9519
BDE .8182 BRA 1.4605 BC3 1.5344 FSP 9715

MID-COURSE EXECUTION ACCURACY

SGT 2070.3 SGR 1821.3 SG3 2892.6
RRT .8971 RRF -.9699 RTF -.9114
SGB 2757.4 R23 -.1590 R13 -.9613
SG1 2686.8 SG2 620.0 THA 40.92

ORBIT DETERMINATION ACCURACY

ST 995.6 SR 921.9 SS 3199.3
CRT .9806 CRS .9411 CST .9882
LSA 3460.0 MSA 323.7 SSA 28.4
EL1 1350.4 EL2 133.1 ALF 42.75

LAUNCH DATE OCT 13 1964 FLIGHT TIME 298.00 ARRIVAL DATE AUG 7 1965

DISTANCE 692.208

HELIOCENTRIC CONIC

RL 149.24 LAL .00 LOL 19.69 VL 32.671 GAL -5.96 AZL 89.49 HCA 219.83 SMA 186.60 ECC .22462 INC .5130 V1 29.857
RP 228.12 LAP -.33 LOP 239.52 VP 21.269 GAP -1.82 AZP 90.39 TAL 326.50 TAP 186.32 RCA 144.69 APO 228.52 V2 24.111
RC 238.446 GL 4.24 GP 9.47 ZAL 137.51 ZAP 119.30 ETS 173.42 ZAE 155.28 ETE 154.46 ZAC 96.79 ETC 256.27 CLP 119.74

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 15.457 VHL 3.931 DLA 12.74 RAL 160.69 RAD 6567.6 VEL 11.698 PTH 2.06 VHP 3.216 DPA 10.19 RAP 183.90 ECC 1.2544

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 56 13	2561.60	-26.20	64.69	21.82	101.15	19 38 55	1961.6	-24.39	56.49
90.00	10 16 8	4391.66	6.19	182.71	17.10	62.31	11 29 20	3791.7	2.43	176.04
100.00	20 24 8	2278.04	-27.33	43.57	21.55	102.61	21 2 7	1678.0	-25.32	35.35
100.00	11 30 54	4150.45	7.20	164.42	16.55	60.91	12 40 4	3550.4	3.27	157.85
110.00	21 47 13	2018.12	-30.32	22.95	20.66	106.61	22 20 51	1418.1	-27.74	14.70
110.00	12 24 19	3983.14	9.85	150.12	14.94	57.10	13 30 42	3383.1	5.44	143.80

DIFFERENTIAL CORRECTIONS

TDE .5214 TRA-1.0916 TC3 .4251 BAU .3079
RDE .5900 RRA -.7883 RC3 1.4280 FAU .47349
FDE-5.8802 FRA17.4759 FC-26.5206 BSP 8924
BDE .7874 BRA 1.3465 BC3 1.4900 FSP 10049

MID-COURSE EXECUTION ACCURACY

SGT 1830.1 SGR 1840.5 SG3 2980.6
RRT .8757 RRF -.9692 RTF -.8881
SGB 2595.5 R23 -.1612 R13 -.9592
SG1 2513.6 SG2 646.9 THA 45.19

ORBIT DETERMINATION ACCURACY

ST 903.9 SR 930.2 SS 3230.7
CRT .9832 CRS .9391 CST .9849
LSA 3465.2 MSA 333.4 SSA 28.2
EL1 1291.5 EL2 119.0 ALF 45.84

LAUNCH DATE OCT 13 1964 FLIGHT TIME 300.00 ARRIVAL DATE AUG 9 1965

DISTANCE 696.099

HELIOCENTRIC CONIC

RL 149.24 LAL .00 LOL 19.69 VL 32.664 GAL -5.95 AZL 89.45 HCA 220.87 SMA 186.49 ECC .22407 INC .5527 V1 29.857
RP 227.73 LAP -.36 LOP 240.56 VP 21.305 GAP -2.12 AZP 90.42 TAL 326.50 TAP 187.37 RCA 144.70 APO 228.27 V2 24.152
RC 240.248 GL 4.58 GP 9.42 ZAL 137.47 ZAP 117.57 ETS 173.84 ZAE 153.55 ETE 156.49 ZAC 96.58 ETC 256.32 CLP 117.98

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 15.390 VHL 3.923 DLA 13.06 RAL 160.81 RAD 6567.6 VEL 11.695 PTH 2.06 VHP 3.171 DPA 10.43 RAP 183.22 ECC 1.2533

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 53 58	2571.48	-26.33	65.39	21.99	100.82	19 36 50	1971.5	-24.57	57.16
90.00	10 19 21	4379.84	5.81	182.04	17.19	62.24	11 32 21	3779.8	2.05	175.38
100.00	20 22 6	2287.27	-27.46	44.22	21.73	102.29	21 0 13	1687.3	-25.49	35.98
100.00	11 33 54	4139.28	6.83	163.80	16.64	60.83	12 42 54	3539.3	2.89	157.23
110.00	21 45 36	2025.96	-30.47	23.51	20.85	106.31	22 19 22	1426.0	-27.93	15.23
110.00	12 26 53	3973.35	9.49	149.60	15.02	57.00	13 33 6	3373.4	5.07	143.29

DIFFERENTIAL CORRECTIONS

TDE .4737 TRA -.9430 TC3 .2320 BAU .3022
RDE .5946 RRA -.7916 RC3 1.4504 FAU .48675
FDE-5.9916 FRA17.9198 FC-27.3812 BSP 8282
BDE .7603 BRA 1.2312 BC3 1.4688 FSP 10337

MID-COURSE EXECUTION ACCURACY

SGT 1584.5 SGR 1859.5 SG3 3066.8
RRT .8437 RRF -.9686 RTF -.8525
SGB 2443.0 R23 -.1597 R13 -.9576
SG1 2348.4 SG2 673.5 THA 50.39

ORBIT DETERMINATION ACCURACY

ST 811.5 SR 939.2 SS 3264.3
CRT .9867 CRS .9375 CST .9801
LSA 3475.4 MSA 343.0 SSA 27.8
EL1 1237.2 EL2 100.3 ALF 49.23

LAUNCH DATE OCT 13 1964 FLIGHT TIME 302.00 ARRIVAL DATE AUG 11 1965

DISTANCE 699.999

HELIOCENTRIC CONIC

RL 149.24 LAL .00 LOL 19.69 VL 32.657 GAL -5.94 AZL 89.41 HCA 221.92 SMA 186.37 ECC .22357 INC .5909 V1 29.857
RP 227.34 LAP -.39 LOP 241.61 VP 21.342 GAP -2.41 AZP 90.44 TAL 326.50 TAP 188.41 RCA 144.71 APO 228.04 V2 24.193
RC 242.030 GL 4.91 GP 9.36 ZAL 137.44 ZAP 115.80 ETS 174.26 ZAE 151.76 ETE 158.33 ZAC 96.37 ETC 256.39 CLP 116.18

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 15.335 VHL 3.916 DLA 13.36 RAL 160.94 RAD 6567.6 VEL 11.693 PTH 2.06 VHP 3.129 DPA 10.70 RAP 182.51 ECC 1.2524

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 51 53	2581.01	-26.45	66.06	22.18	100.51	19 34 54	1981.0	-24.73	57.81
90.00	10 22 28	4368.70	5.46	181.42	17.30	62.17	11 35 17	3768.7	1.69	174.76
100.00	20 20 12	2296.16	-27.59	44.85	21.92	101.98	20 58 28	1696.2	-25.66	36.58
100.00	11 36 50	4128.78	6.48	163.22	16.74	60.76	12 45 38	3528.8	2.54	156.65
110.00	21 44 8	2033.52	-30.61	24.05	21.06	106.02	22 18 2	1433.5	-28.11	15.74
110.00	12 29 23	3964.18	9.15	149.11	15.12	56.92	13 35 27	3364.2	4.73	142.80

DIFFERENTIAL CORRECTIONS

TDE .4240 TRA -.7897 TC3 .0232 BAU .3014
RDE .5990 RRA -.7949 RC3 1.4699 FAU .49917
FDE-6.0934 FRA18.3585 FC-28.1801 BSP 7698
BDE .7339 BRA 1.1205 BC3 1.4700 FSP 10633

MID-COURSE EXECUTION ACCURACY

SGT 1339.9 SGR 1876.8 SG3 3149.5
RRT .7890 RRF -.9680 RTF -.7927
SGB 2306.1 R23 -.1529 R13 -.9570
SG1 2196.1 SG2 703.6 THA 56.76

ORBIT DETERMINATION ACCURACY

ST 715.3 SR 947.6 SS 3295.1
CRT .9905 CRS .9358 CST .9729
LSA 3484.6 MSA 352.4 SSA 27.5
EL1 1184.7 EL2 78.5 ALF 53.02

LAUNCH DATE OCT 13 1964 FLIGHT TIME 304.00 ARRIVAL DATE AUG 13 1965

HELIOCENTRIC CONIC DISTANCE 703.907 EARTH TO MARS

RL	149.24	LAL	.00	LOL	19.69	VL	32.651	GAL	-5.93	AZL	89.37	HCA	222.97	SMA	186.27	ECC	.22312	INC	.6278
RP	226.95	LAP	-.43	LOP	242.66	VP	21.379	GAP	-2.69	AZP	90.46	TAL	326.48	TAP	189.45	RCA	144.71	APO	227.83
RC	243.792	GL	5.22	GP	9.30	ZAL	137.43	ZAP	114.00	ETS	174.67	ZAE	149.91	ETE	159.99	ZAC	96.14	ETC	256.45

V1 29.857 V2 24.235 CLP 114.34

PLANETOCENTRIC CONIC

C3	15.291	VHL	3.910	DLA	13.64	RAL	161.08	RAD	6567.6	VEL	11.691	PTH	2.06	VHP	3.091	DPA	10.97	RAP	181.77

ECC 1.2517

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 49 57	2590.17	-26.56	66.71	22.38	100.20	19 33 7	1990.2	-24.88	58.44
90.00	10 25 30	4358.25	5.13	180.83	17.43	62.11	11 38 8	3758.3	1.35	174.18
100.00	20 18 27	2304.72	-27.71	45.46	22.13	101.68	20 56 52	1704.7	-25.82	37.17
100.00	11 39 40	4118.94	6.16	162.67	16.86	60.69	12 48 19	3518.9	2.20	156.11
110.00	21 42 48	2040.80	-30.75	24.57	21.28	105.73	22 16 49	1440.8	-28.28	16.24
110.00	12 31 49	3955.62	8.83	148.65	15.23	56.84	13 37 44	3355.6	4.40	142.36

DIFFERENTIAL CORRECTIONS

TDE	.3730	TRA	-.6306	TC3	-.1973	BAU	.3068
RDE	.6036	RRA	-.7976	RC3	1.4878	FAU	.51122
FDE	-6.1947	FRA	18.7753	FC	-28.9430	BSP	7176
BDE	.7095	BRA	1.0168	BC3	1.5009	FSP	10912

MID-COURSE EXECUTION ACCURACY

SGT	1107.4	SGR	1892.7	SG3	3228.3		
RRT	.6904	RRF	-.9673	RTF	-.6859		
SGB	2192.9	R23	-.1364	R13	-.9580		
SG1	2066.5	SG2	733.8	THA	64.57		

ORBIT DETERMINATION ACCURACY

ST	616.5	SR	955.7	SS	3324.6
CRT	.9946	CRS	.9342	CST	.9616
LSA	3495.0	MSA	361.5	SSA	27.2
EL1	1136.0	EL2	53.6	ALF	57.24

LAUNCH DATE OCT 13 1964 FLIGHT TIME 306.00 ARRIVAL DATE AUG 15 1965

HELIOCENTRIC CONIC DISTANCE 707.823 EARTH TO MARS

RL	149.24	LAL	.00	LOL	19.69	VL	32.646	GAL	-5.93	AZL	89.34	HCA	224.02	SMA	186.17	ECC	.22272	INC	.6632
RP	226.56	LAP	-.46	LOP	243.71	VP	21.418	GAP	-2.97	AZP	90.48	TAL	326.45	TAP	190.48	RCA	144.71	APO	227.64
RC	245.534	GL	5.52	GP	9.24	ZAL	137.43	ZAP	112.16	ETS	175.07	ZAE	148.01	ETE	161.50	ZAC	95.91	ETC	256.52

V1 29.857 V2 24.277 CLP 112.47

PLANETOCENTRIC CONIC

C3	15.259	VHL	3.906	DLA	13.91	RAL	161.22	RAD	6567.6	VEL	11.689	PTH	2.06	VHP	3.056	DPA	11.26	RAP	181.00

ECC 1.2511

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 48 10	2598.99	-26.66	67.33	22.59	99.91	19 31 29	1999.0	-25.02	59.05
90.00	10 28 26	4348.48	4.81	180.28	17.57	62.06	11 40 54	3748.5	1.04	173.63
100.00	20 16 52	2312.95	-27.82	46.05	22.35	101.39	20 55 25	1712.9	-25.97	37.74
100.00	11 42 25	4109.75	5.85	162.16	17.01	60.63	12 50 55	3509.8	1.89	155.61
110.00	21 41 36	2047.82	-30.87	25.08	21.51	105.46	22 15 44	1447.8	-28.44	16.72
110.00	12 34 11	3947.65	8.53	148.22	15.36	56.77	13 39 58	3347.6	4.10	141.94

DIFFERENTIAL CORRECTIONS

TDE	.3209	TRA	-.4662	TC3	-.4304	BAU	.3190
RDE	.6079	RRA	-.7998	RC3	1.5032	FAU	.52248
FDE	-6.2881	FRA	19.1751	FC	-29.6436	BSP	6751
BDE	.6874	BRA	.9258	BC3	1.5636	FSP	11181

MID-COURSE EXECUTION ACCURACY

SGT	911.6	SGR	1906.5	SG3	3302.4		
RRT	.5042	RRF	-.9666	RTF	-.4869		
SGB	2113.3	R23	-.1069	R13	-.9607		
SG1	1971.3	SG2	761.3	THA	74.00		

ORBIT DETERMINATION ACCURACY

ST	516.1	SR	963.2	SS	3351.4
CRT	.9978	CRS	.9325	CST	.9422
LSA	3505.4	MSA	370.7	SSA	26.9
EL1	1092.3	EL2	30.3	ALF	61.85

LAUNCH DATE OCT 13 1964 FLIGHT TIME 308.00 ARRIVAL DATE AUG 17 1965

HELIOCENTRIC CONIC DISTANCE 711.745 EARTH TO MARS

RL	149.24	LAL	.00	LOL	19.69	VL	32.640	GAL	-5.92	AZL	89.30	HCA	225.08	SMA	186.08	ECC	.22237	INC	.6975
RP	226.17	LAP	-.49	LOP	244.77	VP	21.457	GAP	-3.24	AZP	90.49	TAL	326.42	TAP	191.49	RCA	144.71	APO	227.46
RC	247.256	GL	5.81	GP	9.18	ZAL	137.44	ZAP	110.29	ETS	175.47	ZAE	146.05	ETE	162.88	ZAC	95.67	ETC	256.60

V1 29.857 V2 24.318 CLP 110.57

PLANETOCENTRIC CONIC

C3	15.238	VHL	3.904	DLA	14.16	RAL	161.38	RAD	6567.6	VEL	11.689	PTH	2.06	VHP	3.024	DPA	11.55	RAP	180.21

ECC 1.2508

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 46 34	2607.44	-26.76	67.93	22.83	99.62	19 30 1	2007.4	-25.16	59.63
90.00	10 31 17	4339.40	4.52	179.77	17.74	62.02	11 43 36	3739.4	.75	173.13
100.00	20 15 26	2320.85	-27.93	46.61	22.59	101.12	20 54 7	1720.8	-26.11	38.28
100.00	11 45 6	4101.23	5.56	161.69	17.17	60.58	12 53 27	3501.2	1.60	155.14
110.00	21 40 32	2054.56	-30.99	25.57	21.76	105.19	22 14 47	1454.6	-28.60	17.19
110.00	12 36 29	3940.29	8.25	147.83	15.52	56.71	13 42 9	3340.3	3.82	141.55

DIFFERENTIAL CORRECTIONS

TDE	.2630	TRA	-.2995	TC3	-.6862	BAU	.3379
RDE	.6098	RRA	-.8037	RC3	1.5100	FAU	.53076
FDE	-6.3254	FRA	19.6007	FC	-30.1546	BSP	6543
BDE	.6642	BRA	.8577	BC3	1.6586	FSP	11538

MID-COURSE EXECUTION ACCURACY

SGT	801.0	SGR	1916.0	SG3	3369.4		
RRT	.1731	RRF	-.9658	RTF	-.1417		
SGB	2076.7	R23	-.0602	R13	-.9642		
SG1	1922.0	SG2	786.4	THA	85.03		

ORBIT DETERMINATION ACCURACY

ST	409.6	SR	967.3	SS	3366.0
CRT	.9960	CRS	.9297	CST	.9066
LSA	3505.5	MSA	379.4	SSA	26.9
EL1	1049.9	EL2	33.9	ALF	67.11

LAUNCH DATE OCT 13 1964 FLIGHT TIME 310.00 ARRIVAL DATE AUG 19 1965

HELIOCENTRIC CONIC DISTANCE 715.679 EARTH TO MARS

RL	149.24	LAL	.00	LOL	19.69	VL	32.635	GAL	-5.93	AZL	89.27	HCA	226.14	SMA	186.00	ECC	.22206	INC	.7306
RP	225.78	LAP	-.53	LOP	245.83	VP	21.497	GAP	-3.51	AZP	90.51	TAL	326.37	TAP	192.51	RCA	144.70	APO	227.30
RC	248.959	GL	6.09	GP	9.11	ZAL	137.47	ZAP	108.39	ETS	175.86	ZAE	144.05	ETE	164.15	ZAC	95.43	ETC	256.68

V1 29.857 V2 24.360 CLP 108.64

PLANETOCENTRIC CONIC

C3	15.227	VHL	3.902	DLA	14.40	RAL	161.54	RAD	6567.6	VEL	11.688	PTH	2.06	VHP	2.996	DPA	11.86	RAP	179.38

ECC 1.2506

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 45 7	2615.57	-26.85	68.51	23.07	99.35	19 28 42	2015.6	-25.29	60.19
90.00	10 34 3	4330.96	4.25	179.30	17.92	61.98	11 46 14	3731.0	.47	1[illegible].66
100.00	20 14 9	2328.44	-28.03	47.15	22.84	100.85	20 52 57	1728.4	-26.24	38.81
100.00	11 47 42	4093.32	5.30	161.25	17.35	60.54	12 55 55	3493.3	1.34	154.71
110.00	21 39 36	2061.05	-31.11	26.04	22.03	104.94	22 13 57	1461.0	-28.75	17.63
110.00	12 38 44	3933.48	8.00	147.47	15.69	56.66	13 44 17	3333.5	3.56	141.19

DIFFERENTIAL CORRECTIONS

TDE	.2117	TRA	-.1221	TC3	-.9324	BAU	.3637
RDE	.6156	RRA	-.8026	RC3	1.5239	FAU	.54182
FDE	-6.4411	FRA	19.9125	FC	-30.8049	BSP	6384
BDE	.6510	BRA	.8119	BC3	1.7866	FSP	11705

MID-COURSE EXECUTION ACCURACY

SGT	812.7	SGR	1926.6	SG3	3432.8		
RRT	-.2295	RRF	-.9650	RTF	.2777		
SGB	2091.0	R23	-.0123	R13	-.9667		
SG1	1937.4	SG2	786.6	THA	96.62		

ORBIT DETERMINATION ACCURACY

ST	316.5	SR	975.5	SS	3394.7
CRT	.9731	CRS	.9287	CST	.8256
LSA	3524.8	MSA	388.2	SSA	26.4
EL1	1023.2	EL2	69.5	ALF	72.39

LAUNCH DATE OCT 13 1964 FLIGHT TIME 312.00 ARRIVAL DATE AUG 21 1965

HELIOCENTRIC CONIC DISTANCE 719.619 EARTH TO MARS

RL 149.24 LAL .00 LOL 19.69 VL 32.631 GAL -5.93 AZL 89.24 HCA 227.21 SMA 185.92 ECC .22180 INC .7627 V1 29.857
RP 225.38 LAP -.56 LOP 246.90 VP 21.538 GAP -3.78 AZP 90.52 TAL 326.31 TAP 193.51 RCA 144.69 APO 227.16 V2 24.402
RC 250.643 GL 6.36 GP 9.04 ZAL 137.51 ZAP 106.46 ETS 176.24 ZAE 142.01 ETE 165.32 ZAC 95.17 ETC 256.77 CLP 106.68

PLANETOCENTRIC CONIC

C3 15.227 VHL 3.902 DLA 14.62 RAL 161.72 RAD 6567.6 VEL 11.688 PTH 2.06 VHP 2.971 DPA 12.17 RAP 178.53 ECC 1.2506

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 43 50	2623.34	-26.94	69.06	23.34	99.08	19 27 33	2023.3	-25.40	60.73
90.00	10 36 43	4323.19	4.01	178.86	18.13	61.94	11 48 46	3723.2	.22	172.22
100.00	20 13 1	2335.70	-28.12	47.67	23.11	100.59	20 51 57	1735.7	-26.37	39.31
100.00	11 50 13	4086.06	5.06	160.85	17.55	60.50	12 58 19	3486.1	1.09	154.31
110.00	21 38 48	2067.27	-31.22	26.49	22.31	104.69	22 13 16	1467.3	-28.89	18.06
110.00	12 40 55	3927.26	7.77	147.14	15.88	56.61	13 46 22	3327.3	3.32	140.87

DIFFERENTIAL CORRECTIONS
TDE .1574 TRA .0592 TC3-1.1911 BAU .3952
RDE .6203 RRA -.8014 RC3 1.5331 FAU .55125
FDE-6.5312 FRA20.2082 FC-31.3411 BSP 6466
BDE .6400 BRA .8036 BC3 1.9414 FSP 11880

MID-COURSE EXECUTION ACCURACY
SGT 962.1 SGR 1933.9 SG3 3488.8
RRT -.5434 RRF -.9641 RTF .5991
SGB 2160.0 R23 .0294 R13 -.9678
SG1 2016.3 SG2 774.7 THA 107.85

ORBIT DETERMINATION ACCURACY
ST 234.4 SR 981.8 SS 3416.8
CRT .8678 CRS .9273 CST .6246
LSA 3540.5 MSA 396.7 SSA 25.9
EL1 1003.0 EL2 114.0 ALF 78.14

LAUNCH DATE OCT 13 1964 FLIGHT TIME 314.00 ARRIVAL DATE AUG 23 1965

HELIOCENTRIC CONIC DISTANCE 723.567 EARTH TO MARS

RL 149.24 LAL .00 LOL 19.69 VL 32.627 GAL -5.94 AZL 89.21 HCA 228.27 SMA 185.85 ECC .22159 INC .7938 V1 29.857
RP 224.99 LAP -.59 LOP 247.97 VP 21.579 GAP -4.04 AZP 90.53 TAL 326.24 TAP 194.51 RCA 144.67 APO 227.04 V2 24.444
RC 252.307 GL 6.61 GP 8.97 ZAL 137.56 ZAP 104.51 ETS 176.62 ZAE 139.93 ETE 166.40 ZAC 94.91 ETC 256.86 CLP 104.70

PLANETOCENTRIC CONIC

C3 15.238 VHL 3.904 DLA 14.82 RAL 161.90 RAD 6567.6 VEL 11.689 PTH 2.06 VHP 2.950 DPA 12.48 RAP 177.67 ECC 1.2508

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 42 42	2630.77	-27.02	69.59	23.62	98.83	19 26 33	2030.8	-25.52	61.24
90.00	10 39 19	4316.09	3.78	178.46	18.35	61.92	11 51 15	3716.1	-.01	171.83
100.00	20 12 3	2342.65	-28.20	48.17	23.39	100.34	20 51 5	1742.7	-26.49	39.79
100.00	11 52 40	4079.44	4.83	160.48	17.77	60.47	13 0 39	3479.4	.87	153.94
110.00	21 38 9	2073.24	-31.32	26.93	22.60	104.45	22 12 42	1473.2	-29.02	18.48
110.00	12 43 3	3921.61	7.56	146.84	16.09	56.56	13 48 24	3321.6	3.11	140.57

DIFFERENTIAL CORRECTIONS
TDE .1011 TRA .2447 TC3-1.4607 BAU .4321
RDE .6246 RRA -.7993 RC3 1.5381 FAU .55919
FDE-6.6060 FRA20.4761 FC-31.7695 BSP 6784
BDE .6327 BRA .8359 BC3 2.1211 FSP 12050

MID-COURSE EXECUTION ACCURACY
SGT 1208.5 SGR 1937.8 SG3 3536.8
RRT -.7191 RRF -.9631 RTF .7761
SGB 2283.8 R23 .0573 R13 -.9689
SG1 2155.4 SG2 755.0 THA 117.87

ORBIT DETERMINATION ACCURACY
ST 188.7 SR 987.0 SS 3434.4
CRT .5060 CRS .9257 CST .1472
LSA 3555.4 MSA 405.0 SSA 25.5
EL1 991.8 EL2 162.0 ALF 84.32

LAUNCH DATE OCT 13 1964 FLIGHT TIME 316.00 ARRIVAL DATE AUG 25 1965

HELIOCENTRIC CONIC DISTANCE 727.522 EARTH TO MARS

RL 149.24 LAL .00 LOL 19.69 VL 32.623 GAL -5.95 AZL 89.18 HCA 229.35 SMA 185.79 ECC .22142 INC .8240 V1 29.857
RP 224.60 LAP -.63 LOP 249.04 VP 21.620 GAP -4.30 AZP 90.54 TAL 326.15 TAP 195.50 RCA 144.65 APO 226.93 V2 24.486
RC 253.951 GL 6.86 GP 8.89 ZAL 137.63 ZAP 102.54 ETS 177.00 ZAE 137.83 ETE 167.40 ZAC 94.64 ETC 256.96 CLP 102.70

PLANETOCENTRIC CONIC

C3 15.260 VHL 3.906 DLA 15.01 RAL 162.09 RAD 6567.6 VEL 11.690 PTH 2.06 VHP 2.932 DPA 12.79 RAP 176.78 ECC 1.2511

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 41 45	2637.84	-27.09	70.10	23.91	98.58	19 25 43	2037.8	-25.62	61.74
90.00	10 41 49	4309.66	3.57	178.10	18.59	61.89	11 53 39	3709.7	-.22	171.47
100.00	20 11 14	2349.28	-28.28	48.65	23.69	100.10	20 50 23	1749.3	-26.60	40.25
100.00	11 55 2	4073.45	4.63	160.15	18.00	60.44	13 2 55	3473.5	.66	153.62
110.00	21 37 38	2078.95	-31.42	27.34	22.91	104.22	22 12 17	1479.0	-29.14	18.87
110.00	12 45 7	3916.54	7.37	146.57	16.32	56.53	13 50 24	3316.5	2.91	140.31

DIFFERENTIAL CORRECTIONS
TDE .0437 TRA .4348 TC3-1.7371 BAU .4735
RDE .6285 RRA -.7963 RC3 1.5394 FAU .56584
FDE-6.6687 FRA20.7087 FC-32.1015 BSP 7312
BDE .6300 BRA .9073 BC3 2.3210 FSP 12202

MID-COURSE EXECUTION ACCURACY
SGT 1510.6 SGR 1938.6 SG3 3576.6
RRT -.8098 RRF -.9620 RTF .8663
SGB 2457.7 R23 .0705 R13 -.9709
SG1 2346.0 SG2 732.3 THA 126.36

ORBIT DETERMINATION ACCURACY
ST 212.2 SR 991.2 SS 3448.3
CRT -.0676 CRS .9240 CST -.4406
LSA 3570.3 MSA 413.2 SSA 25.2
EL1 991.3 EL2 211.7 ALF 90.87

LAUNCH DATE OCT 13 1964 FLIGHT TIME 318.00 ARRIVAL DATE AUG 27 1965

HELIOCENTRIC CONIC DISTANCE 731.485 EARTH TO MARS

RL 149.24 LAL .00 LOL 19.69 VL 32.619 GAL -5.96 AZL 89.15 HCA 230.42 SMA 185.73 ECC .22130 INC .8533 V1 29.857
RP 224.21 LAP -.66 LOP 250.11 VP 21.663 GAP -4.56 AZP 90.54 TAL 326.06 TAP 196.48 RCA 144.63 APO 226.83 V2 24.527
RC 255.576 GL 7.10 GP 8.80 ZAL 137.71 ZAP 100.55 ETS 177.36 ZAE 135.69 ETE 168.33 ZAC 94.37 ETC 257.06 CLP 100.68

PLANETOCENTRIC CONIC

C3 15.293 VHL 3.911 DLA 15.19 RAL 162.30 RAD 6567.6 VEL 11.691 PTH 2.06 VHP 2.918 DPA 13.11 RAP 175.88 ECC 1.2517

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 40 58	2644.58	-27.16	70.58	24.22	98.35	19 25 2	2044.6	-25.72	62.20
90.00	10 44 14	4303.88	3.39	177.78	18.85	61.87	11 55 58	3703.9	-.40	171.15
100.00	20 10 34	2355.59	-28.36	49.10	24.01	99.87	20 49 50	1755.6	-26.70	40.69
100.00	11 57 19	4068.10	4.45	159.86	18.26	60.41	13 5 7	3468.1	.48	153.32
110.00	21 37 15	2084.41	-31.51	27.74	23.24	104.00	22 11 59	1484.4	-29.26	19.26
110.00	12 47 8	3912.04	7.20	146.33	16.57	56.49	13 52 20	3312.0	2.74	140.07

DIFFERENTIAL CORRECTIONS
TDE -.0150 TRA .6288 TC3-2.0190 BAU .5189
RDE .6325 RRA -.7917 RC3 1.5377 FAU .57138
FDE-6.7298 FRA20.8942 FC-32.3464 BSP 8014
BDE .6326 BRA 1.0110 BC3 2.5379 FSP 12312

MID-COURSE EXECUTION ACCURACY
SGT 1845.4 SGR 1936.4 SG3 3607.6
RRT -.8582 RRF -.9608 RTF .9143
SGB 2674.9 R23 .0735 R13 -.9738
SG1 2578.6 SG2 711.2 THA 133.39

ORBIT DETERMINATION ACCURACY
ST 291.1 SR 995.0 SS 3460.5
CRT -.4326 CRS .9224 CST -.7453
LSA 3587.7 MSA 420.9 SSA 24.8
EL1 1003.5 EL2 260.2 ALF 97.74

LAUNCH DATE OCT 13 1964 FLIGHT TIME 320.00 ARRIVAL DATE AUG 29 1965

HELIOCENTRIC CONIC DISTANCE 735.455 EARTH TO MARS

RL	149.24	LAL	.00	LOL	19.69	VL	32.616	GAL	-5.98	AZL	89.12	HCA	231.50	SMA	185.68	ECC	.22122	INC	.8819
RP	223.82	LAP	-.69	LOP	251.19	VP	21.705	GAP	-4.81	AZP	90.55	TAL	325.95	TAP	197.45	RCA	144.60	APO	226.75
RC	257.180	GL	7.33	GP	8.72	ZAL	137.81	ZAP	98.55	ETS	177.72	ZAE	133.53	ETE	169.19	ZAC	94.09	ETC	257.16

V1 29.857 V2 24.569 CLP 98.65

PLANETOCENTRIC CONIC

C3 15.336 VHL 3.916 DLA 15.35 RAL 162.51 RAD 6567.6 VEL 11.693 PTH 2.06 VHP 2.908 DPA 13.42 RAP 174.97 ECC 1.2524

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 40 21	2650.96	-27.22	71.04	24.55	98.13	19 24 32	2051.0	-25.81	62.65
90.00	10 46 35	4298.77	3.22	177.49	19.13	61.85	11 58 13	3698.8	-.57	170.86
100.00	20 10 5	2361.59	-28.43	49.54	24.34	99.65	20 49 26	1761.6	-26.80	41.11
100.00	11 59 32	4063.37	4.29	159.60	18.54	60.39	13 7 15	3463.4	.32	153.06
110.00	21 37 0	2089.62	-31.59	28.12	23.58	103.79	22 11 50	1489.6	-29.37	19.62
110.00	12 49 6	3908.11	7.05	146.12	16.84	56.46	13 54 14	3308.1	2.59	139.87

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0746	TRA	.8269	TC3	-2.3050	BAU	.5675	SGT	2201.1	SGR	1930.9	SG3	3629.8	ST	395.6	SR	997.6	SS	3468.5
RDE	.6360	RRA	-.7860	RC3	1.5323	FAU	.57552	RRT	-.8857	RRF	-.9595	RTF	.9416	CRT	-.6034	CRS	.9206	CST	-.8657
FDE	-6.7766	FRA	21.0419	FC	-32.4889	BSP	8866	SGB	2928.0	R23	.0708	R13	-.9771	LSA	3605.2	MSA	428.7	SSA	24.3
BDE	.6404	BRA	1.1408	BC3	2.7679	FSP	12400	SG1	2844.6	SG2	693.7	THA	139.22	EL1	1028.7	EL2	305.9	ALF	104.79

LAUNCH DATE OCT 13 1964 FLIGHT TIME 322.00 ARRIVAL DATE AUG 31 1965

HELIOCENTRIC CONIC DISTANCE 739.432 EARTH TO MARS

RL	149.24	LAL	.00	LOL	19.69	VL	32.613	GAL	-5.99	AZL	89.09	HCA	232.59	SMA	185.63	ECC	.22118	INC	.9098
RP	223.44	LAP	-.72	LOP	252.28	VP	21.749	GAP	-5.05	AZP	90.55	TAL	325.83	TAP	198.42	RCA	144.57	APO	226.69
RC	258.763	GL	7.54	GP	8.62	ZAL	137.92	ZAP	96.55	ETS	178.07	ZAE	131.36	ETE	170.00	ZAC	93.80	ETC	257.27

V1 29.857 V2 24.611 CLP 96.62

PLANETOCENTRIC CONIC

C3 15.390 VHL 3.923 DLA 15.49 RAL 162.74 RAD 6567.6 VEL 11.695 PTH 2.06 VHP 2.901 DPA 13.72 RAP 174.05 ECC 1.2533

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 39 54	2657.00	-27.28	71.47	24.90	97.92	19 24 11	2057.0	-25.90	63.07
90.00	10 48 50	4294.32	3.08	177.24	19.43	61.84	12 0 24	3694.3	-.71	170.61
100.00	20 9 44	2367.28	-28.49	49.95	24.69	99.45	20 49 12	1767.3	-26.89	41.51
100.00	12 1 40	4059.28	4.16	159.37	18.83	60.37	13 9 20	3459.3	.18	152.84
110.00	21 36 54	2094.58	-31.67	28.49	23.94	103.59	22 11 48	1494.6	-29.48	19.97
110.00	12 51 0	3904.74	6.92	145.94	17.12	56.44	13 56 5	3304.7	2.46	139.69

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1352	TRA	1.0285	TC3	-2.5929	BAU	.6187	SGT	2570.5	SGR	1921.9	SG3	3642.2	ST	511.2	SR	999.1	SS	3472.1
RDE	.6392	RRA	-.7790	RC3	1.5231	FAU	.57814	RRT	-.9020	RRF	-.9580	RTF	.9582	CRT	-.6894	CRS	.9187	CST	-.9186
FDE	-6.8092	FRA	21.1461	FC	-32.5214	BSP	9833	SGB	3209.5	R23	.0657	R13	-.9803	LSA	3622.7	MSA	436.3	SSA	23.9
BDE	.6534	BRA	1.2902	BC3	3.0071	FSP	12462	SG1	3136.6	SG2	680.1	THA	144.05	EL1	1067.5	EL2	346.6	ALF	111.85

LAUNCH DATE OCT 13 1964 FLIGHT TIME 324.00 ARRIVAL DATE SEP 2 1965

HELIOCENTRIC CONIC DISTANCE 743.415 EARTH TO MARS

RL	149.24	LAL	.00	LOL	19.69	VL	32.611	GAL	-6.02	AZL	89.06	HCA	233.67	SMA	185.59	ECC	.22119	INC	.9368
RP	223.05	LAP	-.75	LOP	253.37	VP	21.792	GAP	-5.30	AZP	90.55	TAL	325.70	TAP	199.37	RCA	144.54	APO	226.64
RC	260.326	GL	7.75	GP	8.52	ZAL	138.05	ZAP	94.53	ETS	178.42	ZAE	129.18	ETE	170.76	ZAC	93.51	ETC	257.38

V1 29.857 V2 24.653 CLP 94.58

PLANETOCENTRIC CONIC

C3 15.455 VHL 3.931 DLA 15.62 RAL 162.98 RAD 6567.6 VEL 11.698 PTH 2.06 VHP 2.897 DPA 14.02 RAP 173.13 ECC 1.2544

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 39 37	2662.70	-27.33	71.88	25.26	97.72	19 24 0	2062.7	-25.98	63.47
90.00	10 51 0	4290.52	2.96	177.03	19.74	61.83	12 2 30	3690.5	-.83	170.40
100.00	20 9 34	2372.65	-28.55	50.34	25.05	99.25	20 49 6	1772.6	-26.98	41.89
100.00	12 3 44	4055.81	4.04	159.18	19.14	60.36	13 11 20	3455.8	.06	152.65
110.00	21 36 56	2099.29	-31.75	28.84	24.31	103.39	22 11 55	1499.3	-29.58	20.30
110.00	12 52 52	3901.93	6.82	145.79	17.43	56.42	13 57 54	3301.9	2.36	139.54

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1971	TRA	1.2330	TC3	-2.8820	BAU	.6723	SGT	2949.4	SGR	1909.8	SG3	3645.2	ST	632.9	SR	1000.1	SS	3473.4
RDE	.6424	RRA	-.7706	RC3	1.5107	FAU	.57947	RRT	-.9119	RRF	-.9564	RTF	.9689	CRT	-.7382	CRS	.9169	CST	-.9455
FDE	-6.8371	FRA	21.2004	FC	-32.4589	BSP	10885	SGB	3513.8	R23	.0599	R13	-.9832	LSA	3642.5	MSA	443.4	SSA	23.5
BDE	.6720	BRA	1.4540	BC3	3.2540	FSP	12487	SG1	3449.2	SG2	670.2	THA	148.09	EL1	1120.5	EL2	381.0	ALF	118.66

LAUNCH DATE OCT 13 1964 FLIGHT TIME 326.00 ARRIVAL DATE SEP 4 1965

HELIOCENTRIC CONIC DISTANCE 747.406 EARTH TO MARS

RL	149.24	LAL	.00	LOL	19.69	VL	32.609	GAL	-6.04	AZL	89.04	HCA	234.77	SMA	185.55	ECC	.22124	INC	.9633
RP	222.66	LAP	-.79	LOP	254.46	VP	21.836	GAP	-5.54	AZP	90.56	TAL	325.56	TAP	200.32	RCA	144.50	APO	226.60
RC	261.869	GL	7.95	GP	8.42	ZAL	138.19	ZAP	92.52	ETS	178.75	ZAE	126.99	ETE	171.46	ZAC	93.22	ETC	257.49

V1 29.857 V2 24.695 CLP 92.55

PLANETOCENTRIC CONIC

C3 15.532 VHL 3.941 DLA 15.74 RAL 163.22 RAD 6567.6 VEL 11.701 PTH 2.06 VHP 2.898 DPA 14.32 RAP 172.21 ECC 1.2556

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 39 31	2668.06	-27.38	72.26	25.64	97.53	19 23 59	2068.1	-26.05	63.85
90.00	10 53 5	4287.39	2.86	176.86	20.07	61.82	12 4 32	3687.4	-.93	170.23
100.00	20 9 33	2377.71	-28.61	50.70	25.44	99.07	20 49 10	1777.7	-27.06	42.24
100.00	12 5 44	4052.97	3.94	159.02	19.47	60.35	13 13 17	3453.0	-.03	152.49
110.00	21 37 6	2103.76	-31.82	29.17	24.71	103.21	22 12 10	1503.8	-29.67	20.61
110.00	12 54 40	3899.68	6.73	145.67	17.75	56.41	13 59 39	3299.7	2.27	139.43

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2600	TRA	1.4402	TC3	-3.1708	BAU	.7279	SGT	3334.9	SGR	1894.5	SG3	3638.4	ST	757.9	SR	1000.1	SS	3471.1
RDE	.6453	RRA	-.7608	RC3	1.4948	FAU	.57927	RRT	-.9179	RRF	-.9545	RTF	.9760	CRT	-.7681	CRS	.9150	CST	-.9608
FDE	-6.8533	FRA	21.2105	FC	-32.2681	BSP	12004	SGB	3835.4	R23	.0545	R13	-.9856	LSA	3663.3	MSA	450.4	SSA	23.1
BDE	.6957	BRA	1.6288	BC3	3.5055	FSP	12481	SG1	3777.6	SG2	663.6	THA	151.50	EL1	1186.3	EL2	409.1	ALF	124.96

LAUNCH DATE OCT 13 1964 FLIGHT TIME 328.00 ARRIVAL DATE SEP 6 1965

HELIOCENTRIC CONIC DISTANCE 751.403 EARTH TO MARS

RL 149.24 LAL .00 LOL 19.69 VL 32.607 GAL -6.07 AZL 89.01 HCA 235.86 SMA 185.52 ECC .22134 INC .9891 V1 29.857
RP 222.28 LAP -.82 LOP 255.55 VP 21.881 GAP -5.77 AZP 90.56 TAL 325.40 TAP 201.26 RCA 144.45 APO 226.58 V2 24.737
RC 263.392 GL 8.14 GP 8.31 ZAL 138.35 ZAP 90.52 ETS 179.08 ZAE 124.79 ETE 172.13 ZAC 92.93 ETC 257.61 CLP 90.52

PLANETOCENTRIC CONIC

C3 15.619 VHL 3.952 DLA 15.84 RAL 163.48 RAD 6567.6 VEL 11.705 PTH 2.06 VHP 2.901 DPA 14.60 RAP 171.30 ECC 1.2571

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 39 35	2673.07	-27.42	72.62	26.04	97.36	19 24 8	2073.1	-26.12	64.20
90.00	10 55 4	4284.91	2.78	176.72	20.43	61.81	12 6 29	3684.9	-1.01	170.09
100.00	20 9 41	2382.47	-28.66	51.05	25.84	98.89	20 49 24	1782.5	-27.13	42.58
100.00	12 7 39	4050.75	3.87	158.90	19.82	60.34	13 15 9	3450.8	-.11	152.37
110.00	21 37 25	2107.99	-31.88	29.48	25.11	103.04	22 12 33	1508.0	-29.76	20.91
110.00	12 56 25	3897.99	6.67	145.58	18.09	56.40	14 1 23	3298.0	2.20	139.34

DIFFERENTIAL CORRECTIONS
TDE -.3235 TRA 1.6500 TC3-3.4564 BAU .7848
RDE .6480 RRA -.7498 RC3 1.4759 FAU .57780
FDE-6.8599 FRA21.1732 FC-32.0257 BSP 13173
BDE .7243 BRA 1.8123 BC3 3.7583 FSP 12441

MID-COURSE EXECUTION ACCURACY
SGT 3723.8 SGR 1876.2 SG3 3622.4
RRT -.9214 RRF -.9525 RTF .9810
SGB 4169.7 R23 .0496 R13 -.9877
SG1 4117.2 SG2 659.6 THA 154.39

ORBIT DETERMINATION ACCURACY
ST 884.9 SR 999.4 SS 3465.5
CRT -.7874 CRS .9131 CST -.9700
LSA 3685.4 MSA 457.3 SSA 22.6
EL1 1263.1 EL2 431.6 ALF 130.60

LAUNCH DATE OCT 13 1964 FLIGHT TIME 330.00 ARRIVAL DATE SEP 8 1965

HELIOCENTRIC CONIC DISTANCE 755.407 EARTH TO MARS

RL 149.24 LAL .00 LOL 19.69 VL 32.605 GAL -6.10 AZL 88.99 HCA 236.96 SMA 185.49 ECC .22148 INC 1.0144 V1 29.857
RP 221.89 LAP -.85 LOP 256.65 VP 21.925 GAP -6.01 AZP 90.55 TAL 325.23 TAP 202.19 RCA 144.41 APO 226.57 V2 24.779
RC 264.895 GL 8.32 GP 8.20 ZAL 138.52 ZAP 88.52 ETS 179.39 ZAE 122.61 ETE 172.75 ZAC 92.64 ETC 257.73 CLP 88.50

PLANETOCENTRIC CONIC

C3 15.718 VHL 3.965 DLA 15.93 RAL 163.75 RAD 6567.6 VEL 11.709 PTH 2.06 VHP 2.909 DPA 14.87 RAP 170.39 ECC 1.2587

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 39 49	2677.75	-27.46	72.96	26.45	97.20	19 24 26	2077.7	-26.18	64.52
90.00	10 56 59	4283.10	2.72	176.62	20.80	61.80	12 8 22	3683.1	-1.07	169.99
100.00	20 10 0	2386.91	-28.70	51.37	26.26	98.73	20 49 47	1786.9	-27.20	42.89
100.00	12 9 29	4049.16	3.82	158.81	20.19	60.33	13 16 58	3449.2	-.16	152.28
110.00	21 37 52	2111.98	-31.94	29.77	25.54	102.87	22 13 4	1512.0	-29.84	21.19
110.00	12 58 6	3896.86	6.62	145.52	18.45	56.39	14 3 3	3296.9	2.16	139.28

DIFFERENTIAL CORRECTIONS
TDE -.3881 TRA 1.8615 TC3-3.7385 BAU .8429
RDE .6505 RRA -.7375 RC3 1.4537 FAU .57476
FDE-6.8544 FRA21.0908 FC-31.6566 BSP 14372
BDE .7574 BRA 2.0022 BC3 4.0111 FSP 12372

MID-COURSE EXECUTION ACCURACY
SGT 4114.4 SGR 1854.9 SG3 3596.7
RRT -.9231 RRF -.9503 RTF .9846
SGB 4513.2 R23 .0456 R13 -.9894
SG1 4465.1 SG2 657.4 THA 156.87

ORBIT DETERMINATION ACCURACY
ST 1013.3 SR 997.7 SS 3456.1
CRT -.8006 CRS .9110 CST -.9762
LSA 3708.2 MSA 463.9 SSA 22.1
EL1 1349.3 EL2 449.0 ALF 135.56

LAUNCH DATE OCT 13 1964 FLIGHT TIME 332.00 ARRIVAL DATE SEP 10 1965

HELIOCENTRIC CONIC DISTANCE 759.417 EARTH TO MARS

RL 149.24 LAL .00 LOL 19.69 VL 32.604 GAL -6.13 AZL 88.96 HCA 238.06 SMA 185.46 ECC .22166 INC 1.0391 V1 29.857
RP 221.51 LAP -.88 LOP 257.75 VP 21.970 GAP -6.24 AZP 90.55 TAL 325.05 TAP 203.11 RCA 144.35 APO 226.57 V2 24.820
RC 266.379 GL 8.50 GP 8.08 ZAL 138.71 ZAP 86.53 ETS 179.70 ZAE 120.42 ETE 173.34 ZAC 92.35 ETC 257.84 CLP 86.50

PLANETOCENTRIC CONIC

C3 15.829 VHL 3.979 DLA 16.01 RAL 164.03 RAD 6567.6 VEL 11.714 PTH 2.06 VHP 2.920 DPA 15.13 RAP 169.50 ECC 1.2605

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 40 13	2682.08	-27.50	73.27	26.88	97.04	19 24 55	2082.1	-26.24	64.83
90.00	10 58 49	4281.93	2.68	176.55	21.18	61.80	12 10 11	3681.9	-1.11	169.92
100.00	20 10 28	2391.06	-28.75	51.67	26.69	98.57	20 50 19	1791.1	-27.26	43.18
100.00	12 11 15	4048.19	3.78	158.76	20.57	60.33	13 18 43	3448.2	-.19	152.23
110.00	21 38 27	2115.74	-32.00	30.05	25.98	102.72	22 13 43	1515.7	-29.92	21.46
110.00	12 59 45	3896.27	6.60	145.49	18.83	56.38	14 4 41	3296.3	2.14	139.25

DIFFERENTIAL CORRECTIONS
TDE -.4538 TRA 2.0745 TC3-4.0155 BAU .9020
RDE .6529 RRA -.7241 RC3 1.4290 FAU .57051
FDE-6.8424 FRA20.9645 FC-31.2034 BSP 15594
BDE .7951 BRA 2.1972 BC3 4.2622 FSP 12269

MID-COURSE EXECUTION ACCURACY
SGT 4505.1 SGR 1831.3 SG3 3562.5
RRT -.9235 RRF -.9478 RTF .9873
SGB 4863.1 R23 .0424 R13 -.9908
SG1 4818.5 SG2 656.8 THA 159.02

ORBIT DETERMINATION ACCURACY
ST 1142.6 SR 995.5 SS 3444.4
CRT -.8098 CRS .9090 CST -.9804
LSA 3733.5 MSA 470.1 SSA 21.6
EL1 1443.2 EL2 462.5 ALF 139.84

LAUNCH DATE OCT 13 1964 FLIGHT TIME 334.00 ARRIVAL DATE SEP 12 1965

HELIOCENTRIC CONIC DISTANCE 763.431 EARTH TO MARS

RL 149.24 LAL .00 LOL 19.69 VL 32.603 GAL -6.17 AZL 88.94 HCA 239.17 SMA 185.44 ECC .22189 INC 1.0633 V1 29.857
RP 221.13 LAP -.91 LOP 258.86 VP 22.016 GAP -6.46 AZP 90.54 TAL 324.86 TAP 204.03 RCA 144.30 APO 226.59 V2 24.862
RC 267.844 GL 8.66 GP 7.96 ZAL 138.91 ZAP 84.57 ETS 180.00 ZAE 118.26 ETE 173.89 ZAC 92.06 ETC 257.96 CLP 84.51

PLANETOCENTRIC CONIC

C3 15.952 VHL 3.994 DLA 16.07 RAL 164.32 RAD 6567.6 VEL 11.719 PTH 2.06 VHP 2.934 DPA 15.37 RAP 168.63 ECC 1.2625

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 40 48	2686.07	-27.53	73.56	27.33	96.90	19 25 34	2086.1	-26.29	65.11
90.00	11 0 33	4281.45	2.67	176.53	21.59	61.80	12 11 55	3681.4	-1.13	169.90
100.00	20 11 5	2394.89	-28.78	51.95	27.14	98.43	20 51 0	1794.9	-27.32	43.45
100.00	12 12 57	4047.86	3.77	158.74	20.98	60.32	13 20 25	3447.9	-.21	152.21
110.00	21 39 11	2119.26	-32.05	30.31	26.44	102.57	22 14 30	1519.3	-29.99	21.71
110.00	13 1 21	3896.26	6.60	145.49	19.23	56.38	14 6 17	3296.3	2.14	139.25

DIFFERENTIAL CORRECTIONS
TDE -.5171 TRA 2.2937 TC3-4.2791 BAU .9598
RDE .6523 RRA -.7123 RC3 1.3944 FAU .56170
FDE-6.7523 FRA20.8609 FC-30.4849 BSP 16939
BDE .8324 BRA 2.4017 BC3 4.5005 FSP 12270

MID-COURSE EXECUTION ACCURACY
SGT 4894.8 SGR 1801.9 SG3 3516.7
RRT -.9232 RRF -.9449 RTF .9891
SGB 5215.9 R23 .0393 R13 -.9918
SG1 5174.6 SG2 655.2 THA 160.91

ORBIT DETERMINATION ACCURACY
ST 1271.2 SR 989.2 SS 3416.5
CRT -.8153 CRS .9052 CST -.9839
LSA 3747.0 MSA 476.5 SSA 21.5
EL1 1539.8 EL2 472.9 ALF 143.63

LAUNCH DATE OCT 13 1964 FLIGHT TIME 336.00 ARRIVAL DATE SEP 14 1965

HELIOCENTRIC CONIC DISTANCE 767.454 EARTH TO MARS

RL 149.24 LAL .00 LOL 19.69 VL 32.602 GAL -6.21 AZL 88.91 HCA 240.28 SMA 185.43 ECC .22216 INC 1.0871 V1 29.857
RP 220.75 LAP -.94 LOP 259.97 VP 22.061 GAP -6.69 AZP 90.54 TAL 324.65 TAP 204.93 RCA 144.24 APO 226.62 V2 24.903
RC 269.292 GL 8.82 GP 7.83 ZAL 139.13 ZAP 82.62 ETS 180.28 ZAE 116.10 ETE 174.40 ZAC 91.77 ETC 258.08 CLP 82.55

PLANETOCENTRIC CONIC

C3 16.086 VHL 4.011 DLA 16.12 RAL 164.62 RAD 6567.6 VEL 11.725 PTH 2.07 VHP 2.952 DPA 15.60 RAP 167.77 ECC 1.2647

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 41 32	2689.76	-27.56	73.82	27.80	96.77	19 26 22	2089.8	-26.34	65.37
90.00	11 2 13	4281.58	2.67	176.53	22.02	61.80	12 13 34	3681.6	-1.12	169.90
100.00	20 11 52	2398.45	-28.82	52.21	27.61	98.30	20 51 51	1798.4	-27.37	43.70
100.00	12 14 34	4048.12	3.78	158.75	21.40	60.33	13 22 2	3448.1	-.20	152.23
110.00	21 40 3	2122.56	-32.10	30.56	26.92	102.43	22 15 25	1522.6	-30.06	21.94
110.00	13 2 53	3896.77	6.62	145.52	19.64	56.39	14 7 50	3296.8	2.16	139.28

DIFFERENTIAL CORRECTIONS
TDE -.5852 TRA 2.5069 TC3-4.5427 BAU 1.0203
RDE .6556 RRA -.6956 RC3 1.3677 FAU .55626
FDE-6.7517 FRA20.6217 FC-29.9375 BSP 18134
BDE .8788 BRA 2.6016 BC3 4.7441 FSP 12042

MID-COURSE EXECUTION ACCURACY
SGT 5279.5 SGR 1775.0 SG3 3466.8
RRT -.9216 RRF -.9421 RTF .9907
SGB 5569.9 R23 .0376 R13 -.9928
SG1 5531.0 SG2 657.7 THA 162.53

ORBIT DETERMINATION ACCURACY
ST 1400.5 SR 987.2 SS 3404.2
CRT -.8199 CRS .9040 CST -.9858
LSA 3780.4 MSA 482.3 SSA 20.8
EL1 1644.5 EL2 481.4 ALF 146.76

LAUNCH DATE OCT 13 1964 FLIGHT TIME 338.00 ARRIVAL DATE SEP 16 1965

HELIOCENTRIC CONIC DISTANCE 771.483 EARTH TO MARS

RL 149.24 LAL .00 LOL 19.69 VL 32.601 GAL -6.25 AZL 88.89 HCA 241.40 SMA 185.42 ECC .22247 INC 1.1103 V1 29.857
RP 220.37 LAP -.97 LOP 261.08 VP 22.107 GAP -6.91 AZP 90.53 TAL 324.43 TAP 205.82 RCA 144.17 APO 226.67 V2 24.945
RC 270.721 GL 8.97 GP 7.70 ZAL 139.36 ZAP 80.70 ETS 180.55 ZAE 113.97 ETE 174.89 ZAC 91.49 ETC 258.19 CLP 80.61

PLANETOCENTRIC CONIC

C3 16.233 VHL 4.029 DLA 16.15 RAL 164.94 RAD 6567.7 VEL 11.731 PTH 2.07 VHP 2.973 DPA 15.82 RAP 166.94 ECC 1.2672

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 42 27	2693.11	-27.59	74.06	28.28	96.65	19 27 20	2093.1	-26.38	65.61
90.00	11 3 47	4282.37	2.70	176.58	22.46	61.80	12 15 10	3682.4	-1.10	169.95
100.00	20 12 49	2401.71	-28.85	52.44	28.10	98.18	20 52 50	1801.7	-27.42	43.93
100.00	12 16 7	4049.00	3.81	158.80	21.84	60.33	13 23 36	3449.0	-.17	152.28
110.00	21 41 3	2125.64	-32.15	30.79	27.41	102.30	22 16 28	1525.6	-30.12	22.16
110.00	13 4 22	3897.84	6.66	145.57	20.08	56.39	14 9 20	3297.8	2.20	139.33

DIFFERENTIAL CORRECTIONS
TDE -.6546 TRA 2.7212 TC3-4.7976 BAU 1.0809
RDE .6583 RRA -.6786 RC3 1.3378 FAU .54911
FDE-6.7308 FRA20.3585 FC-29.2852 BSP 19334
BDE .9284 BRA 2.8045 BC3 4.9807 FSP 11814

MID-COURSE EXECUTION ACCURACY
SGT 5660.7 SGR 1745.8 SG3 3409.2
RRT -.9194 RRF -.9389 RTF .9920
SGB 5923.8 R23 .0363 R13 -.9937
SG1 5886.9 SG2 660.1 THA 163.96

ORBIT DETERMINATION ACCURACY
ST 1530.0 SR 984.1 SS 3387.1
CRT -.8233 CRS .9024 CST -.9874
LSA 3813.6 MSA 487.7 SSA 20.3
EL1 1752.5 EL2 487.6 ALF 149.48

LAUNCH DATE OCT 13 1964 FLIGHT TIME 340.00 ARRIVAL DATE SEP 18 1965

HELIOCENTRIC CONIC DISTANCE 775.517 EARTH TO MARS

RL 149.24 LAL .00 LOL 19.69 VL 32.601 GAL -6.30 AZL 88.87 HCA 242.51 SMA 185.41 ECC .22283 INC 1.1333 V1 29.857
RP 220.00 LAP -1.01 LOP 262.20 VP 22.153 GAP -7.13 AZP 90.52 TAL 324.20 TAP 206.71 RCA 144.10 APO 226.73 V2 24.986
RC 272.134 GL 9.11 GP 7.57 ZAL 139.60 ZAP 78.80 ETS 180.82 ZAE 111.85 ETE 175.35 ZAC 91.21 ETC 258.30 CLP 78.70

PLANETOCENTRIC CONIC

C3 16.393 VHL 4.049 DLA 16.17 RAL 165.26 RAD 6567.7 VEL 11.738 PTH 2.07 VHP 2.997 DPA 16.01 RAP 166.14 ECC 1.2698

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 43 32	2696.14	-27.61	74.28	28.79	96.55	19 28 28	2096.1	-26.42	65.82
90.00	11 5 17	4283.81	2.74	176.66	22.92	61.81	12 16 41	3683.8	-1.05	170.03
100.00	20 13 54	2404.68	-28.88	52.66	28.60	98.07	20 53 59	1804.7	-27.46	44.14
100.00	12 17 35	4050.50	3.86	158.89	22.30	60.34	13 25 6	3450.5	-.12	152.36
110.00	21 42 11	2128.50	-32.19	31.00	27.92	102.18	22 17 39	1528.5	-30.18	22.36
110.00	13 5 48	3899.45	6.72	145.66	20.53	56.41	14 10 48	3299.4	2.26	139.42

DIFFERENTIAL CORRECTIONS
TDE -.7239 TRA 2.9368 TC3-5.0406 BAU 1.1411
RDE .6605 RRA -.6613 RC3 1.3047 FAU .54027
FDE-6.6897 FRA20.0722 FC-28.5328 BSP 20547
BDE .9799 BRA 3.0104 BC3 5.2068 FSP 11584

MID-COURSE EXECUTION ACCURACY
SGT 6036.1 SGR 1714.4 SG3 3344.2
RRT -.9167 RRF -.9355 RTF .9929
SGB 6274.9 R23 .0354 R13 -.9943
SG1 6239.8 SG2 662.8 THA 165.24

ORBIT DETERMINATION ACCURACY
ST 1658.2 SR 979.8 SS 3365.0
CRT -.8253 CRS .9005 CST -.9886
LSA 3845.7 MSA 493.1 SSA 19.8
EL1 1862.0 EL2 492.8 ALF 151.86

LAUNCH DATE OCT 13 1964 FLIGHT TIME 342.00 ARRIVAL DATE SEP 20 1965

HELIOCENTRIC CONIC DISTANCE 779.556 EARTH TO MARS

RL 149.24 LAL .00 LOL 19.69 VL 32.601 GAL -6.35 AZL 88.84 HCA 243.64 SMA 185.41 ECC .22323 INC 1.1558 V1 29.857
RP 219.62 LAP -1.04 LOP 263.32 VP 22.198 GAP -7.34 AZP 90.51 TAL 323.95 TAP 207.58 RCA 144.02 APO 226.80 V2 25.027
RC 273.529 GL 9.24 GP 7.44 ZAL 139.86 ZAP 76.93 ETS 181.07 ZAE 109.77 ETE 175.78 ZAC 90.93 ETC 258.41 CLP 76.82

PLANETOCENTRIC CONIC

C3 16.566 VHL 4.070 DLA 16.18 RAL 165.59 RAD 6567.7 VEL 11.745 PTH 2.07 VHP 3.025 DPA 16.19 RAP 165.37 ECC 1.2726

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 44 46	2698.85	-27.63	74.48	29.31	96.45	19 29 45	2098.9	-26.45	66.01
90.00	11 6 41	4285.90	2.81	176.77	23.40	61.81	12 18 7	3685.9	-.98	170.14
100.00	20 15 10	2407.37	-28.91	52.86	29.12	97.97	20 55 17	1807.4	-27.50	44.33
100.00	12 18 59	4052.61	3.93	159.00	22.77	60.34	13 26 32	3452.6	-.04	152.47
110.00	21 43 27	2131.15	-32.23	31.20	28.44	102.07	22 18 58	1531.1	-30.23	22.55
110.00	13 7 12	3901.60	6.80	145.77	21.00	56.42	14 12 13	3301.6	2.34	139.53

DIFFERENTIAL CORRECTIONS
TDE -.7943 TRA 3.1533 TC3-5.2722 BAU 1.2010
RDE .6624 RRA -.6437 RC3 1.2698 FAU .53025
FDE-6.6369 FRA19.7618 FC-27.7115 BSP 21760
BDE 1.0343 BRA 3.2184 BC3 5.4229 FSP 11345

MID-COURSE EXECUTION ACCURACY
SGT 6405.7 SGR 1681.7 SG3 3273.2
RRT -.9134 RRF -.9317 RTF .9937
SGB 6622.7 R23 .0347 R13 -.9948
SG1 6589.2 SG2 665.4 THA 166.37

ORBIT DETERMINATION ACCURACY
ST 1786.0 SR 975.0 SS 3339.9
CRT -.8265 CRS .8985 CST -.9897
LSA 3879.0 MSA 498.0 SSA 19.3
EL1 1973.2 EL2 496.8 ALF 153.94

LAUNCH DATE OCT 13 1964 FLIGHT TIME 344.00 ARRIVAL DATE SEP 22 1965

HELIOCENTRIC CONIC DISTANCE 783.601 EARTH TO MARS

RL 149.24 LAL .00 LOL 19.69 VL 32.601 GAL -6.40 AZL 88.82 HCA 244.76 SMA 185.41 ECC .22367 INC 1.1779 V1 29.857
RP 219.25 LAP -1.07 LOP 264.45 VP 22.245 GAP -7.56 AZP 90.50 TAL 323.69 TAP 208.45 RCA 143.94 APO 226.88 V2 25.067
RC 274.906 GL 9.37 GP 7.31 ZAL 140.14 ZAP 75.10 ETS 181.31 ZAE 107.71 ETE 176.18 ZAC 90.67 ETC 258.52 CLP 74.98

PLANETOCENTRIC CONIC

C3 16.752 VHL 4.093 DLA 16.18 RAL 165.93 RAD 6567.7 VEL 11.753 PTH 2.07 VHP 3.056 DPA 16.36 RAP 164.63 ECC 1.2757

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 46 11	2701.26	-27.65	74.65	29.84	96.37	19 31 12	2101.3	-26.48	66.18
90.00	11 8 1	4288.63	2.90	176.93	23.89	61.82	12 19 29	3688.6	-.89	170.30
100.00	20 16 34	2409.79	-28.93	53.03	29.66	97.88	20 56 44	1809.8	-27.54	44.51
100.00	12 20 19	4055.33	4.02	159.15	23.27	60.35	13 27 54	3455.3	.05	152.62
110.00	21 44 51	2133.59	-32.26	31.38	28.98	101.97	22 20 24	1533.6	-30.28	22.73
110.00	13 8 32	3904.30	6.90	145.92	21.49	56.44	14 13 36	3304.3	2.45	139.67

DIFFERENTIAL CORRECTIONS
TDE -.8653 TRA 3.3701 TC3-5.4911 BAU 1.2604
RDE .6641 RRA -.6258 RC3 1.2333 FAU .51920
FDE-6.5734 FRA19.4275 FC-26.8315 BSP 22955
BDE 1.0908 BRA 3.4278 BC3 5.6279 FSP 11090

MID-COURSE EXECUTION ACCURACY
SGT 6767.7 SGR 1647.9 SG3 3196.7
RRT -.9096 RRF -.9276 RTF .9943
SGB 6965.4 R23 .0343 R13 -.9953
SG1 6933.3 SG2 668.2 THA 167.39

ORBIT DETERMINATION ACCURACY
ST 1912.4 SR 969.6 SS 3311.7
CRT -.8270 CRS .8964 CST -.9905
LSA 3913.0 MSA 502.7 SSA 18.8
EL1 2085.0 EL2 500.0 ALF 155.77

LAUNCH DATE OCT 13 1964 FLIGHT TIME 346.00 ARRIVAL DATE SEP 24 1965

HELIOCENTRIC CONIC DISTANCE 787.651 EARTH TO MARS

RL 149.24 LAL .00 LOL 19.69 VL 32.601 GAL -6.46 AZL 88.80 HCA 245.89 SMA 185.42 ECC .22416 INC 1.1997 V1 29.857
RP 218.89 LAP -1.10 LOP 265.58 VP 22.291 GAP -7.77 AZP 90.49 TAL 323.42 TAP 209.31 RCA 143.85 APO 226.98 V2 25.108
RC 276.266 GL 9.48 GP 7.17 ZAL 140.43 ZAP 73.30 ETS 181.54 ZAE 105.69 ETE 176.56 ZAC 90.41 ETC 258.62 CLP 73.17

PLANETOCENTRIC CONIC

C3 16.953 VHL 4.117 DLA 16.16 RAL 166.29 RAD 6567.7 VEL 11.762 PTH 2.08 VHP 3.091 DPA 16.50 RAP 163.93 ECC 1.2790

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 47 45	2703.36	-27.67	74.80	30.40	96.29	19 32 49	2103.4	-26.51	66.33
90.00	11 9 15	4292.00	3.00	177.12	24.41	61.83	12 20 47	3692.0	-.79	170.48
100.00	20 18 7	2411.94	-28.95	53.19	30.22	97.80	20 58 19	1811.9	-27.57	44.66
100.00	12 21 35	4058.65	4.14	159.34	23.78	60.37	13 29 13	3458.7	.16	152.80
110.00	21 46 22	2135.83	-32.29	31.55	29.54	101.88	22 21 58	1535.8	-30.32	22.89
110.00	13 9 49	3907.53	7.03	146.09	22.00	56.46	14 14 57	3307.5	2.57	139.84

DIFFERENTIAL CORRECTIONS
TDE -.9373 TRA 3.5868 TC3-5.6968 BAU 1.3193
RDE .6659 RRA -.6075 RC3 1.1959 FAU .50738
FDE-6.5047 FRA19.0674 FC-25.9107 BSP 24128
BDE 1.1498 BRA 3.6379 BC3 5.8210 FSP 10820

MID-COURSE EXECUTION ACCURACY
SGT 7121.3 SGR 1613.5 SG3 3115.6
RRT -.9054 RRF -.9232 RTF .9948
SGB 7301.8 R23 .0342 R13 -.9956
SG1 7270.9 SG2 671.0 THA 168.31

ORBIT DETERMINATION ACCURACY
ST 2037.5 SR 964.0 SS 3281.6
CRT -.8271 CRS .8943 CST -.9911
LSA 3948.7 MSA 507.1 SSA 18.4
EL1 2197.3 EL2 502.5 ALF 157.38

LAUNCH DATE OCT 13 1964 FLIGHT TIME 348.00 ARRIVAL DATE SEP 26 1965

HELIOCENTRIC CONIC DISTANCE 791.705 EARTH TO MARS

RL 149.24 LAL .00 LOL 19.69 VL 32.601 GAL -6.52 AZL 88.78 HCA 247.02 SMA 185.42 ECC .22470 INC 1.2213 V1 29.857
RP 218.52 LAP -1.12 LOP 266.71 VP 22.337 GAP -7.97 AZP 90.48 TAL 323.13 TAP 210.15 RCA 143.76 APO 227.09 V2 25.148
RC 277.609 GL 9.59 GP 7.04 ZAL 140.73 ZAP 71.54 ETS 181.76 ZAE 103.69 ETE 176.92 ZAC 90.16 ETC 258.71 CLP 71.40

PLANETOCENTRIC CONIC

C3 17.168 VHL 4.143 DLA 16.13 RAL 166.65 RAD 6567.7 VEL 11.771 PTH 2.08 VHP 3.128 DPA 16.62 RAP 163.27 ECC 1.2825

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 49 29	2705.17	-27.68	74.94	30.97	96.23	19 34 34	2105.2	-26.53	66.46
90.00	11 10 25	4296.00	3.13	177.34	24.94	61.84	12 22 1	3696.0	-.66	170.71
100.00	20 19 50	2413.83	-28.97	53.33	30.79	97.73	21 0 4	1813.8	-27.59	44.79
100.00	12 22 46	4062.57	4.27	159.55	24.31	60.39	13 30 28	3462.6	.29	153.02
110.00	21 48 2	2137.87	-32.32	31.70	30.12	101.79	22 23 40	1537.9	-30.36	23.03
110.00	13 11 3	3911.30	7.17	146.29	22.52	56.49	14 16 15	3311.3	2.71	140.03

DIFFERENTIAL CORRECTIONS
TDE-1.0096 TRA 3.8046 TC3-5.8871 BAU 1.3771
RDE .6674 RRA -.5893 RC3 1.1573 FAU .49457
FDE-6.4245 FRA18.6929 FC-24.9404 BSP 25300
BDE 1.2103 BRA 3.8499 BC3 5.9998 FSP 10544

MID-COURSE EXECUTION ACCURACY
SGT 7466.1 SGR 1578.3 SG3 3030.3
RRT -.9006 RRF -.9185 RTF .9952
SGB 7631.1 R23 .0342 R13 -.9959
SG1 7601.3 SG2 673.8 THA 169.13

ORBIT DETERMINATION ACCURACY
ST 2161.0 SR 957.8 SS 3248.4
CRT -.8266 CRS .8922 CST -.9916
LSA 3984.7 MSA 511.3 SSA 18.0
EL1 2309.3 EL2 504.5 ALF 158.82

LAUNCH DATE OCT 13 1964 FLIGHT TIME 350.00 ARRIVAL DATE SEP 28 1965

HELIOCENTRIC CONIC DISTANCE 795.764 EARTH TO MARS

RL 149.24 LAL .00 LOL 19.69 VL 32.602 GAL -6.58 AZL 88.76 HCA 248.16 SMA 185.44 ECC .22528 INC 1.2425 V1 29.857
RP 218.16 LAP -1.15 LOP 267.85 VP 22.383 GAP -8.18 AZP 90.46 TAL 322.83 TAP 210.99 RCA 143.66 APO 227.21 V2 25.188
RC 278.933 GL 9.69 GP 6.90 ZAL 141.05 ZAP 69.82 ETS 181.96 ZAE 101.73 ETE 177.26 ZAC 89.91 ETC 258.81 CLP 69.66

PLANETOCENTRIC CONIC

C3 17.398 VHL 4.171 DLA 16.09 RAL 167.02 RAD 6567.7 VEL 11.781 PTH 2.08 VHP 3.168 DPA 16.73 RAP 162.65 ECC 1.2863

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 51 23	2706.70	-27.69	75.05	31.56	96.17	19 36 29	2106.7	-26.55	66.57
90.00	11 11 30	4300.63	3.28	177.60	25.49	61.86	12 23 11	3700.6	-.51	170.97
100.00	20 21 41	2415.47	-28.98	53.45	31.38	97.67	21 1 57	1815.5	-27.62	44.91
100.00	12 23 53	4067.09	4.42	159.80	24.86	60.41	13 31 40	3467.1	.45	153.27
110.00	21 49 49	2139.73	-32.35	31.84	30.71	101.71	22 25 28	1539.7	-30.39	23.17
110.00	13 12 15	3915.60	7.33	146.52	23.07	56.52	14 17 30	3315.6	2.88	140.26

DIFFERENTIAL CORRECTIONS
TDE-1.0836 TRA 4.0217 TC3-6.0645 BAU 1.4344
RDE .6692 RRA -.5708 RC3 1.1186 FAU .48133
FDE-6.3430 FRA18.2985 FC-23.9515 BSP 26439
BDE 1.2736 BRA 4.0620 BC3 6.1668 FSP 10257

MID-COURSE EXECUTION ACCURACY
SGT 7801.8 SGR 1543.3 SG3 2942.0
RRT -.8954 RRF -.9134 RTF .9955
SGB 7953.0 R23 .0344 R13 -.9961
SG1 7924.1 SG2 676.5 THA 169.88

ORBIT DETERMINATION ACCURACY
ST 2283.4 SR 951.7 SS 3214.3
CRT -.8259 CRS .8902 CST -.9920
LSA 4023.1 MSA 515.0 SSA 17.6
EL1 2421.5 EL2 505.9 ALF 160.10

LAUNCH DATE OCT 13 1964 FLIGHT TIME 352.00 ARRIVAL DATE SEP 30 1965

HELIOCENTRIC CONIC DISTANCE 799.827 EARTH TO MARS

RL 149.24 LAL .00 LOL 19.69 VL 32.603 GAL -6.65 AZL 88.74 HCA 249.30 SMA 185.45 ECC .22591 INC 1.2634 V1 29.857
RP 217.80 LAP -1.18 LOP 268.99 VP 22.429 GAP -8.38 AZP 90.45 TAL 322.51 TAP 211.81 RCA 143.56 APO 227.35 V2 25.228
RC 280.240 GL 9.79 GP 6.76 ZAL 141.38 ZAP 68.13 ETS 182.16 ZAE 99.81 ETE 177.57 ZAC 89.68 ETC 258.89 CLP 67.97

PLANETOCENTRIC CONIC

C3 17.643 VHL 4.200 DLA 16.03 RAL 167.40 RAD 6567.7 VEL 11.791 PTH 2.08 VHP 3.212 DPA 16.82 RAP 162.07 ECC 1.2904

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 53 25	2707.95	-27.70	75.14	32.17	96.13	19 38 33	2108.0	-26.56	66.65
90.00	11 12 31	4305.88	3.45	177.89	26.06	61.88	12 24 17	3705.9	-.34	171.26
100.00	20 23 41	2416.86	-28.99	53.55	31.99	97.62	21 3 58	1816.9	-27.64	45.01
100.00	12 24 56	4072.20	4.59	160.08	25.43	60.43	13 32 48	3472.2	.62	153.55
110.00	21 51 43	2141.40	-32.37	31.96	31.33	101.64	22 27 24	1541.4	-30.43	23.29
110.00	13 13 23	3920.42	7.51	146.77	23.63	56.55	14 18 44	3320.4	3.06	140.51

DIFFERENTIAL CORRECTIONS
TDE-1.1589 TRA 4.2394 TC3-6.2276 BAU 1.4909
RDE .6710 RRA -.5524 RC3 1.0799 FAU .46766
FDE-6.2576 FRA17.8907 FC-22.9472 BSP 27541
BDE 1.3392 BRA 4.2753 BC3 6.3205 FSP 9950

MID-COURSE EXECUTION ACCURACY
SGT 8128.5 SGR 1508.5 SG3 2851.5
RRT -.8898 RRF -.9081 RTF .9957
SGB 8267.3 R23 .0347 R13 -.9963
SG1 8239.3 SG2 679.1 THA 170.56

ORBIT DETERMINATION ACCURACY
ST 2404.6 SR 945.5 SS 3178.7
CRT -.8251 CRS .8883 CST -.9924
LSA 4063.4 MSA 518.5 SSA 17.2
EL1 2533.5 EL2 507.0 ALF 161.25

LAUNCH DATE OCT 13 1964 FLIGHT TIME 354.00 ARRIVAL DATE OCT 2 1965

HELIOCENTRIC CONIC DISTANCE 803.895 EARTH TO MARS

RL 149.24 LAL .00 LOL 19.69 VL 32.604 GAL -6.72 AZL 88.72 HCA 250.45 SMA 185.47 ECC .22658 INC 1.2841 V1 29.857
RP 217.44 LAP -1.21 LOP 270.14 VP 22.475 GAP -8.59 AZP 90.43 TAL 322.18 TAP 212.63 RCA 143.45 APO 227.49 V2 25.268
RC 281.529 GL 9.87 GP 6.63 ZAL 141.72 ZAP 66.49 ETS 182.35 ZAE 97.93 ETE 177.87 ZAC 89.46 ETC 258.97 CLP 66.32

PLANETOCENTRIC CONIC

C3 17.905 VHL 4.231 DLA 15.97 RAL 167.80 RAD 6567.7 VEL 11.802 PTH 2.09 VHP 3.258 DPA 16.89 RAP 161.53 ECC 1.2947

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 55 37	2708.94	-27.71	75.21	32.79	96.09	19 40 46	2108.9	-26.57	66.72
90.00	11 13 27	4311.74	3.64	178.22	26.64	61.90	12 25 18	3711.7	-.15	171.59
100.00	20 25 49	2418.02	-29.00	53.63	32.62	97.57	21 6 7	1818.0	-27.65	45.09
100.00	12 25 55	4077.89	4.78	160.40	26.01	60.46	13 33 53	3477.9	.81	153.86
110.00	21 53 45	2142.91	-32.39	32.08	31.95	101.58	22 29 28	1542.9	-30.46	23.39
110.00	13 14 29	3925.77	7.71	147.06	24.21	56.59	14 19 55	3325.8	3.26	140.79

DIFFERENTIAL CORRECTIONS
TDE-1.2351 TRA 4.4572 TC3-6.3771 BAU 1.5468
RDE .6729 RRA -.5341 RC3 1.0415 FAU .45368
FDE-6.1674 FRA17.4712 FC-21.9359 BSP 28611
BDE 1.4066 BRA 4.4891 BC3 6.4616 FSP 9641

MID-COURSE EXECUTION ACCURACY
SGT 8445.7 SGR 1474.1 SG3 2759.1
RRT -.8838 RRF -.9024 RTF .9959
SGB 8573.4 R23 .0352 R13 -.9965
SG1 8546.3 SG2 681.7 THA 171.17

ORBIT DETERMINATION ACCURACY
ST 2523.8 SR 939.1 SS 3141.4
CRT -.8241 CRS .8864 CST -.9926
LSA 4104.6 MSA 521.6 SSA 16.8
EL1 2644.6 EL2 507.7 ALF 162.28

LAUNCH DATE OCT 13 1964 FLIGHT TIME 356.00 ARRIVAL DATE OCT 4 1965

HELIOCENTRIC CONIC DISTANCE 807.966 EARTH TO MARS

RL 149.24 LAL .00 LOL 19.69 VL 32.605 GAL -6.80 AZL 88.70 HCA 251.60 SMA 185.49 ECC .22730 INC 1.3046 V1 29.857
RP 217.09 LAP -1.24 LOP 271.28 VP 22.521 GAP -8.79 AZP 90.41 TAL 321.84 TAP 213.43 RCA 143.33 APO 227.65 V2 25.307
RC 282.801 GL 9.95 GP 6.49 ZAL 142.08 ZAP 64.89 ETS 182.52 ZAE 96.08 ETE 178.15 ZAC 89.24 ETC 259.04 CLP 64.71

PLANETOCENTRIC CONIC

C3 18.184 VHL 4.264 DLA 15.89 RAL 168.20 RAD 6567.7 VEL 11.814 PTH 2.09 VHP 3.307 DPA 16.95 RAP 161.03 ECC 1.2993

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 57 57	2709.67	-27.71	75.26	33.44	96.07	19 43 7	2109.7	-26.58	66.78
90.00	11 14 18	4318.22	3.85	178.58	27.25	61.92	12 26 16	3718.2	.06	171.95
100.00	20 28 6	2418.95	-29.01	53.70	33.26	97.54	21 8 25	1819.0	-27.67	45.16
100.00	12 26 50	4084.17	4.99	160.74	26.62	60.49	13 34 54	3484.2	1.03	154.20
110.00	21 55 54	2144.25	-32.41	32.18	32.60	101.52	22 31 38	1544.2	-30.48	23.49
110.00	13 15 32	3931.64	7.93	147.37	24.81	56.64	14 21 3	3331.6	3.49	141.10

DIFFERENTIAL CORRECTIONS
TDE-1.3133 TRA 4.6754 TC3-6.5111 BAU 1.6015
RDE .6750 RRA -.5160 RC3 1.0031 FAU .43932
FDE-6.0748 FRA17.0437 FC-20.9158 BSP 29659
BDE 1.4766 BRA 4.7038 BC3 6.5879 FSP 9329

MID-COURSE EXECUTION ACCURACY
SGT 8752.7 SGR 1440.2 SG3 2665.5
RRT -.8773 RRF -.8964 RTF .9961
SGB 8870.4 R23 .0357 R13 -.9966
SG1 8844.0 SG2 684.0 THA 171.74

ORBIT DETERMINATION ACCURACY
ST 2642.1 SR 932.7 SS 3103.1
CRT -.8231 CRS .8847 CST -.9929
LSA 4147.9 MSA 524.2 SSA 16.5
EL1 2755.5 EL2 507.9 ALF 163.21

LAUNCH DATE OCT 13 1964 FLIGHT TIME 358.00 ARRIVAL DATE OCT 6 1965

HELIOCENTRIC CONIC DISTANCE 812.041 EARTH TO MARS

RL 149.24 LAL .00 LOL 19.69 VL 32.607 GAL -6.87 AZL 88.68 HCA 252.75 SMA 185.52 ECC .22808 INC 1.3249 V1 29.857
RP 216.74 LAP -1.27 LOP 272.44 VP 22.567 GAP -8.98 AZP 90.39 TAL 321.48 TAP 214.22 RCA 143.20 APO 227.83 V2 25.346
RC 284.057 GL 10.03 GP 6.36 ZAL 142.45 ZAP 63.33 ETS 182.69 ZAE 94.27 ETE 178.41 ZAC 89.04 ETC 259.11 CLP 63.15

PLANETOCENTRIC CONIC

C3 18.480 VHL 4.299 DLA 15.80 RAL 168.61 RAD 6567.7 VEL 11.826 PTH 2.09 VHP 3.359 DPA 16.99 RAP 160.58 ECC 1.3041

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 0 26	2710.17	-27.72	75.30	34.10	96.05	19 45 36	2110.2	-26.59	66.81
90.00	11 15 5	4325.29	4.07	178.98	27.87	61.95	12 27 10	3725.3	.29	172.34
100.00	20 30 31	2419.67	-29.02	53.75	33.92	97.51	21 10 50	1819.7	-27.68	45.21
100.00	12 27 41	4091.02	5.22	161.12	27.24	60.53	13 35 52	3491.0	1.26	154.58
110.00	21 58 10	2145.43	-32.42	32.26	33.26	101.47	22 33 55	1545.4	-30.50	23.57
110.00	13 16 32	3938.02	8.17	147.71	25.43	56.69	14 22 10	3338.0	3.73	141.43

DIFFERENTIAL CORRECTIONS
TDE-1.3920 TRA 4.8947 TC3-6.6301 BAU 1.6553
RDE .6771 RRA -.4983 RC3 .9652 FAU .42473
FDE-5.9774 FRA16.6125 FC-19.8972 BSP 30681
BDE 1.5480 BRA 4.9200 BC3 6.6999 FSP 9015

MID-COURSE EXECUTION ACCURACY
SGT 9050.0 SGR 1407.0 SG3 2571.2
RRT -.8705 RRF -.8901 RTF .9962
SGB 9158.7 R23 .0363 R13 -.9967
SG1 9132.9 SG2 686.1 THA 172.25

ORBIT DETERMINATION ACCURACY
ST 2758.3 SR 926.3 SS 3063.2
CRT -.8219 CRS .8830 CST -.9931
LSA 4191.8 MSA 526.7 SSA 16.2
EL1 2865.0 EL2 508.0 ALF 164.06

LAUNCH DATE OCT 13 1964 FLIGHT TIME 360.00 ARRIVAL DATE OCT 8 1965

HELIOCENTRIC CONIC DISTANCE 816.120 EARTH TO MARS

RL 149.24 LAL .00 LOL 19.69 VL 32.608 GAL -6.96 AZL 88.65 HCA 253.90 SMA 185.54 ECC .22890 INC 1.3450 V1 29.857
RP 216.39 LAP -1.29 LOP 273.59 VP 22.613 GAP -9.18 AZP 90.37 TAL 321.10 TAP 215.01 RCA 143.07 APO 228.01 V2 25.385
RC 285.296 GL 10.09 GP 6.23 ZAL 142.83 ZAP 61.81 ETS 182.84 ZAE 92.50 ETE 178.66 ZAC 88.84 ETC 259.16 CLP 61.62

PLANETOCENTRIC CONIC

C3 18.795 VHL 4.335 DLA 15.69 RAL 169.02 RAD 6567.8 VEL 11.840 PTH 2.10 VHP 3.414 DPA 17.01 RAP 160.18 ECC 1.3093

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 3 3	2710.42	-27.72	75.31	34.77	96.04	19 48 14	2110.4	-26.59	66.83
90.00	11 15 48	4332.96	4.32	179.41	28.51	61.99	12 28 1	3733.0	.54	172.77
100.00	20 33 3	2420.19	-29.02	53.79	34.60	97.49	21 13 23	1820.2	-27.68	45.24
100.00	12 28 29	4098.43	5.47	161.53	27.88	60.57	13 36 47	3498.4	1.51	154.99
110.00	22 0 32	2146.46	-32.44	32.34	33.94	101.43	22 36 19	1546.5	-30.52	23.65
110.00	13 17 29	3944.92	8.43	148.08	26.06	56.75	14 23 14	3344.9	3.99	141.79

DIFFERENTIAL CORRECTIONS
TDE-1.4722 TRA 5.1151 TC3-6.7341 BAU 1.7081
RDE .6794 RRA -.4810 RC3 .9278 FAU .40999
FDE-5.8777 FRA16.1783 FC-18.8849 BSP 31685
BDE 1.6214 BRA 5.1377 BC3 6.7977 FSP 8704

MID-COURSE EXECUTION ACCURACY
SGT 9337.4 SGR 1374.6 SG3 2476.7
RRT -.8633 RRF -.8835 RTF .9963
SGB 9438.0 R23 .0369 R13 -.9967
SG1 9412.9 SG2 688.0 THA 172.72

ORBIT DETERMINATION ACCURACY
ST 2873.0 SR 919.8 SS 3022.2
CRT -.8206 CRS .8814 CST -.9932
LSA 4237.2 MSA 528.9 SSA 15.9
EL1 2973.6 EL2 507.9 ALF 164.83

LAUNCH DATE OCT 13 1964 FLIGHT TIME 362.00 ARRIVAL DATE OCT 10 1965

HELIOCENTRIC CONIC DISTANCE 820.201 EARTH TO MARS

RL 149.24 LAL .00 LOL 19.69 VL 32.610 GAL -7.04 AZL 88.64 HCA 255.06 SMA 185.57 ECC .22977 INC 1.3649 V1 29.857
RP 216.05 LAP -1.32 LOP 274.75 VP 22.658 GAP -9.38 AZP 90.35 TAL 320.72 TAP 215.78 RCA 142.94 APO 228.21 V2 25.423
RC 286.520 GL 10.15 GP 6.10 ZAL 143.23 ZAP 60.33 ETS 182.99 ZAE 90.77 ETE 178.89 ZAC 88.66 ETC 259.21 CLP 60.14

PLANETOCENTRIC CONIC

C3 19.129 VHL 4.374 DLA 15.58 RAL 169.45 RAD 6567.8 VEL 11.854 PTH 2.10 VHP 3.471 DPA 17.01 RAP 159.82 ECC 1.3148

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 5 49	2710.47	-27.72	75.32	35.47	96.04	19 50 59	2110.5	-26.59	66.83
90.00	11 16 26	4341.22	4.58	179.87	29.17	62.03	12 28 47	3741.2	.80	173.23
100.00	20 35 44	2420.51	-29.03	53.81	35.29	97.48	21 16 4	1820.5	-27.69	45.27
100.00	12 29 13	4106.41	5.74	161.98	28.54	60.61	13 37 39	3506.4	1.78	155.42
110.00	22 3 2	2147.36	-32.45	32.41	34.63	101.39	22 38 49	1547.4	-30.54	23.71
110.00	13 18 24	3952.32	8.70	148.47	26.72	56.81	14 24 16	3352.3	4.28	142.18

DIFFERENTIAL CORRECTIONS
TDE-1.5539 TRA 5.3366 TC3-6.8232 BAU 1.7598
RDE .6819 RRA -.4641 RC3 .8912 FAU .39519
FDE-5.7757 FRA15.7424 FC-17.8855 BSP 32650
BDE 1.6970 BRA 5.3567 BC3 6.8812 FSP 8389

MID-COURSE EXECUTION ACCURACY
SGT 9614.7 SGR 1343.1 SG3 2382.5
RRT -.8558 RRF -.8766 RTF .9964
SGB 9708.0 R23 .0377 R13 -.9967
SG1 9683.5 SG2 689.8 THA 173.15

ORBIT DETERMINATION ACCURACY
ST 2986.1 SR 913.4 SS 2980.1
CRT -.8194 CRS .8799 CST -.9933
LSA 4283.7 MSA 530.7 SSA 15.6
EL1 3081.2 EL2 507.5 ALF 165.53

LAUNCH DATE OCT 13 1964 FLIGHT TIME 364.00 ARRIVAL DATE OCT 12 1965

HELIOCENTRIC CONIC DISTANCE 824.285 EARTH TO MARS

RL 149.24 LAL .00 LOL 19.69 VL 32.612 GAL -7.13 AZL 88.62 HCA 256.23 SMA 185.61 ECC .23069 INC 1.3847 V1 29.857
RP 215.71 LAP -1.34 LOP 275.92 VP 22.704 GAP -9.57 AZP 90.33 TAL 320.31 TAP 216.54 RCA 142.79 APO 228.43 V2 25.461
RC 287.729 GL 10.20 GP 5.97 ZAL 143.64 ZAP 58.89 ETS 183.13 ZAE 89.08 ETE 179.11 ZAC 88.48 ETC 259.26 CLP 58.70

PLANETOCENTRIC CONIC

C3 19.483 VHL 4.414 DLA 15.46 RAL 169.88 RAD 6567.8 VEL 11.869 PTH 2.11 VHP 3.532 DPA 17.00 RAP 159.50 ECC 1.3206

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 8 43	2710.30	-27.72	75.31	36.18	96.05	19 53 53	2110.3	-26.59	66.82
90.00	11 17 1	4350.06	4.86	180.37	29.85	62.07	12 29 31	3750.1	1.09	173.72
100.00	20 38 31	2420.66	-29.03	53.82	36.00	97.47	21 18 52	1820.7	-27.69	45.28
100.00	12 29 53	4114.94	6.02	162.45	29.21	60.67	13 38 28	3514.9	2.07	155.89
110.00	22 5 37	2148.13	-32.46	32.47	35.34	101.36	22 41 26	1548.1	-30.55	23.77
110.00	13 19 16	3960.23	9.00	148.89	27.39	56.88	14 25 16	3360.2	4.58	142.60

DIFFERENTIAL CORRECTIONS
TDE-1.6370 TRA 5.5596 TC3-6.8981 BAU 1.8105
RDE .6845 RRA -.4477 RC3 .8554 FAU .38038
FDE-5.6712 FRA15.3078 FC-16.9026 BSP 33604
BDE 1.7744 BRA 5.5776 BC3 6.9510 FSP 8080

MID-COURSE EXECUTION ACCURACY
SGT 9882.4 SGR 1312.7 SG3 2289.0
RRT -.8480 RRF -.8695 RTF .9964
SGB 9969.2 R23 .0384 R13 -.9967
SG1 9945.2 SG2 691.3 THA 173.54

ORBIT DETERMINATION ACCURACY
ST 3097.5 SR 907.0 SS 2937.0
CRT -.8181 CRS .8785 CST -.9934
LSA 4331.2 MSA 532.1 SSA 15.4
EL1 3187.5 EL2 506.8 ALF 166.17

LAUNCH DATE OCT 13 1964 FLIGHT TIME 366.00 ARRIVAL DATE OCT 14 1965

HELIOCENTRIC CONIC DISTANCE 828.371 EARTH TO MARS

RL 149.24 LAL .00 LOL 19.69 VL 32.614 GAL -7.23 AZL 88.60 HCA 257.39 SMA 185.64 ECC .23167 INC 1.4043 V1 29.857
RP 215.38 LAP -1.37 LOP 277.08 VP 22.749 GAP -9.76 AZP 90.31 TAL 319.89 TAP 217.29 RCA 142.64 APO 228.65 V2 25.498
RC 288.924 GL 10.25 GP 5.85 ZAL 144.06 ZAP 57.50 ETS 183.26 ZAE 87.43 ETE 179.31 ZAC 88.32 ETC 259.30 CLP 57.30

PLANETOCENTRIC CONIC

C3 19.858 VHL 4.456 DLA 15.32 RAL 170.33 RAD 6567.8 VEL 11.884 PTH 2.11 VHP 3.594 DPA 16.97 RAP 159.23 ECC 1.3268

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 11 44	2709.94	-27.71	75.28	36.91	96.06	19 56 54	2109.9	-26.59	66.80
90.00	11 17 31	4359.47	5.16	180.90	30.54	62.12	12 30 10	3759.5	1.39	174.25
100.00	20 41 26	2420.63	-29.03	53.82	36.73	97.47	21 21 47	1820.6	-27.69	45.28
100.00	12 30 29	4124.01	6.32	162.95	29.91	60.72	13 39 13	3524.0	2.38	156.39
110.00	22 8 20	2148.78	-32.47	32.51	36.07	101.33	22 44 8	1548.8	-30.57	23.81
110.00	13 20 6	3968.63	9.31	149.35	28.09	56.96	14 26 14	3368.6	4.89	143.04

DIFFERENTIAL CORRECTIONS
TDE-1.7216 TRA 5.7850 TC3-6.9584 BAU 1.8602
RDE .6872 RRA -.4320 RC3 .8205 FAU .36563
FDE-5.5647 FRA14.8767 FC-15.9402 BSP 34518
BDE 1.8537 BRA 5.8011 BC3 7.0066 FSP 7775

MID-COURSE EXECUTION ACCURACY
SGT10140.9 SGR 1283.4 SG3 2196.6
RRT -.8400 RRF -.8622 RTF .9964
SGB10221.8 R23 .0392 R13 -.9967
SG110198.3 SG2 692.5 THA 173.90

ORBIT DETERMINATION ACCURACY
ST 3207.4 SR 900.6 SS 2892.9
CRT -.8169 CRS .8772 CST -.9935
LSA 4379.8 MSA 533.3 SSA 15.2
EL1 3292.8 EL2 506.0 ALF 166.76

LAUNCH DATE OCT 13 1964 FLIGHT TIME 368.00 ARRIVAL DATE OCT 16 1965

HELIOCENTRIC CONIC DISTANCE 832.458 EARTH TO MARS

RL	149.24	LAL	.00	LOL	19.69	VL	32.617	GAL	-7.32	AZL	88.58	HCA	258.56	SMA	185.68	ECC	.23270	INC	1.4238
RP	215.05	LAP	-1.40	LOP	278.25	VP	22.794	GAP	-9.95	AZP	90.28	TAL	319.46	TAP	218.03	RCA	142.47	APO	228.89
RC	290.105	GL	10.29	GP	5.73	ZAL	144.49	ZAP	56.14	ETS	183.38	ZAE	85.82	ETE	179.51	ZAC	88.17	ETC	259.33

V1 29.857 V2 25.535 CLP 55.95

PLANETOCENTRIC CONIC

C3	20.255	VHL	4.501	DLA	15.18	RAL	170.78	RAD	6567.8	VEL	11.901	PTH	2.11	VHP	3.660	DPA	16.93	RAP	159.00

ECC 1.3334

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 14 52	2709.41	-27.71	75.24	37.66	96.08	20 0 2	2109.4	-26.58	66.76
90.00	11 17 58	4369.44	5.48	181.46	31.26	62.18	12 30 47	3769.4	1.71	174.80
100.00	20 44 28	2420.45	-29.03	53.81	37.48	97.48	21 24 49	1820.4	-27.69	45.26
100.00	12 31 3	4133.63	6.64	163.49	30.62	60.79	13 39 56	3533.6	2.70	156.92
110.00	22 11 8	2149.32	-32.48	32.55	36.82	101.31	22 46 57	1549.3	-30.58	23.85
110.00	13 20 53	3977.53	9.64	149.82	28.80	57.04	14 27 10	3377.5	5.23	143.51

DIFFERENTIAL CORRECTIONS

TDE	-1.8087	TRA	6.0116	TC3	-7.0062	BAU	1.9092	SGT	10390.0	SGR	1255.4
RDE	.6903	RRA	-.4167	RC3	.7869	FAU	.35109	RRT	-.8317	RRF	-.8547
FDE	-5.4593	FRA	14.4462	FC	-15.0061	BSP	35415	SGB	10465.6	R23	.0401
BDE	1.9360	BRA	6.0260	BC3	7.0502	FSP	7473	SG	110442.6	SG2	693.5

MID-COURSE EXECUTION ACCURACY

SG3 2105.5 RTF .9964 R13 -.9967 THA 174.24

ORBIT DETERMINATION ACCURACY

ST	3316.2	SR	894.4	SS	2848.4
CRT	-.8159	CRS	.8761	CST	-.9935
LSA	4430.1	MSA	534.0	SSA	15.0
EL1	3397.4	EL2	504.8	ALF	167.30

LAUNCH DATE OCT 13 1964 FLIGHT TIME 370.00 ARRIVAL DATE OCT 18 1965

HELIOCENTRIC CONIC DISTANCE 836.548 EARTH TO MARS

RL	149.24	LAL	.00	LOL	19.69	VL	32.619	GAL	-7.43	AZL	88.56	HCA	259.74	SMA	185.72	ECC	.23378	INC	1.4432
RP	214.72	LAP	-1.42	LOP	279.43	VP	22.838	GAP	-10.15	AZP	90.26	TAL	319.01	TAP	218.75	RCA	142.30	APO	229.14
RC	291.272	GL	10.32	GP	5.61	ZAL	144.93	ZAP	54.82	ETS	183.49	ZAE	84.24	ETE	179.69	ZAC	88.03	ETC	259.35

V1 29.857 V2 25.572 CLP 54.63

PLANETOCENTRIC CONIC

C3	20.676	VHL	4.547	DLA	15.02	RAL	171.23	RAD	6567.8	VEL	11.919	PTH	2.12	VHP	3.728	DPA	16.88	RAP	158.82

ECC 1.3403

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 18 8	2708.70	-27.71	75.19	38.42	96.10	20 3 17	2108.7	-26.57	66.71
90.00	11 18 21	4379.96	5.82	182.05	31.99	62.24	12 31 21	3780.0	2.05	175.39
100.00	20 47 37	2420.12	-29.02	53.79	38.24	97.49	21 27 57	1820.1	-27.68	45.24
100.00	12 31 33	4143.78	6.98	164.05	31.35	60.86	13 40 37	3543.8	3.04	157.48
110.00	22 14 2	2149.76	-32.48	32.59	37.58	101.29	22 49 51	1549.8	-30.59	23.88
110.00	13 21 38	3986.91	9.99	150.33	29.53	57.14	14 28 4	3386.9	5.59	144.00

DIFFERENTIAL CORRECTIONS

TDE	-1.8964	TRA	6.2414	TC3	-7.0385	BAU	1.9567	SGT	10629.4	SGR	1228.4
RDE	.6935	RRA	-.4021	RC3	.7540	FAU	.33656	RRT	-.8232	RRF	-.8470
FDE	-5.3500	FRA	14.0223	FC	-14.0923	BSP	36290	SGB	10700.2	R23	.0410
BDE	2.0192	BRA	6.2543	BC3	7.0788	FSP	7177	SG	110677.6	SG2	694.3

MID-COURSE EXECUTION ACCURACY

SG3 2015.8 RTF .9964 R13 -.9967 THA 174.54

ORBIT DETERMINATION ACCURACY

ST	3422.6	SR	888.2	SS	2802.5
CRT	-.8147	CRS	.8751	CST	-.9936
LSA	4480.0	MSA	534.6	SSA	14.8
EL1	3499.9	EL2	503.7	ALF	167.81

LAUNCH DATE OCT 13 1964 FLIGHT TIME 372.00 ARRIVAL DATE OCT 20 1965

HELIOCENTRIC CONIC DISTANCE 840.638 EARTH TO MARS

RL	149.24	LAL	.00	LOL	19.69	VL	32.622	GAL	-7.53	AZL	88.54	HCA	260.91	SMA	185.77	ECC	.23493	INC	1.4625
RP	214.40	LAP	-1.44	LOP	280.61	VP	22.882	GAP	-10.34	AZP	90.23	TAL	318.55	TAP	219.47	RCA	142.13	APO	229.41
RC	292.426	GL	10.35	GP	5.49	ZAL	145.39	ZAP	53.55	ETS	183.60	ZAE	82.70	ETE	179.86	ZAC	87.89	ETC	259.36

V1 29.857 V2 25.608 CLP 53.35

PLANETOCENTRIC CONIC

C3	21.120	VHL	4.596	DLA	14.85	RAL	171.70	RAD	6567.9	VEL	11.937	PTH	2.12	VHP	3.798	DPA	16.81	RAP	158.67

ECC 1.3476

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 21 31	2707.85	-27.70	75.13	39.20	96.13	20 6 39	2107.8	-26.56	66.65
90.00	11 18 40	4391.03	6.17	182.68	32.74	62.31	12 31 51	3791.0	2.41	176.01
100.00	20 50 52	2419.66	-29.02	53.75	39.02	97.51	21 31 12	1819.7	-27.68	45.21
100.00	12 32 0	4154.45	7.33	164.65	32.11	60.94	13 41 14	3554.4	3.40	158.07
110.00	22 17 1	2150.11	-32.49	32.61	38.36	101.27	22 52 52	1550.1	-30.59	23.91
110.00	13 22 20	3996.77	10.35	150.86	30.28	57.24	14 28 57	3396.8	5.96	144.52

DIFFERENTIAL CORRECTIONS

TDE	-1.9864	TRA	6.4732	TC3	-7.0593	BAU	2.0037	SGT	10860.2	SGR	1202.8
RDE	.6970	RRA	-.3881	RC3	.7224	FAU	.32237	RRT	-.8145	RRF	-.8392
FDE	-5.2419	FRA	13.6018	FC	-13.2140	BSP	37143	SGB	10926.6	R23	.0419
BDE	2.1051	BRA	6.4849	BC3	7.0962	FSP	6887	SG	110904.5	SG2	694.9

MID-COURSE EXECUTION ACCURACY

SG3 1928.1 RTF .9963 R13 -.9966 THA 174.82

ORBIT DETERMINATION ACCURACY

ST	3527.7	SR	882.1	SS	2756.2
CRT	-.8137	CRS	.8742	CST	-.9936
LSA	4531.4	MSA	534.9	SSA	14.6
EL1	3601.5	EL2	502.3	ALF	168.27

LAUNCH DATE OCT 13 1964 FLIGHT TIME 374.00 ARRIVAL DATE OCT 22 1965

HELIOCENTRIC CONIC DISTANCE 844.729 EARTH TO MARS

RL	149.24	LAL	.00	LOL	19.69	VL	32.624	GAL	-7.64	AZL	88.52	HCA	262.10	SMA	185.81	ECC	.23613	INC	1.4818
RP	214.08	LAP	-1.47	LOP	281.79	VP	22.926	GAP	-10.53	AZP	90.20	TAL	318.07	TAP	220.17	RCA	141.94	APO	229.69
RC	293.566	GL	10.37	GP	5.38	ZAL	145.85	ZAP	52.31	ETS	183.70	ZAE	81.20	ETE	180.02	ZAC	87.77	ETC	259.37

V1 29.857 V2 25.644 CLP 52.11

PLANETOCENTRIC CONIC

C3	21.591	VHL	4.647	DLA	14.67	RAL	172.17	RAD	6567.9	VEL	11.957	PTH	2.13	VHP	3.871	DPA	16.72	RAP	158.57

ECC 1.3553

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 25 0	2706.85	-27.69	75.06	40.00	96.17	20 10 7	2106.9	-26.55	66.58
90.00	11 18 56	4402.63	6.53	183.33	33.51	62.39	12 32 19	3802.6	2.78	176.66
100.00	20 54 14	2419.08	-29.01	53.71	39.82	97.53	21 34 33	1819.1	-27.67	45.16
100.00	12 32 23	4165.64	7.70	165.27	32.88	61.03	13 41 49	3565.6	3.78	158.68
110.00	22 20 7	2150.38	-32.49	32.63	39.15	101.26	22 55 57	1550.4	-30.60	23.93
110.00	13 23 0	4007.11	10.73	151.42	31.05	57.35	14 29 47	3407.1	6.35	145.07

DIFFERENTIAL CORRECTIONS

TDE	-2.0785	TRA	6.7087	TC3	-7.0672	BAU	2.0497	SGT	11082.7	SGR	1178.3
RDE	.7008	RRA	-.3748	RC3	.6919	FAU	.30835	RRT	-.8058	RRF	-.8314
FDE	-5.1329	FRA	13.1892	FC	-12.3638	BSP	37977	SGB	11145.2	R23	.0429
BDE	2.1935	BRA	6.7191	BC3	7.1010	FSP	6605	SG	111123.4	SG2	695.2

MID-COURSE EXECUTION ACCURACY

SG3 1842.4 RTF .9963 R13 -.9965 THA 175.08

ORBIT DETERMINATION ACCURACY

ST	3631.6	SR	876.2	SS	2709.3
CRT	-.8128	CRS	.8734	CST	-.9936
LSA	4583.7	MSA	534.8	SSA	14.5
EL1	3702.1	EL2	500.7	ALF	168.70

LAUNCH DATE OCT 13 1964 FLIGHT TIME 376.00 ARRIVAL DATE OCT 24 1965

HELIOCENTRIC CONIC DISTANCE 848.821 EARTH TO MARS
RL 149.24 LAL .00 LOL 19.69 VL 32.627 GAL -7.76 AZL 88.50 HCA 263.28 SMA 185.86 ECC .23739 INC 1.5010 V1 29.857
RP 213.77 LAP -1.49 LOP 282.97 VP 22.970 GAP -10.72 AZP 90.18 TAL 317.58 TAP 220.86 RCA 141.74 APO 229.99 V2 25.679
RC 294.693 GL 10.38 GP 5.27 ZAL 146.33 ZAP 51.11 ETS 183.80 ZAE 79.73 ETE 180.18 ZAC 87.66 ETC 259.37 CLP 50.91
PLANETOCENTRIC CONIC
C3 22.088 VHL 4.700 DLA 14.49 RAL 172.65 RAD 6567.9 VEL 11.978 PTH 2.13 VHP 3.947 DPA 16.63 RAP 158.51 ECC 1.3635

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 28 36	2705.73	-27.68	74.98	40.82	96.21	20 13 42	2105.7	-26.53	66.50
90.00	11 19 9	4414.76	6.91	184.02	34.30	62.47	12 32 44	3814.8	3.17	177.34
100.00	20 57 42	2418.39	-29.01	53.66	40.64	97.56	21 38 0	1818.4	-27.66	45.12
100.00	12 32 44	4177.33	8.09	165.93	33.67	61.13	13 42 22	3577.3	4.18	159.33
110.00	22 23 17	2150.58	-32.49	32.65	39.96	101.25	22 59 8	1550.6	-30.60	23.94
110.00	13 23 38	4017.91	11.13	152.01	31.84	57.47	14 30 36	3417.9	6.76	145.64

DIFFERENTIAL CORRECTIONS
TDE-2.1724 TRA 6.9477 TC3-7.0623 BAU 2.0947
RDE .7048 RRA -.3622 RC3 .6626 FAU .29460
FDE-5.0236 FRA12.7823 FC-11.5464 BSP 38802
BDE 2.2838 BRA 6.9571 BC3 7.0933 FSP 6331

MID-COURSE EXECUTION ACCURACY
SGT11296.4 SGR 1155.1 SG3 1758.7
RRT -.7970 RRF -.8235 RTF .9962
SGB11355.3 R23 .0439 R13 -.9964
SG111334.0 SG2 695.3 THA 175.32

ORBIT DETERMINATION ACCURACY
ST 3733.8 SR 870.3 SS 2661.6
CRT -.8120 CRS .8728 CST -.9935
LSA 4636.4 MSA 534.5 SSA 14.4
EL1 3801.2 EL2 499.0 ALF 169.09

LAUNCH DATE OCT 13 1964 FLIGHT TIME 378.00 ARRIVAL DATE OCT 26 1965

HELIOCENTRIC CONIC DISTANCE 852.911 EARTH TO MARS
RL 149.24 LAL .00 LOL 19.69 VL 32.630 GAL -7.88 AZL 88.48 HCA 264.47 SMA 185.91 ECC .23872 INC 1.5202 V1 29.857
RP 213.46 LAP -1.51 LOP 284.16 VP 23.013 GAP -10.91 AZP 90.15 TAL 317.07 TAP 221.53 RCA 141.53 APO 230.30 V2 25.714
RC 295.805 GL 10.39 GP 5.16 ZAL 146.81 ZAP 49.94 ETS 183.88 ZAE 78.30 ETE 180.32 ZAC 87.56 ETC 259.37 CLP 49.75
PLANETOCENTRIC CONIC
C3 22.614 VHL 4.755 DLA 14.29 RAL 173.13 RAD 6567.9 VEL 12.000 PTH 2.14 VHP 4.025 DPA 16.52 RAP 158.49 ECC 1.3722

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 32 18	2704.50	-27.67	74.89	41.65	96.25	20 17 22	2104.5	-26.52	66.41
90.00	11 19 19	4427.41	7.31	184.73	35.11	62.57	12 33 6	3827.4	3.58	178.04
100.00	21 1 15	2417.61	-29.00	53.60	41.47	97.59	21 41 33	1817.6	-27.65	45.06
100.00	12 33 2	4189.53	8.49	166.61	34.48	61.23	13 42 52	3589.5	4.59	160.00
110.00	22 26 33	2150.73	-32.49	32.66	40.79	101.25	23 2 24	1550.7	-30.60	23.95
110.00	13 24 14	4029.18	11.54	152.62	32.65	57.60	14 31 23	3429.2	7.18	146.23

DIFFERENTIAL CORRECTIONS
TDE-2.2690 TRA 7.1899 TC3-7.0479 BAU 2.1394
RDE .7092 RRA -.3502 RC3 .6346 FAU .28123
FDE-4.9159 FRA12.3811 FC-10.7663 BSP 39581
BDE 2.3772 BRA 7.1985 BC3 7.0764 FSP 6059

MID-COURSE EXECUTION ACCURACY
SGT11502.9 SGR 1133.1 SG3 1677.3
RRT -.7883 RRF -.8157 RTF .9961
SGB11558.6 R23 .0450 R13 -.9963
SG111537.7 SG2 695.2 THA 175.54

ORBIT DETERMINATION ACCURACY
ST 3834.8 SR 864.5 SS 2613.8
CRT -.8113 CRS .8724 CST -.9935
LSA 4690.4 MSA 534.0 SSA 14.3
EL1 3899.5 EL2 497.0 ALF 169.46

LAUNCH DATE OCT 13 1964 FLIGHT TIME 380.00 ARRIVAL DATE OCT 28 1965

HELIOCENTRIC CONIC DISTANCE 857.002 EARTH TO MARS
RL 149.24 LAL .00 LOL 19.69 VL 32.633 GAL -8.01 AZL 88.46 HCA 265.66 SMA 185.97 ECC .24011 INC 1.5393 V1 29.857
RP 213.16 LAP -1.53 LOP 285.35 VP 23.055 GAP -11.10 AZP 90.12 TAL 316.54 TAP 222.20 RCA 141.32 APO 230.62 V2 25.748
RC 296.904 GL 10.39 GP 5.06 ZAL 147.31 ZAP 48.81 ETS 183.97 ZAE 76.90 ETE 180.46 ZAC 87.47 ETC 259.36 CLP 48.62
PLANETOCENTRIC CONIC
C3 23.171 VHL 4.814 DLA 14.08 RAL 173.62 RAD 6567.9 VEL 12.023 PTH 2.15 VHP 4.105 DPA 16.40 RAP 158.51 ECC 1.3813

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 36 5	2703.18	-27.66	74.79	42.50	96.30	20 21 8	2103.2	-26.50	66.32
90.00	11 19 25	4440.55	7.72	185.48	35.94	62.67	12 33 26	3840.6	4.00	178.78
100.00	21 4 54	2416.75	-28.99	53.54	42.31	97.62	21 45 11	1816.8	-27.63	45.00
100.00	12 33 18	4202.21	8.90	167.32	35.31	61.35	13 43 20	3602.2	5.01	160.70
110.00	22 29 53	2150.82	-32.50	32.67	41.64	101.24	23 5 44	1550.8	-30.61	23.96
110.00	13 24 48	4040.91	11.97	153.26	33.48	57.74	14 32 8	3440.9	7.62	146.86

DIFFERENTIAL CORRECTIONS
TDE-2.3684 TRA 7.4358 TC3-7.0231 BAU 2.1837
RDE .7138 RRA -.3390 RC3 .6077 FAU .26820
FDE-4.8087 FRA11.9868 FC-10.0208 BSP 40341
BDE 2.4737 BRA 7.4435 BC3 7.0493 FSP 5795

MID-COURSE EXECUTION ACCURACY
SGT11701.6 SGR 1112.3 SG3 1598.3
RRT -.7796 RRF -.8080 RTF .9960
SGB11754.4 R23 .0461 R13 -.9962
SG111733.8 SG2 694.8 THA 175.75

ORBIT DETERMINATION ACCURACY
ST 3934.8 SR 859.0 SS 2565.6
CRT -.8108 CRS .8722 CST -.9935
LSA 4745.3 MSA 533.0 SSA 14.2
EL1 3996.9 EL2 494.9 ALF 169.80

LAUNCH DATE OCT 13 1964 FLIGHT TIME 382.00 ARRIVAL DATE OCT 30 1965

HELIOCENTRIC CONIC DISTANCE 861.090 EARTH TO MARS
RL 149.24 LAL .00 LOL 19.69 VL 32.637 GAL -8.14 AZL 88.44 HCA 266.85 SMA 186.02 ECC .24157 INC 1.5584 V1 29.857
RP 212.87 LAP -1.56 LOP 286.55 VP 23.098 GAP -11.29 AZP 90.09 TAL 316.00 TAP 222.85 RCA 141.09 APO 230.96 V2 25.782
RC 297.989 GL 10.39 GP 4.96 ZAL 147.81 ZAP 47.72 ETS 184.05 ZAE 75.53 ETE 180.59 ZAC 87.38 ETC 259.34 CLP 47.52
PLANETOCENTRIC CONIC
C3 23.758 VHL 4.874 DLA 13.87 RAL 174.11 RAD 6568.0 VEL 12.047 PTH 2.15 VHP 4.188 DPA 16.27 RAP 158.57 ECC 1.3910

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 39 58	2701.77	-27.65	74.69	43.37	96.35	20 25 0	2101.8	-26.49	66.22
90.00	11 19 29	4454.20	8.15	186.26	36.79	62.79	12 33 43	3854.2	4.44	179.54
100.00	21 8 38	2415.82	-28.98	53.47	43.18	97.65	21 48 54	1815.8	-27.62	44.93
100.00	12 33 30	4215.38	9.33	168.07	36.16	61.47	13 43 46	3615.4	5.45	161.43
110.00	22 33 18	2150.89	-32.50	32.67	42.50	101.24	23 9 9	1550.9	-30.61	23.96
110.00	13 25 19	4053.08	12.41	153.92	34.33	57.89	14 32 52	3453.1	8.08	147.50

DIFFERENTIAL CORRECTIONS
TDE-2.4699 TRA 7.6860 TC3-6.9876 BAU 2.2272
RDE .7188 RRA -.3284 RC3 .5820 FAU .25547
FDE-4.7011 FRA11.5993 FC3-9.3090 BSP 41082
BDE 2.5724 BRA 7.6930 BC3 7.0118 FSP 5539

MID-COURSE EXECUTION ACCURACY
SGT11892.5 SGR 1092.6 SG3 1521.5
RRT -.7710 RRF -.8004 RTF .9958
SGB11942.6 R23 .0472 R13 -.9960
SG111922.4 SG2 694.1 THA 175.93

ORBIT DETERMINATION ACCURACY
ST 4033.0 SR 853.4 SS 2516.5
CRT -.8105 CRS .8721 CST -.9934
LSA 4800.4 MSA 531.9 SSA 14.1
EL1 4092.8 EL2 492.7 ALF 170.12

LAUNCH DATE OCT 13 1964 FLIGHT TIME 384.00 ARRIVAL DATE NOV 1 1965

HELIOCENTRIC CONIC DISTANCE 865.177 EARTH TO MARS

RL 149.24 LAL .00 LOL 19.69 VL 32.640 GAL -8.27 AZL 88.42 HCA 268.05 SMA 186.08 ECC .24309 INC 1.5776 V1 29.857
RP 212.57 LAP -1.58 LOP 287.75 VP 23.139 GAP -11.48 AZP 90.05 TAL 315.44 TAP 223.49 RCA 140.85 APO 231.32 V2 25.815
RC 299.061 GL 10.38 GP 4.86 ZAL 148.33 ZAP 46.66 ETS 184.12 ZAE 74.20 ETE 180.72 ZAC 87.31 ETC 259.32 CLP 46.47

PLANETOCENTRIC CONIC

C3 24.380 VHL 4.938 DLA 13.64 RAL 174.61 RAD 6568.0 VEL 12.073 PTH 2.16 VHP 4.274 DPA 16.12 RAP 158.66 ECC 1.4012

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 43 57	2700.30	-27.64	74.58	44.25	96.40	20 28 57	2100.3	-26.47	66.11
90.00	11 19 30	4468.33	8.59	187.06	37.66	62.91	12 33 59	3868.3	4.89	180.34
100.00	21 12 27	2414.84	-28.97	53.40	44.06	97.69	21 52 42	1814.8	-27.61	44.86
100.00	12 33 41	4229.02	9.78	168.84	37.03	61.61	13 44 10	3629.0	5.91	162.19
110.00	22 36 48	2150.92	-32.50	32.68	43.38	101.24	23 12 39	1550.9	-30.61	23.97
110.00	13 25 49	4065.70	12.86	154.62	35.20	58.05	14 33 35	3465.7	8.55	148.18

DIFFERENTIAL CORRECTIONS
TDE-2.5740 TRA 7.9415 TC3-6.9417 BAU 2.2698
RDE .7240 RRA -.3186 RC3 .5573 FAU .24306
FDE-4.5936 FRA11.2200 FC3-8.6312 BSP 41820
BDE 2.6739 BRA 7.9479 BC3 6.9640 FSP 5292

MID-COURSE EXECUTION ACCURACY
SGT12076.3 SGR 1074.0 SG3 1447.2
RRT -.7625 RRF -.7930 RTF .9957
SGB12124.0 R23 .0484 R13 -.9958
SG112104.1 SG2 693.2 THA 176.11

ORBIT DETERMINATION ACCURACY
ST 4130.0 SR 848.0 SS 2467.0
CRT -.8102 CRS .8722 CST -.9933
LSA 4856.0 MSA 530.4 SSA 14.0
EL1 4187.6 EL2 490.3 ALF 170.42

LAUNCH DATE OCT 13 1964 FLIGHT TIME 386.00 ARRIVAL DATE NOV 3 1965

HELIOCENTRIC CONIC DISTANCE 869.261 EARTH TO MARS

RL 149.24 LAL .00 LOL 19.69 VL 32.644 GAL -8.41 AZL 88.40 HCA 269.25 SMA 186.14 ECC .24469 INC 1.5967 V1 29.857
RP 212.29 LAP -1.60 LOP 288.95 VP 23.181 GAP -11.67 AZP 90.02 TAL 314.86 TAP 224.12 RCA 140.59 APO 231.69 V2 25.847
RC 300.120 GL 10.36 GP 4.76 ZAL 148.85 ZAP 45.63 ETS 184.19 ZAE 72.90 ETE 180.83 ZAC 87.25 ETC 259.29 CLP 45.44

PLANETOCENTRIC CONIC

C3 25.037 VHL 5.004 DLA 13.41 RAL 175.12 RAD 6568.0 VEL 12.100 PTH 2.17 VHP 4.362 DPA 15.97 RAP 158.79 ECC 1.4120

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 48 0	2698.77	-27.63	74.47	45.15	96.45	20 32 59	2098.8	-26.45	66.01
90.00	11 19 29	4482.94	9.04	187.90	38.55	63.05	12 34 12	3882.9	5.35	181.16
100.00	21 16 21	2413.81	-28.97	53.32	44.96	97.73	21 56 35	1813.8	-27.59	44.79
100.00	12 33 48	4243.12	10.23	169.64	37.92	61.76	13 44 32	3643.1	6.38	162.97
110.00	22 40 22	2150.94	-32.50	32.68	44.27	101.24	23 16 13	1550.9	-30.61	23.97
110.00	13 26 17	4078.76	13.33	155.34	36.09	58.23	14 34 16	3478.8	9.04	148.88

DIFFERENTIAL CORRECTIONS
TDE-2.6814 TRA 8.2013 TC3-6.8889 BAU 2.3128
RDE .7296 RRA -.3095 RC3 .5340 FAU .23111
FDE-4.4882 FRA10.8464 FC3-7.9914 BSP 42524
BDE 2.7789 BRA 8.2071 BC3 6.9096 FSP 5049

MID-COURSE EXECUTION ACCURACY
SGT12254.0 SGR 1056.5 SG3 1375.3
RRT -.7543 RRF -.7860 RTF .9955
SGB12299.4 R23 .0497 R13 -.9957
SG112279.9 SG2 692.2 THA 176.27

ORBIT DETERMINATION ACCURACY
ST 4225.9 SR 842.8 SS 2417.3
CRT -.8101 CRS .8725 CST -.9933
LSA 4912.5 MSA 528.8 SSA 13.9
EL1 4281.4 EL2 487.7 ALF 170.70

LAUNCH DATE OCT 13 1964 FLIGHT TIME 388.00 ARRIVAL DATE NOV 5 1965

HELIOCENTRIC CONIC DISTANCE 873.341 EARTH TO MARS

RL 149.24 LAL .00 LOL 19.69 VL 32.647 GAL -8.56 AZL 88.38 HCA 270.46 SMA 186.20 ECC .24636 INC 1.6160 V1 29.857
RP 212.01 LAP -1.62 LOP 290.15 VP 23.221 GAP -11.87 AZP 89.99 TAL 314.27 TAP 224.73 RCA 140.33 APO 232.08 V2 25.879
RC 301.167 GL 10.34 GP 4.67 ZAL 149.38 ZAP 44.64 ETS 184.25 ZAE 71.62 ETE 180.95 ZAC 87.19 ETC 259.26 CLP 44.44

PLANETOCENTRIC CONIC

C3 25.731 VHL 5.073 DLA 13.17 RAL 175.63 RAD 6568.0 VEL 12.129 PTH 2.17 VHP 4.453 DPA 15.80 RAP 158.96 ECC 1.4235

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 52 8	2697.19	-27.62	74.36	46.07	96.51	20 37 5	2097.2	-26.43	65.89
90.00	11 19 25	4498.01	9.50	188.76	39.46	63.20	12 34 23	3898.0	5.83	182.01
100.00	21 20 20	2412.75	-28.96	53.25	45.88	97.77	22 0 33	1812.8	-27.58	44.72
100.00	12 33 54	4257.70	10.70	170.47	38.83	61.92	13 44 52	3657.7	6.86	163.78
110.00	22 44 0	2150.96	-32.50	32.68	45.19	101.24	23 19 51	1551.0	-30.61	23.97
110.00	13 26 43	4092.25	13.81	156.09	37.01	58.42	14 34 56	3492.2	9.54	149.60

DIFFERENTIAL CORRECTIONS
TDE-2.7921 TRA 8.4661 TC3-6.8275 BAU 2.3553
RDE .7356 RRA -.3011 RC3 .5116 FAU .21948
FDE-4.3834 FRA10.4798 FC3-7.3845 BSP 43197
BDE 2.8874 BRA 8.4714 BC3 6.8467 FSP 4812

MID-COURSE EXECUTION ACCURACY
SGT12424.7 SGR 1040.1 SG3 1305.8
RRT -.7464 RRF -.7792 RTF .9953
SGB12468.2 R23 .0511 R13 -.9955
SG112449.0 SG2 690.8 THA 176.41

ORBIT DETERMINATION ACCURACY
ST 4320.9 SR 837.6 SS 2367.3
CRT -.8102 CRS .8730 CST -.9932
LSA 4969.7 MSA 526.9 SSA 13.8
EL1 4374.5 EL2 484.9 ALF 170.96

LAUNCH DATE OCT 13 1964 FLIGHT TIME 390.00 ARRIVAL DATE NOV 7 1965

HELIOCENTRIC CONIC DISTANCE 877.418 EARTH TO MARS

RL 149.24 LAL .00 LOL 19.69 VL 32.651 GAL -8.71 AZL 88.36 HCA 271.67 SMA 186.27 ECC .24811 INC 1.6352 V1 29.857
RP 211.73 LAP -1.63 LOP 291.36 VP 23.262 GAP -12.06 AZP 89.95 TAL 313.66 TAP 225.33 RCA 140.05 APO 232.48 V2 25.911
RC 302.203 GL 10.31 GP 4.58 ZAL 149.92 ZAP 43.67 ETS 184.31 ZAE 70.38 ETE 181.05 ZAC 87.15 ETC 259.22 CLP 43.48

PLANETOCENTRIC CONIC

C3 26.465 VHL 5.144 DLA 12.92 RAL 176.14 RAD 6568.1 VEL 12.159 PTH 2.18 VHP 4.546 DPA 15.63 RAP 159.15 ECC 1.4356

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 56 21	2695.59	-27.61	74.24	47.00	96.57	20 41 16	2095.6	-26.41	65.78
90.00	11 19 19	4513.55	9.98	189.66	40.40	63.36	12 34 32	3913.5	6.32	182.89
100.00	21 24 23	2411.67	-28.95	53.17	46.81	97.81	22 4 35	1811.7	-27.56	44.64
100.00	12 33 58	4272.70	11.18	171.32	39.77	62.10	13 45 10	3672.7	7.36	164.62
110.00	22 47 42	2150.98	-32.50	32.68	46.11	101.24	23 23 33	1551.0	-30.61	23.97
110.00	13 27 8	4106.16	14.31	156.86	37.94	58.62	14 35 34	3506.2	10.05	150.35

DIFFERENTIAL CORRECTIONS
TDE-2.9064 TRA 8.7357 TC3-6.7590 BAU 2.3977
RDE .7420 RRA -.2933 RC3 .4904 FAU .20825
FDE-4.2802 FRA10.1190 FC3-6.8122 BSP 43832
BDE 2.9997 BRA 8.7406 BC3 6.7767 FSP 4581

MID-COURSE EXECUTION ACCURACY
SGT12588.8 SGR 1024.6 SG3 1238.7
RRT -.7388 RRF -.7728 RTF .9950
SGB12630.4 R23 .0525 R13 -.9952
SG112611.6 SG2 689.2 THA 176.55

ORBIT DETERMINATION ACCURACY
ST 4414.7 SR 832.6 SS 2317.0
CRT -.8105 CRS .8737 CST -.9931
LSA 5027.5 MSA 524.7 SSA 13.7
EL1 4466.6 EL2 482.0 ALF 171.21

LAUNCH DATE OCT 13 1964 FLIGHT TIME 392.00 ARRIVAL DATE NOV 9 1965

HELIOCENTRIC CONIC DISTANCE 881.490 EARTH TO MARS

RL 149.24 LAL .00 LOL 19.69 VL 32.655 GAL -8.87 AZL 88.35 HCA 272.88 SMA 186.33 ECC .24994 INC 1.6545 V1 29.857
RP 211.47 LAP -1.65 LOP 292.57 VP 23.301 GAP -12.26 AZP 89.92 TAL 313.03 TAP 225.91 RCA 139.76 APO 232.90 V2 25.941
RC 303.228 GL 10.28 GP 4.49 ZAL 150.47 ZAP 42.74 ETS 184.37 ZAE 69.17 ETE 181.16 ZAC 87.11 ETC 259.17 CLP 42.54

PLANETOCENTRIC CONIC

C3 27.242 VHL 5.219 DLA 12.66 RAL 176.66 RAD 6568.1 VEL 12.191 PTH 2.19 VHP 4.642 DPA 15.44 RAP 159.38 ECC 1.4483

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 0 38	2693.97	-27.59	74.13	47.95	96.62	20 45 32	2094.0	-26.39	65.67
90.00	11 19 10	4529.53	10.47	190.58	41.35	63.54	12 34 40	3929.5	6.83	183.79
100.00	21 28 30	2410.59	-28.94	53.09	47.76	97.85	22 8 41	1810.6	-27.55	44.56
100.00	12 33 59	4288.15	11.67	172.21	40.72	62.28	13 45 27	3688.1	7.87	165.48
110.00	22 51 28	2151.01	-32.50	32.68	47.06	101.23	23 27 19	1551.0	-30.61	23.97
110.00	13 27 31	4120.49	14.82	157.66	38.90	58.84	14 36 12	3520.5	10.58	151.12

DIFFERENTIAL CORRECTIONS
TDE-3.0241 TRA 9.0116 TC3-6.6841 BAU 2.4404
RDE .7487 RRA -.2864 RC3 .4702 FAU .19740
FDE-4.1773 FRA 9.7652 FC3-6.2733 BSP 44456
BDE 3.1154 BRA 9.0161 BC3 6.7006 FSP 4357

MID-COURSE EXECUTION ACCURACY
SGT12747.7 SGR 1010.1 SG3 1174.0
RRT -.7316 RRF -.7667 RTF .9948
SGB12787.6 R23 .0540 R13 -.9950
SG112769.1 SG2 687.4 THA 176.67

ORBIT DETERMINATION ACCURACY
ST 4507.3 SR 827.7 SS 2266.2
CRT -.8110 CRS .8746 CST -.9929
LSA 5085.6 MSA 522.3 SSA 13.7
EL1 4557.6 EL2 478.9 ALF 171.43

LAUNCH DATE OCT 13 1964 FLIGHT TIME 394.00 ARRIVAL DATE NOV 11 1965

HELIOCENTRIC CONIC DISTANCE 885.556 EARTH TO MARS

RL 149.24 LAL .00 LOL 19.69 VL 32.659 GAL -9.03 AZL 88.33 HCA 274.09 SMA 186.40 ECC .25185 INC 1.6740 V1 29.857
RP 211.20 LAP -1.67 LOP 293.79 VP 23.340 GAP -12.46 AZP 89.88 TAL 312.39 TAP 226.48 RCA 139.45 APO 233.35 V2 25.971
RC 304.242 GL 10.25 GP 4.41 ZAL 151.03 ZAP 41.83 ETS 184.42 ZAE 67.98 ETE 181.25 ZAC 87.09 ETC 259.12 CLP 41.64

PLANETOCENTRIC CONIC

C3 28.063 VHL 5.297 DLA 12.40 RAL 177.19 RAD 6568.1 VEL 12.225 PTH 2.20 VHP 4.740 DPA 15.25 RAP 159.64 ECC 1.4619

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 4 59	2692.35	-27.58	74.01	48.92	96.68	20 49 51	2092.4	-26.37	65.55
90.00	11 19 0	4545.95	10.96	191.53	42.33	63.73	12 34 46	3945.9	7.34	184.72
100.00	21 32 41	2409.51	-28.93	53.01	48.72	97.89	22 12 51	1809.5	-27.53	44.49
100.00	12 33 59	4304.03	12.17	173.12	41.70	62.49	13 45 43	3704.0	8.39	166.37
110.00	22 55 17	2151.06	-32.50	32.69	48.02	101.23	23 31 8	1551.1	-30.61	23.98
110.00	13 27 52	4135.23	15.33	158.49	39.88	59.07	14 36 48	3535.2	11.12	151.92

DIFFERENTIAL CORRECTIONS
TDE-3.1459 TRA 9.2929 TC3-6.6024 BAU 2.4829
RDE .7558 RRA -.2801 RC3 .4509 FAU .18691
FDE-4.0761 FRA 9.4172 FC3-5.7659 BSP 45031
BDE 3.2355 BRA 9.2971 BC3 6.6178 FSP 4138

MID-COURSE EXECUTION ACCURACY
SGT12900.0 SGR 996.4 SG3 1111.5
RRT -.7248 RRF -.7612 RTF .9945
SGB12938.4 R23 .0557 R13 -.9947
SG112920.3 SG2 685.4 THA 176.79

ORBIT DETERMINATION ACCURACY
ST 4599.2 SR 822.9 SS 2215.3
CRT -.8117 CRS .8757 CST -.9928
LSA 5144.6 MSA 519.7 SSA 13.6
EL1 4647.9 EL2 475.6 ALF 171.65

LAUNCH DATE OCT 13 1964 FLIGHT TIME 396.00 ARRIVAL DATE NOV 13 1965

HELIOCENTRIC CONIC DISTANCE 889.616 EARTH TO MARS

RL 149.24 LAL .00 LOL 19.69 VL 32.663 GAL -9.21 AZL 88.31 HCA 275.31 SMA 186.47 ECC .25385 INC 1.6935 V1 29.857
RP 210.95 LAP -1.69 LOP 295.00 VP 23.378 GAP -12.66 AZP 89.84 TAL 311.73 TAP 227.04 RCA 139.13 APO 233.81 V2 26.001
RC 305.247 GL 10.20 GP 4.33 ZAL 151.59 ZAP 40.95 ETS 184.47 ZAE 66.82 ETE 181.35 ZAC 87.07 ETC 259.07 CLP 40.76

PLANETOCENTRIC CONIC

C3 28.933 VHL 5.379 DLA 12.12 RAL 177.71 RAD 6568.2 VEL 12.260 PTH 2.21 VHP 4.842 DPA 15.04 RAP 159.94 ECC 1.4762

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 9 24	2690.74	-27.57	73.89	49.90	96.74	20 54 15	2090.7	-26.35	65.44
90.00	11 18 47	4562.79	11.47	192.51	43.32	63.93	12 34 50	3962.8	7.87	185.68
100.00	21 36 56	2408.44	-28.92	52.93	49.70	97.93	22 17 4	1808.4	-27.52	44.41
100.00	12 33 56	4320.32	12.68	174.06	42.70	62.70	13 45 57	3720.3	8.92	167.29
110.00	22 59 9	2151.15	-32.50	32.69	49.00	101.23	23 35 0	1551.2	-30.61	23.98
110.00	13 28 12	4150.37	15.86	159.35	40.88	59.32	14 37 23	3550.4	11.67	152.75

DIFFERENTIAL CORRECTIONS
TDE-3.2719 TRA 9.5806 TC3-6.5162 BAU 2.5260
RDE .7634 RRA -.2746 RC3 .4327 FAU .17681
FDE-3.9755 FRA 9.0751 FC3-5.2907 BSP 45599
BDE 3.3597 BRA 9.5846 BC3 6.5306 FSP 3926

MID-COURSE EXECUTION ACCURACY
SGT13047.5 SGR 983.6 SG3 1051.4
RRT -.7184 RRF -.7562 RTF .9942
SGB13084.6 R23 .0574 R13 -.9944
SG113066.7 SG2 683.1 THA 176.89

ORBIT DETERMINATION ACCURACY
ST 4690.0 SR 818.2 SS 2164.0
CRT -.8125 CRS .8770 CST -.9926
LSA 5204.0 MSA 516.9 SSA 13.5
EL1 4737.4 EL2 472.2 ALF 171.85

LAUNCH DATE OCT 13 1964 FLIGHT TIME 398.00 ARRIVAL DATE NOV 15 1965

HELIOCENTRIC CONIC DISTANCE 893.668 EARTH TO MARS

RL 149.24 LAL .00 LOL 19.69 VL 32.667 GAL -9.38 AZL 88.29 HCA 276.53 SMA 186.54 ECC .25594 INC 1.7132 V1 29.857
RP 210.70 LAP -1.70 LOP 296.22 VP 23.416 GAP -12.86 AZP 89.81 TAL 311.05 TAP 227.58 RCA 138.80 APO 234.29 V2 26.029
RC 306.243 GL 10.16 GP 4.25 ZAL 152.16 ZAP 40.10 ETS 184.52 ZAE 65.69 ETE 181.44 ZAC 87.06 ETC 259.01 CLP 39.91

PLANETOCENTRIC CONIC

C3 29.852 VHL 5.464 DLA 11.84 RAL 178.25 RAD 6568.2 VEL 12.297 PTH 2.21 VHP 4.946 DPA 14.83 RAP 160.26 ECC 1.4913

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 13 52	2689.14	-27.56	73.78	50.90	96.79	20 58 42	2089.1	-26.33	65.33
90.00	11 18 33	4580.06	11.98	193.52	44.34	64.15	12 34 53	3980.1	8.41	186.66
100.00	21 41 14	2407.39	-28.91	52.86	50.70	97.97	22 21 21	1807.4	-27.50	44.34
100.00	12 33 53	4337.04	13.20	175.03	43.72	62.94	13 46 10	3737.0	9.47	168.23
110.00	23 3 5	2151.28	-32.50	32.70	50.00	101.22	23 38 56	1551.3	-30.61	23.99
110.00	13 28 31	4165.91	16.40	160.23	41.91	59.58	14 37 57	3565.9	12.24	153.59

DIFFERENTIAL CORRECTIONS
TDE-3.4022 TRA 9.8745 TC3-6.4258 BAU 2.5699
RDE .7713 RRA -.2698 RC3 .4154 FAU .16711
FDE-3.8761 FRA 8.7384 FC3-4.8462 BSP 46122
BDE 3.4885 BRA 9.8782 BC3 6.4392 FSP 3720

MID-COURSE EXECUTION ACCURACY
SGT13189.9 SGR 971.5 SG3 993.5
RRT -.7126 RRF -.7517 RTF .9939
SGB13225.6 R23 .0593 R13 -.9941
SG113208.1 SG2 680.7 THA 176.99

ORBIT DETERMINATION ACCURACY
ST 4779.9 SR 813.6 SS 2112.4
CRT -.8136 CRS .8786 CST -.9925
LSA 5263.8 MSA 513.8 SSA 13.4
EL1 4826.0 EL2 468.6 ALF 172.04

LAUNCH DATE OCT 14 1964 FLIGHT TIME 240.00 ARRIVAL DATE JUN 11 1965

HELIOCENTRIC CONIC DISTANCE 583.232 EARTH TO MARS

RL 149.19 LAL .00 LOL 20.68 VL 33.150 GAL -7.42 AZL 93.16 HCA 190.50 SMA 195.12 ECC .26677 INC 3.1615 V1 29.866
RP 238.47 LAP .58 LOP 211.16 VP 20.806 GAP 8.71 AZP 86.89 TAL 323.62 TAP 154.11 RCA 143.07 APO 247.17 V2 23.040
RC 179.231 GL -20.66 GP 17.32 ZAL 137.50 ZAP 148.93 ETS 147.44 ZAE 157.63 ETE 51.32 ZAC 105.66 ETC 255.49 CLP 153.79

PLANETOCENTRIC CONIC

C3 26.412 VHL 5.139 DLA -12.29 RAL 156.10 RAD 6568.1 VEL 12.157 PTH 2.18 VHP 5.863 DPA 14.91 RAP 192.46 ECC 1.4347

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 48 5	1890.37	-10.61	21.91	20.30	116.41	22 19 36	1290.4	-6.98	15.11
90.00	6 39 46	5317.77	27.43	241.62	26.63	82.66	8 8 24	4717.8	26.13	233.20
100.00	23 3 8	1648.24	-11.80	3.49	19.68	117.66	23 30 36	1048.2	-8.00	356.76
100.00	8 7 24	5035.13	28.75	220.63	26.42	81.43	9 31 20	4435.1	27.26	212.14
110.00	0 1 6	1479.00	-14.91	348.85	17.88	121.12	0 25 45	879.0	-10.67	342.31
110.00	9 29 52	4777.13	32.25	200.30	25.68	78.01	10 49 29	4177.1	30.27	191.65

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.8046 TRA-3.4984 TC3 1.4504 BAU .6176 SGT 4712.1 SGR 1989.2 SG3 837.4 ST 2341.8 SR 1084.6 SS 2412.8
RDE .8970 RRA-1.2229 RC3 .9776 FAU .16019 RRT .9687 RRF -.9969 RTF -.9605 CRT .9901 CRS .9989 CST .9955
FDE-3.8571 FRA 5.9653 FC3-5.2508 BSP 17522 SGB 5114.8 R23 -.2323 R13 -.9697 LSA 3528.1 MSA 185.0 SSA 11.9
BDE 2.0153 BRA 3.7060 BC3 1.7491 FSP 2634 SG1 5094.4 SG2 456.7 THA 22.43 EL1 2577.0 EL2 138.2 ALF 24.71

LAUNCH DATE OCT 14 1964 FLIGHT TIME 242.00 ARRIVAL DATE JUN 13 1965

HELIOCENTRIC CONIC DISTANCE 586.772 EARTH TO MARS

RL 149.19 LAL .00 LOL 20.68 VL 33.122 GAL -7.32 AZL 92.75 HCA 191.45 SMA 194.58 ECC .26415 INC 2.7536 V1 29.866
RP 238.14 LAP .55 LOP 212.12 VP 20.798 GAP 8.27 AZP 87.30 TAL 323.82 TAP 155.27 RCA 143.18 APO 245.98 V2 23.073
RC 181.513 GL -18.36 GP 16.32 ZAL 138.09 ZAP 148.86 ETS 149.62 ZAE 158.74 ETE 51.16 ZAC 104.75 ETC 255.54 CLP 153.11

PLANETOCENTRIC CONIC

C3 25.111 VHL 5.011 DLA -10.04 RAL 156.68 RAD 6568.0 VEL 12.103 PTH 2.17 VHP 5.705 DPA 13.90 RAP 192.25 ECC 1.4133

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 31 47	1952.92	-12.48	25.55	20.11	115.62	22 4 20	1352.9	-8.93	18.67
90.00	7 0 45	5230.25	26.51	235.38	25.28	79.67	8 27 55	4630.2	24.81	227.12
100.00	22 48 10	1706.50	-13.62	6.86	19.54	116.87	23 16 36	1106.5	-9.91	.04
100.00	8 27 3	4951.89	27.75	214.64	25.01	78.43	9 49 35	4351.9	25.88	206.34
110.00	23 45 8	1528.11	-16.61	351.63	17.85	120.31	24 10 36	928.1	-12.46	344.98
110.00	9 46 34	4703.05	31.07	194.84	24.11	74.98	11 4 57	4103.1	28.70	186.45

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.7283 TRA-3.4504 TC3 1.5219 BAU .6065 SGT 4720.5 SGR 1902.2 SG3 889.1 ST 2313.4 SR 1023.2 SS 2416.1
RDE .8232 RRA-1.1492 RC3 .9734 FAU .16740 RRT .9683 RRF -.9964 RTF -.9617 CRT .9896 CRS .9981 CST .9964
FDE-3.8328 FRA 6.2839 FC3-5.7713 BSP 17537 SGB 5089.4 R23 -.2278 R13 -.9701 LSA 3493.8 MSA 171.7 SSA 14.4
BDE 1.9143 BRA 3.6367 BC3 1.8066 FSP 2817 SG1 5070.1 SG2 442.7 THA 21.49 EL1 2526.0 EL2 135.0 ALF 23.71

LAUNCH DATE OCT 14 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUN 15 1965

HELIOCENTRIC CONIC DISTANCE 590.331 EARTH TO MARS

RL 149.19 LAL .00 LOL 20.68 VL 33.095 GAL -7.23 AZL 92.41 HCA 192.40 SMA 194.07 ECC .26163 INC 2.4062 V1 29.866
RP 237.81 LAP .52 LOP 213.08 VP 20.791 GAP 7.84 AZP 87.65 TAL 324.03 TAP 156.43 RCA 143.29 APO 244.84 V2 23.106
RC 183.786 GL -16.34 GP 15.47 ZAL 138.50 ZAP 148.64 ETS 151.60 ZAE 159.77 ETE 51.35 ZAC 103.97 ETC 255.58 CLP 152.38

PLANETOCENTRIC CONIC

C3 24.025 VHL 4.902 DLA -8.05 RAL 157.17 RAD 6568.0 VEL 12.058 PTH 2.16 VHP 5.558 DPA 13.04 RAP 192.08 ECC 1.3954

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 17 54	2006.58	-14.04	28.72	20.03	114.85	21 51 21	1406.6	-10.57	21.76
90.00	7 18 31	5154.86	25.48	230.10	24.14	77.21	8 44 26	4554.9	23.47	222.01
100.00	22 35 22	1756.70	-15.14	9.81	19.49	116.08	23 4 39	1156.7	-11.51	2.90
100.00	8 43 44	4879.98	26.67	209.57	23.83	75.97	10 5 4	4280.0	24.48	201.46
110.00	23 34 45	1570.78	-18.06	354.09	17.88	119.53	24 0 55	970.8	-13.99	347.34
110.00	10 0 51	4638.66	29.85	190.23	22.81	72.51	11 18 10	4038.7	27.16	182.07

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.6652 TRA-3.3969 TC3 1.5941 BAU .5999 SGT 4723.6 SGR 1831.6 SG3 941.6 ST 2288.8 SR 975.6 SS 2425.9
RDE .7668 RRA-1.0850 RC3 .9734 FAU .17514 RRT .9677 RRF -.9957 RTF -.9628 CRT .9890 CRS .9971 CST .9972
FDE-3.8303 FRA 6.5864 FC3-6.3109 BSP 17443 SGB 5066.3 R23 -.2228 R13 -.9705 LSA 3471.2 MSA 160.7 SSA 17.0
BDE 1.8333 BRA 3.5660 BC3 1.8678 FSP 2984 SG1 5047.8 SG2 431.9 THA 20.73 EL1 2484.5 EL2 133.2 ALF 22.93

LAUNCH DATE OCT 14 1964 FLIGHT TIME 246.00 ARRIVAL DATE JUN 17 1965

HELIOCENTRIC CONIC DISTANCE 593.910 EARTH TO MARS

RL 149.19 LAL .00 LOL 20.68 VL 33.068 GAL -7.14 AZL 92.11 HCA 193.36 SMA 193.58 ECC .25921 INC 2.1077 V1 29.866
RP 237.48 LAP .49 LOP 214.04 VP 20.787 GAP 7.40 AZP 87.95 TAL 324.23 TAP 157.59 RCA 143.40 APO 243.76 V2 23.140
RC 186.049 GL -14.54 GP 14.74 ZAL 138.78 ZAP 148.30 ETS 153.39 ZAE 160.73 ETE 51.88 ZAC 103.31 ETC 255.62 CLP 151.61

PLANETOCENTRIC CONIC

C3 23.098 VHL 4.806 DLA -6.27 RAL 157.58 RAD 6567.9 VEL 12.020 PTH 2.15 VHP 5.419 DPA 12.30 RAP 191.94 ECC 1.3801

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 5 49	2053.44	-15.36	31.53	20.00	114.08	21 40 3	1453.4	-11.98	24.48
90.00	7 33 52	5088.77	24.41	225.56	23.17	75.18	8 58 40	4488.8	22.13	217.63
100.00	22 24 11	1800.65	-16.44	12.43	19.49	115.32	22 54 12	1200.6	-12.89	5.43
100.00	8 58 11	4816.80	25.55	205.21	22.82	73.93	10 18 28	4216.8	23.10	197.27
110.00	23 25 36	1608.31	-19.31	356.29	17.95	118.77	23 52 25	1008.3	-15.32	349.44
110.00	10 13 15	4581.87	28.62	186.27	21.72	70.45	11 29 37	3981.9	25.69	178.32

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.6241 TRA-3.3253 TC3 1.6873 BAU .6021 SGT 4720.7 SGR 1774.0 SG3 995.0 ST 2276.5 SR 938.4 SS 2439.7
RDE .7230 RRA-1.0287 RC3 .9770 FAU .18320 RRT .9687 RRF -.9949 RTF -.9653 CRT .9891 CRS .9959 CST .9982
FDE-3.8425 FRA 6.8793 FC3-6.8664 BSP 16973 SGB 5043.0 R23 -.2118 R13 -.9722 LSA 3463.2 MSA 144.2 SSA 20.2
BDE 1.7777 BRA 3.4808 BC3 1.9498 FSP 3143 SG1 5026.0 SG2 413.5 THA 20.15 EL1 2459.0 EL2 128.2 ALF 22.25

LAUNCH DATE OCT 14 1964 FLIGHT TIME 248.00 ARRIVAL DATE JUN 19 1965

HELIOCENTRIC CONIC DISTANCE 597.503 EARTH TO MARS

RL 149.19 LAL .00 LOL 20.68 VL 33.043 GAL -7.05 AZL 91.85 HCA 194.32 SMA 193.11 ECC .25690 INC 1.8472 V1 29.866
RP 237.15 LAP .46 LOP 215.00 VP 20.785 GAP 6.98 AZP 88.21 TAL 324.43 TAP 158.75 RCA 143.50 APO 242.72 V2 23.174
RC 188.300 GL -12.94 GP 14.11 ZAL 138.95 ZAP 147.85 ETS 155.03 ZAE 161.65 ETE 52.75 ZAC 102.73 ETC 255.65 CLP 150.81

PLANETOCENTRIC CONIC

C3 22.295 VHL 4.722 DLA -4.68 RAL 157.93 RAD 6567.9 VEL 11.986 PTH 2.14 VHP 5.288 DPA 11.66 RAP 191.81 ECC 1.3669

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 55 7	2094.95	-16.50	34.05	20.01	113.35	21 30 2	1495.0	-13.20	26.92
90.00	7 47 20	5030.06	23.33	221.60	22.34	73.48	9 11 10	4430.1	20.84	213.81
100.00	22 14 16	1839.65	-17.56	14.78	19.52	114.59	22 44 55	1239.6	-14.10	7.70
100.00	9 10 53	4760.60	24.44	201.41	21.97	72.23	10 30 13	4160.6	21.78	193.62
110.00	23 17 28	1641.79	-20.39	358.28	18.04	118.05	23 44 49	1041.8	-16.48	351.34
110.00	10 24 10	4531.22	27.41	182.82	20.79	68.73	11 39 41	3931.2	24.28	175.06

DIFFERENTIAL CORRECTIONS
TDE 1.5643 TRA-3.2763 TC3 1.7334 BAU .5932
RDE .6858 RRA -.9828 RC3 .9781 FAU .19096
FDE-3.8543 FRA 7.1847 FC3-7.4150 BSP 17058
BDE 1.7080 BRA 3.4205 BC3 1.9903 FSP 3330

MID-COURSE EXECUTION ACCURACY
SGT 4711.0 SGR 1725.5 SG3 1049.1
RRT .9675 RRF -.9941 RTF -.9656
SGB 5017.1 R23 -.2083 R13 -.9721
SG1 5000.2 SG2 411.3 THA 19.65

ORBIT DETERMINATION ACCURACY
ST 2244.4 SR 906.7 SS 2452.0
CRT .9879 CRS .9946 CST .9985
LSA 3442.6 MSA 140.8 SSA 22.8
EL1 2417.1 EL2 130.3 ALF 21.82

LAUNCH DATE OCT 14 1964 FLIGHT TIME 250.00 ARRIVAL DATE JUN 21 1965

HELIOCENTRIC CONIC DISTANCE 601.112 EARTH TO MARS

RL 149.19 LAL .00 LOL 20.68 VL 33.019 GAL -6.96 AZL 91.62 HCA 195.28 SMA 192.67 ECC .25467 INC 1.6182 V1 29.866
RP 236.81 LAP .43 LOP 215.96 VP 20.786 GAP 6.56 AZP 88.44 TAL 324.62 TAP 159.90 RCA 143.60 APO 241.73 V2 23.209
RC 190.540 GL -11.49 GP 13.56 ZAL 139.05 ZAP 147.32 ETS 156.52 ZAE 162.52 ETE 53.98 ZAC 102.22 ETC 255.67 CLP 149.98

PLANETOCENTRIC CONIC

C3 21.588 VHL 4.646 DLA -3.24 RAL 158.22 RAD 6567.9 VEL 11.957 PTH 2.13 VHP 5.163 DPA 11.11 RAP 191.69 ECC 1.3553

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 45 30	2132.14	-17.49	36.33	20.04	112.63	21 21 2	1532.1	-14.27	29.13
90.00	7 59 19	4977.29	22.26	218.10	21.62	72.03	9 22 17	4377.3	19.60	210.44
100.00	22 5 19	1874.62	-18.54	16.92	19.56	113.88	22 36 34	1274.6	-15.15	9.76
100.00	9 22 11	4710.03	23.34	198.05	21.23	70.78	10 40 41	4110.0	20.51	190.40
110.00	23 10 6	1671.86	-21.34	.10	18.13	117.36	23 37 57	1071.9	-17.51	353.07
110.00	10 33 54	4485.57	26.25	179.78	20.00	67.28	11 48 39	3885.6	22.94	172.18

DIFFERENTIAL CORRECTIONS
TDE 1.5091 TRA-3.2249 TC3 1.7748 BAU .5853
RDE .6556 RRA -.9434 RC3 .9810 FAU .19889
FDE-3.8739 FRA 7.4934 FC3-7.9759 BSP 17114
BDE 1.6454 BRA 3.3600 BC3 2.0279 FSP 3525

MID-COURSE EXECUTION ACCURACY
SGT 4695.6 SGR 1685.9 SG3 1104.5
RRT .9662 RRF -.9931 RTF -.9659
SGB 4989.0 R23 -.2042 R13 -.9722
SG1 4972.1 SG2 410.2 THA 19.27

ORBIT DETERMINATION ACCURACY
ST 2212.1 SR 881.2 SS 2466.5
CRT .9868 CRS .9930 CST .9989
LSA 3425.5 MSA 138.9 SSA 25.2
EL1 2377.5 EL2 132.9 ALF 21.53

LAUNCH DATE OCT 14 1964 FLIGHT TIME 252.00 ARRIVAL DATE JUN 23 1965

HELIOCENTRIC CONIC DISTANCE 604.737 EARTH TO MARS

RL 149.19 LAL .00 LOL 20.68 VL 32.996 GAL -6.88 AZL 91.42 HCA 196.25 SMA 192.24 ECC .25254 INC 1.4154 V1 29.866
RP 236.46 LAP .40 LOP 216.93 VP 20.788 GAP 6.15 AZP 88.64 TAL 324.81 TAP 161.06 RCA 143.69 APO 240.79 V2 23.244
RC 192.768 GL -10.18 GP 13.08 ZAL 139.09 ZAP 146.71 ETS 157.88 ZAE 163.35 ETE 55.57 ZAC 101.78 ETC 255.69 CLP 149.11

PLANETOCENTRIC CONIC

C3 20.958 VHL 4.578 DLA -1.93 RAL 158.47 RAD 6567.9 VEL 11.931 PTH 2.12 VHP 5.042 DPA 10.64 RAP 191.57 ECC 1.3449

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 36 44	2165.78	-18.36	38.42	20.07	111.95	21 12 50	1565.8	-15.22	31.14
90.00	8 10 6	4929.39	21.22	214.97	21.00	70.80	9 32 15	4329.4	18.41	207.42
100.00	21 57 11	1906.29	-19.40	18.87	19.61	113.20	22 28 57	1306.3	-16.09	11.64
100.00	9 32 20	4664.12	22.28	195.05	20.58	69.54	10 50 4	4064.1	19.30	187.52
110.00	23 3 22	1699.10	-22.19	1.76	18.22	116.70	23 31 41	1099.1	-18.42	354.65
110.00	10 42 38	4444.06	25.13	177.07	19.31	66.03	11 56 42	3844.1	21.68	169.63

DIFFERENTIAL CORRECTIONS
TDE 1.4599 TRA-3.1682 TC3 1.8153 BAU .5789
RDE .6312 RRA -.9089 RC3 .9865 FAU .20715
FDE-3.9023 FRA 7.8033 FC3-8.5568 BSP 17086
BDE 1.5905 BRA 3.2960 BC3 2.0660 FSP 3721

MID-COURSE EXECUTION ACCURACY
SGT 4673.5 SGR 1653.9 SG3 1161.5
RRT .9652 RRF -.9920 RTF -.9664
SGB 4957.5 R23 -.1991 R13 -.9724
SG1 4940.6 SG2 409.2 THA 18.99

ORBIT DETERMINATION ACCURACY
ST 2181.2 SR 861.0 SS 2483.7
CRT .9857 CRS .9912 CST .9992
LSA 3412.9 MSA 137.9 SSA 27.5
EL1 2341.1 EL2 135.3 ALF 21.33

LAUNCH DATE OCT 14 1964 FLIGHT TIME 254.00 ARRIVAL DATE JUN 25 1965

HELIOCENTRIC CONIC DISTANCE 608.378 EARTH TO MARS

RL 149.19 LAL .00 LOL 20.68 VL 32.974 GAL -6.80 AZL 91.23 HCA 197.22 SMA 191.84 ECC .25049 INC 1.2345 V1 29.866
RP 236.12 LAP .37 LOP 217.90 VP 20.793 GAP 5.74 AZP 88.82 TAL 324.99 TAP 162.21 RCA 143.78 APO 239.89 V2 23.279
RC 194.983 GL -8.99 GP 12.66 ZAL 139.07 ZAP 146.03 ETS 159.13 ZAE 164.15 ETE 57.57 ZAC 101.38 ETC 255.71 CLP 148.22

PLANETOCENTRIC CONIC

C3 20.391 VHL 4.516 DLA -.73 RAL 158.69 RAD 6567.8 VEL 11.907 PTH 2.12 VHP 4.927 DPA 10.23 RAP 191.46 ECC 1.3356

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 28 41	2196.48	-19.13	40.34	20.10	111.29	21 5 17	1596.5	-16.06	33.00
90.00	8 19 52	4885.56	20.21	212.15	20.44	69.74	9 41 18	4285.6	17.27	204.71
100.00	21 49 41	1935.18	-20.16	20.68	19.66	112.55	22 21 56	1335.2	-16.93	13.38
100.00	9 41 33	4622.09	21.26	192.35	20.02	68.48	10 58 35	4022.1	18.15	184.93
110.00	22 57 9	1723.98	-22.94	3.30	18.31	116.07	23 25 53	1124.0	-19.25	356.11
110.00	10 50 34	4406.05	24.06	174.64	18.71	64.95	12 4 0	3806.1	20.48	167.33

DIFFERENTIAL CORRECTIONS
TDE 1.4128 TRA-3.1103 TC3 1.8503 BAU .5725
RDE .6109 RRA -.8795 RC3 .9936 FAU .21559
FDE-3.9350 FRA 8.1223 FC3-9.1530 BSP 17041
BDE 1.5393 BRA 3.2323 BC3 2.1002 FSP 3930

MID-COURSE EXECUTION ACCURACY
SGT 4645.7 SGR 1628.4 SG3 1220.3
RRT .9641 RRF -.9909 RTF -.9669
SGB 4922.8 R23 -.1938 R13 -.9728
SG1 4905.8 SG2 409.2 THA 18.81

ORBIT DETERMINATION ACCURACY
ST 2148.9 SR 844.8 SS 2502.1
CRT .9845 CRS .9892 CST .9994
LSA 3401.8 MSA 138.5 SSA 29.3
EL1 2304.9 EL2 138.0 ALF 21.24

LAUNCH DATE OCT 14 1964 FLIGHT TIME 256.00 ARRIVAL DATE JUN 27 1965

HELIOCENTRIC CONIC DISTANCE 612.033 EARTH TO MARS

RL 149.19 LAL .00 LOL 20.68 VL 32.953 GAL -6.72 AZL 91.07 HCA 198.19 SMA 191.45 ECC .24853 INC 1.0720 V1 29.866
RP 235.77 LAP .33 LOP 218.87 VP 20.799 GAP 5.34 AZP 88.98 TAL 325.17 TAP 163.36 RCA 143.87 APO 239.04 V2 23.315
RC 197.185 GL -7.89 GP 12.29 ZAL 139.02 ZAP 145.29 ETS 160.27 ZAE 164.90 ETE 60.00 ZAC 101.03 ETC 255.73 CLP 147.29

PLANETOCENTRIC CONIC

C3 19.877 VHL 4.458 DLA .38 RAL 158.88 RAD 6567.8 VEL 11.885 PTH 2.11 VHP 4.816 DPA 9.87 RAP 191.34 ECC 1.3271

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 21 14	2224.69	-19.81	42.12	20.13	110.65	20 58 18	1624.7	-16.83	34.72
90.00	8 28 49	4845.19	19.24	209.59	19.96	68.82	9 49 34	4245.2	16.19	202.24
100.00	21 42 45	1961.74	-20.85	22.36	19.70	111.92	22 15 26	1361.7	-17.69	14.98
100.00	9 49 58	4583.37	20.27	189.90	19.52	67.55	11 6 22	3983.4	17.05	182.58
110.00	22 51 24	1746.85	-23.62	4.73	18.39	115.46	23 20 30	1146.9	-19.99	357.47
110.00	10 57 49	4371.02	23.03	172.44	18.18	64.01	12 10 40	3771.0	19.35	165.24

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.3686 TRA-3.0492 TC3 1.8810 BAU .5665 SGT 4611.2 SGR 1608.6 SG3 1281.1 ST 2116.2 SR 832.4 SS 2523.0
RDE .5946 RRA -.8539 RC3 1.0027 FAU .22436 RRT .9631 RRF -.9897 RTF -.9673 CRT .9834 CRS .9871 CST .9996
FDE-3.9754 FRA 8.4463 FC3-9.7718 BSP 16957 SGB 4883.7 R23 -.1882 R13 -.9731 LSA 3393.5 MSA 140.9 SSA 30.8
BDE 1.4922 BRA 3.1666 BC3 2.1316 FSP 4143 SG1 4866.5 SG2 410.1 THA 18.71 EL1 2269.6 EL2 140.8 ALF 21.23

LAUNCH DATE OCT 14 1964 FLIGHT TIME 258.00 ARRIVAL DATE JUN 29 1965

HELIOCENTRIC CONIC DISTANCE 615.703 EARTH TO MARS

RL 149.19 LAL .00 LOL 20.68 VL 32.933 GAL -6.65 AZL 90.92 HCA 199.17 SMA 191.09 ECC .24665 INC .9244 V1 29.866
RP 235.42 LAP .30 LOP 219.85 VP 20.808 GAP 4.94 AZP 89.13 TAL 325.34 TAP 164.51 RCA 143.95 APO 238.22 V2 23.351
RC 199.372 GL -6.88 GP 11.96 ZAL 138.94 ZAP 144.50 ETS 161.33 ZAE 165.61 ETE 62.90 ZAC 100.71 ETC 255.74 CLP 146.32

PLANETOCENTRIC CONIC

C3 19.409 VHL 4.406 DLA 1.40 RAL 159.04 RAD 6567.8 VEL 11.866 PTH 2.10 VHP 4.708 DPA 9.57 RAP 191.21 ECC 1.3194

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 14 17	2250.79	-20.43	43.79	20.16	110.04	20 51 47	1650.8	-17.52	36.33
90.00	8 37 3	4807.78	18.30	207.24	19.52	68.01	9 57 11	4207.8	15.16	199.98
100.00	21 36 16	1986.30	-21.46	23.92	19.75	111.32	22 9 23	1386.3	-18.38	16.49
100.00	9 57 45	4547.49	19.32	187.65	19.07	66.74	11 13 32	3947.5	16.01	180.43
110.00	22 46 1	1768.00	-24.23	6.07	18.47	114.89	23 15 29	1168.0	-20.67	358.73
110.00	11 4 29	4338.56	22.05	170.43	17.71	63.19	12 16 48	3738.6	18.27	163.34

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.3279 TRA-2.9840 TC3 1.9103 BAU .5613 SGT 4570.0 SGR 1594.3 SG3 1344.2 ST 2083.6 SR 823.6 SS 2547.4
RDE .5817 RRA -.8313 RC3 1.0151 FAU .23375 RRT .9621 RRF -.9885 RTF -.9677 CRT .9823 CRS .9849 CST .9997
FDE-4.0267 FRA 8.7715 FC-10.4261 BSP 16788 SGB 4840.1 R23 -.1827 R13 -.9734 LSA 3389.3 MSA 144.7 SSA 31.9
BDE 1.4497 BRA 3.0976 BC3 2.1632 FSP 4350 SG1 4822.6 SG2 411.9 THA 18.70 EL1 2235.8 EL2 143.7 ALF 21.31

LAUNCH DATE OCT 14 1964 FLIGHT TIME 260.00 ARRIVAL DATE JUL 1 1965

HELIOCENTRIC CONIC DISTANCE 619.388 EARTH TO MARS

RL 149.19 LAL .00 LOL 20.68 VL 32.914 GAL -6.58 AZL 90.79 HCA 200.15 SMA 190.74 ECC .24486 INC .7899 V1 29.866
RP 235.06 LAP .27 LOP 220.83 VP 20.818 GAP 4.55 AZP 89.26 TAL 325.51 TAP 165.65 RCA 144.03 APO 237.44 V2 23.387
RC 201.544 GL -5.94 GP 11.67 ZAL 138.84 ZAP 143.65 ETS 162.31 ZAE 166.27 ETE 66.31 ZAC 100.42 ETC 255.76 CLP 145.33

PLANETOCENTRIC CONIC

C3 18.980 VHL 4.357 DLA 2.36 RAL 159.18 RAD 6567.8 VEL 11.847 PTH 2.10 VHP 4.604 DPA 9.31 RAP 191.07 ECC 1.3124

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 7 45	2275.08	-20.99	45.35	20.19	109.46	20 45 41	1675.1	-18.15	37.83
90.00	8 44 41	4772.92	17.40	205.08	19.13	67.30	10 4 14	4172.9	14.18	197.89
100.00	21 30 12	2009.16	-22.02	25.39	19.79	110.74	22 3 41	1409.2	-19.00	17.89
100.00	10 4 56	4514.06	18.41	185.59	18.67	66.03	11 20 10	3914.1	15.02	178.44
110.00	22 40 58	1787.67	-24.79	7.32	18.54	114.33	23 10 45	1187.7	-21.29	359.92
110.00	11 10 40	4308.32	21.11	168.59	17.29	62.47	12 22 28	3708.3	17.25	161.58

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.2972 TRA-2.9081 TC3 1.9512 BAU .5601 SGT 4522.5 SGR 1585.3 SG3 1409.9 ST 2057.1 SR 818.7 SS 2577.8
RDE .5726 RRA -.8104 RC3 1.0317 FAU .24401 RRT .9619 RRF -.9873 RTF -.9687 CRT .9819 CRS .9827 CST .9998
FDE-4.0964 FRA 9.0915 FC-11.1302 BSP 16396 SGB 4792.3 R23 -.1748 R13 -.9742 LSA 3394.7 MSA 148.6 SSA 32.4
BDE 1.4179 BRA 3.0189 BC3 2.2072 FSP 4538 SG1 4774.7 SG2 410.6 THA 18.78 EL1 2209.3 EL2 144.5 ALF 21.44

LAUNCH DATE OCT 14 1964 FLIGHT TIME 262.00 ARRIVAL DATE JUL 3 1965

HELIOCENTRIC CONIC DISTANCE 623.085 EARTH TO MARS

RL 149.19 LAL .00 LOL 20.68 VL 32.895 GAL -6.52 AZL 90.67 HCA 201.13 SMA 190.40 ECC .24314 INC .6680 V1 29.866
RP 234.71 LAP .24 LOP 221.81 VP 20.830 GAP 4.16 AZP 89.38 TAL 325.67 TAP 166.80 RCA 144.11 APO 236.70 V2 23.424
RC 203.699 GL -5.07 GP 11.41 ZAL 138.72 ZAP 142.76 ETS 163.23 ZAE 166.86 ETE 70.26 ZAC 100.16 ETC 255.77 CLP 144.30

PLANETOCENTRIC CONIC

C3 18.585 VHL 4.311 DLA 3.25 RAL 159.30 RAD 6567.8 VEL 11.831 PTH 2.10 VHP 4.503 DPA 9.09 RAP 190.92 ECC 1.3059

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 1 37	2297.80	-21.50	46.82	20.22	108.89	20 39 55	1697.8	-18.72	39.25
90.00	8 51 49	4740.32	16.53	203.08	18.78	66.68	10 10 49	4140.3	13.24	195.96
100.00	21 24 29	2030.53	-22.53	26.77	19.83	110.18	21 58 20	1430.5	-19.58	19.22
100.00	10 11 38	4482.81	17.54	183.68	18.31	65.40	11 26 21	3882.8	14.07	176.60
110.00	22 36 12	1806.05	-25.30	8.51	18.61	113.80	23 6 18	1206.0	-21.86	1.04
110.00	11 16 24	4280.07	20.21	166.89	16.91	61.82	12 27 44	3680.1	16.28	159.97

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.2586 TRA-2.8385 TC3 1.9670 BAU .5536 SGT 4466.8 SGR 1579.2 SG3 1477.3 ST 2021.3 SR 814.5 SS 2604.8
RDE .5641 RRA -.7940 RC3 1.0467 FAU .25394 RRT .9610 RRF -.9860 RTF -.9690 CRT .9809 CRS .9803 CST .9998
FDE-4.1569 FRA 9.4367 FC-11.8289 BSP 16188 SGB 4737.7 R23 -.1692 R13 -.9745 LSA 3392.5 MSA 155.3 SSA 32.7
BDE 1.3792 BRA 2.9475 BC3 2.2282 FSP 4764 SG1 4719.7 SG2 413.4 THA 18.92 EL1 2174.3 EL2 147.1 ALF 21.67

LAUNCH DATE OCT 14 1964 FLIGHT TIME 264.00 ARRIVAL DATE JUL 5 1965

HELIOCENTRIC CONIC DISTANCE 626.792 EARTH TO MARS

RL 149.19 LAL .00 LOL 20.68 VL 32.877 GAL -6.45 AZL 90.56 HCA 202.11 SMA 190.09 ECC .24151 INC .5556 V1 29.866
RP 234.35 LAP .21 LOP 222.80 VP 20.844 GAP 3.78 AZP 89.48 TAL 325.82 TAP 167.94 RCA 144.18 APO 236.00 V2 23.461
RC 205.837 GL -4.26 GP 11.17 ZAL 138.59 ZAP 141.81 ETS 164.07 ZAE 167.37 ETE 74.78 ZAC 99.92 ETC 255.78 CLP 143.24

PLANETOCENTRIC CONIC

C3 18.223 VHL 4.269 DLA 4.08 RAL 159.42 RAD 6567.7 VEL 11.815 PTH 2.09 VHP 4.406 DPA 8.91 RAP 190.75 ECC 1.2999

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 55 50	2319.14	-21.96	48.22	20.26	108.34	20 34 29	1719.1	-19.25	40.59
90.00	8 58 30	4709.75	15.70	201.22	18.47	66.13	10 16 59	4109.7	12.34	194.16
100.00	21 19 6	2050.61	-23.00	28.08	19.87	109.64	21 53 16	1450.6	-20.11	20.48
100.00	10 17 55	4453.51	16.70	181.91	17.99	64.84	11 32 9	3853.5	13.17	174.89
110.00	22 31 43	1823.29	-25.76	9.63	18.68	113.28	23 2 7	1223.3	-22.39	2.10
110.00	11 21 47	4253.63	19.35	165.32	16.58	61.25	12 32 41	3653.6	15.36	158.47

DIFFERENTIAL CORRECTIONS
TDE 1.2044 TRA-2.7820 TC3 1.9405 BAU .5385
RDE .5553 RRA -.7824 RC3 1.0587 FAU .26319
FDE-4.1988 FRA 9.8165 FC-12.5038 BSP 16336
BDE 1.3263 BRA 2.8899 BC3 2.2105 FSP 5049

MID-COURSE EXECUTION ACCURACY
SGT 4401.3 SGR 1575.1 SG3 1546.1
RRT .9583 RRF -.9848 RTF -.9681
SGB 4674.6 R23 -.1690 R13 -.9739
SG1 4655.2 SG2 425.5 THA 19.09

ORBIT DETERMINATION ACCURACY
ST 1969.0 SR 809.9 SS 2625.5
CRT .9788 CRS .9776 CST .9998
LSA 3376.1 MSA 164.3 SSA 33.1
EL1 2123.5 EL2 153.9 ALF 22.05

LAUNCH DATE OCT 14 1964 FLIGHT TIME 266.00 ARRIVAL DATE JUL 7 1965

HELIOCENTRIC CONIC DISTANCE 630.514 EARTH TO MARS

RL 149.19 LAL .00 LOL 20.68 VL 32.861 GAL -6.39 AZL 90.45 HCA 203.10 SMA 189.79 ECC .23994 INC .4522 V1 29.866
RP 233.98 LAP .18 LOP 223.79 VP 20.859 GAP 3.41 AZP 89.58 TAL 325.97 TAP 169.07 RCA 144.25 APO 235.32 V2 23.498
RC 207.958 GL -3.50 GP 10.97 ZAL 138.44 ZAP 140.82 ETS 164.87 ZAE 167.78 ETE 79.86 ZAC 99.69 ETC 255.80 CLP 142.15

PLANETOCENTRIC CONIC

C3 17.887 VHL 4.229 DLA 4.86 RAL 159.51 RAD 6567.7 VEL 11.801 PTH 2.09 VHP 4.312 DPA 8.76 RAP 190.57 ECC 1.2944

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 50 21	2339.28	-22.39	49.54	20.29	107.81	20 29 20	1739.3	-19.74	41.86
90.00	9 4 47	4680.92	14.90	199.49	18.19	65.64	10 22 48	4080.9	11.49	192.47
100.00	21 13 59	2069.54	-23.42	29.33	19.91	109.12	21 48 28	1469.5	-20.60	21.67
100.00	10 23 50	4425.90	15.89	180.26	17.71	64.34	11 37 36	3825.9	12.31	173.30
110.00	22 27 28	1839.54	-26.20	10.69	18.74	112.79	22 58 7	1239.5	-22.88	3.11
110.00	11 26 50	4228.66	18.53	163.85	16.27	60.75	12 37 19	3628.7	14.49	157.07

DIFFERENTIAL CORRECTIONS
TDE 1.1667 TRA-2.7075 TC3 1.9407 BAU .5308
RDE .5502 RRA -.7705 RC3 1.0770 FAU .27388
FDE-4.2687 FRA10.1805 FC-13.2558 BSP 16071
BDE 1.2900 BRA 2.8150 BC3 2.2195 FSP 5288

MID-COURSE EXECUTION ACCURACY
SGT 4329.4 SGR 1575.8 SG3 1618.1
RRT .9572 RRF -.9835 RTF -.9681
SGB 4607.3 R23 -.1644 R13 -.9741
SG1 4587.1 SG2 430.5 THA 19.39

ORBIT DETERMINATION ACCURACY
ST 1928.8 SR 809.4 SS 2655.2
CRT .9778 CRS .9750 CST .9997
LSA 3375.6 MSA 172.4 SSA 33.1
EL1 2085.9 EL2 156.7 ALF 22.44

LAUNCH DATE OCT 14 1964 FLIGHT TIME 268.00 ARRIVAL DATE JUL 9 1965

HELIOCENTRIC CONIC DISTANCE 634.249 EARTH TO MARS

RL 149.19 LAL .00 LOL 20.68 VL 32.845 GAL -6.33 AZL 90.36 HCA 204.09 SMA 189.50 ECC .23845 INC .3560 V1 29.866
RP 233.62 LAP .15 LOP 224.78 VP 20.876 GAP 3.04 AZP 89.67 TAL 326.11 TAP 170.21 RCA 144.31 APO 234.69 V2 23.536
RC 210.060 GL -2.78 GP 10.78 ZAL 138.30 ZAP 139.79 ETS 165.62 ZAE 168.08 ETE 85.47 ZAC 99.48 ETC 255.81 CLP 141.02

PLANETOCENTRIC CONIC

C3 17.577 VHL 4.192 DLA 5.60 RAL 159.60 RAD 6567.7 VEL 11.788 PTH 2.08 VHP 4.221 DPA 8.65 RAP 190.36 ECC 1.2893

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 45 8	2358.36	-22.78	50.80	20.32	107.29	20 24 26	1758.4	-20.20	43.08
90.00	9 10 43	4653.71	14.13	197.86	17.93	65.20	10 28 17	4053.7	10.67	190.89
100.00	21 9 7	2087.46	-23.82	30.51	19.95	108.62	21 43 54	1487.5	-21.05	22.80
100.00	10 29 25	4399.84	15.12	178.71	17.45	63.90	11 42 45	3799.8	11.49	171.80
110.00	22 23 25	1854.91	-26.60	11.71	18.81	112.31	22 54 20	1254.9	-23.34	4.06
110.00	11 31 36	4205.16	17.74	162.49	16.00	60.29	12 41 41	3605.2	13.65	155.76

DIFFERENTIAL CORRECTIONS
TDE 1.1289 TRA-2.6302 TC3 1.9323 BAU .5221
RDE .5465 RRA -.7607 RC3 1.0967 FAU .28495
FDE-4.3436 FRA10.5539 FC-14.0350 BSP 15792
BDE 1.2543 BRA 2.7380 BC3 2.2219 FSP 5537

MID-COURSE EXECUTION ACCURACY
SGT 4248.5 SGR 1579.4 SG3 1692.6
RRT .9560 RRF -.9823 RTF -.9680
SGB 4532.6 R23 -.1602 R13 -.9742
SG1 4511.6 SG2 436.4 THA 19.76

ORBIT DETERMINATION ACCURACY
ST 1885.9 SR 810.4 SS 2686.2
CRT .9770 CRS .9725 CST .9996
LSA 3375.7 MSA 181.1 SSA 32.9
EL1 2046.5 EL2 159.3 ALF 22.92

LAUNCH DATE OCT 14 1964 FLIGHT TIME 270.00 ARRIVAL DATE JUL 11 1965

HELIOCENTRIC CONIC DISTANCE 637.994 EARTH TO MARS

RL 149.19 LAL .00 LOL 20.68 VL 32.829 GAL -6.28 AZL 90.27 HCA 205.09 SMA 189.23 ECC .23703 INC .2672 V1 29.866
RP 233.25 LAP .11 LOP 225.77 VP 20.895 GAP 2.67 AZP 89.76 TAL 326.25 TAP 171.33 RCA 144.37 APO 234.08 V2 23.574
RC 212.144 GL -2.10 GP 10.61 ZAL 138.15 ZAP 138.70 ETS 166.32 ZAE 168.24 ETE 91.52 ZAC 99.28 ETC 255.83 CLP 139.85

PLANETOCENTRIC CONIC

C3 17.290 VHL 4.158 DLA 6.29 RAL 159.69 RAD 6567.7 VEL 11.776 PTH 2.08 VHP 4.132 DPA 8.57 RAP 190.14 ECC 1.2845

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 40 9	2376.49	-23.14	52.01	20.36	106.79	20 19 46	1776.5	-20.62	44.24
90.00	9 16 21	4627.95	13.39	196.33	17.71	64.81	10 33 29	4028.0	9.88	189.41
100.00	21 4 29	2104.48	-24.18	31.64	20.00	108.13	21 39 34	1504.5	-21.48	23.89
100.00	10 34 42	4375.20	14.37	177.26	17.22	63.50	11 47 37	3775.2	10.70	170.39
110.00	22 19 35	1869.48	-26.97	12.68	18.87	111.84	22 50 44	1269.5	-23.77	4.98
110.00	11 36 6	4182.95	16.98	161.21	15.76	59.88	12 45 49	3583.0	12.85	154.53

DIFFERENTIAL CORRECTIONS
TDE 1.0885 TRA-2.5529 TC3 1.9075 BAU .5109
RDE .5433 RRA -.7533 RC3 1.1164 FAU .29604
FDE-4.4155 FRA10.9461 FC-14.8233 BSP 15545
BDE 1.2166 BRA 2.6617 BC3 2.2102 FSP 5807

MID-COURSE EXECUTION ACCURACY
SGT 4150.3 SGR 1585.3 SG3 1769.1
RRT .9544 RRF -.9811 RTF -.9676
SGB 4450.2 R23 -.1572 R13 -.9741
SG1 4428.0 SG2 444.2 THA 20.21

ORBIT DETERMINATION ACCURACY
ST 1838.3 SR 812.1 SS 2716.2
CRT .9760 CRS .9698 CST .9994
LSA 3373.3 MSA 190.5 SSA 32.8
EL1 2003.1 EL2 162.4 ALF 23.49

LAUNCH DATE OCT 14 1964 FLIGHT TIME 272.00 ARRIVAL DATE JUL 13 1965

HELIOCENTRIC CONIC DISTANCE 641.752 EARTH TO MARS

RL 149.19 LAL .00 LOL 20.68 VL 32.815 GAL -6.23 AZL 90.19 HCA 206.09 SMA 188.97 ECC .23568 INC .1841 V1 29.866
RP 232.88 LAP .08 LOP 226.77 VP 20.915 GAP 2.31 AZP 89.83 TAL 326.38 TAP 172.46 RCA 144.43 APO 233.50 V2 23.612
RC 214.210 GL -1.46 GP 10.46 ZAL 138.00 ZAP 137.58 ETS 166.98 ZAE 168.24 ETE 97.87 ZAC 99.08 ETC 255.85 CLP 138.65

PLANETOCENTRIC CONIC

C3 17.024 VHL 4.126 DLA 6.95 RAL 159.77 RAD 6567.7 VEL 11.765 PTH 2.08 VHP 4.047 DPA 8.52 RAP 189.89 ECC 1.2802

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 35 25	2393.75	-23.47	53.16	20.39	106.31	20 15 19	1793.8	-21.02	45.35
90.00	9 21 43	4603.53	12.67	194.89	17.51	64.47	10 38 27	4003.5	9.13	188.00
100.00	21 0 5	2120.68	-24.52	32.73	20.04	107.65	21 35 26	1520.7	-21.88	24.93
100.00	10 39 44	4351.84	13.66	175.89	17.02	63.15	11 52 16	3751.8	9.95	169.06
110.00	22 15 55	1883.35	-27.32	13.61	18.94	111.39	22 47 19	1283.3	-24.17	5.86
110.00	11 40 23	4161.94	16.26	160.00	15.54	59.51	12 49 45	3561.9	12.09	153.38

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.0500 TRA-2.4707 TC3 1.8791 BAU .5000 SGT 4059.2 SGR 1593.9 SG3 1848.3 ST 1789.8 SR 815.3 SS 2748.6
RDE .5416 RRA -.7472 RC3 1.1383 FAU .30775 RRT .9530 RRF -.9800 RTF -.9671 CRT .9752 CRS .9673 CST .9992
FDE-4.4961 FRA11.3446 FC-15.6502 BSP 15236 SGB 4360.9 R23 -.1541 R13 -.9740 LSA 3373.7 MSA 200.1 SSA 32.5
BDE 1.1815 BRA 2.5812 BC3 2.1970 FSP 6077 SG1 4337.4 SG2 451.8 THA 20.75 EL1 1959.9 EL2 164.8 ALF 24.13

LAUNCH DATE OCT 14 1964 FLIGHT TIME 274.00 ARRIVAL DATE JUL 15 1965

HELIOCENTRIC CONIC DISTANCE 645.521 EARTH TO MARS

RL 149.19 LAL .00 LOL 20.68 VL 32.801 GAL -6.18 AZL 90.11 HCA 207.09 SMA 188.72 ECC .23440 INC .1070 V1 29.866
RP 232.51 LAP .05 LOP 227.77 VP 20.937 GAP 1.96 AZP 89.90 TAL 326.50 TAP 173.58 RCA 144.49 APO 232.96 V2 23.650
RC 216.258 GL -.86 GP 10.32 ZAL 137.85 ZAP 136.41 ETS 167.62 ZAE 168.08 ETE 104.35 ZAC 98.90 ETC 255.86 CLP 137.41

PLANETOCENTRIC CONIC

C3 16.778 VHL 4.096 DLA 7.57 RAL 159.84 RAD 6567.7 VEL 11.754 PTH 2.07 VHP 3.964 DPA 8.49 RAP 189.61 ECC 1.2761

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 30 54	2410.25	-23.79	54.27	20.44	105.84	20 11 4	1810.2	-21.39	46.42
90.00	9 26 50	4580.35	11.[illegible]	193.53	17.34	64.15	10 43 11	3980.3	8.42	186.68
100.00	20 55 53	2136.15	-24.[illegible]	33.77	20.10	107.19	21 31 29	1536.2	-22.25	25.93
100.00	10 44 32	4329.67	12.97	174.60	16.84	62.83	11 56 42	3729.7	9.23	167.81
110.00	22 12 26	1896.57	-27.64	14.50	19.02	110.96	22 44 3	1296.6	-24.54	6.70
110.00	11 44 28	4142.02	15.57	158.87	15.35	59.18	12 53 30	3542.0	11.37	152.29

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.0093 TRA-2.3870 TC3 1.8351 BAU .4870 SGT 3949.6 SGR 1604.3 SG3 1929.4 ST 1736.8 SR 819.2 SS 2780.4
RDE .5403 RRA -.7430 RC3 1.1601 FAU .31951 RRT .9513 RRF -.9789 RTF -.9663 CRT .9744 CRS .9646 CST .9989
FDE-4.5753 FRA11.7587 FC-16.4867 BSP 14931 SGB 4263.0 R23 -.1521 R13 -.9737 LSA 3372.4 MSA 210.0 SSA 32.2
BDE 1.1449 BRA 2.5000 BC3 2.1710 FSP 6364 SG1 4238.0 SG2 461.1 THA 21.39 EL1 1913.0 EL2 167.3 ALF 24.88

LAUNCH DATE OCT 14 1964 FLIGHT TIME 276.00 ARRIVAL DATE JUL 17 1965

HELIOCENTRIC CONIC DISTANCE 649.301 EARTH TO MARS

RL 149.19 LAL .00 LOL 20.68 VL 32.787 GAL -6.13 AZL 90.04 HCA 208.09 SMA 188.49 ECC .23318 INC .0297 V1 29.866
RP 232.14 LAP .02 LOP 228.77 VP 20.960 GAP 1.61 AZP 89.97 TAL 326.61 TAP 174.70 RCA 144.54 APO 232.44 V2 23.689
RC 218.287 GL -.28 GP 10.20 ZAL 137.70 ZAP 135.19 ETS 168.22 ZAE 167.75 ETE 110.78 ZAC 98.72 ETC 255.88 CLP 136.13

PLANETOCENTRIC CONIC

C3 16.551 VHL 4.068 DLA 8.16 RAL 159.92 RAD 6567.7 VEL 11.745 PTH 2.07 VHP 3.884 DPA 8.49 RAP 189.31 ECC 1.2724

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 26 35	2426.04	-24.07	55.34	20.49	105.38	20 7 1	1826.0	-21.73	47.45
90.00	9 31 44	4558.30	11.33	192.25	17.19	63.88	10 47 43	3958.3	7.73	185.42
100.00	20 51 52	2150.95	-25.13	34.77	20.16	106.74	21 27 43	1551.0	-22.60	26.89
100.00	10 49 8	4308.62	12.31	173.38	16.69	62.55	12 0 57	3708.6	8.54	166.63
110.00	22 9 7	1909.21	-27.95	15.35	19.09	110.53	22 40 56	1309.2	-24.90	7.51
110.00	11 48 22	4123.12	14.91	157.81	15.19	58.88	12 57 6	3523.1	10.68	151.26

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .9698 TRA-2.2986 TC3 1.7838 BAU .4737 SGT 3829.8 SGR 1616.8 SG3 2012.9 ST 1682.2 SR 824.1 SS 2813.7
RDE .5401 RRA -.7398 RC3 1.1836 FAU .33181 RRT .9495 RRF -.9778 RTF -.9653 CRT .9738 CRS .9620 CST .9986
FDE-4.6609 FRA12.1783 FC-17.3564 BSP 14567 SGB 4157.1 R23 -.1504 R13 -.9733 LSA 3372.9 MSA 220.1 SSA 31.9
BDE 1.1100 BRA 2.4147 BC3 2.1408 FSP 6652 SG1 4130.4 SG2 470.6 THA 22.14 EL1 1865.6 EL2 169.1 ALF 25.73

LAUNCH DATE OCT 14 1964 FLIGHT TIME 278.00 ARRIVAL DATE JUL 19 1965

HELIOCENTRIC CONIC DISTANCE 653.091 EARTH TO MARS

RL 149.19 LAL .00 LOL 20.68 VL 32.775 GAL -6.09 AZL 89.97 HCA 209.10 SMA 188.27 ECC .23203 INC .0280 V1 29.866
RP 231.76 LAP -.02 LOP 229.78 VP 20.984 GAP 1.26 AZP 90.03 TAL 326.71 TAP 175.81 RCA 144.58 APO 231.95 V2 23.728
RC 220.299 GL .26 GP 10.09 ZAL 137.56 ZAP 133.93 ETS 168.79 ZAE 167.25 ETE 116.97 ZAC 98.54 ETC 255.90 CLP 134.81

PLANETOCENTRIC CONIC

C3 16.341 VHL 4.042 DLA 8.72 RAL 159.99 RAD 6567.7 VEL 11.736 PTH 2.07 VHP 3.808 DPA 8.52 RAP 188.98 ECC 1.2689

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 22 27	2441.17	-24.34	56.36	20.55	104.93	20 3 9	1841.2	-22.06	48.44
90.00	9 36 26	4537.33	10.70	191.03	17.07	63.63	10 52 4	3937.3	7.07	184.23
100.00	20 48 3	2165.14	-25.41	35.73	20.22	106.30	21 24 8	1565.1	-22.93	27.81
100.00	10 53 32	4288.60	11.68	172.23	16.55	62.29	12 5 1	3688.6	7.88	165.50
110.00	22 5 58	1921.31	-28.24	16.18	19.18	110.12	22 37 59	1321.3	-25.23	8.29
110.00	11 52 7	4105.19	14.28	156.81	15.05	58.61	13 0 32	3505.2	10.02	150.30

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .9297 TRA-2.2068 TC3 1.7203 BAU .4592 SGT 3699.3 SGR 1630.9 SG3 2098.3 ST 1624.6 SR 829.8 SS 2847.5
RDE .5405 RRA -.7380 RC3 1.2076 FAU .34433 RRT .9474 RRF -.9768 RTF -.9640 CRT .9733 CRS .9595 CST .9982
FDE-4.7485 FRA12.6106 FC-18.2424 BSP 14183 SGB 4042.9 R23 -.1493 R13 -.9728 LSA 3373.8 MSA 230.4 SSA 31.6
BDE 1.0754 BRA 2.3270 BC3 2.1018 FSP 6950 SG1 4014.2 SG2 480.9 THA 23.02 EL1 1816.3 EL2 170.3 ALF 26.69

LAUNCH DATE OCT 14 1964 FLIGHT TIME 280.00 ARRIVAL DATE JUL 21 1965

HELIOCENTRIC CONIC DISTANCE 656.892 EARTH TO MARS

RL 149.19 LAL .00 LOL 20.68 VL 32.763 GAL -6.05 AZL 89.90 HCA 210.11 SMA 188.06 ECC .23094 INC .0949 V1 29.866
RP 231.38 LAP -.05 LOP 230.79 VP 21.010 GAP .92 AZP 90.08 TAL 326.81 TAP 176.92 RCA 144.63 APO 231.49 V2 23.768
RC 222.292 GL .78 GP 9.98 ZAL 137.42 ZAP 132.63 ETS 169.34 ZAE 166.58 ETE 122.79 ZAC 98.36 ETC 255.93 CLP 133.45

PLANETOCENTRIC CONIC

C3 16.147 VHL 4.018 DLA 9.26 RAL 160.06 RAD 6567.6 VEL 11.727 PTH 2.07 VHP 3.733 DPA 8.57 RAP 188.62 ECC 1.2657

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 18 31	2455.72	-24.60	57.36	20.61	104.49	19 59 27	1855.7	-22.36	49.39
90.00	9 40 57	4517.36	10.10	189.88	16.96	63.40	10 56 15	3917.4	6.44	183.10
100.00	20 44 24	2178.75	-25.66	36.66	20.29	105.88	21 20 42	1578.8	-23.24	28.71
100.00	10 57 46	4269.55	11.08	171.14	16.45	62.06	12 8 56	3669.6	7.26	164.44
110.00	22 2 57	1932.91	-28.50	16.97	19.27	109.72	22 35 10	1332.9	-25.55	9.04
110.00	11 55 42	4088.15	13.67	155.86	14.93	58.36	13 3 50	3488.2	9.39	149.38

DIFFERENTIAL CORRECTIONS
TDE .8891 TRA-2.1107 TC3 1.6468 BAU .4440
RDE .5414 RRA -.7372 RC3 1.2324 FAU .35717
FDE-4.8381 FRA13.0510 FC-19.1494 BSP 13758
BDE 1.0410 BRA 2.2357 BC3 2.0569 FSP 7255

MID-COURSE EXECUTION ACCURACY
SGT 3557.6 SGR 1646.6 SG3 2185.6
RRT .9452 RRF -.9759 RTF -.9623
SGB 3920.1 R23 -.1485 R13 -.9722
SG1 3889.2 SG2 491.6 THA 24.04

ORBIT DETERMINATION ACCURACY
ST 1563.8 SR 836.0 SS 2881.4
CRT .9730 CRS .9569 CST .9978
LSA 3374.6 MSA 240.7 SSA 31.3
EL1 1765.0 EL2 170.8 ALF 27.77

LAUNCH DATE OCT 14 1964 FLIGHT TIME 282.00 ARRIVAL DATE JUL 23 1965

HELIOCENTRIC CONIC DISTANCE 660.704 EARTH TO MARS

RL 149.19 LAL .00 LOL 20.68 VL 32.751 GAL -6.01 AZL 89.84 HCA 211.12 SMA 187.86 ECC .22991 INC .1561 V1 29.866
RP 231.01 LAP -.08 LOP 231.81 VP 21.037 GAP .59 AZP 90.13 TAL 326.90 TAP 178.02 RCA 144.67 APO 231.05 V2 23.807
RC 224.266 GL 1.28 GP 9.89 ZAL 137.29 ZAP 131.28 ETS 169.87 ZAE 165.75 ETE 128.15 ZAC 98.19 ETC 255.95 CLP 132.05

PLANETOCENTRIC CONIC

C3 15.970 VHL 3.996 DLA 9.76 RAL 160.13 RAD 6567.6 VEL 11.720 PTH 2.06 VHP 3.662 DPA 8.65 RAP 188.24 ECC 1.2628

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 14 46	2469.70	-24.83	58.31	20.68	104.07	19 55 55	1869.7	-22.65	50.32
90.00	9 45 19	4498.34	9.51	188.78	16.88	63.20	11 0 17	3898.3	5.84	182.03
100.00	20 40 55	2191.84	-25.90	37.56	20.37	105.46	21 17 27	1591.8	-23.53	29.57
100.00	11 1 50	4251.41	10.50	170.11	16.36	61.85	12 12 42	3651.4	6.65	163.43
110.00	22 0 6	1944.06	-28.76	17.74	19.37	109.33	22 32 30	1344.1	-25.85	9.77
110.00	11 59 9	4071.98	13.09	154.96	14.83	58.14	13 7 1	3472.0	8.78	148.51

DIFFERENTIAL CORRECTIONS
TDE .8480 TRA-2.0109 TC3 1.5591 BAU .4276
RDE .5429 RRA -.7375 RC3 1.2573 FAU .37017
FDE-4.9308 FRA13.5012 FC-20.0675 BSP 13318
BDE 1.0069 BRA 2.1419 BC3 2.0029 FSP 7569

MID-COURSE EXECUTION ACCURACY
SGT 3404.3 SGR 1663.4 SG3 2274.5
RRT .9425 RRF -.9750 RTF -.9601
SGB 3789.0 R23 -.1488 R13 -.9714
SG1 3755.3 SG2 503.8 THA 25.21

ORBIT DETERMINATION ACCURACY
ST 1500.0 SR 842.9 SS 2916.0
CRT .9729 CRS .9545 CST .9972
LSA 3376.3 MSA 251.1 SSA 31.0
EL1 1712.1 EL2 170.8 ALF 28.98

LAUNCH DATE OCT 14 1964 FLIGHT TIME 284.00 ARRIVAL DATE JUL 25 1965

HELIOCENTRIC CONIC DISTANCE 664.525 EARTH TO MARS

RL 149.19 LAL .00 LOL 20.68 VL 32.740 GAL -5.98 AZL 89.79 HCA 212.14 SMA 187.67 ECC .22894 INC .2140 V1 29.866
RP 230.62 LAP -.11 LOP 232.82 VP 21.065 GAP .26 AZP 90.18 TAL 326.98 TAP 179.12 RCA 144.70 APO 230.63 V2 23.847
RC 226.222 GL 1.76 GP 9.81 ZAL 137.16 ZAP 129.89 ETS 170.38 ZAE 164.78 ETE 133.01 ZAC 98.01 ETC 255.98 CLP 130.61

PLANETOCENTRIC CONIC

C3 15.807 VHL 3.976 DLA 10.25 RAL 160.21 RAD 6567.6 VEL 11.713 PTH 2.06 VHP 3.594 DPA 8.75 RAP 187.82 ECC 1.2601

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 11 11	2483.16	-25.05	59.24	20.77	103.65	19 52 34	1883.2	-22.92	51.21
90.00	9 49 30	4480.23	8.96	187.75	16.82	63.02	11 4 11	3880.2	5.27	181.01
100.00	20 37 36	2204.43	-26.13	38.43	20.46	105.06	21 14 20	1604.4	-23.81	30.40
100.00	11 5 46	4234.19	9.94	169.13	16.29	61.66	12 16 20	3634.2	6.08	162.47
110.00	21 57 23	1954.77	-29.00	18.48	19.47	108.95	22 29 58	1354.8	-26.14	10.47
110.00	12 2 29	4056.62	12.54	154.12	14.75	57.94	13 10 5	3456.6	8.21	147.69

DIFFERENTIAL CORRECTIONS
TDE .8060 TRA-1.9067 TC3 1.4600 BAU .4107
RDE .5448 RRA -.7387 RC3 1.2826 FAU .38338
FDE-5.0232 FRA13.9605 FC-20.9973 BSP 12835
BDE .9729 BRA 2.0448 BC3 1.9433 FSP 7890

MID-COURSE EXECUTION ACCURACY
SGT 3239.5 SGR 1681.2 SG3 2364.8
RRT .9394 RRF -.9741 RTF -.9573
SGB 3649.8 R23 -.1494 R13 -.9704
SG1 3613.0 SG2 516.6 THA 26.58

ORBIT DETERMINATION ACCURACY
ST 1432.6 SR 850.1 SS 2950.2
CRT .9730 CRS .9520 CST .9966
LSA 3377.7 MSA 261.6 SSA 30.6
EL1 1657.1 EL2 169.7 ALF 30.35

LAUNCH DATE OCT 14 1964 FLIGHT TIME 286.00 ARRIVAL DATE JUL 27 1965

HELIOCENTRIC CONIC DISTANCE 668.356 EARTH TO MARS

RL 149.19 LAL .00 LOL 20.68 VL 32.730 GAL -5.94 AZL 89.73 HCA 213.16 SMA 187.49 ECC .22803 INC .2681 V1 29.866
RP 230.24 LAP -.15 LOP 233.84 VP 21.095 GAP -.06 AZP 90.22 TAL 327.05 TAP 180.21 RCA 144.74 APO 230.24 V2 23.887
RC 228.159 GL 2.21 GP 9.73 ZAL 137.05 ZAP 128.45 ETS 170.87 ZAE 163.68 ETE 137.38 ZAC 97.84 ETC 256.01 CLP 129.12

PLANETOCENTRIC CONIC

C3 15.659 VHL 3.957 DLA 10.70 RAL 160.29 RAD 6567.6 VEL 11.707 PTH 2.06 VHP 3.528 DPA 8.87 RAP 187.36 ECC 1.2577

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 7 46	2496.12	-25.26	60.13	20.86	103.25	19 49 22	1896.1	-23.18	52.07
90.00	9 53 34	4463.00	8.42	186.76	16.78	62.86	11 7 57	3863.0	4.72	180.04
100.00	20 34 27	2216.55	-26.34	39.27	20.56	104.67	21 11 23	1616.6	-24.07	31.21
100.00	11 9 34	4217.80	9.41	168.20	16.25	61.50	12 19 51	3617.8	5.53	161.56
110.00	21 54 49	1965.08	-29.22	19.20	19.59	108.58	22 27 34	1365.1	-26.41	11.15
110.00	12 5 41	4042.03	12.01	153.32	14.70	57.75	13 13 3	3442.0	7.66	146.92

DIFFERENTIAL CORRECTIONS
TDE .7643 TRA-1.7979 TC3 1.3485 BAU .3933
RDE .5473 RRA -.7404 RC3 1.3084 FAU .39689
FDE-5.1214 FRA14.4221 FC-21.9432 BSP 12318
BDE .9400 BRA 1.9444 BC3 1.8789 FSP 8209

MID-COURSE EXECUTION ACCURACY
SGT 3063.1 SGR 1700.1 SG3 2456.3
RRT .9356 RRF -.9733 RTF -.9536
SGB 3503.2 R23 -.1509 R13 -.9692
SG1 3462.8 SG2 530.8 THA 28.16

ORBIT DETERMINATION ACCURACY
ST 1362.8 SR 857.9 SS 2985.5
CRT .9733 CRS .9497 CST .9958
LSA 3381.1 MSA 271.9 SSA 30.3
EL1 1601.7 EL2 167.4 ALF 31.89

LAUNCH DATE OCT 14 1964 FLIGHT TIME 288.00 ARRIVAL DATE JUL 29 1965

HELIOCENTRIC CONIC DISTANCE 672.197 EARTH TO MARS

RL	149.19	LAL	.00	LOL	20.68	VL	32.720	GAL	-5.91	AZL	89.68	HCA	214.18	SMA	187.32	ECC	.22717	INC	.3198
RP	229.86	LAP	-.18	LOP	234.87	VP	21.125	GAP	-.38	AZP	90.26	TAL	327.11	TAP	181.29	RCA	144.77	APO	229.88
RC	230.076	GL	2.64	GP	9.65	ZAL	136.94	ZAP	126.97	ETS	171.35	ZAE	162.46	ETE	141.29	ZAC	97.66	ETC	256.04

V1	29.866	V2	23.927	CLP	127.59														

PLANETOCENTRIC CONIC

C3	15.524	VHL	3.940	DLA	11.14	RAL	160.38	RAD	6567.6	VEL	11.701	PTH	2.06	VHP	3.466	DPA	9.01	RAP	186.88
ECC	1.2555																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 4 31	2508.62	-25.45	61.00	20.96	102.86	19 46 20	1908.6	-23.42	52.91
90.00	9 57 29	4446.59	7.91	185.83	16.76	62.72	11 11 35	3846.6	4.19	179.12
100.00	20 31 27	2228.23	-26.54	40.08	20.67	104.28	21 8 36	1628.2	-24.31	31.99
100.00	11 13 14	4202.22	8.90	167.32	16.22	61.35	12 23 16	3609.2	5.01	160.70
110.00	21 52 23	1975.01	-29.44	19.90	19.71	108.22	22 25 18	1375.0	-26.67	11.81
110.00	12 8 48	4028.20	11.50	152.56	14.67	57.59	13 15 56	3428.2	7.15	146.18

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.7214	TRA	-1.6844	TC3	1.2230	BAU	.3755	SGT	2874.3	SGR	1719.4	SG3	2548.4	ST	1289.3	SR	865.8	SS	3020.0
RDE	.5500	RRA	-.7429	RC3	1.3336	FAU	.41035	RRT	.9309	RRF	-.9726	RTF	-.9489	CRT	.9740	CRS	.9473	CST	.9948
FDE	-5.2179	FRA	14.8922	FC	-22.8845	BSP	11776	SGB	3349.3	R23	-.1531	R13	-.9678	LSA	3384.0	MSA	282.3	SSA	30.0
BDE	.9071	BRA	1.8409	BC3	1.8094	FSP	8539	SG1	3304.4	SG2	546.3	THA	30.02	EL1	1544.4	EL2	163.9	ALF	33.62

LAUNCH DATE OCT 14 1964 FLIGHT TIME 290.00 ARRIVAL DATE JUL 31 1965

HELIOCENTRIC CONIC DISTANCE 676.048 EARTH TO MARS

RL	149.19	LAL	.00	LOL	20.68	VL	32.711	GAL	-5.89	AZL	89.63	HCA	215.21	SMA	187.16	ECC	.22638	INC	.3692
RP	229.47	LAP	-.21	LOP	235.89	VP	21.157	GAP	-.69	AZP	90.30	TAL	327.16	TAP	182.37	RCA	144.79	APO	229.53
RC	231.973	GL	3.06	GP	9.58	ZAL	136.85	ZAP	125.45	ETS	171.82	ZAE	161.12	ETE	144.76	ZAC	97.47	ETC	256.08

V1	29.866	V2	23.968	CLP	126.03														

PLANETOCENTRIC CONIC

C3	15.402	VHL	3.925	DLA	11.55	RAL	160.47	RAD	6567.6	VEL	11.696	PTH	2.06	VHP	3.406	DPA	9.18	RAP	186.36
ECC	1.2535																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 1 26	2520.67	-25.63	61.83	21.08	102.48	19 43 27	1920.7	-23.65	53.72
90.00	10 1 17	4431.00	7.42	184.94	16.76	62.60	11 15 8	3831.0	3.69	178.24
100.00	20 28 37	2239.49	-26.73	40.86	20.79	103.91	21 5 57	1639.5	-24.55	32.74
100.00	11 16 47	4187.41	8.42	166.49	16.22	61.21	12 26 34	3587.4	4.51	159.88
110.00	21 50 5	1984.58	-29.64	20.57	19.85	107.87	22 23 10	1384.6	-26.91	12.44
110.00	12 11 48	4015.09	11.02	151.85	14.65	57.44	13 18 43	3415.1	6.65	145.49

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6777	TRA	-1.5659	TC3	1.0852	BAU	.3581	SGT	2673.8	SGR	1739.0	SG3	2640.8	ST	1212.3	SR	873.9	SS	3054.0
RDE	.5529	RRA	-.7458	RC3	1.3589	FAU	.42398	RRT	.9248	RRF	-.9718	RTF	-.9426	CRT	.9749	CRS	.9451	CST	.9935
FDE	-5.3146	FRA	15.3635	FC	-23.8314	BSP	11199	SGB	3189.6	R23	-.1558	R13	-.9661	LSA	3387.3	MSA	292.7	SSA	29.7
BDE	.8747	BRA	1.7344	BC3	1.7390	FSP	8868	SG1	3139.4	SG2	563.4	THA	32.19	EL1	1486.0	EL2	158.7	ALF	35.57

LAUNCH DATE OCT 14 1964 FLIGHT TIME 292.00 ARRIVAL DATE AUG 2 1965

HELIOCENTRIC CONIC DISTANCE 679.907 EARTH TO MARS

RL	149.19	LAL	.00	LOL	20.68	VL	32.702	GAL	-5.87	AZL	89.58	HCA	216.24	SMA	187.01	ECC	.22563	INC	.4154
RP	229.09	LAP	-.25	LOP	236.93	VP	21.189	GAP	-1.00	AZP	90.34	TAL	327.21	TAP	183.45	RCA	144.82	APO	229.21
RC	233.848	GL	3.46	GP	9.52	ZAL	136.76	ZAP	123.88	ETS	172.27	ZAE	159.69	ETE	147.84	ZAC	97.28	ETC	256.12

V1	29.866	V2	24.009	CLP	124.42														

PLANETOCENTRIC CONIC

C3	15.293	VHL	3.911	DLA	11.95	RAL	160.56	RAD	6567.6	VEL	11.691	PTH	2.06	VHP	3.350	DPA	9.36	RAP	185.81
ECC	1.2517																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 58 31	2532.29	-25.80	62.64	21.21	102.10	19 40 44	1932.3	-23.87	54.50
90.00	10 4 57	4416.19	6.96	184.60	16.78	62.48	11 18 33	3816.2	3.22	177.42
100.00	20 25 57	2250.34	-26.90	41.62	20.92	103.55	21 3 27	1650.3	-24.77	33.47
100.00	11 20 13	4173.37	7.96	165.71	16.23	61.09	12 29 46	3573.4	4.04	159.11
110.00	21 47 56	1993.79	-29.83	21.22	20.00	107.53	22 21 10	1393.8	-27.14	13.06
110.00	12 14 43	4002.68	10.57	151.18	14.66	57.30	13 21 26	3402.7	6.18	144.83

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6340	TRA	-1.4420	TC3	.9333	BAU	.3413	SGT	2461.5	SGR	1758.8	SG3	2732.9	ST	1132.7	SR	882.5	SS	3088.7
RDE	.5564	RRA	-.7488	RC3	1.3838	FAU	.43765	RRT	.9167	RRF	-.9711	RTF	-.9339	CRT	.9763	CRS	.9429	CST	.9920
FDE	-5.4167	FRA	15.8305	FC	-24.7747	BSP	10595	SGB	3025.3	R23	-.1592	R13	-.9642	LSA	3392.5	MSA	302.8	SSA	29.4
BDE	.8435	BRA	1.6248	BC3	1.6691	FSP	9190	SG1	2968.7	SG2	582.6	THA	34.76	EL1	1427.8	EL2	151.6	ALF	37.76

LAUNCH DATE OCT 14 1964 FLIGHT TIME 294.00 ARRIVAL DATE AUG 4 1965

HELIOCENTRIC CONIC DISTANCE 683.776 EARTH TO MARS

RL	149.19	LAL	.00	LOL	20.68	VL	32.694	GAL	-5.84	AZL	89.54	HCA	217.28	SMA	186.87	ECC	.22494	INC	.4604
RP	228.70	LAP	-.28	LOP	237.96	VP	21.223	GAP	-1.31	AZP	90.37	TAL	327.24	TAP	184.51	RCA	144.84	APO	228.91
RC	235.703	GL	3.85	GP	9.46	ZAL	136.69	ZAP	122.26	ETS	172.72	ZAE	158.17	ETE	150.59	ZAC	97.09	ETC	256.16

V1	29.866	V2	24.049	CLP	122.76														

PLANETOCENTRIC CONIC

C3	15.197	VHL	3.898	DLA	12.32	RAL	160.66	RAD	6567.6	VEL	11.687	PTH	2.06	VHP	3.296	DPA	9.56	RAP	185.22
ECC	1.2501																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 55 46	2543.49	-25.95	63.42	21.34	101.74	19 38 10	1943.5	-24.07	55.26
90.00	10 8 31	4402.14	6.52	183.30	16.81	62.38	11 21 53	3802.1	2.77	176.63
100.00	20 23 25	2260.79	-27.07	42.36	21.07	103.20	21 1 6	1660.8	-24.98	34.18
100.00	11 23 33	4160.07	7.52	164.96	16.27	60.98	12 32 53	3560.1	3.59	158.37
110.00	21 45 55	2002.67	-30.01	21.85	20.16	107.19	22 19 18	1402.7	-27.36	13.65
110.00	12 17 32	3990.96	10.14	150.55	14.68	57.18	13 24 3	3391.0	5.74	144.21

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5893	TRA	-1.3127	TC3	.7696	BAU	.3260	SGT	2238.4	SGR	1778.4	SG3	2824.4	ST	1049.6	SR	890.9	SS	3122.1
RDE	.5599	RRA	-.7522	RC3	1.4079	FAU	.45121	RRT	.9059	RRF	-.9705	RTF	-.9221	CRT	.9781	CRS	.9408	CST	.9899
FDE	-5.5155	FRA	16.2988	FC	-25.7050	BSP	9962	SGB	2858.8	R23	-.1623	R13	-.9621	LSA	3397.6	MSA	313.1	SSA	29.1
BDE	.8129	BRA	1.5129	BC3	1.6045	FSP	9511	SG1	2794.5	SG2	603.2	THA	37.82	EL1	1369.3	EL2	142.0	ALF	40.22

LAUNCH DATE OCT 14 1964 FLIGHT TIME 296.00 ARRIVAL DATE AUG 6 1965

HELIOCENTRIC CONIC DISTANCE 687.655 EARTH TO MARS

RL 149.19 LAL .00 LOL 20.68 VL 32.686 GAL -5.83 AZL 89.50 HCA 218.31 SMA 186.74 ECC .22431 INC .5031 V1 29.866
RP 228.31 LAP -.31 LOP 239.00 VP 21.257 GAP -1.61 AZP 90.39 TAL 327.26 TAP 185.58 RCA 144.85 APO 228.62 V2 24.090
RC 237.537 GL 4.21 GP 9.39 ZAL 136.62 ZAP 120.61 ETS 173.15 ZAE 156.57 ETE 153.05 ZAC 96.89 ETC 256.21 CLP 121.07

PLANETOCENTRIC CONIC

C3 15.112 VHL 3.887 DLA 12.68 RAL 160.77 RAD 6567.6 VEL 11.683 PTH 2.05 VHP 3.246 DPA 9.78 RAP 184.60 ECC 1.2487

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 53 11	2554.29	-26.10	64.18	21.50	101.39	19 35 45	1954.3	-24.27	55.99
90.00	10 11 58	4388.83	6.10	182.55	16.87	62.29	11 25 7	3788.8	2.34	175.89
100.00	20 21 3	2270.87	-27.22	43.07	21.23	102.85	20 58 54	1670.9	-25.18	34.86
100.00	11 26 46	4147.48	7.10	164.26	16.32	60.89	12 35 54	3547.5	3.17	157.68
110.00	21 44 2	2011.23	-30.18	22.45	20.33	106.87	22 17 33	1411.2	-27.58	14.23
110.00	12 20 17	3979.89	9.73	149.95	14.73	57.07	13 26 37	3379.9	5.32	143.63

DIFFERENTIAL CORRECTIONS
TDE .5460 TRA-1.1760 TC3 .5981 BAU .3137
RDE .5644 RRA -.7548 RC3 1.4330 FAU .46530
FDE-5.6285 FRA16.7458 FC-26.6560 BSP 9278
BDE .7853 BRA 1.3974 BC3 1.5528 FSP 9805

MID-COURSE EXECUTION ACCURACY
SGT 2005.0 SGR 1798.2 SG3 2915.0
RRT .8912 RRF -.9698 RTF -.9055
SGB 2693.2 R23 -.1643 R13 -.9601
SG1 2619.9 SG2 624.1 THA 41.51

ORBIT DETERMINATION ACCURACY
ST 965.3 SR 900.1 SS 3157.8
CRT .9808 CRS .9391 CST .9870
LSA 3407.1 MSA 323.2 SSA 28.6
EL1 1313.5 EL2 128.9 ALF 42.96

LAUNCH DATE OCT 14 1964 FLIGHT TIME 298.00 ARRIVAL DATE AUG 8 1965

HELIOCENTRIC CONIC DISTANCE 691.541 EARTH TO MARS

RL 149.19 LAL .00 LOL 20.68 VL 32.679 GAL -5.81 AZL 89.46 HCA 219.36 SMA 186.61 ECC .22372 INC .5440 V1 29.866
RP 227.92 LAP -.35 LOP 240.04 VP 21.293 GAP -1.90 AZP 90.42 TAL 327.27 TAP 186.63 RCA 144.86 APO 228.36 V2 24.132
RC 239.350 GL 4.57 GP 9.33 ZAL 136.57 ZAP 118.91 ETS 173.58 ZAE 154.89 ETE 155.24 ZAC 96.68 ETC 256.26 CLP 119.33

PLANETOCENTRIC CONIC

C3 15.039 VHL 3.878 DLA 13.01 RAL 160.89 RAD 6567.6 VEL 11.680 PTH 2.05 VHP 3.198 DPA 10.01 RAP 183.94 ECC 1.2475

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 50 45	2564.69	-26.24	64.91	21.66	101.05	19 33 30	1964.7	-24.45	56.70
90.00	10 15 19	4376.27	5.70	181.84	16.95	62.22	11 28 15	3776.3	1.93	175.18
100.00	20 18 51	2280.58	-27.37	43.75	21.40	102.52	20 56 51	1680.6	-25.37	35.52
100.00	11 29 54	4135.61	6.71	163.60	16.40	60.80	12 38 50	3535.6	2.77	157.03
110.00	21 42 18	2019.47	-30.34	23.04	20.52	106.56	22 15 57	1419.5	-27.78	14.79
110.00	12 22 57	3969.48	9.34	149.39	14.80	56.97	13 29 7	3369.5	4.93	143.08

DIFFERENTIAL CORRECTIONS
TDE .4981 TRA-1.0372 TC3 .4022 BAU .3033
RDE .5680 RRA -.7585 RC3 1.4539 FAU .47811
FDE-5.7203 FRA17.2068 FC-27.5229 BSP 8670
BDE .7555 BRA 1.2849 BC3 1.5086 FSP 10131

MID-COURSE EXECUTION ACCURACY
SGT 1764.3 SGR 1816.2 SG3 3002.8
RRT .8671 RRF -.9691 RTF -.8793
SGB 2532.1 R23 -.1662 R13 -.9580
SG1 2446.5 SG2 652.5 THA 45.96

ORBIT DETERMINATION ACCURACY
ST 874.3 SR 908.0 SS 3188.1
CRT .9835 CRS .9369 CST .9834
LSA 3411.9 MSA 333.0 SSA 28.4
EL1 1255.3 EL2 114.4 ALF 46.10

LAUNCH DATE OCT 14 1964 FLIGHT TIME 300.00 ARRIVAL DATE AUG 10 1965

HELIOCENTRIC CONIC DISTANCE 695.437 EARTH TO MARS

RL 149.19 LAL .00 LOL 20.68 VL 32.672 GAL -5.80 AZL 89.42 HCA 220.40 SMA 186.50 ECC .22318 INC .5834 V1 29.866
RP 227.53 LAP -.38 LOP 241.08 VP 21.329 GAP -2.19 AZP 90.44 TAL 327.28 TAP 187.68 RCA 144.87 APO 228.12 V2 24.173
RC 241.142 GL 4.91 GP 9.27 ZAL 136.53 ZAP 117.17 ETS 174.00 ZAE 153.14 ETE 157.22 ZAC 96.47 ETC 256.32 CLP 117.56

PLANETOCENTRIC CONIC

C3 14.978 VHL 3.870 DLA 13.33 RAL 161.01 RAD 6567.6 VEL 11.677 PTH 2.05 VHP 3.154 DPA 10.26 RAP 183.26 ECC 1.2465

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 48 29	2574.70	-26.37	65.62	21.84	100.72	19 31 24	1974.7	-24.62	57.38
90.00	10 18 34	4364.42	5.32	181.18	17.05	62.15	11 31 18	3764.4	1.55	174.52
100.00	20 16 47	2289.92	-27.50	44.41	21.58	102.20	20 54 57	1689.9	-25.54	36.16
100.00	11 32 57	4124.43	6.34	162.98	16.49	60.73	12 41 41	3524.4	2.39	156.41
110.00	21 40 41	2027.41	-30.49	23.61	20.72	106.25	22 14 29	1427.4	-27.97	15.33
110.00	12 25 33	3959.71	8.98	148.87	14.88	56.88	13 31 32	3359.7	4.56	142.57

DIFFERENTIAL CORRECTIONS
TDE .4519 TRA -.8907 TC3 .2014 BAU .2982
RDE .5724 RRA -.7612 RC3 1.4757 FAU .49139
FDE-5.8250 FRA17.6415 FC-28.4036 BSP 8036
BDE .7293 BRA 1.1716 BC3 1.4893 FSP 10424

MID-COURSE EXECUTION ACCURACY
SGT 1519.3 SGR 1834.1 SG3 3088.9
RRT .8305 RRF -.9685 RTF -.8389
SGB 2381.7 R23 -.1634 R13 -.9566
SG1 2282.5 SG2 679.9 THA 51.42

ORBIT DETERMINATION ACCURACY
ST 782.9 SR 916.6 SS 3220.4
CRT .9872 CRS .9351 CST .9778
LSA 3421.4 MSA 342.9 SSA 28.0
EL1 1201.7 EL2 95.1 ALF 49.55

LAUNCH DATE OCT 14 1964 FLIGHT TIME 302.00 ARRIVAL DATE AUG 12 1965

HELIOCENTRIC CONIC DISTANCE 699.341 EARTH TO MARS

RL 149.19 LAL .00 LOL 20.68 VL 32.666 GAL -5.79 AZL 89.38 HCA 221.45 SMA 186.39 ECC .22270 INC .6213 V1 29.866
RP 227.14 LAP -.41 LOP 242.13 VP 21.366 GAP -2.48 AZP 90.47 TAL 327.27 TAP 188.72 RCA 144.88 APO 227.90 V2 24.214
RC 242.914 GL 5.23 GP 9.21 ZAL 136.51 ZAP 115.39 ETS 174.41 ZAE 151.33 ETE 159.00 ZAC 96.24 ETC 256.38 CLP 115.75

PLANETOCENTRIC CONIC

C3 14.927 VHL 3.864 DLA 13.63 RAL 161.14 RAD 6567.6 VEL 11.675 PTH 2.05 VHP 3.113 DPA 10.53 RAP 182.54 ECC 1.2457

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 46 23	2584.33	-26.49	66.30	22.03	100.40	19 29 28	1984.3	-24.78	58.04
90.00	10 21 43	4353.28	4.97	180.55	17.17	62.09	11 34 16	3753.3	1.19	173.90
100.00	20 14 54	2298.90	-27.63	45.05	21.78	101.89	20 53 12	1698.9	-25.71	36.77
100.00	11 35 54	4113.94	5.99	162.39	16.61	60.66	12 44 28	3513.9	2.03	155.84
110.00	21 39 13	2035.05	-30.64	24.16	20.93	105.96	22 13 8	1435.0	-28.15	15.85
110.00	12 28 4	3950.57	8.64	148.38	14.98	56.80	13 33 54	3350.6	4.21	142.09

DIFFERENTIAL CORRECTIONS
TDE .4034 TRA -.7398 TC3 -.0170 BAU .2983
RDE .5766 RRA -.7638 RC3 1.4945 FAU .50382
FDE-5.9208 FRA18.0672 FC-29.2203 BSP 7457
BDE .7037 BRA 1.0633 BC3 1.4946 FSP 10715

MID-COURSE EXECUTION ACCURACY
SGT 1277.7 SGR 1850.2 SG3 3171.0
RRT .7686 RRF -.9678 RTF -.7694
SGB 2248.5 R23 -.1545 R13 -.9563
SG1 2132.9 SG2 711.8 THA 58.15

ORBIT DETERMINATION ACCURACY
ST 687.5 SR 924.5 SS 3249.8
CRT .9912 CRS .9333 CST .9697
LSA 3429.8 MSA 352.4 SSA 27.7
EL1 1149.7 EL2 73.0 ALF 53.43

LAUNCH DATE OCT 14 1964 FLIGHT TIME 304.00 ARRIVAL DATE AUG 14 1965

HELIOCENTRIC CONIC DISTANCE 703.253 EARTH TO MARS

RL	149.19	LAL	.00	LOL	20.68	VL	32.660	GAL	-5.78	AZL	89.34	HCA	222.50	SMA	186.28	ECC	.22226	INC	.6576
RP	226.75	LAP	-.44	LOP	243.19	VP	21.404	GAP	-2.76	AZP	90.48	TAL	327.25	TAP	189.75	RCA	144.88	APO	227.69
RC	244.666	GL	5.55	GP	9.15	ZAL	136.50	ZAP	113.58	ETS	174.82	ZAE	149.47	ETE	160.61	ZAC	96.02	ETC	256.45

V1 29.866 V2 24.256 CLP 113.90

PLANETOCENTRIC CONIC

C3	14.888	VHL	3.858	DLA	13.91	RAL	161.28	RAD	6567.6	VEL	11.674	PTH	2.05	VHP	3.076	DPA	10.80	RAP	181.79

ECC 1.2450

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 44 27	2593.58	-26.60	66.95	22.24	100.09	19 27 41	1993.6	-24.93	58.68
90.00	10 24 46	4342.85	4.63	179.96	17.30	62.03	11 37 9	3742.9	.86	173.32
100.00	20 13 9	2307.54	-27.75	45.66	22.00	101.58	20 51 37	1707.5	-25.87	37.37
100.00	11 38 46	4104.13	5.66	161.85	16.74	60.60	12 47 10	3504.1	1.70	155.38
110.00	21 37 53	2042.39	-30.77	24.69	21.15	105.67	22 11 56	1442.4	-28.32	16.35
110.00	12 30 31	3942.04	8.32	147.92	15.11	56.72	13 36 13	3342.0	3.88	141.64

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3540	TRA	-.5831	TC3	-.2468	BAU	.3048	SGT	1052.8	SGR	1864.6	SG3	3249.0	ST	589.9	SR	931.9	SS	3277.2
RDE	.5808	RRA	-.7660	RC3	1.5113	FAU	.51570	RRT	.6502	RRF	-.9670	RTF	-.6441	CRT	.9954	CRS	.9314	CST	.9565
FDE	-6.0121	FRA	18.4753	FC	-29.9885	BSP	6952	SGB	2141.3	R23	-.1342	R13	-.9579	LSA	3438.8	MSA	361.8	SSA	27.4
BDE	.6801	BRA	.9627	BC3	1.5313	FSP	10994	SG1	2008.5	SG2	742.6	THA	66.43	EL1	1101.9	EL2	47.9	ALF	57.72

LAUNCH DATE OCT 14 1964 FLIGHT TIME 306.00 ARRIVAL DATE AUG 16 1965

HELIOCENTRIC CONIC DISTANCE 707.173 EARTH TO MARS

RL	149.19	LAL	.00	LOL	20.68	VL	32.654	GAL	-5.78	AZL	89.31	HCA	223.56	SMA	186.19	ECC	.22187	INC	.6927
RP	226.36	LAP	-.48	LOP	244.24	VP	21.443	GAP	-3.04	AZP	90.50	TAL	327.22	TAP	190.78	RCA	144.88	APO	227.50
RC	246.398	GL	5.85	GP	9.09	ZAL	136.50	ZAP	111.73	ETS	175.21	ZAE	147.54	ETE	162.08	ZAC	95.78	ETC	256.52

V1 29.866 V2 24.297 CLP 112.02

PLANETOCENTRIC CONIC

C3	14.859	VHL	3.855	DLA	14.18	RAL	161.43	RAD	6567.6	VEL	11.672	PTH	2.05	VHP	3.042	DPA	11.09	RAP	181.01

ECC 1.2445

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 42 41	2602.46	-26.70	67.58	22.47	99.79	19 26 4	2002.5	-25.08	59.29
90.00	10 27 44	4333.12	4.32	179.42	17.46	61.99	11 39 57	3733.1	.54	172.78
100.00	20 11 34	2315.82	-27.86	46.25	22.22	101.29	20 50 10	1715.8	-26.02	37.94
100.00	11 41 32	4094.99	5.36	161.34	16.89	60.55	12 49 47	3495.0	1.39	154.80
110.00	21 36 42	2049.45	-30.90	25.20	21.40	105.40	22 10 52	1449.4	-28.48	16.83
110.00	12 32 54	3934.13	8.02	147.50	15.25	56.66	13 38 28	3334.1	3.58	141.23

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3035	TRA	-.4211	TC3	-.4890	BAU	.3182	SGT	873.1	SGR	1877.1	SG3	3322.0	ST	491.0	SR	939.0	SS	3302.8
RDE	.5849	RRA	-.7675	RC3	1.5255	FAU	.52682	RRT	.4322	RRF	-.9663	RTF	-.4122	CRT	.9980	CRS	.9295	CST	.9336
FDE	-6.0995	FRA	18.8622	FC	-30.6940	BSP	6555	SGB	2070.2	R23	-.0990	R13	-.9612	LSA	3448.6	MSA	371.1	SSA	27.0
BDE	.6589	BRA	.8755	BC3	1.6020	FSP	11259	SG1	1922.2	SG2	768.9	THA	76.42	EL1	1059.2	EL2	27.7	ALF	62.42

LAUNCH DATE OCT 14 1964 FLIGHT TIME 308.00 ARRIVAL DATE AUG 18 1965

HELIOCENTRIC CONIC DISTANCE 711.100 EARTH TO MARS

RL	149.19	LAL	.00	LOL	20.68	VL	32.649	GAL	-5.78	AZL	89.27	HCA	224.62	SMA	186.10	ECC	.22153	INC	.7266
RP	225.97	LAP	-.51	LOP	245.30	VP	21.482	GAP	-3.31	AZP	90.52	TAL	327.18	TAP	191.80	RCA	144.87	APO	227.33
RC	248.110	GL	6.14	GP	9.02	ZAL	136.52	ZAP	109.85	ETS	175.61	ZAE	145.57	ETE	163.42	ZAC	95.53	ETC	256.60

V1 29.866 V2 24.339 CLP 110.11

PLANETOCENTRIC CONIC

C3	14.842	VHL	3.852	DLA	14.43	RAL	161.59	RAD	6567.6	VEL	11.672	PTH	2.05	VHP	3.011	DPA	11.38	RAP	180.20

ECC 1.2443

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 41 6	2610.96	-26.80	68.18	22.71	99.50	19 24 37	2011.0	-25.21	59.87
90.00	10 30 36	4324.09	4.03	178.91	17.63	61.95	11 42 40	3724.1	.25	172.27
100.00	20 10 9	2323.75	-27.97	46.82	22.47	101.01	20 48 53	1723.8	-26.16	38.48
100.00	11 44 14	4086.53	5.07	160.87	17.06	60.50	12 52 21	3486.5	1.11	154.33
110.00	21 35 40	2056.21	-31.02	25.69	21.65	105.13	22 9 56	1456.2	-28.64	17.30
110.00	12 35 13	3926.84	7.75	147.11	15.41	56.60	13 40 40	3326.8	3.31	140.85

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2475	TRA	-.2573	TC3	-.7548	BAU	.3387	SGT	793.7	SGR	1885.3	SG3	3387.8	ST	387.2	SR	942.7	SS	3316.5
RDE	.5867	RRA	-.7708	RC3	1.5312	FAU	.53491	RRT	.0687	RRF	-.9653	RTF	-.0345	CRT	.9938	CRS	.9265	CST	.8908
FDE	-6.1309	FRA	19.2776	FC	-31.2020	BSP	6383	SGB	2045.6	R23	-.0462	R13	-.9647	LSA	3448.5	MSA	380.0	SSA	27.1
BDE	.6368	BRA	.8126	BC3	1.7071	FSP	11616	SG1	1886.3	SG2	791.4	THA	87.99	EL1	1018.3	EL2	39.9	ALF	67.76

LAUNCH DATE OCT 14 1964 FLIGHT TIME 310.00 ARRIVAL DATE AUG 20 1965

HELIOCENTRIC CONIC DISTANCE 715.037 EARTH TO MARS

RL	149.19	LAL	.00	LOL	20.68	VL	32.644	GAL	-5.78	AZL	89.24	HCA	225.68	SMA	186.02	ECC	.22124	INC	.7594
RP	225.58	LAP	-.54	LOP	246.36	VP	21.522	GAP	-3.58	AZP	90.53	TAL	327.13	TAP	192.81	RCA	144.87	APO	227.17
RC	249.803	GL	6.42	GP	8.95	ZAL	136.55	ZAP	107.94	ETS	175.99	ZAE	143.56	ETE	164.66	ZAC	95.28	ETC	256.68

V1 29.866 V2 24.381 CLP 108.17

PLANETOCENTRIC CONIC

C3	14.834	VHL	3.852	DLA	14.66	RAL	161.76	RAD	6567.6	VEL	11.671	PTH	2.05	VHP	2.983	DPA	11.68	RAP	179.37

ECC 1.2441

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 39 40	2619.10	-26.89	68.76	22.96	99.23	19 23 19	2019.1	-25.34	60.44
90.00	10 33 23	4315.73	3.77	178.44	17.83	61.91	11 45 19	3715.7	-.02	171.81
100.00	20 8 53	2331.36	-28.06	47.36	22.73	100.74	20 47 45	1731.4	-26.29	39.01
100.00	11 46 51	4078.70	4.81	160.44	17.25	60.46	12 54 49	3478.7	.84	153.90
110.00	21 34 45	2062.71	-31.14	26.16	21.92	104.87	22 9 8	1462.7	-28.78	17.75
110.00	12 37 29	3920.11	7.50	146.76	15.59	56.55	13 42 49	3320.1	3.05	140.50

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1977	TRA	-.0828	TC3	-1.0095	BAU	.3659	SGT	841.1	SGR	1894.6	SG3	3450.0	ST	297.5	SR	950.2	SS	3342.6
RDE	.5920	RRA	-.7692	RC3	1.5441	FAU	.54582	RRT	-.3233	RRF	-.9645	RTF	.3727	CRT	.9614	CRS	.9253	CST	.7922
FDE	-6.2357	FRA	19.5780	FC	-31.8543	BSP	6278	SGB	2072.9	R23	.0042	R13	-.9666	LSA	3465.9	MSA	388.9	SSA	26.6
BDE	.6242	BRA	.7737	BC3	1.8448	FSP	11777	SG1	1918.0	SG2	786.2	THA	99.84	EL1	992.6	EL2	78.4	ALF	73.14

LAUNCH DATE OCT 14 1964 FLIGHT TIME 312.00 ARRIVAL DATE AUG 22 1965

HELIOCENTRIC CONIC DISTANCE 718.982 EARTH TO MARS
RL 149.19 LAL .00 LOL 20.68 VL 32.640 GAL -5.79 AZL 89.21 HCA 226.75 SMA 185.95 ECC .22099 INC .7909 V1 29.866
RP 225.19 LAP -.58 LOP 247.43 VP 21.563 GAP -3.84 AZP 90.54 TAL 327.07 TAP 193.81 RCA 144.85 APO 227.04 V2 24.423
RC 251.477 GL 6.68 GP 8.87 ZAL 136.59 ZAP 106.01 ETS 176.37 ZAE 141.50 ETE 165.79 ZAC 95.02 ETC 256.77 CLP 106.20
PLANETOCENTRIC CONIC
C3 14.837 VHL 3.852 DLA 14.88 RAL 161.94 RAD 6567.6 VEL 11.671 PTH 2.05 VHP 2.960 DPA 11.99 RAP 178.52 ECC 1.2442

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 38 24	2626.87	-26.97	69.31	23.23	98.96	19 22 11	2026.9	-25.46	60.97
90.00	10 36 4	4308.05	3.52	178.01	18.04	61.88	11 47 52	3708.1	-.27	171.38
100.00	20 7 47	2338.62	-28.15	47.88	23.00	100.48	20 46 46	1738.6	-26.42	39.51
100.00	11 49 23	4071.53	4.57	160.05	17.46	60.43	12 57 14	3471.5	.60	153.51
110.00	21 33 59	2068.93	-31.25	26.61	22.21	104.62	22 8 28	1468.9	-28.92	18.18
110.00	12 39 40	3913.99	7.27	146.43	15.79	56.51	13 44 54	3314.0	2.82	140.18

DIFFERENTIAL CORRECTIONS
TDE .1451 TRA .0954 TC3-1.2777 BAU .3988
RDE .5968 RRA -.7673 RC3 1.5522 FAU .55511
FDE-6.3241 FRA19.8583 FC-32.3899 BSP 6422
BDE .6142 BRA .7732 BC3 2.0105 FSP 11945

MID-COURSE EXECUTION ACCURACY
SGT 1018.4 SGR 1900.7 SG3 3504.5
RRT -.5987 RRF -.9635 RTF .6541
SGB 2156.3 R23 .0444 R13 -.9673
SG1 2014.2 SG2 769.7 THA 110.99

ORBIT DETERMINATION ACCURACY
ST 222.3 SR 956.4 SS 3364.4
CRT .8229 CRS .9238 CST .5487
LSA 3482.1 MSA 397.4 SSA 26.1
EL1 974.1 EL2 124.0 ALF 78.99

LAUNCH DATE OCT 14 1964 FLIGHT TIME 314.00 ARRIVAL DATE AUG 24 1965

HELIOCENTRIC CONIC DISTANCE 722.934 EARTH TO MARS
RL 149.19 LAL .00 LOL 20.68 VL 32.636 GAL -5.79 AZL 89.18 HCA 227.82 SMA 185.88 ECC .22078 INC .8217 V1 29.866
RP 224.80 LAP -.61 LOP 248.50 VP 21.604 GAP -4.10 AZP 90.55 TAL 326.99 TAP 194.81 RCA 144.84 APO 226.91 V2 24.465
RC 253.132 GL 6.94 GP 8.80 ZAL 136.65 ZAP 104.05 ETS 176.74 ZAE 139.41 ETE 166.84 ZAC 94.75 ETC 256.86 CLP 104.22
PLANETOCENTRIC CONIC
C3 14.851 VHL 3.854 DLA 15.08 RAL 162.13 RAD 6567.6 VEL 11.672 PTH 2.05 VHP 2.939 DPA 12.30 RAP 177.64 ECC 1.2444

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 37 19	2634.27	-27.05	69.84	23.52	98.71	19 21 13	2034.3	-25.57	61.49
90.00	10 38 40	4301.06	3.30	177.62	18.27	61.86	11 50 21	3701.1	-.49	170.99
100.00	20 6 51	2345.54	-28.24	48.38	23.29	100.23	20 45 56	1745.5	-26.54	39.99
100.00	11 51 50	4065.02	4.35	159.69	17.69	60.40	12 59 35	3465.0	.38	153.15
110.00	21 33 21	2074.87	-31.35	27.04	22.51	104.39	22 7 56	1474.9	-29.05	18.59
110.00	12 41 49	3908.46	7.06	146.14	16.01	56.47	13 46 57	3308.5	2.60	139.89

DIFFERENTIAL CORRECTIONS
TDE .0911 TRA .2780 TC3-1.5562 BAU .4369
RDE .6008 RRA -.7649 RC3 1.5557 FAU .56274
FDE-6.3919 FRA20.1173 FC-32.8046 BSP 6805
BDE .6076 BRA .8139 BC3 2.2005 FSP 12114

MID-COURSE EXECUTION ACCURACY
SGT 1280.7 SGR 1903.4 SG3 3551.0
RRT -.7472 RRF -.9625 RTF .8036
SGB 2294.1 R23 .0684 R13 -.9684
SG1 2169.2 SG2 746.9 THA 120.72

ORBIT DETERMINATION ACCURACY
ST 190.0 SR 961.2 SS 3380.9
CRT .4066 CRS .9220 CST .0262
LSA 3496.4 MSA 406.0 SSA 25.7
EL1 964.4 EL2 173.0 ALF 85.25

LAUNCH DATE OCT 14 1964 FLIGHT TIME 316.00 ARRIVAL DATE AUG 26 1965

HELIOCENTRIC CONIC DISTANCE 726.894 EARTH TO MARS
RL 149.19 LAL .00 LOL 20.68 VL 32.632 GAL -5.81 AZL 89.15 HCA 228.89 SMA 185.81 ECC .22062 INC .8512 V1 29.866
RP 224.41 LAP -.64 LOP 249.58 VP 21.646 GAP -4.36 AZP 90.56 TAL 326.91 TAP 195.80 RCA 144.82 APO 226.81 V2 24.506
RC 254.766 GL 7.19 GP 8.71 ZAL 136.72 ZAP 102.07 ETS 177.11 ZAE 137.29 ETE 167.81 ZAC 94.48 ETC 256.95 CLP 102.21
PLANETOCENTRIC CONIC
C3 14.875 VHL 3.857 DLA 15.27 RAL 162.33 RAD 6567.6 VEL 11.673 PTH 2.05 VHP 2.922 DPA 12.61 RAP 176.75 ECC 1.2448

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 36 24	2641.31	-27.12	70.34	23.82	98.46	19 20 25	2041.3	-25.67	61.98
90.00	10 41 11	4294.75	3.09	177.27	18.52	61.84	11 52 46	3694.7	-.70	170.64
100.00	20 6 4	2352.13	-28.32	48.85	23.60	100.00	20 45 16	1752.1	-26.65	40.45
100.00	11 54 12	4059.16	4.15	159.36	17.93	60.37	13 1 51	3459.2	.18	152.83
110.00	21 32 52	2080.54	-31.44	27.46	22.83	104.16	22 7 33	1480.5	-29.18	18.99
110.00	12 43 53	3903.51	6.88	145.87	16.25	56.43	13 48 57	3303.5	2.42	139.63

DIFFERENTIAL CORRECTIONS
TDE .0355 TRA .4645 TC3-1.8415 BAU .4795
RDE .6048 RRA -.7612 RC3 1.5563 FAU .56934
FDE-6.4556 FRA20.3343 FC-33.1355 BSP 7384
BDE .6058 BRA .8918 BC3 2.4111 FSP 12242

MID-COURSE EXECUTION ACCURACY
SGT 1591.3 SGR 1903.3 SG3 3589.3
RRT -.8243 RRF -.9613 RTF .8804
SGB 2480.9 R23 .0778 R13 -.9707
SG1 2373.3 SG2 722.6 THA 128.84

ORBIT DETERMINATION ACCURACY
ST 225.1 SR 965.5 SS 3395.1
CRT -.1363 CRS .9203 CST -.5099
LSA 3512.4 MSA 414.1 SSA 25.3
EL1 966.0 EL2 222.8 ALF 91.92

LAUNCH DATE OCT 14 1964 FLIGHT TIME 318.00 ARRIVAL DATE AUG 28 1965

HELIOCENTRIC CONIC DISTANCE 730.860 EARTH TO MARS
RL 149.19 LAL .00 LOL 20.68 VL 32.629 GAL -5.82 AZL 89.12 HCA 229.97 SMA 185.76 ECC .22051 INC .8802 V1 29.866
RP 224.02 LAP -.67 LOP 250.65 VP 21.689 GAP -4.61 AZP 90.57 TAL 326.81 TAP 196.78 RCA 144.80 APO 226.72 V2 24.548
RC 256.380 GL 7.42 GP 8.63 ZAL 136.81 ZAP 100.08 ETS 177.47 ZAE 135.15 ETE 168.71 ZAC 94.20 ETC 257.05 CLP 100.19
PLANETOCENTRIC CONIC
C3 14.910 VHL 3.861 DLA 15.44 RAL 162.54 RAD 6567.6 VEL 11.675 PTH 2.05 VHP 2.909 DPA 12.92 RAP 175.85 ECC 1.2454

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 35 39	2647.98	-27.19	70.82	24.14	98.23	19 19 47	2048.0	-25.77	62.44
90.00	10 43 36	4289.12	2.91	176.95	18.79	61.82	11 55 5	3689.1	-.88	170.32
100.00	20 5 27	2358.38	-28.39	49.31	23.92	99.77	20 44 46	1758.4	-26.75	40.89
100.00	11 56 29	4053.95	3.98	159.08	18.20	60.35	13 4 3	3453.9	.00	152.55
110.00	21 32 32	2085.95	-31.53	27.86	23.16	103.94	22 7 18	1485.9	-29.30	19.36
110.00	12 45 54	3899.14	6.71	145.64	16.51	56.40	13 50 54	3299.1	2.25	139.40

DIFFERENTIAL CORRECTIONS
TDE -.0211 TRA .6551 TC3-2.1325 BAU .5258
RDE .6084 RRA -.7565 RC3 1.5530 FAU .57447
FDE-6.5064 FRA20.5150 FC-33.3562 BSP 8141
BDE .6088 BRA 1.0007 BC3 2.6380 FSP 12360

MID-COURSE EXECUTION ACCURACY
SGT 1931.3 SGR 1899.9 SG3 3618.6
RRT -.8660 RRF -.9600 RTF .9219
SGB 2709.2 R23 .0782 R13 -.9738
SG1 2616.9 SG2 701.1 THA 135.54

ORBIT DETERMINATION ACCURACY
ST 308.1 SR 968.7 SS 3405.3
CRT -.4546 CRS .9184 CST -.7680
LSA 3528.6 MSA 422.1 SSA 24.9
EL1 979.7 EL2 271.4 ALF 98.92

LAUNCH DATE OCT 14 1964 FLIGHT TIME 320.00 ARRIVAL DATE AUG 30 1965

HELIOCENTRIC CONIC DISTANCE 734.834 EARTH TO MARS

RL 149.19 LAL .00 LOL 20.68 VL 32.626 GAL -5.84 AZL 89.09 HCA 231.05 SMA 185.70 ECC .22044 INC .9083 V1 29.866
RP 223.63 LAP -.71 LOP 251.74 VP 21.732 GAP -4.86 AZP 90.57 TAL 326.70 TAP 197.75 RCA 144.77 APO 226.64 V2 24.590
RC 257.974 GL 7.65 GP 8.54 ZAL 136.92 ZAP 98.07 ETS 177.82 ZAE 132.98 ETE 169.55 ZAC 93.92 ETC 257.16 CLP 98.16

PLANETOCENTRIC CONIC

C3 14.955 VHL 3.867 DLA 15.59 RAL 162.76 RAD 6567.6 VEL 11.676 PTH 2.05 VHP 2.899 DPA 13.23 RAP 174.94 ECC 1.2461

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 35 5	2654.28	-27.25	71.27	24.47	98.01	19 19 20	2054.3	-25.86	62.88
90.00	10 45 56	4284.16	2.75	176.68	19.08	61.81	11 57 20	3684.2	-1.04	170.05
100.00	20 5 1	2364.30	-28.46	49.73	24.26	99.55	20 44 25	1764.3	-26.85	41.30
100.00	11 58 42	4049.38	3.82	158.82	18.48	60.33	13 6 11	3449.4	-.15	152.30
110.00	21 32 20	2091.09	-31.62	28.23	23.51	103.73	22 7 11	1491.1	-29.41	19.72
110.00	12 47 52	3895.36	6.57	145.44	16.78	56.38	13 52 48	3295.4	2.10	139.20

DIFFERENTIAL CORRECTIONS
TDE -.0787 TRA .8497 TC3-2.4266 BAU .5753
RDE .6118 RRA -.7505 RC3 1.5463 FAU .57828
FDE-6.5468 FRA20.6524 FC-33.4764 BSP 9037
BDE .6169 BRA 1.1337 BC3 2.8774 FSP 12442

MID-COURSE EXECUTION ACCURACY
SGT 2290.1 SGR 1893.3 SG3 3638.7
RRT -.8900 RRF -.9585 RTF .9461
SGB 2971.4 R23 .0735 R13 -.9772
SG1 2891.7 SG2 683.6 THA 141.07

ORBIT DETERMINATION ACCURACY
ST 412.9 SR 971.1 SS 3412.0
CRT -.6072 CRS .9165 CST -.8732
LSA 3545.3 MSA 429.9 SSA 24.5
EL1 1006.6 EL2 316.5 ALF 106.11

LAUNCH DATE OCT 14 1964 FLIGHT TIME 322.00 ARRIVAL DATE SEP 1 1965

HELIOCENTRIC CONIC DISTANCE 738.816 EARTH TO MARS

RL 149.19 LAL .00 LOL 20.68 VL 32.623 GAL -5.86 AZL 89.06 HCA 232.14 SMA 185.66 ECC .22041 INC .9356 V1 29.866
RP 223.24 LAP -.74 LOP 252.82 VP 21.775 GAP -5.11 AZP 90.57 TAL 326.58 TAP 198.72 RCA 144.74 APO 226.58 V2 24.632
RC 259.547 GL 7.86 GP 8.44 ZAL 137.03 ZAP 96.06 ETS 178.17 ZAE 130.80 ETE 170.34 ZAC 93.63 ETC 257.27 CLP 96.13

PLANETOCENTRIC CONIC

C3 15.011 VHL 3.874 DLA 15.73 RAL 162.99 RAD 6567.6 VEL 11.679 PTH 2.05 VHP 2.893 DPA 13.54 RAP 174.02 ECC 1.2470

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 34 42	2660.23	-27.31	71.70	24.82	97.81	19 19 2	2060.2	-25.94	63.30
90.00	10 48 11	4279.89	2.62	176.44	19.38	61.79	11 59 31	3679.9	-1.18	169.81
100.00	20 4 44	2369.89	-28.52	50.14	24.62	99.35	20 44 14	1769.9	-26.93	41.69
100.00	12 0 50	4045.45	3.69	158.61	18.78	60.32	13 8 15	3445.5	-.29	152.08
110.00	21 32 17	2095.96	-31.69	28.59	23.88	103.53	22 7 13	1496.0	-29.51	20.06
110.00	12 49 46	3892.14	6.45	145.27	17.08	56.36	13 54 39	3292.1	1.98	139.03

DIFFERENTIAL CORRECTIONS
TDE -.1372 TRA 1.0474 TC3-2.7231 BAU .6274
RDE .6152 RRA -.7431 RC3 1.5359 FAU .58067
FDE-6.5806 FRA20.7427 FC-33.4899 BSP 10031
BDE .6303 BRA 1.2842 BC3 3.1264 FSP 12488

MID-COURSE EXECUTION ACCURACY
SGT 2661.4 SGR 1883.5 SG3 3649.1
RRT -.9043 RRF -.9569 RTF .9610
SGB 3260.5 R23 .0672 R13 -.9805
SG1 3190.7 SG2 670.6 THA 145.65

ORBIT DETERMINATION ACCURACY
ST 527.5 SR 972.8 SS 3415.8
CRT -.6865 CRS .9145 CST -.9212
LSA 3563.8 MSA 437.4 SSA 24.1
EL1 1047.7 EL2 356.1 ALF 113.26

LAUNCH DATE OCT 14 1964 FLIGHT TIME 324.00 ARRIVAL DATE SEP 3 1965

HELIOCENTRIC CONIC DISTANCE 742.804 EARTH TO MARS

RL 149.19 LAL .00 LOL 20.68 VL 32.621 GAL -5.88 AZL 89.04 HCA 233.23 SMA 185.62 ECC .22043 INC .9623 V1 29.866
RP 222.85 LAP -.77 LOP 253.91 VP 21.819 GAP -5.35 AZP 90.58 TAL 326.44 TAP 199.67 RCA 144.70 APO 226.53 V2 24.674
RC 261.100 GL 8.07 GP 8.34 ZAL 137.17 ZAP 94.05 ETS 178.50 ZAE 128.62 ETE 171.07 ZAC 93.34 ETC 257.38 CLP 94.09

PLANETOCENTRIC CONIC

C3 15.077 VHL 3.883 DLA 15.86 RAL 163.24 RAD 6567.6 VEL 11.682 PTH 2.05 VHP 2.891 DPA 13.83 RAP 173.10 ECC 1.2481

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 34 29	2665.80	-27.36	72.10	25.19	97.61	19 18 55	2065.8	-26.02	63.69
90.00	10 50 20	4276.29	2.50	176.24	19.70	61.78	12 1 36	3676.3	-1.29	169.61
100.00	20 4 37	2375.15	-28.58	50.52	24.99	99.16	20 44 12	1775.2	-27.02	42.06
100.00	12 2 53	4042.17	3.58	158.43	19.11	60.30	13 10 16	3442.2	-.40	151.90
110.00	21 32 22	2100.58	-31.77	28.93	24.26	103.34	22 7 22	1500.6	-29.61	20.39
110.00	12 51 37	3889.50	6.35	145.13	17.39	56.34	13 56 27	3289.5	1.88	138.90

DIFFERENTIAL CORRECTIONS
TDE -.1969 TRA 1.2481 TC3-3.0204 BAU .6818
RDE .6182 RRA -.7346 RC3 1.5223 FAU .58166
FDE-6.6034 FRA20.7923 FC-33.3989 BSP 11109
BDE .6488 BRA 1.4483 BC3 3.3823 FSP 12511

MID-COURSE EXECUTION ACCURACY
SGT 3041.7 SGR 1870.8 SG3 3650.3
RRT -.9131 RRF -.9552 RTF .9706
SGB 3570.9 R23 .0608 R13 -.9834
SG1 3509.2 SG2 661.3 THA 149.48

ORBIT DETERMINATION ACCURACY
ST 647.5 SR 973.6 SS 3416.3
CRT -.7324 CRS .9125 CST -.9463
LSA 3583.3 MSA 444.7 SSA 23.7
EL1 1102.5 EL2 389.3 ALF 120.11

LAUNCH DATE OCT 14 1964 FLIGHT TIME 326.00 ARRIVAL DATE SEP 5 1965

HELIOCENTRIC CONIC DISTANCE 746.799 EARTH TO MARS

RL 149.19 LAL .00 LOL 20.68 VL 32.619 GAL -5.90 AZL 89.01 HCA 234.32 SMA 185.58 ECC .22049 INC .9882 V1 29.866
RP 222.47 LAP -.80 LOP 255.00 VP 21.863 GAP -5.59 AZP 90.58 TAL 326.29 TAP 200.62 RCA 144.66 APO 226.50 V2 24.716
RC 262.633 GL 8.27 GP 8.23 ZAL 137.32 ZAP 92.04 ETS 178.83 ZAE 126.42 ETE 171.76 ZAC 93.05 ETC 257.49 CLP 92.06

PLANETOCENTRIC CONIC

C3 15.154 VHL 3.893 DLA 15.97 RAL 163.49 RAD 6567.6 VEL 11.685 PTH 2.06 VHP 2.892 DPA 14.12 RAP 172.18 ECC 1.2494

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 34 27	2671.02	-27.40	72.47	25.58	97.43	19 18 58	2071.0	-26.09	64.05
90.00	10 52 24	4273.36	2.41	176.07	20.05	61.78	12 3 37	3673.4	-1.39	169.45
100.00	20 4 40	2380.08	-28.63	50.87	25.38	98.98	20 44 20	1780.1	-27.09	42.41
100.00	12 4 52	4039.53	3.49	158.28	19.44	60.29	13 12 12	3439.5	-.49	151.76
110.00	21 32 36	2104.94	-31.84	29.25	24.66	103.16	22 7 41	1504.9	-29.70	20.70
110.00	12 53 25	3887.44	6.27	145.02	17.72	56.33	13 58 13	3287.4	1.80	138.79

DIFFERENTIAL CORRECTIONS
TDE -.2574 TRA 1.4515 TC3-3.3154 BAU .7377
RDE .6211 RRA -.7248 RC3 1.5051 FAU .58118
FDE-6.6160 FRA20.7940 FC-33.2011 BSP 12248
BDE .6723 BRA 1.6224 BC3 3.6411 FSP 12496

MID-COURSE EXECUTION ACCURACY
SGT 3427.0 SGR 1854.8 SG3 3641.5
RRT -.9183 RRF -.9532 RTF .9772
SGB 3896.8 R23 .0548 R13 -.9858
SG1 3841.3 SG2 655.2 THA 152.71

ORBIT DETERMINATION ACCURACY
ST 770.7 SR 973.5 SS 3413.2
CRT -.7610 CRS .9104 CST -.9608
LSA 3603.7 MSA 451.8 SSA 23.2
EL1 1169.8 EL2 416.1 ALF 126.39

LAUNCH DATE OCT 14 1964 FLIGHT TIME 328.00 ARRIVAL DATE SEP 7 1965

HELIOCENTRIC CONIC DISTANCE 750.800 EARTH TO MARS

RL 149.19 LAL .00 LOL 20.68 VL 32.617 GAL -5.93 AZL 88.99 HCA 235.42 SMA 185.55 ECC .22059 INC 1.0136 V1 29.866
RP 222.08 LAP -.83 LOP 256.10 VP 21.907 GAP -5.82 AZP 90.58 TAL 326.13 TAP 201.55 RCA 144.62 APO 226.48 V2 24.758
RC 264.145 GL 8.45 GP 8.12 ZAL 137.48 ZAP 90.03 ETS 179.15 ZAE 124.23 ETE 172.40 ZAC 92.76 ETC 257.61 CLP 90.03

PLANETOCENTRIC CONIC

C3 15.243 VHL 3.904 DLA 16.07 RAL 163.76 RAD 6567.6 VEL 11.689 PTH 2.06 VHP 2.896 DPA 14.40 RAP 171.27 ECC 1.2509

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 34 35	2675.88	-27.45	72.82	25.99	97.26	19 19 11	2075.9	-26.16	64.39
90.00	10 54 23	4271.10	2.33	175.95	20.41	61.77	12 5 34	3671.1	-1.46	169.32
100.00	20 4 52	2384.69	-28.68	51.21	25.79	98.81	20 44 37	1784.7	-27.17	42.73
100.00	12 6 46	4037.52	3.42	158.17	19.80	60.29	13 14 4	3437.5	-.56	151.65
110.00	21 32 58	2109.05	-31.90	29.56	25.07	102.99	22 8 7	1509.0	-29.78	20.99
110.00	12 55 9	3885.93	6.21	144.95	18.07	56.32	13 59 55	3285.9	1.74	138.71

DIFFERENTIAL CORRECTIONS
TDE -.3187 TRA 1.6573 TC3-3.6085 BAU .7952
RDE .6238 RRA -.7138 RC3 1.4848 FAU .57926
FDE-6.6202 FRA20.7529 FC-32.9001 BSP 13431
BDE .7005 BRA 1.8045 BC3 3.9021 FSP 12450

MID-COURSE EXECUTION ACCURACY
SGT 3816.3 SGR 1836.0 SG3 3623.5
RRT -.9212 RRF -.9511 RTF .9819
SGB 4235.0 R23 .0499 R13 -.9879
SG1 4184.5 SG2 651.7 THA 155.46

ORBIT DETERMINATION ACCURACY
ST 895.8 SR 972.8 SS 3407.3
CRT -.7797 CRS .9083 CST -.9698
LSA 3626.0 MSA 458.8 SSA 22.8
EL1 1248.0 EL2 437.2 ALF 131.98

LAUNCH DATE OCT 14 1964 FLIGHT TIME 330.00 ARRIVAL DATE SEP 9 1965

HELIOCENTRIC CONIC DISTANCE 754.808 EARTH TO MARS

RL 149.19 LAL .00 LOL 20.68 VL 32.615 GAL -5.96 AZL 88.96 HCA 236.52 SMA 185.52 ECC .22074 INC 1.0384 V1 29.866
RP 221.70 LAP -.87 LOP 257.20 VP 21.952 GAP -6.05 AZP 90.57 TAL 325.96 TAP 202.48 RCA 144.57 APO 226.47 V2 24.799
RC 265.639 GL 8.63 GP 8.01 ZAL 137.66 ZAP 88.03 ETS 179.46 ZAE 122.04 ETE 173.01 ZAC 92.46 ETC 257.72 CLP 88.02

PLANETOCENTRIC CONIC

C3 15.342 VHL 3.917 DLA 16.15 RAL 164.03 RAD 6567.6 VEL 11.693 PTH 2.06 VHP 2.905 DPA 14.67 RAP 170.37 ECC 1.2525

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 34 54	2680.39	-27.48	73.15	26.41	97.10	19 19 34	2080.4	-26.21	64.71
90.00	10 56 16	4269.52	2.28	175.86	20.79	61.77	12 7 25	3669.5	-1.51	169.23
100.00	20 5 15	2388.98	-28.72	51.52	26.21	98.65	20 45 4	1789.0	-27.23	43.03
100.00	12 8 35	4036.16	3.38	158.10	20.18	60.28	13 15 52	3436.2	-.60	151.57
110.00	21 33 29	2112.90	-31.96	29.84	25.50	102.83	22 8 42	1512.9	-29.86	21.26
110.00	12 56 50	3885.00	6.18	144.90	18.44	56.31	14 1 35	3285.0	1.71	138.66

DIFFERENTIAL CORRECTIONS
TDE -.3812 TRA 1.8648 TC3-3.8973 BAU .8537
RDE .6265 RRA -.7016 RC3 1.4618 FAU .57607
FDE-6.6170 FRA20.6647 FC-32.5072 BSP 14642
BDE .7333 BRA 1.9924 BC3 4.1624 FSP 12366

MID-COURSE EXECUTION ACCURACY
SGT 4206.8 SGR 1814.6 SG3 3596.3
RRT -.9224 RRF -.9487 RTF .9852
SGB 4581.5 R23 .0457 R13 -.9896
SG1 4535.1 SG2 650.0 THA 157.82

ORBIT DETERMINATION ACCURACY
ST 1022.3 SR 971.5 SS 3398.6
CRT -.7926 CRS .9062 CST -.9758
LSA 3650.0 MSA 465.3 SSA 22.3
EL1 1335.4 EL2 453.4 ALF 136.84

LAUNCH DATE OCT 14 1964 FLIGHT TIME 332.00 ARRIVAL DATE SEP 11 1965

HELIOCENTRIC CONIC DISTANCE 758.823 EARTH TO MARS

RL 149.19 LAL .00 LOL 20.68 VL 32.614 GAL -6.00 AZL 88.94 HCA 237.63 SMA 185.50 ECC .22092 INC 1.0627 V1 29.866
RP 221.32 LAP -.90 LOP 258.31 VP 21.997 GAP -6.28 AZP 90.57 TAL 325.78 TAP 203.40 RCA 144.52 APO 226.48 V2 24.841
RC 267.114 GL 8.80 GP 7.89 ZAL 137.86 ZAP 86.05 ETS 179.75 ZAE 119.86 ETE 173.58 ZAC 92.17 ETC 257.84 CLP 86.02

PLANETOCENTRIC CONIC

C3 15.453 VHL 3.931 DLA 16.22 RAL 164.32 RAD 6567.6 VEL 11.698 PTH 2.06 VHP 2.916 DPA 14.93 RAP 169.48 ECC 1.2543

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 35 23	2684.53	-27.52	73.45	26.84	96.96	19 20 7	2084.5	-26.27	65.00
90.00	10 58 4	4268.61	2.25	175.81	21.18	61.77	12 9 13	3668.6	-1.54	169.18
100.00	20 5 48	2392.95	-28.77	51.81	26.65	98.50	20 45 41	1793.0	-27.29	43.31
100.00	12 10 20	4035.42	3.35	158.06	20.57	60.28	13 17 35	3435.4	-.63	151.53
110.00	21 34 9	2116.51	-32.01	30.11	25.95	102.68	22 9 26	1516.5	-29.94	21.51
110.00	12 58 28	3884.63	6.16	144.88	18.83	56.31	14 3 13	3284.6	1.69	138.64

DIFFERENTIAL CORRECTIONS
TDE -.4444 TRA 2.0737 TC3-4.1796 BAU .9130
RDE .6289 RRA -.6884 RC3 1.4355 FAU .57130
FDE-6.6019 FRA20.5364 FC-32.0071 BSP 15876
BDE .7700 BRA 2.1850 BC3 4.4192 FSP 12262

MID-COURSE EXECUTION ACCURACY
SGT 4596.3 SGR 1790.5 SG3 3559.9
RRT -.9225 RRF -.9461 RTF .9877
SGB 4932.7 R23 .0424 R13 -.9909
SG1 4889.7 SG2 649.8 THA 159.86

ORBIT DETERMINATION ACCURACY
ST 1149.4 SR 969.3 SS 3386.2
CRT -.8016 CRS .9041 CST -.9800
LSA 3674.8 MSA 471.7 SSA 21.8
EL1 1429.5 EL2 465.9 ALF 141.03

LAUNCH DATE OCT 14 1964 FLIGHT TIME 334.00 ARRIVAL DATE SEP 13 1965

HELIOCENTRIC CONIC DISTANCE 762.841 EARTH TO MARS

RL 149.19 LAL .00 LOL 20.68 VL 32.613 GAL -6.04 AZL 88.91 HCA 238.73 SMA 185.48 ECC .22116 INC 1.0864 V1 29.866
RP 220.94 LAP -.93 LOP 259.41 VP 22.042 GAP -6.51 AZP 90.56 TAL 325.58 TAP 204.31 RCA 144.46 APO 226.50 V2 24.883
RC 268.570 GL 8.96 GP 7.77 ZAL 138.07 ZAP 84.09 ETS 180.04 ZAE 117.69 ETE 174.11 ZAC 91.88 ETC 257.95 CLP 84.04

PLANETOCENTRIC CONIC

C3 15.575 VHL 3.947 DLA 16.28 RAL 164.62 RAD 6567.6 VEL 11.703 PTH 2.06 VHP 2.931 DPA 15.17 RAP 168.62 ECC 1.2563

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 36 3	2688.32	-27.55	73.72	27.30	96.82	19 20 52	2088.3	-26.32	65.27
90.00	10 59 47	4268.39	2.25	175.80	21.60	61.76	12 10 55	3668.4	-1.55	169.17
100.00	20 6 31	2396.60	-28.80	52.07	27.11	98.37	20 46 28	1796.6	-27.34	43.57
100.00	12 12 0	4035.35	3.35	158.05	20.99	60.28	13 19 15	3435.3	-.63	151.53
110.00	21 34 58	2119.87	-32.06	30.36	26.41	102.54	22 10 17	1519.9	-30.00	21.75
110.00	13 0 3	3884.83	6.17	144.89	19.24	56.31	14 4 48	3284.8	1.70	138.65

DIFFERENTIAL CORRECTIONS
TDE -.5049 TRA 2.2896 TC3-4.4461 BAU .9706
RDE .6283 RRA -.6769 RC3 1.3994 FAU .56196
FDE-6.5073 FRA20.4353 FC-31.2359 BSP 17238
BDE .8060 BRA 2.3876 BC3 4.6611 FSP 12265

MID-COURSE EXECUTION ACCURACY
SGT 4984.4 SGR 1760.8 SG3 3512.0
RRT -.9218 RRF -.9430 RTF .9894
SGB 5286.2 R23 .0392 R13 -.9919
SG1 5246.3 SG2 648.5 THA 161.67

ORBIT DETERMINATION ACCURACY
ST 1275.7 SR 963.1 SS 3357.7
CRT -.8067 CRS .8999 CST -.9835
LSA 3687.8 MSA 478.2 SSA 21.6
EL1 1526.0 EL2 475.8 ALF 144.72

LAUNCH DATE OCT 14 1964 FLIGHT TIME 336.00 ARRIVAL DATE SEP 15 1965

HELIOCENTRIC CONIC DISTANCE 766.869 EARTH TO MARS

RL	149.19	LAL	.00	LOL	20.68	VL	32.612	GAL	-6.08	AZL	88.89	HCA	239.85	SMA	185.47	ECC	.22143	INC	1.1096
RP	220.56	LAP	-.96	LOP	260.53	VP	22.088	GAP	-6.73	AZP	90.56	TAL	325.37	TAP	205.21	RCA	144.40	APO	226.54
RC	270.009	GL	9.12	GP	7.64	ZAL	138.30	ZAP	82.15	ETS	180.32	ZAE	115.54	ETE	174.61	ZAC	91.60	ETC	258.07

V1	29.866	V2	24.924	CLP	82.08														

PLANETOCENTRIC CONIC

C3	15.709	VHL	3.963	DLA	16.32	RAL	164.93	RAD	6567.6	VEL	11.709	PTH	2.06	VHP	2.950	DPA	15.39	RAP	167.77
ECC	1.2585																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 36 53	2691.78	-27.58	73.97	27.78	96.70	19 21 45	2091.8	-26.36	65.51
90.00	11 1 24	4268.80	2.26	175.82	22.03	61.77	12 12 33	3668.8	-1.53	169.19
100.00	20 7 23	2399.95	-28.83	52.32	27.59	98.24	20 47 23	1799.9	-27.39	43.81
100.00	12 13 36	4035.86	3.37	158.08	21.42	60.28	13 20 52	3435.9	-.61	151.55
110.00	21 35 54	2123.01	-32.11	30.59	26.90	102.41	22 11 17	1523.0	-30.07	21.97
110.00	13 1 34	3885.57	6.20	144.93	19.66	56.32	14 6 20	3285.6	1.73	138.69

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.5713	TRA	2.4984	TC3	-4.7161	BAU	1.0316	SGT	5368.4	SGR	1734.2	SG3	3461.0	ST	1403.3	SR	961.6
RDE	.6319	RRA	-.6605	RC3	1.3723	FAU	.55645	RRT	-.9200	RRF	-.9400	RTF	.9910	CRT	-.8115	CRS	.8987
FDE	-6.5116	FRA	20.1929	FC	-30.6657	BSP	18428	SGB	5641.6	R23	.0375	R13	-.9929	LSA	3722.6	MSA	483.9
BDE	.8519	BRA	2.5842	BC3	4.9117	FSP	12025	SG1	5603.9	SG2	651.2	THA	163.22	EL1	1631.0	EL2	483.4

SS	3346.4	CST	-.9855	SSA	21.0
ALF	147.75				

LAUNCH DATE OCT 14 1964 FLIGHT TIME 338.00 ARRIVAL DATE SEP 17 1965

HELIOCENTRIC CONIC DISTANCE 770.903 EARTH TO MARS

RL	149.19	LAL	.00	LOL	20.68	VL	32.611	GAL	-6.12	AZL	88.87	HCA	240.96	SMA	185.46	ECC	.22175	INC	1.1325
RP	220.18	LAP	-.99	LOP	261.64	VP	22.133	GAP	-6.95	AZP	90.55	TAL	325.14	TAP	206.11	RCA	144.33	APO	226.59
RC	271.430	GL	9.26	GP	7.51	ZAL	138.54	ZAP	80.23	ETS	180.58	ZAE	113.41	ETE	175.08	ZAC	91.31	ETC	258.18

V1	29.866	V2	24.965	CLP	80.15														

PLANETOCENTRIC CONIC

C3	15.855	VHL	3.982	DLA	16.34	RAL	165.24	RAD	6567.6	VEL	11.715	PTH	2.06	VHP	2.972	DPA	15.60	RAP	166.95
ECC	1.2609																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 37 54	2694.90	-27.60	74.19	28.27	96.59	19 22 49	2094.9	-26.40	65.73
90.00	11 2 57	4269.88	2.29	175.88	22.48	61.77	12 14 6	3669.9	-1.50	169.25
100.00	20 8 25	2403.00	-28.86	52.54	28.08	98.13	20 48 28	1803.0	-27.44	44.02
100.00	12 15 7	4037.02	3.41	158.14	21.86	60.28	13 22 24	3437.0	-.57	151.62
110.00	21 36 58	2125.91	-32.15	30.81	27.39	102.29	22 12 24	1525.9	-30.12	22.18
110.00	13 3 2	3886.87	6.25	144.99	20.10	56.32	14 7 49	3286.9	1.78	138.76

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.6383	TRA	2.7086	TC3	-4.9752	BAU	1.0923	SGT	5748.0	SGR	1705.2	SG3	3401.9	ST	1530.5	SR	958.8
RDE	.6348	RRA	-.6440	RC3	1.3413	FAU	.54891	RRT	-.9175	RRF	-.9367	RTF	.9922	CRT	-.8149	CRS	.8970
FDE	-6.4910	FRA	19.9329	FC	-29.9716	BSP	19627	SGB	5995.6	R23	.0361	R13	-.9937	LSA	3756.0	MSA	489.3
BDE	.9002	BRA	2.7841	BC3	5.1529	FSP	11792	SG1	5959.8	SG2	653.9	THA	164.58	EL1	1738.5	EL2	489.3

SS	3329.5	CST	-.9871	SSA	20.4
ALF	150.38				

LAUNCH DATE OCT 14 1964 FLIGHT TIME 340.00 ARRIVAL DATE SEP 19 1965

HELIOCENTRIC CONIC DISTANCE 774.941 EARTH TO MARS

RL	149.19	LAL	.00	LOL	20.68	VL	32.611	GAL	-6.17	AZL	88.85	HCA	242.08	SMA	185.45	ECC	.22211	INC	1.1549
RP	219.81	LAP	-1.02	LOP	262.76	VP	22.179	GAP	-7.16	AZP	90.54	TAL	324.91	TAP	206.99	RCA	144.26	APO	226.65
RC	272.833	GL	9.40	GP	7.38	ZAL	138.79	ZAP	78.34	ETS	180.84	ZAE	111.30	ETE	175.52	ZAC	91.04	ETC	258.29

V1	29.866	V2	25.006	CLP	78.24														

PLANETOCENTRIC CONIC

C3	16.014	VHL	4.002	DLA	16.36	RAL	165.57	RAD	6567.6	VEL	11.722	PTH	2.07	VHP	2.997	DPA	15.79	RAP	166.16
ECC	1.2636																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 39 5	2697.69	-27.62	74.39	28.77	96.49	19 24 2	2097.7	-26.44	65.93
90.00	11 4 24	4271.62	2.35	175.98	22.95	61.77	12 15 35	3671.6	-1.44	169.35
100.00	20 9 36	2405.74	-28.89	52.74	28.59	98.03	20 49 42	1805.7	-27.48	44.22
100.00	12 16 33	4038.79	3.47	158.24	22.33	60.29	13 23 52	3438.8	-.51	151.72
110.00	21 38 11	2128.58	-32.19	31.01	27.91	102.18	22 13 40	1528.6	-30.18	22.37
110.00	13 4 27	3888.72	6.32	145.09	20.56	56.34	14 9 16	3288.7	1.85	138.86

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.7054	TRA	2.9204	TC3	-5.2213	BAU	1.1524	SGT	6121.6	SGR	1674.3	SG3	3335.8	ST	1656.7	SR	954.9
RDE	.6371	RRA	-.6272	RC3	1.3075	FAU	.53986	RRT	-.9145	RRF	-.9330	RTF	.9931	CRT	-.8168	CRS	.8950
FDE	-6.4522	FRA	19.6499	FC	-29.1849	BSP	20844	SGB	6346.4	R23	.0352	R13	-.9944	LSA	3788.7	MSA	494.7
BDE	.9505	BRA	2.9870	BC3	5.3825	FSP	11556	SG1	6312.3	SG2	656.9	THA	165.80	EL1	1847.3	EL2	494.1

SS	3308.0	CST	-.9883	SSA	19.9
ALF	152.67				

LAUNCH DATE OCT 14 1964 FLIGHT TIME 342.00 ARRIVAL DATE SEP 21 1965

HELIOCENTRIC CONIC DISTANCE 778.985 EARTH TO MARS

RL	149.19	LAL	.00	LOL	20.68	VL	32.611	GAL	-6.22	AZL	88.82	HCA	243.21	SMA	185.45	ECC	.22251	INC	1.1769
RP	219.44	LAP	-1.05	LOP	263.89	VP	22.225	GAP	-7.38	AZP	90.53	TAL	324.65	TAP	207.86	RCA	144.19	APO	226.72
RC	274.220	GL	9.53	GP	7.25	ZAL	139.06	ZAP	76.49	ETS	181.08	ZAE	109.22	ETE	175.94	ZAC	90.77	ETC	258.40

V1	29.866	V2	25.047	CLP	76.37

PLANETOCENTRIC CONIC

C3	16.186	VHL	4.023	DLA	16.36	RAL	165.92	RAD	6567.6	VEL	11.729	PTH	2.07	VHP	3.025	DPA	15.97	RAP	165.40
ECC	1.2664																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 40 26	2700.14	-27.64	74.57	29.30	96.41	19 25 26	2100.1	-26.47	66.10
90.00	11 5 46	4274.01	2.43	176.11	23.44	61.78	12 17 0	3674.0	-1.37	169.48
100.00	20 10 58	2408.20	-28.91	52.92	29.12	97.94	20 51 6	1808.2	-27.51	44.39
100.00	12 17 55	4041.19	3.55	158.37	22.81	60.30	13 25 16	3441.2	-.43	151.85
110.00	21 39 33	2131.03	-32.22	31.19	28.44	102.08	22 15 4	1531.0	-30.23	22.54
110.00	13 5 49	3891.12	6.41	145.22	21.04	56.35	14 10 40	3291.1	1.94	138.98

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.7738	TRA	3.1328	TC3	-5.4561	BAU	1.2123	SGT	6489.1	SGR	1642.0	SG3	3263.6	ST	1782.6	SR	950.6
RDE	.6393	RRA	-.6101	RC3	1.2718	FAU	.52960	RRT	-.9110	RRF	-.9291	RTF	.9938	CRT	-.8181	CRS	.8930
FDE	-6.4034	FRA	19.3423	FC	-28.3264	BSP	22049	SGB	6693.7	R23	.0346	R13	-.9949	LSA	3822.9	MSA	499.6
BDE	1.0037	BRA	3.1917	BC3	5.6023	FSP	11312	SG1	6661.1	SG2	659.8	THA	166.89	EL1	1957.9	EL2	497.7

SS	3283.8	CST	-.9893	SSA	19.4
ALF	154.68				

LAUNCH DATE OCT 14 1964 FLIGHT TIME 344.00 ARRIVAL DATE SEP 23 1965

HELIOCENTRIC CONIC DISTANCE 783.035 EARTH TO MARS

RL 149.19 LAL .00 LOL 20.68 VL 32.611 GAL -6.27 AZL 88.80 HCA 244.33 SMA 185.46 ECC .22296 INC 1.1985 V1 29.866
RP 219.07 LAP -1.08 LOP 265.01 VP 22.271 GAP -7.59 AZP 90.52 TAL 324.39 TAP 208.72 RCA 144.11 APO 226.81 V2 25.088
RC 275.589 GL 9.65 GP 7.11 ZAL 139.35 ZAP 74.66 ETS 181.31 ZAE 107.17 ETE 176.33 ZAC 90.50 ETC 258.50 CLP 74.54

PLANETOCENTRIC CONIC

C3 16.371 VHL 4.046 DLA 16.35 RAL 166.27 RAD 6567.7 VEL 11.737 PTH 2.07 VHP 3.057 DPA 16.13 RAP 164.67 ECC 1.2694

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 41 57	2702.28	-27.66	74.73	29.85	96.33	19 26 59	2102.3	-26.49	66.25
90.00	11 7 3	4277.06	2.52	176.28	23.94	61.79	12 18 20	3677.1	-1.27	169.65
100.00	20 12 28	2410.36	-28.93	53.07	29.66	97.86	20 52 39	1810.4	-27.54	44.55
100.00	12 19 13	4044.21	3.65	158.54	23.32	60.31	13 26 37	3444.2	-.33	152.01
110.00	21 41 2	2133.26	-32.26	31.35	28.99	101.98	22 16 35	1533.3	-30.27	22.70
110.00	13 7 8	3894.08	6.52	145.38	21.54	56.37	14 12 2	3294.1	2.06	139.13

DIFFERENTIAL CORRECTIONS
TDE -.8431 TRA 3.3450 TC3-5.6782 BAU 1.2718
RDE .6413 RRA -.5927 RC3 1.2350 FAU .51845
FDE-6.3449 FRA19.0097 FC-27.4167 BSP 23234
BDE 1.0593 BRA 3.3971 BC3 5.8109 FSP 11048

MID-COURSE EXECUTION ACCURACY
SGT 6848.8 SGR 1608.9 SG3 3186.2
RRT -.9070 RRF -.9248 RTF .9944
SGB 7035.2 R23 .0341 R13 -.9953
SG1 7004.0 SG2 662.7 THA 167.86

ORBIT DETERMINATION ACCURACY
ST 1907.2 SR 945.8 SS 3256.5
CRT -.8188 CRS .8909 CST -.9901
LSA 3857.8 MSA 504.1 SSA 19.0
EL1 2069.1 EL2 500.5 ALF 156.44

LAUNCH DATE OCT 14 1964 FLIGHT TIME 346.00 ARRIVAL DATE SEP 25 1965

HELIOCENTRIC CONIC DISTANCE 787.089 EARTH TO MARS

RL 149.19 LAL .00 LOL 20.68 VL 32.612 GAL -6.33 AZL 88.78 HCA 245.47 SMA 185.46 ECC .22345 INC 1.2199 V1 29.866
RP 218.70 LAP -1.11 LOP 266.15 VP 22.317 GAP -7.80 AZP 90.51 TAL 324.11 TAP 209.58 RCA 144.02 APO 226.90 V2 25.128
RC 276.940 GL 9.76 GP 6.98 ZAL 139.65 ZAP 72.87 ETS 181.53 ZAE 105.15 ETE 176.70 ZAC 90.25 ETC 258.60 CLP 72.74

PLANETOCENTRIC CONIC

C3 16.570 VHL 4.071 DLA 16.32 RAL 166.63 RAD 6567.7 VEL 11.745 PTH 2.07 VHP 3.092 DPA 16.27 RAP 163.98 ECC 1.2727

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 43 38	2704.10	-27.67	74.86	30.41	96.27	19 28 42	2104.1	-26.51	66.38
90.00	11 8 15	4280.76	2.64	176.49	24.46	61.80	12 19 35	3680.8	-1.15	169.86
100.00	20 14 8	2412.25	-28.95	53.21	30.23	97.79	20 54 20	1812.3	-27.57	44.68
100.00	12 20 26	4047.84	3.77	158.74	23.84	60.32	13 27 54	3447.8	-.21	152.21
110.00	21 42 39	2135.29	-32.28	31.51	29.56	101.90	22 18 15	1535.3	-30.31	22.85
110.00	13 8 24	3897.57	6.65	145.56	22.06	56.39	14 13 21	3297.6	2.19	139.32

DIFFERENTIAL CORRECTIONS
TDE -.9124 TRA 3.5590 TC3-5.8842 BAU 1.3302
RDE .6432 RRA -.5753 RC3 1.1965 FAU .50616
FDE-6.2767 FRA18.6616 FC-26.4457 BSP 24415
BDE 1.1164 BRA 3.6052 BC3 6.0046 FSP 10781

MID-COURSE EXECUTION ACCURACY
SGT 7200.3 SGR 1575.0 SG3 3104.1
RRT -.9024 RRF -.9201 RTF .9949
SGB 7370.5 R23 .0340 R13 -.9956
SG1 7340.4 SG2 665.7 THA 168.74

ORBIT DETERMINATION ACCURACY
ST 2030.3 SR 940.6 SS 3226.8
CRT -.8187 CRS .8887 CST -.9908
LSA 3893.6 MSA 508.6 SSA 18.5
EL1 2180.3 EL2 503.0 ALF 158.00

LAUNCH DATE OCT 14 1964 FLIGHT TIME 348.00 ARRIVAL DATE SEP 27 1965

HELIOCENTRIC CONIC DISTANCE 791.148 EARTH TO MARS

RL 149.19 LAL .00 LOL 20.68 VL 32.612 GAL -6.39 AZL 88.76 HCA 246.60 SMA 185.47 ECC .22399 INC 1.2409 V1 29.866
RP 218.34 LAP -1.14 LOP 267.28 VP 22.364 GAP -8.00 AZP 90.49 TAL 323.82 TAP 210.42 RCA 143.93 APO 227.01 V2 25.168
RC 278.273 GL 9.87 GP 6.84 ZAL 139.96 ZAP 71.12 ETS 181.74 ZAE 103.16 ETE 177.05 ZAC 90.00 ETC 258.69 CLP 70.98

PLANETOCENTRIC CONIC

C3 16.783 VHL 4.097 DLA 16.28 RAL 167.00 RAD 6567.7 VEL 11.754 PTH 2.07 VHP 3.130 DPA 16.39 RAP 163.33 ECC 1.2762

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 45 29	2705.62	-27.68	74.97	30.99	96.21	19 30 35	2105.6	-26.53	66.49
90.00	11 9 21	4285.10	2.78	176.73	25.00	61.81	12 20 47	3685.1	-1.01	170.10
100.00	20 15 57	2413.87	-28.97	53.33	30.81	97.73	20 56 11	1813.9	-27.59	44.80
100.00	12 21 35	4052.08	3.91	158.97	24.38	60.34	13 29 7	3452.1	-.06	152.44
110.00	21 44 24	2137.11	-32.31	31.64	30.14	101.82	22 20 1	1537.1	-30.34	22.98
110.00	13 9 36	3901.61	6.80	145.77	22.59	56.42	14 14 38	3301.6	2.34	139.53

DIFFERENTIAL CORRECTIONS
TDE -.9834 TRA 3.7723 TC3-6.0778 BAU 1.3882
RDE .6453 RRA -.5575 RC3 1.1579 FAU .49341
FDE-6.2055 FRA18.2898 FC-25.4526 BSP 25571
BDE 1.1762 BRA 3.8132 BC3 6.1871 FSP 10497

MID-COURSE EXECUTION ACCURACY
SGT 7543.2 SGR 1540.9 SG3 3018.3
RRT -.8974 RRF -.9152 RTF .9952
SGB 7699.0 R23 .0340 R13 -.9959
SG1 7669.9 SG2 668.7 THA 169.53

ORBIT DETERMINATION ACCURACY
ST 2152.4 SR 935.2 SS 3195.5
CRT -.8184 CRS .8867 CST -.9913
LSA 3931.4 MSA 512.7 SSA 18.1
EL1 2291.9 EL2 504.8 ALF 159.38

LAUNCH DATE OCT 14 1964 FLIGHT TIME 350.00 ARRIVAL DATE SEP 29 1965

HELIOCENTRIC CONIC DISTANCE 795.212 EARTH TO MARS

RL 149.19 LAL .00 LOL 20.68 VL 32.613 GAL -6.45 AZL 88.74 HCA 247.74 SMA 185.48 ECC .22457 INC 1.2616 V1 29.866
RP 217.98 LAP -1.17 LOP 268.42 VP 22.410 GAP -8.21 AZP 90.48 TAL 323.51 TAP 211.25 RCA 143.83 APO 227.14 V2 25.208
RC 279.589 GL 9.96 GP 6.71 ZAL 140.29 ZAP 69.41 ETS 181.94 ZAE 101.21 ETE 177.37 ZAC 89.76 ETC 258.78 CLP 69.26

PLANETOCENTRIC CONIC

C3 17.010 VHL 4.124 DLA 16.23 RAL 167.38 RAD 6567.7 VEL 11.764 PTH 2.08 VHP 3.171 DPA 16.49 RAP 162.72 ECC 1.2799

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 47 29	2706.85	-27.69	75.06	31.58	96.17	19 32 36	2106.8	-26.55	66.58
90.00	11 10 24	4290.08	2.94	177.01	25.56	61.82	12 21 54	3690.1	-.85	170.38
100.00	20 17 55	2415.24	-28.98	53.43	31.41	97.68	20 58 10	1815.2	-27.61	44.89
100.00	12 22 39	4056.92	4.08	159.24	24.93	60.36	13 30 16	3456.9	.10	152.71
110.00	21 46 17	2138.74	-32.33	31.76	30.74	101.75	22 21 56	1538.7	-30.38	23.09
110.00	13 10 46	3906.18	6.98	146.02	23.14	56.45	14 15 52	3306.2	2.52	139.77

DIFFERENTIAL CORRECTIONS
TDE-1.0556 TRA 3.9859 TC3-6.2566 BAU 1.4454
RDE .6473 RRA -.5397 RC3 1.1190 FAU .48008
FDE-6.1280 FRA17.9030 FC-24.4334 BSP 26693
BDE 1.2383 BRA 4.0223 BC3 6.3558 FSP 10201

MID-COURSE EXECUTION ACCURACY
SGT 7876.9 SGR 1506.8 SG3 2929.5
RRT -.8919 RRF -.9099 RTF .9955
SGB 8019.7 R23 .0342 R13 -.9961
SG1 7991.5 SG2 671.6 THA 170.25

ORBIT DETERMINATION ACCURACY
ST 2273.3 SR 929.6 SS 3162.2
CRT -.8178 CRS .8846 CST -.9917
LSA 3970.5 MSA 516.3 SSA 17.7
EL1 2403.3 EL2 506.1 ALF 160.61

LAUNCH DATE OCT 14 1964 FLIGHT TIME 352.00 ARRIVAL DATE OCT 1 1965

HELIOCENTRIC CONIC DISTANCE 799.280 EARTH TO MARS

RL	149.19	LAL	.00	LOL	20.68	VL	32.614	GAL	-6.52	AZL	88.72	HCA	248.88	SMA	185.50	ECC	.22520	INC	1.2821
RP	217.62	LAP	-1.20	LOP	269.56	VP	22.456	GAP	-8.41	AZP	90.46	TAL	323.19	TAP	212.08	RCA	143.73	APO	227.28
RC	280.887	GL	10.05	GP	6.58	ZAL	140.63	ZAP	67.73	ETS	182.13	ZAE	99.30	ETE	177.68	ZAC	89.53	ETC	258.86

V1	29.866	V2	25.248	CLP	67.58														

PLANETOCENTRIC CONIC

C3	17.253	VHL	4.154	DLA	16.17	RAL	167.77	RAD	6567.7	VEL	11.774	PTH	2.08	VHP	3.215	DPA	16.58	RAP	162.16

ECC	1.2839	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
90.00	18 49 39	2707.79	-27.70	75.12	32.20	96.13	19 34 47	2107.8	-26.56	66.64									
90.00	11 11 21	4295.68	3.12	177.32	26.14	61.84	12 22 57	3695.7	-.67	170.69									
100.00	20 20 2	2416.34	-28.99	53.51	32.02	97.63	21 0 18	1816.3	-27.63	44.97									
100.00	12 23 39	4062.36	4.26	159.54	25.51	60.38	13 31 22	3462.4	.29	153.01									
110.00	21 48 18	2140.18	-32.35	31.87	31.35	101.69	22 23 58	1540.2	-30.40	23.20									
110.00	13 11 53	3911.29	7.17	146.29	23.71	56.49	14 17 4	3311.3	2.71	140.03									

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.1286	TRA	4.2007	TC3	-6.4196	BAU	1.5016	SGT	8201.4	SGR	1472.9	SG3	2838.7	ST	2392.6	SR	923.9	SS	3127.5
RDE	.6494	RRA	-.5222	RC3	1.0798	FAU	.46621	RRT	-.8860	RRF	-.9043	RTF	.9958	CRT	-.8169	CRS	.8827	CST	-.9921
FDE	-6.0459	FRA	17.5073	FC	-23.3934	BSP	27803	SGB	8332.6	R23	.0345	R13	-.9963	LSA	4011.2	MSA	519.8	SSA	17.3
BDE	1.3020	BRA	4.2330	BC3	6.5098	FSP	9903	SG1	8305.3	SG2	674.4	THA	170.90	EL1	2514.2	EL2	507.1	ALF	161.72

LAUNCH DATE OCT 14 1964 FLIGHT TIME 354.00 ARRIVAL DATE OCT 3 1965

HELIOCENTRIC CONIC DISTANCE 803.352 EARTH TO MARS

RL	149.19	LAL	.00	LOL	20.68	VL	32.615	GAL	-6.59	AZL	88.70	HCA	250.03	SMA	185.52	ECC	.22587	INC	1.3023
RP	217.27	LAP	-1.22	LOP	270.71	VP	22.502	GAP	-8.61	AZP	90.44	TAL	322.86	TAP	212.89	RCA	143.62	APO	227.42
RC	282.167	GL	10.14	GP	6.44	ZAL	140.99	ZAP	66.10	ETS	182.31	ZAE	97.42	ETE	177.96	ZAC	89.31	ETC	258.94

V1	29.866	V2	25.287	CLP	65.94														

PLANETOCENTRIC CONIC

C3	17.512	VHL	4.185	DLA	16.09	RAL	168.17	RAD	6567.7	VEL	11.785	PTH	2.08	VHP	3.262	DPA	16.65	RAP	161.63

ECC	1.2882	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
90.00	18 51 58	2708.46	-27.70	75.17	32.83	96.11	19 37 7	2108.5	-26.57	66.69									
90.00	11 12 13	4301.91	3.32	177.67	26.73	61.86	12 23 55	3701.9	-.47	171.04									
100.00	20 22 17	2417.21	-29.00	53.57	32.65	97.60	21 2 34	1817.2	-27.64	45.03									
100.00	12 24 36	4068.39	4.46	159.87	26.10	60.41	13 32 24	3468.4	.49	153.34									
110.00	21 50 25	2141.44	-32.37	31.97	31.99	101.64	22 26 7	1541.4	-30.43	23.29									
110.00	13 12 57	3916.93	7.38	146.59	24.30	56.53	14 18 14	3316.9	2.93	140.33									

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.2035	TRA	4.4148	TC3	-6.5689	BAU	1.5571	SGT	8515.9	SGR	1439.5	SG3	2746.0	ST	2510.9	SR	918.2	SS	3091.6
RDE	.6516	RRA	-.5046	RC3	1.0410	FAU	.45209	RRT	-.8797	RRF	-.8983	RTF	.9960	CRT	-.8161	CRS	.8808	CST	-.9924
FDE	-5.9618	FRA	17.0972	FC	-22.3492	BSP	28865	SGB	8636.7	R23	.0349	R13	-.9965	LSA	4053.7	MSA	522.9	SSA	17.0
BDE	1.3686	BRA	4.4436	BC3	6.6509	FSP	9590	SG1	8610.1	SG2	677.0	THA	171.49	EL1	2624.9	EL2	507.6	ALF	162.72

LAUNCH DATE OCT 14 1964 FLIGHT TIME 356.00 ARRIVAL DATE OCT 5 1965

HELIOCENTRIC CONIC DISTANCE 807.429 EARTH TO MARS

RL	149.19	LAL	.00	LOL	20.68	VL	32.616	GAL	-6.67	AZL	88.68	HCA	251.18	SMA	185.54	ECC	.22659	INC	1.3223
RP	216.91	LAP	-1.25	LOP	271.86	VP	22.548	GAP	-8.80	AZP	90.43	TAL	322.51	TAP	213.69	RCA	143.50	APO	227.59
RC	283.431	GL	10.21	GP	6.31	ZAL	141.36	ZAP	64.51	ETS	182.48	ZAE	95.58	ETE	178.23	ZAC	89.10	ETC	259.01

V1	29.866	V2	25.327	CLP	64.34														

PLANETOCENTRIC CONIC

C3	17.788	VHL	4.218	DLA	16.01	RAL	168.58	RAD	6567.7	VEL	11.797	PTH	2.09	VHP	3.311	DPA	16.70	RAP	161.15

ECC	1.2927	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
90.00	18 54 26	2708.88	-27.71	75.20	33.48	96.10	19 39 35	2108.9	-26.57	66.72									
90.00	11 13 2	4308.75	3.54	178.05	27.34	61.89	12 24 50	3708.7	-.24	171.42									
100.00	20 24 41	2417.85	-29.00	53.62	33.30	97.58	21 4 58	1817.9	-27.65	45.08									
100.00	12 25 28	4075.00	4.69	160.24	26.71	60.44	13 33 23	3475.0	.71	153.70									
110.00	21 52 40	2142.53	-32.38	32.05	32.64	101.59	22 28 23	1542.5	-30.45	23.37									
110.00	13 13 58	3923.08	7.61	146.91	24.91	56.57	14 19 21	3323.1	3.16	140.65									

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.2796	TRA	4.6302	TC3	-6.7021	BAU	1.6115	SGT	8820.6	SGR	1406.7	SG3	2652.1	ST	2627.7	SR	912.5	SS	3054.5
RDE	.6540	RRA	-.4874	RC3	1.0024	FAU	.43760	RRT	-.8730	RRF	-.8921	RTF	.9961	CRT	-.8151	CRS	.8791	CST	-.9926
FDE	-5.8743	FRA	16.6812	FC	-21.2979	BSP	29909	SGB	8932.1	R23	.0354	R13	-.9966	LSA	4097.7	MSA	525.4	SSA	16.6
BDE	1.4370	BRA	4.6558	BC3	6.7766	FSP	9276	SG1	8906.2	SG2	679.5	THA	172.03	EL1	2734.8	EL2	507.9	ALF	163.61

LAUNCH DATE OCT 14 1964 FLIGHT TIME 358.00 ARRIVAL DATE OCT 7 1965

HELIOCENTRIC CONIC DISTANCE 811.509 EARTH TO MARS

RL	149.19	LAL	.00	LOL	20.68	VL	32.618	GAL	-6.75	AZL	88.66	HCA	252.33	SMA	185.57	ECC	.22736	INC	1.3421
RP	216.57	LAP	-1.28	LOP	273.01	VP	22.593	GAP	-9.00	AZP	90.41	TAL	322.14	TAP	214.48	RCA	143.38	APO	227.76
RC	284.679	GL	10.28	GP	6.18	ZAL	141.74	ZAP	62.96	ETS	182.64	ZAE	93.79	ETE	178.49	ZAC	88.90	ETC	259.07

V1	29.866	V2	25.365	CLP	62.78														

PLANETOCENTRIC CONIC

C3	18.081	VHL	4.252	DLA	15.91	RAL	169.00	RAD	6567.7	VEL	11.809	PTH	2.09	VHP	3.364	DPA	16.74	RAP	160.71

ECC	1.2976	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
90.00	18 57 3	2709.04	-27.71	75.21	34.15	96.09	19 42 12	2109.0	-26.57	66.73									
90.00	11 13 45	4316.19	3.78	178.47	27.97	61.92	12 25 41	3716.2	-.00	171.83									
100.00	20 27 12	2418.27	-29.01	53.65	33.97	97.56	21 7 31	1818.3	-27.66	45.11									
100.00	12 26 16	4082.20	4.93	160.64	27.34	60.48	13 34 19	3482.2	.96	154.10									
110.00	21 55 2	2143.47	-32.40	32.12	33.30	101.55	22 30 46	1543.5	-30.47	23.43									
110.00	13 14 56	3929.76	7.86	147.27	25.54	56.63	14 20 26	3329.8	3.42	141.00									

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.3566	TRA	4.8467	TC3	-6.8196	BAU	1.6649	SGT	9115.4	SGR	1374.5	SG3	2557.7	ST	2742.6	SR	906.6	SS	3015.8
RDE	.6564	RRA	-.4704	RC3	.9642	FAU	.42287	RRT	-.8659	RRF	-.8855	RTF	.9962	CRT	-.8139	CRS	.8774	CST	-.9928
FDE	-5.7822	FRA	16.2614	FC	-20.2478	BSP	30932	SGB	9218.4	R23	.0360	R13	-.9966	LSA	4142.4	MSA	527.9	SSA	16.3
BDE	1.5071	BRA	4.8694	BC3	6.8874	FSP	8964	SG1	9193.2	SG2	681.7	THA	172.52	EL1	2843.5	EL2	508.0	ALF	164.43

LAUNCH DATE OCT 14 1964 FLIGHT TIME 360.00 ARRIVAL DATE OCT 9 1965

HELIOCENTRIC CONIC DISTANCE 815.592 EARTH TO MARS

RL 149.19 LAL .00 LOL 20.68 VL 32.620 GAL -6.83 AZL 88.64 HCA 253.49 SMA 185.60 ECC .22818 INC 1.3617 V1 29.866
RP 216.22 LAP -1.31 LOP 274.17 VP 22.639 GAP -9.20 AZP 90.39 TAL 321.77 TAP 215.26 RCA 143.25 APO 227.95 V2 25.404
RC 285.910 GL 10.34 GP 6.05 ZAL 142.13 ZAP 61.45 ETS 182.79 ZAE 92.03 ETE 178.72 ZAC 88.71 ETC 259.13 CLP 61.27

PLANETOCENTRIC CONIC

C3 18.392 VHL 4.289 DLA 15.79 RAL 169.43 RAD 6567.7 VEL 11.823 PTH 2.09 VHP 3.419 DPA 16.75 RAP 160.32 ECC 1.3027

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 59 48	2708.97	-27.71	75.21	34.83	96.09	19 44 57	2109.0	-26.57	66.73
90.00	11 14 24	4324.24	4.04	178.92	28.62	61.95	12 26 29	3724.2	.26	172.28
100.00	20 29 52	2418.48	-29.01	53.67	34.65	97.55	21 10 11	1818.5	-27.66	45.12
100.00	12 27 1	4089.96	5.19	161.06	27.99	60.52	13 35 11	3490.0	1.22	154.52
110.00	21 57 31	2144.25	-32.41	32.18	33.99	101.52	22 33 15	1544.2	-30.48	23.49
110.00	13 15 51	3936.96	8.13	147.65	26.18	56.68	14 21 28	3337.0	3.69	141.38

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.4354 TRA 5.0638 TC3-6.9235 BAU 1.7175 SGT 9400.7 SGR 1343.3 SG3 2463.3 ST 2856.3 SR 900.9 SS 2976.3
RDE .6590 RRA -.4539 RC3 .9269 FAU .40816 RRT -.8584 RRF -.8786 RTF .9963 CRT -.8128 CRS .8759 CST -.9930
FDE-5.6890 FRA15.8376 FC-19.2130 BSP 31917 SGB 9496.2 R23 .0367 R13 -.9967 LSA 4188.9 MSA 529.9 SSA 16.1
BDE 1.5795 BRA 5.0841 BC3 6.9853 FSP 8647 SG1 9471.5 SG2 683.8 THA 172.97 EL1 2951.6 EL2 507.8 ALF 165.17

LAUNCH DATE OCT 14 1964 FLIGHT TIME 362.00 ARRIVAL DATE OCT 11 1965

HELIOCENTRIC CONIC DISTANCE 819.678 EARTH TO MARS

RL 149.19 LAL .00 LOL 20.68 VL 32.621 GAL -6.92 AZL 88.62 HCA 254.65 SMA 185.63 ECC .22905 INC 1.3811 V1 29.866
RP 215.88 LAP -1.33 LOP 275.33 VP 22.684 GAP -9.39 AZP 90.37 TAL 321.37 TAP 216.03 RCA 143.11 APO 228.15 V2 25.442
RC 287.127 GL 10.39 GP 5.92 ZAL 142.54 ZAP 59.98 ETS 182.93 ZAE 90.31 ETE 178.95 ZAC 88.53 ETC 259.18 CLP 59.80

PLANETOCENTRIC CONIC

C3 18.722 VHL 4.327 DLA 15.67 RAL 169.86 RAD 6567.8 VEL 11.837 PTH 2.10 VHP 3.476 DPA 16.76 RAP 159.98 ECC 1.3081

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 2 41	2708.67	-27.70	75.19	35.53	96.10	19 47 50	2108.7	-26.57	66.71
90.00	11 14 59	4332.88	4.32	179.40	29.29	61.99	12 27 12	3732.9	.53	172.76
100.00	20 32 40	2418.49	-29.01	53.67	35.35	97.55	21 12 58	1818.5	-27.66	45.12
100.00	12 27 42	4098.29	5.47	161.53	28.66	60.57	13 36 0	3498.3	1.50	154.98
110.00	22 0 7	2144.89	-32.42	32.22	34.69	101.49	22 35 51	1544.9	-30.49	23.53
110.00	13 16 44	3944.66	8.42	148.06	26.85	56.75	14 22 29	3344.7	3.98	141.78

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.5155 TRA 5.2829 TC3-7.0109 BAU 1.7689 SGT 9676.1 SGR 1313.0 SG3 2369.4 ST 2968.5 SR 895.1 SS 2935.5
RDE .6618 RRA -.4378 RC3 .8902 FAU .39333 RRT -.8507 RRF -.8715 RTF .9964 CRT -.8117 CRS .8745 CST -.9931
FDE-5.5923 FRA15.4148 FC-18.1885 BSP 32888 SGB 9764.8 R23 .0374 R13 -.9967 LSA 4236.4 MSA 531.7 SSA 15.8
BDE 1.6537 BRA 5.3010 BC3 7.0672 FSP 8339 SG1 9740.7 SG2 685.7 THA 173.38 EL1 3058.7 EL2 507.4 ALF 165.85

LAUNCH DATE OCT 14 1964 FLIGHT TIME 364.00 ARRIVAL DATE OCT 13 1965

HELIOCENTRIC CONIC DISTANCE 823.767 EARTH TO MARS

RL 149.19 LAL .00 LOL 20.68 VL 32.624 GAL -7.01 AZL 88.60 HCA 255.82 SMA 185.66 ECC .22997 INC 1.4004 V1 29.866
RP 215.54 LAP -1.36 LOP 276.50 VP 22.729 GAP -9.58 AZP 90.34 TAL 320.97 TAP 216.78 RCA 142.97 APO 228.36 V2 25.480
RC 288.329 GL 10.44 GP 5.80 ZAL 142.96 ZAP 58.55 ETS 183.06 ZAE 88.62 ETE 179.16 ZAC 88.36 ETC 259.22 CLP 58.37

PLANETOCENTRIC CONIC

C3 19.071 VHL 4.367 DLA 15.54 RAL 170.30 RAD 6567.8 VEL 11.851 PTH 2.10 VHP 3.537 DPA 16.74 RAP 159.67 ECC 1.3139

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 5 42	2708.17	-27.70	75.15	36.25	96.12	19 50 50	2108.2	-26.56	66.67
90.00	11 15 30	4342.10	4.61	179.92	29.98	62.03	12 27 52	3742.1	.83	173.28
100.00	20 35 35	2418.33	-29.01	53.65	36.07	97.56	21 15 53	1818.3	-27.66	45.11
100.00	12 28 19	4107.17	5.76	162.02	29.34	60.62	13 36 46	3507.2	1.81	155.47
110.00	22 2 49	2145.39	-32.42	32.26	35.41	101.47	22 38 34	1545.4	-30.50	23.57
110.00	13 17 34	3952.87	8.72	148.50	27.53	56.82	14 23 27	3352.9	4.30	142.21

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.5975 TRA 5.5030 TC3-7.0847 BAU 1.8194 SGT 9941.8 SGR 1283.8 SG3 2276.0 ST 3079.2 SR 889.3 SS 2893.9
RDE .6648 RRA -.4222 RC3 .8545 FAU .37853 RRT -.8426 RRF -.8641 RTF .9964 CRT -.8106 CRS .8732 CST -.9932
FDE-5.4948 FRA14.9909 FC-17.1831 BSP 33819 SGB10024.3 R23 .0381 R13 -.9967 LSA 4285.2 MSA 533.1 SSA 15.6
BDE 1.7303 BRA 5.5192 BC3 7.1360 FSP 8028 SG110000.8 SG2 687.3 THA 173.76 EL1 3164.7 EL2 506.7 ALF 166.47

LAUNCH DATE OCT 14 1964 FLIGHT TIME 366.00 ARRIVAL DATE OCT 15 1965

HELIOCENTRIC CONIC DISTANCE 827.858 EARTH TO MARS

RL 149.19 LAL .00 LOL 20.68 VL 32.626 GAL -7.10 AZL 88.58 HCA 256.99 SMA 185.70 ECC .23095 INC 1.4195 V1 29.866
RP 215.21 LAP -1.38 LOP 277.67 VP 22.774 GAP -9.77 AZP 90.32 TAL 320.54 TAP 217.53 RCA 142.81 APO 228.59 V2 25.517
RC 289.516 GL 10.48 GP 5.68 ZAL 143.40 ZAP 57.17 ETS 183.18 ZAE 86.98 ETE 179.36 ZAC 88.20 ETC 259.25 CLP 56.98

PLANETOCENTRIC CONIC

C3 19.442 VHL 4.409 DLA 15.39 RAL 170.76 RAD 6567.8 VEL 11.867 PTH 2.11 VHP 3.600 DPA 16.71 RAP 159.41 ECC 1.3200

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 8 51	2707.47	-27.70	75.10	36.99	96.15	19 53 59	2107.5	-26.56	66.62
90.00	11 15 57	4351.89	4.92	180.47	30.68	62.08	12 28 29	3751.9	1.15	173.82
100.00	20 38 37	2417.99	-29.00	53.63	36.81	97.57	21 18 55	1818.0	-27.65	45.09
100.00	12 28 52	4116.61	6.08	162.54	30.05	60.68	13 37 29	3516.6	2.12	155.98
110.00	22 5 37	2145.78	-32.43	32.29	36.14	101.46	22 41 23	1545.8	-30.51	23.60
110.00	13 18 22	3961.58	9.05	148.97	28.23	56.89	14 24 24	3361.6	4.63	142.67

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.6814 TRA 5.7253 TC3-7.1444 BAU 1.8692 SGT10198.6 SGR 1255.8 SG3 2184.0 ST 3188.8 SR 883.7 SS 2851.7
RDE .6679 RRA -.4071 RC3 .8198 FAU .36388 RRT -.8343 RRF -.8566 RTF .9964 CRT -.8097 CRS .8720 CST -.9933
FDE-5.3962 FRA14.5699 FC-16.2033 BSP 34724 SGB10275.6 R23 .0389 R13 -.9967 LSA 4335.4 MSA 534.1 SSA 15.3
BDE 1.8092 BRA 5.7398 BC3 7.1913 FSP 7721 SG110252.5 SG2 688.7 THA 174.11 EL1 3270.1 EL2 505.8 ALF 167.04

LAUNCH DATE OCT 14 1964 FLIGHT TIME 368.00 ARRIVAL DATE OCT 17 1965

HELIOCENTRIC CONIC DISTANCE 831.951 EARTH TO MARS

RL 149.19 LAL .00 LOL 20.68 VL 32.628 GAL -7.20 AZL 88.56 HCA 258.16 SMA 185.74 ECC .23197 INC 1.4385 V1 29.866
RP 214.88 LAP -1.41 LOP 278.84 VP 22.819 GAP -9.96 AZP 90.30 TAL 320.11 TAP 218.26 RCA 142.65 APO 228.83 V2 25.554
RC 290.691 GL 10.51 GP 5.56 ZAL 143.84 ZAP 55.82 ETS 183.30 ZAE 85.38 ETE 179.54 ZAC 88.05 ETC 259.28 CLP 55.64

PLANETOCENTRIC CONIC

C3 19.834 VHL 4.454 DLA 15.24 RAL 171.21 RAD 6567.8 VEL 11.883 PTH 2.11 VHP 3.666 DPA 16.67 RAP 159.20 ECC 1.3264

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 12 8	2706.59	-27.69	75.04	37.74	96.18	19 57 14	2106.6	-26.54	66.56
90.00	11 16 20	4362.25	5.25	181.05	31.40	62.13	12 29 3	3762.2	1.48	174.40
100.00	20 41 46	2417.49	-29.00	53.59	37.56	97.59	21 22 4	1817.5	-27.65	45.05
100.00	12 29 23	4126.58	6.41	163.10	30.77	60.74	13 38 9	3526.6	2.46	156.53
110.00	22 8 31	2146.05	-32.43	32.31	36.89	101.44	22 44 18	1546.1	-30.52	23.62
110.00	13 19 7	3970.78	9.39	149.46	28.95	56.98	14 25 18	3370.8	4.98	143.15

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.7663 TRA 5.9503 TC3-7.1876 BAU 1.9172 SGT10445.0 SGR 1228.8 SG3 2093.1 ST 3296.4 SR 878.0 SS 2808.3
RDE .6713 RRA -.3926 RC3 .7860 FAU .34921 RRT -.8257 RRF -.8488 RTF .9964 CRT -.8086 CRS .8710 CST -.9933
FDE-5.2952 FRA14.1532 FC-15.2426 BSP 35627 SGB10517.1 R23 .0398 R13 -.9967 LSA 4386.0 MSA 534.9 SSA 15.1
BDE 1.8896 BRA 5.9632 BC3 7.2304 FSP 7422 SG110494.4 SG2 689.9 THA 174.43 EL1 3373.8 EL2 504.8 ALF 167.56

LAUNCH DATE OCT 14 1964 FLIGHT TIME 370.00 ARRIVAL DATE OCT 19 1965

HELIOCENTRIC CONIC DISTANCE 836.046 EARTH TO MARS

RL 149.19 LAL .00 LOL 20.68 VL 32.631 GAL -7.30 AZL 88.54 HCA 259.34 SMA 185.78 ECC .23306 INC 1.4574 V1 29.866
RP 214.56 LAP -1.43 LOP 280.02 VP 22.863 GAP -10.15 AZP 90.27 TAL 319.65 TAP 218.99 RCA 142.49 APO 229.08 V2 25.590
RC 291.851 GL 10.54 GP 5.44 ZAL 144.30 ZAP 54.52 ETS 183.41 ZAE 83.81 ETE 179.72 ZAC 87.91 ETC 259.30 CLP 54.53

PLANETOCENTRIC CONIC

C3 20.249 VHL 4.500 DLA 15.07 RAL 171.68 RAD 6567.8 VEL 11.901 PTH 2.11 VHP 3.734 DPA 16.61 RAP 159.03 ECC 1.3332

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 15 31	2705.55	-27.68	74.96	38.51	96.21	20 0 37	2105.5	-26.53	66.48
90.00	11 16 40	4373.15	5.60	181.67	32.14	62.20	12 29 33	3773.2	1.83	175.01
100.00	20 45 2	2416.84	-28.99	53.55	38.33	97.62	21 25 19	1816.8	-27.64	45.01
100.00	12 29 50	4137.09	6.76	163.68	31.51	60.81	13 38 47	3537.1	2.82	157.11
110.00	22 11 32	2146.23	-32.43	32.32	37.66	101.44	22 47 18	1546.2	-30.52	23.63
110.00	13 19 50	3980.47	9.75	149.98	29.69	57.07	14 26 10	3380.5	5.34	143.66

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.8537 TRA 6.1772 TC3-7.2194 BAU 1.9650 SGT10683.3 SGR 1203.2 SG3 2004.0 ST 3403.0 SR 872.5 SS 2764.3
RDE .6749 RRA -.3787 RC3 .7534 FAU .33486 RRT -.8170 RRF -.8409 RTF .9964 CRT -.8077 CRS .8701 CST -.9934
FDE-5.1943 FRA13.7394 FC-14.3185 BSP 36488 SGB10750.9 R23 .0407 R13 -.9966 LSA 4438.0 MSA 535.4 SSA 14.9
BDE 1.9728 BRA 6.1888 BC3 7.2586 FSP 7127 SG110728.6 SG2 690.9 THA 174.72 EL1 3476.8 EL2 503.5 ALF 168.04

LAUNCH DATE OCT 14 1964 FLIGHT TIME 372.00 ARRIVAL DATE OCT 21 1965

HELIOCENTRIC CONIC DISTANCE 840.141 EARTH TO MARS

RL 149.19 LAL .00 LOL 20.68 VL 32.633 GAL -7.41 AZL 88.52 HCA 260.51 SMA 185.83 ECC .23420 INC 1.4762 V1 29.866
RP 214.24 LAP -1.46 LOP 281.20 VP 22.907 GAP -10.34 AZP 90.24 TAL 319.18 TAP 219.70 RCA 142.31 APO 229.35 V2 25.626
RC 292.998 GL 10.56 GP 5.33 ZAL 144.76 ZAP 53.25 ETS 183.51 ZAE 82.28 ETE 179.89 ZAC 87.78 ETC 259.31 CLP 53.06

PLANETOCENTRIC CONIC

C3 20.688 VHL 4.548 DLA 14.89 RAL 172.15 RAD 6567.8 VEL 11.919 PTH 2.12 VHP 3.804 DPA 16.54 RAP 158.90 ECC 1.3405

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 19 2	2704.35	-27.67	74.88	39.30	96.26	20 4 6	2104.3	-26.52	66.40
90.00	11 16 56	4384.61	5.96	182.31	32.90	62.27	12 30 0	3784.6	2.20	175.65
100.00	20 48 25	2416.07	-28.99	53.49	39.12	97.64	21 28 41	1816.1	-27.63	44.95
100.00	12 30 14	4148.12	7.13	164.29	32.27	60.89	13 39 22	3548.1	3.19	157.72
110.00	22 14 38	2146.31	-32.44	32.33	38.44	101.43	22 50 24	1546.3	-30.52	23.64
110.00	13 20 30	3990.64	10.13	150.53	30.45	57.18	14 27 1	3390.6	5.73	144.20

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.9426 TRA 6.4071 TC3-7.2368 BAU 2.0115 SGT10912.1 SGR 1178.6 SG3 1916.6 ST 3507.8 SR 867.1 SS 2719.4
RDE .6787 RRA -.3655 RC3 .7219 FAU .32063 RRT -.8081 RRF -.8329 RTF .9963 CRT -.8069 CRS .8693 CST -.9934
FDE-5.0916 FRA13.3316 FC-13.4171 BSP 37336 SGB10975.5 R23 .0416 R13 -.9966 LSA 4490.5 MSA 535.5 SSA 14.8
BDE 2.0578 BRA 6.4175 BC3 7.2727 FSP 6839 SG110953.7 SG2 691.5 THA 174.99 EL1 3578.3 EL2 502.1 ALF 168.49

LAUNCH DATE OCT 14 1964 FLIGHT TIME 374.00 ARRIVAL DATE OCT 23 1965

HELIOCENTRIC CONIC DISTANCE 844.238 EARTH TO MARS

RL 149.19 LAL .00 LOL 20.68 VL 32.636 GAL -7.52 AZL 88.51 HCA 261.70 SMA 185.88 ECC .23539 INC 1.4949 V1 29.866
RP 213.93 LAP -1.48 LOP 282.38 VP 22.951 GAP -10.53 AZP 90.22 TAL 318.70 TAP 220.40 RCA 142.12 APO 229.63 V2 25.662
RC 294.131 GL 10.58 GP 5.22 ZAL 145.24 ZAP 52.02 ETS 183.61 ZAE 80.79 ETE 180.04 ZAC 87.67 ETC 259.32 CLP 51.83

PLANETOCENTRIC CONIC

C3 21.153 VHL 4.599 DLA 14.70 RAL 172.63 RAD 6567.9 VEL 11.939 PTH 2.12 VHP 3.877 DPA 16.45 RAP 158.81 ECC 1.3481

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 22 39	2703.02	-27.66	74.78	40.10	96.30	20 7 42	2103.0	-26.50	66.31
90.00	11 17 8	4396.60	6.34	182.99	33.68	62.34	12 30 25	3796.6	2.59	176.32
100.00	20 51 54	2415.17	-28.98	53.42	39.92	97.68	21 32 9	1815.2	-27.61	44.89
100.00	12 30 34	4159.67	7.51	164.94	33.05	60.98	13 39 54	3559.7	3.58	158.35
110.00	22 17 49	2146.32	-32.44	32.33	39.24	101.43	22 53 36	1546.3	-30.52	23.64
110.00	13 21 8	4001.29	10.52	151.10	31.23	57.29	14 27 49	3401.3	6.13	144.76

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-2.0334 TRA 6.6410 TC3-7.2412 BAU 2.0571 SGT11133.0 SGR 1155.3 SG3 1831.3 ST 3611.3 SR 861.7 SS 2673.9
RDE .6828 RRA -.3529 RC3 .6915 FAU .30664 RRT -.7992 RRF -.8249 RTF .9963 CRT -.8061 CRS .8686 CST -.9934
FDE-4.9885 FRA12.9308 FC-12.5503 BSP 38167 SGB11192.7 R23 .0426 R13 -.9965 LSA 4543.8 MSA 535.5 SSA 14.7
BDE 2.1450 BRA 6.6504 BC3 7.2742 FSP 6558 SG111171.3 SG2 692.0 THA 175.24 EL1 3678.7 EL2 500.5 ALF 168.90

LAUNCH DATE OCT 14 1964 FLIGHT TIME 376.00 ARRIVAL DATE OCT 25 1965

HELIOCENTRIC CONIC DISTANCE 848.334 EARTH TO MARS

RL 149.19 LAL .00 LOL 20.68 VL 32.639 GAL -7.64 AZL 88.49 HCA 262.88 SMA 185.93 ECC .23665 INC 1.5136 V1 29.866
RP 213.62 LAP -1.50 LOP 283.57 VP 22.994 GAP -10.72 AZP 90.19 TAL 318.20 TAP 221.08 RCA 141.93 APO 229.93 V2 25.697
RC 295.251 GL 10.58 GP 5.11 ZAL 145.73 ZAP 50.83 ETS 183.70 ZAE 79.33 ETE 180.19 ZAC 87.56 ETC 259.32 CLP 50.64

PLANETOCENTRIC CONIC

C3 21.644 VHL 4.652 DLA 14.51 RAL 173.12 RAD 6567.9 VEL 11.959 PTH 2.13 VHP 3.953 DPA 16.36 RAP 158.76 ECC 1.3562

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 26 22	2701.56	-27.65	74.67	40.92	96.36	20 11 23	2101.6	-26.48	66.20
90.00	11 17 18	4409.11	6.74	183.70	34.48	62.43	12 30 47	3809.1	2.99	177.02
100.00	20 55 29	2414.17	-28.97	53.35	40.74	97.72	21 35 43	1814.2	-27.60	44.82
100.00	12 30 52	4171.72	7.90	165.61	33.85	61.08	13 40 24	3571.7	3.99	159.02
110.00	22 21 6	2146.26	-32.43	32.33	40.06	101.44	22 56 52	1546.3	-30.52	23.63
110.00	13 21 44	4012.40	10.93	151.71	32.03	57.41	14 28 36	3412.4	6.55	145.35

DIFFERENTIAL CORRECTIONS
TDE-2.1266 TRA 6.8780 TC3-7.2344 BAU 2.1021
RDE .6871 RRA -.3409 RC3 .6623 FAU .29297
FDE-4.8856 FRA12.5351 FC-11.7186 BSP 38980
BDE 2.2348 BRA 6.8864 BC3 7.2646 FSP 6286

MID-COURSE EXECUTION ACCURACY
SGT11345.7 SGR 1133.1 SG3 1748.1
RRT -.7902 RRF -.8168 RTF .9962
SGB11402.1 R23 .0436 R13 -.9964
SG111381.1 SG2 692.2 THA 175.47

ORBIT DETERMINATION ACCURACY
ST 3713.5 SR 856.4 SS 2627.8
CRT -.8055 CRS .8682 CST -.9934
LSA 4598.0 MSA 535.1 SSA 14.5
EL1 3778.1 EL2 498.8 ALF 169.29

LAUNCH DATE OCT 14 1964 FLIGHT TIME 378.00 ARRIVAL DATE OCT 27 1965

HELIOCENTRIC CONIC DISTANCE 852.431 EARTH TO MARS

RL 149.19 LAL .00 LOL 20.68 VL 32.642 GAL -7.76 AZL 88.47 HCA 264.07 SMA 185.98 ECC .23797 INC 1.5323 V1 29.866
RP 213.31 LAP -1.52 LOP 284.76 VP 23.037 GAP -10.91 AZP 90.16 TAL 317.68 TAP 221.76 RCA 141.72 APO 230.23 V2 25.731
RC 296.356 GL 10.59 GP 5.00 ZAL 146.23 ZAP 49.67 ETS 183.78 ZAE 77.90 ETE 180.33 ZAC 87.46 ETC 259.31 CLP 49.49

PLANETOCENTRIC CONIC

C3 22.163 VHL 4.708 DLA 14.30 RAL 173.61 RAD 6567.9 VEL 11.981 PTH 2.14 VHP 4.031 DPA 16.25 RAP 158.75 ECC 1.3647

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 30 11	2700.00	-27.64	74.56	41.76	96.41	20 15 11	2100.0	-26.46	66.09
90.00	11 17 24	4422.13	7.15	184.44	35.30	62.53	12 31 6	3822.1	3.41	177.75
100.00	20 59 9	2413.08	-28.96	53.27	41.58	97.76	21 39 22	1813.1	-27.58	44.74
100.00	12 31 7	4184.28	8.32	166.32	34.67	61.18	13 40 51	3584.3	4.41	159.71
110.00	22 24 28	2146.14	-32.43	32.32	40.89	101.44	23 0 14	1546.1	-30.52	23.62
110.00	13 22 18	4023.98	11.35	152.34	32.84	57.54	14 29 22	3424.0	6.99	145.96

DIFFERENTIAL CORRECTIONS
TDE-2.2221 TRA 7.1188 TC3-7.2154 BAU 2.1462
RDE .6917 RRA -.3297 RC3 .6343 FAU .27959
FDE-4.7829 FRA12.1457 FC-10.9214 BSP 39765
BDE 2.3272 BRA 7.1264 BC3 7.2432 FSP 6018

MID-COURSE EXECUTION ACCURACY
SGT11550.2 SGR 1112.1 SG3 1667.2
RRT -.7813 RRF -.8089 RTF .9961
SGB11603.6 R23 .0446 R13 -.9963
SG111582.9 SG2 692.2 THA 175.68

ORBIT DETERMINATION ACCURACY
ST 3814.4 SR 851.2 SS 2581.2
CRT -.8050 CRS .8679 CST -.9933
LSA 4653.0 MSA 534.5 SSA 14.4
EL1 3876.5 EL2 496.9 ALF 169.64

LAUNCH DATE OCT 14 1964 FLIGHT TIME 380.00 ARRIVAL DATE OCT 29 1965

HELIOCENTRIC CONIC DISTANCE 856.526 EARTH TO MARS

RL 149.19 LAL .00 LOL 20.68 VL 32.645 GAL -7.88 AZL 88.45 HCA 265.27 SMA 186.03 ECC .23935 INC 1.5508 V1 29.866
RP 213.01 LAP -1.55 LOP 285.95 VP 23.080 GAP -11.10 AZP 90.13 TAL 317.15 TAP 222.42 RCA 141.50 APO 230.56 V2 25.765
RC 297.448 GL 10.58 GP 4.90 ZAL 146.74 ZAP 48.55 ETS 183.86 ZAE 76.51 ETE 180.47 ZAC 87.38 ETC 259.50 CLP 48.37

PLANETOCENTRIC CONIC

C3 22.712 VHL 4.766 DLA 14.08 RAL 174.11 RAD 6567.9 VEL 12.004 PTH 2.14 VHP 4.112 DPA 16.12 RAP 158.78 ECC 1.3738

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 34 6	2698.34	-27.63	74.44	42.62	96.47	20 19 4	2098.3	-26.44	65.98
90.00	11 17 27	4435.66	7.57	185.20	36.14	62.63	12 31 23	3835.7	3.84	178.51
100.00	21 2 55	2411.91	-28.95	53.19	42.43	97.80	21 43 7	1811.9	-27.57	44.66
100.00	12 31 19	4197.32	8.74	167.05	35.50	61.30	13 41 17	3597.3	4.85	160.43
110.00	22 27 54	2145.98	-32.43	32.31	41.74	101.45	23 3 40	1546.0	-30.51	23.61
110.00	13 22 49	4036.02	11.79	152.99	33.68	57.68	14 30 5	3436.0	7.44	146.60

DIFFERENTIAL CORRECTIONS
TDE-2.3203 TRA 7.3632 TC3-7.1874 BAU 2.1902
RDE .6967 RRA -.3190 RC3 .6076 FAU .26662
FDE-4.6806 FRA11.7623 FC-10.1628 BSP 40514
BDE 2.4227 BRA 7.3701 BC3 7.2130 FSP 5755

MID-COURSE EXECUTION ACCURACY
SGT11747.8 SGR 1092.4 SG3 1588.6
RRT -.7725 RRF -.8010 RTF .9959
SGB11798.4 R23 .0457 R13 -.9961
SG111778.1 SG2 691.9 THA 175.88

ORBIT DETERMINATION ACCURACY
ST 3914.2 SR 846.1 SS 2534.0
CRT -.8047 CRS .8677 CST -.9933
LSA 4708.9 MSA 533.5 SSA 14.3
EL1 3973.9 EL2 494.8 ALF 169.98

LAUNCH DATE OCT 14 1964 FLIGHT TIME 382.00 ARRIVAL DATE OCT 31 1965

HELIOCENTRIC CONIC DISTANCE 860.620 EARTH TO MARS

RL 149.19 LAL .00 LOL 20.68 VL 32.648 GAL -8.01 AZL 88.43 HCA 266.46 SMA 186.09 ECC .24080 INC 1.5694 V1 29.866
RP 212.72 LAP -1.57 LOP 287.15 VP 23.122 GAP -11.28 AZP 90.10 TAL 316.60 TAP 223.07 RCA 141.28 APO 230.90 V2 25.798
RC 298.526 GL 10.57 GP 4.80 ZAL 147.26 ZAP 47.47 ETS 183.93 ZAE 75.15 ETE 180.59 ZAC 87.30 ETC 259.28 CLP 47.28

PLANETOCENTRIC CONIC

C3 23.292 VHL 4.826 DLA 13.86 RAL 174.61 RAD 6567.9 VEL 12.028 PTH 2.15 VHP 4.195 DPA 15.99 RAP 158.85 ECC 1.3833

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 38 7	2696.61	-27.61	74.32	43.49	96.53	20 23 3	2096.6	-26.42	65.85
90.00	11 17 28	4449.68	8.01	186.00	36.99	62.75	12 31 37	3849.7	4.29	179.29
100.00	21 6 46	2410.68	-28.94	53.10	43.30	97.85	21 46 57	1810.7	-27.55	44.57
100.00	12 31 29	4210.84	9.19	167.81	36.36	61.43	13 41 40	3610.8	5.30	161.18
110.00	22 31 26	2145.79	-32.43	32.29	42.61	101.46	23 7 11	1545.8	-30.51	23.60
110.00	13 23 19	4048.50	12.24	153.67	34.54	57.83	14 30 48	3448.5	7.91	147.26

DIFFERENTIAL CORRECTIONS
TDE-2.4209 TRA 7.6122 TC3-7.1476 BAU 2.2331
RDE .7019 RRA -.3091 RC3 .5820 FAU .25393
FDE-4.5787 FRA11.3865 FC3-9.4382 BSP 41267
BDE 2.5206 BRA 7.6185 BC3 7.1713 FSP 5502

MID-COURSE EXECUTION ACCURACY
SGT11937.2 SGR 1073.7 SG3 1512.4
RRT -.7637 RRF -.7933 RTF .9958
SGB11985.4 R23 .0469 R13 -.9960
SG111965.5 SG2 691.5 THA 176.06

ORBIT DETERMINATION ACCURACY
ST 4012.5 SR 841.1 SS 2486.5
CRT -.8044 CRS .8678 CST -.9932
LSA 4765.2 MSA 532.4 SSA 14.2
EL1 4070.0 EL2 492.6 ALF 170.28

LAUNCH DATE OCT 14 1964 FLIGHT TIME 384.00 ARRIVAL DATE NOV 2 1965

HELIOCENTRIC CONIC DISTANCE 864.713 EARTH TO MARS

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RL  149.19 LAL    .00 LOL  20.68 VL  32.652 GAL  -8.15 AZL  88.41 HCA 267.66 SMA 186.15 ECC .24232 INC 1.5881 V1  29.866
RP  212.43 LAP  -1.59 LOP 288.35 VP  23.163 GAP -11.47 AZP  90.06 TAL 316.04 TAP 223.70 RCA 141.04 APO 231.25 V2  25.831
RC 299.592 GL   10.56 GP    4.71 ZAL 147.78 ZAP  46.42 ETS 184.00 ZAE  73.83 ETE 180.71 ZAC  87.23 ETC 259.26 CLP  46.23
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PLANETOCENTRIC CONIC

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C3  23.906 VHL  4.889 DLA  13.62 RAL 175.12 RAD 6568.0 VEL 12.053 PTH   2.15 VHP  4.280 DPA  15.84 RAP 158.95 ECC 1.3934
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LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 42 12	2694.81	-27.60	74.19	44.38	96.59	20 27 7	2094.8	-26.40	65.73
90.00	11 17 26	4464.19	8.46	186.83	37.87	62.88	12 31 50	3864.2	4.76	180.11
100.00	21 10 42	2409.40	-28.92	53.00	44.19	97.89	21 50 52	1809.4	-27.53	44.48
100.00	12 31 37	4224.84	9.64	168.60	37.24	61.57	13 42 1	3624.8	5.77	161.95
110.00	22 35 1	2145.57	-32.43	32.27	43.49	101.47	23 10 47	1545.6	-30.51	23.58
110.00	13 23 47	4061.43	12.71	154.38	35.42	58.00	14 31 28	3461.4	8.39	147.95

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DIFFERENTIAL CORRECTIONS                    MID-COURSE EXECUTION ACCURACY          ORBIT DETERMINATION ACCURACY
TDE-2.5242 TRA 7.8661 TC3-7.0980 BAU 2.2755   SGT12119.6 SGR 1056.0 SG3 1438.4      ST  4109.7 SR   836.2 SS  2438.2
RDE  .7074 RRA -.2999 RC3  .5574 FAU .24158   RRT -.7552 RRF -.7858 RTF  .9956      CRT -.8043 CRS  .8680 CST -.9932
FDE-4.4765 FRA11.0171 FC3-8.7486 BSP  41996   SGB12165.6 R23  .0480 R13 -.9958     LSA 4821.9 MSA  530.9 SSA   14.1
BDE 2.6214 BRA 7.8718 BC3 7.1198 FSP   5256   SG112145.9 SG2  690.7 THA 176.22     EL1 4165.1 EL2  490.2 ALF 170.57
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LAUNCH DATE OCT 14 1964 FLIGHT TIME 386.00 ARRIVAL DATE NOV 4 1965

HELIOCENTRIC CONIC DISTANCE 868.802 EARTH TO MARS

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RL  149.19 LAL    .00 LOL  20.68 VL  32.655 GAL  -8.29 AZL  88.39 HCA 268.87 SMA 186.21 ECC .24391 INC 1.6067 V1  29.866
RP  212.15 LAP  -1.61 LOP 289.55 VP  23.204 GAP -11.66 AZP  90.03 TAL 315.46 TAP 224.32 RCA 140.79 APO 231.63 V2  25.863
RC 300.645 GL   10.54 GP    4.61 ZAL 148.32 ZAP  45.40 ETS 184.07 ZAE  72.53 ETE 180.83 ZAC  87.17 ETC 259.23 CLP  45.21
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PLANETOCENTRIC CONIC

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C3  24.554 VHL  4.955 DLA  13.38 RAL 175.63 RAD 6568.0 VEL 12.080 PTH   2.16 VHP  4.368 DPA  15.69 RAP 159.09 ECC 1.4041
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LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 46 23	2692.96	-27.59	74.05	45.29	96.66	20 31 16	2093.0	-26.38	65.60
90.00	11 17 21	4479.17	8.92	187.68	38.77	63.01	12 32 0	3879.2	5.23	180.95
100.00	21 14 43	2408.07	-28.91	52.91	45.09	97.94	21 54 51	1808.1	-27.51	44.38
100.00	12 31 42	4239.29	10.11	169.42	38.14	61.72	13 42 21	3639.3	6.25	162.76
110.00	22 38 41	2145.33	-32.42	32.26	44.39	101.48	23 14 26	1545.3	-30.50	23.57
110.00	13 24 13	4074.80	13.19	155.12	36.32	58.17	14 32 8	3474.8	8.89	148.66

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DIFFERENTIAL CORRECTIONS                    MID-COURSE EXECUTION ACCURACY          ORBIT DETERMINATION ACCURACY
TDE-2.6315 TRA 8.1244 TC3-7.0414 BAU 2.3181   SGT12296.2 SGR 1039.5 SG3 1367.0      ST  4206.4 SR   831.5 SS  2390.2
RDE  .7134 RRA -.2913 RC3  .5341 FAU .22966   RRT -.7469 RRF -.7787 RTF  .9954      CRT -.8045 CRS  .8685 CST -.9931
FDE-4.3773 FRA10.6535 FC3-8.0975 BSP  42677   SGB12340.0 R23  .0493 R13 -.9956     LSA 4880.3 MSA  529.2 SSA   14.0
BDE 2.7265 BRA 8.1296 BC3 7.0617 FSP   5014   SG112320.7 SG2  689.8 THA 176.38     EL1 4260.0 EL2  487.6 ALF 170.84
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LAUNCH DATE OCT 14 1964 FLIGHT TIME 388.00 ARRIVAL DATE NOV 6 1965

HELIOCENTRIC CONIC DISTANCE 872.889 EARTH TO MARS

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RL  149.19 LAL    .00 LOL  20.68 VL  32.659 GAL  -8.44 AZL  88.37 HCA 270.07 SMA 186.27 ECC .24557 INC 1.6253 V1  29.866
RP  211.87 LAP  -1.63 LOP 290.76 VP  23.245 GAP -11.86 AZP  90.00 TAL 314.86 TAP 224.93 RCA 140.53 APO 232.01 V2  25.895
RC 301.687 GL   10.51 GP    4.52 ZAL 148.86 ZAP  44.41 ETS 184.13 ZAE  71.26 ETE 180.93 ZAC  87.12 ETC 259.19 CLP  44.23
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PLANETOCENTRIC CONIC

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C3  25.240 VHL  5.024 DLA  13.13 RAL 176.15 RAD 6568.0 VEL 12.109 PTH   2.17 VHP  4.459 DPA  15.52 RAP 159.27 ECC 1.4154
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LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 50 38	2691.08	-27.57	73.92	46.21	96.73	20 35 29	2091.1	-26.35	65.46
90.00	11 17 14	4494.61	9.40	188.57	39.69	63.17	12 32 8	3894.6	5.72	181.82
100.00	21 18 48	2406.72	-28.90	52.81	46.01	97.99	21 58 55	1806.7	-27.49	44.29
100.00	12 31 44	4254.24	10.59	170.27	39.06	61.88	13 42 39	3654.2	6.75	163.58
110.00	22 42 25	2145.10	-32.42	32.24	45.31	101.49	23 18 10	1545.1	-30.50	23.55
110.00	13 24 37	4088.59	13.68	155.88	37.25	58.37	14 32 46	3488.6	9.40	149.40

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DIFFERENTIAL CORRECTIONS                    MID-COURSE EXECUTION ACCURACY          ORBIT DETERMINATION ACCURACY
TDE-2.7419 TRA 8.3873 TC3-6.9772 BAU 2.3607   SGT12465.9 SGR 1023.9 SG3 1298.1      ST  4301.8 SR   826.9 SS  2341.6
RDE  .7197 RRA -.2834 RC3  .5120 FAU .21815   RRT -.7390 RRF -.7719 RTF  .9952      CRT -.8049 CRS  .8691 CST -.9930
FDE-4.2785 FRA10.2961 FC3-7.4828 BSP  43344   SGB12507.9 R23  .0507 R13 -.9954     LSA 4939.0 MSA  527.2 SSA   14.0
BDE 2.8348 BRA 8.3921 BC3 6.9959 FSP   4778   SG112488.9 SG2  688.6 THA 176.52     EL1 4353.6 EL2  484.9 ALF 171.09
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LAUNCH DATE OCT 14 1964 FLIGHT TIME 390.00 ARRIVAL DATE NOV 8 1965

HELIOCENTRIC CONIC DISTANCE 876.971 EARTH TO MARS

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RL  149.19 LAL    .00 LOL  20.68 VL  32.663 GAL  -8.59 AZL  88.36 HCA 271.28 SMA 186.34 ECC .24731 INC 1.6440 V1  29.866
RP  211.60 LAP  -1.64 LOP 291.97 VP  23.284 GAP -12.05 AZP  89.96 TAL 314.25 TAP 225.53 RCA 140.25 APO 232.42 V2  25.926
RC 302.717 GL   10.48 GP    4.44 ZAL 149.42 ZAP  43.45 ETS 184.19 ZAE  70.03 ETE 181.04 ZAC  87.08 ETC 259.15 CLP  43.27
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PLANETOCENTRIC CONIC

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C3  25.965 VHL  5.096 DLA  12.87 RAL 176.68 RAD 6568.0 VEL 12.138 PTH   2.18 VHP  4.552 DPA  15.35 RAP 159.47 ECC 1.4273
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LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 54 58	2689.17	-27.56	73.78	47.15	96.79	20 39 47	2089.2	-26.33	65.33
90.00	11 17 4	4510.51	9.89	189.48	40.63	63.33	12 32 15	3910.5	6.23	182.71
100.00	21 22 58	2405.36	-28.89	52.71	46.95	98.04	22 3 3	1805.4	-27.47	44.19
100.00	12 31 45	4269.56	11.08	171.14	40.01	62.06	13 42 55	3669.6	7.26	164.44
110.00	22 46 13	2144.87	-32.42	32.22	46.24	101.49	23 21 57	1544.9	-30.49	23.53
110.00	13 25 0	4102.80	14.19	156.67	38.19	58.57	14 33 23	3502.8	9.93	150.17

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DIFFERENTIAL CORRECTIONS                    MID-COURSE EXECUTION ACCURACY          ORBIT DETERMINATION ACCURACY
TDE-2.8551 TRA 8.6561 TC3-6.9042 BAU 2.4027   SGT12629.0 SGR 1009.3 SG3 1231.4      ST  4395.7 SR   822.4 SS  2292.4
RDE  .7263 RRA -.2762 RC3  .4908 FAU .20696   RRT -.7313 RRF -.7654 RTF  .9950      CRT -.8053 CRS  .8700 CST -.9929
FDE-4.1797 FRA 9.9450 FC3-6.9008 BSP  43972   SGB12669.3 R23  .0521 R13 -.9952     LSA 4997.8 MSA  525.1 SSA   13.9
BDE 2.9460 BRA 8.6605 BC3 6.9217 FSP   4549   SG112650.6 SG2  687.1 THA 176.65     EL1 4445.9 EL2  482.0 ALF 171.33
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LAUNCH DATE OCT 14 1964 FLIGHT TIME 392.00 ARRIVAL DATE NOV 10 1965

HELIOCENTRIC CONIC DISTANCE 881.049 EARTH TO MARS

RL 149.19 LAL .00 LOL 20.68 VL 32.667 GAL -8.75 AZL 88.34 HCA 272.49 SMA 186.40 ECC .24913 INC 1.6628 V1 29.866
RP 211.33 LAP -1.66 LOP 293.18 VP 23.324 GAP -12.24 AZP 89.93 TAL 313.62 TAP 226.11 RCA 139.96 APO 232.84 V2 25.956
RC 303.736 GL 10.44 GP 4.35 ZAL 149.98 ZAP 42.52 ETS 184.24 ZAE 68.82 ETE 181.14 ZAC 87.05 ETC 259.11 CLP 42.34

PLANETOCENTRIC CONIC

C3 26.731 VHL 5.170 DLA 12.60 RAL 177.20 RAD 6568.1 VEL 12.170 PTH 2.18 VHP 4.648 DPA 15.16 RAP 159.71 ECC 1.4399

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 59 21	2687.25	-27.54	73.64	48.10	96.86	20 44 9	2087.3	-26.30	65.19
90.00	11 16 53	4526.85	10.38	190.43	41.60	63.51	12 32 20	3926.8	6.74	183.64
100.00	21 27 11	2403.99	-28.87	52.61	47.90	98.10	22 7 15	1804.0	-27.45	44.09
100.00	12 31 44	4285.34	11.58	172.05	40.97	62.25	13 43 9	3685.3	7.78	165.32
110.00	22 50 4	2144.66	-32.41	32.21	47.19	101.50	23 25 49	1544.7	-30.49	23.52
110.00	13 25 21	4117.43	14.71	157.49	39.16	58.79	14 33 58	3517.4	10.47	150.96

DIFFERENTIAL CORRECTIONS
TDE-2.9718 TRA 8.9309 TC3-6.8248 BAU 2.4448
RDE .7332 RRA -.2697 RC3 .4707 FAU .19617
FDE-4.0814 FRA 9.6006 FC3-6.3533 BSP 44601
BDE 3.0609 BRA 8.9350 BC3 6.8410 FSP 4327

MID-COURSE EXECUTION ACCURACY
SGT12786.6 SGR 995.5 SG3 1167.1
RRT -.7241 RRF -.7594 RTF .9948
SGB12825.3 R23 .0537 R13 -.9949
SG112807.0 SG2 685.5 THA 176.76

ORBIT DETERMINATION ACCURACY
ST 4488.5 SR 817.9 SS 2242.8
CRT -.8059 CRS .8710 CST -.9928
LSA 5056.9 MSA 522.8 SSA 13.8
EL1 4537.2 EL2 479.0 ALF 171.55

LAUNCH DATE OCT 14 1964 FLIGHT TIME 394.00 ARRIVAL DATE NOV 12 1965

HELIOCENTRIC CONIC DISTANCE 885.122 EARTH TO MARS

RL 149.19 LAL .00 LOL 20.68 VL 32.671 GAL -8.91 AZL 88.32 HCA 273.71 SMA 186.47 ECC .25103 INC 1.6816 V1 29.866
RP 211.08 LAP -1.68 LOP 294.39 VP 23.362 GAP -12.44 AZP 89.89 TAL 312.97 TAP 226.68 RCA 139.66 APO 233.28 V2 25.986
RC 304.746 GL 10.40 GP 4.27 ZAL 150.54 ZAP 41.62 ETS 184.29 ZAE 67.64 ETE 181.23 ZAC 87.03 ETC 259.06 CLP 41.44

PLANETOCENTRIC CONIC

C3 27.542 VHL 5.248 DLA 12.33 RAL 177.73 RAD 6568.1 VEL 12.203 PTH 2.19 VHP 4.746 DPA 14.96 RAP 159.98 ECC 1.4533

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 3 49	2685.34	-27.52	73.50	49.08	96.93	20 48 34	2085.3	-26.28	65.06
90.00	11 16 39	4543.62	10.89	191.40	42.58	63.70	12 32 23	3943.6	7.27	184.59
100.00	21 31 29	2402.63	-28.86	52.51	48.88	98.15	22 11 31	1802.6	-27.43	44.00
100.00	12 31 41	4301.56	12.09	172.98	41.96	62.45	13 43 23	3701.6	8.31	166.23
110.00	22 53 59	2144.48	-32.41	32.19	46.16	101.51	23 29 43	1544.5	-30.49	23.51
110.00	13 25 40	4132.47	15.24	158.34	40.14	59.02	14 34 33	3532.5	11.02	151.77

DIFFERENTIAL CORRECTIONS
TDE-3.0930 TRA 9.2108 TC3-6.7405 BAU 2.4875
RDE .7406 RRA -.2639 RC3 .4517 FAU .18578
FDE-3.9850 FRA 9.2610 FC3-5.8396 BSP 45178
BDE 3.1805 BRA 9.2146 BC3 6.7556 FSP 4110

MID-COURSE EXECUTION ACCURACY
SGT12938.6 SGR 982.6 SG3 1105.1
RRT -.7173 RRF -.7539 RTF .9945
SGB12975.9 R23 .0553 R13 -.9947
SG112957.9 SG2 683.6 THA 176.87

ORBIT DETERMINATION ACCURACY
ST 4580.8 SR 813.5 SS 2193.1
CRT -.8068 CRS .8723 CST -.9926
LSA 5117.0 MSA 520.1 SSA 13.7
EL1 4628.1 EL2 475.7 ALF 171.76

LAUNCH DATE OCT 14 1964 FLIGHT TIME 396.00 ARRIVAL DATE NOV 14 1965

HELIOCENTRIC CONIC DISTANCE 889.187 EARTH TO MARS

RL 149.19 LAL .00 LOL 20.68 VL 32.675 GAL -9.08 AZL 88.30 HCA 274.93 SMA 186.54 ECC .25302 INC 1.7005 V1 29.866
RP 210.82 LAP -1.69 LOP 295.61 VP 23.400 GAP -12.64 AZP 89.85 TAL 312.30 TAP 227.23 RCA 139.34 APO 233.74 V2 26.015
RC 305.746 GL 10.35 GP 4.19 ZAL 151.12 ZAP 40.75 ETS 184.34 ZAE 66.49 ETE 181.32 ZAC 87.01 ETC 259.00 CLP 40.57

PLANETOCENTRIC CONIC

C3 28.400 VHL 5.329 DLA 12.04 RAL 178.27 RAD 6568.1 VEL 12.238 PTH 2.20 VHP 4.847 DPA 14.75 RAP 160.28 ECC 1.4674

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 8 20	2683.44	-27.51	73.37	50.06	97.00	20 53 4	2083.4	-26.25	64.92
90.00	11 16 24	4560.81	11.41	192.39	43.59	63.91	12 32 25	3960.8	7.81	185.56
100.00	21 35 49	2401.29	-28.85	52.41	49.86	98.20	22 15 51	1801.3	-27.41	43.90
100.00	12 31 36	4318.19	12.61	173.94	42.97	62.67	13 43 34	3718.2	8.85	167.17
110.00	22 57 56	2144.34	-32.41	32.18	49.14	101.52	23 33 41	1544.3	-30.48	23.50
110.00	13 25 59	4147.90	15.78	159.21	41.16	59.27	14 35 6	3547.9	11.58	152.61

DIFFERENTIAL CORRECTIONS
TDE-3.2187 TRA 9.4974 TC3-6.6496 BAU 2.5301
RDE .7484 RRA -.2588 RC3 .4335 FAU .17572
FDE-3.8888 FRA 8.9275 FC3-5.3566 BSP 45727
BDE 3.3045 BRA 9.5009 BC3 6.6637 FSP 3899

MID-COURSE EXECUTION ACCURACY
SGT13084.9 SGR 970.5 SG3 1045.4
RRT -.7110 RRF -.7489 RTF .9942
SGB13120.9 R23 .0570 R13 -.9944
SG113103.1 SG2 681.4 THA 176.97

ORBIT DETERMINATION ACCURACY
ST 4672.4 SR 809.3 SS 2142.9
CRT -.8079 CRS .8737 CST -.9925
LSA 5177.8 MSA 517.2 SSA 13.6
EL1 4718.4 EL2 472.3 ALF 171.95

LAUNCH DATE OCT 14 1964 FLIGHT TIME 398.00 ARRIVAL DATE NOV 16 1965

HELIOCENTRIC CONIC DISTANCE 893.246 EARTH TO MARS

RL 149.19 LAL .00 LOL 20.68 VL 32.679 GAL -9.26 AZL 88.28 HCA 276.15 SMA 186.61 ECC .25509 INC 1.7195 V1 29.866
RP 210.58 LAP -1.71 LOP 296.84 VP 23.438 GAP -12.84 AZP 89.82 TAL 311.62 TAP 227.77 RCA 139.01 APO 234.22 V2 26.043
RC 306.737 GL 10.30 GP 4.12 ZAL 151.70 ZAP 39.91 ETS 184.38 ZAE 65.36 ETE 181.41 ZAC 87.00 ETC 258.94 CLP 39.73

PLANETOCENTRIC CONIC

C3 29.308 VHL 5.414 DLA 11.75 RAL 178.81 RAD 6568.2 VEL 12.275 PTH 2.21 VHP 4.951 DPA 14.54 RAP 160.61 ECC 1.4823

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 12 55	2681.56	-27.49	73.23	51.07	97.06	20 57 37	2081.6	-26.23	64.79
90.00	11 16 7	4578.42	11.93	193.42	44.62	64.13	12 32 25	3978.4	8.36	186.57
100.00	21 40 14	2399.99	-28.83	52.32	50.87	98.24	22 20 14	1800.0	-27.39	43.81
100.00	12 31 30	4335.23	13.15	174.92	44.00	62.91	13 43 45	3735.2	9.41	168.13
110.00	23 1 57	2144.24	-32.41	32.18	50.14	101.52	23 37 42	1544.2	-30.48	23.49
110.00	13 26 15	4163.73	16.32	160.11	42.19	59.54	14 35 39	3563.7	12.16	153.48

DIFFERENTIAL CORRECTIONS
TDE-3.3484 TRA 9.7905 TC3-6.5548 BAU 2.5735
RDE .7566 RRA -.2544 RC3 .4162 FAU .16605
FDE-3.7938 FRA 8.5993 FC3-4.9049 BSP 46252
BDE 3.4328 BRA 9.7938 BC3 6.5680 FSP 3695

MID-COURSE EXECUTION ACCURACY
SGT13226.6 SGR 959.1 SG3 987.9
RRT -.7053 RRF -.7445 RTF .9939
SGB13261.3 R23 .0589 R13 -.9940
SG113243.9 SG2 679.1 THA 177.06

ORBIT DETERMINATION ACCURACY
ST 4762.9 SR 805.1 SS 2092.4
CRT -.8091 CRS .8754 CST -.9923
LSA 5239.0 MSA 514.2 SSA 13.5
EL1 4807.7 EL2 468.7 ALF 172.14

LAUNCH DATE OCT 15 1964 FLIGHT TIME 240.00 ARRIVAL DATE JUN 12 1965

HELIOCENTRIC CONIC DISTANCE 582.435 EARTH TO MARS

RL 149.15 LAL .00 LOL 21.68 VL 33.154 GAL -7.24 AZL 93.24 HCA 189.98 SMA 195.04 ECC .26528 INC 3.2385 V1 29.874
RP 238.31 LAP .56 LOP 211.64 VP 20.818 GAP 8.58 AZP 86.81 TAL 324.38 TAP 154.36 RCA 143.30 APO 246.78 V2 23.056
RC 180.373 GL -21.43 GP 17.71 ZAL 136.50 ZAP 148.60 ETS 147.06 ZAE 157.36 ETE 52.15 ZAC 106.12 ETC 255.44 CLP 153.63

PLANETOCENTRIC CONIC

C3 25.858 VHL 5.085 DLA -13.07 RAL 155.96 RAD 6568.0 VEL 12.134 PTH 2.17 VHP 5.842 DPA 15.14 RAP 192.91 ECC 1.4255

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 50 17	1858.48	-9.64	20.07	19.86	116.75	22 21 15	1258.5	-5.97	13.31
90.00	6 28 35	5339.15	27.60	243.16	26.44	83.42	7 57 34	4739.2	26.40	234.70
100.00	23 4 50	1617.96	-10.84	1.76	19.23	118.03	23 31 48	1018.0	-7.00	355.06
100.00	7 56 43	5054.91	28.94	222.07	26.25	82.16	9 20 58	4454.9	27.55	213.54
110.00	0 1 43	1452.09	-13.95	347.35	17.41	121.53	0 25 55	852.1	-9.68	340.85
110.00	9 20 15	4793.53	32.48	201.52	25.56	78.70	10 40 9	4193.5	30.58	192.82

DIFFERENTIAL CORRECTIONS
TDE 1.8000 TRA-3.4103 TC3 1.4905 BAU .6253
RDE .9133 RRA-1.2217 RC3 1.0247 FAU .16059
FDE-3.8928 FRA 5.8235 FC3-5.3767 BSP 17568
BDE 2.0185 BRA 3.6225 BC3 1.8088 FSP 2654

MID-COURSE EXECUTION ACCURACY
SGT 4687.5 SGR 2035.2 SG3 840.0
RRT .9687 RRF -.9972 RTF -.9602
SGB 5110.3 R23 -.2328 R13 -.9700
SG1 5089.1 SG2 465.3 THA 23.01

ORBIT DETERMINATION ACCURACY
ST 2348.7 SR 1113.4 SS 2439.1
CRT .9905 CRS .9991 CST .9952
LSA 3559.4 MSA 188.7 SSA 11.0
EL1 2595.5 EL2 138.3 ALF 25.23

LAUNCH DATE OCT 15 1964 FLIGHT TIME 242.00 ARRIVAL DATE JUN 14 1965

HELIOCENTRIC CONIC DISTANCE 585.980 EARTH TO MARS

RL 149.15 LAL .00 LOL 21.68 VL 33.126 GAL -7.15 AZL 92.80 HCA 190.93 SMA 194.50 ECC .26269 INC 2.8037 V1 29.874
RP 237.98 LAP .53 LOP 212.60 VP 20.809 GAP 8.14 AZP 87.25 TAL 324.59 TAP 155.52 RCA 143.41 APO 245.60 V2 23.089
RC 182.651 GL -18.95 GP 16.62 ZAL 137.15 ZAP 148.58 ETS 149.34 ZAE 158.55 ETE 51.91 ZAC 105.12 ETC 255.50 CLP 152.95

PLANETOCENTRIC CONIC

C3 24.508 VHL 4.951 DLA -10.65 RAL 156.60 RAD 6568.0 VEL 12.078 PTH 2.16 VHP 5.681 DPA 14.04 RAP 192.67 ECC 1.4033

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 32 28	1926.93	-11.71	24.05	19.64	115.97	22 4 35	1326.9	-8.13	17.19
90.00	6 51 33	5244.28	26.68	236.58	25.02	80.14	8 18 58	4644.3	25.04	228.09
100.00	22 48 30	1681.63	-12.85	5.41	19.06	117.22	23 16 32	1081.6	-9.10	358.63
100.00	8 18 12	4964.81	27.93	215.56	24.76	78.88	9 40 57	4364.8	26.11	207.23
110.00	23 44 43	1505.63	-15.84	350.35	17.36	120.70	24 9 48	905.6	-11.65	343.75
110.00	9 38 30	4713.57	31.26	195.61	23.88	75.40	10 57 3	4113.6	28.94	187.17

DIFFERENTIAL CORRECTIONS
TDE 1.7184 TRA-3.3622 TC3 1.5717 BAU .6139
RDE .8311 RRA-1.1438 RC3 1.0200 FAU .16814
FDE-3.8568 FRA 6.1479 FC3-5.9394 BSP 17514
BDE 1.9088 BRA 3.5515 BC3 1.8736 FSP 2839

MID-COURSE EXECUTION ACCURACY
SGT 4696.2 SGR 1838.9 SG3 893.4
RRT .9684 RRF -.9968 RTF -.9616
SGB 5080.7 R23 -.2284 R13 -.9704
SG1 5060.9 SG2 448.7 THA 21.97

ORBIT DETERMINATION ACCURACY
ST 2317.0 SR 1043.7 SS 2438.0
CRT .9901 CRS .9985 CST .9962
LSA 3517.3 MSA 173.7 SSA 13.4
EL1 2537.7 EL2 133.8 ALF 24.11

LAUNCH DATE OCT 15 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUN 16 1965

HELIOCENTRIC CONIC DISTANCE 589.544 EARTH TO MARS

RL 149.15 LAL .00 LOL 21.68 VL 33.098 GAL -7.05 AZL 92.44 HCA 191.89 SMA 193.99 ECC .26020 INC 2.4364 V1 29.874
RP 237.65 LAP .50 LOP 213.56 VP 20.804 GAP 7.71 AZP 87.62 TAL 324.80 TAP 156.69 RCA 143.52 APO 244.47 V2 23.123
RC 184.919 GL -16.78 GP 15.70 ZAL 137.60 ZAP 148.40 ETS 151.40 ZAE 159.64 ETE 52.05 ZAC 104.27 ETC 255.55 CLP 152.22

PLANETOCENTRIC CONIC

C3 23.399 VHL 4.837 DLA -8.51 RAL 157.14 RAD 6567.9 VEL 12.032 PTH 2.15 VHP 5.531 DPA 13.12 RAP 192.47 ECC 1.3851

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 17 31	1985.09	-13.42	27.45	19.56	115.17	21 50 36	1385.1	-9.92	20.52
90.00	7 10 47	5163.43	25.61	230.70	23.82	77.48	8 36 51	4563.4	23.63	222.59
100.00	22 34 44	1736.01	-14.52	8.59	19.01	116.42	23 3 40	1136.0	-10.85	1.71
100.00	8 36 16	4887.75	26.80	210.11	23.51	76.23	9 57 43	4287.7	24.64	201.98
110.00	23 33 33	1551.81	-17.42	352.99	17.39	119.89	23 59 25	951.8	-13.32	346.29
110.00	9 53 56	4644.71	29.97	190.66	22.51	72.73	11 11 20	4044.7	27.32	182.47

DIFFERENTIAL CORRECTIONS
TDE 1.6490 TRA-3.3105 TC3 1.6470 BAU .6057
RDE .7681 RRA-1.0769 RC3 1.0180 FAU .17603
FDE-3.8415 FRA 6.4558 FC3-6.5129 BSP 17429
BDE 1.8192 BRA 3.4813 BC3 1.9362 FSP 3013

MID-COURSE EXECUTION ACCURACY
SGT 4698.3 SGR 1860.5 SG3 947.2
RRT .9679 RRF -.9962 RTF -.9626
SGB 5053.3 R23 -.2239 R13 -.9707
SG1 5034.4 SG2 436.6 THA 21.14

ORBIT DETERMINATION ACCURACY
ST 2287.4 SR 989.1 SS 2442.5
CRT .9895 CRS .9976 CST .9970
LSA 3485.7 MSA 161.8 SSA 16.1
EL1 2488.7 EL2 131.5 ALF 23.23

LAUNCH DATE OCT 15 1964 FLIGHT TIME 246.00 ARRIVAL DATE JUN 18 1965

HELIOCENTRIC CONIC DISTANCE 593.128 EARTH TO MARS

RL 149.15 LAL .00 LOL 21.68 VL 33.073 GAL -6.96 AZL 92.12 HCA 192.85 SMA 193.51 ECC .25781 INC 2.1225 V1 29.874
RP 237.31 LAP .47 LOP 214.52 VP 20.800 GAP 7.28 AZP 87.93 TAL 325.00 TAP 157.85 RCA 143.62 APO 243.40 V2 23.157
RC 187.176 GL -14.87 GP 14.92 ZAL 137.90 ZAP 148.08 ETS 153.27 ZAE 160.65 ETE 52.54 ZAC 103.55 ETC 255.59 CLP 151.45

PLANETOCENTRIC CONIC

C3 22.463 VHL 4.740 DLA -6.63 RAL 157.59 RAD 6567.9 VEL 11.993 PTH 2.14 VHP 5.391 DPA 12.33 RAP 192.30 ECC 1.3697

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 4 37	2035.51	-14.86	30.45	19.53	114.38	21 38 32	1435.5	-11.44	23.44
90.00	7 27 15	5093.14	24.48	225.86	22.82	75.31	8 52 8	4493.1	22.23	217.91
100.00	22 22 48	1783.28	-15.93	11.38	19.02	115.63	22 52 31	1183.3	-12.35	4.42
100.00	8 51 45	4820.59	25.02	205.47	22.47	74.05	10 12 6	4220.6	23.19	197.52
110.00	23 23 49	1592.22	-18.78	355.34	17.47	119.10	23 50 22	992.2	-14.75	348.54
110.00	10 7 13	4584.42	28.68	186.44	21.38	70.54	11 23 38	3984.4	25.75	178.48

DIFFERENTIAL CORRECTIONS
TDE 1.6056 TRA-3.2394 TC3 1.7474 BAU .6078
RDE .7207 RRA-1.0175 RC3 1.0215 FAU .18453
FDE-3.8494 FRA 6.7467 FC3-7.1119 BSP 16912
BDE 1.7600 BRA 3.3954 BC3 2.0240 FSP 3165

MID-COURSE EXECUTION ACCURACY
SGT 4696.1 SGR 1797.3 SG3 1002.1
RRT .9688 RRF -.9954 RTF -.9652
SGB 5028.3 R23 -.2135 R13 -.9723
SG1 5011.0 SG2 417.3 THA 20.49

ORBIT DETERMINATION ACCURACY
ST 2273.5 SR 947.6 SS 2454.4
CRT .9896 CRS .9965 CST .9980
LSA 3474.2 MSA 144.4 SSA 19.4
EL1 2459.9 EL2 126.0 ALF 22.48

LAUNCH DATE OCT 15 1964 FLIGHT TIME 248.00 ARRIVAL DATE JUN 20 1965

HELIOCENTRIC CONIC DISTANCE 596.726 EARTH TO MARS

RL 149.15 LAL .00 LOL 21.68 VL 33.048 GAL -6.87 AZL 91.85 HCA 193.81 SMA 193.05 ECC .25551 INC 1.8509 V1 29.874
RP 236.98 LAP .44 LOP 215.48 VP 20.799 GAP 6.85 AZP 88.20 TAL 325.20 TAP 159.01 RCA 143.72 APO 242.37 V2 23.191
RC 189.421 GL -13.16 GP 14.25 ZAL 138.09 ZAP 147.65 ETS 154.96 ZAE 161.60 ETE 53.39 ZAC 102.93 ETC 255.62 CLP 150.65

PLANETOCENTRIC CONIC

C3 21.660 VHL 4.654 DLA -4.94 RAL 157.96 RAD 6567.9 VEL 11.960 PTH 2.13 VHP 5.259 DPA 11.66 RAP 192.15 ECC 1.3565

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 53 16	2079.91	-16.09	33.13	19.56	113.62	21 27 56	1479.9	-12.76	26.04
90.00	7 41 37	5031.12	23.35	221.67	21.97	73.50	9 5 28	4431.1	20.86	213.88
100.00	22 12 17	1825.00	-17.14	13.89	19.06	114.87	22 42 42	1225.0	-13.65	6.84
100.00	9 5 17	4761.25	24.45	201.45	21.59	72.25	10 24 38	4161.3	21.79	193.66
110.00	23 15 12	1628.03	-19.95	357.46	17.58	118.35	23 42 20	1028.0	-16.01	350.56
110.00	10 18 51	4530.99	27.41	182.80	20.43	68.73	11 34 22	3931.0	24.27	175.04

DIFFERENTIAL CORRECTIONS
TDE 1.5406 TRA-3.1931 TC3 1.7929 BAU .5973
RDE .6795 RRA -.9704 RC3 1.0198 FAU .19228
FDE-3.8479 FRA 7.0576 FC3-7.6855 BSP 17045
BDE 1.6838 BRA 3.3373 BC3 2.0627 FSP 3366

MID-COURSE EXECUTION ACCURACY
SGT 4685.2 SGR 1743.2 SG3 1057.0
RRT .9675 RRF -.9946 RTF -.9654
SGB 4999.0 R23 -.2104 R13 -.9722
SG1 4981.8 SG2 414.3 THA 19.94

ORBIT DETERMINATION ACCURACY
ST 2236.3 SR 911.0 SS 2460.9
CRT .9885 CRS .9951 CST .9984
LSA 3444.8 MSA 140.2 SSA 22.1
EL1 2411.3 EL2 127.9 ALF 22.00

LAUNCH DATE OCT 15 1964 FLIGHT TIME 250.00 ARRIVAL DATE JUN 22 1965

HELIOCENTRIC CONIC DISTANCE 600.340 EARTH TO MARS

RL 149.15 LAL .00 LOL 21.68 VL 33.024 GAL -6.79 AZL 91.61 HCA 194.78 SMA 192.61 ECC .25332 INC 1.6125 V1 29.874
RP 236.64 LAP .41 LOP 216.45 VP 20.800 GAP 6.44 AZP 88.44 TAL 325.39 TAP 160.17 RCA 143.82 APO 241.40 V2 23.226
RC 191.655 GL -11.63 GP 13.66 ZAL 138.19 ZAP 147.13 ETS 156.50 ZAE 162.51 ETE 54.61 ZAC 102.39 ETC 255.65 CLP 149.81

PLANETOCENTRIC CONIC

C3 20.958 VHL 4.578 DLA -3.42 RAL 158.28 RAD 6567.9 VEL 11.931 PTH 2.12 VHP 5.133 DPA 11.08 RAP 192.01 ECC 1.3449

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 43 7	2119.49	-17.15	35.55	19.60	112.88	21 18 27	1519.5	-13.91	28.38
90.00	7 54 18	4975.68	22.23	217.99	21.24	71.99	9 17 44	4375.7	19.56	210.33
100.00	22 2 52	1862.25	-18.19	16.16	19.12	114.13	22 33 54	1262.2	-14.78	9.03
100.00	9 17 15	4708.15	23.30	197.92	20.85	70.73	10 35 43	4108.2	20.46	190.28
110.00	23 7 27	1660.08	-20.97	359.38	17.69	117.63	23 35 7	1060.1	-17.11	352.39
110.00	10 29 9	4483.09	26.19	179.62	19.62	67.20	11 43 52	3883.1	22.87	172.03

DIFFERENTIAL CORRECTIONS
TDE 1.4871 TRA-3.1383 TC3 1.8442 BAU .5909
RDE .6478 RRA -.9283 RC3 1.0234 FAU .20076
FDE-3.8671 FRA 7.3578 FC3-8.2930 BSP 16985
BDE 1.6221 BRA 3.2727 BC3 2.1091 FSP 3547

MID-COURSE EXECUTION ACCURACY
SGT 4668.7 SGR 1699.9 SG3 1113.8
RRT .9665 RRF -.9937 RTF -.9658
SGB 4968.6 R23 -.2060 R13 -.9723
SG1 4951.5 SG2 411.6 THA 19.53

ORBIT DETERMINATION ACCURACY
ST 2204.5 SR 883.2 SS 2474.8
CRT .9874 CRS .9936 CST .9988
LSA 3427.1 MSA 136.9 SSA 24.7
EL1 2371.3 EL2 129.8 ALF 21.65

LAUNCH DATE OCT 15 1964 FLIGHT TIME 252.00 ARRIVAL DATE JUN 24 1965

HELIOCENTRIC CONIC DISTANCE 603.970 EARTH TO MARS

RL 149.15 LAL .00 LOL 21.68 VL 33.001 GAL -6.71 AZL 91.40 HCA 195.74 SMA 192.19 ECC .25121 INC 1.4034 V1 29.874
RP 236.29 LAP .38 LOP 217.42 VP 20.803 GAP 6.03 AZP 88.65 TAL 325.58 TAP 161.33 RCA 143.91 APO 240.46 V2 23.261
RC 193.877 GL -10.26 GP 13.16 ZAL 138.23 ZAP 146.52 ETS 157.90 ZAE 163.37 ETE 56.22 ZAC 101.91 ETC 255.67 CLP 148.94

PLANETOCENTRIC CONIC

C3 20.336 VHL 4.510 DLA -2.04 RAL 158.55 RAD 6567.8 VEL 11.904 PTH 2.12 VHP 5.013 DPA 10.57 RAP 191.88 ECC 1.3347

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 33 56	2155.15	-18.08	37.75	19.64	112.17	21 9 51	1555.1	-14.92	30.51
90.00	8 5 40	4925.60	21.14	214.72	20.61	70.71	9 27 45	4325.6	18.31	207.19
100.00	21 54 20	1895.82	-19.12	18.23	19.19	113.43	22 25 55	1295.8	-15.78	11.02
100.00	9 27 57	4660.17	22.19	194.79	20.20	69.44	10 45 37	4060.2	19.19	187.28
110.00	23 0 24	1689.01	-21.88	1.14	17.80	116.95	23 28 33	1089.0	-18.09	354.06
110.00	10 38 22	4439.74	25.01	176.80	18.93	65.90	11 52 22	3839.7	21.54	169.36

DIFFERENTIAL CORRECTIONS
TDE 1.4332 TRA-3.0855 TC3 1.8812 BAU .5826
RDE .6205 RRA -.8935 RC3 1.0258 FAU .20888
FDE-3.8814 FRA 7.6745 FC3-8.8920 BSP 17020
BDE 1.5617 BRA 3.2123 BC3 2.1427 FSP 3761

MID-COURSE EXECUTION ACCURACY
SGT 4645.7 SGR 1663.7 SG3 1171.5
RRT .9654 RRF -.9926 RTF -.9662
SGB 4934.6 R23 -.2014 R13 -.9725
SG1 4917.5 SG2 410.0 THA 19.21

ORBIT DETERMINATION ACCURACY
ST 2168.7 SR 859.3 SS 2486.0
CRT .9863 CRS .9918 CST .9991
LSA 3406.2 MSA 135.3 SSA 27.1
EL1 2329.0 EL2 132.2 ALF 21.42

LAUNCH DATE OCT 15 1964 FLIGHT TIME 254.00 ARRIVAL DATE JUN 26 1965

HELIOCENTRIC CONIC DISTANCE 607.615 EARTH TO MARS

RL 149.15 LAL .00 LOL 21.68 VL 32.979 GAL -6.63 AZL 91.22 HCA 196.72 SMA 191.79 ECC .24919 INC 1.2170 V1 29.874
RP 235.94 LAP .35 LOP 218.39 VP 20.808 GAP 5.62 AZP 88.03 TAL 325.77 TAP 162.48 RCA 144.00 APO 239.58 V2 23.297
RC 196.086 GL -9.00 GP 12.71 ZAL 138.21 ZAP 145.85 ETS 159.19 ZAE 164.19 ETE 58.25 ZAC 101.49 ETC 255.69 CLP 148.03

PLANETOCENTRIC CONIC

C3 19.780 VHL 4.447 DLA -.78 RAL 158.79 RAD 6567.8 VEL 11.881 PTH 2.11 VHP 4.897 DPA 10.14 RAP 191.75 ECC 1.3255

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 25 31	2187.57	-18.90	39.78	19.70	111.48	21 1 59	1587.6	-15.82	32.46
90.00	8 15 55	4879.98	20.08	211.79	20.06	69.61	9 37 15	4280.0	17.13	204.37
100.00	21 46 30	1926.35	-19.93	20.13	19.25	112.75	22 18 37	1326.3	-16.68	12.84
100.00	9 37 37	4616.43	21.12	191.99	19.63	68.34	10 54 34	4016.4	17.99	184.59
110.00	22 53 55	1715.33	-22.68	2.76	17.91	116.29	23 22 30	1115.3	-18.96	355.60
110.00	10 46 42	4400.21	25.89	174.27	18.33	64.79	12 0 2	3800.2	20.29	166.98

DIFFERENTIAL CORRECTIONS
TDE 1.3854 TRA-3.0274 TC3 1.9189 BAU .5762
RDE .5990 RRA -.8627 RC3 1.0322 FAU .21759
FDE-3.9095 FRA 7.9889 FC3-9.5234 BSP 16949
BDE 1.5094 BRA 3.1479 BC3 2.1789 FSP 3968

MID-COURSE EXECUTION ACCURACY
SGT 4616.6 SGR 1635.2 SG3 1231.2
RRT .9643 RRF -.9915 RTF -.9667
SGB 4897.6 R23 -.1961 R13 -.9728
SG1 4880.5 SG2 409.4 THA 19.00

ORBIT DETERMINATION ACCURACY
ST 2134.8 SR 841.1 SS 2502.0
CRT .9851 CRS .9899 CST .9994
LSA 3392.0 MSA 135.4 SSA 29.2
EL1 2290.6 EL2 134.6 ALF 21.29

LAUNCH DATE OCT 15 1964 FLIGHT TIME 256.00 ARRIVAL DATE JUN 28 1965

HELIOCENTRIC CONIC DISTANCE 611.275 EARTH TO MARS

RL	149.15	LAL	.00	LOL	21.68	VL	32.958	GAL	-6.56	AZL	91.05	HCA	197.69	SMA	191.40	ECC	.24725	INC	1.0498	V1	29.874
RP	235.59	LAP	.32	LOP	219.36	VP	20.815	GAP	5.22	AZP	89.00	TAL	325.95	TAP	163.64	RCA	144.08	APO	238.73	V2	23.333
RC	198.280	GL	-7.86	GP	12.32	ZAL	138.16	ZAP	145.11	ETS	160.36	ZAE	164.96	ETE	60.72	ZAC	101.12	ETC	255.71	CLP	147.09

PLANETOCENTRIC CONIC

C3	19.278	VHL	4.391	DLA	.37	RAL	158.98	RAD	6567.8	VEL	11.860	PTH	2.10	VHP	4.786	DPA	9.77	RAP	191.61	ECC	1.3173

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 17 46	2217.27	-19.63	41.65	19.75	110.82	20 54 43	1617.3	-16.63	34.27
90.00	8 25 16	4838.10	19.07	209.14	19.58	68.66	9 45 54	4238.1	16.00	201.81
100.00	21 39 17	1954.32	-20.66	21.89	19.32	112.10	22 11 51	1354.3	-17.48	14.53
100.00	9 46 27	4576.27	20.09	189.45	19.14	67.38	11 2 43	3976.3	16.85	182.15
110.00	22 47 55	1739.46	-23.40	4.27	18.01	115.66	23 16 55	1139.5	-19.75	357.03
110.00	10 54 17	4363.90	22.82	172.00	17.81	63.83	12 7 1	3763.9	19.11	164.82

DIFFERENTIAL CORRECTIONS

TDE	1.3406	TRA	-2.9669	TC3	1.9513	BAU	.5700
RDE	.5817	RRA	-.8359	RC3	1.0410	FAU	.22669
FDE	-3.9465	FRA	8.3074	FC	-10.1801	BSP	16838
BDE	1.4613	BRA	3.0824	BC3	2.2116	FSP	4176

MID-COURSE EXECUTION ACCURACY

SGT	4581.1	SGR	1613.0	SG3	1293.0		
RRT	.9632	RRF	-.9904	RTF	-.9671		
SGB	4856.8	R23	-.1910	R13	-.9730		
SG1	4839.4	SG2	410.2	THA	18.88		

ORBIT DETERMINATION ACCURACY

ST	2100.5	SR	827.1	SS	2521.1
CRT	.9840	CRS	.9878	CST	.9995
LSA	3381.1	MSA	137.4	SSA	30.8
EL1	2253.3	EL2	137.4	ALF	21.26

LAUNCH DATE OCT 15 1964 FLIGHT TIME 258.00 ARRIVAL DATE JUN 30 1965

HELIOCENTRIC CONIC DISTANCE 614.949 EARTH TO MARS

RL	149.15	LAL	.00	LOL	21.68	VL	32.938	GAL	-6.48	AZL	90.90	HCA	198.67	SMA	191.04	ECC	.24540	INC	.8995	V1	29.874
RP	235.24	LAP	.29	LOP	220.34	VP	20.824	GAP	4.82	AZP	89.15	TAL	326.12	TAP	164.79	RCA	144.16	APO	237.92	V2	23.369
RC	200.460	GL	-6.80	GP	11.97	ZAL	138.07	ZAP	144.31	ETS	161.44	ZAE	165.69	ETE	63.69	ZAC	100.78	ETC	255.73	CLP	146.13

PLANETOCENTRIC CONIC

C3	18.822	VHL	4.338	DLA	1.44	RAL	159.16	RAD	6567.8	VEL	11.841	PTH	2.10	VHP	4.679	DPA	9.45	RAP	191.47	ECC	1.3098

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 10 33	2244.66	-20.29	43.40	19.80	110.19	20 47 57	1644.7	-17.36	35.95
90.00	8 33 51	4799.41	18.09	206.72	19.15	67.84	9 53 51	4199.4	14.93	199.47
100.00	21 32 33	1980.13	-21.31	23.53	19.38	111.47	22 5 33	1380.1	-18.20	16.11
100.00	9 54 32	4539.18	19.10	187.14	18.70	66.56	11 10 11	3939.2	15.76	179.93
110.00	22 42 20	1761.71	-24.05	5.67	18.11	115.06	23 11 42	1161.7	-20.47	358.35
110.00	11 1 14	4330.37	21.79	169.93	17.35	62.99	12 13 25	3730.4	18.00	162.86

DIFFERENTIAL CORRECTIONS

TDE	1.2963	TRA	-2.9052	TC3	1.9742	BAU	.5628
RDE	.5672	RRA	-.8132	RC3	1.0507	FAU	.23589
FDE	-3.9854	FRA	8.6369	FC	-10.8496	BSP	16732
BDE	1.4150	BRA	3.0168	BC3	2.2364	FSP	4400

MID-COURSE EXECUTION ACCURACY

SGT	4538.1	SGR	1595.7	SG3	1356.5		
RRT	.9621	RRF	-.9892	RTF	-.9674		
SGB	4810.5	R23	-.1860	R13	-.9732		
SG1	4792.8	SG2	412.1	THA	18.83		

ORBIT DETERMINATION ACCURACY

ST	2063.8	SR	815.9	SS	2540.6
CRT	.9828	CRS	.9855	CST	.9997
LSA	3370.2	MSA	141.2	SSA	32.0
EL1	2214.7	EL2	140.5	ALF	21.32

LAUNCH DATE OCT 15 1964 FLIGHT TIME 260.00 ARRIVAL DATE JUL 2 1965

HELIOCENTRIC CONIC DISTANCE 618.638 EARTH TO MARS

RL	149.15	LAL	.00	LOL	21.68	VL	32.919	GAL	-6.41	AZL	90.76	HCA	199.65	SMA	190.70	ECC	.24362	INC	.7627	V1	29.874
RP	234.89	LAP	.26	LOP	221.32	VP	20.835	GAP	4.43	AZP	89.28	TAL	326.29	TAP	165.94	RCA	144.24	APO	237.15	V2	23.405
RC	202.623	GL	-5.83	GP	11.66	ZAL	137.96	ZAP	143.46	ETS	162.44	ZAE	166.35	ETE	67.18	ZAC	100.48	ETC	255.74	CLP	145.12

PLANETOCENTRIC CONIC

C3	18.406	VHL	4.290	DLA	2.43	RAL	159.30	RAD	6567.7	VEL	11.823	PTH	2.09	VHP	4.575	DPA	9.18	RAP	191.32	ECC	1.3029

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 3 47	2270.10	-20.88	45.03	19.84	109.58	20 41 38	1670.1	-18.02	37.52
90.00	8 41 48	4763.46	17.15	204.50	18.77	67.12	10 1 11	4163.5	13.91	197.33
100.00	21 26 16	2004.07	-21.90	25.06	19.44	110.87	21 59 40	1404.1	-18.86	17.58
100.00	10 2 0	4504.72	18.15	185.02	18.31	65.83	11 17 5	3904.7	14.74	177.89
110.00	22 37 6	1782.34	-24.64	6.98	18.19	114.48	23 6 49	1182.3	-21.12	359.60
110.00	11 7 39	4299.22	20.82	168.04	16.93	62.26	12 19 18	3699.2	16.94	161.06

DIFFERENTIAL CORRECTIONS

TDE	1.2640	TRA	-2.8311	TC3	2.0148	BAU	.5609
RDE	.5571	RRA	-.7918	RC3	1.0664	FAU	.24630
FDE	-4.0475	FRA	8.9559	FC	-11.5849	BSP	16350
BDE	1.3813	BRA	2.9397	BC3	2.2796	FSP	4594

MID-COURSE EXECUTION ACCURACY

SGT	4489.9	SGR	1584.6	SG3	1423.2		
RRT	.9618	RRF	-.9879	RTF	-.9683		
SGB	4761.3	R23	-.1782	R13	-.9740		
SG1	4743.6	SG2	410.6	THA	18.90		

ORBIT DETERMINATION ACCURACY

ST	2035.0	SR	809.4	SS	2568.0
CRT	.9822	CRS	.9832	CST	.9998
LSA	3371.7	MSA	145.1	SSA	32.7
EL1	2185.5	EL2	141.5	ALF	21.43

LAUNCH DATE OCT 15 1964 FLIGHT TIME 262.00 ARRIVAL DATE JUL 4 1965

HELIOCENTRIC CONIC DISTANCE 622.339 EARTH TO MARS

RL	149.15	LAL	.00	LOL	21.68	VL	32.901	GAL	-6.35	AZL	90.64	HCA	200.63	SMA	190.37	ECC	.24193	INC	.6382	V1	29.874
RP	234.53	LAP	.22	LOP	222.30	VP	20.847	GAP	4.05	AZP	89.40	TAL	326.45	TAP	167.08	RCA	144.31	APO	236.42	V2	23.442
RC	204.770	GL	-4.93	GP	11.38	ZAL	137.83	ZAP	142.58	ETS	163.37	ZAE	166.95	ETE	71.24	ZAC	100.20	ETC	255.76	CLP	144.09

PLANETOCENTRIC CONIC

C3	18.024	VHL	4.245	DLA	3.35	RAL	159.44	RAD	6567.7	VEL	11.807	PTH	2.09	VHP	4.475	DPA	8.95	RAP	191.16	ECC	1.2966

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 57 27	2293.83	-21.41	46.56	19.89	108.99	20 35 41	1693.8	-18.62	39.00
90.00	8 49 11	4729.94	16.25	202.45	18.43	66.49	10 8 1	4129.9	12.94	195.34
100.00	21 20 22	2026.41	-22.43	26.50	19.50	110.29	21 54 8	1426.4	-19.47	18.96
100.00	10 8 58	4472.59	17.24	183.06	17.96	65.20	11 23 30	3872.6	13.76	176.01
110.00	22 32 12	1801.57	-25.17	8.22	18.28	113.93	23 2 13	1201.6	-21.72	.77
110.00	11 13 37	4270.19	19.89	166.30	16.57	61.61	12 24 47	3670.2	15.94	159.41

DIFFERENTIAL CORRECTIONS

TDE	1.2198	TRA	-2.7672	TC3	2.0189	BAU	.5517
RDE	.5473	RRA	-.7753	RC3	1.0795	FAU	.25614
FDE	-4.0962	FRA	9.3034	FC	-12.3029	BSP	16252
BDE	1.3370	BRA	2.8737	BC3	2.2894	FSP	4836

MID-COURSE EXECUTION ACCURACY

SGT	4432.0	SGR	1576.2	SG3	1491.2		
RRT	.9603	RRF	-.9867	RTF	-.9682		
SGB	4704.0	R23	-.1745	R13	-.9740		
SG1	4685.5	SG2	416.0	THA	19.01		

ORBIT DETERMINATION ACCURACY

ST	1993.1	SR	803.3	SS	2590.4
CRT	.9809	CRS	.9807	CST	.9998
LSA	3362.1	MSA	152.2	SSA	33.1
EL1	2143.9	EL2	145.4	ALF	21.67

LAUNCH DATE OCT 15 1964 FLIGHT TIME 264.00 ARRIVAL DATE JUL 6 1965

HELIOCENTRIC CONIC DISTANCE 626.051 EARTH TO MARS

RL 149.15 LAL .00 LOL 21.68 VL 32.883 GAL -6.29 AZL 90.53 HCA 201.62 SMA 190.05 ECC .24032 INC .5247 V1 29.874
RP 234.17 LAP .19 LOP 223.29 VP 20.862 GAP 3.67 AZP 89.51 TAL 326.61 TAP 168.22 RCA 144.38 APO 235.73 V2 23.479
RC 206.900 GL -4.09 GP 11.14 ZAL 137.69 ZAP 141.61 ETS 164.23 ZAE 167.46 ETE 75.87 ZAC 99.94 ETC 255.77 CLP 143.02

PLANETOCENTRIC CONIC

C3 17.674 VHL 4.204 DLA 4.21 RAL 159.55 RAD 6567.7 VEL 11.792 PTH 2.08 VHP 4.378 DPA 8.76 RAP 190.98 ECC 1.2909

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 51 29	2316.08	-21.90	48.02	19.94	108.42	20 30 5	1716.1	-19.18	40.40
90.00	8 56 5	4698.55	15.39	200.55	18.13	65.93	10 14 24	4098.5	12.01	193.50
100.00	21 14 48	2047.34	-22.92	27.87	19.55	109.73	21 48 55	1447.3	-20.02	20.27
100.00	10 15 27	4442.51	16.38	181.25	17.66	64.64	11 29 30	3842.5	12.83	174.26
110.00	22 27 34	1819.58	-25.66	9.39	18.36	113.39	22 57 54	1219.6	-22.28	1.87
110.00	11 19 10	4243.04	19.00	164.70	16.24	61.04	12 29 54	3643.0	14.99	157.87

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.1702 TRA-2.7066 TC3 2.0009 BAU .5386 SGT 4365.1 SGR 1570.6 SG3 1560.9 ST 1943.6 SR 798.2 SS 2610.7
RDE .5385 RRA -.7624 RC3 1.0919 FAU .26579 RRT .9581 RRF -.9854 RTF -.9676 CRT .9790 CRS .9779 CST .9998
FDE-4.1381 FRA 9.6724 FC-13.0198 BSP 16266 SGB 4639.1 R23 -.1727 R13 -.9736 LSA 3347.1 MSA 160.8 SSA 33.5
BDE 1.2882 BRA 2.8119 BC3 2.2794 FSP 5109 SG1 4619.6 SG2 425.3 THA 19.19 EL1 2095.6 EL2 150.9 ALF 22.02

LAUNCH DATE OCT 15 1964 FLIGHT TIME 266.00 ARRIVAL DATE JUL 8 1965

HELIOCENTRIC CONIC DISTANCE 629.778 EARTH TO MARS

RL 149.15 LAL .00 LOL 21.68 VL 32.867 GAL -6.23 AZL 90.42 HCA 202.61 SMA 189.75 ECC .23878 INC .4205 V1 29.874
RP 233.80 LAP .16 LOP 224.28 VP 20.877 GAP 3.30 AZP 89.61 TAL 326.76 TAP 169.36 RCA 144.45 APO 235.06 V2 23.517
RC 209.011 GL -3.30 GP 10.92 ZAL 137.54 ZAP 140.61 ETS 165.03 ZAE 167.86 ETE 81.08 ZAC 99.70 ETC 255.79 CLP 141.91

PLANETOCENTRIC CONIC

C3 17.350 VHL 4.165 DLA 5.02 RAL 159.66 RAD 6567.7 VEL 11.778 PTH 2.08 VHP 4.284 DPA 8.61 RAP 190.78 ECC 1.2855

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 45 49	2337.03	-22.34	49.39	19.98	107.87	20 24 46	1737.0	-19.69	41.72
90.00	9 2 35	4669.02	14.56	198.77	17.86	65.44	10 20 24	4069.0	11.13	191.78
100.00	21 9 31	2067.05	-23.37	29.16	19.61	109.19	21 43 58	1467.0	-20.53	21.51
100.00	10 21 33	4414.23	15.54	179.56	17.38	64.14	11 35 8	3814.2	11.94	172.63
110.00	22 23 11	1836.52	-26.12	10.50	18.44	112.88	22 53 47	1236.5	-22.79	2.92
110.00	11 24 23	4217.53	18.15	163.20	15.95	60.53	12 34 41	3617.5	14.09	156.45

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.1338 TRA-2.6313 TC3 2.0038 BAU .5313 SGT 4291.9 SGR 1569.9 SG3 1633.8 ST 1903.4 SR 796.7 SS 2638.3
RDE .5330 RRA -.7499 RC3 1.1098 FAU .27670 RRT .9572 RRF -.9841 RTF -.9678 CRT .9782 CRS .9753 CST .9997
FDE-4.2028 FRA10.0317 FC-13.8070 BSP 15964 SGB 4570.0 R23 -.1673 R13 -.9739 LSA 3345.0 MSA 168.8 SSA 33.4
BDE 1.2529 BRA 2.7360 BC3 2.2907 FSP 5352 SG1 4549.8 SG2 428.8 THA 19.48 EL1 2057.8 EL2 153.1 ALF 22.40

LAUNCH DATE OCT 15 1964 FLIGHT TIME 268.00 ARRIVAL DATE JUL 10 1965

HELIOCENTRIC CONIC DISTANCE 633.517 EARTH TO MARS

RL 149.15 LAL .00 LOL 21.68 VL 32.851 GAL -6.17 AZL 90.32 HCA 203.60 SMA 189.47 ECC .23731 INC .3230 V1 29.874
RP 233.44 LAP .13 LOP 225.27 VP 20.895 GAP 2.93 AZP 89.70 TAL 326.90 TAP 170.50 RCA 144.51 APO 234.43 V2 23.555
RC 211.104 GL -2.56 GP 10.72 ZAL 137.39 ZAP 139.56 ETS 165.79 ZAE 168.14 ETE 86.82 ZAC 99.48 ETC 255.80 CLP 140.77

PLANETOCENTRIC CONIC

C3 17.051 VHL 4.129 DLA 5.77 RAL 159.75 RAD 6567.7 VEL 11.766 PTH 2.08 VHP 4.193 DPA 8.49 RAP 190.56 ECC 1.2806

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 40 27	2356.84	-22.75	50.70	20.03	107.33	20 19 44	1756.8	-20.16	42.98
90.00	9 8 42	4641.18	13.77	197.12	17.62	65.01	10 26 3	4041.2	10.29	190.17
100.00	21 4 31	2085.66	-23.78	30.39	19.66	108.67	21 39 17	1485.7	-21.01	22.69
100.00	10 27 18	4387.60	14.75	177.99	17.13	63.70	11 40 26	3787.6	11.10	171.10
110.00	22 19 2	1852.50	-26.54	11.55	18.52	112.38	22 49 54	1252.5	-23.27	3.91
110.00	11 29 18	4193.52	17.34	161.81	15.69	60.07	12 39 11	3593.5	13.23	155.11

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.0955 TRA-2.5559 TC3 1.9911 BAU .5217 SGT 4209.5 SGR 1572.0 SG3 1709.1 ST 1859.2 SR 796.8 SS 2667.2
RDE .5288 RRA -.7396 RC3 1.1288 FAU .28787 RRT .9558 RRF -.9829 RTF -.9676 CRT .9772 CRS .9726 CST .9995
FDE-4.2716 FRA10.4022 FC-14.6159 BSP 15686 SGB 4493.4 R23 -.1636 R13 -.9739 LSA 3342.6 MSA 177.8 SSA 33.2
BDE 1.2165 BRA 2.6607 BC3 2.2888 FSP 5604 SG1 4472.3 SG2 435.1 THA 19.84 EL1 2016.7 EL2 156.0 ALF 22.87

LAUNCH DATE OCT 15 1964 FLIGHT TIME 270.00 ARRIVAL DATE JUL 12 1965

HELIOCENTRIC CONIC DISTANCE 637.267 EARTH TO MARS

RL 149.15 LAL .00 LOL 21.68 VL 32.836 GAL -6.12 AZL 90.23 HCA 204.59 SMA 189.20 ECC .23591 INC .2341 V1 29.874
RP 233.07 LAP .10 LOP 226.27 VP 20.914 GAP 2.56 AZP 89.79 TAL 327.04 TAP 171.63 RCA 144.57 APO 233.83 V2 23.593
RC 213.179 GL -1.87 GP 10.54 ZAL 137.23 ZAP 138.47 ETS 166.50 ZAE 168.28 ETE 92.99 ZAC 99.26 ETC 255.82 CLP 139.60

PLANETOCENTRIC CONIC

C3 16.775 VHL 4.096 DLA 6.49 RAL 159.84 RAD 6567.7 VEL 11.754 PTH 2.07 VHP 4.105 DPA 8.41 RAP 190.33 ECC 1.2761

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 35 21	2375.63	-23.12	51.95	20.07	106.82	20 14 56	1775.6	-20.60	44.18
90.00	9 14 30	4614.89	13.01	195.56	17.41	64.62	10 31 25	4014.9	9.48	188.65
100.00	20 59 46	2103.31	-24.16	31.57	19.72	108.16	21 34 50	1503.3	-21.45	23.81
100.00	10 32 45	4362.44	13.98	176.51	16.91	63.31	11 45 27	3762.4	10.29	169.67
110.00	22 15 5	1867.63	-26.92	12.55	18.60	111.90	22 46 13	1267.6	-23.71	4.86
110.00	11 33 56	4170.88	16.57	160.51	15.46	59.67	12 43 27	3570.9	12.42	153.87

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.0559 TRA-2.4787 TC3 1.9671 BAU .5108 SGT 4117.9 SGR 1576.7 SG3 1786.6 ST 1811.1 SR 797.7 SS 2695.4
RDE .5253 RRA -.7316 RC3 1.1484 FAU .29925 RRT .9543 RRF -.9817 RTF -.9672 CRT .9762 CRS .9699 CST .9994
FDE-4.3390 FRA10.7878 FC-15.4437 BSP 15416 SGB 4409.4 R23 -.1603 R13 -.9738 LSA 3338.5 MSA 187.3 SSA 33.0
BDE 1.1793 BRA 2.5844 BC3 2.2778 FSP 5875 SG1 4387.2 SG2 442.3 THA 20.29 EL1 1972.6 EL2 158.9 ALF 23.43

LAUNCH DATE OCT 15 1964 FLIGHT TIME 272.00 ARRIVAL DATE JUL 14 1965

HELIOCENTRIC CONIC DISTANCE 641.029 EARTH TO MARS

RL	149.15	LAL	.00	LOL	21.68	VL	32.821	GAL	-6.06	AZL	90.15	HCA	205.59	SMA	188.94	ECC	.23458	INC	.1503
RP	232.70	LAP	.07	LOP	227.27	VP	20.935	GAP	2.21	AZP	89.86	TAL	327.17	TAP	172.76	RCA	144.62	APO	233.27
RC	215.236	GL	-1.21	GP	10.38	ZAL	137.07	ZAP	137.34	ETS	167.16	ZAE	168.26	ETE	99.43	ZAC	99.06	ETC	255.84

V1	29.874	V2	23.631	CLP	138.38														

PLANETOCENTRIC CONIC

C3	16.520	VHL	4.064	DLA	7.16	RAL	159.92	RAD	6567.7	VEL	11.743	PTH	2.07	VHP	4.020	DPA	8.35	RAP	190.07
ECC	1.2719																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 30 29	2393.50	-23.47	53.14	20.12	106.31	20 10 23	1793.5	-21.01	45.34
90.00	9 20 0	4589.99	12.28	194.10	17.22	64.28	10 36 30	3990.0	8.72	187.23
100.00	20 55 15	2120.08	-24.51	32.69	19.78	107.67	21 30 35	1520.1	-21.86	24.89
100.00	10 37 55	4338.64	13.25	175.12	16.72	62.96	11 50 14	3738.6	9.52	168.32
110.00	22 11 20	1882.00	-27.29	13.51	18.68	111.44	22 42 42	1282.0	-24.13	5.77
110.00	11 38 20	4149.49	15.83	159.30	15.25	59.30	12 47 29	3549.5	11.64	152.70

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.0173	TRA	-2.3974	TC3	1.9342	BAU	.4992	SGT	4016.3	SGR	1583.8	SG3	1866.3	ST	1761.5	SR	800.1	SS	2725.5
RDE	.5231	RRA	-.7249	RC3	1.1695	FAU	.31105	RRT	.9527	RRF	-.9805	RTF	-.9666	CRT	.9754	CRS	.9671	CST	.9991
FDE	-4.4130	FRA	11.1799	FC	-16.3007	BSP	15094	SGB	4317.2	RZ3	-.1574	R13	-.9737	LSA	3336.3	MSA	197.2	SSA	32.7
BDE	1.1439	BRA	2.5046	BC3	2.2603	FSP	6148	SG1	4293.7	SG2	450.0	THA	20.83	EL1	1927.9	EL2	161.3	ALF	24.07

LAUNCH DATE OCT 15 1964 FLIGHT TIME 274.00 ARRIVAL DATE JUL 16 1965

HELIOCENTRIC CONIC DISTANCE 644.802 EARTH TO MARS

RL	149.15	LAL	.00	LOL	21.68	VL	32.807	GAL	-6.02	AZL	90.07	HCA	206.60	SMA	188.70	ECC	.23331	INC	.0730
RP	232.32	LAP	.03	LOP	228.27	VP	20.957	GAP	1.85	AZP	89.93	TAL	327.29	TAP	173.88	RCA	144.67	APO	232.73
RC	217.275	GL	-.60	GP	10.24	ZAL	136.92	ZAP	136.15	ETS	167.80	ZAE	168.07	ETE	105.97	ZAC	98.87	ETC	255.86

V1	29.874	V2	23.670	CLP	137.13														

PLANETOCENTRIC CONIC

C3	16.284	VHL	4.035	DLA	7.80	RAL	160.00	RAD	6567.7	VEL	11.733	PTH	2.07	VHP	3.938	DPA	8.32	RAP	189.78
ECC	1.2680																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 25 51	2410.54	-23.79	54.29	20.18	105.83	20 6 2	1810.5	-21.39	46.44
90.00	9 25 15	4566.39	11.58	192.72	17.06	63.98	10 41 22	3966.4	7.98	185.88
100.00	20 50 57	2136.07	-24.84	33.76	19.84	107.19	21 26 33	1536.1	-22.25	25.92
100.00	10 42 51	4316.09	12.55	173.81	16.56	62.65	11 54 47	3716.1	8.79	167.05
110.00	22 7 46	1895.68	-27.62	14.44	18.77	110.99	22 39 22	1295.7	-24.52	6.64
110.00	11 42 31	4129.25	15.12	158.15	15.08	58.97	12 51 20	3529.2	10.90	151.60

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.9774	TRA	-2.3142	TC3	1.8880	BAU	.4860	SGT	3904.7	SGR	1592.9	SG3	1948.1	ST	1708.2	SR	803.2	SS	2755.6
RDE	.5216	RRA	-.7200	RC3	1.1911	FAU	.32303	RRT	.9509	RRF	-.9794	RTF	-.9658	CRT	.9745	CRS	.9643	CST	.9988
FDE	-4.4875	FRA	11.5866	FC	-17.1732	BSP	14772	SGB	4217.1	RZ3	-.1554	R13	-.9734	LSA	3333.5	MSA	207.3	SSA	32.4
BDE	1.1079	BRA	2.4236	BC3	2.2323	FSP	6436	SG1	4192.0	SG2	459.0	THA	21.47	EL1	1880.5	EL2	163.6	ALF	24.82

LAUNCH DATE OCT 15 1964 FLIGHT TIME 276.00 ARRIVAL DATE JUL 18 1965

HELIOCENTRIC CONIC DISTANCE 648.586 EARTH TO MARS

RL	149.15	LAL	.00	LOL	21.68	VL	32.794	GAL	-5.97	AZL	90.00	HCA	207.60	SMA	188.47	ECC	.23212	INC	.0000
RP	231.95	LAP	.00	LOP	229.28	VP	20.980	GAP	1.51	AZP	90.00	TAL	327.40	TAP	175.00	RCA	144.72	APO	232.22
RC	219.295	GL	-.01	GP	10.11	ZAL	136.77	ZAP	134.93	ETS	168.40	ZAE	167.70	ETE	112.41	ZAC	98.68	ETC	255.87

V1	29.874	V2	23.709	CLP	135.84														

PLANETOCENTRIC CONIC

C3	16.067	VHL	4.008	DLA	8.40	RAL	160.07	RAD	6567.6	VEL	11.724	PTH	2.07	VHP	3.859	DPA	8.32	RAP	189.47
ECC	1.2644																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 21 26	2426.82	-24.09	55.39	20.24	105.35	20 1 53	1826.8	-21.75	47.50
90.00	9 30 17	4543.98	10.90	191.42	16.92	63.70	10 46 0	3944.0	7.28	184.61
100.00	20 46 51	2151.34	-25.14	34.80	19.91	106.73	21 22 42	1551.3	-22.61	26.91
100.00	10 47 33	4294.69	11.88	172.58	16.41	62.37	11 59 8	3694.7	8.08	165.85
110.00	22 4 22	1908.73	-27.94	15.32	18.85	110.55	22 36 11	1308.7	-24.89	7.48
110.00	11 46 31	4110.07	14.45	157.08	14.92	58.68	12 55 1	3510.1	10.20	150.56

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.9380	TRA	-2.2271	TC3	1.8324	BAU	.4721	SGT	3782.9	SGR	1604.2	SG3	2032.3	ST	1652.7	SR	807.4	SS	2786.7
RDE	.5210	RRA	-.7164	RC3	1.2140	FAU	.33543	RRT	.9490	RRF	-.9783	RTF	-.9647	CRT	.9739	CRS	.9616	CST	.9985
FDE	-4.5657	FRA	12.0024	FC	-18.0741	BSP	14405	SGB	4109.0	RZ3	-.1537	R13	-.9730	LSA	3331.7	MSA	217.7	SSA	32.1
BDE	1.0729	BRA	2.3395	BC3	2.1981	FSP	6730	SG1	4082.2	SG2	468.5	THA	22.23	EL1	1831.9	EL2	165.4	ALF	25.67

LAUNCH DATE OCT 15 1964 FLIGHT TIME 278.00 ARRIVAL DATE JUL 20 1965

HELIOCENTRIC CONIC DISTANCE 652.381 EARTH TO MARS

RL	149.15	LAL	.00	LOL	21.68	VL	32.782	GAL	-5.93	AZL	89.93	HCA	208.61	SMA	188.25	ECC	.23098	INC	.0656
RP	231.57	LAP	-.03	LOP	230.29	VP	21.005	GAP	1.17	AZP	90.06	TAL	327.50	TAP	176.11	RCA	144.77	APO	231.73
RC	221.297	GL	.55	GP	9.99	ZAL	136.62	ZAP	133.66	ETS	168.98	ZAE	167.16	ETE	118.58	ZAC	98.49	ETC	255.90

V1	29.874	V2	23.748	CLP	134.51														

PLANETOCENTRIC CONIC

C3	15.867	VHL	3.983	DLA	8.97	RAL	160.15	RAD	6567.6	VEL	11.715	PTH	2.06	VHP	3.783	DPA	8.35	RAP	189.13
ECC	1.2611																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 17 13	2442.41	-24.37	56.45	20.31	104.89	19 57 55	1842.4	-22.08	48.52
90.00	9 35 5	4522.68	10.26	190.18	16.80	63.46	10 50 28	3922.7	6.61	183.40
100.00	20 42 56	2165.95	-25.42	35.79	19.98	106.28	21 19 2	1565.9	-22.95	27.87
100.00	10 52 3	4274.38	11.23	171.42	16.29	62.12	12 3 17	3674.4	7.41	164.71
110.00	22 1 9	1921.20	-28.23	16.17	18.95	110.12	22 33 10	1321.2	-25.23	8.28
110.00	11 50 20	4091.89	13.80	156.07	14.79	58.41	12 58 32	3491.9	9.52	149.58

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8979	TRA	-2.1367	TC3	1.7636	BAU	.4570	SGT	3650.1	SGR	1617.0	SG3	2118.3	ST	1594.1	SR	812.3	SS	2818.4
RDE	.5210	RRA	-.7140	RC3	1.2375	FAU	.34807	RRT	.9468	RRF	-.9772	RTF	-.9632	CRT	.9733	CRS	.9588	CST	.9981
FDE	-4.6468	FRA	12.4280	FC	-18.9919	BSP	14014	SGB	3992.3	RZ3	-.1529	R13	-.9724	LSA	3330.3	MSA	228.2	SSA	31.8
BDE	1.0381	BRA	2.2528	BC3	2.1545	FSP	7030	SG1	3963.4	SG2	479.2	THA	23.11	EL1	1781.3	EL2	166.8	ALF	26.63

LAUNCH DATE OCT 15 1964 FLIGHT TIME 280.00 ARRIVAL DATE JUL 22 1965

HELIOCENTRIC CONIC DISTANCE 656.186 EARTH TO MARS

RL 149.15 LAL .00 LOL 21.68 VL 32.770 GAL -5.89 AZL 89.87 HCA 209.62 SMA 188.04 ECC .22991 INC .1303 V1 29.874
RP 231.20 LAP .06 LOP 231.30 VP 21.031 GAP .83 AZP 90.11 TAL 327.60 TAP 177.22 RCA 144.81 APO 231.28 V2 23.788
RC 223.281 GL 1.08 GP 9.88 ZAL 136.47 ZAP 132.34 ETS 169.53 ZAE 166.45 ETE 124.34 ZAC 98.31 ETC 255.92 CLP 133.13

PLANETOCENTRIC CONIC

C3 15.682 VHL 3.960 DLA 9.51 RAL 160.22 RAD 6567.6 VEL 11.708 PTH 2.06 VHP 3.709 DPA 8.40 RAP 188.76 ECC 1.2581

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 13 12	2457.37	-24.62	57.47	20.38	104.44	19 54 9	1857.4	-22.40	49.50
90.00	9 39 42	4502.43	9.64	189.02	16.71	63.25	10 54 45	3902.4	5.97	182.26
100.00	20 39 13	2179.95	-25.69	36.75	20.06	105.84	21 15 32	1580.0	-23.26	28.79
100.00	10 56 22	4255.10	10.62	170.32	16.20	61.89	12 7 18	3655.1	6.78	163.63
110.00	21 58 5	1933.14	-28.51	16.99	19.05	109.71	22 30 18	1333.1	-25.56	9.06
110.00	11 54 0	4074.65	13.19	155.11	14.68	58.17	13 1 54	3474.7	8.88	148.66

DIFFERENTIAL CORRECTIONS
TDE .8574 TRA-2.0423 TC3 1.6840 BAU .4412
RDE .5217 RRA -.7128 RC3 1.2617 FAU .36104
FDE-4.7298 FRA12.8627 FC-19.9310 BSP 13589
BDE 1.0036 BRA 2.1631 BC3 2.1043 FSP 7339

MID-COURSE EXECUTION ACCURACY
SGT 3506.3 SGR 1631.5 SG3 2206.3
RRT .9443 RRF -.9762 RTF -.9614
SGB 3867.3 R23 -.1525 R13 -.9717
SG1 3836.0 SG2 490.6 THA 24.14

ORBIT DETERMINATION ACCURACY
ST 1532.4 SR 817.9 SS 2850.4
CRT .9729 CRS .9561 CST .9976
LSA 3329.3 MSA 238.8 SSA 31.5
EL1 1729.0 EL2 167.6 ALF 27.72

LAUNCH DATE OCT 15 1964 FLIGHT TIME 282.00 ARRIVAL DATE JUL 24 1965

HELIOCENTRIC CONIC DISTANCE 660.002 EARTH TO MARS

RL 149.15 LAL .00 LOL 21.68 VL 32.758 GAL -5.85 AZL 89.81 HCA 210.64 SMA 187.85 ECC .22890 INC .1914 V1 29.874
RP 230.82 LAP -.10 LOP 232.31 VP 21.058 GAP .50 AZP 90.16 TAL 327.69 TAP 178.33 RCA 144.85 APO 230.84 V2 23.827
RC 225.247 GL 1.58 GP 9.78 ZAL 136.34 ZAP 130.98 ETS 170.06 ZAE 165.59 ETE 129.62 ZAC 98.12 ETC 255.95 CLP 131.72

PLANETOCENTRIC CONIC

C3 15.513 VHL 3.939 DLA 10.03 RAL 160.30 RAD 6567.6 VEL 11.700 PTH 2.06 VHP 3.639 DPA 8.48 RAP 188.36 ECC 1.2553

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 9 22	2471.72	-24.86	58.45	20.46	104.01	19 50 33	1871.7	-22.69	50.45
90.00	9 44 9	4483.17	9.05	187.91	16.64	63.05	10 58 52	3883.2	5.36	181.17
100.00	20 35 40	2193.39	-25.93	37.67	20.15	105.41	21 12 13	1593.4	-23.56	29.67
100.00	11 0 32	4236.74	10.03	169.27	16.12	61.69	12 11 9	3636.7	6.17	162.61
110.00	21 55 10	1944.59	-28.77	17.78	19.15	109.31	22 27 35	1344.6	-25.87	9.80
110.00	11 57 31	4058.30	12.60	154.21	14.60	57.96	13 5 9	3458.3	8.27	147.78

DIFFERENTIAL CORRECTIONS
TDE .8169 TRA-1.9439 TC3 1.5914 BAU .4244
RDE .5228 RRA -.7126 RC3 1.2862 FAU .37416
FDE-4.8145 FRA13.3075 FC-20.8810 BSP 13128
BDE .9699 BRA 2.0704 BC3 2.0462 FSP 7654

MID-COURSE EXECUTION ACCURACY
SGT 3351.1 SGR 1647.1 SG3 2295.8
RRT .9415 RRF -.9753 RTF -.9590
SGB 3734.1 R23 -.1528 R13 -.9708
SG1 3700.0 SG2 502.8 THA 25.33

ORBIT DETERMINATION ACCURACY
ST 1468.2 SR 824.0 SS 2882.8
CRT .9728 CRS .9534 CST .9970
LSA 3328.9 MSA 249.5 SSA 31.1
EL1 1675.3 EL2 167.4 ALF 28.95

LAUNCH DATE OCT 15 1964 FLIGHT TIME 284.00 ARRIVAL DATE JUL 26 1965

HELIOCENTRIC CONIC DISTANCE 663.827 EARTH TO MARS

RL 149.15 LAL .00 LOL 21.68 VL 32.748 GAL -5.82 AZL 89.75 HCA 211.66 SMA 187.66 ECC .22795 INC .2482 V1 29.874
RP 230.43 LAP -.13 LOP 233.33 VP 21.087 GAP .17 AZP 90.21 TAL 327.77 TAP 179.42 RCA 144.88 APO 230.44 V2 23.867
RC 227.193 GL 2.07 GP 9.69 ZAL 136.21 ZAP 129.58 ETS 170.57 ZAE 164.58 ETE 134.39 ZAC 97.94 ETC 255.97 CLP 130.27

PLANETOCENTRIC CONIC

C3 15.358 VHL 3.919 DLA 10.51 RAL 160.38 RAD 6567.6 VEL 11.694 PTH 2.06 VHP 3.571 DPA 8.58 RAP 187.92 ECC 1.2528

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 5 43	2485.52	-25.09	59.40	20.56	103.58	19 47 8	1885.5	-22.97	51.37
90.00	9 48 25	4464.86	8.48	186.87	16.59	62.88	11 2 50	3864.9	4.78	180.14
100.00	20 32 17	2206.30	-26.16	38.56	20.25	105.00	21 9 4	1606.3	-23.85	30.53
100.00	11 4 32	4219.31	9.46	168.29	16.06	61.51	12 14 51	3619.3	5.58	161.65
110.00	21 52 24	1955.58	-29.02	18.54	19.27	108.92	22 25 0	1355.6	-26.16	10.52
110.00	12 0 54	4042.79	12.03	153.36	14.53	57.76	13 8 17	3442.8	7.69	146.96

DIFFERENTIAL CORRECTIONS
TDE .7760 TRA-1.8406 TC3 1.4878 BAU .4072
RDE .5246 RRA -.7129 RC3 1.3116 FAU .38767
FDE-4.9036 FRA13.7545 FC-21.8530 BSP 12621
BDE .9366 BRA 1.9738 BC3 1.9834 FSP 7969

MID-COURSE EXECUTION ACCURACY
SGT 3184.0 SGR 1664.0 SG3 2386.7
RRT .9381 RRF -.9744 RTF -.9560
SGB 3592.6 R23 -.1536 R13 -.9698
SG1 3555.3 SG2 516.0 THA 26.72

ORBIT DETERMINATION ACCURACY
ST 1400.9 SR 830.8 SS 2915.8
CRT .9728 CRS .9508 CST .9963
LSA 3329.6 MSA 260.0 SSA 30.8
EL1 1620.2 EL2 166.3 ALF 30.34

LAUNCH DATE OCT 15 1964 FLIGHT TIME 286.00 ARRIVAL DATE JUL 28 1965

HELIOCENTRIC CONIC DISTANCE 667.662 EARTH TO MARS

RL 149.15 LAL .00 LOL 21.68 VL 32.738 GAL -5.79 AZL 89.70 HCA 212.68 SMA 187.48 ECC .22706 INC .3021 V1 29.874
RP 230.05 LAP -.16 LOP 234.36 VP 21.117 GAP -.15 AZP 90.25 TAL 327.84 TAP 180.52 RCA 144.91 APO 230.05 V2 23.907
RC 229.120 GL 2.53 GP 9.61 ZAL 136.09 ZAP 128.13 ETS 171.06 ZAE 163.44 ETE 138.67 ZAC 97.76 ETC 256.00 CLP 128.77

PLANETOCENTRIC CONIC

C3 15.217 VHL 3.901 DLA 10.98 RAL 160.46 RAD 6567.6 VEL 11.688 PTH 2.06 VHP 3.506 DPA 8.70 RAP 187.46 ECC 1.2504

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 2 14	2498.80	-25.30	60.32	20.66	103.17	19 43 53	1898.8	-23.23	52.25
90.00	9 52 33	4447.44	7.94	185.87	16.56	62.73	11 6 41	3847.4	4.22	179.17
100.00	20 29 5	2218.71	-26.38	39.42	20.36	104.60	21 6 4	1618.7	-24.11	31.35
100.00	11 8 24	4202.76	8.92	167.36	16.03	61.35	12 18 26	3602.8	5.03	160.73
110.00	21 49 48	1966.14	-29.25	19.28	19.40	108.54	22 22 34	1366.1	-26.44	11.22
110.00	12 4 10	4028.09	11.50	152.56	14.49	57.59	13 11 18	3428.1	7.14	146.18

DIFFERENTIAL CORRECTIONS
TDE .7346 TRA-1.7336 TC3 1.3687 BAU .3892
RDE .5266 RRA -.7142 RC3 1.3364 FAU .40114
FDE-4.9926 FRA14.2113 FC-22.8218 BSP 12108
BDE .9039 BRA 1.8749 BC3 1.9129 FSP 8298

MID-COURSE EXECUTION ACCURACY
SGT 3005.3 SGR 1681.5 SG3 2478.5
RRT .9340 RRF -.9735 RTF -.9520
SGB 3443.7 R23 -.1555 R13 -.9685
SG1 3402.5 SG2 530.8 THA 28.34

ORBIT DETERMINATION ACCURACY
ST 1330.7 SR 837.9 SS 2948.8
CRT .9732 CRS .9482 CST .9954
LSA 3330.8 MSA 270.7 SSA 30.5
EL1 1563.9 EL2 164.0 ALF 31.89

LAUNCH DATE OCT 15 1964 FLIGHT TIME 288.00 ARRIVAL DATE JUL 30 1965

HELIOCENTRIC CONIC DISTANCE 671.507 EARTH TO MARS

RL	149.15	LAL	.00	LOL	21.68	VL	32.728	GAL	-5.76	AZL	89.65	HCA	213.71	SMA	187.32	ECC	.22622	INC	.3535
RP	229.67	LAP	-.20	LOP	235.38	VP	21.148	GAP	-.47	AZP	90.29	TAL	327.90	TAP	181.60	RCA	144.94	APO	229.69
RC	231.027	GL	2.97	GP	9.53	ZAL	135.99	ZAP	126.63	ETS	171.54	ZAE	162.19	ETE	142.47	ZAC	97.57	ETC	256.04

V1	29.874	V2	23.948	CLP	127.23														

PLANETOCENTRIC CONIC

C3	15.090	VHL	3.885	DLA	11.42	RAL	160.55	RAD	6567.6	VEL	11.682	PTH	2.05	VHP	3.444	DPA	8.84	RAP	186.96
ECC	1.2483																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 58 56	2511.58	-25.49	61.20	20.77	102.77	19 40 48	1911.6	-23.48	53.11
90.00	9 56 33	4430.88	7.42	184.93	16.55	62.59	11 10 23	3830.9	3.69	178.24
100.00	20 26 3	2230.65	-26.58	40.25	20.48	104.20	21 3 13	1630.7	-24.37	32.15
100.00	11 12 7	4187.04	8.41	166.47	16.02	61.21	12 21 54	3587.0	4.50	159.86
110.00	21 47 20	1976.29	-29.46	19.99	19.53	108.17	22 20 16	1376.3	-26.70	11.89
110.00	12 7 20	4014.16	10.99	151.80	14.46	57.43	13 14 14	3414.2	6.62	145.44

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6927	TRA	-1.6214	TC3	1.2361	BAU	.3709	SGT	2814.1	SGR	1699.5	SG3	2570.8	ST	1257.2	SR	845.3	SS	2981.7
RDE	.5291	RRA	-.7161	RC3	1.3612	FAU	.41471	RRT	.9288	RRF	-.9727	RTF	-.9468	CRT	.9738	CRS	.9457	CST	.9943
FDE	-5.0831	FRA	14.6717	FC	-23.7935	BSP	11554	SGB	3287.5	R23	-.1579	R13	-.9669	LSA	3332.5	MSA	281.3	SSA	30.2
BDE	.8717	BRA	1.7725	BC3	1.8387	FSP	8628	SG1	3241.7	SG2	546.9	THA	30.24	EL1	1506.4	EL2	160.3	ALF	33.65

LAUNCH DATE OCT 15 1964 FLIGHT TIME 290.00 ARRIVAL DATE AUG 1 1965

HELIOCENTRIC CONIC DISTANCE 675.362 EARTH TO MARS

RL	149.15	LAL	.00	LOL	21.68	VL	32.719	GAL	-5.74	AZL	89.60	HCA	214.73	SMA	187.16	ECC	.22544	INC	.4021
RP	229.28	LAP	-.23	LOP	236.41	VP	21.179	GAP	-.78	AZP	90.33	TAL	327.95	TAP	182.68	RCA	144.97	APO	229.35
RC	232.913	GL	3.39	GP	9.46	ZAL	135.89	ZAP	125.09	ETS	172.00	ZAE	160.83	ETE	145.85	ZAC	97.38	ETC	256.07

V1	29.874	V2	23.988	CLP	125.65														

PLANETOCENTRIC CONIC

C3	14.975	VHL	3.870	DLA	11.84	RAL	160.64	RAD	6567.6	VEL	11.677	PTH	2.05	VHP	3.386	DPA	9.00	RAP	186.43
ECC	1.2464																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 55 49	2523.87	-25.67	62.06	20.89	102.37	19 37 53	1923.9	-23.71	53.93
90.00	10 0 24	4415.16	6.93	184.04	16.56	62.48	11 13 59	3815.2	3.19	177.36
100.00	20 23 10	2242.14	-26.77	41.05	20.61	103.82	21 0 32	1642.1	-24.60	32.92
100.00	11 15 44	4172.13	7.92	165.64	16.02	61.08	12 25 16	3572.1	4.00	159.04
110.00	21 45 1	1986.05	-29.67	20.67	19.67	107.81	22 18 7	1386.1	-26.95	12.54
110.00	12 10 23	4000.98	10.51	151.09	14.46	57.28	13 17 4	3401.0	6.12	144.74

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6504	TRA	-1.5042	TC3	1.0918	BAU	.3533	SGT	2611.3	SGR	1718.1	SG3	2663.5	ST	1180.7	SR	853.0	SS	3014.8
RDE	.5320	RRA	-.7181	RC3	1.3863	FAU	.42856	RRT	.9221	RRF	-.9719	RTF	-.9399	CRT	.9748	CRS	.9433	CST	.9929
FDE	-5.1765	FRA	15.1301	FC	-24.7763	BSP	10956	SGB	3125.9	R23	-.1609	R13	-.9651	LSA	3335.3	MSA	291.8	SSA	29.9
BDE	.8402	BRA	1.6668	BC3	1.7646	FSP	8950	SG1	3074.5	SG2	564.6	THA	32.47	EL1	1448.3	EL2	155.0	ALF	35.63

LAUNCH DATE OCT 15 1964 FLIGHT TIME 292.00 ARRIVAL DATE AUG 3 1965

HELIOCENTRIC CONIC DISTANCE 679.226 EARTH TO MARS

RL	149.15	LAL	.00	LOL	21.68	VL	32.710	GAL	-5.71	AZL	89.55	HCA	215.77	SMA	187.01	ECC	.22471	INC	.4484
RP	228.89	LAP	-.26	LOP	237.44	VP	21.212	GAP	-1.09	AZP	90.36	TAL	327.99	TAP	183.76	RCA	144.99	APO	229.04
RC	234.778	GL	3.79	GP	9.39	ZAL	135.80	ZAP	123.51	ETS	172.45	ZAE	159.37	ETE	148.85	ZAC	97.18	ETC	256.11

V1	29.874	V2	24.029	CLP	124.03														

PLANETOCENTRIC CONIC

C3	14.872	VHL	3.856	DLA	12.23	RAL	160.73	RAD	6567.6	VEL	11.673	PTH	2.05	VHP	3.330	DPA	9.18	RAP	185.87
ECC	1.2448																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 52 52	2535.71	-25.84	62.88	21.03	101.99	19 35 7	1935.7	-23.93	54.73
90.00	10 4 8	4400.25	6.46	183.20	16.59	62.37	11 17 28	3800.3	2.71	176.52
100.00	20 20 28	2253.19	-26.95	41.82	20.75	103.45	20 58 1	1653.2	-24.83	33.66
100.00	11 19 13	4158.00	7.45	164.85	16.05	60.97	12 28 31	3558.0	3.52	158.26
110.00	21 42 50	1995.44	-29.86	21.33	19.83	107.46	22 16 6	1395.4	-27.18	13.17
110.00	12 13 20	3988.52	10.05	150.41	14.47	57.15	13 19 49	3388.5	5.65	144.09

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6075	TRA	-1.3822	TC3	.9329	BAU	.3363	SGT	2397.5	SGR	1736.7	SG3	2755.9	ST	1101.2	SR	860.9	SS	3047.6
RDE	.5351	RRA	-.7207	RC3	1.4106	FAU	.44229	RRT	.9133	RRF	-.9712	RTF	-.9305	CRT	.9763	CRS	.9410	CST	.9912
FDE	-5.2702	FRA	15.5907	FC	-25.7465	BSP	10343	SGB	2960.4	R23	-.1644	R13	-.9631	LSA	3339.1	MSA	302.2	SSA	29.6
BDE	.8096	BRA	1.5588	BC3	1.6912	FSP	9275	SG1	2902.1	SG2	584.4	THA	35.12	EL1	1389.9	EL2	147.7	ALF	37.86

LAUNCH DATE OCT 15 1964 FLIGHT TIME 294.00 ARRIVAL DATE AUG 5 1965

HELIOCENTRIC CONIC DISTANCE 683.099 EARTH TO MARS

RL	149.15	LAL	.00	LOL	21.68	VL	32.702	GAL	-5.69	AZL	89.51	HCA	216.80	SMA	186.87	ECC	.22404	INC	.4929
RP	228.51	LAP	-.30	LOP	238.48	VP	21.246	GAP	-1.39	AZP	90.39	TAL	328.02	TAP	184.83	RCA	145.01	APO	228.74
RC	236.623	GL	4.18	GP	9.32	ZAL	135.73	ZAP	121.89	ETS	172.89	ZAE	157.62	ETE	151.52	ZAC	96.98	ETC	256.16

V1	29.874	V2	24.070	CLP	122.36														

PLANETOCENTRIC CONIC

C3	14.782	VHL	3.845	DLA	12.61	RAL	160.84	RAD	6567.6	VEL	11.669	PTH	2.05	VHP	3.277	DPA	9.39	RAP	185.27
ECC	1.2433																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 50 5	2547.11	-26.00	63.68	21.17	101.62	19 32 32	1947.1	-24.14	55.50
90.00	10 7 45	4386.13	6.01	182.40	16.64	62.28	11 20 51	3786.1	2.25	175.74
100.00	20 17 55	2263.83	-27.11	42.57	20.90	103.09	20 55 39	1663.8	-25.04	34.38
100.00	11 22 36	4144.64	7.01	164.10	16.09	60.87	12 31 40	3544.6	3.07	157.53
110.00	21 40 48	2004.47	-30.05	21.97	20.00	107.13	22 14 13	1404.5	-27.41	13.78
110.00	12 16 12	3976.77	9.61	149.78	14.51	57.04	13 22 29	3376.8	5.20	143.47

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5638	TRA	-1.2548	TC3	.7606	BAU	.3208	SGT	2172.5	SGR	1755.2	SG3	2847.5	ST	1018.2	SR	868.8	SS	3079.5
RDE	.5384	RRA	-.7235	RC3	1.4342	FAU	.45593	RRT	.9012	RRF	-.9704	RTF	-.9174	CRT	.9782	CRS	.9386	CST	.9889
FDE	-5.3623	FRA	16.0496	FC	-26.7032	BSP	9719	SGB	2792.9	R23	-.1678	R13	-.9609	LSA	3343.1	MSA	312.6	SSA	29.2
BDE	.7796	BRA	1.4484	BC3	1.6234	FSP	9604	SG1	2726.3	SG2	606.3	THA	38.29	EL1	1331.3	EL2	138.0	ALF	40.37

LAUNCH DATE OCT 15 1964 FLIGHT TIME 296.00 ARRIVAL DATE AUG 7 1965

HELIOCENTRIC CONIC DISTANCE 686.982 EARTH TO MARS

RL 149.15 LAL .00 LOL 21.68 VL 32.695 GAL -5.68 AZL 89.46 HCA 217.84 SMA 186.74 ECC .22341 INC .5352 V1 29.874
RP 228.12 LAP -.33 LOP 239.52 VP 21.281 GAP -1.69 AZP 90.42 TAL 328.04 TAP 185.89 RCA 145.02 APO 228.46 V2 24.111
RC 238.446 GL 4.55 GP 9.25 ZAL 135.66 ZAP 120.22 ETS 173.32 ZAE 156.19 ETE 153.90 ZAC 96.77 ETC 256.21 CLP 120.66

PLANETOCENTRIC CONIC

C3 14.702 VHL 3.834 DLA 12.97 RAL 160.95 RAD 6567.6 VEL 11.666 PTH 2.05 VHP 3.227 DPA 9.60 RAP 184.64 ECC 1.2420

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 47 28	2558.08	-26.15	64.45	21.33	101.27	19 30 6	1958.1	-24.33	56.25
90.00	10 11 15	4372.77	5.59	181.65	16.71	62.19	11 24 8	3772.8	1.82	174.99
100.00	20 15 32	2274.06	-27.27	43.29	21.06	102.74	20 53 26	1674.1	-25.24	35.08
100.00	11 25 52	4132.01	6.59	163.40	16.16	60.78	12 34 44	3532.0	2.65	156.83
110.00	21 38 55	2013.16	-30.22	22.59	20.18	106.80	22 12 28	1413.2	-27.62	14.36
110.00	12 18 58	3965.69	9.20	149.19	14.56	56.93	13 25 4	3365.7	4.78	142.88

DIFFERENTIAL CORRECTIONS
TDE .5216 TRA-1.1201 TC3 .5802 BAU .3086
RDE .5426 RRA -.7254 RC3 1.4587 FAU .47006
FDE-5.4686 FRA16.4845 FC-27.6789 BSP 9020
BDE .7527 BRA 1.3344 BC3 1.5698 FSP 9889

MID-COURSE EXECUTION ACCURACY
SGT 1937.8 SGR 1773.7 SG3 2937.9
RRT .8845 RRF -.9697 RTF -.8988
SGB 2627.0 R23 -.1698 R13 -.9588
SG1 2550.7 SG2 628.7 THA 42.14

ORBIT DETERMINATION ACCURACY
ST 934.4 SR 877.5 SS 3113.5
CRT .9810 CRS .9367 CST .9857
LSA 3351.4 MSA 322.9 SSA 28.8
EL1 1275.8 EL2 124.6 ALF 43.16

LAUNCH DATE OCT 15 1964 FLIGHT TIME 298.00 ARRIVAL DATE AUG 9 1965

HELIOCENTRIC CONIC DISTANCE 690.872 EARTH TO MARS

RL 149.15 LAL .00 LOL 21.68 VL 32.688 GAL -5.66 AZL 89.42 HCA 218.89 SMA 186.62 ECC .22284 INC .5761 V1 29.874
RP 227.73 LAP -.36 LOP 240.56 VP 21.317 GAP -1.98 AZP 90.45 TAL 328.05 TAP 186.94 RCA 145.03 APO 228.21 V2 24.152
RC 240.248 GL 4.90 GP 9.19 ZAL 135.61 ZAP 118.51 ETS 173.75 ZAE 154.49 ETE 156.03 ZAC 96.56 ETC 256.26 CLP 118.91

PLANETOCENTRIC CONIC

C3 14.635 VHL 3.826 DLA 13.30 RAL 161.07 RAD 6567.6 VEL 11.663 PTH 2.05 VHP 3.181 DPA 9.84 RAP 183.97 ECC 1.2409

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 45 1	2568.62	-26.29	65.19	21.50	100.92	19 27 50	1968.6	-24.52	56.97
90.00	10 14 38	4360.17	5.19	180.94	16.79	62.12	11 27 18	3760.2	1.42	174.29
100.00	20 13 18	2283.90	-27.42	43.99	21.24	102.41	20 51 22	1683.9	-25.43	35.75
100.00	11 29 2	4120.13	6.20	162.74	16.24	60.70	12 37 42	3520.1	2.24	156.18
110.00	21 37 10	2021.50	-30.38	23.19	20.37	106.48	22 10 51	1421.5	-27.82	14.93
110.00	12 21 40	3955.29	8.81	148.63	14.64	56.84	13 27 35	3355.3	4.39	142.34

DIFFERENTIAL CORRECTIONS
TDE .4748 TRA -.9834 TC3 .3759 BAU .2984
RDE .5457 RRA -.7287 RC3 1.4783 FAU .48270
FDE-5.5475 FRA16.9402 FC-28.5550 BSP 8421
BDE .7234 BRA 1.2240 BC3 1.5253 FSP 10228

MID-COURSE EXECUTION ACCURACY
SGT 1696.8 SGR 1790.2 SG3 3025.3
RRT .8572 RRF -.9690 RTF -.8693
SGB 2466.6 R23 -.1710 R13 -.9567
SG1 2377.2 SG2 658.1 THA 46.79

ORBIT DETERMINATION ACCURACY
ST 843.8 SR 884.5 SS 3141.0
CRT .9839 CRS .9342 CST .9815
LSA 3353.9 MSA 333.1 SSA 28.6
EL1 1217.5 EL2 109.7 ALF 46.37

LAUNCH DATE OCT 15 1964 FLIGHT TIME 300.00 ARRIVAL DATE AUG 11 1965

HELIOCENTRIC CONIC DISTANCE 694.772 EARTH TO MARS

RL 149.15 LAL .00 LOL 21.68 VL 32.681 GAL -5.65 AZL 89.39 HCA 219.93 SMA 186.51 ECC .22232 INC .6148 V1 29.874
RP 227.34 LAP -.39 LOP 241.61 VP 21.353 GAP -2.27 AZP 90.47 TAL 328.06 TAP 187.99 RCA 145.04 APO 227.97 V2 24.193
RC 242.030 GL 5.25 GP 9.12 ZAL 135.58 ZAP 116.76 ETS 174.16 ZAE 152.72 ETE 157.95 ZAC 96.34 ETC 256.32 CLP 117.13

PLANETOCENTRIC CONIC

C3 14.578 VHL 3.818 DLA 13.62 RAL 161.20 RAD 6567.6 VEL 11.660 PTH 2.05 VHP 3.137 DPA 10.09 RAP 183.27 ECC 1.2399

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 42 45	2578.76	-26.42	65.90	21.69	100.58	19 25 43	1978.8	-24.69	57.66
90.00	10 17 55	4348.31	4.81	180.27	16.90	62.06	11 30 24	3748.3	1.03	173.62
100.00	20 11 15	2293.35	-27.55	44.65	21.44	102.08	20 49 28	1693.3	-25.61	36.39
100.00	11 32 7	4108.95	5.82	162.12	16.34	60.63	12 40 36	3509.0	1.87	155.56
110.00	21 35 33	2029.53	-30.53	23.76	20.58	106.17	22 9 23	1429.5	-28.02	15.47
110.00	12 24 17	3945.53	8.45	148.11	14.73	56.75	13 30 3	3345.5	4.02	141.83

DIFFERENTIAL CORRECTIONS
TDE .4302 TRA -.8391 TC3 .1653 BAU .2940
RDE .5501 RRA -.7306 RC3 1.4993 FAU .49600
FDE-5.6489 FRA17.3601 FC-29.4555 BSP 7783
BDE .6983 BRA 1.1126 BC3 1.5084 FSP 10511

MID-COURSE EXECUTION ACCURACY
SGT 1453.0 SGR 1806.9 SG3 3110.8
RRT .8147 RRF -.9682 RTF -.8227
SGB 2318.6 R23 -.1672 R13 -.9555
SG1 2214.3 SG2 687.5 THA 52.55

ORBIT DETERMINATION ACCURACY
ST 753.5 SR 892.8 SS 3172.6
CRT .9878 CRS .9323 CST .9752
LSA 3363.3 MSA 343.1 SSA 28.2
EL1 1164.8 EL2 90.0 ALF 49.89

LAUNCH DATE OCT 15 1964 FLIGHT TIME 302.00 ARRIVAL DATE AUG 13 1965

HELIOCENTRIC CONIC DISTANCE 698.680 EARTH TO MARS

RL 149.15 LAL .00 LOL 21.68 VL 32.675 GAL -5.64 AZL 89.35 HCA 220.98 SMA 186.40 ECC .22185 INC .6523 V1 29.874
RP 226.95 LAP -.43 LOP 242.66 VP 21.391 GAP -2.55 AZP 90.49 TAL 328.05 TAP 189.03 RCA 145.05 APO 227.75 V2 24.235
RC 243.792 GL 5.57 GP 9.06 ZAL 135.55 ZAP 114.97 ETS 174.57 ZAE 150.89 ETE 159.67 ZAC 96.11 ETC 256.38 CLP 115.30

PLANETOCENTRIC CONIC

C3 14.532 VHL 3.812 DLA 13.92 RAL 161.33 RAD 6567.6 VEL 11.658 PTH 2.05 VHP 3.097 DPA 10.35 RAP 182.55 ECC 1.2392

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 40 39	2588.48	-26.54	66.59	21.89	100.26	19 23 47	1988.5	-24.85	58.33
90.00	10 21 6	4337.18	4.45	179.65	17.03	62.01	11 33 24	3737.2	.67	173.00
100.00	20 9 21	2302.42	-27.68	45.30	21.64	101.76	20 47 43	1702.4	-25.78	37.01
100.00	11 35 5	4098.48	5.47	161.54	16.47	60.57	12 43 24	3498.5	1.51	154.99
110.00	21 34 6	2037.24	-30.68	24.32	20.80	105.87	22 8 3	1437.2	-28.20	16.00
110.00	12 26 50	3936.43	8.11	147.62	14.85	56.68	13 32 26	3336.4	3.67	141.35

DIFFERENTIAL CORRECTIONS
TDE .3833 TRA -.6904 TC3 -.0618 BAU .2950
RDE .5540 RRA -.7326 RC3 1.5173 FAU .50838
FDE-5.7369 FRA17.7755 FC-30.2860 BSP 7216
BDE .6736 BRA 1.0067 BC3 1.5185 FSP 10803

MID-COURSE EXECUTION ACCURACY
SGT 1215.3 SGR 1821.7 SG3 3192.3
RRT .7398 RRF -.9675 RTF -.7417
SGB 2189.8 R23 -.1554 R13 -.9557
SG1 2068.0 SG2 720.2 THA 59.67

ORBIT DETERMINATION ACCURACY
ST 659.3 SR 900.2 SS 3200.4
CRT .9920 CRS .9302 CST .9657
LSA 3370.7 MSA 352.9 SSA 27.9
EL1 1113.8 EL2 67.3 ALF 53.85

LAUNCH DATE OCT 15 1964 FLIGHT TIME 304.00 ARRIVAL DATE AUG 15 1965

HELIOCENTRIC CONIC DISTANCE 702.596 EARTH TO MARS

RL	149.15	LAL	.00	LOL	21.68	VL	32.669	GAL	-5.64	AZL	89.31	HCA	222.04	SMA	186.30	ECC	.22142	INC	.6882
RP	226.56	LAP	-.46	LOP	243.71	VP	21.429	GAP	-2.83	AZP	90.51	TAL	328.02	TAP	190.06	RCA	145.05	APO	227.55
RC	245.534	GL	5.89	GP	8.99	ZAL	135.54	ZAP	113.14	ETS	174.97	ZAE	149.00	ETE	161.24	ZAC	95.88	ETC	256.45

V1 29.874 V2 24.277 CLP 113.45

PLANETOCENTRIC CONIC

C3	14.497	VHL	3.807	DLA	14.20	RAL	161.48	RAD	6567.6	VEL	11.657	PTH	2.05	VHP	3.061	DPA	10.63	RAP	181.79

ECC 1.2386

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 38 43	2597.81	-26.65	67.25	22.11	99.95	19 22 1	1997.8	-25.00	58.97
90.00	10 24 11	4326.78	4.12	179.06	17.17	61.96	11 36 18	3726.8	.34	172.42
100.00	20 7 37	2311.12	-27.80	45.92	21.86	101.46	20 46 8	1711.1	-25.94	37.61
100.00	11 37 59	4088.71	5.15	161.00	16.61	60.51	12 46 7	3488.7	1.18	154.45
110.00	21 32 47	2044.63	-30.82	24.85	21.03	105.58	22 6 51	1444.6	-28.37	16.50
110.00	12 29 18	3927.96	7.79	147.17	14.98	56.61	13 34 46	3328.0	3.35	140.91

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3352	TRA	-.5365	TC3	-.3015	BAU	.3028	SGT	1000.4	SGR	1834.7	SG3	3269.4	ST	563.0	SR	907.1
RDE	.5579	RRA	-.7342	RC3	1.5329	FAU	.52011	RRT	.6019	RRF	-.9667	RTF	-.5939	CRT	.9960	CRS	.9281
FDE	-5.8205	FRA	18.1728	FC	-31.0602	BSP	6728	SGB	2089.7	RZ3	-.1303	R13	-.9580	LSA	3378.8	MSA	362.4
BDE	.6508	BRA	.9094	BC3	1.5623	FSP	11078	SG1	1949.9	SG2	751.7	THA	68.48	EL1	1066.8	EL2	42.5

SS 3226.2 CST .9504 SSA 27.6 ALF 58.22

LAUNCH DATE OCT 15 1964 FLIGHT TIME 306.00 ARRIVAL DATE AUG 17 1965

HELIOCENTRIC CONIC DISTANCE 706.521 EARTH TO MARS

RL	149.15	LAL	.00	LOL	21.68	VL	32.663	GAL	-5.63	AZL	89.28	HCA	223.10	SMA	186.20	ECC	.22105	INC	.7227
RP	226.17	LAP	-.49	LOP	244.77	VP	21.468	GAP	-3.11	AZP	90.53	TAL	327.99	TAP	191.09	RCA	145.05	APO	227.36
RC	247.256	GL	6.19	GP	8.92	ZAL	135.55	ZAP	111.28	ETS	175.36	ZAE	147.06	ETE	162.66	ZAC	95.63	ETC	256.52

V1 29.874 V2 24.318 CLP 111.56

PLANETOCENTRIC CONIC

C3	14.472	VHL	3.804	DLA	14.47	RAL	161.63	RAD	6567.6	VEL	11.656	PTH	2.05	VHP	3.027	DPA	10.91	RAP	181.00

ECC 1.2382

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 36 57	2606.74	-26.75	67.88	22.34	99.65	19 20 24	2006.7	-25.15	59.58
90.00	10 27 10	4317.09	3.81	178.52	17.34	61.92	11 39 8	3717.1	.03	171.88
100.00	20 6 3	2319.44	-27.91	46.51	22.10	101.17	20 44 42	1719.4	-26.09	38.18
100.00	11 40 46	4079.62	4.84	160.49	16.77	60.47	12 48 46	3479.6	.87	153.95
110.00	21 31 36	2051.72	-30.94	25.36	21.28	105.31	22 5 48	1451.7	-28.53	16.99
110.00	12 31 42	3920.11	7.50	146.76	15.13	56.55	13 37 2	3320.1	3.05	140.50

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2868	TRA	-.3769	TC3	-.5524	BAU	.3178	SGT	840.8	SGR	1846.2	SG3	3341.7	ST	466.5	SR	914.0
RDE	.5620	RRA	-.7350	RC3	1.5467	FAU	.53134	RRT	.3487	RRF	-.9658	RTF	-.3256	CRT	.9978	CRS	.9262
FDE	-5.9053	FRA	18.5436	FC	-31.7853	BSP	6359	SGB	2028.6	RZ3	-.0888	R13	-.9618	LSA	3388.8	MSA	371.8
BDE	.6309	BRA	.8260	BC3	1.6424	FSP	11335	SG1	1874.2	SG2	776.2	THA	79.08	EL1	1025.8	EL2	27.3

SS 3251.2 CST .9233 SSA 27.2 ALF 62.99

LAUNCH DATE OCT 15 1964 FLIGHT TIME 308.00 ARRIVAL DATE AUG 19 1965

HELIOCENTRIC CONIC DISTANCE 710.451 EARTH TO MARS

RL	149.15	LAL	.00	LOL	21.68	VL	32.658	GAL	-5.64	AZL	89.24	HCA	224.16	SMA	186.12	ECC	.22072	INC	.7560
RP	225.78	LAP	-.53	LOP	245.83	VP	21.507	GAP	-3.38	AZP	90.54	TAL	327.95	TAP	192.11	RCA	145.04	APO	227.20
RC	248.959	GL	6.48	GP	8.85	ZAL	135.57	ZAP	109.40	ETS	175.75	ZAE	145.08	ETE	163.97	ZAC	95.38	ETC	256.60

V1 29.874 V2 24.360 CLP 109.64

PLANETOCENTRIC CONIC

C3	14.458	VHL	3.802	DLA	14.71	RAL	161.79	RAD	6567.6	VEL	11.655	PTH	2.05	VHP	2.997	DPA	11.20	RAP	180.19

ECC 1.2379

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 35 23	2615.26	-26.85	68.49	22.58	99.36	19 18 58	2015.3	-25.28	60.17
90.00	10 30 4	4308.14	3.52	178.02	17.52	61.89	11 41 52	3708.1	-.26	171.39
100.00	20 4 39	2327.40	-28.01	47.08	22.35	100.88	20 43 26	1727.4	-26.23	38.73
100.00	11 43 29	4071.24	4.56	160.03	16.95	60.43	12 51 20	3471.2	.59	153.50
110.00	21 30 35	2058.50	-31.06	25.85	21.54	105.04	22 4 54	1458.5	-28.69	17.46
110.00	12 34 2	3912.90	7.23	146.37	15.30	56.50	13 39 15	3312.9	2.77	140.12

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2326	TRA	-.2157	TC3	-.8277	BAU	.3399	SGT	795.0	SGR	1853.0	SG3	3406.1	ST	365.2	SR	917.4
RDE	.5637	RRA	-.7376	RC3	1.5512	FAU	.53926	RRT	-.0398	RRF	-.9648	RTF	.0768	CRT	.9904	CRS	.9229
FDE	-5.9305	FRA	18.9466	FC	-32.2904	BSP	6224	SGB	2016.4	RZ3	-.0297	R13	-.9651	LSA	3388.3	MSA	380.7
BDE	.6098	BRA	.7685	BC3	1.7582	FSP	11684	SG1	1853.4	SG2	794.2	THA	91.20	EL1	986.3	EL2	47.0

SS 3263.7 CST .8715 SSA 27.3 ALF 68.43

LAUNCH DATE OCT 15 1964 FLIGHT TIME 310.00 ARRIVAL DATE AUG 21 1965

HELIOCENTRIC CONIC DISTANCE 714.393 EARTH TO MARS

RL	149.15	LAL	.00	LOL	21.68	VL	32.654	GAL	-5.64	AZL	89.21	HCA	225.22	SMA	186.04	ECC	.22043	INC	.7882
RP	225.38	LAP	-.56	LOP	246.90	VP	21.548	GAP	-3.65	AZP	90.56	TAL	327.90	TAP	193.12	RCA	145.03	APO	227.05
RC	250.643	GL	6.75	GP	8.78	ZAL	135.60	ZAP	107.48	ETS	176.13	ZAE	143.05	ETE	165.16	ZAC	95.12	ETC	256.68

V1 29.874 V2 24.402 CLP 107.69

PLANETOCENTRIC CONIC

C3	14.454	VHL	3.802	DLA	14.95	RAL	161.97	RAD	6567.6	VEL	11.655	PTH	2.05	VHP	2.971	DPA	11.51	RAP	179.35

ECC 1.2379

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 33 58	2623.41	-26.94	69.07	22.84	99.08	19 17 42	2023.4	-25.41	60.73
90.00	10 32 51	4299.86	3.26	177.55	17.73	61.86	11 44 31	3699.9	-.53	170.92
100.00	20 3 24	2335.00	-28.11	47.62	22.61	100.61	20 42 19	1735.0	-26.36	39.26
100.00	11 46 6	4063.50	4.30	159.60	17.15	60.39	12 53 50	3463.5	.32	153.07
110.00	21 29 42	2064.99	-31.18	26.32	21.82	104.78	22 4 7	1465.0	-28.84	17.91
110.00	12 36 18	3906.28	6.98	146.02	15.49	56.45	13 41 24	3306.3	2.52	139.77

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1845	TRA	-.0441	TC3	-1.0929	BAU	.3685	SGT	878.9	SGR	1861.1	SG3	3466.9	ST	279.9	SR	924.6
RDE	.5689	RRA	-.7355	RC3	1.5629	FAU	.54997	RRT	-.4097	RRF	-.9639	RTF	.4600	CRT	.9451	CRS	.9216
FDE	-6.0323	FRA	19.2335	FC	-32.9412	BSP	6181	SGB	2058.2	RZ3	.0220	R13	-.9663	LSA	3405.9	MSA	389.7
BDE	.5981	BRA	.7368	BC3	1.9071	FSP	11840	SG1	1903.0	SG2	784.1	THA	103.24	EL1	962.0	EL2	87.9

SS 3289.3 CST .7512 SSA 26.7 ALF 73.90

LAUNCH DATE OCT 15 1964 FLIGHT TIME 312.00 ARRIVAL DATE AUG 23 1965

HELIOCENTRIC CONIC DISTANCE 718.342 EARTH TO MARS

RL 149.15 LAL .00 LOL 21.68 VL 32.649 GAL -5.64 AZL 89.18 HCA 226.29 SMA 185.97 ECC .22019 INC .8196 V1 29.874
RP 224.99 LAP -.59 LOP 247.97 VP 21.589 GAP -3.91 AZP 90.57 TAL 327.83 TAP 194.12 RCA 145.02 APO 226.91 V2 24.444
RC 252.307 GL 7.02 GP 8.70 ZAL 135.65 ZAP 105.53 ETS 176.50 ZAE 140.98 ETE 166.26 ZAC 94.86 ETC 256.76 CLP 105.72

PLANETOCENTRIC CONIC

C3 14.460 VHL 3.803 DLA 15.16 RAL 162.15 RAD 6567.6 VEL 11.655 PTH 2.05 VHP 2.948 DPA 11.81 RAP 178.49 ECC 1.2380

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 32 45	2631.17	-27.02	69.62	23.12	98.81	19 16 36	2031.2	-25.52	61.27
90.00	10 35 33	4292.29	3.01	177.13	17.95	61.83	11 47 5	3692.3	-.78	170.50
100.00	20 2 20	2342.25	-28.20	48.14	22.90	100.35	20 41 22	1742.2	-26.48	39.76
100.00	11 48 39	4056.44	4.06	159.21	17.37	60.36	12 56 15	3456.4	.09	152.68
110.00	21 28 58	2071.19	-31.29	26.78	22.11	104.53	22 3 29	1471.2	-28.97	18.34
110.00	12 38 30	3900.26	6.75	145.70	15.70	56.41	13 43 31	3300.3	2.29	139.46

DIFFERENTIAL CORRECTIONS
TDE .1340 TRA .1311 TC3-1.3703 BAU .4028
RDE .5731 RRA -.7334 RC3 1.5694 FAU .55887
FDE-6.1062 FRA19.5101 FC-33.4605 BSP 6398
BDE .5886 BRA .7451 BC3 2.0834 FSP 12014

MID-COURSE EXECUTION ACCURACY
SGT 1081.1 SGR 1865.8 SG3 3520.0
RRT -.6464 RRF -.9628 RTF .7015
SGB 2156.4 R23 .0593 R13 -.9666
SG1 2016.8 SG2 763.1 THA 114.22

ORBIT DETERMINATION ACCURACY
ST 213.3 SR 930.0 SS 3308.3
CRT .7668 CRS .9197 CST .4593
LSA 3419.8 MSA 398.7 SSA 26.3
EL1 944.6 EL2 134.8 ALF 79.82

LAUNCH DATE OCT 15 1964 FLIGHT TIME 314.00 ARRIVAL DATE AUG 25 1965

HELIOCENTRIC CONIC DISTANCE 722.298 EARTH TO MARS

RL 149.15 LAL .00 LOL 21.68 VL 32.645 GAL -5.65 AZL 89.15 HCA 227.37 SMA 185.90 ECC .22000 INC .8497 V1 29.874
RP 224.60 LAP -.63 LOP 249.04 VP 21.630 GAP -4.17 AZP 90.58 TAL 327.75 TAP 195.12 RCA 145.00 APO 226.80 V2 24.485
RC 253.951 GL 7.28 GP 8.62 ZAL 135.72 ZAP 103.57 ETS 176.87 ZAE 138.88 ETE 167.28 ZAC 94.59 ETC 256.86 CLP 103.72

PLANETOCENTRIC CONIC

C3 14.476 VHL 3.805 DLA 15.36 RAL 162.35 RAD 6567.6 VEL 11.656 PTH 2.05 VHP 2.928 DPA 12.12 RAP 177.61 ECC 1.2382

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 31 41	2638.53	-27.10	70.15	23.41	98.56	19 15 40	2038.5	-25.63	61.78
90.00	10 38 9	4285.42	2.79	176.75	18.19	61.81	11 49 35	3685.4	-1.00	170.12
100.00	20 1 26	2349.13	-28.28	48.64	23.19	100.10	20 40 35	1749.1	-26.60	40.24
100.00	11 51 6	4050.05	3.85	158.86	17.60	60.33	12 58 36	3450.1	-.13	152.33
110.00	21 28 22	2077.10	-31.39	27.21	22.42	104.30	22 2 59	1477.1	-29.10	18.75
110.00	12 40 39	3894.85	6.55	145.42	15.93	56.38	13 45 34	3294.9	2.09	139.18

DIFFERENTIAL CORRECTIONS
TDE .0817 TRA .3103 TC3-1.6581 BAU .4422
RDE .5772 RRA -.7304 RC3 1.5722 FAU .56650
FDE-6.1744 FRA19.7517 FC-33.8793 BSP 6838
BDE .5830 BRA .7936 BC3 2.2850 FSP 12162

MID-COURSE EXECUTION ACCURACY
SGT 1357.2 SGR 1867.6 SG3 3565.0
RRT -.7714 RRF -.9617 RTF .8274
SGB 2308.7 R23 .0789 R13 -.9678
SG1 2187.8 SG2 737.2 THA 123.59

ORBIT DETERMINATION ACCURACY
ST 194.2 SR 934.9 SS 3324.8
CRT .3076 CRS .9179 CST -.0904
LSA 3435.1 MSA 407.2 SSA 25.9
EL1 936.9 EL2 184.4 ALF 86.20

LAUNCH DATE OCT 15 1964 FLIGHT TIME 316.00 ARRIVAL DATE AUG 27 1965

HELIOCENTRIC CONIC DISTANCE 726.262 EARTH TO MARS

RL 149.15 LAL .00 LOL 21.68 VL 32.642 GAL -5.66 AZL 89.12 HCA 228.44 SMA 185.84 ECC .21985 INC .8790 V1 29.874
RP 224.21 LAP -.66 LOP 250.11 VP 21.672 GAP -4.42 AZP 90.58 TAL 327.66 TAP 196.10 RCA 144.98 APO 226.69 V2 24.527
RC 255.576 GL 7.52 GP 8.53 ZAL 135.79 ZAP 101.58 ETS 177.23 ZAE 136.75 ETE 168.22 ZAC 94.31 ETC 256.95 CLP 101.71

PLANETOCENTRIC CONIC

C3 14.503 VHL 3.808 DLA 15.54 RAL 162.55 RAD 6567.6 VEL 11.657 PTH 2.05 VHP 2.912 DPA 12.43 RAP 176.71 ECC 1.2387

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 30 49	2645.51	-27.16	70.65	23.72	98.32	19 14 54	2045.5	-25.73	62.27
90.00	10 40 40	4279.25	2.59	176.40	18.45	61.79	11 51 59	3679.3	-1.20	169.77
100.00	20 0 42	2355.66	-28.36	49.11	23.51	99.87	20 39 57	1755.7	-26.70	40.70
100.00	11 53 28	4044.33	3.65	158.55	17.86	60.31	13 0 53	3444.3	-.33	152.02
110.00	21 27 56	2082.72	-31.48	27.62	22.74	104.07	22 2 38	1482.7	-29.23	19.14
110.00	12 42 44	3890.04	6.37	145.16	16.18	56.34	13 47 34	3290.0	1.90	138.92

DIFFERENTIAL CORRECTIONS
TDE .0283 TRA .4936 TC3-1.9530 BAU .4860
RDE .5809 RRA -.7265 RC3 1.5710 FAU .57263
FDE-6.2280 FRA19.9622 FC-34.1836 BSP 7482
BDE .5816 BRA .8783 BC3 2.5064 FSP 12299

MID-COURSE EXECUTION ACCURACY
SGT 1675.9 SGR 1866.2 SG3 3601.4
RRT -.8368 RRF -.9604 RTF .8927
SGB 2508.2 R23 .0847 R13 -.9704
SG1 2405.0 SG2 712.0 THA 131.33

ORBIT DETERMINATION ACCURACY
ST 239.3 SR 938.6 SS 3337.1
CRT -.1918 CRS .9159 CST -.5666
LSA 3449.8 MSA 415.5 SSA 25.5
EL1 939.8 EL2 234.6 ALF 92.99

LAUNCH DATE OCT 15 1964 FLIGHT TIME 318.00 ARRIVAL DATE AUG 29 1965

HELIOCENTRIC CONIC DISTANCE 730.233 EARTH TO MARS

RL 149.15 LAL .00 LOL 21.68 VL 32.638 GAL -5.68 AZL 89.09 HCA 229.52 SMA 185.78 ECC .21974 INC .9074 V1 29.874
RP 223.82 LAP -.69 LOP 251.19 VP 21.715 GAP -4.67 AZP 90.59 TAL 327.56 TAP 197.08 RCA 144.96 APO 226.61 V2 24.569
RC 257.180 GL 7.75 GP 8.44 ZAL 135.89 ZAP 99.58 ETS 177.58 ZAE 134.59 ETE 169.10 ZAC 94.03 ETC 257.05 CLP 99.69

PLANETOCENTRIC CONIC

C3 14.539 VHL 3.813 DLA 15.71 RAL 162.77 RAD 6567.6 VEL 11.659 PTH 2.05 VHP 2.900 DPA 12.74 RAP 175.81 ECC 1.2393

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 30 7	2652.11	-27.23	71.12	24.05	98.09	19 14 19	2052.1	-25.83	62.73
90.00	10 43 5	4273.78	2.42	176.10	18.72	61.78	11 54 19	3673.8	-1.37	169.47
100.00	20 0 8	2361.84	-28.43	49.55	23.84	99.64	20 39 30	1761.8	-26.81	41.13
100.00	11 55 46	4039.27	3.48	158.27	18.13	60.29	13 3 5	3439.3	-.50	151.74
110.00	21 27 38	2088.05	-31.57	28.01	23.08	103.85	22 2 26	1488.1	-29.34	19.51
110.00	12 44 45	3885.82	6.21	144.94	16.44	56.32	13 49 31	3285.8	1.74	138.70

DIFFERENTIAL CORRECTIONS
TDE -.0261 TRA .6807 TC3-2.2528 BAU .5333
RDE .5845 RRA -.7213 RC3 1.5663 FAU .57746
FDE-6.2747 FRA20.1294 FC-34.3850 BSP 8285
BDE .5851 BRA .9918 BC3 2.7438 FSP 12403

MID-COURSE EXECUTION ACCURACY
SGT 2020.4 SGR 1861.7 SG3 3628.5
RRT -.8728 RRF -.9590 RTF .9288
SGB 2747.3 R23 .0822 R13 -.9738
SG1 2659.2 SG2 690.4 THA 137.68

ORBIT DETERMINATION ACCURACY
ST 325.3 SR 941.7 SS 3346.4
CRT -.4701 CRS .9138 CST -.7862
LSA 3465.7 MSA 423.6 SSA 25.1
EL1 955.3 EL2 283.0 ALF 100.12

LAUNCH DATE OCT 15 1964 FLIGHT TIME 320.00 ARRIVAL DATE AUG 31 1965

HELIOCENTRIC CONIC DISTANCE 734.212 EARTH TO MARS

RL	149.15	LAL	.00	LOL	21.68	VL	32.635	GAL	-5.70	AZL	89.06	HCA	230.61	SMA	185.73	ECC	.21968	INC	.9350
RP	223.44	LAP	-.72	LOP	252.28	VP	21.758	GAP	-4.92	AZP	90.59	TAL	327.45	TAP	198.05	RCA	144.93	APO	226.53
RC	258.763	GL	7.98	GP	8.35	ZAL	136.00	ZAP	97.58	ETS	177.92	ZAE	132.42	ETE	169.92	ZAC	93.74	ETC	257.16

V1	29.874	V2	24.611	CLP	97.66														

PLANETOCENTRIC CONIC

C3	14.586	VHL	3.819	DLA	15.86	RAL	162.99	RAD	6567.6	VEL	11.661	PTH	2.05	VHP	2.891	DPA	13.05	RAP	174.89

ECC	1.2400																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 29 37	2658.31	-27.29	71.56	24.39	97.87	19 13 55	2058.3	-25.92	63.16
90.00	10 45 24	4269.00	2.26	175.83	19.02	61.77	11 56 33	3669.0	-1.53	169.20
100.00	19 59 44	2367.67	-28.50	49.98	24.18	99.43	20 39 12	1767.7	-26.90	41.54
100.00	11 57 58	4034.88	3.33	158.03	18.43	60.28	13 5 13	3434.9	-.65	151.50
110.00	21 27 29	2093.11	-31.65	28.38	23.44	103.65	22 2 22	1493.1	-29.45	19.86
110.00	12 46 42	3882.20	6.07	144.75	18.73	56.30	13 51 25	3282.2	1.60	138.51

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0816	TRA	.8716	TC3	-2.5556	BAU	.5837	SGT	2381.9	SGR	1854.2	SG3	3646.7	ST	429.8	SR	944.0
RDE	.5879	RRA	-.7151	RC3	1.5582	FAU	.58095	RRT	-.8937	RRF	-.9574	RTF	.9501	CRT	-.6076	CRS	.9117
FDE	-6.3123	FRA	20.2571	FC	-34.4814	BSP	9221	SGB	3018.5	R23	.0759	R13	-.9774	LSA	3482.7	MSA	431.5
BDE	.5936	BRA	1.1274	BC3	2.9932	FSP	12479	SG1	2942.5	SG2	673.3	THA	142.90	EL1	984.2	EL2	327.4

SS	3352.7	CST	-.8791	SSA	24.7	ALF	107.46

LAUNCH DATE OCT 15 1964 FLIGHT TIME 322.00 ARRIVAL DATE SEP 2 1965

HELIOCENTRIC CONIC DISTANCE 738.197 EARTH TO MARS

RL	149.15	LAL	.00	LOL	21.68	VL	32.633	GAL	-5.72	AZL	89.04	HCA	231.69	SMA	185.69	ECC	.21966	INC	.9618
RP	223.05	LAP	-.75	LOP	253.37	VP	21.801	GAP	-5.16	AZP	90.60	TAL	327.32	TAP	199.02	RCA	144.90	APO	226.47
RC	260.326	GL	8.19	GP	8.25	ZAL	136.13	ZAP	95.56	ETS	178.26	ZAE	130.23	ETE	170.68	ZAC	93.45	ETC	257.27

V1	29.874	V2	24.653	CLP	95.62		

PLANETOCENTRIC CONIC

C3	14.643	VHL	3.827	DLA	15.99	RAL	163.23	RAD	6567.6	VEL	11.663	PTH	2.05	VHP	2.886	DPA	13.35	RAP	173.97

ECC	1.2410																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 29 17	2664.14	-27.34	71.98	24.75	97.67	19 13 41	2064.1	-26.00	63.57
90.00	10 47 38	4264.91	2.13	175.60	19.33	61.76	11 58 43	3664.9	-1.66	168.97
100.00	19 59 31	2373.15	-28.56	50.37	24.54	99.23	20 39 4	1773.1	-26.99	41.92
100.00	12 0 5	4031.14	3.21	157.82	18.74	60.26	13 7 17	3431.1	-.77	151.30
110.00	21 27 29	2097.89	-31.73	28.73	23.81	103.45	22 2 27	1497.9	-29.55	20.20
110.00	12 48 36	3879.15	5.96	144.59	17.03	56.28	13 53 16	3279.2	1.49	138.36

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1378	TRA	1.0657	TC3	-2.8599	BAU	.6365	SGT	2754.7	SGR	1843.7	SG3	3655.4	ST	543.0	SR	945.6
RDE	.5912	RRA	-.7076	RC3	1.5466	FAU	.58300	RRT	-.9063	RRF	-.9557	RTF	.9635	CRT	-.6809	CRS	.9096
FDE	-6.3416	FRA	20.3422	FC	-34.4686	BSP	10252	SGB	3314.8	R23	.0686	R13	-.9807	LSA	3501.1	MSA	439.2
BDE	.6070	BRA	1.2792	BC3	3.2513	FSP	12523	SG1	3248.2	SG2	661.0	THA	147.23	EL1	1027.1	EL2	366.1

SS	3355.9	CST	-.9228	SSA	24.3	ALF	114.70

LAUNCH DATE OCT 15 1964 FLIGHT TIME 324.00 ARRIVAL DATE SEP 4 1965

HELIOCENTRIC CONIC DISTANCE 742.190 EARTH TO MARS

RL	149.15	LAL	.00	LOL	21.68	VL	32.630	GAL	-5.74	AZL	89.01	HCA	232.78	SMA	185.65	ECC	.21969	INC	.9880
RP	222.66	LAP	-.79	LOP	254.46	VP	21.845	GAP	-5.40	AZP	90.60	TAL	327.18	TAP	199.97	RCA	144.86	APO	226.43
RC	261.869	GL	8.39	GP	8.15	ZAL	136.27	ZAP	93.55	ETS	178.59	ZAE	128.04	ETE	171.39	ZAC	93.16	ETC	257.38

V1	29.874	V2	24.695	CLP	93.59		

PLANETOCENTRIC CONIC

C3	14.711	VHL	3.835	DLA	16.11	RAL	163.48	RAD	6567.6	VEL	11.666	PTH	2.05	VHP	2.884	DPA	13.64	RAP	173.06

ECC	1.2421																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 29 8	2669.58	-27.39	72.37	25.13	97.48	19 13 37	2069.6	-26.07	63.95
90.00	10 49 47	4261.52	2.02	175.41	19.67	61.75	12 0 48	3661.5	-1.77	168.78
100.00	19 59 28	2378.28	-28.61	50.74	24.92	99.04	20 39 6	1778.3	-27.07	42.28
100.00	12 2 8	4028.05	3.10	157.65	19.07	60.25	13 9 16	3428.1	-.88	151.13
110.00	21 27 38	2102.40	-31.80	29.07	24.20	103.27	22 2 40	1502.4	-29.64	20.52
110.00	12 50 27	3876.70	5.86	144.46	17.35	56.26	13 55 4	3276.7	1.39	138.23

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1952	TRA	1.2627	TC3	-3.1646	BAU	.6914	SGT	3135.8	SGR	1830.1	SG3	3654.3	ST	661.3	SR	946.3
RDE	.5942	RRA	-.6989	RC3	1.5316	FAU	.58365	RRT	-.9139	RRF	-.9538	RTF	.9723	CRT	-.7245	CRS	.9074
FDE	-6.3617	FRA	20.3807	FC	-34.3486	BSP	11352	SGB	3630.8	R23	.0614	R13	-.9836	LSA	3520.5	MSA	446.6
BDE	.6255	BRA	1.4432	BC3	3.5158	FSP	12533	SG1	3571.7	SG2	652.3	THA	150.86	EL1	1083.7	EL2	398.0

SS	3355.8	CST	-.9465	SSA	23.8	ALF	121.59

LAUNCH DATE OCT 15 1964 FLIGHT TIME 326.00 ARRIVAL DATE SEP 6 1965

HELIOCENTRIC CONIC DISTANCE 746.189 EARTH TO MARS

RL	149.15	LAL	.00	LOL	21.68	VL	32.628	GAL	-5.77	AZL	88.99	HCA	233.88	SMA	185.61	ECC	.21975	INC	1.0135
RP	222.28	LAP	-.82	LOP	255.55	VP	21.889	GAP	-5.64	AZP	90.60	TAL	327.03	TAP	200.91	RCA	144.82	APO	226.40
RC	263.392	GL	8.59	GP	8.04	ZAL	136.43	ZAP	91.54	ETS	178.91	ZAE	125.84	ETE	172.06	ZAC	92.87	ETC	257.49

V1	29.874	V2	24.737	CLP	91.55		

PLANETOCENTRIC CONIC

C3	14.789	VHL	3.846	DLA	16.22	RAL	163.74	RAD	6567.6	VEL	11.669	PTH	2.05	VHP	2.886	DPA	13.93	RAP	172.14

ECC	1.2434																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 29 10	2674.65	-27.43	72.73	25.52	97.30	19 13 45	2074.6	-26.14	64.31
90.00	10 51 50	4258.81	1.94	175.26	20.02	61.74	12 2 48	3658.8	-1.86	168.63
100.00	19 59 35	2383.07	-28.66	51.09	25.32	98.87	20 39 18	1783.1	-27.14	42.62
100.00	12 4 6	4025.62	3.02	157.52	19.41	60.25	13 11 11	3425.6	-.96	150.99
110.00	21 27 56	2106.63	-31.86	29.38	24.60	103.09	22 3 2	1506.6	-29.73	20.81
110.00	12 52 14	3874.82	5.79	144.36	17.69	56.25	13 56 49	3274.8	1.32	138.13

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2536	TRA	1.4620	TC3	-3.4678	BAU	.7481	SGT	3521.8	SGR	1813.8	SG3	3643.8	ST	782.6	SR	946.5
RDE	.5972	RRA	-.6891	RC3	1.5134	FAU	.58290	RRT	-.9184	RRF	-.9518	RTF	.9784	CRT	-.7525	CRS	.9052
FDE	-6.3736	FRA	20.3767	FC	-34.1233	BSP	12506	SGB	3961.4	R23	.0551	R13	-.9860	LSA	3541.6	MSA	453.6
BDE	.6488	BRA	1.6163	BC3	3.7836	FSP	12504	SG1	3908.2	SG2	646.7	THA	153.92	EL1	1152.9	EL2	423.1

SS	3352.8	CST	-.9606	SSA	23.4	ALF	127.87

LAUNCH DATE OCT 15 1964 FLIGHT TIME 328.00 ARRIVAL DATE SEP 8 1965

HELIOCENTRIC CONIC DISTANCE 750.195 EARTH TO MARS

RL 149.15 LAL .00 LOL 21.68 VL 32.627 GAL -5.79 AZL 88.96 HCA 234.98 SMA 185.58 ECC .21986 INC 1.0383 V1 29.874
RP 221.89 LAP -.85 LOP 256.65 VP 21.934 GAP -5.87 AZP 90.60 TAL 326.87 TAP 201.85 RCA 144.78 APO 226.38 V2 24.779
RC 264.895 GL 8.77 GP 7.93 ZAL 136.60 ZAP 89.53 ETS 179.22 ZAE 123.65 ETE 172.68 ZAC 92.58 ETC 257.60 CLP 89.53

PLANETOCENTRIC CONIC

C3 14.877 VHL 3.857 DLA 16.31 RAL 164.01 RAD 6567.6 VEL 11.673 PTH 2.05 VHP 2.892 DPA 14.20 RAP 171.23 ECC 1.2448

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 29 23	2679.33	-27.47	73.07	25.93	97.14	19 14 2	2079.3	-26.20	64.64
90.00	10 53 47	4256.80	1.87	175.15	20.39	61.74	12 4 44	3656.8	-1.92	168.52
100.00	19 59 52	2387.51	-28.71	51.41	25.74	98.70	20 39 40	1787.5	-27.21	42.93
100.00	12 5 58	4023.84	2.96	157.42	19.78	60.24	13 13 2	3423.8	-1.02	150.90
110.00	21 28 22	2110.60	-31.92	29.67	25.02	102.93	22 3 33	1510.6	-29.81	21.10
110.00	12 53 58	3873.52	5.74	144.29	18.05	56.24	13 58 31	3273.5	1.27	138.06

DIFFERENTIAL CORRECTIONS
TDE -.3127 TRA 1.6638 TC3-3.7674 BAU .8060
RDE .6000 RRA -.6781 RC3 1.4921 FAU .58075
FDE-6.3780 FRA20.3278 FC-33.7946 BSP 13700
BDE .6766 BRA 1.7967 BC3 4.0521 FSP 12449

MID-COURSE EXECUTION ACCURACY
SGT 3910.7 SGR 1794.7 SG3 3623.9
RRT -.9207 RRF -.9495 RTF .9827
SGB 4302.8 R23 .0499 R13 -.9881
SG1 4254.4 SG2 643.8 THA 156.52

ORBIT DETERMINATION ACCURACY
ST 905.6 SR 945.9 SS 3347.0
CRT -.7707 CRS .9030 CST -.9694
LSA 3564.3 MSA 460.6 SSA 22.9
EL1 1232.4 EL2 442.9 ALF 133.38

LAUNCH DATE OCT 15 1964 FLIGHT TIME 330.00 ARRIVAL DATE SEP 10 1965

HELIOCENTRIC CONIC DISTANCE 754.208 EARTH TO MARS

RL 149.15 LAL .00 LOL 21.68 VL 32.625 GAL -5.83 AZL 88.94 HCA 236.08 SMA 185.56 ECC .22001 INC 1.0626 V1 29.874
RP 221.51 LAP -.88 LOP 257.75 VP 21.978 GAP -6.10 AZP 90.59 TAL 326.69 TAP 202.78 RCA 144.73 APO 226.38 V2 24.820
RC 266.379 GL 8.95 GP 7.81 ZAL 136.79 ZAP 87.54 ETS 179.52 ZAE 121.46 ETE 173.27 ZAC 92.28 ETC 257.72 CLP 87.52

PLANETOCENTRIC CONIC

C3 14.977 VHL 3.870 DLA 16.39 RAL 164.30 RAD 6567.6 VEL 11.677 PTH 2.05 VHP 2.901 DPA 14.47 RAP 170.34 ECC 1.2465

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 29 47	2683.64	-27.51	73.38	26.36	96.99	19 14 30	2083.6	-26.26	64.94
90.00	10 55 39	4255.47	1.83	175.07	20.77	61.74	12 6 34	3655.5	-1.96	168.45
100.00	20 0 20	2391.62	-28.75	51.71	26.17	98.55	20 40 11	1791.6	-27.27	43.22
100.00	12 7 46	4022.72	2.92	157.36	20.16	60.24	13 14 49	3422.7	-1.06	150.83
110.00	21 28 58	2114.31	-31.98	29.95	25.46	102.78	22 4 12	1514.3	-29.89	21.36
110.00	12 55 38	3872.80	5.72	144.25	18.43	56.24	14 0 11	3272.8	1.24	138.02

DIFFERENTIAL CORRECTIONS
TDE -.3726 TRA 1.8674 TC3-4.0617 BAU .8647
RDE .6026 RRA -.6661 RC3 1.4674 FAU .57701
FDE-6.3695 FRA20.2387 FC-33.3533 BSP 14923
BDE .7085 BRA 1.9827 BC3 4.3187 FSP 12366

MID-COURSE EXECUTION ACCURACY
SGT 4300.3 SGR 1772.7 SG3 3594.5
RRT -.9215 RRF -.9469 RTF .9858
SGB 4651.4 R23 .0456 R13 -.9897
SG1 4606.8 SG2 642.6 THA 158.77

ORBIT DETERMINATION ACCURACY
ST 1029.8 SR 944.5 SS 3337.2
CRT -.7833 CRS .9007 CST -.9753
LSA 3587.6 MSA 467.3 SSA 22.5
EL1 1320.2 EL2 458.1 ALF 138.15

LAUNCH DATE OCT 15 1964 FLIGHT TIME 332.00 ARRIVAL DATE SEP 12 1965

HELIOCENTRIC CONIC DISTANCE 758.227 EARTH TO MARS

RL 149.15 LAL .00 LOL 21.68 VL 32.624 GAL -5.86 AZL 88.91 HCA 237.19 SMA 185.54 ECC .22021 INC 1.0863 V1 29.874
RP 221.13 LAP -.91 LOP 258.86 VP 22.024 GAP -6.32 AZP 90.59 TAL 326.50 TAP 203.69 RCA 144.68 APO 226.39 V2 24.862
RC 267.844 GL 9.12 GP 7.69 ZAL 136.99 ZAP 85.36 ETS 179.80 ZAE 119.27 ETE 173.82 ZAC 91.99 ETC 257.83 CLP 85.52

PLANETOCENTRIC CONIC

C3 15.088 VHL 3.884 DLA 16.45 RAL 164.59 RAD 6567.6 VEL 11.682 PTH 2.05 VHP 2.913 DPA 14.72 RAP 169.46 ECC 1.2483

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 30 21	2687.59	-27.54	73.67	26.80	96.85	19 15 9	2087.6	-26.31	65.22
90.00	10 57 25	4254.83	1.81	175.04	21.18	61.74	12 8 20	3654.8	-1.98	168.41
100.00	20 0 58	2395.40	-28.79	51.98	26.61	98.41	20 40 53	1795.4	-27.33	43.49
100.00	12 9 30	4022.24	2.91	157.33	20.57	60.24	13 16 32	3422.2	-1.08	150.81
110.00	21 29 42	2117.76	-32.03	30.20	25.92	102.63	22 5 0	1517.8	-29.96	21.60
110.00	12 57 15	3872.64	5.71	144.24	18.83	56.24	14 1 47	3272.6	1.24	138.02

DIFFERENTIAL CORRECTIONS
TDE -.4336 TRA 2.0722 TC3-4.3506 BAU .9244
RDE .6052 RRA -.6530 RC3 1.4403 FAU .57200
FDE-6.3569 FRA20.1055 FC-32.8212 BSP 16157
BDE .7445 BRA 2.1727 BC3 4.5828 FSP 12244

MID-COURSE EXECUTION ACCURACY
SGT 4689.3 SGR 1748.6 SG3 3556.3
RRT -.9212 RRF -.9442 RTF .9881
SGB 5004.7 R23 .0423 R13 -.9911
SG1 4963.2 SG2 642.8 THA 160.71

ORBIT DETERMINATION ACCURACY
ST 1154.7 SR 942.8 SS 3325.5
CRT -.7922 CRS .8985 CST -.9795
LSA 3613.4 MSA 473.6 SSA 22.0
EL1 1414.8 EL2 469.6 ALF 142.23

LAUNCH DATE OCT 15 1964 FLIGHT TIME 334.00 ARRIVAL DATE SEP 14 1965

HELIOCENTRIC CONIC DISTANCE 762.249 EARTH TO MARS

RL 149.15 LAL .00 LOL 21.68 VL 32.623 GAL -5.90 AZL 88.89 HCA 238.30 SMA 185.52 ECC .22044 INC 1.1095 V1 29.874
RP 220.75 LAP -.94 LOP 259.97 VP 22.069 GAP -6.55 AZP 90.58 TAL 326.30 TAP 204.60 RCA 144.62 APO 226.42 V2 24.903
RC 269.292 GL 9.27 GP 7.57 ZAL 137.21 ZAP 83.61 ETS 180.08 ZAE 117.11 ETE 174.33 ZAC 91.70 ETC 257.95 CLP 83.55

PLANETOCENTRIC CONIC

C3 15.210 VHL 3.900 DLA 16.50 RAL 164.90 RAD 6567.6 VEL 11.687 PTH 2.06 VHP 2.929 DPA 14.96 RAP 168.60 ECC 1.2503

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 31 7	2691.15	-27.57	73.92	27.27	96.72	19 15 59	2091.2	-26.35	65.47
90.00	10 59 6	4254.89	1.81	175.04	21.60	61.74	12 10 0	3654.9	-1.98	168.41
100.00	20 1 46	2398.84	-28.82	52.23	27.08	98.29	20 41 45	1798.8	-27.38	43.73
100.00	12 11 8	4022.42	2.91	157.34	20.99	60.24	13 18 10	3422.4	-1.07	150.82
110.00	21 30 35	2120.95	-32.08	30.44	26.39	102.50	22 5 56	1520.9	-30.02	21.83
110.00	12 58 48	3873.08	5.73	144.27	19.24	56.24	14 3 21	3273.1	1.25	138.04

DIFFERENTIAL CORRECTIONS
TDE -.4918 TRA 2.2840 TC3-4.6223 BAU .9823
RDE .6050 RRA -.6418 RC3 1.4034 FAU .56245
FDE-6.2652 FRA20.0028 FC-32.0136 BSP 17526
BDE .7797 BRA 2.3724 BC3 4.8307 FSP 12243

MID-COURSE EXECUTION ACCURACY
SGT 5076.2 SGR 1719.0 SG3 3507.0
RRT -.9202 RRF -.9409 RTF .9898
SGB 5359.3 R23 .0390 R13 -.9920
SG1 5320.8 SG2 641.9 THA 162.43

ORBIT DETERMINATION ACCURACY
ST 1279.0 SR 937.0 SS 3297.9
CRT -.7972 CRS .8941 CST -.9830
LSA 3627.5 MSA 480.1 SSA 21.8
EL1 1511.5 EL2 478.7 ALF 145.82

LAUNCH DATE OCT 15 1964 FLIGHT TIME 336.00 ARRIVAL DATE SEP 16 1965

HELIOCENTRIC CONIC DISTANCE 766.282 EARTH TO MARS

RL	149.15	LAL	.00	LOL	21.68	VL	32.622	GAL	-5.94	AZL	88.87	HCA	239.41	SMA	185.51	ECC	.22072	INC	1.1324	V1	29.874
RP	220.37	LAP	-.97	LOP	261.08	VP	22.114	GAP	-6.77	AZP	90.58	TAL	326.09	TAP	205.50	RCA	144.56	APO	226.45	V2	24.945
RC	270.721	GL	9.42	GP	7.44	ZAL	137.45	ZAP	81.67	ETS	180.35	ZAE	114.96	ETE	174.82	ZAC	91.42	ETC	258.06	CLP	81.60

PLANETOCENTRIC CONIC

C3	15.344	VHL	3.917	DLA	16.53	RAL	165.21	RAD	6567.6	VEL	11.693	PTH	2.06	VHP	2.948	DPA	15.18	RAP	167.76	ECC	1.2525

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 32 3	2694.38	-27.60	74.16	27.75	96.61	19 16 58	2094.4	-26.39	65.70
90.00	11 0 41	4255.58	1.83	175.08	22.04	61.74	12 11 36	3655.6	-1.96	168.45
100.00	20 2 44	2401.97	-28.85	52.46	27.56	98.17	20 42 46	1802.0	-27.42	43.95
100.00	12 12 42	4023.22	2.94	157.38	21.43	60.24	13 19 45	3423.2	-1.04	150.86
110.00	21 31 36	2123.90	-32.12	30.66	26.88	102.38	22 7 0	1523.9	-30.08	22.04
110.00	13 0 18	3874.06	5.76	144.32	19.67	56.25	14 4 53	3274.1	1.29	138.09

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.5559	TRA	2.4886	TC3	-4.8964	BAU	1.0433	SGT	5458.3	SGR	1692.4	SG3	3454.1	ST	1404.3	SR	935.6	SS	3286.0
RDE	.6085	RRA	-.6258	RC3	1.3750	FAU	.55643	RRT	-.9181	RRF	-.9377	RTF	.9912	CRT	-.8021	CRS	.8927	CST	-.9850
FDE	-6.2666	FRA	19.7630	FC	-31.3953	BSP	18725	SGB	5714.7	R23	.0372	R13	-.9930	LSA	3661.8	MSA	485.7	SSA	21.2
BDE	.8242	BRA	2.5661	BC3	5.0858	FSP	12002	SG1	5678.2	SG2	644.8	THA	163.90	EL1	1616.1	EL2	485.6	ALF	148.75

LAUNCH DATE OCT 15 1964 FLIGHT TIME 338.00 ARRIVAL DATE SEP 18 1965

HELIOCENTRIC CONIC DISTANCE 770.320 EARTH TO MARS

RL	149.15	LAL	.00	LOL	21.68	VL	32.622	GAL	-5.99	AZL	88.85	HCA	240.53	SMA	185.50	ECC	.22104	INC	1.1547	V1	29.874
RP	220.00	LAP	-1.01	LOP	262.20	VP	22.160	GAP	-6.98	AZP	90.57	TAL	325.86	TAP	206.39	RCA	144.50	APO	226.50	V2	24.986
RC	272.134	GL	9.56	GP	7.31	ZAL	137.70	ZAP	79.76	ETS	180.61	ZAE	112.83	ETE	175.27	ZAC	91.14	ETC	258.17	CLP	79.67

PLANETOCENTRIC CONIC

C3	15.489	VHL	3.936	DLA	16.55	RAL	165.54	RAD	6567.6	VEL	11.699	PTH	2.06	VHP	2.971	DPA	15.38	RAP	166.95	ECC	1.2549

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 33 10	2697.25	-27.62	74.36	28.25	96.51	19 18 7	2097.2	-26.43	65.90
90.00	11 2 11	4256.97	1.88	175.16	22.50	61.74	12 13 8	3657.0	-1.92	168.53
100.00	20 3 51	2404.79	-28.88	52.67	28.06	98.07	20 43 56	1804.8	-27.46	44.15
100.00	12 14 11	4024.65	2.99	157.46	21.88	60.24	13 21 15	3424.7	-.99	150.94
110.00	21 32 46	2126.60	-32.16	30.86	27.38	102.26	22 8 13	1526.6	-30.14	22.23
110.00	13 1 45	3875.60	5.82	144.40	20.13	56.26	14 6 21	3275.6	1.35	138.17

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.6206	TRA	2.6952	TC3	-5.1593	BAU	1.1040	SGT	5836.4	SGR	1663.7	SG3	3393.6	ST	1529.4	SR	933.2	SS	3269.6
RDE	.6116	RRA	-.6097	RC3	1.3431	FAU	.54864	RRT	-.9154	RRF	-.9342	RTF	.9924	CRT	-.8053	CRS	.8910	CST	-.9866
FDE	-6.2483	FRA	19.5035	FC	-30.6848	BSP	19925	SGB	6068.9	R23	.0360	R13	-.9938	LSA	3695.7	MSA	491.2	SSA	20.6
BDE	.8713	BRA	2.7633	BC3	5.3312	FSP	11763	SG1	6034.2	SG2	647.9	THA	165.20	EL1	1723.0	EL2	491.1	ALF	151.28

LAUNCH DATE OCT 15 1964 FLIGHT TIME 340.00 ARRIVAL DATE SEP 20 1965

HELIOCENTRIC CONIC DISTANCE 774.363 EARTH TO MARS

RL	149.15	LAL	.00	LOL	21.68	VL	32.622	GAL	-6.03	AZL	88.82	HCA	241.65	SMA	185.50	ECC	.22141	INC	1.1766	V1	29.874
RP	219.62	LAP	-1.04	LOP	263.32	VP	22.206	GAP	-7.20	AZP	90.56	TAL	325.62	TAP	207.27	RCA	144.43	APO	226.57	V2	25.027
RC	273.529	GL	9.70	GP	7.18	ZAL	137.97	ZAP	77.88	ETS	180.85	ZAE	110.73	ETE	175.70	ZAC	90.86	ETC	258.28	CLP	77.78

PLANETOCENTRIC CONIC

C3	15.647	VHL	3.956	DLA	16.56	RAL	165.88	RAD	6567.6	VEL	11.706	PTH	2.06	VHP	2.997	DPA	15.57	RAP	166.17	ECC	1.2575

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 34 28	2699.76	-27.64	74.54	28.76	96.42	19 19 27	2099.8	-26.46	66.08
90.00	11 3 35	4259.02	1.94	175.27	22.98	61.74	12 14 34	3659.0	-1.85	168.65
100.00	20 5 9	2407.29	-28.90	52.85	28.58	97.97	20 45 16	1807.3	-27.50	44.33
100.00	12 15 35	4026.73	3.06	157.58	22.36	60.25	13 22 42	3426.7	-.92	151.05
110.00	21 34 4	2129.07	-32.20	31.04	27.90	102.16	22 9 34	1529.1	-30.19	22.40
110.00	13 3 9	3877.71	5.90	144.51	20.60	56.27	14 7 47	3277.7	1.43	138.28

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.6859	TRA	2.9027	TC3	-5.4095	BAU	1.1642	SGT	6208.2	SGR	1633.2	SG3	3326.2	ST	1653.9	SR	929.9	SS	3248.9
RDE	.6141	RRA	-.5934	RC3	1.3086	FAU	.53931	RRT	-.9121	RRF	-.9303	RTF	.9932	CRT	-.8075	CRS	.8890	CST	-.9879
FDE	-6.2131	FRA	19.2230	FC	-29.8395	BSP	21135	SGB	6419.5	R23	.0350	R13	-.9944	LSA	3729.4	MSA	496.4	SSA	20.1
BDE	.9207	BRA	2.9628	BC3	5.5655	FSP	11520	SG1	6386.4	SG2	650.9	THA	166.36	EL1	1831.6	EL2	495.3	ALF	153.49

LAUNCH DATE OCT 15 1964 FLIGHT TIME 342.00 ARRIVAL DATE SEP 22 1965

HELIOCENTRIC CONIC DISTANCE 778.412 EARTH TO MARS

RL	149.15	LAL	.00	LOL	21.68	VL	32.622	GAL	-6.09	AZL	88.80	HCA	242.78	SMA	185.50	ECC	.22181	INC	1.1981	V1	29.874
RP	219.25	LAP	-1.07	LOP	264.45	VP	22.252	GAP	-7.41	AZP	90.55	TAL	325.36	TAP	208.14	RCA	144.35	APO	226.64	V2	25.067
RC	274.906	GL	9.82	GP	7.05	ZAL	138.25	ZAP	76.03	ETS	181.09	ZAE	108.66	ETE	176.10	ZAC	90.59	ETC	258.38	CLP	75.92

PLANETOCENTRIC CONIC

C3	15.817	VHL	3.977	DLA	16.55	RAL	166.23	RAD	6567.6	VEL	11.713	PTH	2.06	VHP	3.026	DPA	15.75	RAP	165.42	ECC	1.2603

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 35 55	2701.94	-27.66	74.70	29.29	96.34	19 20 57	2101.9	-26.49	66.23
90.00	11 4 55	4261.75	2.03	175.42	23.47	61.75	12 15 56	3661.8	-1.76	168.80
100.00	20 6 37	2409.49	-28.93	53.01	29.11	97.89	20 46 46	1809.5	-27.53	44.48
100.00	12 16 55	4029.43	3.15	157.73	22.85	60.26	13 24 4	3429.4	-.83	151.20
110.00	21 35 31	2131.31	-32.23	31.21	28.44	102.07	22 11 2	1531.3	-30.23	22.56
110.00	13 4 29	3880.37	6.00	144.65	21.08	56.28	14 9 10	3280.4	1.53	138.42

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.7521	TRA	3.1109	TC3	-5.6472	BAU	1.2241	SGT	6573.4	SGR	1601.6	SG3	3253.0	ST	1777.4	SR	926.1	SS	3225.5
RDE	.6166	RRA	-.5768	RC3	1.2725	FAU	.52891	RRT	-.9083	RRF	-.9262	RTF	.9939	CRT	-.8088	CRS	.8869	CST	-.9889
FDE	-6.1681	FRA	18.9181	FC	-28.9492	BSP	22329	SGB	6765.7	R23	.0344	R13	-.9949	LSA	3764.2	MSA	501.3	SSA	19.6
BDE	.9725	BRA	3.1639	BC3	5.7888	FSP	11266	SG1	6734.0	SG2	654.1	THA	167.40	EL1	1941.2	EL2	498.7	ALF	155.42

LAUNCH DATE OCT 15 1964 FLIGHT TIME 344.00 ARRIVAL DATE SEP 24 1965

HELIOCENTRIC CONIC DISTANCE 782.466 EARTH TO MARS

RL 149.15 LAL .00 LOL 21.68 VL 32.622 GAL -6.14 AZL 88.78 HCA 243.91 SMA 185.50 ECC .22226 INC 1.2193 V1 29.874
RP 218.89 LAP -1.10 LOP 265.58 VP 22.298 GAP -7.62 AZP 90.54 TAL 325.09 TAP 209.00 RCA 144.27 APO 226.73 V2 25.108
RC 276.266 GL 9.94 GP 6.92 ZAL 138.54 ZAP 74.21 ETS 181.31 ZAE 106.61 ETE 176.48 ZAC 90.33 ETC 258.48 CLP 74.09

PLANETOCENTRIC CONIC

C3 16.001 VHL 4.000 DLA 16.53 RAL 166.59 RAD 6567.6 VEL 11.721 PTH 2.07 VHP 3.058 DPA 15.90 RAP 164.70 ECC 1.2633

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 37 34	2703.79	-27.67	74.84	29.85	96.28	19 22 37	2103.8	-26.51	66.36
90.00	11 6 9	4265.14	2.14	175.61	23.99	61.76	12 17 14	3665.1	-1.65	168.99
100.00	20 8 14	2411.39	-28.94	53.15	29.67	97.82	20 48 25	1811.4	-27.56	44.62
100.00	12 18 10	4032.77	3.26	157.91	23.36	60.27	13 25 22	3432.8	-.72	151.38
110.00	21 37 6	2133.32	-32.26	31.36	28.99	101.98	22 12 39	1533.3	-30.27	22.71
110.00	13 5 47	3883.60	6.12	144.82	21.59	56.30	14 10 30	3283.6	1.65	138.59

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.8190 TRA 3.3201 TC3-5.8708 BAU 1.2833 SGT 6931.2 SGR 1569.0 SG3 3174.4 ST 1900.1 SR 921.7 SS 3198.9
RDE .6188 RRA -.5601 RC3 1.2347 FAU .51735 RRT -.9039 RRF -.9216 RTF .9945 CRT -.8094 CRS .8847 CST -.9897
FDE-6.1118 FRA18.5936 FC-27.9917 BSP 23526 SGB 7106.6 R23 .0340 R13 -.9953 LSA 3799.6 MSA 505.9 SSA 19.7
BDE 1.0265 BRA 3.3670 BC3 5.9992 FSP 11006 SG1 7076.1 SG2 657.3 THA 168.33 EL1 2051.5 EL2 501.4 ALF 157.12

LAUNCH DATE OCT 15 1964 FLIGHT TIME 346.00 ARRIVAL DATE SEP 26 1965

HELIOCENTRIC CONIC DISTANCE 786.525 EARTH TO MARS

RL 149.15 LAL .00 LOL 21.68 VL 32.622 GAL -6.20 AZL 88.76 HCA 245.04 SMA 185.51 ECC .22276 INC 1.2401 V1 29.874
RP 218.52 LAP -1.12 LOP 266.71 VP 22.344 GAP -7.83 AZP 90.52 TAL 324.81 TAP 209.85 RCA 144.18 APO 226.83 V2 25.148
RC 277.609 GL 10.04 GP 6.78 ZAL 138.85 ZAP 72.43 ETS 181.53 ZAE 104.60 ETE 176.84 ZAC 90.08 ETC 258.58 CLP 72.30

PLANETOCENTRIC CONIC

C3 16.198 VHL 4.025 DLA 16.49 RAL 166.96 RAD 6567.6 VEL 11.730 PTH 2.07 VHP 3.094 DPA 16.04 RAP 164.03 ECC 1.2666

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 39 22	2705.31	-27.68	74.94	30.41	96.22	19 24 27	2105.3	-26.53	66.47
90.00	11 7 18	4269.18	2.27	175.84	24.52	61.77	12 18 27	3669.2	-1.52	169.21
100.00	20 10 0	2413.00	-28.96	53.27	30.24	97.76	20 50 13	1813.0	-27.58	44.73
100.00	12 19 20	4036.72	3.40	158.13	23.89	60.28	13 26 37	3436.7	-.58	151.60
110.00	21 38 49	2135.12	-32.28	31.49	29.57	101.91	22 14 24	1535.1	-30.31	22.84
110.00	13 7 1	3887.37	6.27	145.02	22.11	56.33	14 11 48	3287.4	1.80	138.78

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.8867 TRA 3.5297 TC3-6.0796 BAU 1.3418 SGT 7289.5 SGR 1536.0 SG3 3091.6 ST 2021.6 SR 917.1 SS 3170.4
RDE .6211 RRA -.5435 RC3 1.1960 FAU .50499 RRT -.8991 RRF -.9169 RTF .9949 CRT -.8095 CRS .8826 CST -.9904
FDE-6.0490 FRA18.2506 FC-26.9907 BSP 24693 SGB 7440.7 R23 .0338 R13 -.9956 LSA 3836.5 MSA 510.3 SSA 18.7
BDE 1.0826 BRA 3.5713 BC3 6.1961 FSP 10732 SG1 7411.4 SG2 660.4 THA 169.17 EL1 2162.0 EL2 503.5 ALF 158.62

LAUNCH DATE OCT 15 1964 FLIGHT TIME 348.00 ARRIVAL DATE SEP 28 1965

HELIOCENTRIC CONIC DISTANCE 790.589 EARTH TO MARS

RL 149.15 LAL .00 LOL 21.68 VL 32.623 GAL -6.26 AZL 88.74 HCA 246.18 SMA 185.52 ECC .22330 INC 1.2607 V1 29.874
RP 218.16 LAP -1.15 LOP 267.85 VP 22.390 GAP -8.03 AZP 90.51 TAL 324.51 TAP 210.69 RCA 144.09 APO 226.94 V2 25.188
RC 278.933 GL 10.14 GP 6.65 ZAL 139.18 ZAP 70.69 ETS 181.73 ZAE 102.62 ETE 177.17 ZAC 89.83 ETC 258.67 CLP 70.55

PLANETOCENTRIC CONIC

C3 16.409 VHL 4.051 DLA 16.45 RAL 167.34 RAD 6567.7 VEL 11.738 PTH 2.07 VHP 3.132 DPA 16.15 RAP 163.39 ECC 1.2700

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 41 20	2706.52	-27.69	75.03	31.00	96.18	19 26 26	2106.5	-26.54	66.55
90.00	11 8 21	4273.88	2.42	176.10	25.06	61.78	12 19 35	3673.9	-1.37	169.47
100.00	20 11 56	2414.33	-28.97	53.36	30.82	97.71	20 52 10	1814.3	-27.60	44.83
100.00	12 20 26	4041.29	3.55	158.38	24.44	60.30	13 27 48	3441.3	-.43	151.85
110.00	21 40 40	2136.70	-32.30	31.61	30.16	101.84	22 16 17	1536.7	-30.34	22.95
110.00	13 8 12	3891.69	6.43	145.25	22.66	56.35	14 13 3	3291.7	1.96	139.01

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.9559 TRA 3.7393 TC3-6.2740 BAU 1.3995 SGT 7620.8 SGR 1502.8 SG3 3005.3 ST 2142.1 SR 912.4 SS 3140.4
RDE .6234 RRA -.5262 RC3 1.1571 FAU .49208 RRT -.8938 RRF -.9116 RTF .9953 CRT -.8093 CRS .8805 CST -.9910
FDE-5.9830 FRA17.8865 FC-25.9625 BSP 25844 SGB 7767.6 R23 .0338 R13 -.9959 LSA 3875.3 MSA 514.2 SSA 18.3
BDE 1.1412 BRA 3.7762 BC3 6.3798 FSP 10445 SG1 7739.2 SG2 663.6 THA 169.93 EL1 2272.9 EL2 505.1 ALF 159.95

LAUNCH DATE OCT 15 1964 FLIGHT TIME 350.00 ARRIVAL DATE SEP 30 1965

HELIOCENTRIC CONIC DISTANCE 794.657 EARTH TO MARS

RL 149.15 LAL .00 LOL 21.68 VL 32.624 GAL -6.32 AZL 88.72 HCA 247.32 SMA 185.53 ECC .22388 INC 1.2809 V1 29.874
RP 217.80 LAP -1.18 LOP 268.99 VP 22.436 GAP -8.23 AZP 90.49 TAL 324.20 TAP 211.52 RCA 144.00 APO 227.07 V2 25.228
RC 280.240 GL 10.24 GP 6.52 ZAL 139.52 ZAP 68.99 ETS 181.92 ZAE 100.68 ETE 177.48 ZAC 89.60 ETC 258.76 CLP 68.84

PLANETOCENTRIC CONIC

C3 16.634 VHL 4.078 DLA 16.39 RAL 167.73 RAD 6567.7 VEL 11.748 PTH 2.07 VHP 3.174 DPA 16.26 RAP 162.79 ECC 1.2738

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 43 28	2707.42	-27.70	75.10	31.60	96.15	19 28 35	2107.4	-26.56	66.62
90.00	11 9 20	4279.21	2.59	176.40	25.63	61.79	12 20 39	3679.2	-1.20	169.77
100.00	20 14 1	2415.40	-28.98	53.44	31.43	97.67	20 54 16	1815.4	-27.62	44.90
100.00	12 21 28	4046.47	3.73	158.66	25.00	60.32	13 28 55	3446.5	-.25	152.14
110.00	21 42 39	2138.09	-32.32	31.71	30.76	101.78	22 18 17	1538.1	-30.36	23.05
110.00	13 9 20	3896.55	6.61	145.51	23.22	56.39	14 14 16	3296.5	2.15	139.26

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.0264 TRA 3.9493 TC3-6.4544 BAU 1.4567 SGT 7952.5 SGR 1469.7 SG3 2916.1 ST 2261.5 SR 907.5 SS 3108.5
RDE .6257 RRA -.5092 RC3 1.1178 FAU .47859 RRT -.8881 RRF -.9060 RTF .9956 CRT -.8089 CRS .8785 CST -.9914
FDE-5.9115 FRA17.5090 FC-24.9088 BSP 26958 SGB 8087.1 R23 .0339 R13 -.9961 LSA 3915.7 MSA 517.8 SSA 17.9
BDE 1.2021 BRA 3.9820 BC3 6.5505 FSP 10146 SG1 8059.6 SG2 666.6 THA 170.61 EL1 2383.6 EL2 506.3 ALF 161.13

LAUNCH DATE OCT 15 1964 FLIGHT TIME 352.00 ARRIVAL DATE OCT 2 1965

HELIOCENTRIC CONIC DISTANCE 798.730 EARTH TO MARS

RL 149.15 LAL .00 LOL 21.68 VL 32.625 GAL -6.39 AZL 88.70 HCA 248.47 SMA 185.55 ECC .22451 INC 1.3008 V1 29.874
RP 217.44 LAP -1.21 LOP 270.14 VP 22.482 GAP -8.43 AZP 90.48 TAL 323.88 TAP 212.34 RCA 143.89 APO 227.21 V2 25.268
RC 281.529 GL 10.32 GP 6.38 ZAL 139.87 ZAP 67.32 ETS 182.10 ZAE 98.78 ETE 177.78 ZAC 89.37 ETC 258.84 CLP 67.17

PLANETOCENTRIC CONIC

C3 16.874 VHL 4.108 DLA 16.32 RAL 168.13 RAD 6567.7 VEL 11.758 PTH 2.08 VHP 3.218 DPA 16.34 RAP 162.24 ECC 1.2777

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 45 45	2708.04	-27.70	75.14	32.23	96.13	19 30 53	2108.0	-26.56	66.66
90.00	11 10 14	4285.19	2.79	176.73	26.21	61.81	12 21 39	3685.2	-1.01	170.11
100.00	20 16 15	2416.21	-28.99	53.50	32.05	97.64	20 56 31	1816.2	-27.63	44.96
100.00	12 22 26	4052.25	3.92	158.98	25.59	60.34	13 29 58	3452.2	-.06	152.45
110.00	21 44 46	2139.28	-32.34	31.80	31.38	101.73	22 20 25	1539.3	-30.39	23.13
110.00	13 10 24	3901.95	6.82	145.79	23.80	56.42	14 15 26	3301.9	2.36	139.55

DIFFERENTIAL CORRECTIONS
TDE-1.0974 TRA 4.1610 TC3-6.6171 BAU 1.5125
RDE .6281 RRA -.4924 RC3 1.0783 FAU .46456
FDE-5.8337 FRA17.1228 FC-23.8340 BSP 28061
BDE 1.2644 BRA 4.1900 BC3 6.7044 FSP 9845

MID-COURSE EXECUTION ACCURACY
SGT 8274.4 SGR 1436.8 SG3 2824.7
RRT -.8819 RRF -.9001 RTF .9958
SGB 8398.2 R23 .0342 R13 -.9963
SG1 8371.5 SG2 669.6 THA 171.24

ORBIT DETERMINATION ACCURACY
ST 2379.2 SR 902.4 SS 3074.8
CRT -.8080 CRS .8765 CST -.9918
LSA 3956.9 MSA 521.3 SSA 17.5
EL1 2493.5 EL2 507.3 ALF 162.20

LAUNCH DATE OCT 15 1964 FLIGHT TIME 354.00 ARRIVAL DATE OCT 4 1965

HELIOCENTRIC CONIC DISTANCE 802.807 EARTH TO MARS

RL 149.15 LAL .00 LOL 21.68 VL 32.626 GAL -6.46 AZL 88.68 HCA 249.61 SMA 185.57 ECC .22518 INC 1.3205 V1 29.874
RP 217.09 LAP -1.24 LOP 271.28 VP 22.528 GAP -8.63 AZP 90.46 TAL 323.54 TAP 213.15 RCA 143.78 APO 227.36 V2 25.307
RC 282.801 GL 10.40 GP 6.25 ZAL 140.24 ZAP 65.70 ETS 182.27 ZAE 96.91 ETE 178.05 ZAC 89.15 ETC 258.91 CLP 65.55

PLANETOCENTRIC CONIC

C3 17.130 VHL 4.139 DLA 16.23 RAL 168.54 RAD 6567.7 VEL 11.769 PTH 2.08 VHP 3.266 DPA 16.40 RAP 161.73 ECC 1.2819

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 48 12	2708.38	-27.70	75.17	32.86	96.11	19 33 20	2108.4	-26.57	66.68
90.00	11 11 3	4291.79	3.00	177.10	26.82	61.83	12 22 35	3691.8	-.79	170.47
100.00	20 18 37	2416.77	-28.99	53.54	32.69	97.62	20 58 54	1816.8	-27.64	45.00
100.00	12 23 19	4058.63	4.14	159.33	26.19	60.37	13 30 58	3458.6	.16	152.80
110.00	21 46 59	2140.29	-32.35	31.88	32.02	101.69	22 22 40	1540.3	-30.41	23.20
110.00	13 11 26	3907.88	7.04	146.11	24.39	56.46	14 16 34	3307.9	2.58	139.86

DIFFERENTIAL CORRECTIONS
TDE-1.1708 TRA 4.3716 TC3-6.7673 BAU 1.5680
RDE .6307 RRA -.4755 RC3 1.0395 FAU .45042
FDE-5.7586 FRA16.7218 FC-22.7635 BSP 29115
BDE 1.3299 BRA 4.3974 BC3 6.8467 FSP 9531

MID-COURSE EXECUTION ACCURACY
SGT 8586.9 SGR 1404.6 SG3 2732.0
RRT -.8753 RRF -.8939 RTF .9960
SGB 8701.0 R23 .0347 R13 -.9964
SG1 8675.0 SG2 672.4 THA 171.80

ORBIT DETERMINATION ACCURACY
ST 2496.1 SR 897.4 SS 3040.5
CRT -.8073 CRS .8748 CST -.9921
LSA 4000.7 MSA 524.1 SSA 17.1
EL1 2603.5 EL2 507.7 ALF 163.16

LAUNCH DATE OCT 15 1964 FLIGHT TIME 356.00 ARRIVAL DATE OCT 6 1965

HELIOCENTRIC CONIC DISTANCE 806.889 EARTH TO MARS

RL 149.15 LAL .00 LOL 21.68 VL 32.627 GAL -6.54 AZL 88.66 HCA 250.77 SMA 185.59 ECC .22590 INC 1.3401 V1 29.874
RP 216.74 LAP -1.27 LOP 272.44 VP 22.574 GAP -8.82 AZP 90.44 TAL 323.18 TAP 213.95 RCA 143.67 APO 227.52 V2 25.346
RC 284.057 GL 10.47 GP 6.12 ZAL 140.62 ZAP 64.12 ETS 182.43 ZAE 95.08 ETE 178.31 ZAC 88.95 ETC 258.98 CLP 63.96

PLANETOCENTRIC CONIC

C3 17.403 VHL 4.172 DLA 16.13 RAL 168.96 RAD 6567.7 VEL 11.781 PTH 2.08 VHP 3.316 DPA 16.45 RAP 161.26 ECC 1.2864

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 50 48	2708.45	-27.70	75.17	33.52	96.11	19 35 56	2108.4	-26.57	66.69
90.00	11 11 48	4299.01	3.23	177.51	27.44	61.85	12 23 27	3699.0	-.56	170.88
100.00	20 21 9	2417.09	-29.00	53.56	33.34	97.61	21 1 26	1817.1	-27.64	45.02
100.00	12 24 8	4065.60	4.37	159.72	26.81	60.40	13 31 54	3465.6	.40	153.19
110.00	21 49 21	2141.12	-32.36	31.94	32.68	101.65	22 25 2	1541.1	-30.42	23.26
110.00	13 12 25	3914.34	7.28	146.45	25.01	56.51	14 17 40	3314.3	2.83	140.19

DIFFERENTIAL CORRECTIONS
TDE-1.2450 TRA 4.5841 TC3-6.8996 BAU 1.6221
RDE .6333 RRA -.4591 RC3 1.0007 FAU .43580
FDE-5.6730 FRA16.3180 FC-21.6798 BSP 30165
BDE 1.3968 BRA 4.6070 BC3 6.9718 FSP 9222

MID-COURSE EXECUTION ACCURACY
SGT 8889.3 SGR 1372.8 SG3 2638.0
RRT -.8683 RRF -.8874 RTF .9961
SGB 8994.6 R23 .0351 R13 -.9966
SG1 8969.3 SG2 674.9 THA 172.32

ORBIT DETERMINATION ACCURACY
ST 2611.5 SR 892.2 SS 3004.4
CRT -.8064 CRS .8731 CST -.9924
LSA 4045.3 MSA 526.7 SSA 16.8
EL1 2712.5 EL2 508.0 ALF 164.02

LAUNCH DATE OCT 15 1964 FLIGHT TIME 358.00 ARRIVAL DATE OCT 8 1965

HELIOCENTRIC CONIC DISTANCE 810.974 EARTH TO MARS

RL 149.15 LAL .00 LOL 21.68 VL 32.629 GAL -6.62 AZL 88.64 HCA 251.92 SMA 185.62 ECC .22667 INC 1.3593 V1 29.874
RP 216.39 LAP -1.29 LOP 273.59 VP 22.619 GAP -9.02 AZP 90.42 TAL 322.81 TAP 214.74 RCA 143.55 APO 227.70 V2 25.385
RC 285.296 GL 10.53 GP 5.99 ZAL 141.02 ZAP 62.58 ETS 182.59 ZAE 93.29 ETE 178.56 ZAC 88.75 ETC 259.04 CLP 62.42

PLANETOCENTRIC CONIC

C3 17.692 VHL 4.206 DLA 16.02 RAL 169.38 RAD 6567.7 VEL 11.793 PTH 2.09 VHP 3.368 DPA 16.48 RAP 160.84 ECC 1.2912

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 53 32	2708.26	-27.70	75.16	34.19	96.12	19 38 41	2108.3	-26.57	66.68
90.00	11 12 28	4306.85	3.48	177.95	28.08	61.88	12 24 15	3706.8	-.31	171.31
100.00	20 23 48	2417.19	-29.00	53.57	34.02	97.60	21 4 5	1817.2	-27.64	45.03
100.00	12 24 54	4073.15	4.62	160.14	27.45	60.43	13 32 47	3473.1	.65	153.60
110.00	21 51 49	2141.79	-32.37	31.99	33.35	101.63	22 27 31	1541.8	-30.43	23.31
110.00	13 13 22	3921.32	7.54	146.82	25.65	56.56	14 18 43	3321.3	3.10	140.56

DIFFERENTIAL CORRECTIONS
TDE-1.3206 TRA 4.7975 TC3-7.0166 BAU 1.6752
RDE .6361 RRA -.4429 RC3 .9625 FAU .42107
FDE-5.5872 FRA15.9084 FC-20.6041 BSP 31173
BDE 1.4658 BRA 4.8179 BC3 7.0823 FSP 8907

MID-COURSE EXECUTION ACCURACY
SGT 9181.8 SGR 1341.8 SG3 2543.6
RRT -.8609 RRF -.8805 RTF .9963
SGB 9279.3 R23 .0357 R13 -.9966
SG1 9254.6 SG2 677.4 THA 172.79

ORBIT DETERMINATION ACCURACY
ST 2725.4 SR 887.0 SS 2967.1
CRT -.8054 CRS .8714 CST -.9926
LSA 4091.2 MSA 529.1 SSA 16.5
EL1 2820.7 EL2 508.0 ALF 164.81

LAUNCH DATE OCT 15 1964 FLIGHT TIME 360.00 ARRIVAL DATE OCT 10 1965

HELIOCENTRIC CONIC DISTANCE 815.062 EARTH TO MARS

RL 149.15 LAL .00 LOL 21.68 VL 32.631 GAL -6.70 AZL 88.62 HCA 253.08 SMA 185.65 ECC .22749 INC 1.3784 V1 29.874
RP 216.05 LAP -1.32 LOP 274.75 VP 22.665 GAP -9.21 AZP 90.40 TAL 322.43 TAP 215.51 RCA 143.42 APO 227.89 V2 25.423
RC 286.520 GL 10.59 GP 5.87 ZAL 141.43 ZAP 61.08 ETS 182.73 ZAE 91.54 ETE 178.79 ZAC 88.57 ETC 259.09 CLP 60.91

PLANETOCENTRIC CONIC

C3 17.999 VHL 4.243 DLA 15.90 RAL 169.82 RAD 6567.7 VEL 11.806 PTH 2.09 VHP 3.424 DPA 16.50 RAP 160.46 ECC 1.2962

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 56 25	2707.84	-27.70	75.13	34.88	96.13	19 41 33	2107.8	-26.56	66.65
90.00	11 13 4	4315.28	3.75	178.42	28.73	61.91	12 24 59	3715.3	-.03	171.78
100.00	20 26 35	2417.08	-29.00	53.56	34.71	97.61	21 6 52	1817.1	-27.64	45.02
100.00	12 25 35	4081.27	4.90	160.58	28.10	60.47	13 33 36	3481.3	.93	154.05
110.00	21 54 24	2142.30	-32.38	32.03	34.04	101.60	22 30 7	1542.3	-30.44	23.35
110.00	13 14 15	3928.82	7.83	147.22	26.30	56.62	14 19 44	3328.8	3.38	140.95

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.3977 TRA 5.0125 TC3-7.1179 BAU 1.7272 SGT 9464.9 SGR 1311.8 SG3 2449.3 ST 2838.1 SR 881.9 SS 2929.2
RDE .6391 RRA -.4272 RC3 .9251 FAU .40625 RRT -.8531 RRF -.8734 RTF .9963 CRT -.8044 CRS .8700 CST -.9927
FDE-5.5002 FRA15.4975 FC-19.5396 BSP 32159 SGB 9555.4 R23 .0364 R13 -.9967 LSA 4138.9 MSA 531.2 SSA 16.2
BDE 1.5369 BRA 5.0307 BC3 7.1777 FSP 8593 SG1 9531.2 SG2 679.7 THA 173.22 EL1 2928.3 EL2 507.8 ALF 165.52

LAUNCH DATE OCT 15 1964 FLIGHT TIME 362.00 ARRIVAL DATE OCT 12 1965

HELIOCENTRIC CONIC DISTANCE 819.153 EARTH TO MARS

RL 149.15 LAL .00 LOL 21.68 VL 32.633 GAL -6.79 AZL 88.60 HCA 254.24 SMA 185.68 ECC .22836 INC 1.3973 V1 29.874
RP 215.71 LAP -1.34 LOP 275.92 VP 22.710 GAP -9.40 AZP 90.38 TAL 322.03 TAP 216.28 RCA 143.28 APO 228.09 V2 25.461
RC 287.729 GL 10.64 GP 5.74 ZAL 141.85 ZAP 59.62 ETS 182.86 ZAE 89.83 ETE 179.00 ZAC 88.39 ETC 259.14 CLP 59.46

PLANETOCENTRIC CONIC

C3 18.325 VHL 4.281 DLA 15.77 RAL 170.27 RAD 6567.7 VEL 11.820 PTH 2.09 VHP 3.482 DPA 16.50 RAP 160.13 ECC 1.3016

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 59 27	2707.19	-27.69	75.08	35.59	96.16	19 44 34	2107.2	-26.55	66.60
90.00	11 13 35	4324.31	4.04	178.92	29.41	61.95	12 25 39	3724.3	.26	172.29
100.00	20 29 30	2416.77	-28.99	53.54	35.41	97.62	21 9 47	1816.8	-27.64	45.00
100.00	12 26 13	4089.97	5.19	161.07	28.78	60.52	13 34 23	3490.0	1.22	154.52
110.00	21 57 7	2142.67	-32.39	32.06	34.75	101.59	22 32 49	1542.7	-30.45	23.38
110.00	13 15 6	3936.84	8.13	147.65	26.97	56.68	14 20 43	3336.8	3.69	141.37

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.4769 TRA 5.2280 TC3-7.2045 BAU 1.7784 SGT 9737.6 SGR 1282.8 SG3 2355.4 ST 2949.5 SR 876.8 SS 2890.0
RDE .6422 RRA -.4118 RC3 .8885 FAU .39141 RRT -.8451 RRF -.8660 RTF .9964 CRT -.8035 CRS .8687 CST -.9928
FDE-5.4109 FRA15.0843 FC-18.4915 BSP 33111 SGB 9621.7 R23 .0371 R13 -.9967 LSA 4187.7 MSA 532.7 SSA 16.0
BDE 1.6105 BRA 5.2441 BC3 7.2591 FSP 8280 SG1 9798.1 SG2 681.6 THA 173.62 EL1 3035.0 EL2 507.2 ALF 166.17

LAUNCH DATE OCT 15 1964 FLIGHT TIME 364.00 ARRIVAL DATE OCT 14 1965

HELIOCENTRIC CONIC DISTANCE 823.247 EARTH TO MARS

RL 149.15 LAL .00 LOL 21.68 VL 32.635 GAL -6.88 AZL 88.58 HCA 255.41 SMA 185.72 ECC .22928 INC 1.4161 V1 29.874
RP 215.38 LAP -1.37 LOP 277.08 VP 22.755 GAP -9.59 AZP 90.36 TAL 321.62 TAP 217.03 RCA 143.14 APO 228.30 V2 25.498
RC 288.924 GL 10.68 GP 5.62 ZAL 142.28 ZAP 58.21 ETS 182.99 ZAE 88.16 ETE 179.21 ZAC 88.23 ETC 259.18 CLP 58.04

PLANETOCENTRIC CONIC

C3 18.671 VHL 4.321 DLA 15.63 RAL 170.72 RAD 6567.8 VEL 11.834 PTH 2.10 VHP 3.543 DPA 16.48 RAP 159.84 ECC 1.3073

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 2 36	2706.34	-27.69	75.02	36.32	96.19	19 47 43	2106.3	-26.54	66.54
90.00	11 14 2	4333.93	4.35	179.46	30.10	61.99	12 26 16	3733.9	.57	172.82
100.00	20 32 33	2416.28	-28.99	53.50	36.14	97.64	21 12 49	1816.3	-27.63	44.97
100.00	12 26 47	4099.22	5.50	161.58	29.47	60.57	13 35 6	3499.2	1.54	155.03
110.00	21 59 55	2142.90	-32.39	32.07	35.47	101.58	22 35 38	1542.9	-30.46	23.39
110.00	13 15 54	3945.36	8.44	148.10	27.66	56.75	14 21 39	3345.4	4.01	141.82

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.5574 TRA 5.4462 TC3-7.2768 BAU 1.8288 SGT10002.1 SGR 1254.8 SG3 2262.5 ST 3059.6 SR 871.7 SS 2850.0
RDE .6455 RRA -.3970 RC3 .8529 FAU .37665 RRT -.8367 RRF -.8584 RTF .9964 CRT -.8026 CRS .8675 CST -.9930
FDE-5.3193 FRA14.6737 FC-17.4648 BSP 34041 SGB10080.5 R23 .0378 R13 -.9967 LSA 4237.7 MSA 534.1 SSA 15.7
BDE 1.6859 BRA 5.4607 BC3 7.3266 FSP 7972 SG110057.4 SG2 683.4 THA 173.98 EL1 3140.8 EL2 506.6 ALF 166.77

LAUNCH DATE OCT 15 1964 FLIGHT TIME 366.00 ARRIVAL DATE OCT 16 1965

HELIOCENTRIC CONIC DISTANCE 827.343 EARTH TO MARS

RL 149.15 LAL .00 LOL 21.68 VL 32.637 GAL -6.98 AZL 88.57 HCA 256.58 SMA 185.76 ECC .23025 INC 1.4347 V1 29.874
RP 215.05 LAP -1.40 LOP 278.25 VP 22.800 GAP -9.78 AZP 90.33 TAL 321.19 TAP 217.77 RCA 142.99 APO 228.53 V2 25.535
RC 290.105 GL 10.71 GP 5.50 ZAL 142.73 ZAP 56.83 ETS 183.11 ZAE 86.53 ETE 179.40 ZAC 88.07 ETC 259.21 CLP 56.66

PLANETOCENTRIC CONIC

C3 19.036 VHL 4.363 DLA 15.47 RAL 171.18 RAD 6567.8 VEL 11.850 PTH 2.10 VHP 3.606 DPA 16.45 RAP 159.60 ECC 1.3133

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 5 53	2705.28	-27.68	74.94	37.06	96.22	19 50 59	2105.3	-26.53	66.47
90.00	11 14 25	4344.12	4.67	180.04	30.81	62.04	12 26 50	3744.1	.90	173.39
100.00	20 35 43	2415.61	-28.98	53.46	36.88	97.66	21 15 58	1815.6	-27.62	44.92
100.00	12 27 17	4109.03	5.83	162.12	30.18	60.63	13 35 46	3509.0	1.87	155.57
110.00	22 2 50	2143.01	-32.39	32.08	36.21	101.57	22 38 33	1543.0	-30.46	23.40
110.00	13 16 39	3954.38	8.78	148.58	28.37	56.83	14 22 34	3354.4	4.35	142.29

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.6395 TRA 5.6665 TC3-7.3325 BAU 1.8777 SGT10256.2 SGR 1227.9 SG3 2170.7 ST 3168.2 SR 866.6 SS 2808.8
RDE .6489 RRA -.3828 RC3 .8181 FAU .36188 RRT -.8281 RRF -.8505 RTF .9964 CRT -.8017 CRS .8663 CST -.9930
FDE-5.2251 FRA14.2663 FC-16.4576 BSP 34954 SGB10329.4 R23 .0386 R13 -.9967 LSA 4288.5 MSA 535.1 SSA 15.5
BDE 1.7632 BRA 5.6794 BC3 7.3780 FSP 7670 SG110306.7 SG2 684.9 THA 174.31 EL1 3245.4 EL2 505.7 ALF 167.32

LAUNCH DATE OCT 15 1964 FLIGHT TIME 368.00 ARRIVAL DATE OCT 18 1965

HELIOCENTRIC CONIC DISTANCE 831.441 EARTH TO MARS

RL	149.15	LAL	.00	LOL	21.68	VL	32.639	GAL	-7.07	AZL	88.55	HCA	257.76	SMA	185.80	ECC	.23127	INC	1.4531	V1	29.874
RP	214.72	LAP	-1.42	LOP	279.43	VP	22.844	GAP	-9.97	AZP	90.31	TAL	320.75	TAP	218.51	RCA	142.83	APO	228.77	V2	25.572
RC	291.272	GL	10.74	GP	5.39	ZAL	143.18	ZAP	55.50	ETS	183.22	ZAE	84.93	ETE	179.58	ZAC	87.93	ETC	259.23	CLP	55.33

PLANETOCENTRIC CONIC

C3	19.424	VHL	4.407	DLA	15.30	RAL	171.65	RAD	6567.8	VEL	11.866	PTH	2.11	VHP	3.672	DPA	16.40	RAP	159.39	ECC	1.3197

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 9 18	2704.05	-27.67	74.85	37.82	96.27	19 54 22	2104.0	-26.51	66.38
90.00	11 14 45	4354.87	5.02	180.64	31.54	62.09	12 27 20	3754.9	1.24	173.99
100.00	20 39 0	2414.78	-28.97	53.40	37.64	97.69	21 19 14	1814.8	-27.61	44.86
100.00	12 27 44	4119.37	6.17	162.69	30.91	60.69	13 36 24	3519.4	2.22	156.14
110.00	22 5 51	2143.01	-32.39	32.08	36.97	101.57	22 41 34	1543.0	-30.46	23.40
110.00	13 17 22	3963.90	9.13	149.09	29.10	56.92	14 23 26	3363.9	4.72	142.79

DIFFERENTIAL CORRECTIONS

TDE	-1.7240	TRA	5.8883	TC3	-7.3758	BAU	1.9261
RDE	.6527	RRA	-.3689	RC3	.7846	FAU	.34735
FDE	-5.1324	FRA	13.8593	FC	-15.4819	BSP	35828
BDE	1.8434	BRA	5.8998	BC3	7.4174	FSP	7369

MID-COURSE EXECUTION ACCURACY

SGT	10501.3	SGR	1202.3	SG3	2080.2		
RRT	-.8193	RRF	-.8425	RTF	.9964		
SGB	10569.9	R23	.0395	R13	-.9967		
SG1	10547.6	SG2	686.3	THA	174.62		

ORBIT DETERMINATION ACCURACY

ST	3275.7	SR	861.7	SS	2767.4
CRT	-.8009	CRS	.8655	CST	-.9931
LSA	4341.0	MSA	535.8	SSA	15.3
EL1	3349.4	EL2	504.6	ALF	167.82

LAUNCH DATE OCT 15 1964 FLIGHT TIME 370.00 ARRIVAL DATE OCT 20 1965

HELIOCENTRIC CONIC DISTANCE 835.541 EARTH TO MARS

RL	149.15	LAL	.00	LOL	21.68	VL	32.642	GAL	-7.18	AZL	88.53	HCA	258.93	SMA	185.84	ECC	.23235	INC	1.4715	V1	29.874
RP	214.40	LAP	-1.44	LOP	280.61	VP	22.889	GAP	-10.16	AZP	90.28	TAL	320.29	TAP	219.23	RCA	142.66	APO	229.02	V2	25.608
RC	292.426	GL	10.76	GP	5.27	ZAL	143.65	ZAP	54.20	ETS	183.32	ZAE	83.38	ETE	179.75	ZAC	87.79	ETC	259.25	CLP	54.03

PLANETOCENTRIC CONIC

C3	19.833	VHL	4.453	DLA	15.13	RAL	172.12	RAD	6567.8	VEL	11.883	PTH	2.11	VHP	3.740	DPA	16.34	RAP	159.23	ECC	1.3264

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
98.00	19 12 49	2702.64	-27.66	74.75	38.60	96.32	19 57 52	2102.6	-26.50	66.28
90.00	11 15 1	4366.18	5.38	181.28	32.29	62.16	12 27 47	3766.2	1.61	174.62
100.00	20 42 23	2413.80	-28.97	53.32	38.42	97.73	21 22 37	1813.8	-27.59	44.79
100.00	12 28 8	4130.25	6.53	163.30	31.66	60.77	13 36 58	3530.3	2.59	156.73
110.00	22 8 58	2142.91	-32.39	32.08	37.74	101.58	22 44 41	1542.9	-30.46	23.39
110.00	13 18 3	3973.91	9.51	149.63	29.85	57.01	14 24 17	3373.9	5.10	143.32

DIFFERENTIAL CORRECTIONS

TDE	-1.8100	TRA	6.1135	TC3	-7.4035	BAU	1.9732
RDE	.6566	RRA	-.3558	RC3	.7520	FAU	.33295
FDE	-5.0372	FRA	13.4582	FC	-14.5333	BSP	36690
BDE	1.9254	BRA	6.1238	BC3	7.4416	FSP	7076

MID-COURSE EXECUTION ACCURACY

SGT	10737.3	SGR	1177.7	SG3	1991.4		
RRT	-.8104	RRF	-.8344	RTF	.9964		
SGB	10801.7	R23	.0403	R13	-.9966		
SG1	10779.8	SG2	687.4	THA	174.90		

ORBIT DETERMINATION ACCURACY

ST	3381.8	SR	856.8	SS	2724.9
CRT	-.8002	CRS	.8647	CST	-.9931
LSA	4394.1	MSA	536.2	SSA	15.1
EL1	3452.1	EL2	503.4	ALF	168.29

LAUNCH DATE OCT 15 1964 FLIGHT TIME 372.00 ARRIVAL DATE OCT 22 1965

HELIOCENTRIC CONIC DISTANCE 839.642 EARTH TO MARS

RL	149.15	LAL	.00	LOL	21.68	VL	32.645	GAL	-7.29	AZL	88.51	HCA	260.11	SMA	185.89	ECC	.23348	INC	1.4898	V1	29.874
RP	214.08	LAP	-1.47	LOP	281.79	VP	22.932	GAP	-10.35	AZP	90.26	TAL	319.82	TAP	219.93	RCA	142.49	APO	229.29	V2	25.644
RC	293.566	GL	10.78	GP	5.16	ZAL	144.13	ZAP	52.95	ETS	183.42	ZAE	81.85	ETE	179.91	ZAC	87.67	ETC	259.26	CLP	52.77

PLANETOCENTRIC CONIC

C3	20.267	VHL	4.502	DLA	14.94	RAL	172.60	RAD	6567.8	VEL	11.902	PTH	2.11	VHP	3.811	DPA	16.27	RAP	159.12	ECC	1.3335

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 16 28	2701.09	-27.65	74.64	39.39	96.37	20 1 29	2101.1	-26.48	66.17
90.00	11 15 13	4378.03	5.75	181.94	33.06	62.23	12 28 11	3778.0	1.99	175.28
100.00	20 45 53	2412.70	-28.96	53.24	39.21	97.77	21 26 6	1812.7	-27.58	44.71
100.00	12 28 29	4141.65	6.91	163.93	32.43	60.85	13 37 30	3541.7	2.97	157.36
110.00	22 12 10	2142.72	-32.39	32.06	38.53	101.59	22 47 53	1542.7	-30.45	23.38
110.00	13 18 41	3984.40	9.89	150.19	30.62	57.11	14 25 5	3384.4	5.49	143.87

DIFFERENTIAL CORRECTIONS

TDE	-1.8976	TRA	6.3416	TC3	-7.4179	BAU	2.0193
RDE	.6607	RRA	-.3432	RC3	.7206	FAU	.31876
FDE	-4.9406	FRA	13.0623	FC	-13.6162	BSP	37533
BDE	2.0094	BRA	6.3508	BC3	7.4528	FSP	6789

MID-COURSE EXECUTION ACCURACY

SGT	10964.4	SGR	1154.3	SG3	1904.5		
RRT	-.8013	RRF	-.8261	RTF	.9963		
SGB	11025.0	R23	.0413	R13	-.9965		
SG1	11003.5	SG2	688.2	THA	175.16		

ORBIT DETERMINATION ACCURACY

ST	3486.1	SR	851.9	SS	2681.4
CRT	-.7995	CRS	.8640	CST	-.9932
LSA	4447.6	MSA	536.4	SSA	15.0
EL1	3553.4	EL2	502.0	ALF	168.72

LAUNCH DATE OCT 15 1964 FLIGHT TIME 374.00 ARRIVAL DATE OCT 24 1965

HELIOCENTRIC CONIC DISTANCE 843.744 EARTH TO MARS

RL	149.15	LAL	.00	LOL	21.68	VL	32.648	GAL	-7.40	AZL	88.49	HCA	261.30	SMA	185.94	ECC	.23468	INC	1.5080	V1	29.874
RP	213.77	LAP	-1.49	LOP	282.97	VP	22.976	GAP	-10.53	AZP	90.23	TAL	319.33	TAP	220.63	RCA	142.30	APO	229.57	V2	25.679
RC	294.693	GL	10.79	GP	5.05	ZAL	144.62	ZAP	51.73	ETS	183.51	ZAE	80.37	ETE	180.06	ZAC	87.56	ETC	259.27	CLP	51.55

PLANETOCENTRIC CONIC

C3	20.725	VHL	4.553	DLA	14.74	RAL	173.09	RAD	6567.8	VEL	11.921	PTH	2.12	VHP	3.884	DPA	16.18	RAP	159.04	ECC	1.3411

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 20 13	2699.41	-27.64	74.52	40.20	96.43	20 5 12	2099.4	-26.46	66.05
90.00	11 15 22	4390.41	6.15	182.64	33.85	62.30	12 28 32	3790.4	2.39	175.97
100.00	20 49 29	2411.48	-28.94	53.15	40.02	97.82	21 29 41	1811.5	-27.56	44.63
100.00	12 28 46	4153.57	7.31	164.60	33.22	60.93	13 38 0	3553.6	3.37	158.02
110.00	22 15 28	2142.45	-32.38	32.04	39.33	101.60	22 51 11	1542.5	-30.45	23.36
110.00	13 19 17	3995.36	10.30	150.78	31.40	57.22	14 25 52	3395.4	5.91	144.45

DIFFERENTIAL CORRECTIONS

TDE	-1.9877	TRA	6.5728	TC3	-7.4208	BAU	2.0650
RDE	.6651	RRA	-.3313	RC3	.6906	FAU	.30491
FDE	-4.8439	FRA	12.6716	FC	-12.7365	BSP	38344
BDE	2.0960	BRA	6.5811	BC3	7.4528	FSP	6509

MID-COURSE EXECUTION ACCURACY

SGT	11183.8	SGR	1132.2	SG3	1819.7		
RRT	-.7921	RRF	-.8179	RTF	.9962		
SGB	11240.9	R23	.0422	R13	-.9965		
SG1	11219.8	SG2	688.8	THA	175.40		

ORBIT DETERMINATION ACCURACY

ST	3589.4	SR	847.2	SS	2637.4
CRT	-.7990	CRS	.8635	CST	-.9932
LSA	4502.2	MSA	536.2	SSA	14.8
EL1	3654.0	EL2	500.4	ALF	169.11

LAUNCH DATE OCT 15 1964 FLIGHT TIME 376.00 ARRIVAL DATE OCT 26 1965

HELIOCENTRIC CONIC DISTANCE 847.846 EARTH TO MARS

RL 149.15 LAL .00 LOL 21.68 VL 32.651 GAL -7.51 AZL 88.47 HCA 262.49 SMA 185.99 ECC .23593 INC 1.5262 V1 29.874
RP 213.46 LAP -1.51 LOP 284.16 VP 23.019 GAP -10.72 AZP 90.20 TAL 318.82 TAP 221.31 RCA 142.11 APO 229.87 V2 25.714
RC 295.805 GL 10.79 GP 4.95 ZAL 145.13 ZAP 50.55 ETS 183.59 ZAE 78.92 ETE 180.20 ZAC 87.46 ETC 259.27 CLP 50.37

PLANETOCENTRIC CONIC

C3 21.210 VHL 4.605 DLA 14.53 RAL 173.59 RAD 6567.9 VEL 11.941 PTH 2.12 VHP 3.960 DPA 16.08 RAP 159.01 ECC 1.3491

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 24 4	2697.60	-27.62	74.39	41.03	96.50	20 9 1	2097.6	-26.43	65.92
90.00	11 15 28	4403.32	6.55	183.37	34.65	62.39	12 28 51	3803.3	2.81	176.70
100.00	20 53 12	2410.15	-28.93	53.06	40.84	97.87	21 33 22	1810.2	-27.54	44.53
100.00	12 29 1	4166.00	7.72	165.29	34.02	61.03	13 38 27	3566.0	3.79	158.70
110.00	22 18 51	2142.12	-32.38	32.02	40.16	101.61	22 54 34	1542.1	-30.44	23.34
110.00	13 19 50	4006.80	10.72	151.40	32.21	57.35	14 26 37	3406.8	6.34	145.05

DIFFERENTIAL CORRECTIONS
TDE-2.0797 TRA 6.8086 TC3-7.4097 BAU 2.1095
RDE .6697 RRA -.3200 RC3 .6615 FAU .29124
FDE-4.7463 FRA12.2886 FC-11.8873 BSP 39159
BDE 2.1848 BRA 6.8161 BC3 7.4392 FSP 6238

MID-COURSE EXECUTION ACCURACY
SGT11395.0 SGR 1111.1 SG3 1737.0
RRT -.7830 RRF -.8097 RTF .9961
SGB11449.0 R23 .0432 R13 -.9964
SG111428.3 SG2 689.1 THA 175.62

ORBIT DETERMINATION ACCURACY
ST 3691.5 SR 842.4 SS 2592.6
CRT -.7985 CRS .8632 CST -.9932
LSA 4557.6 MSA 535.8 SSA 14.7
EL1 3753.4 EL2 498.8 ALF 169.48

LAUNCH DATE OCT 15 1964 FLIGHT TIME 378.00 ARRIVAL DATE OCT 28 1965

HELIOCENTRIC CONIC DISTANCE 851.947 EARTH TO MARS

RL 149.15 LAL .00 LOL 21.68 VL 32.654 GAL -7.64 AZL 88.46 HCA 263.68 SMA 186.04 ECC .23724 INC 1.5442 V1 29.874
RP 213.16 LAP -1.53 LOP 285.35 VP 23.062 GAP -10.91 AZP 90.17 TAL 318.30 TAP 221.98 RCA 141.90 APO 230.18 V2 25.748
RC 296.904 GL 10.79 GP 4.84 ZAL 145.64 ZAP 49.40 ETS 183.67 ZAE 77.50 ETE 180.34 ZAC 87.36 ETC 259.26 CLP 49.23

PLANETOCENTRIC CONIC

C3 21.723 VHL 4.661 DLA 14.32 RAL 174.09 RAD 6567.9 VEL 11.963 PTH 2.13 VHP 4.038 DPA 15.97 RAP 159.01 ECC 1.3575

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 28 1	2695.69	-27.61	74.25	41.88	96.56	20 12 57	2095.7	-26.41	65.79
90.00	11 15 30	4416.74	6.98	184.13	35.48	62.49	12 29 7	3816.7	3.24	177.45
100.00	20 56 59	2408.74	-28.92	52.96	41.69	97.92	21 37 8	1808.7	-27.52	44.43
100.00	12 29 13	4178.92	8.14	166.02	34.85	61.14	13 38 52	3578.9	4.23	159.41
110.00	22 22 20	2141.73	-32.37	31.99	40.99	101.63	22 58 1	1541.7	-30.43	23.31
110.00	13 20 22	4018.69	11.16	152.05	33.04	57.48	14 27 21	3418.7	6.79	145.68

DIFFERENTIAL CORRECTIONS
TDE-2.1748 TRA 7.0469 TC3-7.3881 BAU 2.1535
RDE .6746 RRA -.3093 RC3 .6337 FAU .27795
FDE-4.6503 FRA11.9095 FC-11.0775 BSP 39933
BDE 2.2771 BRA 7.0537 BC3 7.4152 FSP 5971

MID-COURSE EXECUTION ACCURACY
SGT11597.8 SGR 1091.2 SG3 1656.6
RRT -.7739 RRF -.8016 RTF .9960
SGB11649.0 R23 .0442 R13 -.9962
SG111628.6 SG2 689.3 THA 175.82

ORBIT DETERMINATION ACCURACY
ST 3792.7 SR 837.9 SS 2547.7
CRT -.7983 CRS .8630 CST -.9932
LSA 4614.2 MSA 535.0 SSA 14.6
EL1 3852.3 EL2 496.8 ALF 169.83

LAUNCH DATE OCT 15 1964 FLIGHT TIME 380.00 ARRIVAL DATE OCT 30 1965

HELIOCENTRIC CONIC DISTANCE 856.048 EARTH TO MARS

RL 149.15 LAL .00 LOL 21.68 VL 32.657 GAL -7.76 AZL 88.44 HCA 264.87 SMA 186.10 ECC .23862 INC 1.5623 V1 29.874
RP 212.87 LAP -1.56 LOP 286.55 VP 23.104 GAP -11.09 AZP 90.14 TAL 317.76 TAP 222.64 RCA 141.69 APO 230.50 V2 25.782
RC 297.989 GL 10.78 GP 4.75 ZAL 146.16 ZAP 48.29 ETS 183.75 ZAE 76.12 ETE 180.47 ZAC 87.28 ETC 259.25 CLP 48.12

PLANETOCENTRIC CONIC

C3 22.265 VHL 4.719 DLA 14.09 RAL 174.59 RAD 6567.9 VEL 11.985 PTH 2.14 VHP 4.119 DPA 15.85 RAP 159.05 ECC 1.3664

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 32 4	2693.69	-27.59	74.11	42.74	96.63	20 16 57	2093.7	-26.39	65.65
90.00	11 15 30	4430.65	7.41	184.92	36.33	62.59	12 29 21	3830.7	3.68	178.23
100.00	21 0 53	2407.25	-28.90	52.85	42.55	97.97	21 41 0	1807.3	-27.50	44.33
100.00	12 29 22	4192.32	8.58	166.77	35.70	61.26	13 39 14	3592.3	4.68	160.15
110.00	22 25 53	2141.30	-32.37	31.95	41.85	101.65	23 1 34	1541.3	-30.42	23.28
110.00	13 20 52	4031.05	11.61	152.72	33.88	57.62	14 28 3	3431.0	7.25	146.33

DIFFERENTIAL CORRECTIONS
TDE-2.2716 TRA 7.2903 TC3-7.3548 BAU 2.1967
RDE .6798 RRA -.2994 RC3 .6070 FAU .26495
FDE-4.5531 FRA11.5380 FC-10.3023 BSP 40694
BDE 2.3712 BRA 7.2965 BC3 7.3798 FSP 5713

MID-COURSE EXECUTION ACCURACY
SGT11793.4 SGR 1072.4 SG3 1578.4
RRT -.7649 RRF -.7936 RTF .9959
SGB11842.0 R23 .0453 R13 -.9961
SG111822.0 SG2 689.2 THA 176.01

ORBIT DETERMINATION ACCURACY
ST 3892.2 SR 833.3 SS 2501.9
CRT -.7981 CRS .8630 CST -.9931
LSA 4670.9 MSA 534.1 SSA 14.5
EL1 3949.5 EL2 494.8 ALF 170.15

LAUNCH DATE OCT 15 1964 FLIGHT TIME 382.00 ARRIVAL DATE NOV 1 1965

HELIOCENTRIC CONIC DISTANCE 860.148 EARTH TO MARS

RL 149.15 LAL .00 LOL 21.68 VL 32.660 GAL -7.89 AZL 88.42 HCA 266.07 SMA 186.15 ECC .24006 INC 1.5804 V1 29.874
RP 212.57 LAP -1.58 LOP 287.75 VP 23.145 GAP -11.28 AZP 90.11 TAL 317.21 TAP 223.28 RCA 141.47 APO 230.84 V2 25.815
RC 299.061 GL 10.76 GP 4.65 ZAL 146.69 ZAP 47.21 ETS 183.82 ZAE 74.77 ETE 180.59 ZAC 87.21 ETC 259.22 CLP 47.04

PLANETOCENTRIC CONIC

C3 22.837 VHL 4.779 DLA 13.85 RAL 175.11 RAD 6567.9 VEL 12.009 PTH 2.14 VHP 4.202 DPA 15.71 RAP 159.13 ECC 1.3758

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 36 12	2691.62	-27.58	73.96	43.62	96.71	20 21 3	2091.6	-26.36	65.50
90.00	11 15 27	4445.06	7.86	185.74	37.19	62.71	12 29 32	3845.1	4.14	179.03
100.00	21 4 51	2405.70	-28.89	52.73	43.42	98.03	21 44 57	1805.7	-27.48	44.22
100.00	12 29 29	4206.21	9.03	167.55	36.57	61.38	13 39 35	3606.2	5.15	160.92
110.00	22 29 30	2140.83	-32.36	31.92	42.72	101.67	23 5 11	1540.8	-30.42	23.24
110.00	13 21 19	4043.85	12.07	153.42	34.79	57.77	14 28 43	3443.8	7.73	147.01

DIFFERENTIAL CORRECTIONS
TDE-2.3713 TRA 7.5380 TC3-7.3114 BAU 2.2393
RDE .6853 RRA -.2900 RC3 .5816 FAU .25235
FDE-4.4565 FRA11.1724 FC3-9.5661 BSP 41443
BDE 2.4684 BRA 7.5436 BC3 7.3345 FSP 5463

MID-COURSE EXECUTION ACCURACY
SGT11981.7 SGR 1054.7 SG3 1502.7
RRT -.7560 RRF -.7858 RTF .9958
SGB12028.1 R23 .0465 R13 -.9960
SG112008.3 SG2 688.8 THA 176.18

ORBIT DETERMINATION ACCURACY
ST 3990.6 SR 828.8 SS 2455.6
CRT -.7980 CRS .8632 CST -.9931
LSA 4728.4 MSA 533.0 SSA 14.4
EL1 4045.9 EL2 492.6 ALF 170.45

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LAUNCH DATE  OCT 15 1964                          FLIGHT TIME 384.00                                  ARRIVAL DATE  NOV  3 1965

 HELIOCENTRIC CONIC                                DISTANCE 864.246                                     EARTH  TO  MARS
  RL  149.15 LAL     .00 LOL  21.68 VL  32.664 GAL  -8.03 AZL  88.40 HCA 267.27 SMA 186.21 ECC .24157 INC 1.5984 V1  29.874
  RP  212.29 LAP   -1.60 LOP 288.95 VP  23.187 GAP -11.47 AZP  90.08 TAL 316.64 TAP 223.92 RCA 141.23 APO 231.20 V2  25.847
  RC 300.120 GL    10.74 GP    4.56 ZAL 147.23 ZAP  46.17 ETS 183.88 ZAE  73.45 ETE 180.71 ZAC  87.15 ETC 259.20 CLP  46.00
 PLANETOCENTRIC CONIC
  C3  23.443 VHL  4.842 DLA  13.61 RAL 175.62 RAD 6568.0 VEL 12.034 PTH   2.15 VHP  4.287 DPA  15.57 RAP 159.24 ECC 1.3858
  LNCH AZMTH  LNCH TIME  L-I TIME    INJ LAT   INJ LONG  INJ RT ASC  INJ AZMTH  INJ TIME  PO CST TIM  INJ 2 LAT INJ 2 LONG
     90.00    19 40 25   2689.49     -27.56     73.80      44.51      96.78   20 25 14    2089.5     -26.33      65.35
     90.00    11 15 22   4459.95       8.33    186.59      38.08      62.84   12 29 41    3860.0       4.62     179.87
    100.00    21  8 54   2404.11     -28.87     52.62      44.32      98.09   21 48 58    1804.1     -27.45      44.10
    100.00    12 29 33   4220.56       9.50    168.36      37.45      61.52   13 39 54    3620.6       5.63     161.72
    110.00    22 33 12   2140.35     -32.35     31.88      43.61     101.69   23  8 52    1540.3     -30.41      23.21
    110.00    13 21 45   4057.09      12.55    154.14      35.64      57.94   14 29 22    3457.1       8.23     147.72
 DIFFERENTIAL CORRECTIONS                          MID-COURSE EXECUTION ACCURACY                       ORBIT DETERMINATION ACCURACY
  TDE-2.4746 TRA 7.7901 TC3-7.2592 BAU 2.2818      SGT12163.4 SGR 1038.1 SG3 1429.3                    ST  4088.5 SR   824.5 SS  2409.2
  RDE  .6912 RRA -.2813 RC3  .5572 FAU .24009      RRT -.7474 RRF -.7782 RTF  .9956                    CRT -.7983 CRS  .8636 CST -.9930
  FDE-4.3614 FRA10.8131 FC3-8.8664 BSP  42146      SGB12207.6 R23  .0477 R13 -.9958                    LSA 4787.2 MSA  531.5 SSA   14.3
  BDE 2.5693 BRA 7.7951 BC3 7.2806 FSP   5216      SG112188.2 SG2  688.2 THA 176.34                    EL1 4141.9 EL2  490.2 ALF 170.72

LAUNCH DATE  OCT 15 1964                          FLIGHT TIME 386.00                                  ARRIVAL DATE  NOV  5 1965

 HELIOCENTRIC CONIC                                DISTANCE 868.342                                     EARTH  TO  MARS
  RL  149.15 LAL     .00 LOL  21.68 VL  32.667 GAL  -8.17 AZL  88.38 HCA 268.48 SMA 186.28 ECC .24315 INC 1.6165 V1  29.874
  RP  212.01 LAP   -1.62 LOP 290.15 VP  23.227 GAP -11.66 AZP  90.04 TAL 316.06 TAP 224.53 RCA 140.98 APO 231.57 V2  25.879
  RC 301.167 GL    10.71 GP    4.47 ZAL 147.78 ZAP  45.16 ETS 183.95 ZAE  72.16 ETE 180.82 ZAC  87.09 ETC 259.17 CLP  44.99
 PLANETOCENTRIC CONIC
  C3  24.083 VHL  4.907 DLA  13.35 RAL 178.14 RAD 6568.0 VEL 12.061 PTH   2.16 VHP  4.375 DPA  15.41 RAP 159.39 ECC 1.3963
  LNCH AZMTH  LNCH TIME  L-I TIME    INJ LAT   INJ LONG  INJ RT ASC  INJ AZMTH  INJ TIME  PO CST TIM  INJ 2 LAT INJ 2 LONG
     90.00    19 44 43   2687.31     -27.54     73.65      45.42      98.86   20 29 30    2087.3     -26.30      65.20
     90.00    11 15 13   4475.31       8.80    187.46      38.99      62.98   12 29 49    3875.3       5.11     180.73
    100.00    21 13  2   2402.47     -28.86     52.50      45.22      98.15   21 53  4    1802.5     -27.43      43.99
    100.00    12 29 35   4235.38       9.98    169.20      38.36      61.68   13 40 11    3635.4       6.12     162.54
    110.00    22 36 58   2139.85     -32.35     31.85      44.82     101.71   23 12 38    1539.9     -30.40      23.17
    110.00    13 22  9   4070.76      13.05    154.90      36.55      58.12   14 30  0    3470.8       8.74     148.45
 DIFFERENTIAL CORRECTIONS                          MID-COURSE EXECUTION ACCURACY                       ORBIT DETERMINATION ACCURACY
  TDE-2.5806 TRA 8.0471 TC3-7.1980 BAU 2.3239      SGT12338.3 SGR 1022.4 SG3 1358.4                    ST  4185.2 SR   820.3 SS  2362.4
  RDE  .6974 RRA -.2733 RC3  .5341 FAU .22824      RRT -.7381 RRF -.7710 RTF  .9954                    CRT -.7986 CRS  .8643 CST -.9929
  FDE-4.2670 FRA10.4597 FC3-8.2046 BSP  42831      SGB12380.6 R23  .0490 R13 -.9956                    LSA 4846.5 MSA  529.8 SSA   14.2
  BDE 2.6734 BRA 8.0517 BC3 7.2178 FSP   4975      SG112361.5 SG2  687.4 THA 176.48                    EL1 4236.9 EL2  487.7 ALF 170.98

LAUNCH DATE  OCT 15 1964                          FLIGHT TIME 388.00                                  ARRIVAL DATE  NOV  7 1965

 HELIOCENTRIC CONIC                                DISTANCE 872.434                                     EARTH  TO  MARS
  RL  149.15 LAL     .00 LOL  21.68 VL  32.671 GAL  -8.32 AZL  88.37 HCA 269.69 SMA 186.34 ECC .24481 INC 1.6345 V1  29.874
  RP  211.73 LAP   -1.63 LOP 291.36 VP  23.267 GAP -11.85 AZP  90.01 TAL 315.45 TAP 225.14 RCA 140.72 APO 231.96 V2  25.911
  RC 302.203 GL    10.68 GP    4.38 ZAL 148.34 ZAP  44.18 ETS 184.00 ZAE  70.90 ETE 180.92 ZAC  87.05 ETC 259.13 CLP  44.01
 PLANETOCENTRIC CONIC
  C3  24.760 VHL  4.976 DLA  13.09 RAL 176.67 RAD 6568.0 VEL 12.089 PTH   2.16 VHP  4.466 DPA  15.24 RAP 159.58 ECC 1.4075
  LNCH AZMTH  LNCH TIME  L-I TIME    INJ LAT   INJ LONG  INJ RT ASC  INJ AZMTH  INJ TIME  PO CST TIM  INJ 2 LAT INJ 2 LONG
     90.00    19 49  5   2685.10     -27.52     73.49      46.35      96.94   20 33 50    2085.1     -26.28      65.04
     90.00    11 15  3   4491.13       9.29    188.37      39.92      63.13   12 29 54    3891.1       5.61     181.62
    100.00    21 17 14   2400.82     -28.84     52.38      46.15      98.21   21 57 15    1800.8     -27.41      43.87
    100.00    12 29 35   4250.63      10.47    170.06      39.29      61.84   13 40 26    3650.6       6.63     163.39
    110.00    22 40 48   2139.36     -32.34     31.81      45.44     101.73   23 16 27    1539.4     -30.39      23.14
    110.00    13 22 31   4084.87      13.55    155.68      37.48      58.31   14 30 36    3484.9       9.26     149.20
 DIFFERENTIAL CORRECTIONS                          MID-COURSE EXECUTION ACCURACY                       ORBIT DETERMINATION ACCURACY
  TDE-2.6901 TRA 8.3091 TC3-7.1290 BAU 2.3659      SGT12506.7 SGR 1007.7 SG3 1289.9                    ST  4280.7 SR   816.1 SS  2314.8
  RDE  .7039 RRA -.2659 RC3  .5120 FAU .21674      RRT -.7511 RRF -.7641 RTF  .9952                    CRT -.7991 CRS  .8651 CST -.9928
  FDE-4.1723 FRA10.1122 FC3-7.5784 BSP  43495      SGB12547.2 R23  .0503 R13 -.9954                    LSA 4906.1 MSA  527.8 SSA   14.1
  BDE 2.7807 BRA 8.3133 BC3 7.1473 FSP   4743      SG112528.5 SG2  686.3 THA 176.62                    EL1 4330.7 EL2  485.0 ALF 171.23

LAUNCH DATE  OCT 15 1964                          FLIGHT TIME 390.00                                  ARRIVAL DATE  NOV  9 1965

 HELIOCENTRIC CONIC                                DISTANCE 876.522                                     EARTH  TO  MARS
  RL  149.15 LAL     .00 LOL  21.68 VL  32.675 GAL  -8.47 AZL  88.35 HCA 270.90 SMA 186.40 ECC .24653 INC 1.6526 V1  29.874
  RP  211.47 LAP   -1.65 LOP 292.57 VP  23.307 GAP -12.04 AZP  89.97 TAL 314.83 TAP 225.73 RCA 140.45 APO 232.36 V2  25.941
  RC 303.228 GL    10.64 GP    4.29 ZAL 148.90 ZAP  43.23 ETS 184.06 ZAE  69.67 ETE 181.02 ZAC  87.01 ETC 259.09 CLP  43.06
 PLANETOCENTRIC CONIC
  C3  25.475 VHL  5.047 DLA  12.82 RAL 177.20 RAD 6568.0 VEL 12.118 PTH   2.17 VHP  4.559 DPA  15.06 RAP 159.79 ECC 1.4193
  LNCH AZMTH  LNCH TIME  L-I TIME    INJ LAT   INJ LONG  INJ RT ASC  INJ AZMTH  INJ TIME  PO CST TIM  INJ 2 LAT INJ 2 LONG
     90.00    19 53 32   2682.88     -27.50     73.33      47.30      97.02   20 38 15    2082.9     -26.25      64.89
     90.00    11 14 51   4507.39       9.79    189.30      40.07      63.30   12 29 58    3907.4       6.13     182.54
    100.00    21 21 30   2399.16     -28.83     52.26      47.09      98.27   22  1 29    1799.2     -27.38      43.75
    100.00    12 29 33   4266.35      10.88    170.96      40.24      62.02   13 40 40    3666.3       7.15     164.26
    110.00    22 44 41   2138.88     -32.33     31.77      46.37     101.75   23 20 20    1538.9     -30.38      23.10
    110.00    13 22 52   4099.39      14.07    156.48      38.44      58.52   14 31 11    3499.4       9.80     149.98
 DIFFERENTIAL CORRECTIONS                          MID-COURSE EXECUTION ACCURACY                       ORBIT DETERMINATION ACCURACY
  TDE-2.8030 TRA 8.5767 TC3-7.0526 BAU 2.4078      SGT12669.3 SGR  993.9 SG3 1223.7                    ST  4375.3 SR   812.1 SS  2267.0
  RDE  .7108 RRA -.2592 RC3  .4910 FAU .20564      RRT -.7235 RRF -.7577 RTF  .9950                    CRT -.7998 CRS  .8661 CST -.9927
  FDE-4.0788 FRA 9.7710 FC3-6.9884 BSP  44130      SGB12708.2 R23  .0518 R13 -.9951                    LSA 4966.4 MSA  525.6 SSA   14.0
  BDE 2.8917 BRA 8.5806 BC3 7.0697 FSP   4516      SG112689.7 SG2  685.0 THA 176.74                    EL1 4423.8 EL2  482.1 ALF 171.45
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LAUNCH DATE OCT 15 1964 FLIGHT TIME 392.00 ARRIVAL DATE NOV 11 1965

DISTANCE 880.606

HELIOCENTRIC CONIC

RL	149.15	LAL	.00	LOL	21.68	VL	32.679	GAL	-8.63	AZL	88.33	HCA	272.11	SMA	186.47	ECC	.24834	INC	1.6709	V1	29.874
RP	211.20	LAP	-1.67	LOP	293.79	VP	23.346	GAP	-12.23	AZP	89.94	TAL	314.20	TAP	226.31	RCA	140.16	APO	232.78	V2	25.971
RC	304.242	GL	10.60	GP	4.21	ZAL	149.48	ZAP	42.31	ETS	184.11	ZAE	68.47	ETE	181.12	ZAC	86.98	ETC	259.04	CLP	42.14

EARTH TO MARS

PLANETOCENTRIC CONIC

C3	26.232	VHL	5.122	DLA	12.54	RAL	177.74	RAD	6568.1	VEL	12.149	PTH	2.18	VHP	4.654	DPA	14.87	RAP	160.04	ECC	1.4317

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 58 2	2680.66	-27.49	73.17	48.26	97.09	20 42 43	2080.7	-26.22	64.73
90.00	11 14 36	4524.10	10.30	190.27	41.84	63.48	12 30 0	3924.1	6.66	183.48
100.00	21 25 50	2397.51	-28.81	52.14	48.05	98.34	22 5 48	1797.5	-27.36	43.64
100.00	12 29 29	4282.48	11.49	171.88	41.22	62.21	13 40 52	3682.5	7.68	165.16
110.00	22 48 38	2138.42	-32.33	31.74	47.35	101.77	23 24 17	1538.4	-30.37	23.07
110.00	13 23 11	4114.33	14.60	157.32	39.41	58.74	14 31 45	3514.3	10.35	150.79

DIFFERENTIAL CORRECTIONS

TDE	-2.9189	TRA	8.8505	TC3	-6.9694	BAU	2.4498
RDE	.7180	RRA	-.2533	RC3	.4710	FAU	.19491
FDE	-3.9847	FRA	9.4356	FC3	-6.4324	BSP	44751
BDE	3.0059	BRA	8.8542	BC3	6.9853	FSP	4297

MID-COURSE EXECUTION ACCURACY

SGT	12826.2	SGR	980.9	SG3	1159.9		
RRT	-.7163	RRF	-.7517	RTF	.9947		
SGB	12863.6	R23	.0533	R13	-.9949		
SG1	12845.4	SG2	683.5	THA	176.86		

ORBIT DETERMINATION ACCURACY

ST	4468.5	SR	808.0	SS	2218.4
CRT	-.8006	CRS	.8672	CST	-.9926
LSA	5026.7	MSA	523.2	SSA	13.9
EL1	4515.6	EL2	479.1	ALF	171.67

LAUNCH DATE OCT 15 1964 FLIGHT TIME 394.00 ARRIVAL DATE NOV 13 1965

DISTANCE 884.684

HELIOCENTRIC CONIC

RL	149.15	LAL	.00	LOL	21.68	VL	32.683	GAL	-8.79	AZL	88.31	HCA	273.33	SMA	186.54	ECC	.25023	INC	1.6891	V1	29.874
RP	210.95	LAP	-1.69	LOP	295.00	VP	23.384	GAP	-12.42	AZP	89.90	TAL	313.54	TAP	226.87	RCA	139.86	APO	233.22	V2	26.001
RC	305.247	GL	10.55	GP	4.13	ZAL	150.06	ZAP	41.42	ETS	184.15	ZAE	67.30	ETE	181.21	ZAC	86.96	ETC	258.99	CLP	41.25

EARTH TO MARS

PLANETOCENTRIC CONIC

C3	27.033	VHL	5.199	DLA	12.26	RAL	178.28	RAD	6568.1	VEL	12.182	PTH	2.19	VHP	4.753	DPA	14.67	RAP	160.32	ECC	1.4449

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 2 37	2678.44	-27.47	73.01	49.23	97.17	20 47 15	2078.4	-26.19	64.57
90.00	11 14 19	4541.23	10.82	191.26	42.83	63.67	12 30 1	3941.2	7.20	184.45
100.00	21 30 14	2395.86	-28.79	52.02	49.03	98.40	22 10 10	1795.9	-27.33	43.52
100.00	12 29 23	4299.04	12.01	172.83	42.21	62.42	13 41 3	3699.0	8.23	166.09
110.00	22 52 38	2138.00	-32.32	31.71	48.30	101.79	23 28 16	1538.0	-30.36	23.04
110.00	13 23 28	4129.66	15.14	158.18	40.41	58.98	14 32 18	3529.7	10.92	151.62

DIFFERENTIAL CORRECTIONS

TDE	-3.0390	TRA	9.1304	TC3	-6.8790	BAU	2.4914
RDE	.7256	RRA	-.2479	RC3	.4520	FAU	.18451
FDE	-3.8923	FRA	9.1058	FC3	-5.9091	BSP	45343
BDE	3.1244	BRA	9.1337	BC3	6.8938	FSP	4083

MID-COURSE EXECUTION ACCURACY

SGT	12976.8	SGR	968.7	SG3	1099.3		
RRT	-.7095	RRF	-.7462	RTF	.9944		
SGB	13012.9	R23	.0549	R13	-.9946		
SG1	12995.1	SG2	681.7	THA	176.96		

ORBIT DETERMINATION ACCURACY

ST	4561.0	SR	804.1	SS	2169.8
CRT	-.8016	CRS	.8686	CST	-.9925
LSA	5087.8	MSA	520.6	SSA	13.8
EL1	4606.8	EL2	475.9	ALF	171.87

LAUNCH DATE OCT 15 1964 FLIGHT TIME 396.00 ARRIVAL DATE NOV 15 1965

DISTANCE 888.756

HELIOCENTRIC CONIC

RL	149.15	LAL	.00	LOL	21.68	VL	32.687	GAL	-8.97	AZL	88.29	HCA	274.55	SMA	186.61	ECC	.25221	INC	1.7074	V1	29.874
RP	210.70	LAP	-1.70	LOP	296.22	VP	23.422	GAP	-12.62	AZP	89.86	TAL	312.87	TAP	227.42	RCA	139.55	APO	233.68	V2	26.029
RC	306.243	GL	10.50	GP	4.05	ZAL	150.64	ZAP	40.55	ETS	184.20	ZAE	66.15	ETE	181.30	ZAC	86.95	ETC	258.93	CLP	40.38

EARTH TO MARS

PLANETOCENTRIC CONIC

C3	27.880	VHL	5.280	DLA	11.97	RAL	178.82	RAD	6568.1	VEL	12.217	PTH	2.20	VHP	4.854	DPA	14.47	RAP	160.63	ECC	1.4588

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 7 15	2676.24	-27.45	72.85	50.23	97.25	20 51 51	2076.2	-26.16	64.42
90.00	11 14 1	4558.78	11.35	192.28	43.85	63.88	12 30 0	3958.8	7.75	185.45
100.00	21 34 41	2394.25	-28.78	51.90	50.02	98.46	22 14 35	1794.3	-27.31	43.41
100.00	12 29 16	4316.00	12.55	173.81	43.23	62.64	13 41 12	3716.0	8.78	167.04
110.00	22 56 42	2137.62	-32.32	31.68	49.29	101.80	23 32 20	1537.6	-30.35	23.01
110.00	13 23 45	4145.40	15.69	159.07	41.43	59.23	14 32 50	3545.4	11.49	152.47

DIFFERENTIAL CORRECTIONS

TDE	-3.1635	TRA	9.4159	TC3	-6.7851	BAU	2.5341
RDE	.7336	RRA	-.2433	RC3	.4340	FAU	.17455
FDE	-3.8005	FRA	8.7809	FC3	-5.4201	BSP	45896
BDE	3.2475	BRA	9.4190	BC3	6.7989	FSP	3875

MID-COURSE EXECUTION ACCURACY

SGT	13122.8	SGR	957.3	SG3	1039.1		
RRT	-.7032	RRF	-.7413	RTF	.9941		
SGB	13157.7	R23	.0566	R13	-.9943		
SG1	13140.1	SG2	679.7	THA	177.06		

ORBIT DETERMINATION ACCURACY

ST	4652.8	SR	800.2	SS	2120.7
CRT	-.8028	CRS	.8702	CST	-.9923
LSA	5149.5	MSA	517.7	SSA	13.8
EL1	4697.4	EL2	472.6	ALF	172.06

LAUNCH DATE OCT 15 1964 FLIGHT TIME 398.00 ARRIVAL DATE NOV 17 1965

DISTANCE 892.821

HELIOCENTRIC CONIC

RL	149.15	LAL	.00	LOL	21.68	VL	32.691	GAL	-9.14	AZL	88.27	HCA	275.77	SMA	186.69	ECC	.25427	INC	1.7259	V1	29.874
RP	210.46	LAP	-1.72	LOP	297.45	VP	23.459	GAP	-12.82	AZP	89.83	TAL	312.19	TAP	227.95	RCA	139.22	APO	234.16	V2	26.057
RC	307.229	GL	10.44	GP	3.98	ZAL	151.24	ZAP	39.71	ETS	184.24	ZAE	65.03	ETE	181.38	ZAC	86.95	ETC	258.87	CLP	39.55

EARTH TO MARS

PLANETOCENTRIC CONIC

C3	28.776	VHL	5.364	DLA	11.67	RAL	179.36	RAD	6568.2	VEL	12.254	PTH	2.20	VHP	4.957	DPA	14.25	RAP	160.96	ECC	1.4736

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 11 56	2674.08	-27.43	72.69	51.24	97.32	20 56 30	2074.1	-26.13	64.27
90.00	11 13 41	4576.74	11.88	193.32	44.89	64.11	12 29 58	3976.7	8.31	186.47
100.00	21 39 11	2392.67	-28.76	51.79	51.03	98.51	22 19 4	1792.7	-27.29	43.30
100.00	12 29 7	4333.38	13.09	174.82	44.27	62.88	13 41 20	3733.4	9.35	168.02
110.00	23 0 48	2137.29	-32.31	31.66	50.29	101.82	23 36 26	1537.3	-30.35	22.99
110.00	13 23 59	4161.52	16.25	159.90	42.48	59.50	14 33 21	3561.5	12.08	153.35

DIFFERENTIAL CORRECTIONS

TDE	-3.2926	TRA	9.7077	TC3	-6.6854	BAU	2.5769
RDE	.7420	RRA	-.2393	RC3	.4168	FAU	.16491
FDE	-3.7093	FRA	8.4606	FC3	-4.9614	BSP	46412
BDE	3.3752	BRA	9.7107	BC3	6.6983	FSP	3672

MID-COURSE EXECUTION ACCURACY

SGT	13283.0	SGR	946.6	SG3	982.0		
RRT	-.6975	RRF	-.7369	RTF	.9938		
SGB	13296.7	R23	.0584	R13	-.9940		
SG1	13279.4	SG2	677.5	THA	177.14		

ORBIT DETERMINATION ACCURACY

ST	4743.7	SR	796.4	SS	2071.1
CRT	-.8043	CRS	.8720	CST	-.9922
LSA	5211.7	MSA	514.6	SSA	13.7
EL1	4787.2	EL2	469.0	ALF	172.23

LAUNCH DATE OCT 16 1964 FLIGHT TIME 240.00 ARRIVAL DATE JUN 13 1965

HELIOCENTRIC CONIC DISTANCE 581.634 EARTH TO MARS

RL	149.11	LAL	.00	LOL	22.67	VL	33.157	GAL	-7.06	AZL	93.32	HCA	189.47	SMA	194.95	ECC	.26381	INC	3.5232	V1	29.883
RP	238.14	LAP	.55	LOP	212.12	VP	20.829	GAP	8.45	AZP	86.72	TAL	325.15	TAP	154.61	RCA	143.52	APO	246.38	V2	23.073
RC	181.513	GL	-22.27	GP	18.13	ZAL	135.46	ZAP	148.23	ETS	146.65	ZAE	157.08	ETE	53.03	ZAC	106.60	ETC	255.39	CLP	153.46

PLANETOCENTRIC CONIC

C3	25.339	VHL	5.034	DLA	-13.91	RAL	155.77	RAD	6568.0	VEL	12.113	PTH	2.17	VHP	5.823	DPA	15.39	RAP	193.38	ECC	1.4170

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 52 53	1824.68	-8.60	18.13	19.42	117.08	22 23 18	1224.7	-4.90	11.41
90.00	6 16 38	5362.94	27.78	244.88	26.25	84.26	7 46 1	4762.9	26.69	236.38
100.00	23 6 53	1585.94	-9.81	359.94	18.78	118.38	23 33 19	985.9	-5.94	353.28
100.00	7 45 19	5076.91	29.13	223.67	26.08	82.99	9 9 56	4476.9	27.86	215.10
110.00	0 2 34	1423.82	-12.94	345.78	16.92	121.92	0 26 18	823.8	-8.63	339.34
110.00	9 10 3	4811.80	32.71	202.90	25.43	79.48	10 30 15	4211.8	30.92	194.14

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.8008	TRA	-3.3188	TC3	1.5358	BAU	.6354	SGT	4662.3	SGR	2085.6	SG3	842.4	ST	2359.4	SR	1146.9	SS	2470.1
RDE	.9340	RRA	-1.2196	RC3	1.0766	FAU	.16121	RRT	.9688	RRF	-.9975	RTF	-.9600	CRT	.9910	CRS	.9994	CST	.9950
FDE	-3.9389	FRA	5.6712	FC3	-5.5080	BSP	17531	SGB	5107.5	R23	-.2328	R13	-.9703	LSA	3598.1	MSA	192.4	SSA	10.0
BDE	2.0286	BRA	3.5358	BC3	1.8756	FSP	2662	SG1	5085.5	SG2	474.2	THA	23.65	EL1	2619.7	EL2	138.4	ALF	25.80

LAUNCH DATE OCT 16 1964 FLIGHT TIME 242.00 ARRIVAL DATE JUN 15 1965

HELIOCENTRIC CONIC DISTANCE 585.185 EARTH TO MARS

RL	149.11	LAL	.00	LOL	22.67	VL	33.129	GAL	-6.97	AZL	92.86	HCA	190.42	SMA	194.42	ECC	.26124	INC	2.8576	V1	29.883
RP	237.81	LAP	.52	LOP	213.08	VP	20.821	GAP	8.01	AZP	87.19	TAL	325.36	TAP	155.78	RCA	143.63	APO	245.21	V2	23.106
RC	183.786	GL	-19.58	GP	16.95	ZAL	136.17	ZAP	148.28	ETS	149.04	ZAE	158.35	ETE	52.71	ZAC	105.50	ETC	255.46	CLP	152.78

PLANETOCENTRIC CONIC

C3	23.931	VHL	4.892	DLA	-11.28	RAL	156.49	RAD	6568.0	VEL	12.054	PTH	2.15	VHP	5.657	DPA	14.21	RAP	193.10	ECC	1.3938

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 33 20	1899.00	-10.90	22.46	19.16	116.30	22 5 0	1299.9	-7.28	15.65
90.00	6 41 54	5259.63	26.85	237.47	24.73	80.66	8 9 34	4659.6	25.29	229.15
100.00	22 49 0	1655.79	-12.04	3.92	18.57	117.57	23 16 35	1055.8	-8.25	357.18
100.00	8 8 55	4978.96	28.11	216.57	24.49	79.39	9 31 54	4379.0	26.36	208.21
110.00	23 44 22	1482.36	-15.02	349.04	16.85	121.07	24 9 5	882.4	-10.80	342.49
110.00	9 30 2	4725.15	31.45	196.46	23.64	75.87	10 48 47	4125.2	29.19	187.98

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.7132	TRA	-3.2708	TC3	1.6273	BAU	.6235	SGT	4671.2	SGR	1979.2	SG3	898.0	ST	2324.2	SR	1068.0	SS	2465.8
RDE	.8426	RRA	-1.1367	RC3	1.0721	FAU	.16932	RRT	.9684	RRF	-.9971	RTF	-.9614	CRT	.9906	CRS	.9988	CST	.9960
FDE	-3.8940	FRA	5.9981	FC3	-6.1252	BSP	17411	SGB	5073.2	R23	-.2291	R13	-.9706	LSA	3548.4	MSA	176.6	SSA	12.4
BDE	1.9092	BRA	3.4626	BC3	1.8867	FSP	2841	SG1	5052.7	SG2	456.2	THA	22.50	EL1	2554.4	EL2	133.1	ALF	24.55

LAUNCH DATE OCT 16 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUN 17 1965

HELIOCENTRIC CONIC DISTANCE 588.754 EARTH TO MARS

RL	149.11	LAL	.00	LOL	22.67	VL	33.102	GAL	-6.88	AZL	92.47	HCA	191.38	SMA	193.92	ECC	.25878	INC	2.4689	V1	29.883
RP	237.48	LAP	.49	LOP	214.04	VP	20.816	GAP	7.58	AZP	87.58	TAL	325.57	TAP	156.95	RCA	143.74	APO	244.10	V2	23.140
RC	186.049	GL	-17.25	GP	15.95	ZAL	136.67	ZAP	148.14	ETS	151.20	ZAE	159.50	ETE	52.78	ZAC	104.58	ETC	255.52	CLP	152.06

PLANETOCENTRIC CONIC

C3	22.793	VHL	4.774	DLA	-9.00	RAL	157.08	RAD	6567.9	VEL	12.007	PTH	2.14	VHP	5.505	DPA	13.21	RAP	192.86	ECC	1.3751

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 17 9	1963.09	-12.78	26.15	19.06	115.48	21 49 52	1363.1	-9.24	19.26
90.00	7 2 47	5172.64	25.74	231.34	23.48	77.78	8 29 0	4572.6	23.80	223.21
100.00	22 34 6	1714.83	-13.87	7.35	18.51	116.75	23 2 41	1114.8	-10.17	.51
100.00	8 28 31	4896.13	26.93	210.70	23.18	76.51	9 50 7	4296.1	24.81	202.54
110.00	23 32 21	1532.45	-16.76	351.88	16.88	120.24	23 57 54	932.4	-12.62	345.22
110.00	9 46 46	4651.27	30.10	191.12	22.19	72.98	11 4 17	4051.3	27.48	182.92

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.6342	TRA	-3.2243	TC3	1.7015	BAU	.6117	SGT	4672.7	SGR	1891.0	SG3	952.8	ST	2286.9	SR	1004.2	SS	2460.9
RDE	.7708	RRA	-1.0684	RC3	1.0654	FAU	.17699	RRT	.9679	RRF	-.9966	RTF	-.9625	CRT	.9900	CRS	.9980	CST	.9968
FDE	-3.8566	FRA	6.3215	FC3	-6.7226	BSP	17409	SGB	5040.9	R23	-.2250	R13	-.9709	LSA	3502.5	MSA	163.3	SSA	15.1
BDE	1.8068	BRA	3.3967	BC3	2.0075	FSP	3040	SG1	5021.5	SG2	441.9	THA	21.57	EL1	2494.3	EL2	130.0	ALF	23.56

LAUNCH DATE OCT 16 1964 FLIGHT TIME 246.00 ARRIVAL DATE JUN 19 1965

HELIOCENTRIC CONIC DISTANCE 592.343 EARTH TO MARS

RL	149.11	LAL	.00	LOL	22.67	VL	33.076	GAL	-6.79	AZL	92.14	HCA	192.34	SMA	193.44	ECC	.25641	INC	2.1385	V1	29.883
RP	237.15	LAP	.46	LOP	215.00	VP	20.813	GAP	7.15	AZP	87.91	TAL	325.78	TAP	158.12	RCA	143.84	APO	243.04	V2	23.174
RC	188.300	GL	-15.20	GP	15.11	ZAL	136.99	ZAP	147.85	ETS	153.14	ZAE	160.57	ETE	53.23	ZAC	103.80	ETC	255.56	CLP	151.28

PLANETOCENTRIC CONIC

C3	21.845	VHL	4.674	DLA	-6.98	RAL	157.56	RAD	6567.9	VEL	11.968	PTH	2.13	VHP	5.363	DPA	12.37	RAP	192.67	ECC	1.3595

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 3 21	2017.43	-14.35	29.37	19.04	114.68	21 36 58	1417.4	-10.90	22.39
90.00	7 20 29	5097.70	24.56	226.17	22.44	75.45	8 45 27	4497.7	22.32	218.21
100.00	22 21 21	1765.78	-15.41	10.35	18.52	115.93	22 50 47	1165.8	-11.80	3.42
100.00	8 45 10	4824.58	25.70	205.74	22.10	74.18	10 5 35	4224.6	23.28	197.78
110.00	23 21 58	1575.99	-18.24	354.40	16.98	119.43	23 48 14	976.0	-14.18	347.63
110.00	10 1 3	4587.13	28.74	186.63	21.01	70.64	11 17 30	3987.1	25.83	178.66

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.5858	TRA	-3.1543	TC3	1.8070	BAU	.6129	SGT	4670.0	SGR	1821.2	SG3	1009.2	ST	2268.8	SR	957.0	SS	2468.4
RDE	.7185	RRA	-1.0064	RC3	1.0677	FAU	.18579	RRT	.9689	RRF	-.9959	RTF	-.9650	CRT	.9901	CRS	.9969	CST	.9979
FDE	-3.8545	FRA	6.6144	FC3	-7.3631	BSP	16897	SGB	5012.5	R23	-.2151	R13	-.9724	LSA	3483.5	MSA	145.0	SSA	18.4
BDE	1.7410	BRA	3.3110	BC3	2.0988	FSP	3195	SG1	4994.8	SG2	421.6	THA	20.85	EL1	2459.2	EL2	124.2	ALF	22.73

LAUNCH DATE OCT 16 1964 FLIGHT TIME 248.00 ARRIVAL DATE JUN 21 1965

HELIOCENTRIC CONIC DISTANCE 595.945 EARTH TO MARS

RL 149.11 LAL .00 LOL 22.67 VL 33.052 GAL -6.70 AZL 91.85 HCA 193.30 SMA 192.98 ECC .25415 INC 1.8542 V1 29.883
RP 236.81 LAP .43 LOP 215.96 VP 20.813 GAP 6.73 AZP 88.20 TAL 325.98 TAP 159.28 RCA 143.93 APO 242.02 V2 23.209
RC 190.540 GL -13.39 GP 14.39 ZAL 137.20 ZAP 147.44 ETS 154.90 ZAE 161.57 ETE 54.06 ZAC 103.13 ETC 255.60 CLP 150.48

PLANETOCENTRIC CONIC

C3 21.040 VHL 4.587 DLA -5.19 RAL 157.97 RAD 6567.9 VEL 11.934 PTH 2.12 VHP 5.230 DPA 11.66 RAP 192.49 ECC 1.3463

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 51 18	2064.97	-15.68	32.23	19.08	113.88	21 25 43	1465.0	-12.32	25.16
90.00	7 35 49	5032.06	23.36	221.73	21.57	73.53	8 59 41	4432.1	20.89	213.94
100.00	22 10 12	1810.47	-16.72	13.02	18.58	115.14	22 40 22	1210.5	-13.20	6.00
100.00	8 59 36	4761.80	24.46	201.49	21.20	72.26	10 18 58	4161.8	21.81	193.70
110.00	23 12 50	1614.37	-19.51	356.65	17.10	118.64	23 39 44	1014.4	-15.53	349.78
110.00	10 13 27	4530.67	27.40	182.78	20.04	68.72	11 28 58	3930.7	24.26	175.02

DIFFERENTIAL CORRECTIONS
TDE 1.5205 TRA-3.1063 TC3 1.8615 BAU .6034
RDE .6744 RRA -.9565 RC3 1.0657 FAU .19400
FDE-3.8486 FRA 6.9212 FC3-7.9826 BSP 16932
BDE 1.6033 BRA 3.2503 BC3 2.1450 FSP 3387

MID-COURSE EXECUTION ACCURACY
SGT 4658.7 SGR 1762.0 SG3 1065.6
RRT .9677 RRF -.9951 RTF -.9653
SGB 4980.8 R23 -.2120 R13 -.9723
SG1 4963.3 SG2 416.9 THA 20.25

ORBIT DETERMINATION ACCURACY
ST 2230.7 SR 916.5 SS 2472.6
CRT .9890 CRS .9957 CST .9983
LSA 3451.1 MSA 139.4 SSA 21.3
EL1 2408.4 EL2 125.3 ALF 22.18

LAUNCH DATE OCT 16 1964 FLIGHT TIME 250.00 ARRIVAL DATE JUN 23 1965

HELIOCENTRIC CONIC DISTANCE 599.564 EARTH TO MARS

RL 149.11 LAL .00 LOL 22.67 VL 33.028 GAL -6.62 AZL 91.61 HCA 194.27 SMA 192.54 ECC .25197 INC 1.6072 V1 29.883
RP 236.46 LAP .40 LOP 216.93 VP 20.814 GAP 6.31 AZP 88.44 TAL 326.17 TAP 160.44 RCA 144.03 APO 241.06 V2 23.244
RC 192.768 GL -11.78 GP 13.76 ZAL 137.31 ZAP 146.93 ETS 156.49 ZAE 162.51 ETE 55.28 ZAC 102.55 ETC 255.63 CLP 149.63

PLANETOCENTRIC CONIC

C3 20.342 VHL 4.510 DLA -3.59 RAL 158.32 RAD 6567.8 VEL 11.905 PTH 2.12 VHP 5.104 DPA 11.04 RAP 192.33 ECC 1.3348

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 40 36	2107.14	-16.82	34.79	19.14	113.12	21 15 43	1507.1	-13.55	27.64
90.00	7 49 16	4973.75	22.19	217.86	20.83	71.94	9 12 10	4373.8	19.51	210.21
100.00	22 0 16	1850.15	-17.86	15.42	18.66	114.38	22 31 6	1250.2	-14.42	8.32
100.00	9 12 18	4705.98	23.25	197.78	20.44	70.67	10 30 44	4106.0	20.40	190.14
110.00	23 4 39	1648.55	-20.61	358.69	17.23	117.90	23 32 8	1048.6	-16.71	351.73
110.00	10 24 23	4480.34	26.11	179.44	19.22	67.11	11 39 3	3880.3	22.78	171.86

DIFFERENTIAL CORRECTIONS
TDE 1.4603 TRA-3.0570 TC3 1.9071 BAU .5940
RDE .6386 RRA -.9143 RC3 1.0650 FAU .20222
FDE-3.8494 FRA 7.2323 FC3-8.6062 BSP 16981
BDE 1.5938 BRA 3.1908 BC3 2.1843 FSP 3593

MID-COURSE EXECUTION ACCURACY
SGT 4641.2 SGR 1713.2 SG3 1122.9
RRT .9665 RRF -.9942 RTF -.9656
SGB 4947.3 R23 -.2082 R13 -.9723
SG1 4930.0 SG2 413.7 THA 19.78

ORBIT DETERMINATION ACCURACY
ST 2192.4 SR 883.6 SS 2478.5
CRT .9879 CRS .9942 CST .9987
LSA 3422.2 MSA 135.5 SSA 24.1
EL1 2360.3 EL2 127.1 ALF 21.78

LAUNCH DATE OCT 16 1964 FLIGHT TIME 252.00 ARRIVAL DATE JUN 25 1965

HELIOCENTRIC CONIC DISTANCE 603.199 EARTH TO MARS

RL 149.11 LAL .00 LOL 22.67 VL 33.006 GAL -6.54 AZL 91.39 HCA 195.24 SMA 192.13 ECC .24989 INC 1.3900 V1 29.883
RP 236.12 LAP .37 LOP 217.90 VP 20.818 GAP 5.90 AZP 88.66 TAL 326.37 TAP 161.61 RCA 144.12 APO 240.14 V2 23.279
RC 194.983 GL -10.32 GP 13.22 ZAL 137.35 ZAP 146.33 ETS 157.94 ZAE 163.40 ETE 56.90 ZAC 102.05 ETC 255.65 CLP 148.75

PLANETOCENTRIC CONIC

C3 19.729 VHL 4.442 DLA -2.14 RAL 158.61 RAD 6567.8 VEL 11.879 PTH 2.11 VHP 4.983 DPA 10.51 RAP 192.18 ECC 1.3247

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 30 57	2144.96	-17.82	37.12	19.21	112.38	21 6 42	1545.0	-14.63	29.90
90.00	8 1 15	4921.36	21.04	214.45	20.20	70.60	9 23 16	4321.4	18.20	206.92
100.00	21 51 18	1885.78	-18.84	17.60	18.75	113.64	22 22 43	1285.8	-15.49	10.42
100.00	9 23 35	4655.78	22.08	194.51	19.79	69.33	10 41 11	4055.8	19.07	187.01
110.00	22 57 15	1679.29	-21.58	.55	17.37	117.18	23 25 15	1079.3	-17.76	353.50
110.00	10 34 7	4435.03	24.88	176.49	18.53	65.77	11 48 2	3835.0	21.39	169.08

DIFFERENTIAL CORRECTIONS
TDE 1.4080 TRA-3.0014 TC3 1.9529 BAU .5872
RDE .6105 RRA -.8769 RC3 1.0684 FAU .21098
FDE-3.8656 FRA 7.5376 FC3-9.2580 BSP 16910
BDE 1.5347 BRA 3.1269 BC3 2.2261 FSP 3789

MID-COURSE EXECUTION ACCURACY
SGT 4617.2 SGR 1673.9 SG3 1182.0
RRT .9655 RRF -.9932 RTF -.9660
SGB 4911.3 R23 -.2037 R13 -.9725
SG1 4894.0 SG2 411.4 THA 19.43

ORBIT DETERMINATION ACCURACY
ST 2156.9 SR 858.0 SS 2489.8
CRT .9869 CRS .9925 CST .9990
LSA 3401.4 MSA 133.1 SSA 26.7
EL1 2317.7 EL2 129.1 ALF 21.50

LAUNCH DATE OCT 16 1964 FLIGHT TIME 254.00 ARRIVAL DATE JUN 27 1965

HELIOCENTRIC CONIC DISTANCE 606.849 EARTH TO MARS

RL 149.11 LAL .00 LOL 22.67 VL 32.984 GAL -6.46 AZL 91.20 HCA 196.21 SMA 191.73 ECC .24789 INC 1.1985 V1 29.883
RP 235.77 LAP .33 LOP 218.87 VP 20.823 GAP 5.50 AZP 88.85 TAL 326.55 TAP 162.76 RCA 144.20 APO 239.26 V2 23.315
RC 197.185 GL -9.01 GP 12.75 ZAL 137.33 ZAP 145.66 ETS 159.26 ZAE 164.24 ETE 58.96 ZAC 101.60 ETC 255.68 CLP 147.84

PLANETOCENTRIC CONIC

C3 19.184 VHL 4.380 DLA -.82 RAL 158.86 RAD 6567.8 VEL 11.856 PTH 2.10 VHP 4.867 DPA 10.06 RAP 192.03 ECC 1.3157

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 22 9	2179.21	-18.69	39.25	19.28	111.66	20 58 28	1579.2	-15.59	31.95
90.00	8 12 1	4873.82	19.94	211.40	19.65	69.46	9 33 15	4273.8	16.96	203.99
100.00	21 43 7	1918.05	-19.71	19.61	18.84	112.94	22 15 5	1318.0	-16.44	12.35
100.00	9 33 45	4610.22	20.96	191.59	19.23	68.19	10 50 35	4010.2	17.82	184.21
110.00	22 50 29	1707.15	-22.43	2.26	17.50	116.50	23 18 57	1107.2	-18.69	355.12
110.00	10 42 52	4393.88	23.70	173.87	17.93	64.62	11 56 6	3793.9	20.09	166.60

DIFFERENTIAL CORRECTIONS
TDE 1.3569 TRA-2.9457 TC3 1.9880 BAU .5792
RDE .5867 RRA -.8456 RC3 1.0719 FAU .21962
FDE-3.8815 FRA 7.8557 FC3-9.9112 BSP 16863
BDE 1.4783 BRA 3.0647 BC3 2.2586 FSP 4008

MID-COURSE EXECUTION ACCURACY
SGT 4586.5 SGR 1641.5 SG3 1242.4
RRT .9644 RRF -.9921 RTF -.9664
SGB 4871.4 R23 -.1987 R13 -.9727
SG1 4854.1 SG2 410.0 THA 19.19

ORBIT DETERMINATION ACCURACY
ST 2119.0 SR 836.7 SS 2500.5
CRT .9857 CRS .9905 CST .9993
LSA 3380.0 MSA 132.5 SSA 29.0
EL1 2274.4 EL2 131.4 ALF 21.34

LAUNCH DATE OCT 16 1964 FLIGHT TIME 256.00 ARRIVAL DATE JUN 29 1965

HELIOCENTRIC CONIC DISTANCE 610.514 EARTH TO MARS

RL	149.11	LAL	.00	LOL	22.67	VL	32.963	GAL	-6.39	AZL	91.03	HCA	197.19	SMA	191.35	ECC	.24598	INC	1.0274
RP	235.42	LAP	.30	LOP	219.85	VP	20.831	GAP	5.10	AZP	89.02	TAL	326.74	TAP	163.92	RCA	144.28	APO	238.42
RC	199.372	GL	-7.81	GP	12.33	ZAL	137.27	ZAP	144.92	ETS	160.46	ZAE	165.03	ETE	61.48	ZAC	101.20	ETC	255.70

V1	29.883	V2	23.351	CLP	146.90														

PLANETOCENTRIC CONIC

C3	18.694	VHL	4.324	DLA	.39	RAL	159.07	RAD	6567.8	VEL	11.835	PTH	2.10	VHP	4.756	DPA	9.67	RAP	191.88
ECC	1.3076																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 14 4	2210.48	-19.47	41.22	19.35	110.98	20 50 55	1610.5	-16.44	33.85
90.00	8 21 48	4830.36	18.87	208.65	19.18	68.49	9 42 19	4230.4	15.79	201.34
100.00	21 35 35	1947.52	-20.48	21.46	18.92	112.26	22 8 3	1347.5	-17.29	14.12
100.00	9 42 58	4568.56	19.88	188.96	18.74	67.21	10 59 7	3968.6	16.62	181.69
110.00	22 44 15	1732.60	-23.20	3.84	17.62	115.84	23 13 8	1132.6	-19.53	356.62
110.00	10 50 48	4356.24	22.59	171.52	17.41	63.63	12 3 24	3756.2	18.86	164.37

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.3101	TRA	-2.8870	TC3	2.0203	BAU	.5724	SGT	4550.1	SGR	1616.2	SG3	1305.0	ST	2081.9	SR	820.2	SS	2515.1
RDE	.5678	RRA	-.8182	RC3	1.0788	FAU	.22876	RRT	.9634	RRF	-.9910	RTF	-.9669	CRT	.9845	CRS	.9884	CST	.9995
FDE	-3.9081	FRA	8.1759	FC	-10.5946	BSP	16760	SGB	4828.6	R23	-.1935	R13	-.9730	LSA	3363.6	MSA	134.0	SSA	30.8
BDE	1.4279	BRA	3.0007	BC3	2.2903	FSP	4226	SG1	4811.2	SG2	409.9	THA	19.03	EL1	2233.6	EL2	134.0	ALF	21.28

LAUNCH DATE OCT 16 1964 FLIGHT TIME 258.00 ARRIVAL DATE JUL 1 1965

HELIOCENTRIC CONIC DISTANCE 614.193 EARTH TO MARS

RL	149.11	LAL	.00	LOL	22.67	VL	32.943	GAL	-6.31	AZL	90.87	HCA	198.17	SMA	190.99	ECC	.24416	INC	.8734
RP	235.06	LAP	.27	LOP	220.83	VP	20.840	GAP	4.70	AZP	89.17	TAL	326.91	TAP	165.08	RCA	144.36	APO	237.63
RC	201.544	GL	-6.71	GP	11.97	ZAL	137.18	ZAP	144.12	ETS	161.56	ZAE	165.77	ETE	64.52	ZAC	100.84	ETC	255.71

V1	29.883	V2	23.387	CLP	145.92														

PLANETOCENTRIC CONIC

C3	18.250	VHL	4.272	DLA	1.50	RAL	159.26	RAD	6567.7	VEL	11.817	PTH	2.09	VHP	4.649	DPA	9.33	RAP	191.73
ECC	1.3003																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 6 34	2239.25	-20.16	43.05	19.42	110.32	20 43 54	1639.2	-17.21	35.61
90.00	8 30 46	4790.34	17.86	206.16	18.76	67.65	9 50 36	4190.3	14.67	198.93
100.00	21 28 37	1974.62	-21.17	23.17	19.00	111.61	22 1 31	1374.6	-18.05	15.77
100.00	9 51 24	4530.19	18.85	186.58	18.31	66.36	11 6 55	3930.2	15.50	179.40
110.00	22 38 27	1756.01	-23.88	5.31	17.73	115.22	23 7 43	1156.0	-20.29	358.01
110.00	10 58 3	4321.58	21.52	169.40	16.96	62.78	12 10 5	3721.6	17.70	162.35

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.2663	TRA	-2.8248	TC3	2.0465	BAU	.5655	SGT	4506.1	SGR	1596.7	SG3	1369.7	ST	2044.5	SR	807.7	SS	2533.0
RDE	.5526	RRA	-.7943	RC3	1.0882	FAU	.23832	RRT	.9622	RRF	-.9898	RTF	-.9672	CRT	.9833	CRS	.9861	CST	.9997
FDE	-3.9441	FRA	8.4990	FC	-11.3051	BSP	16625	SGB	4780.6	R23	-.1884	R13	-.9732	LSA	3350.9	MSA	137.4	SSA	32.2
BDE	1.3817	BRA	2.9343	BC3	2.3178	FSP	4447	SG1	4762.9	SG2	411.2	THA	18.97	EL1	2194.0	EL2	136.8	ALF	21.32

LAUNCH DATE OCT 16 1964 FLIGHT TIME 260.00 ARRIVAL DATE JUL 3 1965

HELIOCENTRIC CONIC DISTANCE 617.886 EARTH TO MARS

RL	149.11	LAL	.00	LOL	22.67	VL	32.925	GAL	-6.25	AZL	90.73	HCA	199.15	SMA	190.65	ECC	.24241	INC	.7343
RP	234.71	LAP	.24	LOP	221.81	VP	20.851	GAP	4.32	AZP	89.31	TAL	327.08	TAP	166.23	RCA	144.44	APO	236.87
RC	203.699	GL	-5.70	GP	11.64	ZAL	137.06	ZAP	143.26	ETS	162.58	ZAE	166.44	ETE	68.10	ZAC	100.52	ETC	255.73

V1	29.883	V2	23.424	CLP	144.91														

PLANETOCENTRIC CONIC

C3	17.846	VHL	4.224	DLA	2.53	RAL	159.41	RAD	6567.7	VEL	11.800	PTH	2.09	VHP	4.545	DPA	9.05	RAP	191.56
ECC	1.2937																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 59 35	2265.88	-20.78	44.76	19.48	109.68	20 37 20	1665.9	-17.91	37.26
90.00	8 39 1	4753.26	16.88	203.87	18.39	66.92	9 58 14	4153.3	13.61	196.72
100.00	21 22 6	1999.71	-21.79	24.78	19.08	110.98	21 55 25	1399.7	-18.75	17.31
100.00	9 59 11	4494.66	17.87	184.40	17.93	65.63	11 14 5	3894.7	14.43	177.30
110.00	22 33 2	1777.65	-24.50	6.68	17.84	114.62	23 2 40	1177.7	-20.98	359.31
110.00	11 4 43	4289.48	20.51	167.46	16.56	62.03	12 16 13	3689.5	16.61	160.50

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.2301	TRA	-2.7545	TC3	2.0789	BAU	.5613	SGT	4455.7	SGR	1582.8	SG3	1436.8	ST	2011.1	SR	799.1	SS	2555.6
RDE	.5411	RRA	-.7728	RC3	1.1014	FAU	.24857	RRT	.9617	RRF	-.9885	RTF	-.9679	CRT	.9826	CRS	.9837	CST	.9998
FDE	-3.9941	FRA	8.8210	FC	-12.0586	BSP	16314	SGB	4728.5	R23	-.1816	R13	-.9737	LSA	3345.7	MSA	141.5	SSA	33.0
BDE	1.3438	BRA	2.8609	BC3	2.3527	FSP	4657	SG1	4710.6	SG2	410.5	THA	19.01	EL1	2159.6	EL2	138.3	ALF	21.42

LAUNCH DATE OCT 16 1964 FLIGHT TIME 262.00 ARRIVAL DATE JUL 5 1965

HELIOCENTRIC CONIC DISTANCE 621.590 EARTH TO MARS

RL	149.11	LAL	.00	LOL	22.67	VL	32.906	GAL	-6.18	AZL	90.61	HCA	200.13	SMA	190.32	ECC	.24074	INC	.6076
RP	234.35	LAP	.21	LOP	222.80	VP	20.865	GAP	3.93	AZP	89.43	TAL	327.25	TAP	167.38	RCA	144.51	APO	236.14
RC	205.837	GL	-4.76	GP	11.35	ZAL	136.92	ZAP	142.35	ETS	163.52	ZAE	167.04	ETE	72.27	ZAC	100.22	ETC	255.75

V1	29.883	V2	23.461	CLP	143.86														

PLANETOCENTRIC CONIC

C3	17.477	VHL	4.181	DLA	3.48	RAL	159.55	RAD	6567.7	VEL	11.784	PTH	2.08	VHP	4.446	DPA	8.81	RAP	191.38
ECC	1.2876																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 53 2	2290.66	-21.34	46.36	19.55	109.07	20 31 12	1690.7	-18.54	38.80
90.00	8 46 40	4718.78	15.95	201.77	18.06	66.29	10 5 19	4118.8	12.61	194.69
100.00	21 16 0	2023.05	-22.35	26.29	19.16	110.38	21 49 43	1423.0	-19.38	18.75
100.00	10 6 23	4461.63	16.93	182.40	17.60	64.99	11 20 45	3861.6	13.42	175.37
110.00	22 27 58	1797.78	-25.07	7.97	17.95	114.04	22 57 56	1197.8	-21.61	.53
110.00	11 10 54	4259.66	19.55	165.68	16.20	61.38	12 21 54	3659.7	15.58	158.81

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.1820	TRA	-2.6944	TC3	2.0746	BAU	.5500	SGT	4395.5	SGR	1572.0	SG3	1505.4	ST	1964.4	SR	791.1	SS	2573.8
RDE	.5302	RRA	-.7561	RC3	1.1126	FAU	.25838	RRT	.9597	RRF	-.9873	RTF	-.9675	CRT	.9809	CRS	.9811	CST	.9998
FDE	-4.0316	FRA	9.1697	FC	-12.7986	BSP	16278	SGB	4668.1	R23	-.1789	R13	-.9735	LSA	3329.5	MSA	149.1	SSA	33.5
BDE	1.2955	BRA	2.7985	BC3	2.3541	FSP	4911	SG1	4649.4	SG2	417.4	THA	19.10	EL1	2112.9	EL2	143.2	ALF	21.66

LAUNCH DATE OCT 16 1964 FLIGHT TIME 264.00 ARRIVAL DATE JUL 7 1965

HELIOCENTRIC CONIC DISTANCE 625.308 EARTH TO MARS

RL 149.11 LAL .00 LOL 22.67 VL 32.889 GAL -6.12 AZL 90.49 HCA 201.12 SMA 190.01 ECC .23915 INC .4926 V1 29.883
RP 233.98 LAP .18 LOP 223.79 VP 20.879 GAP 3.56 AZP 89.54 TAL 327.40 TAP 168.52 RCA 144.57 APO 235.46 V2 23.498
RC 207.958 GL -3.90 GP 11.09 ZAL 136.77 ZAP 141.39 ETS 164.40 ZAE 167.55 ETE 77.03 ZAC 99.95 ETC 255.76 CLP 142.78

PLANETOCENTRIC CONIC

C3 17.139 VHL 4.140 DLA 4.37 RAL 159.67 RAD 6567.7 VEL 11.770 PTH 2.08 VHP 4.349 DPA 8.61 RAP 191.19 ECC 1.2821

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 46 52	2313.85	-21.85	47.87	19.61	108.48	20 25 25	1713.8	-19.12	40.26
90.00	8 53 49	4686.55	15.06	199.83	17.77	65.73	10 11 55	4086.5	11.65	192.80
100.00	21 10 15	2044.87	-22.86	27.71	19.23	109.80	21 44 20	1444.9	-19.96	20.12
100.00	10 13 7	4430.76	16.03	180.55	17.30	64.43	11 26 57	3830.8	12.46	173.58
110.00	22 23 12	1816.58	-25.58	9.19	18.04	113.48	22 53 28	1216.6	-22.19	1.69
110.00	11 16 39	4231.81	18.63	164.04	15.89	60.81	12 27 11	3631.8	14.60	157.24

DIFFERENTIAL CORRECTIONS
TDE 1.1360 TRA-2.6311 TC3 2.0832 BAU .5385
RDE .5213 RRA -.7420 RC3 1.1252 FAU .26844
FDE-4.0724 FRA 9.5294 FC-13.5595 BSP 16199
BDE 1.2499 BRA 2.7337 BC3 2.3501 FSP 5177

MID-COURSE EXECUTION ACCURACY
SGT 4327.5 SGR 1565.0 SG3 1576.1
RRT .9579 RRF -.9860 RTF -.9671
SGB 4601.8 R23 -.1762 R13 -.9733
SG1 4582.2 SG2 424.6 THA 19.28

ORBIT DETERMINATION ACCURACY
ST 1917.0 SR 785.4 SS 2593.2
CRT .9792 CRS .9782 CST .9997
LSA 3315.2 MSA 157.3 SSA 33.8
EL1 2066.4 EL2 147.7 ALF 21.98

LAUNCH DATE OCT 16 1964 FLIGHT TIME 266.00 ARRIVAL DATE JUL 9 1965

HELIOCENTRIC CONIC DISTANCE 629.040 EARTH TO MARS

RL 149.11 LAL .00 LOL 22.67 VL 32.873 GAL -6.06 AZL 90.39 HCA 202.11 SMA 189.72 ECC .23763 INC .3868 V1 29.883
RP 233.62 LAP .15 LOP 224.78 VP 20.896 GAP 3.18 AZP 89.64 TAL 327.55 TAP 169.66 RCA 144.64 APO 234.80 V2 23.536
RC 210.060 GL -3.09 GP 10.86 ZAL 136.62 ZAP 140.39 ETS 165.21 ZAE 167.94 ETE 82.37 ZAC 99.70 ETC 255.78 CLP 141.67

PLANETOCENTRIC CONIC

C3 16.827 VHL 4.102 DLA 5.20 RAL 159.78 RAD 6567.7 VEL 11.756 PTH 2.08 VHP 4.256 DPA 8.46 RAP 190.98 ECC 1.2769

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 41 1	2335.64	-22.31	49.30	19.67	107.90	20 19 57	1735.6	-19.65	41.63
90.00	9 0 31	4656.29	14.20	198.02	17.51	65.24	10 18 7	4056.3	10.75	191.04
100.00	21 4 49	2065.37	-23.33	29.05	19.30	109.24	21 39 14	1465.4	-20.49	21.40
100.00	10 19 24	4401.79	15.17	178.82	17.04	63.93	11 32 46	3801.8	11.55	171.91
110.00	22 18 41	1834.22	-26.06	10.34	18.14	112.95	22 49 15	1234.2	-22.72	2.78
110.00	11 22 2	4205.71	17.76	162.52	15.61	60.30	12 32 8	3605.7	13.67	155.79

DIFFERENTIAL CORRECTIONS
TDE 1.1017 TRA-2.5546 TC3 2.0706 BAU .5321
RDE .5157 RRA -.7285 RC3 1.1436 FAU .27978
FDE-4.1360 FRA 9.8788 FC-14.3944 BSP 15818
BDE 1.2164 BRA 2.6564 BC3 2.3655 FSP 5410

MID-COURSE EXECUTION ACCURACY
SGT 4253.3 SGR 1563.0 SG3 1650.2
RRT .9571 RRF -.9847 RTF -.9674
SGB 4531.4 R23 -.1702 R13 -.9737
SG1 4511.3 SG2 426.9 THA 19.56

ORBIT DETERMINATION ACCURACY
ST 1877.7 SR 783.3 SS 2620.0
CRT .9786 CRS .9756 CST .9996
LSA 3313.0 MSA 165.3 SSA 33.6
EL1 2029.1 EL2 149.3 ALF 22.33

LAUNCH DATE OCT 16 1964 FLIGHT TIME 268.00 ARRIVAL DATE JUL 11 1965

HELIOCENTRIC CONIC DISTANCE 632.782 EARTH TO MARS

RL 149.11 LAL .00 LOL 22.67 VL 32.857 GAL -6.01 AZL 90.29 HCA 203.11 SMA 189.44 ECC .23618 INC .2893 V1 29.883
RP 233.25 LAP .11 LOP 225.77 VP 20.914 GAP 2.82 AZP 89.73 TAL 327.70 TAP 170.80 RCA 144.70 APO 234.18 V2 23.574
RC 212.144 GL -2.33 GP 10.65 ZAL 136.45 ZAP 139.33 ETS 165.97 ZAE 168.21 ETE 88.25 ZAC 99.46 ETC 255.79 CLP 140.52

PLANETOCENTRIC CONIC

C3 16.540 VHL 4.067 DLA 5.97 RAL 159.88 RAD 6567.7 VEL 11.744 PTH 2.07 VHP 4.165 DPA 8.33 RAP 190.75 ECC 1.2722

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 35 30	2356.20	-22.73	50.66	19.73	107.35	20 14 46	1756.2	-20.15	42.94
90.00	9 6 49	4627.84	13.38	196.33	17.29	64.81	10 23 57	4027.8	9.88	189.40
100.00	20 59 41	2084.70	-23.76	30.33	19.36	108.70	21 34 25	1484.7	-20.99	22.63
100.00	10 25 20	4374.57	14.35	177.22	16.80	63.49	11 38 14	3774.6	10.68	170.36
110.00	22 14 24	1850.83	-26.49	11.44	18.23	112.44	22 45 15	1250.8	-23.22	3.81
110.00	11 27 5	4181.20	16.92	161.11	15.36	59.85	12 36 47	3581.2	12.79	154.43

DIFFERENTIAL CORRECTIONS
TDE 1.0626 TRA-2.4802 TC3 2.0548 BAU .5219
RDE .5108 RRA -.7178 RC3 1.1614 FAU .29103
FDE-4.1960 FRA10.2457 FC-15.2329 BSP 15542
BDE 1.1790 BRA 2.5820 BC3 2.3604 FSP 5668

MID-COURSE EXECUTION ACCURACY
SGT 4168.6 SGR 1563.4 SG3 1726.0
RRT .9557 RRF -.9835 RTF -.9672
SGB 4452.1 R23 -.1665 R13 -.9737
SG1 4431.0 SG2 432.9 THA 19.92

ORBIT DETERMINATION ACCURACY
ST 1831.5 SR 782.1 SS 2645.6
CRT .9775 CRS .9727 CST .9995
LSA 3306.6 MSA 174.5 SSA 33.5
EL1 1985.6 EL2 152.2 ALF 22.80

LAUNCH DATE OCT 16 1964 FLIGHT TIME 270.00 ARRIVAL DATE JUL 13 1965

HELIOCENTRIC CONIC DISTANCE 636.537 EARTH TO MARS

RL 149.11 LAL .00 LOL 22.67 VL 32.842 GAL -5.95 AZL 90.20 HCA 204.10 SMA 189.17 ECC .23480 INC .1984 V1 29.883
RP 232.88 LAP .08 LOP 226.77 VP 20.933 GAP 2.46 AZP 89.82 TAL 327.83 TAP 171.94 RCA 144.75 APO 233.59 V2 23.612
RC 214.210 GL -1.62 GP 10.47 ZAL 136.29 ZAP 138.23 ETS 166.68 ZAE 168.32 ETE 94.53 ZAC 99.24 ETC 255.81 CLP 139.33

PLANETOCENTRIC CONIC

C3 16.275 VHL 4.034 DLA 6.71 RAL 159.97 RAD 6567.7 VEL 11.733 PTH 2.07 VHP 4.078 DPA 8.24 RAP 190.50 ECC 1.2678

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 30 15	2375.66	-23.12	51.95	19.79	106.82	20 9 51	1775.7	-20.60	44.19
90.00	9 12 47	4601.00	12.60	194.74	17.09	64.43	10 29 28	4001.0	9.06	187.86
100.00	20 54 48	2102.99	-24.15	31.54	19.43	108.17	21 29 51	1503.0	-21.44	23.79
100.00	10 30 56	4348.90	13.57	175.72	16.60	63.11	11 43 24	3748.9	9.85	168.90
110.00	22 10 21	1866.53	-26.90	12.48	18.32	111.94	22 41 28	1266.5	-23.68	4.79
110.00	11 31 52	4158.13	16.13	159.79	15.14	59.45	12 41 10	3558.1	11.96	153.17

DIFFERENTIAL CORRECTIONS
TDE 1.0239 TRA-2.4034 TC3 2.0295 BAU .5109
RDE .5072 RRA -.7090 RC3 1.1809 FAU .30269
FDE-4.2607 FRA10.6228 FC-16.1014 BSP 15244
BDE 1.1426 BRA 2.5057 BC3 2.3481 FSP 5936

MID-COURSE EXECUTION ACCURACY
SGT 4075.3 SGR 1566.7 SG3 1804.4
RRT .9542 RRF -.9822 RTF -.9668
SGB 4366.1 R23 -.1632 R13 -.9736
SG1 4343.8 SG2 440.0 THA 20.36

ORBIT DETERMINATION ACCURACY
ST 1783.3 SR 782.5 SS 2672.6
CRT .9765 CRS .9698 CST .9993
LSA 3301.5 MSA 184.2 SSA 33.2
EL1 1941.2 EL2 155.0 ALF 23.35

LAUNCH DATE OCT 16 1964 FLIGHT TIME 272.00 ARRIVAL DATE JUL 15 1965

HELIOCENTRIC CONIC DISTANCE 640.303 EARTH TO MARS

RL	149.11	LAL	.00	LOL	22.67	VL	32.827	GAL	-5.90	AZL	90.12	HCA	205.10	SMA	188.92	ECC	.23349	INC	.1143	V1	29.883
RP	232.51	LAP	.05	LOP	227.77	VP	20.954	GAP	2.10	AZP	89.89	TAL	327.96	TAP	173.07	RCA	144.81	APO	233.03	V2	23.650
RC	216.258	GL	-.95	GP	10.30	ZAL	136.13	ZAP	137.08	ETS	167.36	ZAE	168.27	ETE	101.07	ZAC	99.03	ETC	255.83	CLP	138.10

PLANETOCENTRIC CONIC

C3	16.031	VHL	4.004	DLA	7.40	RAL	160.06	RAD	6567.6	VEL	11.722	PTH	2.07	VHP	3.994	DPA	8.18	RAP	190.23	ECC	1.2638

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 25 16	2394.14	-23.48	53.19	19.85	106.30	20 5 10	1794.1	-21.02	45.38
90.00	9 18 26	4575.63	11.85	193.26	16.91	64.09	10 34 42	3975.6	8.27	186.41
100.00	20 50 10	2120.34	-24.52	32.71	19.50	107.66	21 25 30	1520.3	-21.87	24.91
100.00	10 36 14	4324.66	12.82	174.31	16.42	62.76	11 48 19	3724.7	9.07	167.53
110.00	22 6 31	1881.41	-27.27	13.48	18.42	111.46	22 37 52	1281.4	-24.11	5.73
110.00	11 36 22	4136.36	15.37	158.56	14.95	59.09	12 45 19	3536.4	11.16	151.98

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.9847	TRA	-2.3240	TC3	1.9914	BAU	.4984	SGT	3971.8	SGR	1572.4	SG3	1884.9	ST	1732.0	SR	783.9	SS	2700.1
RDE	.5045	RRA	-.7020	RC3	1.2011	FAU	.31457	RRT	.9524	RRF	-.9810	RTF	-.9661	CRT	.9755	CRS	.9669	CST	.9990
FDE	-4.3268	FRA	11.0123	FC	-16.9882	BSP	14933	SGB	4271.7	R23	-.1606	R13	-.9734	LSA	3296.4	MSA	194.4	SSA	32.9
BDE	1.1064	BRA	2.4277	BC3	2.3256	FSP	6217	SG1	4248.1	SG2	448.0	THA	20.90	EL1	1894.6	EL2	157.6	ALF	24.00

LAUNCH DATE OCT 16 1964 FLIGHT TIME 274.00 ARRIVAL DATE JUL 17 1965

HELIOCENTRIC CONIC DISTANCE 644.080 EARTH TO MARS

RL	149.11	LAL	.00	LOL	22.67	VL	32.814	GAL	-5.86	AZL	90.04	HCA	206.11	SMA	188.68	ECC	.23225	INC	.0389	V1	29.883
RP	232.14	LAP	.02	LOP	228.77	VP	20.977	GAP	1.75	AZP	89.97	TAL	328.08	TAP	174.19	RCA	144.86	APO	232.50	V2	23.689
RC	218.287	GL	-.31	GP	10.15	ZAL	135.96	ZAP	135.89	ETS	167.99	ZAE	168.05	ETE	107.66	ZAC	98.82	ETC	255.85	CLP	136.84

PLANETOCENTRIC CONIC

C3	15.805	VHL	3.976	DLA	8.05	RAL	160.14	RAD	6567.6	VEL	11.713	PTH	2.06	VHP	3.912	DPA	8.15	RAP	189.93	ECC	1.2601

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 20 31	2411.74	-23.81	54.37	19.92	105.79	20 0 43	1811.7	-21.42	46.52
90.00	9 23 49	4551.61	11.13	191.86	16.76	63.79	10 39 41	3951.6	7.52	185.04
100.00	20 45 45	2136.85	-24.85	33.82	19.58	107.17	21 21 22	1536.9	-22.27	25.97
100.00	10 41 17	4301.72	12.10	172.99	16.26	62.46	11 52 59	3701.7	8.32	166.24
110.00	22 2 52	1895.55	-27.62	14.43	18.51	110.99	22 34 27	1295.5	-24.51	6.63
110.00	11 40 40	4115.80	14.65	157.40	14.79	58.76	12 49 16	3515.8	10.41	150.87

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.9446	TRA	-2.2424	TC3	1.9406	BAU	.4846	SGT	3858.3	SGR	1580.2	SG3	1967.5	ST	1677.5	SR	786.1	SS	2727.3
RDE	.5025	RRA	-.6968	RC3	1.2218	FAU	.32664	RRT	.9505	RRF	-.9798	RTF	-.9652	CRT	.9746	CRS	.9639	CST	.9987
FDE	-4.3921	FRA	11.4166	FC	-17.8913	BSP	14607	SGB	4169.4	R23	-.1587	R13	-.9730	LSA	3290.4	MSA	204.9	SSA	32.6
BDE	1.0699	BRA	2.3482	BC3	2.2932	FSP	6512	SG1	4144.3	SG2	457.0	THA	21.55	EL1	1845.6	EL2	160.0	ALF	24.75

LAUNCH DATE OCT 16 1964 FLIGHT TIME 276.00 ARRIVAL DATE JUL 19 1965

HELIOCENTRIC CONIC DISTANCE 647.869 EARTH TO MARS

RL	149.11	LAL	.00	LOL	22.67	VL	32.801	GAL	-5.81	AZL	89.97	HCA	207.11	SMA	188.45	ECC	.23107	INC	.0297	V1	29.883
RP	231.76	LAP	-.02	LOP	229.78	VP	21.001	GAP	1.41	AZP	90.03	TAL	328.20	TAP	175.31	RCA	144.90	APO	232.00	V2	23.728
RC	220.299	GL	.29	GP	10.01	ZAL	135.80	ZAP	134.65	ETS	168.60	ZAE	167.64	ETE	114.10	ZAC	98.62	ETC	255.87	CLP	135.54

PLANETOCENTRIC CONIC

C3	15.598	VHL	3.949	DLA	8.66	RAL	160.21	RAD	6567.6	VEL	11.704	PTH	2.06	VHP	3.834	DPA	8.15	RAP	189.61	ECC	1.2567

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 16 0	2428.53	-24.12	55.51	19.99	105.30	19 56 29	1828.5	-21.79	47.61
90.00	9 28 58	4528.83	10.44	190.54	16.64	63.53	10 44 27	3928.8	6.81	183.75
100.00	20 41 33	2152.60	-25.16	34.88	19.66	106.69	21 17 26	1552.6	-22.64	27.00
100.00	10 46 6	4280.00	11.41	171.74	16.13	62.18	11 57 26	3680.0	7.60	165.02
110.00	21 59 24	1909.01	-27.94	15.34	18.61	110.54	22 31 13	1309.0	-24.89	7.50
110.00	11 44 45	4096.34	13.96	156.31	14.64	58.48	12 53 1	3496.3	9.69	149.82

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.9056	TRA	-2.1562	TC3	1.8811	BAU	.4703	SGT	3734.4	SGR	1590.2	SG3	2052.4	ST	1621.5	SR	789.7	SS	2757.1
RDE	.5018	RRA	-.6925	RC3	1.2445	FAU	.33929	RRT	.9484	RRF	-.9787	RTF	-.9640	CRT	.9739	CRS	.9610	CST	.9984
FDE	-4.4668	FRA	11.8231	FC	-18.8319	BSP	14222	SGB	4058.9	R23	-.1572	R13	-.9725	LSA	3287.4	MSA	215.4	SSA	32.3
BDE	1.0353	BRA	2.2647	BC3	2.2555	FSP	6801	SG1	4032.0	SG2	466.8	THA	22.31	EL1	1796.3	EL2	161.9	ALF	25.60

LAUNCH DATE OCT 16 1964 FLIGHT TIME 278.00 ARRIVAL DATE JUL 21 1965

HELIOCENTRIC CONIC DISTANCE 651.668 EARTH TO MARS

RL	149.11	LAL	.00	LOL	22.67	VL	32.788	GAL	-5.77	AZL	89.90	HCA	208.12	SMA	188.23	ECC	.22996	INC	.1014	V1	29.883
RP	231.38	LAP	-.05	LOP	230.79	VP	21.026	GAP	1.07	AZP	90.09	TAL	328.30	TAP	176.43	RCA	144.95	APO	231.52	V2	23.768
RC	222.292	GL	.85	GP	9.89	ZAL	135.65	ZAP	133.37	ETS	169.17	ZAE	167.06	ETE	120.24	ZAC	98.43	ETC	255.89	CLP	134.19

PLANETOCENTRIC CONIC

C3	15.406	VHL	3.925	DLA	9.24	RAL	160.29	RAD	6567.6	VEL	11.696	PTH	2.06	VHP	3.758	DPA	8.18	RAP	189.25	ECC	1.2536

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 11 42	2444.58	-24.40	56.60	20.07	104.83	19 52 26	1844.6	-22.13	48.66
90.00	9 33 53	4507.22	9.79	189.29	16.53	63.30	10 49 0	3907.2	6.12	182.53
100.00	20 37 34	2167.64	-25.45	35.91	19.74	106.23	21 13 41	1567.6	-22.98	27.98
100.00	10 50 42	4259.39	10.75	170.56	16.02	61.94	12 1 42	3659.4	6.92	163.87
110.00	21 56 6	1921.86	-28.25	16.22	18.72	110.10	22 28 8	1321.9	-25.25	8.33
110.00	11 48 39	4077.93	13.30	155.29	14.52	58.22	12 56 37	3477.9	9.01	148.83

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8662	TRA	-2.0667	TC3	1.8091	BAU	.4550	SGT	3599.7	SGR	1602.0	SG3	2139.2	ST	1562.5	SR	794.0	SS	2786.7
RDE	.5015	RRA	-.6896	RC3	1.2676	FAU	.35214	RRT	.9462	RRF	-.9776	RTF	-.9625	CRT	.9733	CRS	.9580	CST	.9979
FDE	-4.5413	FRA	12.2418	FC	-19.7878	BSP	13814	SGB	3940.0	R23	-.1563	R13	-.9719	LSA	3284.1	MSA	226.2	SSA	32.0
BDE	1.0009	BRA	2.1787	BC3	2.2090	FSP	7104	SG1	3911.0	SG2	477.3	THA	23.20	EL1	1745.0	EL2	163.2	ALF	26.57

LAUNCH DATE OCT 16 1964 FLIGHT TIME 280.00 ARRIVAL DATE JUL 23 1965

HELIOCENTRIC CONIC DISTANCE 655.377 EARTH TO MARS

RL 149.11 LAL .00 LOL 22.67 VL 32.777 GAL -5.73 AZL 89.83 HCA 209.14 SMA 188.03 ECC .22891 INC .1664 V1 29.883
RP 231.01 LAP -.08 LOP 231.81 VP 21.052 GAP .73 AZP 90.15 TAL 328.40 TAP 177.54 RCA 144.99 APO 231.07 V2 23.807
RC 224.266 GL 1.39 GP 9.77 ZAL 135.50 ZAP 132.04 ETS 169.72 ZAE 166.31 ETE 125.93 ZAC 98.24 ETC 255.91 CLP 132.81

PLANETOCENTRIC CONIC

C3 15.231 VHL 3.903 DLA 9.79 RAL 160.37 RAD 6567.6 VEL 11.688 PTH 2.06 VHP 3.685 DPA 8.23 RAP 188.87 ECC 1.2507

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 7 35	2459.94	-24.67	57.64	20.15	104.36	19 48 35	1859.9	-22.45	49.67
90.00	9 38 36	4486.70	9.16	188.12	16.45	63.09	10 53 23	3886.7	5.47	181.37
100.00	20 33 45	2182.03	-25.72	36.89	19.83	105.78	21 10 8	1582.0	-23.31	28.92
100.00	10 55 7	4239.84	10.13	169.45	15.94	61.72	12 5 47	3639.8	6.27	162.79
110.00	21 52 58	1934.14	-28.53	17.06	18.83	109.68	22 25 13	1334.1	-25.58	9.12
110.00	11 52 23	4060.50	12.68	154.33	14.43	57.99	13 0 4	3460.5	8.36	147.90

DIFFERENTIAL CORRECTIONS
TDE .8257 TRA-1.9743 TC3 1.7211 BAU .4380
RDE .5017 RRA -.6881 RC3 1.2906 FAU .36503
FDE-4.6145 FRA12.6739 FC-20.7485 BSP 13401
BDE .9661 BRA 2.0907 BC3 2.1513 FSP 7425

MID-COURSE EXECUTION ACCURACY
SGT 3453.3 SGR 1614.9 SG3 2227.5
RRT .9434 RRF -.9765 RTF -.9604
SGB 3812.3 R23 -.1564 R13 -.9711
SG1 3780.7 SG2 489.3 THA 24.24

ORBIT DETERMINATION ACCURACY
ST 1499.9 SR 798.7 SS 2815.9
CRT .9728 CRS .9550 CST .9974
LSA 3280.2 MSA 237.1 SSA 31.6
EL1 1691.3 EL2 164.1 ALF 27.67

LAUNCH DATE OCT 16 1964 FLIGHT TIME 282.00 ARRIVAL DATE JUL 25 1965

HELIOCENTRIC CONIC DISTANCE 659.297 EARTH TO MARS

RL 149.11 LAL .00 LOL 22.67 VL 32.766 GAL -5.70 AZL 89.77 HCA 210.16 SMA 187.83 ECC .22791 INC .2263 V1 29.883
RP 230.62 LAP -.11 LOP 232.82 VP 21.080 GAP .40 AZP 90.20 TAL 328.48 TAP 178.64 RCA 145.02 APO 230.64 V2 23.847
RC 226.222 GL 1.91 GP 9.67 ZAL 135.36 ZAP 130.67 ETS 170.25 ZAE 165.41 ETE 131.12 ZAC 98.05 ETC 255.94 CLP 131.38

PLANETOCENTRIC CONIC

C3 15.070 VHL 3.882 DLA 10.31 RAL 160.44 RAD 6567.6 VEL 11.681 PTH 2.05 VHP 3.615 DPA 8.30 RAP 188.46 ECC 1.2480

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 3 41	2474.68	-24.91	58.65	20.24	103.92	19 44 56	1874.7	-22.75	50.65
90.00	9 43 8	4467.20	8.55	187.00	16.39	62.90	10 57 35	3867.2	4.85	180.27
100.00	20 30 9	2195.82	-25.98	37.84	19.93	105.34	21 6 44	1595.8	-23.62	29.83
100.00	10 59 21	4221.29	9.53	168.40	15.87	61.53	12 9 43	3621.3	5.65	161.76
110.00	21 50 1	1945.90	-28.80	17.87	18.94	109.26	22 22 27	1345.9	-25.90	9.89
110.00	11 55 59	4043.98	12.08	153.43	14.35	57.78	13 3 23	3444.0	7.74	147.02

DIFFERENTIAL CORRECTIONS
TDE .7861 TRA-1.8766 TC3 1.6242 BAU .4211
RDE .5027 RRA -.6870 RC3 1.3151 FAU .37847
FDE-4.6960 FRA13.1060 FC-21.7423 BSP 12916
BDE .9331 BRA 1.9984 BC3 2.0899 FSP 7736

MID-COURSE EXECUTION ACCURACY
SGT 3295.7 SGR 1629.5 SG3 2317.6
RRT .9403 RRF -.9755 RTF -.9578
SGB 3676.5 R23 -.1569 R13 -.9702
SG1 3642.1 SG2 501.8 THA 25.45

ORBIT DETERMINATION ACCURACY
ST 1435.6 SR 804.4 SS 2847.2
CRT .9726 CRS .9522 CST .9967
LSA 3279.0 MSA 247.9 SSA 31.3
EL1 1637.4 EL2 163.9 ALF 28.91

LAUNCH DATE OCT 16 1964 FLIGHT TIME 284.00 ARRIVAL DATE JUL 27 1965

HELIOCENTRIC CONIC DISTANCE 663.127 EARTH TO MARS

RL 149.11 LAL .00 LOL 22.67 VL 32.755 GAL -5.66 AZL 89.72 HCA 211.18 SMA 187.65 ECC .22698 INC .2833 V1 29.883
RP 230.24 LAP -.15 LOP 233.84 VP 21.109 GAP .08 AZP 90.24 TAL 328.56 TAP 179.74 RCA 145.06 APO 230.24 V2 23.887
RC 228.159 GL 2.39 GP 9.57 ZAL 135.23 ZAP 129.25 ETS 170.76 ZAE 164.37 ETE 135.80 ZAC 97.86 ETC 255.97 CLP 129.92

PLANETOCENTRIC CONIC

C3 14.923 VHL 3.863 DLA 10.81 RAL 160.53 RAD 6567.6 VEL 11.675 PTH 2.05 VHP 3.548 DPA 8.40 RAP 188.02 ECC 1.2456

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 59 58	2488.82	-25.14	59.63	20.34	103.48	19 41 27	1888.8	-23.04	51.59
90.00	9 47 30	4448.68	7.98	185.94	16.35	62.74	11 1 38	3848.7	4.26	179.24
100.00	20 26 43	2209.05	-26.21	38.75	20.04	104.91	21 3 32	1609.0	-23.91	30.71
100.00	11 3 26	4203.68	8.95	167.41	15.83	61.36	12 13 30	3603.7	5.06	160.78
110.00	21 47 12	1957.16	-29.05	18.65	19.07	108.86	22 19 49	1357.2	-26.20	10.63
110.00	11 59 26	4028.33	11.51	152.57	14.30	57.59	13 6 34	3428.3	7.15	146.19

DIFFERENTIAL CORRECTIONS
TDE .7460 TRA-1.7751 TC3 1.5123 BAU .4030
RDE .5041 RRA -.6870 RC3 1.3394 FAU .39193
FDE-4.7764 FRA13.5493 FC-22.7368 BSP 12415
BDE .9003 BRA 1.9035 BC3 2.0201 FSP 8061

MID-COURSE EXECUTION ACCURACY
SGT 3126.3 SGR 1645.0 SG3 2408.9
RRT .9366 RRF -.9746 RTF -.9545
SGB 3532.7 R23 -.1582 R13 -.9690
SG1 3494.9 SG2 515.5 THA 26.87

ORBIT DETERMINATION ACCURACY
ST 1368.2 SR 810.5 SS 2878.1
CRT .9727 CRS .9493 CST .9959
LSA 3277.8 MSA 258.9 SSA 31.0
EL1 1581.9 EL2 162.7 ALF 30.30

LAUNCH DATE OCT 16 1964 FLIGHT TIME 286.00 ARRIVAL DATE JUL 29 1965

HELIOCENTRIC CONIC DISTANCE 666.966 EARTH TO MARS

RL 149.11 LAL .00 LOL 22.67 VL 32.745 GAL -5.63 AZL 89.66 HCA 212.20 SMA 187.48 ECC .22610 INC .3372 V1 29.883
RP 229.86 LAP -.18 LOP 234.87 VP 21.139 GAP -.24 AZP 90.29 TAL 328.63 TAP 180.83 RCA 145.09 APO 229.87 V2 23.927
RC 230.076 GL 2.86 GP 9.48 ZAL 135.11 ZAP 127.79 ETS 171.25 ZAE 163.19 ETE 139.97 ZAC 97.67 ETC 256.00 CLP 128.41

PLANETOCENTRIC CONIC

C3 14.790 VHL 3.846 DLA 11.28 RAL 160.61 RAD 6567.6 VEL 11.669 PTH 2.05 VHP 3.484 DPA 8.52 RAP 187.54 ECC 1.2434

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 56 26	2502.40	-25.35	60.57	20.45	103.05	19 38 8	1902.4	-23.30	52.49
90.00	9 51 42	4431.08	7.43	184.94	16.33	62.60	11 5 33	3831.1	3.70	178.25
100.00	20 23 27	2221.74	-26.43	39.63	20.16	104.50	21 0 29	1621.7	-24.18	31.55
100.00	11 7 22	4186.97	8.41	166.47	15.80	61.21	12 17 9	3587.0	4.50	159.86
110.00	21 44 33	1967.96	-29.29	19.40	19.20	108.47	22 17 21	1368.0	-26.48	11.34
110.00	12 2 45	4013.52	10.97	151.77	14.26	57.42	13 9 39	3413.5	6.59	145.40

DIFFERENTIAL CORRECTIONS
TDE .7056 TRA-1.6691 TC3 1.3880 BAU .3848
RDE .5060 RRA -.6876 RC3 1.3639 FAU .40560
FDE-4.8592 FRA13.9961 FC-23.7424 BSP 11879
BDE .8682 BRA 1.8052 BC3 1.9459 FSP 8386

MID-COURSE EXECUTION ACCURACY
SGT 2945.3 SGR 1661.3 SG3 2501.1
RRT .9322 RRF -.9737 RTF -.9503
SGB 3381.5 R23 -.1600 R13 -.9676
SG1 3339.7 SG2 530.3 THA 28.52

ORBIT DETERMINATION ACCURACY
ST 1298.0 SR 817.0 SS 2909.2
CRT .9730 CRS .9466 CST .9949
LSA 3277.5 MSA 269.9 SSA 30.6
EL1 1525.3 EL2 160.3 ALF 31.88

LAUNCH DATE OCT 16 1964 FLIGHT TIME 288.00 ARRIVAL DATE JUL 31 1965

HELIOCENTRIC CONIC DISTANCE 670.815 EARTH TO MARS

RL	149.11	LAL	.00	LOL	22.67	VL	32.736	GAL	-5.61	AZL	89.61	HCA	213.23	SMA	187.31	ECC	.22528	INC	.3882	V1	29.883
RP	229.47	LAP	-.21	LOP	235.89	VP	21.170	GAP	-.56	AZP	90.32	TAL	328.69	TAP	181.92	RCA	145.11	APO	229.51	V2	23.968
RC	231.973	GL	3.30	GP	9.40	ZAL	135.00	ZAP	126.28	ETS	171.73	ZAE	161.91	ETE	143.67	ZAC	97.47	ETC	256.03	CLP	126.86

PLANETOCENTRIC CONIC

C3	14.669	VHL	3.830	DLA	11.72	RAL	160.70	RAD	6567.6	VEL	11.664	PTH	2.05	VHP	3.423	DPA	8.66	RAP	187.03	ECC	1.2414

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 53 5	2515.45	-25.55	61.47	20.57	102.64	19 35 0	1915.5	-23.55	53.37
90.00	9 55 46	4414.39	6.90	184.00	16.33	62.47	11 9 20	3814.4	3.16	177.31
100.00	20 20 22	2233.94	-26.64	40.48	20.28	104.10	20 57 36	1633.9	-24.43	32.37
100.00	11 11 9	4171.13	7.89	165.58	15.80	61.07	12 20 40	3571.1	3.97	158.98
110.00	21 42 3	1978.32	-29.51	20.13	19.34	108.10	22 15 2	1378.3	-26.75	12.03
110.00	12 5 57	3999.51	10.45	151.01	14.25	57.27	13 12 37	3399.5	6.06	144.66

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6646	TRA	-1.5587	TC3	1.2488	BAU	.3662	SGT	2752.2	SGR	1678.3	SG3	2593.9	ST	1224.6	SR	823.8	SS	2940.4
RDE	.5082	RRA	-.6889	RC3	1.3883	FAU	.41936	RRT	.9265	RRF	-.9728	RTF	-.9446	CRT	.9737	CRS	.9438	CST	.9937
FDE	-4.9429	FRA	14.4475	FC	-24.7499	BSP	11309	SGB	3223.5	R23	-.1628	R13	-.9660	LSA	3277.9	MSA	280.7	SSA	30.3
BDE	.8366	BRA	1.7041	BC3	1.8673	FSP	8713	SG1	3176.8	SG2	547.1	THA	30.47	EL1	1467.6	EL2	156.6	ALF	33.66

LAUNCH DATE OCT 16 1964 FLIGHT TIME 290.00 ARRIVAL DATE AUG 2 1965

HELIOCENTRIC CONIC DISTANCE 674.674 EARTH TO MARS

RL	149.11	LAL	.00	LOL	22.67	VL	32.727	GAL	-5.58	AZL	89.56	HCA	214.26	SMA	187.16	ECC	.22452	INC	.4361	V1	29.883
RP	229.09	LAP	-.25	LOP	236.93	VP	21.202	GAP	-.87	AZP	90.36	TAL	328.74	TAP	183.00	RCA	145.14	APO	229.18	V2	24.009
RC	233.848	GL	3.73	GP	9.32	ZAL	134.90	ZAP	124.73	ETS	172.19	ZAE	160.51	ETE	146.96	ZAC	97.27	ETC	256.07	CLP	125.26

PLANETOCENTRIC CONIC

C3	14.561	VHL	3.816	DLA	12.14	RAL	160.79	RAD	6567.6	VEL	11.660	PTH	2.05	VHP	3.365	DPA	8.82	RAP	186.49	ECC	1.2396

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 49 55	2527.99	-25.73	62.34	20.70	102.24	19 32 3	1928.0	-23.79	54.21
90.00	9 59 41	4398.55	6.40	183.10	16.35	62.36	11 12 59	3798.5	2.65	176.43
100.00	20 17 28	2245.65	-26.83	41.30	20.42	103.71	20 54 53	1645.7	-24.68	33.16
100.00	11 14 49	4156.13	7.39	164.74	15.82	60.95	12 24 5	3556.1	3.46	158.16
110.00	21 39 43	1988.27	-29.72	20.83	19.50	107.73	22 12 51	1388.3	-27.00	12.69
110.00	12 9 3	3986.27	9.96	150.29	14.26	57.13	13 15 29	3386.3	5.56	143.97

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6233	TRA	-1.4430	TC3	1.0964	BAU	.3481	SGT	2547.1	SGR	1695.6	SG3	2686.8	ST	1148.3	SR	831.0	SS	2972.0
RDE	.5109	RRA	-.6904	RC3	1.4128	FAU	.43329	RRT	.9192	RRF	-.9720	RTF	-.9371	CRT	.9748	CRS	.9412	CST	.9922
FDE	-5.0302	FRA	14.8960	FC	-25.7617	BSP	10707	SGB	3059.9	R23	-.1662	R13	-.9640	LSA	3279.6	MSA	291.4	SSA	30.0
BDE	.8059	BRA	1.5996	BC3	1.7883	FSP	9038	SG1	3007.2	SG2	565.6	THA	32.77	EL1	1409.4	EL2	151.1	ALF	35.67

LAUNCH DATE OCT 16 1964 FLIGHT TIME 292.00 ARRIVAL DATE AUG 4 1965

HELIOCENTRIC CONIC DISTANCE 678.542 EARTH TO MARS

RL	149.11	LAL	.00	LOL	22.67	VL	32.718	GAL	-5.56	AZL	89.52	HCA	215.29	SMA	187.01	ECC	.22381	INC	.4822	V1	29.883
RP	228.70	LAP	-.28	LOP	237.96	VP	21.235	GAP	-1.17	AZP	90.39	TAL	328.78	TAP	184.07	RCA	145.16	APO	228.87	V2	24.049
RC	235.703	GL	4.14	GP	9.24	ZAL	134.82	ZAP	123.13	ETS	172.64	ZAE	159.02	ETE	149.87	ZAC	97.07	ETC	256.11	CLP	123.63

PLANETOCENTRIC CONIC

C3	14.465	VHL	3.803	DLA	12.54	RAL	160.89	RAD	6567.6	VEL	11.655	PTH	2.05	VHP	3.310	DPA	9.01	RAP	185.91	ECC	1.2380

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 46 55	2540.05	-25.91	63.18	20.84	101.85	19 29 15	1940.1	-24.01	55.03
90.00	10 3 28	4383.55	5.93	182.25	16.39	62.26	11 16 32	3783.5	2.17	175.59
100.00	20 14 43	2256.90	-27.01	42.08	20.57	103.33	20 52 20	1656.9	-24.90	33.91
100.00	11 18 21	4141.93	6.92	163.95	15.85	60.85	12 27 23	3541.9	2.98	157.38
110.00	21 37 31	1997.83	-29.91	21.50	19.66	107.38	22 10 49	1397.8	-27.24	13.33
110.00	12 12 3	3973.77	9.50	149.62	14.28	57.01	13 18 17	3373.8	5.09	143.31

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5810	TRA	-1.3228	TC3	.9284	BAU	.3307	SGT	2330.7	SGR	1712.8	SG3	2779.0	ST	1068.4	SR	838.2	SS	3002.2
RDE	.5136	RRA	-.6924	RC3	1.4361	FAU	.44696	RRT	.9093	RRF	-.9711	RTF	-.9267	CRT	.9762	CRS	.9385	CST	.9902
FDE	-5.1136	FRA	15.3489	FC	-26.7519	BSP	10094	SGB	2892.4	R23	-.1700	R13	-.9619	LSA	3281.1	MSA	302.1	SSA	29.7
BDE	.7754	BRA	1.4930	BC3	1.7101	FSP	9369	SG1	2832.3	SG2	586.5	THA	35.50	EL1	1350.3	EL2	143.8	ALF	37.95

LAUNCH DATE OCT 16 1964 FLIGHT TIME 294.00 ARRIVAL DATE AUG 6 1965

HELIOCENTRIC CONIC DISTANCE 682.419 EARTH TO MARS

RL	149.11	LAL	.00	LOL	22.67	VL	32.710	GAL	-5.54	AZL	89.47	HCA	216.33	SMA	186.87	ECC	.22315	INC	.5262	V1	29.883
RP	228.31	LAP	-.31	LOP	239.00	VP	21.270	GAP	-1.47	AZP	90.42	TAL	328.81	TAP	185.14	RCA	145.17	APO	228.58	V2	24.090
RC	237.537	GL	4.53	GP	9.17	ZAL	134.74	ZAP	121.50	ETS	173.07	ZAE	157.45	ETE	152.45	ZAC	96.86	ETC	256.16	CLP	121.95

PLANETOCENTRIC CONIC

C3	14.380	VHL	3.792	DLA	12.92	RAL	161.00	RAD	6567.6	VEL	11.652	PTH	2.05	VHP	3.258	DPA	9.21	RAP	185.30	ECC	1.2367

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 44 7	2551.64	-26.06	63.99	21.00	101.48	19 26 38	1951.6	-24.22	55.81
90.00	10 7 8	4369.36	5.48	181.45	16.45	62.17	11 19 57	3769.4	1.71	174.80
100.00	20 12 9	2267.71	-27.17	42.84	20.73	102.96	20 49 57	1667.7	-25.12	34.65
100.00	11 21 47	4128.52	6.47	163.20	15.91	60.75	12 30 35	3528.5	2.53	156.64
110.00	21 35 28	2007.00	-30.10	22.15	19.84	107.03	22 8 55	1407.0	-27.47	13.95
110.00	12 14 57	3961.99	9.06	148.99	14.33	56.90	13 20 59	3362.0	4.64	142.69

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5386	TRA	-1.1974	TC3	.7472	BAU	.3151	SGT	2104.5	SGR	1729.9	SG3	2870.4	ST	986.2	SR	845.5	SS	3032.6
RDE	.5167	RRA	-.6945	RC3	1.4588	FAU	.46061	RRT	.8956	RRF	-.9703	RTF	-.9120	CRT	.9783	CRS	.9360	CST	.9877
FDE	-5.1993	FRA	15.7965	FC	-27.7314	BSP	9457	SGB	2724.3	R23	-.1737	R13	-.9595	LSA	3284.1	MSA	312.7	SSA	29.4
BDE	.7464	BRA	1.3843	BC3	1.6390	FSP	9695	SG1	2655.2	SG2	609.8	THA	38.79	EL1	1292.2	EL2	133.9	ALF	40.51

LAUNCH DATE OCT 16 1964 FLIGHT TIME 296.00 ARRIVAL DATE AUG 8 1965

HELIOCENTRIC CONIC DISTANCE 686.306 EARTH TO MARS

RL 149.11 LAL .00 LOL 22.67 VL 32.703 GAL -5.53 AZL 89.43 HCA 217.37 SMA 186.75 ECC .22254 INC .5684 V1 29.883
RP 227.92 LAP -.35 LOP 240.04 VP 21.305 GAP -1.77 AZP 90.45 TAL 328.83 TAP 186.20 RCA 145.19 APO 228.30 V2 24.132
RC 239.350 GL 4.90 GP 9.10 ZAL 134.68 ZAP 119.81 ETS 173.50 ZAE 155.80 ETE 154.76 ZAC 96.65 ETC 256.21 CLP 120.23

PLANETOCENTRIC CONIC

C3 14.306 VHL 3.782 DLA 13.28 RAL 161.11 RAD 6567.6 VEL 11.649 PTH 2.04 VHP 3.209 DPA 9.43 RAP 184.66 ECC 1.2354

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 41 28	2562.77	-26.21	64.78	21.16	101.11	19 24 11	1962.8	-24.42	56.57
90.00	10 10 41	4355.95	5.05	180.70	16.53	62.10	11 23 16	3756.0	1.28	174.05
100.00	20 9 44	2278.09	-27.33	43.57	20.90	102.61	20 47 43	1678.1	-25.32	35.35
100.00	11 25 5	4115.86	6.05	162.50	15.98	60.67	12 33 41	3515.9	2.10	155.94
110.00	21 33 34	2015.80	-30.27	22.78	20.02	106.70	22 7 10	1415.8	-27.69	14.54
110.00	12 17 45	3950.91	8.65	148.40	14.39	56.80	13 23 36	3350.9	4.22	142.11

DIFFERENTIAL CORRECTIONS

TDE .4980 TRA-1.0647 TC3 .5587 BAU .3030
RDE .5206 RRA -.6960 RC3 1.4823 FAU .47469
FDE-5.2979 FRA16.2250 FC-28.7259 BSP 8756
BDE .7205 BRA 1.2721 BC3 1.5841 FSP 9985

MID-COURSE EXECUTION ACCURACY

SGT 1869.2 SGR 1747.3 SG3 2960.8
RRT .8770 RRF -.9696 RTF -.8912
SGB 2558.7 R23 -.1756 R13 -.9573
SG1 2479.1 SG2 633.1 THA 42.80

ORBIT DETERMINATION ACCURACY

ST 903.5 SR 853.7 SS 3065.1
CRT .9813 CRS .9338 CST .9839
LSA 3291.6 MSA 323.4 SSA 28.9
EL1 1237.3 EL2 119.8 ALF 43.34

LAUNCH DATE OCT 16 1964 FLIGHT TIME 298.00 ARRIVAL DATE AUG 10 1965

HELIOCENTRIC CONIC DISTANCE 690.200 EARTH TO MARS

RL 149.11 LAL .00 LOL 22.67 VL 32.696 GAL -5.51 AZL 89.39 HCA 218.42 SMA 186.63 ECC .22198 INC .6084 V1 29.883
RP 227.53 LAP -.38 LOP 241.08 VP 21.341 GAP -2.06 AZP 90.48 TAL 328.84 TAP 187.26 RCA 145.20 APO 228.05 V2 24.173
RC 241.142 GL 5.26 GP 9.03 ZAL 134.63 ZAP 118.09 ETS 173.92 ZAE 154.07 ETE 156.83 ZAC 96.43 ETC 256.26 CLP 118.48

PLANETOCENTRIC CONIC

C3 14.243 VHL 3.774 DLA 13.62 RAL 161.23 RAD 6567.6 VEL 11.646 PTH 2.04 VHP 3.163 DPA 9.66 RAP 183.98 ECC 1.2344

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 39 1	2573.45	-26.35	65.53	21.34	100.76	19 21 54	1973.4	-24.60	57.30
90.00	10 14 6	4343.34	4.65	179.99	16.63	62.04	11 26 30	3743.3	.87	173.35
100.00	20 7 31	2288.05	-27.48	44.28	21.09	102.26	20 45 39	1688.0	-25.51	36.03
100.00	11 28 18	4103.97	5.66	161.84	16.08	60.60	12 36 42	3504.0	1.70	155.29
110.00	21 31 49	2024.25	-30.43	23.38	20.22	106.37	22 5 33	1424.3	-27.89	15.11
110.00	12 20 29	3940.53	8.26	147.84	14.48	56.71	13 26 9	3340.5	3.83	141.56

DIFFERENTIAL CORRECTIONS

TDE .4531 TRA -.9299 TC3 .3456 BAU .2935
RDE .5238 RRA -.6983 RC3 1.5018 FAU .48759
FDE-5.3762 FRA16.6625 FC-29.6363 BSP 8147
BDE .6926 BRA 1.1629 BC3 1.5411 FSP 10311

MID-COURSE EXECUTION ACCURACY

SGT 1628.2 SGR 1762.8 SG3 3047.9
RRT .8457 RRF -.9687 RTF -.8576
SGB 2399.6 R23 -.1763 R13 -.9553
SG1 2305.9 SG2 664.3 THA 47.69

ORBIT DETERMINATION ACCURACY

ST 814.3 SR 860.6 SS 3092.5
CRT .9844 CRS .9313 CST .9792
LSA 3294.7 MSA 333.6 SSA 28.7
EL1 1180.2 EL2 104.4 ALF 46.61

LAUNCH DATE OCT 16 1964 FLIGHT TIME 300.00 ARRIVAL DATE AUG 12 1965

HELIOCENTRIC CONIC DISTANCE 694.104 EARTH TO MARS

RL 149.11 LAL .00 LOL 22.67 VL 32.689 GAL -5.50 AZL 89.35 HCA 219.47 SMA 186.51 ECC .22147 INC .6469 V1 29.883
RP 227.14 LAP -.41 LOP 242.13 VP 21.378 GAP -2.35 AZP 90.50 TAL 328.84 TAP 188.31 RCA 145.21 APO 227.82 V2 24.214
RC 242.914 GL 5.60 GP 8.96 ZAL 134.59 ZAP 116.33 ETS 174.33 ZAE 152.28 ETE 158.68 ZAC 96.20 ETC 256.32 CLP 116.68

PLANETOCENTRIC CONIC

C3 14.191 VHL 3.767 DLA 13.93 RAL 161.36 RAD 6567.6 VEL 11.644 PTH 2.04 VHP 3.121 DPA 9.91 RAP 183.28 ECC 1.2336

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 36 44	2583.69	-26.48	66.25	21.54	100.42	19 19 48	1983.7	-24.77	58.00
90.00	10 17 26	4331.48	4.27	179.33	16.75	61.98	11 29 37	3731.5	.49	172.69
100.00	20 5 27	2297.60	-27.61	44.96	21.29	101.93	20 43 44	1697.6	-25.69	36.68
100.00	11 31 24	4092.80	5.28	161.22	16.19	60.54	12 39 37	3492.8	1.32	154.68
110.00	21 30 13	2032.35	-30.59	23.96	20.44	106.06	22 4 5	1432.4	-28.08	15.66
110.00	12 23 7	3930.81	7.90	147.32	14.58	56.63	13 28 38	3330.8	3.46	141.06

DIFFERENTIAL CORRECTIONS

TDE .4094 TRA -.7880 TC3 .1246 BAU .2896
RDE .5277 RRA -.6999 RC3 1.5214 FAU .50067
FDE-5.4660 FRA17.0759 FC-30.5430 BSP 7520
BDE .6679 BRA 1.0540 BC3 1.5265 FSP 10598

MID-COURSE EXECUTION ACCURACY

SGT 1386.2 SGR 1777.9 SG3 3132.7
RRT .7960 RRF -.9679 RTF -.8034
SGB 2254.4 R23 -.1709 R13 -.9543
SG1 2144.4 SG2 695.7 THA 53.77

ORBIT DETERMINATION ACCURACY

ST 724.6 SR 868.1 SS 3121.5
CRT .9885 CRS .9291 CST .9719
LSA 3302.1 MSA 343.8 SSA 28.4
EL1 1127.6 EL2 84.4 ALF 50.21

LAUNCH DATE OCT 16 1964 FLIGHT TIME 302.00 ARRIVAL DATE AUG 14 1965

HELIOCENTRIC CONIC DISTANCE 698.016 EARTH TO MARS

RL 149.11 LAL .00 LOL 22.67 VL 32.683 GAL -5.50 AZL 89.32 HCA 220.52 SMA 186.41 ECC .22101 INC .6837 V1 29.883
RP 226.75 LAP -.44 LOP 243.19 VP 21.415 GAP -2.63 AZP 90.52 TAL 328.83 TAP 189.35 RCA 145.21 APO 227.61 V2 24.256
RC 244.666 GL 5.92 GP 8.89 ZAL 134.57 ZAP 114.53 ETS 174.73 ZAE 150.43 ETE 160.35 ZAC 95.97 ETC 256.38 CLP 114.85

PLANETOCENTRIC CONIC

C3 14.150 VHL 3.762 DLA 14.23 RAL 161.50 RAD 6567.6 VEL 11.642 PTH 2.04 VHP 3.082 DPA 10.17 RAP 182.54 ECC 1.2329

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 34 38	2593.50	-26.60	66.94	21.74	100.09	19 17 51	1993.5	-24.93	58.67
90.00	10 20 38	4320.37	3.92	178.70	16.88	61.93	11 32 39	3720.4	.13	172.07
100.00	20 3 33	2306.74	-27.74	45.61	21.50	101.61	20 42 0	1706.7	-25.86	37.31
100.00	11 34 24	4082.37	4.93	160.64	16.32	60.48	12 42 27	3482.4	.96	154.11
110.00	21 28 46	2040.12	-30.73	24.52	20.66	105.76	22 2 46	1440.1	-28.27	16.19
110.00	12 25 41	3921.76	7.56	146.84	14.70	56.56	13 31 3	3321.8	3.11	140.58

DIFFERENTIAL CORRECTIONS

TDE .3641 TRA -.6414 TC3 -.1104 BAU .2919
RDE .5315 RRA -.7011 RC3 1.5389 FAU .51317
FDE-5.5491 FRA17.4758 FC-31.3969 BSP 6958
BDE .6443 BRA .9503 BC3 1.5428 FSP 10881

MID-COURSE EXECUTION ACCURACY

SGT 1153.4 SGR 1791.6 SG3 3213.7
RRT .7081 RRF -.9671 RTF -.7087
SGB 2130.8 R23 -.1555 R13 -.9551
SG1 2002.3 SG2 728.7 THA 61.35

ORBIT DETERMINATION ACCURACY

ST 631.7 SR 875.2 SS 3148.1
CRT .9928 CRS .9268 CST .9609
LSA 3309.0 MSA 353.7 SSA 28.0
EL1 1077.6 EL2 61.3 ALF 54.24

LAUNCH DATE OCT 16 1964 FLIGHT TIME 304.00 ARRIVAL DATE AUG 16 1965

HELIOCENTRIC CONIC DISTANCE 701.937 EARTH TO MARS

RL	149.11	LAL	.00	LOL	22.67	VL	32.677	GAL	-5.49	AZL	89.28	HCA	221.58	SMA	186.31	ECC	.22060	INC	.7191	V1	29.883
RP	226.36	LAP	-.48	LOP	244.24	VP	21.454	GAP	-2.91	AZP	90.54	TAL	328.80	TAP	190.38	RCA	145.21	APO	227.41	V2	24.297
RC	246.398	GL	6.24	GP	8.82	ZAL	134.57	ZAP	112.69	ETS	175.12	ZAE	148.52	ETE	161.87	ZAC	95.72	ETC	256.45	CLP	112.98

PLANETOCENTRIC CONIC

C3	14.119	VHL	3.758	DLA	14.51	RAL	161.65	RAD	6567.6	VEL	11.641	PTH	2.04	VHP	3.046	DPA	10.45	RAP	181.77	ECC	1.2324

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 32 42	2602.89	-26.71	67.61	21.97	99.78	19 16 5	2002.9	-25.09	59.32
90.00	10 23 45	4310.01	3.58	178.12	17.04	61.89	11 35 35	3710.0	-.20	171.49
100.00	20 1 49	2315.49	-27.86	46.23	21.73	101.30	20 40 25	1715.5	-26.01	37.91
100.00	11 37 19	4072.65	4.61	160.11	16.47	60.43	12 45 12	3472.6	.63	153.57
110.00	21 27 27	2047.55	-30.87	25.06	20.90	105.47	22 1 35	1447.6	-28.44	16.70
110.00	12 28 10	3913.35	7.25	146.40	14.85	56.50	13 33 24	3313.4	2.79	140.14

DIFFERENTIAL CORRECTIONS

TDE	.3177	TRA	-.4901	TC3	-.3606	BAU	.3010
RDE	.5352	RRA	-.7022	RC3	1.5534	FAU	.52477
FDE	-5.6261	FRA	17.8624	FC	-32.1777	BSP	6495
BDE	.6224	BRA	.8563	BC3	1.5947	FSP	11154

MID-COURSE EXECUTION ACCURACY

SGT	950.8	SGR	1803.4	SG3	3289.9		
RRT	.5440	RRF	-.9662	RTF	-.5337		
SGB	2038.7	R23	-.1248	R13	-.9582		
SG1	1891.5	SG2	760.7	THA	70.77		

ORBIT DETERMINATION ACCURACY

ST	537.1	SR	881.7	SS	3172.7
CRT	.9967	CRS	.9245	CST	.9429
LSA	3316.5	MSA	363.4	SSA	27.7
EL1	1031.7	EL2	37.2	ALF	58.69

LAUNCH DATE OCT 16 1964 FLIGHT TIME 306.00 ARRIVAL DATE AUG 18 1965

HELIOCENTRIC CONIC DISTANCE 705.866 EARTH TO MARS

RL	149.11	LAL	.00	LOL	22.67	VL	32.672	GAL	-5.49	AZL	89.25	HCA	222.64	SMA	186.22	ECC	.22024	INC	.7534	V1	29.883
RP	225.97	LAP	-.51	LOP	245.30	VP	21.493	GAP	-3.18	AZP	90.55	TAL	328.77	TAP	191.40	RCA	145.21	APO	227.23	V2	24.339
RC	248.110	GL	6.54	GP	8.75	ZAL	134.57	ZAP	110.82	ETS	175.51	ZAE	146.57	ETE	163.25	ZAC	95.48	ETC	256.52	CLP	111.08

PLANETOCENTRIC CONIC

C3	14.098	VHL	3.755	DLA	14.78	RAL	161.81	RAD	6567.6	VEL	11.640	PTH	2.04	VHP	3.013	DPA	10.73	RAP	180.97	ECC	1.2320

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 30 58	2611.86	-26.81	68.25	22.20	99.47	19 14 30	2011.9	-25.23	59.94
90.00	10 26 45	4300.39	3.27	177.58	17.21	61.86	11 38 25	3700.4	-.51	170.95
100.00	20 0 16	2323.85	-27.97	46.83	21.97	101.01	20 39 0	1723.9	-26.16	38.49
100.00	11 40 8	4063.63	4.30	159.61	16.64	60.39	12 47 51	3463.6	.33	153.08
110.00	21 26 18	2054.66	-31.00	25.57	21.16	105.19	22 0 33	1454.7	-28.60	17.19
110.00	12 30 35	3905.59	6.95	145.98	15.01	56.45	13 35 41	3305.6	2.49	139.74

DIFFERENTIAL CORRECTIONS

TDE	.2705	TRA	-.3333	TC3	-.6221	BAU	.3175
RDE	.5389	RRA	-.7026	RC3	1.5656	FAU	.53570
FDE	-5.6989	FRA	18.2255	FC	-32.8972	BSP	6168
BDE	.6030	BRA	.7777	BC3	1.6847	FSP	11414

MID-COURSE EXECUTION ACCURACY

SGT	815.7	SGR	1813.3	SG3	3361.0		
RRT	.2525	RRF	-.9653	RTF	-.2262		
SGB	1988.3	R23	-.0757	R13	-.9625		
SG1	1827.6	SG2	783.1	THA	82.05		

ORBIT DETERMINATION ACCURACY

ST	442.2	SR	887.8	SS	3195.2
CRT	.9973	CRS	.9222	CST	.9105
LSA	3324.7	MSA	373.0	SSA	27.4
EL1	991.4	EL2	29.3	ALF	63.56

LAUNCH DATE OCT 16 1964 FLIGHT TIME 308.00 ARRIVAL DATE AUG 20 1965

HELIOCENTRIC CONIC DISTANCE 709.801 EARTH TO MARS

RL	149.11	LAL	.00	LOL	22.67	VL	32.667	GAL	-5.49	AZL	89.21	HCA	223.70	SMA	186.13	ECC	.21992	INC	.7862	V1	29.883
RP	225.58	LAP	-.54	LOP	246.36	VP	21.533	GAP	-3.45	AZP	90.57	TAL	328.72	TAP	192.42	RCA	145.20	APO	227.07	V2	24.381
RC	249.803	GL	6.83	GP	8.68	ZAL	134.60	ZAP	108.92	ETS	175.89	ZAE	144.56	ETE	164.51	ZAC	95.22	ETC	256.60	CLP	109.15

PLANETOCENTRIC CONIC

C3	14.087	VHL	3.753	DLA	15.02	RAL	161.98	RAD	6567.6	VEL	11.639	PTH	2.04	VHP	2.984	DPA	11.03	RAP	180.15	ECC	1.2318

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 29 25	2620.40	-26.90	68.85	22.46	99.18	19 13 5	2020.4	-25.36	60.53
90.00	10 29 39	4291.52	2.99	177.09	17.41	61.83	11 41 11	3691.5	-.80	170.46
100.00	19 58 54	2331.81	-28.07	47.40	22.23	100.73	20 37 46	1731.8	-26.30	39.04
100.00	11 42 51	4055.34	4.02	159.15	16.84	60.35	12 50 27	3455.3	.05	152.62
110.00	21 25 18	2061.44	-31.12	26.07	21.43	104.92	21 59 40	1461.4	-28.76	17.66
110.00	12 32 56	3898.48	6.69	145.61	15.19	56.40	13 37 54	3298.5	2.22	139.36

DIFFERENTIAL CORRECTIONS

TDE	.2185	TRA	-.1747	TC3	-.9077	BAU	.3414
RDE	.5405	RRA	-.7047	RC3	1.5688	FAU	.54343
FDE	-5.7181	FRA	18.6168	FC	-33.3967	BSP	6080
BDE	.5830	BRA	.7260	BC3	1.8125	FSP	11762

MID-COURSE EXECUTION ACCURACY

SGT	807.3	SGR	1818.9	SG3	3424.0		
RRT	-.1496	RRF	-.9642	RTF	.1889		
SGB	1990.0	R23	-.0106	R13	-.9652		
SG1	1823.8	SG2	796.1	THA	94.70		

ORBIT DETERMINATION ACCURACY

ST	344.3	SR	890.9	SS	3206.7
CRT	.9852	CRS	.9186	CST	.8471
LSA	3323.9	MSA	382.1	SSA	27.5
EL1	953.5	EL2	55.2	ALF	69.09

LAUNCH DATE OCT 16 1964 FLIGHT TIME 310.00 ARRIVAL DATE AUG 22 1965

HELIOCENTRIC CONIC DISTANCE 713.747 EARTH TO MARS

RL	149.11	LAL	.00	LOL	22.67	VL	32.662	GAL	-5.49	AZL	89.18	HCA	224.77	SMA	186.06	ECC	.21965	INC	.8180	V1	29.883
RP	225.19	LAP	-.58	LOP	247.43	VP	21.573	GAP	-3.71	AZP	90.58	TAL	328.66	TAP	193.43	RCA	145.19	APO	226.92	V2	24.423
RC	251.477	GL	7.10	GP	8.60	ZAL	134.64	ZAP	107.00	ETS	176.26	ZAE	142.52	ETE	165.67	ZAC	94.96	ETC	256.68	CLP	107.20

PLANETOCENTRIC CONIC

C3	14.086	VHL	3.753	DLA	15.25	RAL	162.16	RAD	6567.6	VEL	11.639	PTH	2.04	VHP	2.959	DPA	11.33	RAP	179.31	ECC	1.2318

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 28 2	2628.54	-26.99	69.43	22.72	98.90	19 11 50	2028.5	-25.48	61.09
90.00	10 32 28	4283.34	2.73	176.63	17.62	61.80	11 43 51	3683.3	-1.06	170.00
100.00	19 57 41	2339.41	-28.16	47.94	22.50	100.45	20 36 40	1739.4	-26.43	39.57
100.00	11 45 29	4047.70	3.77	158.73	17.04	60.32	12 52 57	3447.7	-.21	152.20
110.00	21 24 27	2067.92	-31.23	26.54	21.71	104.66	21 58 55	1467.9	-28.90	18.11
110.00	12 35 12	3891.96	6.44	145.26	15.39	56.36	13 40 4	3292.0	1.97	139.02

DIFFERENTIAL CORRECTIONS

TDE	.1723	TRA	-.0062	TC3	-1.1816	BAU	.3714
RDE	.5456	RRA	-.7021	RC3	1.5794	FAU	.55399
FDE	-5.8130	FRA	18.8922	FC	-34.0491	BSP	6104
BDE	.5721	BRA	.7021	BC3	1.9725	FSP	11911

MID-COURSE EXECUTION ACCURACY

SGT	925.2	SGR	1825.7	SG3	3483.5		
RRT	-.4864	RRF	-.9632	RTF	.5373		
SGB	2046.8	R23	.0406	R13	-.9655		
SG1	1892.4	SG2	779.9	THA	106.78		

ORBIT DETERMINATION ACCURACY

ST	264.5	SR	897.8	SS	3231.0
CRT	.9231	CRS	.9171	CST	.7002
LSA	3340.8	MSA	391.3	SSA	26.9
EL1	930.8	EL2	98.1	ALF	74.61

LAUNCH DATE OCT 16 1964 FLIGHT TIME 312.00 ARRIVAL DATE AUG 24 1965

HELIOCENTRIC CONIC DISTANCE 717.700 EARTH TO MARS

RL 149.11 LAL .00 LOL 22.67 VL 32.658 GAL -5.50 AZL 89.15 HCA 225.84 SMA 185.98 ECC .21942 INC .8486 V1 29.883
RP 224.80 LAP -.61 LOP 248.50 VP 21.614 GAP -3.97 AZP 90.59 TAL 328.60 TAP 194.43 RCA 145.18 APO 226.79 V2 24.465
RC 253.132 GL 7.37 GP 8.52 ZAL 134.69 ZAP 105.04 ETS 176.63 ZAE 140.44 ETE 166.74 ZAC 94.69 ETC 256.77 CLP 105.22

PLANETOCENTRIC CONIC

C3 14.095 VHL 3.754 DLA 15.46 RAL 162.35 RAD 6567.6 VEL 11.640 PTH 2.04 VHP 2.936 DPA 11.63 RAP 178.44 ECC 1.2320

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 26 50	2636.27	-27.07	69.98	23.01	98.64	19 10 46	2036.3	-25.60	61.63
90.00	10 35 10	4275.88	2.49	176.21	17.85	61.78	11 46 26	3675.9	-1.31	169.59
100.00	19 56 39	2346.62	-28.25	48.46	22.79	100.20	20 35 45	1746.6	-26.55	40.07
100.00	11 48 2	4040.76	3.53	158.35	17.27	60.30	12 55 23	3440.8	-.45	151.82
110.00	21 23 45	2074.08	-31.33	26.99	22.01	104.42	21 58 19	1474.1	-29.04	18.54
110.00	12 37 25	3886.07	6.22	144.95	15.61	56.32	13 42 11	3286.1	1.75	138.72

DIFFERENTIAL CORRECTIONS
TDE .1237 TRA .1659 TC3-1.4696 BAU .4073
RDE .5498 RRA -.6994 RC3 1.5849 FAU .56276
FDE-5.8862 FRA19.1523 FC-34.5663 BSP 6386
BDE .5636 BRA .7188 BC3 2.1613 FSP 12069

MID-COURSE EXECUTION ACCURACY
SGT 1149.9 SGR 1829.4 SG3 3535.0
RRT -.6871 RRF -.9620 RTF .7420
SGB 2160.7 R23 .0740 R13 -.9656
SG1 2024.6 SG2 754.8 THA 117.50

ORBIT DETERMINATION ACCURACY
ST 207.3 SR 903.2 SS 3249.8
CRT .7003 CRS .9152 CST .3593
LSA 3355.4 MSA 400.3 SSA 26.5
EL1 915.1 EL2 146.0 ALF 80.63

LAUNCH DATE OCT 16 1964 FLIGHT TIME 314.00 ARRIVAL DATE AUG 26 1965

HELIOCENTRIC CONIC DISTANCE 721.660 EARTH TO MARS

RL 149.11 LAL .00 LOL 22.67 VL 32.654 GAL -5.51 AZL 89.12 HCA 226.91 SMA 185.92 ECC .21923 INC .8783 V1 29.883
RP 224.41 LAP -.64 LOP 249.58 VP 21.656 GAP -4.23 AZP 90.60 TAL 328.52 TAP 195.43 RCA 145.16 APO 226.68 V2 24.506
RC 254.766 GL 7.62 GP 8.43 ZAL 134.76 ZAP 103.07 ETS 176.99 ZAE 138.32 ETE 167.73 ZAC 94.41 ETC 256.86 CLP 103.22

PLANETOCENTRIC CONIC

C3 14.113 VHL 3.757 DLA 15.65 RAL 162.55 RAD 6567.6 VEL 11.640 PTH 2.04 VHP 2.918 DPA 11.94 RAP 177.56 ECC 1.2323

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 25 49	2643.58	-27.15	70.51	23.31	98.39	19 9 52	2043.6	-25.71	62.14
90.00	10 37 46	4269.15	2.27	175.84	18.10	61.77	11 48 55	3669.2	-1.52	169.21
100.00	19 55 47	2353.45	-28.33	48.95	23.09	99.95	20 35 0	1753.5	-26.67	40.54
100.00	11 50 29	4034.51	3.32	158.01	17.52	60.28	12 57 44	3434.5	-.66	151.48
110.00	21 23 12	2079.94	-31.43	27.42	22.33	104.18	21 57 52	1479.9	-29.17	18.94
110.00	12 39 34	3880.79	6.02	144.67	15.84	56.29	13 44 15	3280.8	1.55	138.44

DIFFERENTIAL CORRECTIONS
TDE .0737 TRA .3419 TC3-1.7666 BAU .4479
RDE .5536 RRA -.6961 RC3 1.5859 FAU .56995
FDE-5.9446 FRA19.3880 FC-34.9616 BSP 6899
BDE .5585 BRA .7756 BC3 2.3740 FSP 12223

MID-COURSE EXECUTION ACCURACY
SGT 1438.0 SGR 1829.9 SG3 3578.3
RRT -.7919 RRF -.9608 RTF .8476
SGB 2327.3 R23 .0887 R13 -.9672
SG1 2210.9 SG2 726.7 THA 126.46

ORBIT DETERMINATION ACCURACY
ST 201.5 SR 907.6 SS 3264.6
CRT .2173 CRS .9131 CST -.1951
LSA 3369.5 MSA 409.1 SSA 26.1
EL1 908.7 EL2 196.5 ALF 87.10

LAUNCH DATE OCT 16 1964 FLIGHT TIME 316.00 ARRIVAL DATE AUG 28 1965

HELIOCENTRIC CONIC DISTANCE 725.629 EARTH TO MARS

RL 149.11 LAL .00 LOL 22.67 VL 32.651 GAL -5.52 AZL 89.09 HCA 227.99 SMA 185.86 ECC .21909 INC .9070 V1 29.883
RP 224.02 LAP -.67 LOP 250.65 VP 21.698 GAP -4.48 AZP 90.61 TAL 328.42 TAP 196.41 RCA 145.14 APO 226.58 V2 24.548
RC 256.380 GL 7.86 GP 8.34 ZAL 134.85 ZAP 101.08 ETS 177.34 ZAE 136.18 ETE 168.64 ZAC 94.13 ETC 256.95 CLP 101.20

PLANETOCENTRIC CONIC

C3 14.142 VHL 3.761 DLA 15.83 RAL 162.76 RAD 6567.6 VEL 11.642 PTH 2.04 VHP 2.903 DPA 12.25 RAP 176.66 ECC 1.2327

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 24 59	2650.49	-27.21	71.00	23.62	98.15	19 9 10	2050.5	-25.81	62.62
90.00	10 40 17	4263.14	2.08	175.50	18.37	61.75	11 51 20	3663.1	-1.72	168.87
100.00	19 55 6	2359.91	-28.41	49.42	23.41	99.71	20 34 25	1759.9	-26.77	40.99
100.00	11 52 52	4028.95	3.13	157.70	17.78	60.26	13 0 0	3428.9	-.85	151.18
110.00	21 22 48	2085.50	-31.53	27.82	22.66	103.96	21 57 33	1485.5	-29.29	19.33
110.00	12 41 39	3876.13	5.84	144.43	16.10	56.26	13 46 15	3276.1	1.37	138.20

DIFFERENTIAL CORRECTIONS
TDE .0223 TRA .5218 TC3-2.0707 BAU .4929
RDE .5575 RRA -.6916 RC3 1.5840 FAU .57606
FDE-5.9992 FRA19.5803 FC-35.2646 BSP 7594
BDE .5579 BRA .8664 BC3 2.6071 FSP 12341

MID-COURSE EXECUTION ACCURACY
SGT 1763.4 SGR 1827.7 SG3 3612.9
RRT -.8476 RRF -.9594 RTF .9035
SGB 2539.6 R23 .0904 R13 -.9702
SG1 2441.1 SG2 700.6 THA 133.79

ORBIT DETERMINATION ACCURACY
ST 254.5 SR 911.4 SS 3276.9
CRT -.2341 CRS .9110 CST -.6113
LSA 3385.1 MSA 417.4 SSA 25.7
EL1 913.5 EL2 246.9 ALF 94.04

LAUNCH DATE OCT 16 1964 FLIGHT TIME 318.00 ARRIVAL DATE AUG 30 1965

HELIOCENTRIC CONIC DISTANCE 729.604 EARTH TO MARS

RL 149.11 LAL .00 LOL 22.67 VL 32.648 GAL -5.54 AZL 89.06 HCA 229.07 SMA 185.81 ECC .21900 INC .9349 V1 29.883
RP 223.63 LAP -.71 LOP 251.74 VP 21.740 GAP -4.73 AZP 90.61 TAL 328.32 TAP 197.39 RCA 145.11 APO 226.50 V2 24.590
RC 257.974 GL 8.10 GP 8.25 ZAL 134.95 ZAP 99.08 ETS 177.69 ZAE 134.02 ETE 169.49 ZAC 93.85 ETC 257.05 CLP 99.18

PLANETOCENTRIC CONIC

C3 14.180 VHL 3.766 DLA 15.99 RAL 162.98 RAD 6567.6 VEL 11.643 PTH 2.04 VHP 2.891 DPA 12.55 RAP 175.75 ECC 1.2334

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 24 21	2656.99	-27.28	71.47	23.96	97.92	19 8 38	2057.0	-25.90	63.07
90.00	10 42 41	4257.84	1.91	175.21	18.65	61.74	11 53 39	3657.8	-1.89	168.58
100.00	19 54 35	2366.00	-28.48	49.85	23.75	99.49	20 34 1	1766.0	-26.87	41.42
100.00	11 55 8	4024.06	2.97	157.43	18.06	60.24	13 2 13	3424.1	-1.01	150.91
110.00	21 22 33	2090.75	-31.61	28.21	23.00	103.74	21 57 24	1490.8	-29.40	19.70
110.00	12 43 40	3872.07	5.69	144.21	16.37	56.24	13 48 12	3272.1	1.21	137.99

DIFFERENTIAL CORRECTIONS
TDE -.0301 TRA .7055 TC3-2.3796 BAU .5413
RDE .5609 RRA -.6863 RC3 1.5777 FAU .58047
FDE-6.0393 FRA19.7407 FC-35.4384 BSP 8449
BDE .5617 BRA .9843 BC3 2.8551 FSP 12441

MID-COURSE EXECUTION ACCURACY
SGT 2112.1 SGR 1822.1 SG3 3638.1
RRT -.8787 RRF -.9579 RTF .9349
SGB 2789.5 R23 .0855 R13 -.9739
SG1 2705.5 SG2 679.1 THA 139.79

ORBIT DETERMINATION ACCURACY
ST 342.4 SR 914.2 SS 3285.2
CRT -.4796 CRS .9087 CST -.8004
LSA 3400.5 MSA 425.6 SSA 25.3
EL1 930.5 EL2 295.2 ALF 101.34

LAUNCH DATE OCT 16 1964 FLIGHT TIME 320.00 ARRIVAL DATE SEP 1 1965

HELIOCENTRIC CONIC DISTANCE 733.587 EARTH TO MARS

RL	149.11	LAL	.00	LOL	22.67	VL	32.645	GAL	-5.56	AZL	89.04	HCA	230.16	SMA	185.76	ECC	.21894	INC	.9620
RP	223.24	LAP	-.74	LOP	252.82	VP	21.784	GAP	-4.98	AZP	90.62	TAL	328.20	TAP	198.36	RCA	145.09	APO	226.43
RC	259.547	GL	8.32	GP	8.15	ZAL	135.07	ZAP	97.07	ETS	178.02	ZAE	131.84	ETE	170.28	ZAC	93.56	ETC	257.16

V1 29.883 V2 24.632 CLP 97.14

PLANETOCENTRIC CONIC

C3 14.229 VHL 3.772 DLA 16.14 RAL 163.21 RAD 6567.6 VEL 11.645 PTH 2.04 VHP 2.883 DPA 12.86 RAP 174.83 ECC 1.2342

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 23 54	2663.08	-27.33	71.90	24.31	97.71	19 8 17	2063.1	-25.98	63.50
90.00	10 45 0	4253.38	1.76	174.95	18.96	61.73	11 55 54	3653.4	-2.04	168.32
100.00	19 54 15	2371.72	-28.54	50.27	24.10	99.28	20 33 47	1771.7	-26.96	41.82
100.00	11 57 20	4019.85	2.83	157.20	18.36	60.23	13 4 20	3419.8	-1.16	150.68
110.00	21 22 28	2095.71	-31.69	28.57	23.37	103.54	21 57 23	1495.7	-29.50	20.05
110.00	12 45 37	3868.62	5.56	144.03	16.67	56.22	13 50 5	3268.6	1.08	137.81

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0832	TRA	.8927	TC3	-2.6913	BAU	.5925	SGT	2476.1	SGR	1813.8	SG3	3654.2	ST	446.1	SR	916.4	SS	3290.5
RDE	.5642	RRA	-.6798	RC3	1.5683	FAU	.58364	RRT	-.8969	RRF	-.9562	RTF	.9538	CRT	-.6041	CRS	.9064	CST	-.8831
FDE	-6.0725	FRA	19.8578	FC	-35.5109	BSP	9418	SGB	3069.3	R23	.0777	R13	-.9776	LSA	3417.3	MSA	433.6	SSA	24.9
BDE	.5703	BRA	1.1221	BC3	3.1149	FSP	12508	SG1	2996.9	SG2	662.9	THA	144.71	EL1	961.2	EL2	338.9	ALF	108.81

LAUNCH DATE OCT 16 1964 FLIGHT TIME 322.00 ARRIVAL DATE SEP 3 1965

HELIOCENTRIC CONIC DISTANCE 737.576 EARTH TO MARS

RL	149.11	LAL	.00	LOL	22.67	VL	32.642	GAL	-5.58	AZL	89.01	HCA	231.25	SMA	185.71	ECC	.21893	INC	.9884
RP	222.85	LAP	-.77	LOP	253.91	VP	21.827	GAP	-5.22	AZP	90.62	TAL	328.07	TAP	199.32	RCA	145.05	APO	226.37
RC	261.100	GL	8.53	GP	8.05	ZAL	135.20	ZAP	95.05	ETS	178.35	ZAE	129.65	ETE	171.02	ZAC	93.27	ETC	257.26

V1 29.883 V2 24.674 CLP 95.11

PLANETOCENTRIC CONIC

C3 14.287 VHL 3.780 DLA 16.27 RAL 163.46 RAD 6567.6 VEL 11.648 PTH 2.04 VHP 2.879 DPA 13.16 RAP 173.92 ECC 1.2351

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 23 38	2668.77	-27.38	72.31	24.67	97.51	19 8 7	2068.8	-26.06	63.90
90.00	10 47 13	4249.36	1.63	174.73	19.28	61.73	11 58 3	3649.4	-2.16	168.11
100.00	19 54 5	2377.07	-28.60	50.65	24.47	99.09	20 33 42	1777.1	-27.05	42.20
100.00	11 59 27	4016.31	2.71	157.00	18.68	60.22	13 6 23	3416.3	-1.28	150.48
110.00	21 22 31	2100.38	-31.76	28.92	23.74	103.35	21 57 32	1500.4	-29.60	20.37
110.00	12 47 30	3865.76	5.45	143.88	16.98	56.20	13 51 56	3265.8	.97	137.66

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1374	TRA	1.0831	TC3	-3.0042	BAU	.6462	SGT	2850.7	SGR	1802.5	SG3	3660.8	ST	557.9	SR	917.9	SS	3292.9
RDE	.5674	RRA	-.6721	RC3	1.5555	FAU	.58541	RRT	-.9079	RRF	-.9544	RTF	.9658	CRT	-.6734	CRS	.9041	CST	-.9240
FDE	-6.0976	FRA	19.9329	FC	-35.4727	BSP	10478	SGB	3372.7	R23	.0694	R13	-.9809	LSA	3435.4	MSA	441.3	SSA	24.5
BDE	.5838	BRA	1.2747	BC3	3.3830	FSP	12545	SG1	3309.3	SG2	651.0	THA	148.80	EL1	1006.0	EL2	376.3	ALF	116.20

LAUNCH DATE OCT 16 1964 FLIGHT TIME 324.00 ARRIVAL DATE SEP 5 1965

HELIOCENTRIC CONIC DISTANCE 741.573 EARTH TO MARS

RL	149.11	LAL	.00	LOL	22.67	VL	32.640	GAL	-5.60	AZL	88.99	HCA	232.34	SMA	185.68	ECC	.21896	INC	1.0139
RP	222.47	LAP	-.80	LOP	255.00	VP	21.871	GAP	-5.45	AZP	90.62	TAL	327.93	TAP	200.27	RCA	145.02	APO	226.33
RC	262.633	GL	8.73	GP	7.95	ZAL	135.35	ZAP	93.04	ETS	178.67	ZAE	127.45	ETE	171.71	ZAC	92.97	ETC	257.37

V1 29.883 V2 24.716 CLP 93.07

PLANETOCENTRIC CONIC

C3 14.356 VHL 3.789 DLA 16.38 RAL 163.71 RAD 6567.6 VEL 11.651 PTH 2.05 VHP 2.878 DPA 13.45 RAP 173.00 ECC 1.2363

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 23 33	2674.06	-27.43	72.69	25.05	97.32	19 8 8	2074.1	-26.13	64.27
90.00	10 49 20	4246.20	1.53	174.56	19.62	61.72	12 0 7	3646.2	-2.26	167.93
100.00	19 54 6	2382.05	-28.65	51.02	24.86	98.91	20 33 48	1782.1	-27.12	42.55
100.00	12 1 29	4013.44	2.61	156.85	19.02	60.21	13 8 22	3413.4	-1.37	150.32
110.00	21 22 44	2104.76	-31.83	29.24	24.14	103.17	21 57 49	1504.8	-29.69	20.68
110.00	12 49 20	3863.49	5.36	143.76	17.31	56.19	13 53 44	3263.5	.89	137.54

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1924	TRA	1.2764	TC3	-3.3164	BAU	.7017	SGT	3232.3	SGR	1788.4	SG3	3657.9	ST	674.2	SR	918.7	SS	3292.8
RDE	.5706	RRA	-.6634	RC3	1.5392	FAU	.58572	RRT	-.9144	RRF	-.9524	RTF	.9739	CRT	-.7152	CRS	.9018	CST	-.9465
FDE	-6.1161	FRA	19.9665	FC	-35.3221	BSP	11603	SGB	3694.1	R23	.0618	R13	-.9839	LSA	3455.4	MSA	448.7	SSA	24.0
BDE	.6021	BRA	1.4385	BC3	3.6562	FSP	12543	SG1	3637.6	SG2	643.2	THA	152.22	EL1	1064.5	EL2	406.7	ALF	123.13

LAUNCH DATE OCT 16 1964 FLIGHT TIME 326.00 ARRIVAL DATE SEP 7 1965

HELIOCENTRIC CONIC DISTANCE 745.577 EARTH TO MARS

RL	149.11	LAL	.00	LOL	22.67	VL	32.638	GAL	-5.63	AZL	88.96	HCA	233.44	SMA	185.64	ECC	.21904	INC	1.0389
RP	222.08	LAP	-.83	LOP	256.10	VP	21.915	GAP	-5.69	AZP	90.62	TAL	327.78	TAP	201.21	RCA	144.98	APO	226.31
RC	264.145	GL	8.92	GP	7.84	ZAL	135.51	ZAP	91.03	ETS	178.98	ZAE	125.25	ETE	172.35	ZAC	92.68	ETC	257.49

V1 29.883 V2 24.758 CLP 91.04

PLANETOCENTRIC CONIC

C3 14.435 VHL 3.799 DLA 16.48 RAL 163.98 RAD 6567.6 VEL 11.654 PTH 2.05 VHP 2.881 DPA 13.73 RAP 172.09 ECC 1.2376

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 23 40	2678.95	-27.47	73.04	25.46	97.15	19 8 19	2079.0	-26.20	64.61
90.00	10 51 22	4243.73	1.45	174.42	19.98	61.72	12 2 6	3643.7	-2.34	167.79
100.00	19 54 18	2386.68	-28.70	51.35	25.26	98.74	20 34 5	1786.7	-27.20	42.87
100.00	12 3 25	4011.24	2.54	156.73	19.38	60.21	13 10 16	3411.2	-1.45	150.20
110.00	21 23 6	2108.86	-31.90	29.54	24.55	103.00	21 58 15	1508.9	-29.78	20.97
110.00	12 51 7	3861.82	5.30	143.67	17.66	56.18	13 55 29	3261.8	.82	137.45

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2484	TRA	1.4718	TC3	-3.6267	BAU	.7588	SGT	3618.4	SGR	1771.4	SG3	3645.1	ST	793.3	SR	918.9	SS	3289.5
RDE	.5736	RRA	-.6536	RC3	1.5195	FAU	.58450	RRT	-.9182	RRF	-.9501	RTF	.9794	CRT	-.7421	CRS	.8994	CST	-.9600
FDE	-6.1259	FRA	19.9559	FC	-35.0562	BSP	12779	SGB	4028.7	R23	.0553	R13	-.9863	LSA	3476.6	MSA	455.9	SSA	23.6
BDE	.6250	BRA	1.6104	BC3	3.9322	FSP	12515	SG1	3977.8	SG2	638.4	THA	155.11	EL1	1135.1	EL2	430.5	ALF	129.38

LAUNCH DATE OCT 16 1964 FLIGHT TIME 328.00 ARRIVAL DATE SEP 9 1965

HELIOCENTRIC CONIC DISTANCE 749.588 EARTH TO MARS

RL 149.11 LAL .00 LOL 22.67 VL 32.636 GAL -5.66 AZL 88.94 HCA 234.54 SMA 185.61 ECC .21915 INC 1.0633 V1 29.883
RP 221.70 LAP -.87 LOP 257.20 VP 21.960 GAP -5.92 AZP 90.62 TAL 327.61 TAP 202.15 RCA 144.94 APO 226.29 V2 24.799
RC 265.639 GL 9.10 GP 7.72 ZAL 135.70 ZAP 89.03 ETS 179.28 ZAE 123.05 ETE 172.95 ZAC 92.38 ETC 257.60 CLP 89.02

PLANETOCENTRIC CONIC

C3 14.524 VHL 3.811 DLA 16.57 RAL 164.26 RAD 6567.6 VEL 11.658 PTH 2.05 VHP 2.887 DPA 14.00 RAP 171.18 ECC 1.2390

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 23 58	2683.45	-27.51	73.37	25.87	97.00	19 8 42	2083.4	-26.25	64.93
90.00	10 53 17	4241.97	1.39	174.32	20.36	61.71	12 3 59	3642.0	-2.40	167.69
100.00	19 54 40	2390.95	-28.74	51.66	25.68	98.58	20 34 31	1790.9	-27.26	43.17
100.00	12 5 16	4009.70	2.48	156.64	19.75	60.20	13 12 6	3409.7	-1.50	150.12
110.00	21 23 37	2112.68	-31.95	29.83	24.98	102.84	21 58 49	1512.7	-29.86	21.24
110.00	12 52 50	3860.74	5.26	143.62	18.03	56.18	13 57 10	3260.7	.78	137.40

DIFFERENTIAL CORRECTIONS
TDE -.3050 TRA 1.6697 TC3-3.9330 BAU .8171
RDE .5764 RRA -.6427 RC3 1.4968 FAU .58190
FDE-6.1274 FRA19.9020 FC-34.6856 BSP 13984
BDE .6521 BRA 1.7891 BC3 4.2082 FSP 12447

MID-COURSE EXECUTION ACCURACY
SGT 4007.0 SGR 1751.8 SG3 3622.9
RRT -.9200 RRF -.9477 RTF .9834
SGB 4373.2 R23 .0499 R13 -.9882
SG1 4326.7 SG2 636.0 THA 157.58

ORBIT DETERMINATION ACCURACY
ST 914.1 SR 918.5 SS 3283.2
CRT -.7599 CRS .8970 CST -.9687
LSA 3499.1 MSA 462.9 SSA 23.1
EL1 1215.6 EL2 449.0 ALF 134.82

LAUNCH DATE OCT 16 1964 FLIGHT TIME 330.00 ARRIVAL DATE SEP 11 1965

HELIOCENTRIC CONIC DISTANCE 753.605 EARTH TO MARS

RL 149.11 LAL .00 LOL 22.67 VL 32.635 GAL -5.69 AZL 88.91 HCA 235.64 SMA 185.59 ECC .21931 INC 1.0871 V1 29.883
RP 221.32 LAP -.90 LOP 258.31 VP 22.005 GAP -6.15 AZP 90.61 TAL 327.43 TAP 203.07 RCA 144.89 APO 226.29 V2 24.841
RC 267.114 GL 9.27 GP 7.61 ZAL 135.89 ZAP 87.04 ETS 179.57 ZAE 120.86 ETE 173.52 ZAC 92.09 ETC 257.71 CLP 87.01

PLANETOCENTRIC CONIC

C3 14.624 VHL 3.824 DLA 16.64 RAL 164.55 RAD 6567.6 VEL 11.662 PTH 2.05 VHP 2.897 DPA 14.26 RAP 170.29 ECC 1.2407

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 24 27	2687.55	-27.54	73.66	26.31	96.85	19 9 15	2087.6	-26.31	65.21
90.00	10 55 7	4240.91	1.36	174.28	20.75	61.71	12 5 48	3640.9	-2.43	167.63
100.00	19 55 13	2394.86	-28.78	51.95	26.12	98.43	20 35 8	1794.9	-27.32	43.45
100.00	12 7 3	4008.83	2.45	156.59	20.15	60.20	13 13 52	3408.8	-1.53	150.07
110.00	21 24 17	2116.22	-32.01	30.09	25.42	102.70	21 59 33	1516.2	-29.93	21.49
110.00	12 54 29	3860.24	5.24	143.59	18.41	56.17	13 58 49	3260.2	.76	137.37

DIFFERENTIAL CORRECTIONS
TDE -.3629 TRA 1.8687 TC3-4.2349 BAU .8765
RDE .5793 RRA -.6307 RC3 1.4717 FAU .57809
FDE-6.1234 FRA19.8046 FC-34.2230 BSP 15209
BDE .6836 BRA 1.9723 BC3 4.4833 FSP 12351

MID-COURSE EXECUTION ACCURACY
SGT 4396.1 SGR 1730.0 SG3 3592.0
RRT -.9204 RRF -.9450 RTF .9863
SGB 4724.2 R23 .0456 R13 -.9899
SG1 4681.3 SG2 635.3 THA 159.70

ORBIT DETERMINATION ACCURACY
ST 1036.2 SR 917.6 SS 3274.4
CRT -.7726 CRS .8946 CST -.9746
LSA 3523.7 MSA 469.5 SSA 22.6
EL1 1304.4 EL2 462.7 ALF 139.48

LAUNCH DATE OCT 16 1964 FLIGHT TIME 332.00 ARRIVAL DATE SEP 13 1965

HELIOCENTRIC CONIC DISTANCE 757.628 EARTH TO MARS

RL 149.11 LAL .00 LOL 22.67 VL 32.634 GAL -5.73 AZL 88.89 HCA 236.75 SMA 185.57 ECC .21951 INC 1.1103 V1 29.883
RP 220.94 LAP -.93 LOP 259.41 VP 22.050 GAP -6.37 AZP 90.61 TAL 327.24 TAP 203.99 RCA 144.84 APO 226.31 V2 24.883
RC 268.570 GL 9.44 GP 7.48 ZAL 136.11 ZAP 85.06 ETS 179.85 ZAE 118.68 ETE 174.05 ZAC 91.80 ETC 257.83 CLP 85.02

PLANETOCENTRIC CONIC

C3 14.734 VHL 3.839 DLA 16.69 RAL 164.85 RAD 6567.6 VEL 11.667 PTH 2.05 VHP 2.911 DPA 14.51 RAP 169.42 ECC 1.2425

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 25 8	2691.27	-27.57	73.93	26.76	96.72	19 9 59	2091.3	-26.35	65.48
90.00	10 56 52	4240.55	1.35	174.24	21.17	61.71	12 7 32	3640.5	-2.44	167.61
100.00	19 55 56	2398.43	-28.82	52.20	26.57	98.30	20 35 55	1798.4	-27.37	43.70
100.00	12 8 44	4008.62	2.45	156.58	20.56	60.20	13 15 33	3408.6	-1.54	150.06
110.00	21 25 5	2119.49	-32.06	30.33	25.88	102.56	22 0 25	1519.5	-30.00	21.72
110.00	12 56 5	3860.32	5.24	143.60	18.82	56.17	14 0 25	3260.3	.77	137.37

DIFFERENTIAL CORRECTIONS
TDE -.4215 TRA 2.0699 TC3-4.5284 BAU .9362
RDE .5818 RRA -.6180 RC3 1.4431 FAU .57260
FDE-6.1070 FRA19.6732 FC-33.6436 BSP 16457
BDE .7185 BRA 2.1602 BC3 4.7527 FSP 12230

MID-COURSE EXECUTION ACCURACY
SGT 4783.9 SGR 1705.6 SG3 3551.9
RRT -.9197 RRF -.9421 RTF .9885
SGB 5078.9 R23 .0422 R13 -.9912
SG1 5038.9 SG2 635.8 THA 161.54

ORBIT DETERMINATION ACCURACY
ST 1158.9 SR 915.9 SS 3262.1
CRT -.7814 CRS .8921 CST -.9788
LSA 3549.1 MSA 475.9 SSA 22.2
EL1 1399.2 EL2 473.3 ALF 143.45

LAUNCH DATE OCT 16 1964 FLIGHT TIME 334.00 ARRIVAL DATE SEP 15 1965

HELIOCENTRIC CONIC DISTANCE 761.655 EARTH TO MARS

RL 149.11 LAL .00 LOL 22.67 VL 32.633 GAL -5.77 AZL 88.87 HCA 237.86 SMA 185.56 ECC .21975 INC 1.1331 V1 29.883
RP 220.56 LAP -.96 LOP 260.53 VP 22.095 GAP -6.59 AZP 90.60 TAL 327.03 TAP 204.89 RCA 144.78 APO 226.33 V2 24.924
RC 270.009 GL 9.59 GP 7.36 ZAL 136.34 ZAP 83.11 ETS 180.12 ZAE 116.52 ETE 174.55 ZAC 91.51 ETC 257.94 CLP 83.05

PLANETOCENTRIC CONIC

C3 14.857 VHL 3.854 DLA 16.73 RAL 165.17 RAD 6567.6 VEL 11.672 PTH 2.05 VHP 2.927 DPA 14.74 RAP 168.57 ECC 1.2445

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 26 0	2694.59	-27.60	74.17	27.23	96.60	19 10 55	2094.6	-26.40	65.71
90.00	10 58 30	4240.91	1.36	174.26	21.60	61.71	12 9 11	3640.9	-2.43	167.63
100.00	19 56 51	2401.64	-28.85	52.44	27.05	98.18	20 36 52	1801.6	-27.42	43.93
100.00	12 10 21	4009.09	2.46	156.61	20.99	60.20	13 17 10	3409.1	-1.52	150.09
110.00	21 26 4	2122.49	-32.10	30.55	26.36	102.44	22 1 26	1522.5	-30.06	21.94
110.00	12 57 37	3861.01	5.27	143.63	19.24	56.18	14 1 58	3261.0	.79	137.41

DIFFERENTIAL CORRECTIONS
TDE -.4769 TRA 2.2782 TC3-4.8036 BAU .9940
RDE .5816 RRA -.6071 RC3 1.4047 FAU .56244
FDE-6.0102 FRA19.5724 FC-32.7750 BSP 17842
BDE .7521 BRA 2.3577 BC3 5.0048 FSP 12228

MID-COURSE EXECUTION ACCURACY
SGT 5169.1 SGR 1675.7 SG3 3500.1
RRT -.9184 RRF -.9385 RTF .9901
SGB 5434.0 R23 .0387 R13 -.9921
SG1 5396.7 SG2 635.1 THA 163.18

ORBIT DETERMINATION ACCURACY
ST 1280.8 SR 910.2 SS 3233.5
CRT -.7861 CRS .8873 CST -.9824
LSA 3562.5 MSA 482.4 SSA 22.0
EL1 1495.5 EL2 481.7 ALF 146.95

LAUNCH DATE OCT 16 1964 FLIGHT TIME 336.00 ARRIVAL DATE SEP 17 1965

HELIOCENTRIC CONIC DISTANCE 765.692 EARTH TO MARS

RL	149.11	LAL	.00	LOL	22.67	VL	32.632	GAL	-5.81	AZL	88.84	HCA	238.98	SMA	185.55	ECC	.22003	INC	1.1553	V1	29.883
RP	220.18	LAP	-.99	LOP	261.64	VP	22.141	GAP	-6.81	AZP	90.60	TAL	326.81	TAP	205.79	RCA	144.72	APO	226.37	V2	24.965
RC	271.430	GL	9.73	GP	7.24	ZAL	136.58	ZAP	81.18	ETS	180.38	ZAE	114.38	ETE	175.02	ZAC	91.23	ETC	258.05	CLP	81.11

PLANETOCENTRIC CONIC

C3	14.989	VHL	3.872	DLA	16.76	RAL	165.49	RAD	6567.6	VEL	11.678	PTH	2.05	VHP	2.947	DPA	14.96	RAP	167.74	ECC	1.2467

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 27 2	2697.55	-27.62	74.39	27.72	96.50	19 12 0	2097.6	-26.43	65.92
90.00	11 0 3	4241.92	1.39	174.32	22.05	61.71	12 10 45	3641.9	-2.40	167.69
100.00	19 57 54	2404.54	-28.88	52.65	27.54	98.07	20 37 59	1804.5	-27.46	44.13
100.00	12 11 52	4010.17	2.50	156.67	21.43	60.20	13 18 42	3410.2	-1.48	150.15
110.00	21 27 10	2125.24	-32.14	30.76	26.85	102.32	22 2 35	1525.2	-30.11	22.13
110.00	12 59 6	3862.23	5.32	143.70	19.68	56.18	14 3 28	3262.2	.84	137.47

DIFFERENTIAL CORRECTIONS

TDE	-.5392	TRA	2.4786	TC3	-5.0836	BAU	1.0554
RDE	.5856	RRA	-.5914	RC3	1.3760	FAU	.55639
FDE	-6.0205	FRA	19.3301	FC	-32.1351	BSP	19026
BDE	.7960	BRA	2.5482	BC3	5.2665	FSP	11970

MID-COURSE EXECUTION ACCURACY

SGT	5550.3	SGR	1649.8	SG3	3446.3		
RRT	-.9159	RRF	-.9352	RTF	.9915		
SGB	5790.3	R23	.0371	R13	-.9931		
SG1	5755.0	SG2	638.5	THA	164.58		

ORBIT DETERMINATION ACCURACY

ST	1404.0	SR	909.5	SS	3223.7
CRT	-.7912	CRS	.8861	CST	-.9844
LSA	3598.9	MSA	488.0	SSA	21.4
EL1	1600.1	EL2	488.0	ALF	149.76

LAUNCH DATE OCT 16 1964 FLIGHT TIME 338.00 ARRIVAL DATE SEP 19 1965

HELIOCENTRIC CONIC DISTANCE 769.735 EARTH TO MARS

RL	149.11	LAL	.00	LOL	22.67	VL	32.632	GAL	-5.85	AZL	88.82	HCA	240.10	SMA	185.54	ECC	.22036	INC	1.1771	V1	29.883
RP	219.81	LAP	-1.02	LOP	262.76	VP	22.187	GAP	-7.02	AZP	90.59	TAL	326.58	TAP	206.68	RCA	144.65	APO	226.42	V2	25.006
RC	272.833	GL	9.87	GP	7.11	ZAL	136.85	ZAP	79.28	ETS	180.63	ZAE	112.25	ETE	175.46	ZAC	90.95	ETC	258.16	CLP	79.19

PLANETOCENTRIC CONIC

C3	15.134	VHL	3.890	DLA	16.77	RAL	165.83	RAD	6567.6	VEL	11.684	PTH	2.05	VHP	2.971	DPA	15.17	RAP	166.94	ECC	1.2491

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 28 16	2700.15	-27.64	74.57	28.22	96.41	19 13 16	2100.1	-26.47	66.10
90.00	11 1 30	4243.63	1.45	174.41	22.52	61.72	12 12 14	3643.6	-2.35	167.79
100.00	19 59 8	2407.10	-28.90	52.84	28.04	97.98	20 39 15	1807.1	-27.50	44.31
100.00	12 13 19	4011.91	2.56	156.76	21.90	60.21	13 20 11	3411.9	-1.43	150.24
110.00	21 28 25	2127.74	-32.18	30.94	27.37	102.22	22 3 53	1527.7	-30.16	22.31
110.00	13 0 31	3864.04	5.38	143.79	20.14	56.19	14 4 55	3264.0	.91	137.57

DIFFERENTIAL CORRECTIONS

TDE	-.6018	TRA	2.6807	TC3	-5.3506	BAU	1.1162
RDE	.5888	RRA	-.5758	RC3	1.3435	FAU	.54835
FDE	-6.0052	FRA	19.0715	FC	-31.3678	BSP	20226
BDE	.8419	BRA	2.7419	BC3	5.5167	FSP	11725

MID-COURSE EXECUTION ACCURACY

SGT	5926.2	SGR	1621.5	SG3	3384.5		
RRT	-.9129	RRF	-.9315	RTF	.9925		
SGB	6144.0	R23	.0358	R13	-.9938		
SG1	6110.4	SG2	641.8	THA	165.82		

ORBIT DETERMINATION ACCURACY

ST	1526.9	SR	907.6	SS	3208.0
CRT	-.7947	CRS	.8844	CST	-.9860
LSA	3633.5	MSA	493.5	SSA	20.8
EL1	1706.5	EL2	492.9	ALF	152.20

LAUNCH DATE OCT 16 1964 FLIGHT TIME 340.00 ARRIVAL DATE SEP 21 1965

HELIOCENTRIC CONIC DISTANCE 773.783 EARTH TO MARS

RL	149.11	LAL	.00	LOL	22.67	VL	32.632	GAL	-5.90	AZL	88.80	HCA	241.23	SMA	185.54	ECC	.22073	INC	1.1986	V1	29.883
RP	219.44	LAP	-1.05	LOP	263.89	VP	22.232	GAP	-7.24	AZP	90.58	TAL	326.33	TAP	207.56	RCA	144.58	APO	226.49	V2	25.047
RC	274.220	GL	10.00	GP	6.98	ZAL	137.12	ZAP	77.40	ETS	180.87	ZAE	110.16	ETE	175.87	ZAC	90.68	ETC	258.27	CLP	77.31

PLANETOCENTRIC CONIC

C3	15.291	VHL	3.910	DLA	16.77	RAL	166.18	RAD	6567.6	VEL	11.691	PTH	2.06	VHP	2.997	DPA	15.35	RAP	166.16	ECC	1.2516

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 29 40	2702.38	-27.66	74.73	28.75	96.33	19 14 42	2102.4	-26.49	66.26
90.00	11 2 52	4246.02	1.52	174.55	23.00	61.72	12 13 38	3646.0	-2.27	167.92
100.00	20 0 32	2409.34	-28.92	53.00	28.57	97.90	20 40 42	1809.3	-27.53	44.47
100.00	12 14 41	4014.30	2.64	156.89	22.38	60.21	13 21 35	3414.3	-1.34	150.37
110.00	21 29 49	2129.99	-32.21	31.11	27.89	102.12	22 5 19	1530.0	-30.20	22.47
110.00	13 1 53	3866.41	5.47	143.92	20.62	56.21	14 6 20	3266.4	1.00	137.69

DIFFERENTIAL CORRECTIONS

TDE	-.6646	TRA	2.8848	TC3	-5.6035	BAU	1.1763
RDE	.5915	RRA	-.5601	RC3	1.3080	FAU	.53862
FDE	-5.9693	FRA	18.7967	FC	-30.4956	BSP	21440
BDE	.8897	BRA	2.9387	BC3	5.7542	FSP	11482

MID-COURSE EXECUTION ACCURACY

SGT	6296.2	SGR	1591.3	SG3	3315.7		
RRT	-.9093	RRF	-.9274	RTF	.9934		
SGB	6494.2	R23	.0348	R13	-.9944		
SG1	6462.1	SG2	645.1	THA	166.92		

ORBIT DETERMINATION ACCURACY

ST	1649.2	SR	904.6	SS	3187.3
CRT	-.7968	CRS	.8822	CST	-.9874
LSA	3667.1	MSA	498.7	SSA	20.3
EL1	1814.1	EL2	496.9	ALF	154.33

LAUNCH DATE OCT 16 1964 FLIGHT TIME 342.00 ARRIVAL DATE SEP 23 1965

HELIOCENTRIC CONIC DISTANCE 777.836 EARTH TO MARS

RL	149.11	LAL	.00	LOL	22.67	VL	32.632	GAL	-5.95	AZL	88.78	HCA	242.35	SMA	185.54	ECC	.22114	INC	1.2195	V1	29.883
RP	219.07	LAP	-1.08	LOP	265.01	VP	22.278	GAP	-7.44	AZP	90.57	TAL	326.07	TAP	208.42	RCA	144.51	APO	226.57	V2	25.088
RC	275.589	GL	10.12	GP	6.85	ZAL	137.41	ZAP	75.56	ETS	181.10	ZAE	108.09	ETE	176.26	ZAC	90.41	ETC	258.37	CLP	75.46

PLANETOCENTRIC CONIC

C3	15.460	VHL	3.932	DLA	16.75	RAL	166.53	RAD	6567.6	VEL	11.698	PTH	2.06	VHP	3.027	DPA	15.52	RAP	165.43	ECC	1.2544

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 31 15	2704.26	-27.67	74.87	29.29	96.26	19 16 19	2104.3	-26.52	66.39
90.00	11 4 8	4249.09	1.62	174.72	23.51	61.73	12 14 57	3649.1	-2.17	168.09
100.00	20 2 6	2411.26	-28.94	53.14	29.11	97.82	20 42 18	1811.3	-27.56	44.61
100.00	12 15 58	4017.32	2.74	157.06	22.88	60.22	13 22 55	3417.3	-1.24	150.54
110.00	21 31 22	2132.00	-32.24	31.26	28.44	102.04	22 6 54	1532.0	-30.24	22.61
110.00	13 3 12	3869.35	5.59	144.07	21.12	56.22	14 7 41	3269.4	1.11	137.84

DIFFERENTIAL CORRECTIONS

TDE	-.7289	TRA	3.0890	TC3	-5.8448	BAU	1.2363
RDE	.5943	RRA	-.5441	RC3	1.2714	FAU	.52801
FDE	-5.9299	FRA	18.4955	FC	-29.5681	BSP	22632
BDE	.9405	BRA	3.1365	BC3	5.9815	FSP	11223

MID-COURSE EXECUTION ACCURACY

SGT	6659.6	SGR	1560.5	SG3	3241.4		
RRT	-.9052	RRF	-.9230	RTF	.9940		
SGB	6840.0	R23	.0342	R13	-.9949		
SG1	6809.2	SG2	648.5	THA	167.91		

ORBIT DETERMINATION ACCURACY

ST	1770.9	SR	901.4	SS	3165.2
CRT	-.7983	CRS	.8802	CST	-.9884
LSA	3703.1	MSA	503.5	SSA	19.8
EL1	1923.2	EL2	499.9	ALF	156.18

LAUNCH DATE OCT 16 1964 FLIGHT TIME 344.00 ARRIVAL DATE SEP 25 1965

HELIOCENTRIC CONIC DISTANCE 781.895 EARTH TO MARS

RL 149.11 LAL .00 LOL 22.67 VL 32.632 GAL -6.01 AZL 88.76 HCA 243.48 SMA 185.54 ECC .22159 INC 1.2402 V1 29.883
RP 218.70 LAP -1.11 LOP 266.15 VP 22.324 GAP -7.65 AZP 90.55 TAL 325.80 TAP 209.28 RCA 144.43 APO 226.66 V2 25.128
RC 276.940 GL 10.23 GP 6.71 ZAL 137.72 ZAP 73.75 ETS 181.31 ZAE 106.05 ETE 176.63 ZAC 90.15 ETC 258.47 CLP 73.64

PLANETOCENTRIC CONIC

C3 15.642 VHL 3.955 DLA 16.72 RAL 166.90 RAD 6567.6 VEL 11.706 PTH 2.06 VHP 3.060 DPA 15.67 RAP 164.73 ECC 1.2574

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 33 1	2705.79	-27.68	74.98	29.84	96.21	19 18 6	2105.8	-26.54	66.50
90.00	11 5 19	4252.78	1.74	174.93	24.03	61.73	12 16 12	3652.8	-2.05	168.30
100.00	20 3 50	2412.87	-28.96	53.26	29.67	97.76	20 44 3	1812.9	-27.58	44.72
100.00	12 17 10	4020.99	2.87	157.26	23.40	60.23	13 24 11	3421.0	-1.12	150.74
110.00	21 33 3	2133.77	-32.26	31.39	29.00	101.96	22 8 36	1533.8	-30.28	22.74
110.00	13 4 27	3872.85	5.72	144.26	21.63	56.24	14 9 0	3272.9	1.24	138.03

DIFFERENTIAL CORRECTIONS
TDE -.7940 TRA 3.2940 TC3-6.0709 BAU 1.2954
RDE .5968 RRA -.5280 RC3 1.2333 FAU .51631
FDE-5.8787 FRA18.1768 FC-28.5769 BSP 23809
BDE .9933 BRA 3.3360 BC3 6.1949 FSP 10955

MID-COURSE EXECUTION ACCURACY
SGT 7015.0 SGR 1528.7 SG3 3162.1
RRT -.9006 RRF -.9182 RTF .9946
SGB 7179.6 R23 .0337 R13 -.9953
SG1 7150.0 SG2 651.8 THA 168.80

ORBIT DETERMINATION ACCURACY
ST 1891.7 SR 897.7 SS 3139.9
CRT -.7991 CRS .8780 CST -.9893
LSA 3739.7 MSA 507.9 SSA 19.3
EL1 2032.7 EL2 502.2 ALF 157.81

LAUNCH DATE OCT 16 1964 FLIGHT TIME 346.00 ARRIVAL DATE SEP 27 1965

HELIOCENTRIC CONIC DISTANCE 785.958 EARTH TO MARS

RL 149.11 LAL .00 LOL 22.67 VL 32.633 GAL -6.07 AZL 88.74 HCA 244.62 SMA 185.55 ECC .22209 INC 1.2605 V1 29.883
RP 218.34 LAP -1.14 LOP 267.28 VP 22.370 GAP -7.86 AZP 90.54 TAL 325.51 TAP 210.13 RCA 144.34 APO 226.76 V2 25.168
RC 278.273 GL 10.33 GP 6.58 ZAL 138.05 ZAP 71.98 ETS 181.52 ZAE 104.05 ETE 176.97 ZAC 89.90 ETC 258.56 CLP 71.86

PLANETOCENTRIC CONIC

C3 15.837 VHL 3.980 DLA 16.68 RAL 167.28 RAD 6567.6 VEL 11.714 PTH 2.06 VHP 3.096 DPA 15.80 RAP 164.06 ECC 1.2606

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 34 56	2706.99	-27.69	75.07	30.42	96.16	19 20 3	2107.0	-26.55	66.59
90.00	11 6 25	4257.25	1.89	175.17	24.56	61.74	12 17 22	3657.3	-1.91	168.55
100.00	20 5 44	2414.19	-28.97	53.35	30.24	97.71	20 45 58	1814.2	-27.60	44.82
100.00	12 18 18	4025.28	3.01	157.50	23.94	60.25	13 25 23	3425.3	-.97	150.97
110.00	21 34 52	2135.32	-32.28	31.51	29.58	101.90	22 10 27	1535.3	-30.31	22.85
110.00	13 5 40	3876.91	5.87	144.47	22.17	56.26	14 10 17	3276.9	1.40	138.24

DIFFERENTIAL CORRECTIONS
TDE -.8595 TRA 3.5003 TC3-6.2804 BAU 1.3535
RDE .5993 RRA -.5118 RC3 1.1940 FAU .50364
FDE-5.8190 FRA17.8400 FC-27.5326 BSP 24988
BDE 1.0478 BRA 3.5375 BC3 6.3929 FSP 10681

MID-COURSE EXECUTION ACCURACY
SGT 7361.7 SGR 1496.4 SG3 3078.2
RRT -.8955 RRF -.9131 RTF .9950
SGB 7512.3 R23 .0336 R13 -.9957
SG1 7483.6 SG2 655.2 THA 169.60

ORBIT DETERMINATION ACCURACY
ST 2011.2 SR 893.6 SS 3112.0
CRT -.7992 CRS .8757 CST -.9900
LSA 3776.9 MSA 512.3 SSA 18.9
EL1 2142.2 EL2 504.3 ALF 159.25

LAUNCH DATE OCT 16 1964 FLIGHT TIME 348.00 ARRIVAL DATE SEP 29 1965

HELIOCENTRIC CONIC DISTANCE 790.027 EARTH TO MARS

RL 449.11 LAL .00 LOL 22.67 VL 32.633 GAL -6.13 AZL 88.72 HCA 245.76 SMA 185.56 ECC .22263 INC 1.2805 V1 29.883
RP 217.98 LAP -1.17 LOP 268.42 VP 22.416 GAP -8.06 AZP 90.53 TAL 325.21 TAP 210.97 RCA 144.25 APO 226.88 V2 25.208
RC 279.589 GL 10.43 GP 6.45 ZAL 138.38 ZAP 70.25 ETS 181.71 ZAE 102.08 ETE 177.29 ZAC 89.66 ETC 258.65 CLP 70.12

PLANETOCENTRIC CONIC

C3 16.045 VHL 4.006 DLA 16.62 RAL 167.67 RAD 6567.6 VEL 11.723 PTH 2.07 VHP 3.135 DPA 15.92 RAP 163.44 ECC 1.2641

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 37 2	2707.87	-27.70	75.13	31.01	96.13	19 22 10	2107.9	-26.56	66.65
90.00	11 7 25	4262.32	2.05	175.46	25.12	61.75	12 18 28	3662.3	-1.74	168.83
100.00	20 7 47	2415.22	-28.98	53.43	30.84	97.68	20 48 2	1815.2	-27.61	44.89
100.00	12 19 21	4030.20	3.18	157.77	24.50	60.26	13 26 32	3430.2	-.81	151.24
110.00	21 36 49	2136.66	-32.30	31.61	30.17	101.84	22 12 26	1536.7	-30.34	22.95
110.00	13 6 49	3881.53	6.05	144.71	22.72	56.29	14 11 30	3281.5	1.58	138.48

DIFFERENTIAL CORRECTIONS
TDE -.9265 TRA 3.7067 TC3-6.4760 BAU 1.4111
RDE .6018 RRA -.4955 RC3 1.1547 FAU .49057
FDE-5.7551 FRA17.4858 FC-26.4691 BSP 26128
BDE 1.1048 BRA 3.7396 BC3 6.5782 FSP 10391

MID-COURSE EXECUTION ACCURACY
SGT 7699.9 SGR 1464.1 SG3 2991.4
RRT -.8899 RRF -.9076 RTF .9953
SGB 7837.9 R23 .0335 R13 -.9959
SG1 7810.2 SG2 658.4 THA 170.33

ORBIT DETERMINATION ACCURACY
ST 2129.7 SR 889.3 SS 3082.5
CRT -.7990 CRS .8736 CST -.9906
LSA 3816.0 MSA 516.2 SSA 18.4
EL1 2251.9 EL2 505.8 ALF 160.53

LAUNCH DATE OCT 16 1964 FLIGHT TIME 350.00 ARRIVAL DATE OCT 1 1965

HELIOCENTRIC CONIC DISTANCE 794.100 EARTH TO MARS

RL 149.11 LAL .00 LOL 22.67 VL 32.634 GAL -6.20 AZL 88.70 HCA 246.90 SMA 185.58 ECC .22321 INC 1.3003 V1 29.883
RP 217.62 LAP -1.20 LOP 269.56 VP 22.462 GAP -8.26 AZP 90.51 TAL 324.89 TAP 211.79 RCA 144.16 APO 227.00 V2 25.248
RC 280.887 GL 10.52 GP 6.32 ZAL 138.73 ZAP 68.56 ETS 181.89 ZAE 100.15 ETE 177.59 ZAC 89.43 ETC 258.73 CLP 68.42

PLANETOCENTRIC CONIC

C3 16.268 VHL 4.033 DLA 16.55 RAL 168.07 RAD 6567.7 VEL 11.733 PTH 2.07 VHP 3.177 DPA 16.01 RAP 162.86 ECC 1.2677

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 39 18	2708.44	-27.70	75.17	31.62	96.11	19 24 26	2108.4	-26.57	66.69
90.00	11 8 21	4268.04	2.23	175.78	25.70	61.76	12 19 29	3668.0	-1.56	169.15
100.00	20 9 59	2415.97	-28.99	53.48	31.45	97.65	20 50 15	1816.0	-27.62	44.94
100.00	12 20 20	4035.73	3.36	158.07	25.07	60.28	13 27 36	3435.7	-.62	151.55
110.00	21 38 54	2137.78	-32.32	31.69	30.78	101.79	22 14 32	1537.8	-30.36	23.03
110.00	13 7 55	3886.69	6.24	144.99	23.29	56.32	14 12 42	3286.7	1.77	138.75

DIFFERENTIAL CORRECTIONS
TDE -.9945 TRA 3.9139 TC3-6.6547 BAU 1.4675
RDE .6043 RRA -.4793 RC3 1.1148 FAU .47673
FDE-5.6855 FRA17.1203 FC-25.3695 BSP 27257
BDE 1.1637 BRA 3.9432 BC3 6.7474 FSP 10098

MID-COURSE EXECUTION ACCURACY
SGT 8028.5 SGR 1431.8 SG3 2901.5
RRT -.8838 RRF -.9017 RTF .9956
SGB 8158.1 R23 .0336 R13 -.9961
SG1 8128.3 SG2 661.6 THA 170.98

ORBIT DETERMINATION ACCURACY
ST 2247.1 SR 884.9 SS 3051.3
CRT -.7985 CRS .8715 CST -.9911
LSA 3856.5 MSA 519.8 SSA 18.1
EL1 2361.2 EL2 506.9 ALF 161.67

LAUNCH DATE OCT 16 1964 FLIGHT TIME 352.00 ARRIVAL DATE OCT 3 1965

HELIOCENTRIC CONIC DISTANCE 798.178 EARTH TO MARS

RL	149.11	LAL	.00	LOL	22.67	VL	32.635	GAL	-6.26	AZL	88.68	HCA	248.05	SMA	185.60	ECC	.22384	INC	1.3197
RP	217.27	LAP	-1.22	LOP	270.71	VP	22.508	GAP	-8.46	AZP	90.49	TAL	324.56	TAP	212.61	RCA	144.05	APO	227.14
RC	282.167	GL	10.60	GP	6.19	ZAL	139.10	ZAP	66.91	ETS	182.07	ZAE	98.25	ETE	177.88	ZAC	89.21	ETC	258.81

V1	29.883	V2	25.287	CLP	66.76														

PLANETOCENTRIC CONIC

C3	16.506	VHL	4.063	DLA	16.47	RAL	168.48	RAD	6567.7	VEL	11.743	PTH	2.07	VHP	3.222	DPA	16.09	RAP	162.32

ECC	1.2716	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG	
		90.00	18 41 43	2708.70	-27.71	75.19	32.25	96.10	19 26 52	2108.7	-26.57	66.71	
		90.00	11 9 11	4274.40	2.44	176.13	26.29	61.78	12 20 25	3674.4	-1.35	169.50	
		100.00	20 12 21	2416.46	-28.99	53.52	32.08	97.63	20 52 37	1816.5	-27.63	44.98	
		100.00	12 21 15	4041.87	3.57	158.41	25.66	60.30	13 28 37	3441.9	-.41	151.88	
		110.00	21 41 7	2138.71	-32.33	31.76	31.41	101.76	22 16 46	1538.7	-30.37	23.09	
		110.00	13 8 58	3892.39	6.46	145.29	23.87	56.36	14 13 50	3292.4	1.99	139.05	

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-1.0650	TRA	4.1207	TC3	-6.8213	BAU	1.5239	SGT	8348.6	SGR	1400.4	SG3	2810.2	ST	2364.0	SR	880.8
RDE	.6073	RRA	-.4630	RC3	1.0758	FAU	.46290	RRT	-.8773	RRF	-.8956	RTF	.9958	CRT	-.7982	CRS	.8698
FDE	-5.6208	FRA	16.7374	FC	-24.2787	BSP	28328	SGB	8465.3	R23	.0340	R13	-.9963	LSA	3900.5	MSA	523.0
BDE	1.2260	BRA	4.1466	BC3	6.9056	FSP	9785	SG1	8439.1	SG2	664.8	THA	171.58	EL1	2471.2	EL2	507.6

SS	3020.5	V1	29.883	V2	25.327
CST	-.9914				
SSA	17.7				
ALF	162.68				

LAUNCH DATE OCT 16 1964 FLIGHT TIME 354.00 ARRIVAL DATE OCT 5 1965

HELIOCENTRIC CONIC DISTANCE 802.260 EARTH TO MARS

RL	149.11	LAL	.00	LOL	22.67	VL	32.637	GAL	-6.34	AZL	88.66	HCA	249.20	SMA	185.62	ECC	.22451	INC	1.3389
RP	216.91	LAP	-1.25	LOP	271.86	VP	22.554	GAP	-8.65	AZP	90.48	TAL	324.22	TAP	213.42	RCA	143.95	APO	227.29
RC	283.431	GL	10.67	GP	6.06	ZAL	139.48	ZAP	65.30	ETS	182.23	ZAE	96.39	ETE	178.14	ZAC	89.00	ETC	258.88

V1	29.883	V2	25.327	CLP	65.15														

PLANETOCENTRIC CONIC

C3	16.759	VHL	4.094	DLA	16.38	RAL	168.90	RAD	6567.7	VEL	11.753	PTH	2.07	VHP	3.270	DPA	16.16	RAP	161.82

ECC	1.2758	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG	
		90.00	18 44 18	2708.69	-27.70	75.19	32.90	96.10	19 29 27	2108.7	-26.57	66.71	
		90.00	11 9 56	4281.39	2.66	176.52	26.90	61.80	12 21 18	3681.4	-1.13	169.89	
		100.00	20 14 51	2416.70	-28.99	53.54	32.72	97.62	20 55 8	1816.7	-27.63	45.00	
		100.00	12 22 5	4048.61	3.80	158.78	26.27	60.33	13 29 34	3448.6	-.18	152.25	
		110.00	21 43 28	2139.45	-32.34	31.82	32.06	101.72	22 19 7	1539.4	-30.39	23.14	
		110.00	13 9 58	3898.63	6.69	145.62	24.48	56.40	14 14 56	3298.6	2.23	139.37	

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-1.1361	TRA	4.3289	TC3	-6.9696	BAU	1.5787	SGT	8658.4	SGR	1369.2	SG3	2717.0	ST	2479.2	SR	876.4
RDE	.6101	RRA	-.4470	RC3	1.0366	FAU	.44852	RRT	-.8704	RRF	-.8891	RTF	.9960	CRT	-.7975	CRS	.8681
FDE	-5.5474	FRA	16.3489	FC	-23.1694	BSP	29387	SGB	8766.0	R23	.0344	R13	-.9964	LSA	3944.8	MSA	526.0
BDE	1.2896	BRA	4.3519	BC3	7.0463	FSP	9476	SG1	8740.6	SG2	667.8	THA	172.12	EL1	2580.0	EL2	508.1

SS	2987.2	V1	29.883	V2	25.327
CST	-.9917				
SSA	17.3				
ALF	163.60				

LAUNCH DATE OCT 16 1964 FLIGHT TIME 356.00 ARRIVAL DATE OCT 7 1965

HELIOCENTRIC CONIC DISTANCE 806.346 EARTH TO MARS

RL	149.11	LAL	.00	LOL	22.67	VL	32.638	GAL	-6.41	AZL	88.64	HCA	250.35	SMA	185.65	ECC	.22523	INC	1.3578
RP	216.57	LAP	-1.28	LOP	273.01	VP	22.600	GAP	-8.85	AZP	90.46	TAL	323.86	TAP	214.21	RCA	143.83	APO	227.46
RC	284.679	GL	10.73	GP	5.93	ZAL	139.88	ZAP	63.73	ETS	182.38	ZAE	94.58	ETE	178.40	ZAC	88.79	ETC	258.95

V1	29.883	V2	25.365	CLP	63.57														

PLANETOCENTRIC CONIC

C3	17.028	VHL	4.127	DLA	16.27	RAL	169.32	RAD	6567.7	VEL	11.765	PTH	2.08	VHP	3.320	DPA	16.20	RAP	161.37

ECC	1.2802	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG	
		90.00	18 47 2	2708.40	-27.70	75.17	33.56	96.11	19 32 11	2108.4	-26.57	66.69	
		90.00	11 10 37	4289.01	2.91	176.95	27.53	61.82	12 22 6	3689.0	-.88	170.32	
		100.00	20 17 30	2416.69	-28.99	53.53	33.38	97.62	20 57 46	1816.7	-27.63	45.00	
		100.00	12 22 51	4055.95	4.05	159.19	26.90	60.36	13 30 27	3455.9	.07	152.66	
		110.00	21 45 56	2140.01	-32.35	31.86	32.72	101.70	22 21 36	1540.0	-30.40	23.18	
		110.00	13 10 55	3905.40	6.95	145.97	25.11	56.45	14 16 0	3305.4	2.49	139.73	

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-1.2084	TRA	4.5385	TC3	-7.1009	BAU	1.6324	SGT	8958.3	SGR	1338.5	SG3	2622.9	ST	2593.1	SR	871.8
RDE	.6130	RRA	-.4313	RC3	.9977	FAU	.43379	RRT	-.8631	RRF	-.8822	RTF	.9962	CRT	-.7966	CRS	.8663
FDE	-5.4684	FRA	15.9565	FC	-22.0545	BSP	30425	SGB	9057.7	R23	.0349	R13	-.9965	LSA	3989.9	MSA	528.5
BDE	1.3550	BRA	4.5590	BC3	7.1706	FSP	9163	SG1	9032.9	SG2	670.5	THA	172.61	EL1	2688.1	EL2	508.3

SS	2952.1	V1	29.883	V2	25.365
CST	-.9920				
SSA	17.0				
ALF	164.44				

LAUNCH DATE OCT 16 1964 FLIGHT TIME 358.00 ARRIVAL DATE OCT 9 1965

HELIOCENTRIC CONIC DISTANCE 810.436 EARTH TO MARS

RL	149.11	LAL	.00	LOL	22.67	VL	32.640	GAL	-6.49	AZL	88.62	HCA	251.51	SMA	185.67	ECC	.22600	INC	1.3766
RP	216.22	LAP	-1.31	LOP	274.17	VP	22.645	GAP	-9.04	AZP	90.44	TAL	323.49	TAP	215.00	RCA	143.71	APO	227.64
RC	285.910	GL	10.79	GP	5.81	ZAL	140.28	ZAP	62.20	ETS	182.53	ZAE	92.80	ETE	178.63	ZAC	88.60	ETC	259.00

V1	29.883	V2	25.404	CLP	62.04														

PLANETOCENTRIC CONIC

C3	17.314	VHL	4.161	DLA	16.15	RAL	169.76	RAD	6567.7	VEL	11.777	PTH	2.08	VHP	3.374	DPA	16.23	RAP	160.96

ECC	1.2849	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG	
		90.00	18 49 55	2707.85	-27.70	75.13	34.24	96.13	19 35 3	2107.8	-26.56	66.65	
		90.00	11 11 13	4297.25	3.17	177.41	28.17	61.85	12 22 51	3697.2	-.62	170.78	
		100.00	20 20 17	2416.46	-28.99	53.52	34.06	97.63	21 0 33	1816.5	-27.63	44.98	
		100.00	12 23 33	4063.87	4.31	159.62	27.54	60.39	13 31 17	3463.9	.34	153.09	
		110.00	21 48 31	2140.40	-32.35	31.89	33.40	101.68	22 24 11	1540.4	-30.41	23.21	
		110.00	13 11 49	3912.70	7.22	146.36	25.75	56.50	14 17 1	3312.7	2.77	140.11	

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-1.2833	TRA	4.7483	TC3	-7.2180	BAU	1.6855	SGT	9248.6	SGR	1308.9	SG3	2528.7	ST	2706.4	SR	867.4
RDE	.6162	RRA	-.4159	RC3	.9598	FAU	.41913	RRT	-.8554	RRF	-.8751	RTF	.9963	CRT	-.7960	CRS	.8649
FDE	-5.3921	FRA	15.5561	FC	-20.9570	BSP	31417	SGB	9340.8	R23	.0355	R13	-.9966	LSA	4037.9	MSA	530.7
BDE	1.4235	BRA	4.7664	BC3	7.2815	FSP	8845	SG1	9316.5	SG2	673.1	THA	173.06	EL1	2796.2	EL2	508.2

SS	2917.1	V1	29.883	V2	25.404
CST	-.9922				
SSA	16.7				
ALF	165.19				

LAUNCH DATE OCT 16 1964 FLIGHT TIME 360.00 ARRIVAL DATE OCT 11 1965

HELIOCENTRIC CONIC DISTANCE 814.529 EARTH TO MARS

RL 149.11 LAL .00 LOL 22.67 VL 32.642 GAL -6.58 AZL 88.60 HCA 252.67 SMA 185.70 ECC .22682 INC 1.3952 V1 29.883
RP 215.88 LAP -1.33 LOP 275.33 VP 22.691 GAP -9.23 AZP 90.42 TAL 323.10 TAP 215.77 RCA 143.58 APO 227.83 V2 25.442
RC 287.127 GL 10.84 GP 5.68 ZAL 140.71 ZAP 60.71 ETS 182.67 ZAE 91.06 ETE 178.85 ZAC 88.42 ETC 259.06 CLP 60.55

PLANETOCENTRIC CONIC

C3 17.618 VHL 4.197 DLA 16.02 RAL 170.21 RAD 6567.7 VEL 11.790 PTH 2.08 VHP 3.430 DPA 16.24 RAP 160.60 ECC 1.2899

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 52 57	2707.06	-27.69	75.07	34.94	96.16	19 38 4	2107.1	-26.55	66.59
90.00	11 11 45	4306.09	3.46	177.90	28.84	61.88	12 23 31	3706.1	-.33	171.27
100.00	20 23 12	2416.01	-28.99	53.48	34.76	97.65	21 3 28	1816.0	-27.62	44.95
100.00	12 24 11	4072.38	4.60	160.09	28.21	60.43	13 32 4	3472.4	.63	153.56
110.00	21 51 13	2140.63	-32.36	31.90	34.09	101.67	22 26 53	1540.6	-30.41	23.23
110.00	13 12 40	3920.52	7.51	146.78	26.41	56.55	14 18 0	3320.5	3.06	140.52

DIFFERENTIAL CORRECTIONS
TDE-1.3589 TRA 4.9603 TC3-7.3181 BAU 1.7373
RDE .6194 RRA -.4009 RC3 .9223 FAU .40422
FDE-5.3103 FRA15.1571 FC-19.8636 BSP 32397
BDE 1.4934 BRA 4.9765 BC3 7.3760 FSP 8535

MID-COURSE EXECUTION ACCURACY
SGT 9529.3 SGR 1280.1 SG3 2434.5
RRT -.8473 RRF -.8677 RTF .9963
SGB 9614.9 R23 .0361 R13 -.9967
SG1 9591.1 SG2 675.4 THA 173.47

ORBIT DETERMINATION ACCURACY
ST 2818.0 SR 863.0 SS 2880.4
CRT -.7952 CRS .8635 CST -.9924
LSA 4086.4 MSA 532.6 SSA 16.4
EL1 2903.1 EL2 507.9 ALF 165.87

LAUNCH DATE OCT 16 1964 FLIGHT TIME 362.00 ARRIVAL DATE OCT 13 1965

HELIOCENTRIC CONIC DISTANCE 818.625 EARTH TO MARS

RL 149.11 LAL .00 LOL 22.67 VL 32.644 GAL -6.66 AZL 88.59 HCA 253.84 SMA 185.74 ECC .22768 INC 1.4136 V1 29.883
RP 215.54 LAP -1.36 LOP 276.50 VP 22.736 GAP -9.42 AZP 90.39 TAL 322.69 TAP 216.53 RCA 143.45 APO 228.03 V2 25.480
RC 288.329 GL 10.89 GP 5.56 ZAL 141.14 ZAP 59.27 ETS 182.79 ZAE 89.36 ETE 179.06 ZAC 88.25 ETC 259.10 CLP 59.10

PLANETOCENTRIC CONIC

C3 17.939 VHL 4.235 DLA 15.87 RAL 170.66 RAD 6567.7 VEL 11.803 PTH 2.09 VHP 3.488 DPA 16.24 RAP 160.28 ECC 1.2952

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 56 6	2706.04	-27.69	75.00	35.65	96.20	19 41 12	2106.0	-26.54	66.52
90.00	11 12 13	4315.53	3.76	178.43	29.52	61.91	12 24 8	3715.5	-.03	171.80
100.00	20 26 15	2415.35	-28.98	53.44	35.47	97.67	21 6 30	1815.4	-27.62	44.90
100.00	12 24 46	4081.45	4.90	160.59	28.89	60.48	13 32 47	3481.4	.93	154.06
110.00	21 54 1	2140.71	-32.36	31.91	34.80	101.67	22 29 42	1540.7	-30.41	23.24
110.00	13 13 28	3928.85	7.83	147.22	27.09	56.62	14 18 57	3328.9	3.38	140.95

DIFFERENTIAL CORRECTIONS
TDE-1.4363 TRA 5.1743 TC3-7.4025 BAU 1.7880
RDE .6229 RRA -.3864 RC3 .8857 FAU .38934
FDE-5.2269 FRA14.7577 FC-18.7889 BSP 33347
BDE 1.5656 BRA 5.1887 BC3 7.4553 FSP 8223

MID-COURSE EXECUTION ACCURACY
SGT 9800.6 SGR 1252.3 SG3 2340.9
RRT -.8390 RRF -.8600 RTF .9964
SGB 9880.3 R23 .0368 R13 -.9967
SG1 9857.0 SG2 677.6 THA 173.85

ORBIT DETERMINATION ACCURACY
ST 2928.6 SR 858.5 SS 2842.9
CRT -.7944 CRS .8623 CST -.9926
LSA 4136.4 MSA 534.2 SSA 16.1
EL1 3009.3 EL2 507.5 ALF 166.50

LAUNCH DATE OCT 16 1964 FLIGHT TIME 364.00 ARRIVAL DATE OCT 15 1965

HELIOCENTRIC CONIC DISTANCE 822.724 EARTH TO MARS

RL 149.11 LAL .00 LOL 22.67 VL 32.646 GAL -6.76 AZL 88.57 HCA 255.01 SMA 185.78 ECC .22860 INC 1.4317 V1 29.883
RP 215.21 LAP -1.38 LOP 277.67 VP 22.781 GAP -9.61 AZP 90.37 TAL 322.28 TAP 217.28 RCA 143.31 APO 228.24 V2 25.517
RC 289.516 GL 10.92 GP 5.44 ZAL 141.59 ZAP 57.86 ETS 182.91 ZAE 87.69 ETE 179.26 ZAC 88.09 ETC 259.14 CLP 57.70

PLANETOCENTRIC CONIC

C3 18.280 VHL 4.276 DLA 15.72 RAL 171.12 RAD 6567.7 VEL 11.818 PTH 2.09 VHP 3.549 DPA 16.22 RAP 160.00 ECC 1.3008

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 59 24	2704.81	-27.68	74.91	36.39	96.24	19 44 29	2104.8	-26.52	66.43
90.00	11 12 36	4325.55	4.08	178.99	30.22	61.95	12 24 42	3725.6	.30	172.36
100.00	20 29 25	2414.51	-28.97	53.38	36.21	97.70	21 9 40	1814.5	-27.60	44.84
100.00	12 25 16	4091.08	5.23	161.13	29.59	60.53	13 33 27	3491.1	1.26	154.58
110.00	21 56 57	2140.66	-32.36	31.91	35.53	101.67	22 32 37	1540.7	-30.41	23.23
110.00	13 14 14	3937.70	8.16	147.69	27.79	56.69	14 19 52	3337.7	3.72	141.42

DIFFERENTIAL CORRECTIONS
TDE-1.5160 TRA 5.3890 TC3-7.4732 BAU 1.8382
RDE .6265 RRA -.3723 RC3 .8504 FAU .37464
FDE-5.1426 FRA14.3568 FC-17.7422 BSP 34259
BDE 1.6404 BRA 5.4018 BC3 7.5214 FSP 7913

MID-COURSE EXECUTION ACCURACY
SGT10062.2 SGR 1225.6 SG3 2248.3
RRT -.8303 RRF -.8521 RTF .9964
SGB10136.6 R23 .0375 R13 -.9967
SG110113.8 SG2 679.5 THA 174.20

ORBIT DETERMINATION ACCURACY
ST 3038.0 SR 854.1 SS 2804.5
CRT -.7938 CRS .8613 CST -.9927
LSA 4187.8 MSA 535.3 SSA 15.9
EL1 3114.9 EL2 506.7 ALF 167.07

LAUNCH DATE OCT 16 1964 FLIGHT TIME 366.00 ARRIVAL DATE OCT 17 1965

HELIOCENTRIC CONIC DISTANCE 826.826 EARTH TO MARS

RL 149.11 LAL .00 LOL 22.67 VL 32.648 GAL -6.85 AZL 88.55 HCA 256.18 SMA 185.81 ECC .22957 INC 1.4499 V1 29.883
RP 214.88 LAP -1.41 LOP 278.84 VP 22.825 GAP -9.79 AZP 90.35 TAL 321.84 TAP 218.02 RCA 143.16 APO 228.47 V2 25.554
RC 290.691 GL 10.95 GP 5.32 ZAL 142.05 ZAP 56.50 ETS 183.03 ZAE 86.07 ETE 179.44 ZAC 87.94 ETC 259.17 CLP 56.33

PLANETOCENTRIC CONIC

C3 18.642 VHL 4.318 DLA 15.55 RAL 171.59 RAD 6567.8 VEL 11.833 PTH 2.10 VHP 3.613 DPA 16.19 RAP 159.77 ECC 1.3068

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 2 50	2703.38	-27.67	74.81	37.13	96.29	19 47 53	2103.4	-26.51	66.33
90.00	11 12 56	4336.15	4.42	179.59	30.94	62.00	12 25 12	3736.2	.64	172.95
100.00	20 32 43	2413.50	-28.96	53.30	36.95	97.74	21 12 56	1813.5	-27.59	44.77
100.00	12 25 43	4101.27	5.57	161.69	30.31	60.58	13 34 5	3501.3	1.61	155.14
110.00	21 59 58	2140.49	-32.36	31.89	36.28	101.68	22 35 39	1540.5	-30.41	23.22
110.00	13 14 57	3947.04	8.51	148.19	28.51	56.77	14 20 44	3347.0	4.07	141.91

DIFFERENTIAL CORRECTIONS
TDE-1.5969 TRA 5.6066 TC3-7.5273 BAU 1.8869
RDE .6303 RRA -.3587 RC3 .8158 FAU .35991
FDE-5.0563 FRA13.9598 FC-16.7148 BSP 35158
BDE 1.7168 BRA 5.6181 BC3 7.5713 FSP 7610

MID-COURSE EXECUTION ACCURACY
SGT10314.3 SGR 1200.0 SG3 2156.7
RRT -.8214 RRF -.8440 RTF .9964
SGB10383.9 R23 .0384 R13 -.9967
SG110361.5 SG2 681.2 THA 174.52

ORBIT DETERMINATION ACCURACY
ST 3145.9 SR 849.7 SS 2765.3
CRT -.7931 CRS .8603 CST -.9928
LSA 4240.0 MSA 536.4 SSA 15.7
EL1 3219.2 EL2 505.8 ALF 167.60

LAUNCH DATE OCT 16 1964 FLIGHT TIME 368.00 ARRIVAL DATE OCT 19 1965

HELIOCENTRIC CONIC DISTANCE 830.929 EARTH TO MARS

RL 149.11 LAL .00 LOL 22.67 VL 32.651 GAL -6.95 AZL 88.53 HCA 257.35 SMA 185.86 ECC .23059 INC 1.4678 V1 29.883
RP 214.56 LAP -1.43 LOP 280.02 VP 22.870 GAP -9.98 AZP 90.32 TAL 321.39 TAP 218.75 RCA 143.00 APO 228.71 V2 25.590
RC 291.851 GL 10.97 GP 5.21 ZAL 142.52 ZAP 55.17 ETS 183.13 ZAE 84.48 ETE 179.61 ZAC 87.80 ETC 259.19 CLP 55.01

PLANETOCENTRIC CONIC

C3 19.024 VHL 4.362 DLA 15.38 RAL 172.07 RAD 6567.8 VEL 11.849 PTH 2.10 VHP 3.679 DPA 16.14 RAP 159.58 ECC 1.3131

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 6 23	2701.77	-27.65	74.69	37.90	96.35	19 51 24	2101.8	-26.49	66.22
90.00	11 13 11	4347.32	4.78	180.21	31.68	62.06	12 25 39	3747.3	1.00	173.57
100.00	20 36 8	2412.33	-28.95	53.22	37.72	97.78	21 16 20	1812.3	-27.57	44.69
100.00	12 26 7	4111.99	5.92	162.29	31.05	60.65	13 34 39	3512.0	1.97	155.73
110.00	22 3 6	2140.20	-32.35	31.87	37.04	101.69	22 38 46	1540.2	-30.40	23.20
110.00	13 15 38	3956.89	8.87	148.72	29.25	56.85	14 21 35	3356.9	4.45	142.42

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.6793 TRA 5.8273 TC3-7.5651 BAU 1.9343 SGT10556.8 SGR 1175.4 SG3 2066.6 ST 3252.4 SR 845.3 SS 2724.6
RDE .6342 RRA -.3457 RC3 .7822 FAU .34526 RRT -.8124 RRF -.8357 RTF .9964 CRT -.7924 CRS .8594 CST -.9928
FDE-4.9666 FRA13.5680 FC-15.7120 BSP 36054 SGB10622.1 R23 .0392 R13 -.9966 LSA 4292.8 MSA 537.1 SSA 15.5
BDE 1.7951 BRA 5.8376 BC3 7.6054 FSP 7316 SG110600.1 SG2 682.7 THA 174.81 EL1 3322.4 EL2 504.8 ALF 168.08

LAUNCH DATE OCT 16 1964 FLIGHT TIME 370.00 ARRIVAL DATE OCT 21 1965

HELIOCENTRIC CONIC DISTANCE 835.034 EARTH TO MARS

RL 149.11 LAL .00 LOL 22.67 VL 32.653 GAL -7.05 AZL 88.51 HCA 258.53 SMA 185.90 ECC .23166 INC 1.4856 V1 29.883
RP 214.24 LAP -1.46 LOP 281.20 VP 22.914 GAP -10.17 AZP 90.30 TAL 320.93 TAP 219.46 RCA 142.84 APO 228.97 V2 25.626
RC 292.998 GL 10.99 GP 5.10 ZAL 143.00 ZAP 53.89 ETS 183.23 ZAE 82.94 ETE 179.78 ZAC 87.68 ETC 259.21 CLP 53.72

PLANETOCENTRIC CONIC

C3 19.428 VHL 4.408 DLA 15.19 RAL 172.55 RAD 6567.8 VEL 11.866 PTH 2.11 VHP 3.747 DPA 16.08 RAP 159.44 ECC 1.3197

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 10 2	2700.00	-27.64	74.56	38.68	96.41	19 55 2	2100.0	-26.46	66.09
90.00	11 13 23	4359.03	5.15	180.87	32.44	62.12	12 26 2	3759.0	1.38	174.22
100.00	20 39 39	2411.01	-28.94	53.12	38.50	97.83	21 19 50	1811.0	-27.55	44.59
100.00	12 26 28	4123.26	6.30	162.91	31.81	60.72	13 35 11	3523.3	2.35	156.35
110.00	22 6 20	2139.81	-32.35	31.84	37.82	101.71	22 42 0	1539.8	-30.40	23.17
110.00	13 16 16	3967.22	9.26	149.27	30.00	56.95	14 22 24	3367.2	4.84	142.96

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.7649 TRA 6.0498 TC3-7.5922 BAU 1.9816 SGT10791.6 SGR 1152.2 SG3 1978.4 ST 3358.5 SR 841.1 SS 2684.3
RDE .6386 RRA -.3332 RC3 .7500 FAU .33100 RRT -.8032 RRF -.8273 RTF .9964 CRT -.7920 CRS .8589 CST -.9929
FDE-4.8798 FRA13.1777 FC-14.7495 BSP 36892 SGB10853.0 R23 .0401 R13 -.9966 LSA 4347.8 MSA 537.3 SSA 15.3
BDE 1.8769 BRA 6.0590 BC3 7.6291 FSP 7021 SG110831.4 SG2 683.9 THA 175.08 EL1 3425.4 EL2 503.5 ALF 168.53

LAUNCH DATE OCT 16 1964 FLIGHT TIME 372.00 ARRIVAL DATE OCT 23 1965

HELIOCENTRIC CONIC DISTANCE 839.140 EARTH TO MARS

RL 149.11 LAL .00 LOL 22.67 VL 32.656 GAL -7.16 AZL 88.50 HCA 259.72 SMA 185.95 ECC .23279 INC 1.5034 V1 29.883
RP 213.93 LAP -1.48 LOP 282.38 VP 22.957 GAP -10.35 AZP 90.27 TAL 320.45 TAP 220.17 RCA 142.66 APO 229.24 V2 25.662
RC 294.131 GL 11.00 GP 4.99 ZAL 143.49 ZAP 52.64 ETS 183.32 ZAE 81.42 ETE 179.93 ZAC 87.56 ETC 259.22 CLP 52.48

PLANETOCENTRIC CONIC

C3 19.856 VHL 4.456 DLA 14.99 RAL 173.05 RAD 6567.8 VEL 11.884 PTH 2.11 VHP 3.818 DPA 16.00 RAP 159.33 ECC 1.3268

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 13 49	2698.08	-27.63	74.42	39.48	96.48	19 58 47	2098.1	-26.44	65.96
90.00	11 13 32	4371.29	5.54	181.56	33.21	62.19	12 26 23	3771.3	1.77	174.91
100.00	20 43 17	2409.56	-28.93	53.02	39.30	97.89	21 23 27	1809.6	-27.53	44.49
100.00	12 26 45	4135.04	6.69	163.57	32.59	60.80	13 35 40	3535.0	2.75	157.00
110.00	22 9 39	2139.33	-32.34	31.81	38.61	101.73	22 45 18	1539.3	-30.39	23.14
110.00	13 16 52	3978.04	9.66	149.85	30.78	57.05	14 23 10	3378.0	5.25	143.53

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.8514 TRA 6.2765 TC3-7.6032 BAU 2.0273 SGT11017.3 SGR 1130.0 SG3 1891.9 ST 3462.7 SR 836.8 SS 2642.2
RDE .6429 RRA -.3214 RC3 .7188 FAU .31681 RRT -.7939 RRF -.8189 RTF .9963 CRT -.7915 CRS .8583 CST -.9929
FDE-4.7886 FRA12.7945 FC-13.8127 BSP 37741 SGB11075.1 R23 .0409 R13 -.9965 LSA 4402.6 MSA 537.4 SSA 15.1
BDE 1.9599 BRA 6.2847 BC3 7.6371 FSP 6739 SG111053.9 SG2 684.9 THA 175.33 EL1 3526.8 EL2 502.1 ALF 168.94

LAUNCH DATE OCT 16 1964 FLIGHT TIME 374.00 ARRIVAL DATE OCT 25 1965

HELIOCENTRIC CONIC DISTANCE 843.247 EARTH TO MARS

RL 149.11 LAL .00 LOL 22.67 VL 32.659 GAL -7.28 AZL 88.48 HCA 260.90 SMA 186.00 ECC .23398 INC 1.5211 V1 29.883
RP 213.62 LAP -1.50 LOP 283.57 VP 23.000 GAP -10.54 AZP 90.24 TAL 319.96 TAP 220.86 RCA 142.48 APO 229.52 V2 25.697
RC 295.251 GL 11.00 GP 4.89 ZAL 144.00 ZAP 51.43 ETS 183.41 ZAE 79.95 ETE 180.08 ZAC 87.45 ETC 259.22 CLP 51.27

PLANETOCENTRIC CONIC

C3 20.309 VHL 4.507 DLA 14.78 RAL 173.54 RAD 6567.8 VEL 11.903 PTH 2.11 VHP 3.892 DPA 15.91 RAP 159.27 ECC 1.3342

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 17 42	2696.02	-27.61	74.27	40.30	96.55	20 2 38	2096.0	-26.41	65.81
90.00	11 13 37	4384.08	5.95	182.28	34.01	62.26	12 26 41	3784.1	2.19	175.62
100.00	20 47 1	2408.00	-28.91	52.90	40.11	97.95	21 27 9	1808.0	-27.51	44.38
100.00	12 26 59	4147.34	7.10	164.25	33.38	60.89	13 36 7	3547.3	3.16	157.67
110.00	22 13 4	2138.77	-32.33	31.77	39.42	101.75	22 48 42	1538.8	-30.38	23.10
110.00	13 17 26	3989.33	10.08	150.46	31.57	57.16	14 23 55	3389.3	5.68	144.13

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.9404 TRA 6.5059 TC3-7.6014 BAU 2.0723 SGT11234.3 SGR 1108.9 SG3 1807.5 ST 3565.8 SR 832.7 SS 2599.8
RDE .6476 RRA -.3101 RC3 .6888 FAU .30295 RRT -.7845 RRF -.8104 RTF .9962 CRT -.7912 CRS .8580 CST -.9929
FDE-4.6984 FRA12.4149 FC-12.9141 BSP 38555 SGB11288.9 R23 .0419 R13 -.9964 LSA 4458.5 MSA 537.3 SSA 15.0
BDE 2.0457 BRA 6.5133 BC3 7.6326 FSP 6462 SG111268.1 SG2 685.6 THA 175.56 EL1 3627.4 EL2 500.6 ALF 169.33

LAUNCH DATE OCT 16 1964 FLIGHT TIME 376.00 ARRIVAL DATE OCT 27 1965

HELIOCENTRIC CONIC DISTANCE 847.354 EARTH TO MARS

RL 149.11 LAL .00 LOL 22.67 VL 32.662 GAL -7.39 AZL 88.46 HCA 262.09 SMA 186.05 ECC .23523 INC 1.5387 V1 29.883
RP 213.31 LAP -1.52 LOP 284.76 VP 23.043 GAP -10.72 AZP 90.21 TAL 319.45 TAP 221.54 RCA 142.29 APO 229.81 V2 25.731
RC 296.356 GL 11.00 GP 4.78 ZAL 144.51 ZAP 50.26 ETS 183.49 ZAE 78.50 ETE 180.21 ZAC 87.35 ETC 259.22 CLP 50.10

PLANETOCENTRIC CONIC

C3 20.787 VHL 4.559 DLA 14.56 RAL 174.05 RAD 6567.8 VEL 11.923 PTH 2.12 VHP 3.967 DPA 15.81 RAP 159.25 ECC 1.3421

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 21 42	2693.85	-27.59	74.12	41.14	96.63	20 6 35	2093.9	-26.39	65.66
90.00	11 13 39	4397.40	6.37	183.04	34.83	62.35	12 26 56	3797.4	2.62	176.36
100.00	20 50 51	2406.33	-28.90	52.78	40.95	98.01	21 30 57	1806.3	-27.49	44.26
100.00	12 27 11	4160.14	7.52	164.97	34.20	60.98	13 36 31	3560.1	3.60	158.38
110.00	22 16 33	2138.15	-32.32	31.72	40.25	101.78	22 52 12	1538.2	-30.36	23.05
110.00	13 17 57	4001.09	10.51	151.09	32.39	57.28	14 24 39	3401.1	6.12	144.75

DIFFERENTIAL CORRECTIONS
TDE-2.0317 TRA 6.7394 TC3-7.5881 BAU 2.1167
RDE .6526 RRA -.2995 RC3 .6600 FAU .28939
FDE-4.6072 FRA12.0429 FC-12.0523 BSP 39346
BDE 2.1340 BRA 6.7461 BC3 7.6167 FSP 6191

MID-COURSE EXECUTION ACCURACY
SGT11444.0 SGR 1089.0 SG3 1725.4
RRT -.7752 RRF -.8021 RTF .9961
SGB11495.7 R23 .0429 R13 -.9963
SG111475.3 SG2 686.1 THA 175.77

ORBIT DETERMINATION ACCURACY
ST 3667.9 SR 828.5 SS 2556.7
CRT -.7910 CRS .8578 CST -.9929
LSA 4515.3 MSA 536.7 SSA 14.9
EL1 3727.1 EL2 498.8 ALF 169.68

LAUNCH DATE OCT 16 1964 FLIGHT TIME 378.00 ARRIVAL DATE OCT 29 1965

HELIOCENTRIC CONIC DISTANCE 851.462 EARTH TO MARS

RL 149.11 LAL .00 LOL 22.67 VL 32.665 GAL -7.51 AZL 88.44 HCA 263.28 SMA 186.10 ECC .23653 INC 1.5562 V1 29.883
RP 213.01 LAP -1.55 LOP 285.95 VP 23.086 GAP -10.90 AZP 90.18 TAL 318.92 TAP 222.21 RCA 142.08 APO 230.12 V2 25.765
RC 297.448 GL 10.99 GP 4.68 ZAL 145.04 ZAP 49.13 ETS 183.56 ZAE 77.10 ETE 180.34 ZAC 87.27 ETC 259.21 CLP 48.96

PLANETOCENTRIC CONIC

C3 21.293 VHL 4.614 DLA 14.34 RAL 174.56 RAD 6567.9 VEL 11.945 PTH 2.13 VHP 4.046 DPA 15.70 RAP 159.26 ECC 1.3504

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 25 47	2691.58	-27.57	73.95	41.99	96.71	20 10 38	2091.6	-26.36	65.50
90.00	11 13 38	4411.22	6.80	183.82	35.66	62.45	12 27 9	3811.2	3.06	177.14
100.00	20 54 46	2404.59	-28.88	52.65	41.80	98.07	21 34 51	1804.6	-27.46	44.14
100.00	12 27 19	4173.44	7.96	165.71	35.03	61.09	13 36 53	3573.4	4.04	159.11
110.00	22 20 8	2137.48	-32.31	31.67	41.10	101.81	22 55 46	1537.5	-30.35	23.00
110.00	13 18 27	4013.31	10.96	151.76	33.23	57.42	14 25 20	3413.3	6.58	145.39

DIFFERENTIAL CORRECTIONS
TDE-2.1262 TRA 6.9763 TC3-7.5633 BAU 2.1606
RDE .6578 RRA -.2894 RC3 .6325 FAU .27620
FDE-4.5174 FRA11.6748 FC-11.2295 BSP 40112
BDE 2.2256 BRA 6.9823 BC3 7.5897 FSP 5925

MID-COURSE EXECUTION ACCURACY
SGT11645.8 SGR 1070.3 SG3 1645.5
RRT -.7660 RRF -.7938 RTF .9960
SGB11694.9 R23 .0439 R13 -.9962
SG111674.7 SG2 686.4 THA 175.96

ORBIT DETERMINATION ACCURACY
ST 3769.3 SR 824.5 SS 2513.4
CRT -.7910 CRS .8579 CST -.9929
LSA 4573.5 MSA 535.9 SSA 14.7
EL1 3826.3 EL2 496.9 ALF 170.01

LAUNCH DATE OCT 16 1964 FLIGHT TIME 380.00 ARRIVAL DATE OCT 31 1965

HELIOCENTRIC CONIC DISTANCE 855.568 EARTH TO MARS

RL 149.11 LAL .00 LOL 22.67 VL 32.669 GAL -7.64 AZL 88.43 HCA 264.48 SMA 186.16 ECC .23790 INC 1.5737 V1 29.883
RP 212.72 LAP -1.57 LOP 287.15 VP 23.128 GAP -11.09 AZP 90.15 TAL 318.38 TAP 222.86 RCA 141.87 APO 230.45 V2 25.798
RC 298.526 GL 10.97 GP 4.59 ZAL 145.57 ZAP 48.03 ETS 183.63 ZAE 75.72 ETE 180.47 ZAC 87.19 ETC 259.19 CLP 47.86

PLANETOCENTRIC CONIC

C3 21.828 VHL 4.672 DLA 14.10 RAL 175.07 RAD 6567.9 VEL 11.967 PTH 2.13 VHP 4.126 DPA 15.57 RAP 159.32 ECC 1.3592

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 29 57	2689.23	-27.56	73.78	42.85	96.79	20 14 47	2089.2	-26.33	65.33
90.00	11 13 34	4425.53	7.25	184.63	36.52	62.55	12 27 19	3825.5	3.52	177.94
100.00	20 58 47	2402.77	-28.86	52.52	42.66	98.14	21 38 50	1802.8	-27.43	44.01
100.00	12 27 26	4187.22	8.41	166.48	35.89	61.21	13 37 13	3587.2	4.51	159.87
110.00	22 23 48	2136.77	-32.30	31.62	41.96	101.84	22 59 24	1536.8	-30.34	22.95
110.00	13 18 54	4025.99	11.42	152.44	34.08	57.56	14 26 0	3426.0	7.06	146.06

DIFFERENTIAL CORRECTIONS
TDE-2.2229 TRA 7.2175 TC3-7.5271 BAU 2.2037
RDE .6634 RRA -.2800 RC3 .6061 FAU .26331
FDE-4.4272 FRA11.3130 FC-10.4435 BSP 40858
BDE 2.3198 BRA 7.2230 BC3 7.5514 FSP 5667

MID-COURSE EXECUTION ACCURACY
SGT11840.0 SGR 1052.6 SG3 1567.9
RRT -.7568 RRF -.7857 RTF .9959
SGB11886.7 R23 .0450 R13 -.9961
SG111866.9 SG2 686.4 THA 176.14

ORBIT DETERMINATION ACCURACY
ST 3869.3 SR 820.6 SS 2469.4
CRT -.7912 CRS .8581 CST -.9929
LSA 4632.1 MSA 534.9 SSA 14.6
EL1 3924.3 EL2 494.8 ALF 170.32

LAUNCH DATE OCT 16 1964 FLIGHT TIME 382.00 ARRIVAL DATE NOV 2 1965

HELIOCENTRIC CONIC DISTANCE 859.673 EARTH TO MARS

RL 149.11 LAL .00 LOL 22.67 VL 32.672 GAL -7.77 AZL 88.41 HCA 265.68 SMA 186.22 ECC .23934 INC 1.5912 V1 29.883
RP 212.43 LAP -1.59 LOP 288.35 VP 23.169 GAP -11.27 AZP 90.12 TAL 317.82 TAP 223.50 RCA 141.65 APO 230.79 V2 25.831
RC 299.592 GL 10.95 GP 4.49 ZAL 146.12 ZAP 46.96 ETS 183.70 ZAE 74.38 ETE 180.59 ZAC 87.12 ETC 259.17 CLP 46.79

PLANETOCENTRIC CONIC

C3 22.393 VHL 4.732 DLA 13.85 RAL 175.59 RAD 6567.9 VEL 11.991 PTH 2.14 VHP 4.209 DPA 15.43 RAP 159.41 ECC 1.3685

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 34 13	2686.80	-27.54	73.61	43.74	96.88	20 19 0	2086.8	-26.30	65.16
90.00	11 13 27	4440.34	7.72	185.47	37.39	62.67	12 27 28	3840.3	3.99	178.77
100.00	21 2 53	2400.89	-28.84	52.38	43.54	98.21	21 42 53	1800.9	-27.41	43.88
100.00	12 27 29	4201.48	8.88	167.28	36.77	61.34	13 37 31	3601.5	4.99	160.66
110.00	22 27 31	2136.02	-32.29	31.56	42.83	101.87	23 3 7	1536.0	-30.32	22.90
110.00	13 19 20	4039.11	11.90	153.16	34.96	57.72	14 26 39	3439.1	7.56	146.76

DIFFERENTIAL CORRECTIONS
TDE-2.3215 TRA 7.4640 TC3-7.4792 BAU 2.2459
RDE .6691 RRA -.2713 RC3 .5807 FAU .25070
FDE-4.3352 FRA10.9592 FC3-9.6921 BSP 41610
BDE 2.4160 BRA 7.4689 BC3 7.5017 FSP 5420

MID-COURSE EXECUTION ACCURACY
SGT12026.8 SGR 1035.8 SG3 1492.7
RRT -.7479 RRF -.7778 RTF .9957
SGB12071.3 R23 .0461 R13 -.9959
SG112051.8 SG2 686.2 THA 176.30

ORBIT DETERMINATION ACCURACY
ST 3967.7 SR 816.6 SS 2424.3
CRT -.7913 CRS .8584 CST -.9929
LSA 4690.6 MSA 533.7 SSA 14.5
EL1 4020.8 EL2 492.7 ALF 170.61

LAUNCH DATE OCT 16 1964 FLIGHT TIME 384.00 ARRIVAL DATE NOV 4 1965

HELIOCENTRIC CONIC DISTANCE 863.777 EARTH TO MARS

RL	149.11	LAL	.00	LOL	22.67	VL	32.676	GAL	-7.91	AZL	88.39	HCA	266.88	SMA	186.28	ECC	.24084	INC	1.6087
RP	212.15	LAP	-1.61	LOP	289.55	VP	23.210	GAP	-11.46	AZP	90.09	TAL	317.24	TAP	224.13	RCA	141.42	APO	231.14
RC	300.645	GL	10.92	GP	4.40	ZAL	146.67	ZAP	45.92	ETS	183.76	ZAE	73.07	ETE	180.70	ZAC	87.06	ETC	259.14

V1	29.883	V2	25.863	CLP	45.76														

PLANETOCENTRIC CONIC

C3	22.991	VHL	4.795	DLA	13.60	RAL	176.12	RAD	6567.9	VEL	12.015	PTH	2.14	VHP	4.295	DPA	15.29	RAP	159.53

ECC	1.3784	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
90.00	19 38 34	2684.33	-27.52	73.43	44.64	96.96	20 23 18	2084.3	-26.27	64.99									
90.00	11 13 18	4455.62	8.19	186.34	38.29	62.80	12 27 34	3855.6	4.48	179.62									
100.00	21 7 3	2398.97	-28.82	52.24	44.44	98.28	21 47 2	1799.0	-27.38	43.74									
100.00	12 27 30	4216.21	9.36	168.11	37.66	61.48	13 37 47	3616.2	5.48	161.47									
110.00	22 31 20	2135.27	-32.28	31.50	43.73	101.90	23 6 55	1535.3	-30.31	22.85									
110.00	13 19 43	4052.68	12.39	153.90	35.86	57.88	14 27 16	3452.7	8.06	147.48									

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-2.4238	TRA	7.7144	TC3	-7.4234	BAU	2.2881	SGT	12207.1	SGR	1020.1	SG3	1419.9	ST	4065.6	SR	812.8	SS	2379.2
RDE	.6752	RRA	-.2631	RC3	.5567	FAU	.23856	RRT	-.7392	RRF	-.7702	RTF	.9956	CRT	-.7917	CRS	.8590	CST	-.9928
FDE	-4.2454	FRA	10.6093	FC3	-8.9831	BSP	42312	SGB	12249.6	R23	.0474	R13	-.9957	LSA	4750.5	MSA	532.2	SSA	14.4
BDE	2.5161	BRA	7.7189	BC3	7.4443	FSP	5176	SG	112230.4	SG2	685.7	THA	176.45	EL1	4116.9	EL2	490.3	ALF	170.87

LAUNCH DATE OCT 16 1964 FLIGHT TIME 386.00 ARRIVAL DATE NOV 6 1965

HELIOCENTRIC CONIC DISTANCE 867.878 EARTH TO MARS

RL	149.11	LAL	.00	LOL	22.67	VL	32.679	GAL	-8.05	AZL	88.37	HCA	268.09	SMA	186.34	ECC	.24241	INC	1.6262
RP	211.87	LAP	-1.63	LOP	290.76	VP	23.250	GAP	-11.65	AZP	90.05	TAL	316.65	TAP	224.74	RCA	141.17	APO	231.51
RC	301.687	GL	10.89	GP	4.31	ZAL	147.24	ZAP	44.92	ETS	183.82	ZAE	71.79	ETE	180.80	ZAC	87.01	ETC	259.11

V1	29.883	V2	25.895	CLP	44.76														

PLANETOCENTRIC CONIC

C3	23.623	VHL	4.860	DLA	13.33	RAL	176.65	RAD	6568.0	VEL	12.042	PTH	2.15	VHP	4.383	DPA	15.13	RAP	159.69

ECC	1.3888	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
90.00	19 42 59	2681.81	-27.50	73.25	45.56	97.05	20 27 41	2081.8	-26.23	64.81									
90.00	11 13 7	4471.36	8.68	187.24	39.20	62.94	12 27 38	3871.4	4.98	180.51									
100.00	21 11 18	2397.02	-28.81	52.10	45.36	98.35	21 51 15	1797.0	-27.35	43.60									
100.00	12 27 30	4231.38	9.85	168.97	38.58	61.64	13 38 1	3631.4	5.99	162.32									
110.00	22 35 12	2134.50	-32.27	31.45	44.64	101.93	23 10 46	1534.5	-30.29	22.79									
110.00	13 20 5	4066.67	12.90	154.67	36.78	58.07	14 27 52	3466.7	8.59	148.23									

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-2.5297	TRA	7.9698	TC3	-7.3588	BAU	2.3301	SGT	12381.0	SGR	1005.4	SG3	1349.5	ST	4162.8	SR	809.1	SS	2333.8
RDE	.6817	RRA	-.2556	RC3	.5338	FAU	.22678	RRT	-.7309	RRF	-.7629	RTF	.9954	CRT	-.7924	CRS	.8598	CST	-.9927
FDE	-4.1565	FRA	10.2657	FC3	-8.3110	BSP	42985	SGB	12421.7	R23	.0486	R13	-.9955	LSA	4811.4	MSA	530.4	SSA	14.3
BDE	2.6199	BRA	7.9739	BC3	7.3781	FSP	4936	SG	112402.8	SG2	685.0	THA	176.59	EL1	4212.6	EL2	487.8	ALF	171.12

LAUNCH DATE OCT 16 1964 FLIGHT TIME 388.00 ARRIVAL DATE NOV 8 1965

HELIOCENTRIC CONIC DISTANCE 871.976 EARTH TO MARS

RL	149.11	LAL	.00	LOL	22.67	VL	32.683	GAL	-8.20	AZL	88.36	HCA	269.30	SMA	186.41	ECC	.24406	INC	1.6437
RP	211.60	LAP	-1.64	LOP	291.97	VP	23.290	GAP	-11.84	AZP	90.02	TAL	316.05	TAP	225.34	RCA	140.91	APO	231.90
RC	302.717	GL	10.85	GP	4.23	ZAL	147.81	ZAP	43.95	ETS	183.87	ZAE	70.54	ETE	180.90	ZAC	86.97	ETC	259.07

V1	29.883	V2	25.926	CLP	43.78														

PLANETOCENTRIC CONIC

C3	24.291	VHL	4.929	DLA	13.06	RAL	177.18	RAD	6568.0	VEL	12.069	PTH	2.16	VHP	4.473	DPA	14.96	RAP	159.88

ECC	1.3998	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
90.00	19 47 29	2679.27	-27.47	73.07	46.49	97.14	20 32 9	2079.3	-26.20	64.63									
90.00	11 12 53	4487.57	9.18	188.17	40.14	63.10	12 27 41	3887.6	5.50	181.42									
100.00	21 15 37	2395.06	-28.79	51.96	46.29	98.43	21 55 32	1795.1	-27.32	43.46									
100.00	12 27 27	4247.01	10.36	169.86	39.52	61.80	13 38 14	3647.0	6.51	163.18									
110.00	22 39 8	2133.74	-32.26	31.39	45.56	101.96	23 14 41	1533.7	-30.28	22.74									
110.00	13 20 25	4081.09	13.42	155.47	37.72	58.26	14 28 26	3481.1	9.12	149.00									

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-2.6370	TRA	8.2323	TC3	-7.2843	BAU	2.3714	SGT	12548.7	SGR	991.5	SG3	1281.4	ST	4258.0	SR	805.3	SS	2287.1
RDE	.6884	RRA	-.2488	RC3	.5118	FAU	.21529	RRT	-.7228	RRF	-.7559	RTF	.9952	CRT	-.7929	CRS	.8607	CST	-.9927
FDE	-4.0650	FRA	9.9297	FC3	-7.6730	BSP	43672	SGB	12587.8	R23	.0499	R13	-.9953	LSA	4871.4	MSA	528.5	SSA	14.2
BDE	2.7254	BRA	8.2361	BC3	7.3022	FSP	4709	SG	112569.2	SG2	684.1	THA	176.72	EL1	4306.2	EL2	485.2	ALF	171.36

LAUNCH DATE OCT 16 1964 FLIGHT TIME 390.00 ARRIVAL DATE NOV 10 1965

HELIOCENTRIC CONIC DISTANCE 876.070 EARTH TO MARS

RL	149.11	LAL	.00	LOL	22.67	VL	32.687	GAL	-8.35	AZL	88.34	HCA	270.51	SMA	186.47	ECC	.24578	INC	1.6612
RP	211.33	LAP	-1.66	LOP	293.18	VP	23.329	GAP	-12.02	AZP	89.99	TAL	315.42	TAP	225.93	RCA	140.64	APO	232.30
RC	303.736	GL	10.81	GP	4.15	ZAL	148.38	ZAP	43.00	ETS	183.92	ZAE	69.31	ETE	181.00	ZAC	86.94	ETC	259.03

V1	29.883	V2	25.956	CLP	42.84														

PLANETOCENTRIC CONIC

C3	24.997	VHL	5.000	DLA	12.78	RAL	177.72	RAD	6568.0	VEL	12.099	PTH	2.17	VHP	4.566	DPA	14.78	RAP	160.11

ECC	1.4114	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
90.00	19 52 3	2676.72	-27.45	72.88	47.44	97.23	20 36 40	2076.7	-26.17	64.45									
90.00	11 12 37	4504.21	9.69	189.12	41.10	63.26	12 27 41	3904.2	6.03	182.36									
100.00	21 20 0	2393.09	-28.77	51.82	47.24	98.50	21 59 53	1793.1	-27.29	43.32									
100.00	12 27 22	4263.07	10.87	170.77	40.48	61.98	13 38 25	3663.1	7.04	164.08									
110.00	22 43 7	2133.00	-32.25	31.34	46.51	102.00	23 18 40	1533.0	-30.26	22.68									
110.00	13 20 44	4095.93	13.95	156.29	38.68	58.47	14 29 0	3495.9	9.67	149.80									

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-2.7501	TRA	8.4975	TC3	-7.2041	BAU	2.4131	SGT	12709.5	SGR	978.6	SG3	1215.7	ST	4353.5	SR	801.8	SS	2241.0
RDE	.6956	RRA	-.2426	RC3	.4910	FAU	.20428	RRT	-.7152	RRF	-.7495	RTF	.9949	CRT	-.7940	CRS	.8620	CST	-.9926
FDE	-3.9779	FRA	9.5965	FC3	-7.0748	BSP	44283	SGB	12747.1	R23	.0514	R13	-.9951	LSA	4933.6	MSA	526.2	SSA	14.1
BDE	2.8367	BRA	8.5010	BC3	7.2208	FSP	4481	SG	112728.8	SG2	682.9	THA	176.84	EL1	4400.3	EL2	482.3	ALF	171.58

LAUNCH DATE OCT 16 1964 FLIGHT TIME 392.00 ARRIVAL DATE NOV 12 1965

HELIOCENTRIC CONIC DISTANCE 880.160 EARTH TO MARS

RL 149.11 LAL .00 LOL 22.67 VL 32.691 GAL -8.51 AZL 88.32 HCA 271.73 SMA 186.54 ECC .24757 INC 1.6788 V1 29.883
RP 211.08 LAP -1.68 LOP 294.39 VP 23.368 GAP -12.22 AZP 89.95 TAL 314.78 TAP 226.51 RCA 140.36 APO 232.73 V2 25.986
RC 304.746 GL 10.76 GP 4.07 ZAL 148.97 ZAP 42.09 ETS 183.97 ZAE 68.12 ETE 181.09 ZAC 86.91 ETC 258.98 CLP 41.93

PLANETOCENTRIC CONIC

C3 25.745 VHL 5.074 DLA 12.49 RAL 178.27 RAD 6568.0 VEL 12.129 PTH 2.17 VHP 4.661 DPA 14.59 RAP 160.37 ECC 1.4237

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 56 41	2674.18	-27.43	72.70	48.41	97.32	20 41 15	2074.2	-26.13	64.27
90.00	11 12 19	4521.29	10.21	190.10	42.08	63.45	12 27 41	3921.3	6.57	183.32
100.00	21 24 27	2391.14	-28.75	51.68	48.20	98.57	22 4 18	1791.1	-27.26	43.19
100.00	12 27 15	4279.56	11.40	171.71	41.46	62.18	13 38 34	3679.6	7.59	165.00
110.00	22 47 10	2132.29	-32.24	31.28	47.46	102.03	23 22 43	1532.3	-30.25	22.63
110.00	13 21 1	4111.17	14.49	157.14	39.66	58.69	14 29 32	3511.2	10.24	150.62

DIFFERENTIAL CORRECTIONS
TDE-2.8656 TRA 8.7702 TC3-7.1161 BAU 2.4546
RDE .7030 RRA -.2370 RC3 .4711 FAU .19359
FDE-3.8885 FRA 9.2705 FC3-6.5100 BSP 44899
BDE 2.9506 BRA 8.7734 BC3 7.1317 FSP 4265

MID-COURSE EXECUTION ACCURACY
SGT12865.1 SGR 966.4 SG3 1152.4
RRT -.7080 RRF -.7435 RTF .9947
SGB12901.4 R23 .0529 R13 -.9948
SG112883.4 SG2 681.5 THA 176.95

ORBIT DETERMINATION ACCURACY
ST 4447.3 SR 798.2 SS 2193.7
CRT -.7950 CRS .8633 CST -.9925
LSA 4995.3 MSA 523.7 SSA 14.1
EL1 4492.9 EL2 479.3 ALF 171.79

LAUNCH DATE OCT 16 1964 FLIGHT TIME 394.00 ARRIVAL DATE NOV 14 1965

HELIOCENTRIC CONIC DISTANCE 884.244 EARTH TO MARS

RL 149.11 LAL .00 LOL 22.67 VL 32.695 GAL -8.68 AZL 88.30 HCA 272.94 SMA 186.61 ECC .24945 INC 1.6965 V1 29.883
RP 210.82 LAP -1.69 LOP 295.61 VP 23.406 GAP -12.41 AZP 89.91 TAL 314.12 TAP 227.07 RCA 140.06 APO 233.16 V2 26.015
RC 305.746 GL 10.71 GP 3.99 ZAL 149.56 ZAP 41.21 ETS 184.01 ZAE 66.95 ETE 181.18 ZAC 86.90 ETC 258.93 CLP 41.05

PLANETOCENTRIC CONIC

C3 26.535 VHL 5.151 DLA 12.20 RAL 178.81 RAD 6568.1 VEL 12.162 PTH 2.18 VHP 4.759 DPA 14.39 RAP 160.65 ECC 1.4367

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 1 22	2671.65	-27.41	72.52	49.39	97.41	20 45 54	2071.7	-26.10	64.10
90.00	11 12 0	4538.78	10.75	191.12	43.08	63.64	12 27 39	3938.8	7.12	184.31
100.00	21 28 57	2389.21	-28.73	51.54	49.18	98.64	22 8 46	1789.2	-27.23	43.05
100.00	12 27 6	4296.46	11.93	172.68	42.47	62.39	13 38 43	3696.5	8.14	165.94
110.00	22 51 16	2131.62	-32.23	31.23	48.44	102.05	23 26 48	1531.6	-30.24	22.59
110.00	13 21 16	4126.82	15.04	158.02	40.67	58.94	14 30 3	3526.8	10.81	151.46

DIFFERENTIAL CORRECTIONS
TDE-2.9855 TRA 9.0484 TC3-7.0228 BAU 2.4965
RDE .7108 RRA -.2321 RC3 .4522 FAU .18330
FDE-3.8009 FRA 8.9487 FC3-5.9805 BSP 45473
BDE 3.0689 BRA 9.0514 BC3 7.0373 FSP 4052

MID-COURSE EXECUTION ACCURACY
SGT13015.2 SGR 955.0 SG3 1091.3
RRT -.7013 RRF -.7381 RTF .9944
SGB13050.2 R23 .0545 R13 -.9946
SG113032.5 SG2 679.9 THA 177.05

ORBIT DETERMINATION ACCURACY
ST 4540.5 SR 794.7 SS 2146.2
CRT -.7963 CRS .8648 CST -.9923
LSA 5057.9 MSA 521.1 SSA 14.0
EL1 4584.9 EL2 476.1 ALF 171.98

LAUNCH DATE OCT 16 1964 FLIGHT TIME 396.00 ARRIVAL DATE NOV 16 1965

HELIOCENTRIC CONIC DISTANCE 888.322 EARTH TO MARS

RL 149.11 LAL .00 LOL 22.67 VL 32.699 GAL -8.85 AZL 88.29 HCA 274.17 SMA 186.69 ECC .25141 INC 1.7142 V1 29.883
RP 210.58 LAP -1.71 LOP 296.84 VP 23.443 GAP -12.60 AZP 89.88 TAL 313.45 TAP 227.61 RCA 139.75 APO 233.62 V2 26.043
RC 306.737 GL 10.65 GP 3.92 ZAL 150.16 ZAP 40.35 ETS 184.06 ZAE 65.81 ETE 181.27 ZAC 86.89 ETC 258.87 CLP 40.19

PLANETOCENTRIC CONIC

C3 27.371 VHL 5.232 DLA 11.89 RAL 179.36 RAD 6568.1 VEL 12.196 PTH 2.19 VHP 4.860 DPA 14.18 RAP 160.97 ECC 1.4505

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 6 7	2669.16	-27.39	72.34	50.39	97.50	20 50 36	2069.2	-26.06	63.92
90.00	11 11 38	4556.69	11.28	192.15	44.11	63.86	12 27 35	3956.7	7.68	185.33
100.00	21 33 31	2387.31	-28.71	51.40	50.18	98.71	22 13 18	1787.3	-27.20	42.92
100.00	12 26 56	4313.77	12.48	173.68	43.49	62.61	13 38 50	3713.8	8.71	166.92
110.00	22 55 26	2130.99	-32.22	31.19	49.43	102.08	23 30 56	1531.0	-30.22	22.54
110.00	13 21 31	4142.86	15.60	158.92	41.70	59.19	14 30 33	3542.9	11.40	152.34

DIFFERENTIAL CORRECTIONS
TDE-3.1090 TRA 9.3335 TC3-6.9240 BAU 2.5386
RDE .7190 RRA -.2279 RC3 .4343 FAU .17338
FDE-3.7132 FRA 8.6325 FC3-5.4839 BSP 46034
BDE 3.1910 BRA 9.3363 BC3 6.9376 FSP 3845

MID-COURSE EXECUTION ACCURACY
SGT13160.4 SGR 944.3 SG3 1032.5
RRT -.6951 RRF -.7333 RTF .9941
SGB13194.3 R23 .0562 R13 -.9942
SG113176.8 SG2 678.0 THA 177.14

ORBIT DETERMINATION ACCURACY
ST 4632.5 SR 791.3 SS 2098.2
CRT -.7977 CRS .8666 CST -.9922
LSA 5120.6 MSA 518.3 SSA 13.9
EL1 4675.8 EL2 472.8 ALF 172.16

LAUNCH DATE OCT 16 1964 FLIGHT TIME 398.00 ARRIVAL DATE NOV 18 1965

HELIOCENTRIC CONIC DISTANCE 892.393 EARTH TO MARS

RL 149.11 LAL .00 LOL 22.67 VL 32.704 GAL -9.02 AZL 88.27 HCA 275.39 SMA 186.76 ECC .25346 INC 1.7321 V1 29.883
RP 210.34 LAP -1.72 LOP 298.06 VP 23.480 GAP -12.80 AZP 89.84 TAL 312.75 TAP 228.14 RCA 139.42 APO 234.10 V2 26.071
RC 307.719 GL 10.58 GP 3.84 ZAL 150.77 ZAP 39.52 ETS 184.09 ZAE 64.69 ETE 181.35 ZAC 86.89 ETC 258.81 CLP 39.36

PLANETOCENTRIC CONIC

C3 28.256 VHL 5.316 DLA 11.58 RAL 179.92 RAD 6568.1 VEL 12.232 PTH 2.20 VHP 4.964 DPA 13.96 RAP 161.31 ECC 1.4650

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 10 55	2666.70	-27.36	72.16	51.41	97.58	20 55 22	2066.7	-26.03	63.75
90.00	11 11 16	4575.01	11.83	193.22	45.16	64.09	12 27 31	3975.0	8.25	186.37
100.00	21 38 7	2385.46	-28.69	51.26	51.19	98.78	22 17 53	1785.5	-27.18	42.79
100.00	12 26 44	4331.48	13.03	174.71	44.54	62.86	13 38 56	3731.5	9.29	167.91
110.00	22 59 37	2130.42	-32.21	31.14	50.44	102.10	23 35 8	1530.4	-30.21	22.50
110.00	13 21 44	4159.28	16.17	159.85	42.76	59.47	14 31 3	3559.3	12.00	153.23

DIFFERENTIAL CORRECTIONS
TDE-3.2368 TRA 9.6250 TC3-6.8196 BAU 2.5810
RDE .7276 RRA -.2244 RC3 .4172 FAU .16379
FDE-3.6259 FRA 8.3212 FC3-5.0184 BSP 46559
BDE 3.3176 BRA 9.6277 BC3 6.8324 FSP 3645

MID-COURSE EXECUTION ACCURACY
SGT13300.0 SGR 934.2 SG3 975.8
RRT -.6895 RRF -.7290 RTF .9937
SGB13332.8 R23 .0581 R13 -.9939
SG113315.6 SG2 675.9 THA 177.22

ORBIT DETERMINATION ACCURACY
ST 4723.7 SR 787.9 SS 2049.7
CRT -.7992 CRS .8686 CST -.9920
LSA 5183.6 MSA 515.2 SSA 13.8
EL1 4765.9 EL2 469.3 ALF 172.33

LAUNCH DATE OCT 17 1964 FLIGHT TIME 240.00 ARRIVAL DATE JUN 14 1965

HELIOCENTRIC CONIC DISTANCE 580.830 EARTH TO MARS

RL	149.06	LAL	.00	LOL	23.66	VL	33.160	GAL	-6.89	AZL	93.42	HCA	188.95	SMA	194.86	ECC	.26234	INC	3.4172
RP	237.98	LAP	.53	LOP	212.60	VP	20.840	GAP	8.31	AZP	86.62	TAL	325.92	TAP	154.87	RCA	143.74	APO	245.99
RC	182.651	GL	-23.18	GP	18.59	ZAL	134.38	ZAP	147.85	ETS	146.22	ZAE	156.76	ETE	53.96	ZAC	107.11	ETC	255.34

V1	29.892	V2	23.089	CLP	153.28														

PLANETOCENTRIC CONIC

C3	24.860	VHL	4.986	DLA	-14.80	RAL	155.53	RAD	6568.0	VEL	12.093	PTH	2.16	VHP	5.804	DPA	15.68	RAP	193.85
ECC	1.4091																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 56 0	1788.60	-7.47	16.08	18.98	117.39	22 25 48	1188.6	-3.75	9.38
90.00	6 3 45	5389.62	27.94	246.82	26.05	85.22	7 33 35	4789.6	26.99	238.28
100.00	23 9 22	1551.89	-8.70	358.02	18.32	118.71	23 35 14	951.9	-4.80	351.40
100.00	7 33 4	5101.56	29.32	225.48	25.90	83.92	8 58 6	4501.6	28.17	216.87
110.00	0 3 43	1393.95	-11.86	344.14	16.43	122.30	0 26 57	793.9	-7.51	337.75
110.00	8 59 8	4832.27	32.96	204.44	25.32	80.37	10 19 41	4232.3	31.28	195.62

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.8049	TRA	-3.2266	TC3	1.5810	BAU	.6464	SGT	4636.1	SGR	2140.7	SG3	844.7	ST	2372.2	SR	1185.1	SS	2505.1
RDE	.9592	RRA	-1.2169	RC3	1.1326	FAU	.16196	RRT	.9687	RRF	-.9978	RTF	-.9597	CRT	.9913	CRS	.9996	CST	.9947
FDE	-3.9943	FRA	5.5091	FC3	-5.6400	BSP	17483	SGB	5106.5	R23	-.2329	R13	-.9706	LSA	3642.6	MSA	197.2	SSA	9.1
BDE	2.0439	BRA	3.4484	BC3	1.9448	FSP	2662	SG1	5083.4	SG2	485.0	THA	24.33	EL1	2648.1	EL2	139.4	ALF	26.43

LAUNCH DATE OCT 17 1964 FLIGHT TIME 242.00 ARRIVAL DATE JUN 16 1965

HELIOCENTRIC CONIC DISTANCE 584.386 EARTH TO MARS

RL	149.06	LAL	.00	LOL	23.66	VL	33.132	GAL	-6.79	AZL	92.92	HCA	189.91	SMA	194.34	ECC	.25981	INC	2.9172
RP	237.65	LAP	.50	LOP	213.56	VP	20.833	GAP	7.87	AZP	87.13	TAL	326.14	TAP	156.05	RCA	143.85	APO	244.83
RC	184.919	GL	-20.27	GP	17.29	ZAL	135.16	ZAP	147.97	ETS	148.73	ZAE	158.13	ETE	53.54	ZAC	105.91	ETC	255.42

V1	29.892	V2	23.123	CLP	152.61														

PLANETOCENTRIC CONIC

C3	23.381	VHL	4.835	DLA	-11.96	RAL	156.33	RAD	6567.9	VEL	12.032	PTH	2.15	VHP	5.634	DPA	14.40	RAP	193.52
ECC	1.3848																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 34 24	1871.62	-10.04	20.83	18.66	116.62	22 5 36	1271.6	-6.39	14.05
90.00	6 31 42	5276.53	27.03	238.67	24.44	81.23	7 59 39	4676.5	25.54	230.32
100.00	22 49 39	1628.83	-11.18	2.38	18.06	117.90	23 16 48	1028.8	-7.36	355.67
100.00	7 59 8	4994.56	28.30	217.69	24.20	79.95	9 22 23	4394.6	26.62	209.29
110.00	23 44 8	1458.19	-14.17	347.69	16.32	121.44	24 8 27	858.2	-9.91	341.18
110.00	9 21 8	4737.96	31.66	197.40	23.39	76.39	10 40 6	4138.0	29.47	188.88

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY. ORBIT DETERMINATION ACCURACY

TDE	1.7081	TRA	-3.1803	TC3	1.6809	BAU	.6325	SGT	4645.1	SGR	2021.7	SG3	902.3	ST	2331.2	SR	1094.3	SS	2493.9
RDE	.8556	RRA	-1.1300	RC3	1.1262	FAU	.17032	RRT	.9684	RRF	-.9974	RTF	-.9611	CRT	.9910	CRS	.9991	CST	.9958
FDE	-3.9316	FRA	5.8474	FC3	-6.3063	BSP	17350	SGB	5066.0	R23	-.2295	R13	-.9709	LSA	3580.4	MSA	179.8	SSA	11.5
BDE	1.9104	BRA	3.3751	BC3	2.0233	FSP	2850	SG1	5044.7	SG2	464.1	THA	23.06	EL1	2571.8	EL2	132.7	ALF	25.02

LAUNCH DATE OCT 17 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUN 18 1965

HELIOCENTRIC CONIC DISTANCE 587.960 EARTH TO MARS

RL	149.06	LAL	.00	LOL	23.66	VL	33.106	GAL	-6.70	AZL	92.50	HCA	190.87	SMA	193.84	ECC	.25737	INC	2.5034
RP	237.31	LAP	.47	LOP	214.52	VP	20.828	GAP	7.44	AZP	87.54	TAL	326.35	TAP	157.22	RCA	143.95	APO	243.73
RC	187.176	GL	-17.75	GP	16.21	ZAL	135.71	ZAP	147.88	ETS	150.99	ZAE	159.36	ETE	53.55	ZAC	104.90	ETC	255.48

V1	29.892	V2	23.157	CLP	151.88														

PLANETOCENTRIC CONIC

C3	22.207	VHL	4.712	DLA	-9.50	RAL	156.98	RAD	6567.9	VEL	11.983	PTH	2.14	VHP	5.479	DPA	13.32	RAP	193.25
ECC	1.3655																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 16 50	1940.50	-12.11	24.82	18.54	115.79	21 49 10	1340.5	-8.55	17.96
90.00	6 54 28	5182.59	25.88	232.03	23.12	78.10	8 20 51	4582.6	23.98	223.88
100.00	22 33 31	1693.12	-13.20	6.08	17.99	117.06	23 1 44	1093.1	-9.47	359.28
100.00	8 20 29	4905.21	27.07	211.34	22.82	76.82	9 42 14	4305.2	24.99	203.16
110.00	23 31 9	1512.64	-16.08	350.75	16.35	120.58	23 56 21	912.6	-11.90	344.14
110.00	9 39 20	4658.45	30.24	191.63	21.86	73.25	10 56 58	4058.4	27.65	183.40

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.6260	TRA	-3.1323	TC3	1.7674	BAU	.6212	SGT	4646.7	SGR	1924.8	SG3	959.2	ST	2291.8	SR	1022.9	SS	2486.2
RDE	.7770	RRA	-1.0573	RC3	1.1197	FAU	.17860	RRT	.9680	RRF	-.9969	RTF	-.9623	CRT	.9905	CRS	.9983	CST	.9967
FDE	-3.8875	FRA	6.1701	FC3	-6.9626	BSP	17248	SGB	5029.6	R23	-.2257	R13	-.9711	LSA	3528.8	MSA	165.1	SSA	14.1
BDE	1.8021	BRA	3.3059	BC3	2.0922	FSP	3039	SG1	5009.6	SG2	447.9	THA	22.04	EL1	2506.5	EL2	128.5	ALF	23.92

LAUNCH DATE OCT 17 1964 FLIGHT TIME 246.00 ARRIVAL DATE JUN 20 1965

HELIOCENTRIC CONIC DISTANCE 591.554 EARTH TO MARS

RL	149.06	LAL	.00	LOL	23.66	VL	33.080	GAL	-6.61	AZL	92.16	HCA	191.83	SMA	193.36	ECC	.25503	INC	2.1561
RP	236.98	LAP	.44	LOP	215.48	VP	20.826	GAP	7.02	AZP	87.89	TAL	326.56	TAP	158.39	RCA	144.05	APO	242.68
RC	189.421	GL	-15.56	GP	15.30	ZAL	136.07	ZAP	147.62	ETS	153.02	ZAE	160.48	ETE	53.95	ZAC	104.06	ETC	255.53

V1	29.892	V2	23.191	CLP	151.11														

PLANETOCENTRIC CONIC

C3	21.244	VHL	4.609	DLA	-7.34	RAL	157.51	RAD	6567.9	VEL	11.943	PTH	2.13	VHP	5.335	DPA	12.42	RAP	193.02
ECC	1.3496																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 2 1	1999.18	-13.83	28.28	18.53	114.96	21 35 20	1399.2	-10.35	21.33
90.00	7 13 34	5102.50	24.64	226.50	22.03	75.59	8 38 36	4502.5	22.42	218.53
100.00	22 19 50	1748.12	-14.88	9.30	18.01	116.23	22 48 58	1148.1	-11.24	2.41
100.00	8 38 26	4828.78	25.77	206.03	21.70	74.31	9 58 54	4228.8	23.37	198.05
110.00	23 20 2	1559.64	-17.69	353.45	16.46	119.74	23 46 2	959.6	-13.60	346.72
110.00	9 54 43	4590.03	28.80	186.83	20.62	70.74	11 11 13	3990.0	25.90	178.85

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.5650	TRA	-3.0713	TC3	1.8651	BAU	.6172	SGT	4643.2	SGR	1845.6	SG3	1016.1	ST	2263.0	SR	966.4	SS	2481.1
RDE	.7163	RRA	-.9956	RC3	1.1150	FAU	.18688	RRT	.9689	RRF	-.9963	RTF	-.9647	CRT	.9905	CRS	.9974	CST	.9977
FDE	-3.8565	FRA	6.4841	FC3	-7.6159	BSP	16905	SGB	4996.6	R23	-.2166	R13	-.9725	LSA	3491.3	MSA	145.9	SSA	17.5
BDE	1.7211	BRA	3.2286	BC3	2.1730	FSP	3233	SG1	4978.4	SG2	426.2	THA	21.23	EL1	2457.6	EL2	122.4	ALF	22.99

LAUNCH DATE OCT 17 1964 FLIGHT TIME 248.00 ARRIVAL DATE JUN 22 1965

DISTANCE 595.162 EARTH TO MARS

HELIOCENTRIC CONIC
RL 149.06 LAL .00 LOL 23.66 VL 33.056 GAL -6.52 AZL 91.86 HCA 192.79 SMA 192.91 ECC .25279 INC 1.8583 V1 29.892
RP 236.64 LAP .41 LOP 216.45 VP 20.826 GAP 6.60 AZP 88.19 TAL 326.77 TAP 159.56 RCA 144.14 APO 241.68 V2 23.226
RC 191.655 GL -13.63 GP 14.53 ZAL 136.29 ZAP 147.23 ETS 154.85 ZAE 161.53 ETE 54.76 ZAC 103.34 ETC 255.57 CLP 150.29

PLANETOCENTRIC CONIC
C3 20.436 VHL 4.521 DLA -5.44 RAL 157.96 RAD 6567.8 VEL 11.909 PTH 2.12 VHP 5.201 DPA 11.66 RAP 192.82 ECC 1.3363

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 49 12	2050.17	-15.27	31.33	18.58	114.14	21 23 22	1450.2	-11.88	24.29
90.00	7 29 57	5032.91	23.38	221.79	21.14	73.56	8 53 49	4432.9	20.91	213.99
100.00	22 7 58	1796.05	-16.31	12.15	18.09	115.41	22 37 54	1196.1	-12.75	5.16
100.00	8 53 51	4762.26	24.47	201.52	20.77	72.28	10 13 13	4162.3	21.82	193.72
110.00	23 10 20	1600.82	-19.06	355.85	16.60	118.93	23 37 1	1000.8	-15.06	349.02
110.00	10 7 59	4530.25	27.39	182.75	19.62	68.70	11 23 29	3930.3	24.25	174.99

DIFFERENTIAL CORRECTIONS
TDE 1.4965 TRA-3.0239 TC3 1.9236 BAU .6069
RDE .6682 RRA -.9435 RC3 1.1112 FAU .19533
FDE-3.8407 FRA 6.7926 FC3-8.2748 BSP 16925
BDE 1.6389 BRA 3.1676 BC3 2.2215 FSP 3429

MID-COURSE EXECUTION ACCURACY
SGT 4630.8 SGR 1780.4 SG3 1073.8
RRT .9677 RRF -.9955 RTF -.9650
SGB 4961.2 R23 -.2138 R13 -.9723
SG1 4943.4 SG2 420.2 THA 20.56

ORBIT DETERMINATION ACCURACY
ST 2221.3 SR 920.9 SS 2480.7
CRT .9895 CRS .9962 CST .9982
LSA 3452.0 MSA 139.1 SSA 20.5
EL1 2401.5 EL2 123.0 ALF 22.37

LAUNCH DATE OCT 17 1964 FLIGHT TIME 250.00 ARRIVAL DATE JUN 24 1965

DISTANCE 598.785 EARTH TO MARS

HELIOCENTRIC CONIC
RL 149.06 LAL .00 LOL 23.66 VL 33.033 GAL -6.44 AZL 91.60 HCA 193.76 SMA 192.48 ECC .25065 INC 1.6012 V1 29.892
RP 236.29 LAP .38 LOP 217.42 VP 20.828 GAP 6.19 AZP 88.44 TAL 326.96 TAP 160.73 RCA 144.23 APO 240.72 V2 23.261
RC 193.877 GL -11.91 GP 13.86 ZAL 136.40 ZAP 146.73 ETS 156.50 ZAE 162.51 ETE 55.97 ZAC 102.72 ETC 255.61 CLP 149.44

PLANETOCENTRIC CONIC
C3 19.742 VHL 4.443 DLA -3.74 RAL 158.34 RAD 6567.8 VEL 11.880 PTH 2.11 VHP 5.074 DPA 11.01 RAP 192.64 ECC 1.3249

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 37 54	2095.13	-16.50	34.06	18.66	113.34	21 12 49	1495.1	-13.20	26.93
90.00	7 44 14	4971.49	22.14	217.72	20.39	71.88	9 7 6	4371.5	19.46	210.07
100.00	21 57 29	1838.38	-17.52	14.70	18.19	114.61	22 28 7	1238.4	-14.06	7.63
100.00	9 7 20	4703.47	23.20	197.61	20.00	70.60	10 25 43	4103.5	20.34	189.98
110.00	23 1 43	1637.31	-20.25	358.01	16.76	118.15	23 29 0	1037.3	-16.33	351.09
110.00	10 19 35	4477.31	26.03	179.24	18.79	67.02	11 34 13	3877.3	22.69	171.67

DIFFERENTIAL CORRECTIONS
TDE 1.4338 TRA-2.9746 TC3 1.9729 BAU .5973
RDE .6296 RRA -.8994 RC3 1.1088 FAU .20380
FDE-3.8326 FRA 7.1027 FC3-8.9372 BSP 16940
BDE 1.5660 BRA 3.1076 BC3 2.2631 FSP 3635

MID-COURSE EXECUTION ACCURACY
SGT 4611.8 SGR 1726.5 SG3 1132.3
RRT .9666 RRF -.9947 RTF -.9653
SGB 4924.4 R23 -.2103 R13 -.9723
SG1 4906.8 SG2 415.9 THA 20.04

ORBIT DETERMINATION ACCURACY
ST 2179.7 SR 884.0 SS 2482.2
CRT .9884 CRS .9947 CST .9986
LSA 3417.0 MSA 134.2 SSA 23.5
EL1 2348.9 EL2 124.4 ALF 21.91

LAUNCH DATE OCT 17 1964 FLIGHT TIME 252.00 ARRIVAL DATE JUN 26 1965

DISTANCE 602.425 EARTH TO MARS

HELIOCENTRIC CONIC
RL 149.06 LAL .00 LOL 23.66 VL 33.010 GAL -6.36 AZL 91.38 HCA 194.73 SMA 192.07 ECC .24859 INC 1.3765 V1 29.892
RP 235.94 LAP .35 LOP 218.39 VP 20.832 GAP 5.78 AZP 88.67 TAL 327.16 TAP 161.89 RCA 144.32 APO 239.81 V2 23.297
RC 196.086 GL -10.38 GP 13.29 ZAL 136.44 ZAP 146.13 ETS 157.99 ZAE 163.43 ETE 57.60 ZAC 102.17 ETC 255.64 CLP 148.56

PLANETOCENTRIC CONIC
C3 19.137 VHL 4.375 DLA -2.22 RAL 158.65 RAD 6567.8 VEL 11.854 PTH 2.10 VHP 4.953 DPA 10.45 RAP 192.47 ECC 1.3149

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 27 45	2135.27	-17.57	36.52	18.75	112.57	21 3 21	1535.3	-14.36	29.32
90.00	7 56 53	4916.61	20.93	214.14	19.76	70.48	9 18 49	4316.6	18.08	206.63
100.00	21 48 4	1876.21	-18.58	17.01	18.30	113.85	22 19 20	1276.2	-15.20	9.85
100.00	9 19 15	4650.91	21.97	194.19	19.35	69.20	10 36 46	4050.9	18.94	186.71
110.00	22 53 57	1669.98	-21.28	359.98	16.92	117.40	23 21 47	1070.0	-17.44	352.96
110.00	10 29 52	4429.89	24.74	176.16	18.10	65.62	11 43 42	3829.9	21.23	168.76

DIFFERENTIAL CORRECTIONS
TDE 1.3789 TRA-2.9210 TC3 2.0200 BAU .5897
RDE .5991 RRA -.8609 RC3 1.1100 FAU .21270
FDE-3.8388 FRA 7.4100 FC3-9.6225 BSP 16873
BDE 1.5034 BRA 3.0452 BC3 2.3049 FSP 3838

MID-COURSE EXECUTION ACCURACY
SGT 4587.3 SGR 1682.9 SG3 1192.5
RRT .9655 RRF -.9937 RTF -.9658
SGB 4886.3 R23 -.2060 R13 -.9724
SG1 4868.8 SG2 412.8 THA 19.65

ORBIT DETERMINATION ACCURACY
ST 2141.0 SR 855.0 SS 2489.0
CRT .9873 CRS .9930 CST .9990
LSA 3390.0 MSA 131.1 SSA 26.3
EL1 2301.9 EL2 126.2 ALF 21.59

LAUNCH DATE OCT 17 1964 FLIGHT TIME 254.00 ARRIVAL DATE JUN 28 1965

DISTANCE 606.080 EARTH TO MARS

HELIOCENTRIC CONIC
RL 149.06 LAL .00 LOL 23.66 VL 32.989 GAL -6.29 AZL 91.18 HCA 195.71 SMA 191.67 ECC .24662 INC 1.1786 V1 29.892
RP 235.59 LAP .32 LOP 219.36 VP 20.838 GAP 5.37 AZP 88.87 TAL 327.35 TAP 163.05 RCA 144.40 APO 238.94 V2 23.333
RC 198.280 GL -9.00 GP 12.78 ZAL 136.42 ZAP 145.46 ETS 159.34 ZAE 164.30 ETE 59.70 ZAC 101.70 ETC 255.66 CLP 147.64

PLANETOCENTRIC CONIC
C3 18.601 VHL 4.313 DLA -.83 RAL 158.92 RAD 6567.8 VEL 11.831 PTH 2.10 VHP 4.837 DPA 9.97 RAP 192.31 ECC 1.3061

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 18 34	2171.47	-18.50	36.77	18.85	111.83	20 54 45	1571.5	-15.38	31.49
90.00	8 8 12	4867.05	19.77	210.97	19.22	69.31	9 29 19	4267.0	16.78	203.57
100.00	21 39 31	1910.33	-19.51	19.13	18.41	113.11	22 11 21	1310.3	-16.21	11.88
100.00	9 29 56	4603.42	20.79	191.16	18.80	68.02	10 46 39	4003.4	17.62	183.80
110.00	22 46 52	1699.49	-22.20	1.79	17.07	116.69	23 15 12	1099.5	-18.44	354.67
110.00	10 39 4	4387.03	23.50	173.44	17.51	64.43	11 52 11	3787.0	19.87	166.19

DIFFERENTIAL CORRECTIONS
TDE 1.3281 TRA-2.8644 TC3 2.0612 BAU .5826
RDE .5742 RRA -.8279 RC3 1.1134 FAU .22179
FDE-3.8516 FRA 7.7211 FC-10.3226 BSP 16775
BDE 1.4469 BRA 2.9816 BC3 2.3427 FSP 4050

MID-COURSE EXECUTION ACCURACY
SGT 4556.0 SGR 1647.4 SG3 1254.1
RRT .9645 RRF -.9927 RTF -.9662
SGB 4844.7 R23 -.2010 R13 -.9727
SG1 4827.2 SG2 410.6 THA 19.37

ORBIT DETERMINATION ACCURACY
ST 2102.2 SR 831.6 SS 2497.8
CRT .9862 CRS .9911 CST .9993
LSA 3366.3 MSA 129.7 SSA 28.8
EL1 2257.1 EL2 128.2 ALF 21.39

LAUNCH DATE OCT 17 1964 FLIGHT TIME 256.00 ARRIVAL DATE JUN 30 1965

HELIOCENTRIC CONIC DISTANCE 609.749 EARTH TO MARS

RL	149.06	LAL	.00	LOL	23.66	VL	32.968	GAL	-6.21	AZL	91.00	HCA	196.68	SMA	191.30	ECC	.24473	INC	1.0029	V1	29.892
RP	235.24	LAP	.29	LOP	220.34	VP	20.846	GAP	4.98	AZP	89.04	TAL	327.53	TAP	164.21	RCA	144.48	APO	238.12	V2	23.369
RC	200.460	GL	-7.75	GP	12.34	ZAL	136.36	ZAP	144.72	ETS	160.57	ZAE	165.11	ETE	62.28	ZAC	101.27	ETC	255.68	CLP	146.69

PLANETOCENTRIC CONIC

C3	18.123	VHL	4.257	DLA	.43	RAL	159.14	RAD	6567.7	VEL	11.811	PTH	2.09	VHP	4.726	DPA	9.56	RAP	192.14	ECC	1.2983

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 10 8	2204.41	-19.32	40.84	18.94	111.11	20 46 52	1604.4	-16.28	33.48
90.00	8 18 26	4821.91	18.66	208.12	18.75	68.31	9 38 48	4221.9	15.55	200.83
100.00	21 31 40	1941.39	-20.32	21.07	18.51	112.40	22 4 2	1341.4	-17.11	13.75
100.00	9 39 35	4560.17	19.66	188.44	18.32	67.02	10 55 35	3960.2	16.38	181.18
110.00	22 40 22	1726.34	-23.01	3.45	17.22	116.01	23 9 9	1126.3	-19.32	356.25
110.00	10 47 22	4347.98	22.33	171.01	17.00	63.42	11 59 50	3748.0	18.59	163.89

DIFFERENTIAL CORRECTIONS

TDE	1.2807	TRA	-2.8057	TC3	2.0945	BAU	.5753
RDE	.5541	RRA	-.7994	RC3	1.1188	FAU	.23115
FDE	-3.8720	FRA	8.0377	FC	-11.0419	BSP	16654
BDE	1.3954	BRA	2.9173	BC3	2.3746	FSP	4269

MID-COURSE EXECUTION ACCURACY

SGT	4517.8	SGR	1619.0	SG3	1317.6		
RRT	.9635	RRF	-.9915	RTF	-.9666		
SGB	4799.2	R23	-.1960	R13	-.9729		
SG1	4781.6	SG2	409.8	THA	19.19		

ORBIT DETERMINATION ACCURACY

ST	2063.3	SR	813.1	SS	2509.3
CRT	.9851	CRS	.9890	CST	.9995
LSA	3346.2	MSA	130.6	SSA	30.8
EL1	2213.9	EL2	130.5	ALF	21.29

LAUNCH DATE OCT 17 1964 FLIGHT TIME 258.00 ARRIVAL DATE JUL 2 1965

HELIOCENTRIC CONIC DISTANCE 613.433 EARTH TO MARS

RL	149.06	LAL	.00	LOL	23.66	VL	32.949	GAL	-6.15	AZL	90.85	HCA	197.66	SMA	190.94	ECC	.24293	INC	.8455	V1	29.892
RP	234.89	LAP	.26	LOP	221.32	VP	20.856	GAP	4.59	AZP	89.19	TAL	327.71	TAP	165.37	RCA	144.56	APO	237.33	V2	23.405
RC	202.623	GL	-6.60	GP	11.96	ZAL	136.26	ZAP	143.92	ETS	161.70	ZAE	165.86	ETE	65.39	ZAC	100.89	ETC	255.70	CLP	145.70

PLANETOCENTRIC CONIC

C3	17.692	VHL	4.206	DLA	1.58	RAL	159.34	RAD	6567.7	VEL	11.793	PTH	2.09	VHP	4.619	DPA	9.21	RAP	191.97	ECC	1.2912

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 2 21	2234.61	-20.05	42.75	19.03	110.43	20 39 35	1634.6	-17.09	35.33
90.00	8 27 47	4780.50	17.60	205.55	18.34	67.45	9 47 27	4180.5	14.39	198.34
100.00	21 24 25	1969.86	-21.05	22.87	18.62	111.73	21 57 15	1369.9	-17.92	15.48
100.00	9 48 23	4520.48	18.59	185.98	17.90	66.16	11 3 43	3920.5	15.21	178.82
110.00	22 34 21	1750.96	-23.74	4.99	17.35	115.35	23 3 32	1151.0	-20.12	357.71
110.00	10 54 56	4312.15	21.23	168.82	16.55	62.55	12 6 48	3712.1	17.38	161.80

DIFFERENTIAL CORRECTIONS

TDE	1.2366	TRA	-2.7438	TC3	2.1225	BAU	.5684
RDE	.5379	RRA	-.7747	RC3	1.1269	FAU	.24089
FDE	-3.9013	FRA	8.3578	FC	-11.7877	BSP	16480
BDE	1.3485	BRA	2.8510	BC3	2.4031	FSP	4491

MID-COURSE EXECUTION ACCURACY

SGT	4472.7	SGR	1596.8	SG3	1383.2		
RRT	.9624	RRF	-.9904	RTF	-.9670		
SGB	4749.2	R23	-.1907	R13	-.9732		
SG1	4731.5	SG2	410.0	THA	19.11		

ORBIT DETERMINATION ACCURACY

ST	2024.4	SR	798.7	SS	2524.0
CRT	.9839	CRS	.9866	CST	.9997
LSA	3329.9	MSA	133.5	SSA	32.3
EL1	2172.2	EL2	133.0	ALF	21.30

LAUNCH DATE OCT 17 1964 FLIGHT TIME 260.00 ARRIVAL DATE JUL 4 1965

HELIOCENTRIC CONIC DISTANCE 617.131 EARTH TO MARS

RL	149.06	LAL	.00	LOL	23.66	VL	32.930	GAL	-6.08	AZL	90.70	HCA	198.65	SMA	190.60	ECC	.24120	INC	.7035	V1	29.892
RP	234.53	LAP	.22	LOP	222.31	VP	20.868	GAP	4.20	AZP	89.33	TAL	327.88	TAP	166.53	RCA	144.63	APO	236.58	V2	23.442
RC	204.770	GL	-5.55	GP	11.61	ZAL	136.13	ZAP	143.06	ETS	162.74	ZAE	166.54	ETE	69.07	ZAC	100.55	ETC	255.72	CLP	144.68

PLANETOCENTRIC CONIC

C3	17.301	VHL	4.159	DLA	2.65	RAL	159.50	RAD	6567.7	VEL	11.776	PTH	2.08	VHP	4.516	DPA	8.92	RAP	191.79	ECC	1.2847

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 55 6	2262.48	-20.70	44.54	19.11	109.76	20 32 48	1662.5	-17.82	37.05
90.00	8 36 21	4742.25	16.59	203.20	17.99	66.72	9 55 24	4142.3	13.29	196.07
100.00	21 17 40	1996.13	-21.71	24.55	18.71	111.07	21 50 56	1396.1	-18.65	17.09
100.00	9 56 28	4483.84	17.56	183.74	17.53	65.42	11 11 12	3883.8	14.10	176.66
110.00	22 28 45	1773.66	-24.39	6.43	17.48	114.73	22 58 19	1173.7	-20.85	359.07
110.00	11 1 53	4279.07	20.18	166.83	16.16	61.80	12 13 12	3679.1	16.25	159.91

DIFFERENTIAL CORRECTIONS

TDE	1.2001	TRA	-2.6740	TC3	2.1563	BAU	.5641
RDE	.5257	RRA	-.7523	RC3	1.1395	FAU	.25144
FDE	-3.9462	FRA	8.6743	FC	-12.5823	BSP	16144
BDE	1.3102	BRA	2.7778	BC3	2.4389	FSP	4698

MID-COURSE EXECUTION ACCURACY

SGT	4421.2	SGR	1580.8	SG3	1451.4		
RRT	.9619	RRF	-.9891	RTF	-.9677		
SGB	4695.3	R23	-.1839	R13	-.9737		
SG1	4677.5	SG2	408.7	THA	19.13		

ORBIT DETERMINATION ACCURACY

ST	1989.9	SR	788.7	SS	2544.2
CRT	.9831	CRS	.9842	CST	.9998
LSA	3321.8	MSA	137.5	SSA	33.2
EL1	2136.3	EL2	134.3	ALF	21.38

LAUNCH DATE OCT 17 1964 FLIGHT TIME 262.00 ARRIVAL DATE JUL 6 1965

HELIOCENTRIC CONIC DISTANCE 620.712 EARTH TO MARS

RL	149.06	LAL	.00	LOL	23.66	VL	32.912	GAL	-6.03	AZL	90.58	HCA	199.63	SMA	190.28	ECC	.23966	INC	.5755	V1	29.892
RP	234.17	LAP	.19	LOP	223.29	VP	20.882	GAP	3.84	AZP	89.46	TAL	327.98	TAP	167.61	RCA	144.68	APO	235.89	V2	23.479
RC	206.900	GL	-4.58	GP	11.29	ZAL	136.07	ZAP	142.20	ETS	163.68	ZAE	167.15	ETE	73.07	ZAC	100.23	ETC	255.73	CLP	143.68

PLANETOCENTRIC CONIC

C3	16.989	VHL	4.122	DLA	3.61	RAL	159.73	RAD	6567.7	VEL	11.763	PTH	2.08	VHP	4.423	DPA	8.63	RAP	191.64	ECC	1.2796

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 48 52	2288.11	-21.28	46.19	19.31	109.13	20 27 0	1688.1	-18.48	38.64
90.00	8 44 26	4708.23	15.66	201.13	17.80	66.10	10 2 54	4108.2	12.30	194.07
100.00	21 11 54	2020.30	-22.29	26.11	18.92	110.45	21 45 34	1420.3	-19.30	18.58
100.00	10 4 5	4451.27	16.63	181.77	17.34	64.80	11 18 16	3851.5	13.10	174.76
110.00	22 24 0	1794.59	-24.98	7.77	17.72	114.13	22 53 55	1194.6	-21.51	.34
110.00	11 8 28	4249.73	19.22	165.09	15.95	61.17	12 19 17	3649.7	15.23	158.25

DIFFERENTIAL CORRECTIONS

TDE	.3449	TRA	-3.4096	TC3	.2326	BAU	.2047
RDE	.3990	RRA	-.8632	RC3	.8707	FAU	.20288
FDE	-2.7143	FRA	10.4233	FC	-10.3389	BSP	35393
BDE	.5274	BRA	3.5171	BC3	.9013	FSP	7701

MID-COURSE EXECUTION ACCURACY

SGT	4777.0	SGR	1506.1	SG3	1490.6		
RRT	.8497	RRF	-.9877	RTF	-.8784		
SGB	5008.8	R23	-.4200	R13	-.8970		
SG1	4949.8	SG2	766.4	THA	15.37		

ORBIT DETERMINATION ACCURACY

ST	1503.2	SR	662.0	SS	2204.3
CRT	.7837	CRS	.9609	CST	.9244
LSA	2694.8	MSA	542.6	SSA	21.2
EL1	1596.2	EL2	387.2	ALF	20.29

LAUNCH DATE OCT 17 1964 FLIGHT TIME 264.00 ARRIVAL DATE JUL 8 1965

HELIOCENTRIC CONIC DISTANCE 624.562 EARTH TO MARS

RL 149.06 LAL .00 LOL 23.66 VL 32.895 GAL -5.95 AZL 90.46 HCA 200.62 SMA 189.97 ECC .23799 INC .4583 V1 29.892
RP 233.80 LAP .16 LOP 224.28 VP 20.897 GAP 3.44 AZP 89.57 TAL 328.20 TAP 168.83 RCA 144.76 APO 235.19 V2 23.517
RC 209.011 GL -3.69 GP 11.04 ZAL 135.83 ZAP 141.17 ETS 164.58 ZAE 167.65 ETE 78.25 ZAC 99.95 ETC 255.75 CLP 142.54

PLANETOCENTRIC CONIC

C3 16.619 VHL 4.077 DLA 4.55 RAL 159.78 RAD 6567.7 VEL 11.747 PTH 2.07 VHP 4.320 DPA 8.46 RAP 191.39 ECC 1.2735

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 41 57	2312.52	-21.82	47.78	19.27	108.51	20 20 30	1712.5	-19.09	40.17
90.00	8 51 41	4673.69	14.70	199.05	17.40	65.52	10 9 35	4073.7	11.27	192.05
100.00	21 5 26	2043.26	-22.83	27.60	18.89	109.84	21 39 29	1443.3	-19.92	20.02
100.00	10 10 54	4418.18	15.66	179.80	16.93	64.21	11 24 32	3818.2	12.07	172.85
110.00	22 18 35	1814.33	-25.52	9.05	17.72	113.55	22 48 49	1214.3	-22.12	1.55
110.00	11 14 14	4219.87	18.23	163.34	15.52	60.57	12 24 34	3619.9	14.17	156.58

DIFFERENTIAL CORRECTIONS
TDE 1.1066 TRA-2.5510 TC3 2.1410 BAU .5411
RDE .5046 RRA -.7202 RC3 1.1612 FAU .27172
FDE-4.0124 FRA 9.3744 FC-14.1554 BSP 15976
BDE 1.2162 BRA 2.6508 BC3 2.4356 FSP 5222

MID-COURSE EXECUTION ACCURACY
SGT 4289.8 SGR 1559.1 SG3 1592.4
RRT .9582 RRF -.9866 RTF -.9670
SGB 4564.4 R23 -.1781 R13 -.9733
SG1 4544.9 SG2 421.2 THA 19.37

ORBIT DETERMINATION ACCURACY
ST 1893.7 SR 772.4 SS 2576.4
CRT .9799 CRS .9786 CST .9997
LSA 3285.7 MSA 153.3 SSA 34.1
EL1 2040.1 EL2 143.1 ALF 21.90

LAUNCH DATE OCT 17 1964 FLIGHT TIME 266.00 ARRIVAL DATE JUL 10 1965

HELIOCENTRIC CONIC DISTANCE 628.297 EARTH TO MARS

RL 149.06 LAL .00 LOL 23.66 VL 32.878 GAL -5.90 AZL 90.35 HCA 201.62 SMA 189.68 ECC .23649 INC .3503 V1 29.892
RP 233.44 LAP .13 LOP 225.27 VP 20.914 GAP 3.07 AZP 89.67 TAL 328.35 TAP 169.97 RCA 144.82 APO 234.54 V2 23.555
RC 211.104 GL -2.85 GP 10.80 ZAL 135.66 ZAP 140.16 ETS 165.40 ZAE 168.03 ETE 83.74 ZAC 99.69 ETC 255.77 CLP 141.41

PLANETOCENTRIC CONIC

C3 16.319 VHL 4.040 DLA 5.40 RAL 159.89 RAD 6567.7 VEL 11.735 PTH 2.07 VHP 4.227 DPA 8.30 RAP 191.17 ECC 1.2686

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 35 57	2335.18	-22.30	49.27	19.35	107.92	20 14 52	1735.2	-19.64	41.60
90.00	8 58 36	4642.71	13.81	197.21	17.15	65.03	10 15 59	4042.7	10.33	190.26
100.00	20 59 51	2064.58	-23.31	29.00	18.98	109.26	21 34 15	1464.6	-20.47	21.35
100.00	10 17 23	4388.54	14.78	178.04	16.68	63.72	11 30 32	3788.5	11.13	171.15
110.00	22 13 56	1832.70	-26.02	10.24	17.83	113.00	22 44 29	1232.7	-22.67	2.68
110.00	11 19 47	4193.18	17.33	161.79	15.26	60.07	12 29 40	3593.2	13.22	155.10

DIFFERENTIAL CORRECTIONS
TDE 1.0687 TRA-2.4787 TC3 2.1375 BAU .5324
RDE .4983 RRA -.7065 RC3 1.1778 FAU .28305
FDE-4.0671 FRA 9.7223 FC-15.0160 BSP 15679
BDE 1.1792 BRA 2.5774 BC3 2.4405 FSP 5466

MID-COURSE EXECUTION ACCURACY
SGT 4213.1 SGR 1555.0 SG3 1667.1
RRT .9569 RRF -.9853 RTF -.9670
SGB 4490.9 R23 -.1736 R13 -.9734
SG1 4470.7 SG2 425.7 THA 19.64

ORBIT DETERMINATION ACCURACY
ST 1850.1 SR 769.0 SS 2599.9
CRT .9788 CRS .9757 CST .9996
LSA 3278.1 MSA 161.7 SSA 34.0
EL1 1998.2 EL2 145.8 ALF 22.26

LAUNCH DATE OCT 17 1964 FLIGHT TIME 268.00 ARRIVAL DATE JUL 12 1965

HELIOCENTRIC CONIC DISTANCE 632.045 EARTH TO MARS

RL 149.06 LAL .00 LOL 23.66 VL 32.863 GAL -5.84 AZL 90.25 HCA 202.61 SMA 189.41 ECC .23507 INC .2533 V1 29.892
RP 233.07 LAP .10 LOP 226.27 VP 20.932 GAP 2.71 AZP 89.77 TAL 328.50 TAP 171.11 RCA 144.88 APO 233.93 V2 23.593
RC 213.179 GL -2.07 GP 10.58 ZAL 135.49 ZAP 139.09 ETS 166.17 ZAE 168.28 ETE 89.76 ZAC 99.44 ETC 255.79 CLP 140.25

PLANETOCENTRIC CONIC

C3 16.043 VHL 4.005 DLA 6.20 RAL 159.99 RAD 6567.6 VEL 11.723 PTH 2.07 VHP 4.137 DPA 8.17 RAP 190.93 ECC 1.2640

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 30 16	2356.50	-22.74	50.68	19.42	107.34	20 9 33	1756.5	-20.15	42.96
90.00	9 5 6	4613.62	12.97	195.49	16.94	64.61	10 21 59	4013.6	9.45	188.58
100.00	20 54 33	2084.64	-23.76	30.32	19.06	108.70	21 29 18	1484.6	-20.98	22.62
100.00	10 23 30	4360.72	13.93	176.41	16.46	63.28	11 36 10	3760.7	10.23	169.57
110.00	22 9 33	1849.96	-26.47	11.38	17.94	112.46	22 40 23	1250.0	-23.19	3.76
110.00	11 25 0	4168.17	16.48	160.36	15.02	59.62	12 34 28	3568.2	12.32	153.72

DIFFERENTIAL CORRECTIONS
TDE 1.0294 TRA-2.4058 TC3 2.1187 BAU .5216
RDE .4927 RRA -.6956 RC3 1.1941 FAU .29431
FDE-4.1169 FRA10.0893 FC-15.8815 BSP 15409
BDE 1.1413 BRA 2.5043 BC3 2.4320 FSP 5737

MID-COURSE EXECUTION ACCURACY
SGT 4127.0 SGR 1553.6 SG3 1743.7
RRT .9555 RRF -.9840 RTF -.9667
SGB 4409.7 R23 -.1697 R13 -.9734
SG1 4388.6 SG2 431.0 THA 19.98

ORBIT DETERMINATION ACCURACY
ST 1802.6 SR 766.6 SS 2621.8
CRT .9777 CRS .9727 CST .9995
LSA 3268.1 MSA 171.3 SSA 33.8
EL1 1953.2 EL2 148.5 ALF 22.71

LAUNCH DATE OCT 17 1964 FLIGHT TIME 270.00 ARRIVAL DATE JUL 14 1965

HELIOCENTRIC CONIC DISTANCE 635.804 EARTH TO MARS

RL 149.06 LAL .00 LOL 23.66 VL 32.848 GAL -5.79 AZL 90.16 HCA 203.61 SMA 189.14 ECC .23371 INC .1630 V1 29.892
RP 232.70 LAP .07 LOP 227.27 VP 20.952 GAP 2.35 AZP 89.85 TAL 328.64 TAP 172.25 RCA 144.94 APO 233.35 V2 23.631
RC 215.236 GL -1.34 GP 10.38 ZAL 135.32 ZAP 137.98 ETS 166.89 ZAE 168.36 ETE 96.15 ZAC 99.21 ETC 255.80 CLP 139.05

PLANETOCENTRIC CONIC

C3 15.790 VHL 3.974 DLA 6.95 RAL 160.09 RAD 6567.6 VEL 11.712 PTH 2.06 VHP 4.051 DPA 8.07 RAP 190.67 ECC 1.2599

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 24 53	2376.66	-23.14	52.02	19.50	106.79	20 4 30	1776.7	-20.62	44.25
90.00	9 11 14	4586.24	12.17	193.88	16.75	64.23	10 27 40	3986.2	8.60	187.01
100.00	20 49 33	2103.58	-24.16	31.58	19.14	108.15	21 24 36	1503.6	-21.46	23.83
100.00	10 29 15	4334.55	13.12	174.88	16.27	62.90	11 41 29	3734.5	9.39	168.09
110.00	22 5 23	1866.24	-26.89	12.46	18.04	111.95	22 36 30	1266.2	-23.67	4.78
110.00	11 29 54	4144.66	15.66	159.02	14.82	59.22	12 38 58	3544.7	11.47	152.43

DIFFERENTIAL CORRECTIONS
TDE .9902 TRA-2.3299 TC3 2.0892 BAU .5099
RDE .4885 RRA -.6863 RC3 1.2124 FAU .30604
FDE-4.1730 FRA10.4620 FC-16.7800 BSP 15100
BDE 1.1042 BRA 2.4289 BC3 2.4156 FSP 6010

MID-COURSE EXECUTION ACCURACY
SGT 4031.1 SGR 1555.2 SG3 1822.6
RRT .9539 RRF -.9827 RTF -.9663
SGB 4320.7 R23 -.1665 R13 -.9733
SG1 4298.4 SG2 437.9 THA 20.42

ORBIT DETERMINATION ACCURACY
ST 1752.7 SR 765.8 SS 2645.7
CRT .9766 CRS .9696 CST .9992
LSA 3259.5 MSA 181.4 SSA 33.5
EL1 1906.7 EL2 151.4 ALF 23.26

LAUNCH DATE OCT 17 1964 FLIGHT TIME 272.00 ARRIVAL DATE JUL 16 1965

HELIOCENTRIC CONIC DISTANCE 639.574 EARTH TO MARS

RL	149.06	LAL	.00	LOL	23.66	VL	32.834	GAL	-5.74	AZL	90.08	HCA	204.61	SMA	188.89	ECC	.23242	INC	.0740
RP	232.32	LAP	.03	LOP	228.27	VP	20.974	GAP	2.00	AZP	89.93	TAL	328.76	TAP	173.38	RCA	144.99	APO	232.79
RC	217.275	GL	-.66	GP	10.21	ZAL	135.15	ZAP	136.82	ETS	167.56	ZAE	168.28	ETE	102.78	ZAC	98.98	ETC	255.82

V1	29.892	V2	23.670	CLP	137.81														

PLANETOCENTRIC CONIC

C3	15.556	VHL	3.944	DLA	7.66	RAL	160.18	RAD	6567.6	VEL	11.702	PTH	2.06	VHP	3.967	DPA	8.01	RAP	190.38
ECC	1.2560																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 19 46	2395.76	-23.51	53.30	19.57	106.25	19 59 42	1795.8	-21.06	45.48
90.00	9 17 2	4560.39	11.40	192.37	16.59	63.90	10 33 3	3960.4	7.80	185.54
100.00	20 44 48	2121.53	-24.54	32.78	19.23	107.63	21 20 9	1521.5	-21.90	24.98
100.00	10 34 42	4309.86	12.35	173.45	16.10	62.56	11 46 32	3709.9	8.58	166.70
110.00	22 1 27	1881.63	-27.28	13.49	18.15	111.45	22 32 49	1281.6	-24.12	5.75
110.00	11 34 32	4122.52	14.89	157.78	14.64	58.87	12 43 14	3522.5	10.65	151.23

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.9513	TRA	-2.2518	TC3	2.0485	BAU	.4972	SGT	3926.2	SGR	1559.8	SG3	1904.2	ST	1700.8	SR	766.7
RDE	.4857	RRA	-.6787	RC3	1.2326	FAU	.31828	RRT	.9520	RRF	-.9815	RTF	-.9655	CRT	.9755	CRS	.9666
FDE	-4.2357	FRA	10.8439	FC	-17.7128	BSP	14774	SGB	4224.7	R23	-.1642	R13	-.9730	LSA	3252.9	MSA	191.7
BDE	1.0682	BRA	2.3518	BC3	2.3907	FSP	6286	SG1	4201.0	SG2	446.4	THA	20.96	EL1	1859.2	EL2	154.2

SS	2671.8	CST	.9990	SSA	33.2
ALF	23.91				

LAUNCH DATE OCT 17 1964 FLIGHT TIME 274.00 ARRIVAL DATE JUL 18 1965

HELIOCENTRIC CONIC DISTANCE 643.356 EARTH TO MARS

RL	149.06	LAL	.00	LOL	23.66	VL	32.820	GAL	-5.70	AZL	90.00	HCA	205.62	SMA	188.65	ECC	.23120	INC	.0000
RP	231.95	LAP	.00	LOP	229.28	VP	20.997	GAP	1.65	AZP	90.00	TAL	328.89	TAP	174.50	RCA	145.04	APO	232.27
RC	219.295	GL	-.01	GP	10.05	ZAL	134.98	ZAP	135.62	ETS	168.20	ZAE	168.02	ETE	109.41	ZAC	98.77	ETC	255.84

V1	29.892	V2	23.709	CLP	136.54														

PLANETOCENTRIC CONIC

C3	15.341	VHL	3.917	DLA	8.32	RAL	160.26	RAD	6567.6	VEL	11.693	PTH	2.06	VHP	3.886	DPA	7.98	RAP	190.07
ECC	1.2525																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 14 54	2413.92	-23.85	54.52	19.65	105.73	19 55 8	1813.9	-21.47	46.66
90.00	9 22 33	4535.95	10.66	190.95	16.46	63.61	10 38 9	3936.0	7.03	184.15
100.00	20 40 17	2138.57	-24.89	33.93	19.32	107.12	21 15 55	1538.6	-22.31	26.08
100.00	10 39 52	4286.54	11.62	172.11	15.96	62.26	11 51 19	3686.5	7.82	165.39
110.00	21 57 43	1896.24	-27.64	14.47	18.26	110.97	22 29 19	1296.2	-24.53	6.68
110.00	11 38 55	4101.64	14.15	156.61	14.49	58.55	12 47 17	3501.6	9.88	150.10

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.9123	TRA	-2.1703	TC3	1.9947	BAU	.4831	SGT	3810.2	SGR	1566.2	SG3	1987.5	ST	1646.1	SR	768.3
RDE	.4836	RRA	-.6728	RC3	1.2528	FAU	.33057	RRT	.9500	RRF	-.9802	RTF	-.9645	CRT	.9746	CRS	.9634
FDE	-4.2970	FRA	11.2387	FC	-18.6549	BSP	14417	SGB	4119.5	R23	-.1622	R13	-.9726	LSA	3245.7	MSA	202.5
BDE	1.0325	BRA	2.2722	BC3	2.3555	FSP	6579	SG1	4094.3	SG2	455.1	THA	21.61	EL1	1809.9	EL2	156.4

SS	2697.5	CST	.9986	SSA	32.8
ALF	24.66				

LAUNCH DATE OCT 17 1964 FLIGHT TIME 276.00 ARRIVAL DATE JUL 20 1965

HELIOCENTRIC CONIC DISTANCE 647.148 EARTH TO MARS

RL	149.06	LAL	.00	LOL	23.66	VL	32.807	GAL	-5.65	AZL	89.93	HCA	206.63	SMA	188.43	ECC	.23005	INC	.0671
RP	231.57	LAP	-.03	LOP	230.29	VP	21.021	GAP	1.30	AZP	90.06	TAL	329.00	TAP	175.63	RCA	145.08	APO	231.78
RC	221.297	GL	.60	GP	9.90	ZAL	134.82	ZAP	134.37	ETS	168.81	ZAE	167.58	ETE	115.86	ZAC	98.56	ETC	255.86

V1	29.892	V2	23.748	CLP	135.22														

PLANETOCENTRIC CONIC

C3	15.143	VHL	3.891	DLA	8.95	RAL	160.34	RAD	6567.6	VEL	11.684	PTH	2.06	VHP	3.808	DPA	7.97	RAP	189.74
ECC	1.2492																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 10 17	2431.22	-24.17	55.69	19.73	105.22	19 50 48	1831.2	-21.84	47.79
90.00	9 27 49	4512.82	9.96	189.62	16.34	63.35	10 43 2	3912.8	6.30	182.84
100.00	20 35 59	2154.79	-25.21	35.03	19.41	106.62	21 11 54	1554.8	-22.69	27.14
100.00	10 44 48	4264.48	10.92	170.85	15.84	62.00	11 55 52	3664.5	7.09	164.16
110.00	21 54 10	1910.12	-27.97	15.42	18.37	110.50	22 26 0	1310.1	-24.92	7.57
110.00	11 43 6	4081.92	13.45	155.51	14.36	58.27	12 51 8	3481.9	9.15	149.05

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8730	TRA	-2.0858	TC3	1.9301	BAU	.4682	SGT	3684.4	SGR	1574.8	SG3	2073.1	ST	1588.8	SR	770.9
RDE	.4823	RRA	-.6682	RC3	1.2745	FAU	.34329	RRT	.9478	RRF	-.9791	RTF	-.9632	CRT	.9738	CRS	.9602
FDE	-4.3613	FRA	11.6425	FC	-19.6265	BSP	14032	SGB	4006.8	R23	-.1609	R13	-.9721	LSA	3239.2	MSA	213.4
BDE	.9974	BRA	2.1903	BC3	2.3129	FSP	6876	SG1	3979.8	SG2	465.0	THA	22.38	EL1	1758.9	EL2	158.4

SS	2724.0	CST	.9982	SSA	32.5
ALF	25.51				

LAUNCH DATE OCT 17 1964 FLIGHT TIME 278.00 ARRIVAL DATE JUL 22 1965

HELIOCENTRIC CONIC DISTANCE 650.951 EARTH TO MARS

RL	149.06	LAL	.00	LOL	23.66	VL	32.795	GAL	-5.61	AZL	89.86	HCA	207.64	SMA	188.21	ECC	.22895	INC	.1388
RP	231.20	LAP	-.06	LOP	231.30	VP	21.046	GAP	.97	AZP	90.12	TAL	329.10	TAP	176.74	RCA	145.12	APO	231.31
RC	223.281	GL	1.18	GP	9.77	ZAL	134.66	ZAP	133.07	ETS	169.38	ZAE	166.95	ETE	121.94	ZAC	98.36	ETC	255.88

V1	29.892	V2	23.788	CLP	133.87														

PLANETOCENTRIC CONIC

C3	14.961	VHL	3.868	DLA	9.54	RAL	160.42	RAD	6567.6	VEL	11.677	PTH	2.05	VHP	3.733	DPA	8.00	RAP	189.37
ECC	1.2462																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 5 53	2447.73	-24.46	56.81	19.82	104.73	19 46 40	1847.7	-22.20	48.87
90.00	9 32 51	4490.90	9.28	188.36	16.25	63.13	10 47 42	3890.9	5.61	181.61
100.00	20 31 54	2170.26	-25.50	36.08	19.50	106.14	21 8 5	1570.3	-23.04	28.15
100.00	10 49 30	4243.59	10.25	169.66	15.74	61.76	12 0 14	3643.6	6.39	162.99
110.00	21 50 49	1923.34	-28.28	16.32	18.48	110.05	22 22 52	1323.3	-25.29	8.42
110.00	11 47 5	4063.28	12.78	154.49	14.25	58.02	12 54 49	3463.3	8.46	148.05

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8340	TRA	-1.9977	TC3	1.8511	BAU	.4520	SGT	3547.0	SGR	1585.1	SG3	2160.4	ST	1529.2	SR	774.5
RDE	.4817	RRA	-.6649	RC3	1.2966	FAU	.35619	RRT	.9453	RRF	-.9779	RTF	-.9615	CRT	.9731	CRS	.9570
FDE	-4.4285	FRA	12.0560	FC	-20.6113	BSP	13631	SGB	3885.1	R23	-.1603	R13	-.9714	LSA	3233.8	MSA	224.5
BDE	.9631	BRA	2.1055	BC3	2.2600	FSP	7188	SG1	3855.8	SG2	475.8	THA	23.28	EL1	1706.7	EL2	159.7

SS	2751.4	CST	.9977	SSA	32.1
ALF	26.49				

LAUNCH DATE OCT 17 1964 FLIGHT TIME 280.00 ARRIVAL DATE JUL 24 1965

HELIOCENTRIC CONIC DISTANCE 654.765 EARTH TO MARS

RL 149.06 LAL .00 LOL 23.66 VL 32.784 GAL -5.57 AZL 89.80 HCA 208.65 SMA 188.01 ECC .22792 INC .2028 V1 29.892
RP 230.82 LAP -.10 LOP 232.31 VP 21.073 GAP .63 AZP 90.18 TAL 329.20 TAP 177.85 RCA 145.16 APO 230.86 V2 23.827
RC 225.247 GL 1.73 GP 9.65 ZAL 134.51 ZAP 131.73 ETS 169.93 ZAE 166.17 ETE 127.56 ZAC 98.16 ETC 255.91 CLP 132.47

PLANETOCENTRIC CONIC

C3 14.794 VHL 3.846 DLA 10.10 RAL 160.49 RAD 6567.6 VEL 11.670 PTH 2.05 VHP 3.661 DPA 8.05 RAP 188.98 ECC 1.2435

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 1 41	2463.51	-24.73	57.89	19.91	104.26	19 42 45	1863.5	-22.53	49.91
90.00	9 37 40	4470.10	8.64	187.17	16.18	62.93	10 52 10	3870.1	4.94	180.44
100.00	20 28 2	2185.04	-25.78	37.10	19.60	105.68	21 4 27	1585.0	-23.38	29.12
100.00	10 54 1	4223.80	9.61	168.54	15.67	61.56	12 4 24	3623.8	5.73	161.90
110.00	21 47 38	1935.96	-28.57	17.18	18.60	109.61	22 19 53	1336.0	-25.63	9.24
110.00	11 50 54	4045.65	12.14	153.52	14.16	57.80	12 58 20	3445.7	7.80	147.11

DIFFERENTIAL CORRECTIONS
TDE .7952 TRA-1.9053 TC3 1.7609 BAU .4352
RDE .4818 RRA -.6625 RC3 1.3196 FAU .36943
FDE-4.4988 FRA12.4759 FC-21.6191 BSP 13172
BDE .9298 BRA 2.0173 BC3 2.2005 FSP 7500

MID-COURSE EXECUTION ACCURACY
SGT 3398.5 SGR 1597.1 SG3 2249.5
RRT .9425 RRF -.9768 RTF -.9594
SGB 3755.0 R23 -.1601 R13 -.9706
SG1 3723.3 SG2 487.2 THA 24.33

ORBIT DETERMINATION ACCURACY
ST 1467.3 SR 778.8 SS 2779.6
CRT .9727 CRS .9539 CST .9971
LSA 3229.4 MSA 235.7 SSA 31.8
EL1 1653.4 EL2 160.3 ALF 27.59

LAUNCH DATE OCT 17 1964 FLIGHT TIME 282.00 ARRIVAL DATE JUL 26 1965

HELIOCENTRIC CONIC DISTANCE 658.589 EARTH TO MARS

RL 149.06 LAL .00 LOL 23.66 VL 32.773 GAL -5.54 AZL 89.74 HCA 209.67 SMA 187.82 ECC .22694 INC .2631 V1 29.892
RP 230.43 LAP -.13 LOP 233.33 VP 21.101 GAP .31 AZP 90.23 TAL 329.28 TAP 178.96 RCA 145.20 APO 230.44 V2 23.867
RC 227.193 GL 2.25 GP 9.54 ZAL 134.36 ZAP 130.35 ETS 170.46 ZAE 165.22 ETE 132.66 ZAC 97.96 ETC 255.94 CLP 131.03

PLANETOCENTRIC CONIC

C3 14.641 VHL 3.826 DLA 10.63 RAL 160.57 RAD 6567.6 VEL 11.663 PTH 2.05 VHP 3.592 DPA 8.12 RAP 188.55 ECC 1.2410

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 57 42	2478.62	-24.98	58.92	20.02	103.79	19 39 1	1878.6	-22.83	50.91
90.00	9 42 17	4450.37	8.03	186.04	16.14	62.75	10 56 28	3850.4	4.31	179.33
100.00	20 24 21	2199.18	-26.04	38.07	19.71	105.23	21 1 0	1599.2	-23.69	30.05
100.00	10 58 20	4205.04	9.00	167.48	15.62	61.37	12 8 25	3605.0	5.11	160.86
110.00	21 44 37	1948.01	-28.85	18.02	18.73	109.19	22 17 5	1348.0	-25.96	10.03
110.00	11 54 33	4028.98	11.53	152.61	14.10	57.60	13 1 42	3429.0	7.17	146.22

DIFFERENTIAL CORRECTIONS
TDE .7553 TRA-1.8102 TC3 1.6547 BAU .4171
RDE .4824 RRA -.6613 RC3 1.3427 FAU .38279
FDE-4.5691 FRA12.9061 FC-22.6340 BSP 12704
BDE .8962 BRA 1.9272 BC3 2.1309 FSP 7824

MID-COURSE EXECUTION ACCURACY
SGT 3238.6 SGR 1610.2 SG3 2339.9
RRT .9390 RRF -.9758 RTF -.9566
SGB 3616.8 R23 -.1612 R13 -.9695
SG1 3582.0 SG2 500.7 THA 25.56

ORBIT DETERMINATION ACCURACY
ST 1401.8 SR 783.6 SS 2807.8
CRT .9724 CRS .9507 CST .9964
LSA 3225.1 MSA 246.9 SSA 31.5
EL1 1598.0 EL2 160.4 ALF 28.84

LAUNCH DATE OCT 17 1964 FLIGHT TIME 284.00 ARRIVAL DATE JUL 28 1965

HELIOCENTRIC CONIC DISTANCE 662.418 EARTH TO MARS

RL 149.06 LAL .00 LOL 23.66 VL 32.762 GAL -5.51 AZL 89.68 HCA 210.70 SMA 187.64 ECC .22603 INC .3197 V1 29.892
RP 230.05 LAP -.16 LOP 234.36 VP 21.131 GAP -.02 AZP 90.27 TAL 329.36 TAP 180.06 RCA 145.23 APO 230.05 V2 23.907
RC 229.120 GL 2.74 GP 9.44 ZAL 134.23 ZAP 128.92 ETS 170.96 ZAE 164.14 ETE 137.23 ZAC 97.76 ETC 255.96 CLP 129.55

PLANETOCENTRIC CONIC

C3 14.502 VHL 3.808 DLA 11.13 RAL 160.66 RAD 6567.6 VEL 11.657 PTH 2.05 VHP 3.525 DPA 8.22 RAP 188.09 ECC 1.2387

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 53 55	2493.10	-25.21	59.92	20.12	103.35	19 35 28	1893.1	-23.12	51.87
90.00	9 46 44	4431.66	7.44	184.98	16.11	62.60	11 0 36	3831.7	3.72	178.28
100.00	20 20 51	2212.72	-26.27	39.00	19.83	104.79	20 57 44	1612.7	-23.99	30.95
100.00	11 2 29	4187.26	8.42	166.48	15.58	61.21	12 12 16	3587.3	4.51	159.87
110.00	21 41 46	1959.54	-29.10	18.82	18.86	108.78	22 14 25	1359.5	-26.26	10.78
110.00	11 58 4	4013.21	10.96	151.75	14.06	57.42	13 4 57	3413.2	6.58	145.39

DIFFERENTIAL CORRECTIONS
TDE .7164 TRA-1.7098 TC3 1.5377 BAU .3989
RDE .4836 RRA -.6606 RC3 1.3668 FAU .39651
FDE-4.6448 FRA13.3393 FC-23.6701 BSP 12182
BDE .8643 BRA 1.8330 BC3 2.0573 FSP 8145

MID-COURSE EXECUTION ACCURACY
SGT 3067.2 SGR 1624.6 SG3 2431.8
RRT .9351 RRF -.9748 RTF -.9530
SGB 3470.8 R23 -.1626 R13 -.9682
SG1 3432.5 SG2 514.5 THA 27.01

ORBIT DETERMINATION ACCURACY
ST 1334.7 SR 789.2 SS 2837.4
CRT .9725 CRS .9476 CST .9954
LSA 3223.0 MSA 258.1 SSA 31.1
EL1 1542.4 EL2 159.1 ALF 30.25

LAUNCH DATE OCT 17 1964 FLIGHT TIME 286.00 ARRIVAL DATE JUL 30 1965

HELIOCENTRIC CONIC DISTANCE 666.267 EARTH TO MARS

RL 149.06 LAL .00 LOL 23.66 VL 32.752 GAL -5.48 AZL 89.63 HCA 211.72 SMA 187.47 ECC .22517 INC .3731 V1 29.892
RP 229.67 LAP -.20 LOP 235.38 VP 21.161 GAP -.33 AZP 90.32 TAL 329.43 TAP 181.15 RCA 145.26 APO 229.68 V2 23.948
RC 231.027 GL 3.21 GP 9.34 ZAL 134.11 ZAP 127.44 ETS 171.45 ZAE 162.93 ETE 141.29 ZAC 97.56 ETC 256.00 CLP 128.03

PLANETOCENTRIC CONIC

C3 14.376 VHL 3.792 DLA 11.60 RAL 160.74 RAD 6567.6 VEL 11.652 PTH 2.05 VHP 3.462 DPA 8.34 RAP 187.61 ECC 1.2366

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 50 20	2506.98	-25.42	60.88	20.24	102.91	19 32 7	1907.0	-23.39	52.80
90.00	9 51 1	4413.90	6.89	183.97	16.10	62.47	11 4 35	3813.9	3.15	177.29
100.00	20 17 33	2225.70	-26.50	39.90	19.95	104.37	20 54 38	1625.7	-24.26	31.82
100.00	11 6 29	4170.42	7.86	165.54	15.57	61.07	12 15 59	3570.4	3.94	158.95
110.00	21 39 4	1970.58	-29.34	19.59	19.01	108.38	22 11 55	1370.6	-26.55	11.51
110.00	12 1 27	3998.30	10.41	150.94	14.03	57.25	13 8 5	3398.3	6.02	144.60

DIFFERENTIAL CORRECTIONS
TDE .6766 TRA-1.6054 TC3 1.4047 BAU .3799
RDE .4852 RRA -.6607 RC3 1.3905 FAU .41024
FDE-4.7197 FRA13.7779 FC-24.7049 BSP 11634
BDE .8326 BRA 1.7361 BC3 1.9765 FSP 8472

MID-COURSE EXECUTION ACCURACY
SGT 2883.4 SGR 1639.6 SG3 2524.3
RRT .9301 RRF -.9738 RTF -.9483
SGB 3317.0 R23 -.1650 R13 -.9667
SG1 3274.3 SG2 530.3 THA 28.70

ORBIT DETERMINATION ACCURACY
ST 1264.3 SR 795.1 SS 2866.4
CRT .9728 CRS .9446 CST .9943
LSA 3220.8 MSA 269.3 SSA 30.8
EL1 1485.3 EL2 156.7 ALF 31.85

LAUNCH DATE OCT 17 1964 FLIGHT TIME 288.00 ARRIVAL DATE AUG 1 1965

HELIOCENTRIC CONIC DISTANCE 670.120 EARTH TO MARS

RL 149.06 LAL .00 LOL 23.66 VL 32.743 GAL -5.45 AZL 89.58 HCA 212.75 SMA 187.31 ECC .22437 INC .4235 V1 29.892
RP 229.28 LAP -.23 LOP 236.41 VP 21.192 GAP -.65 AZP 90.36 TAL 329.49 TAP 182.24 RCA 145.28 APO 229.33 V2 23.988
RC 232.913 GL 3.66 GP 9.25 ZAL 133.99 ZAP 125.92 ETS 171.92 ZAE 161.61 ETE 144.89 ZAC 97.36 ETC 256.03 CLP 126.47

PLANETOCENTRIC CONIC

C3 14.262 VHL 3.777 DLA 12.05 RAL 160.83 RAD 6567.6 VEL 11.647 PTH 2.04 VHP 3.401 DPA 8.48 RAP 187.08 ECC 1.2347

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 46 56	2520.30	-25.62	61.81	20.37	102.49	19 28 56	1920.3	-23.65	53.69
90.00	9 55 8	4397.07	6.36	183.02	16.11	62.35	11 8 25	3797.1	2.60	176.35
100.00	20 14 25	2238.14	-26.70	40.77	20.09	103.96	20 51 43	1638.1	-24.52	32.65
100.00	11 10 20	4154.46	7.34	164.65	15.58	60.94	12 19 35	3554.5	3.40	158.07
110.00	21 36 33	1981.15	-29.57	20.32	19.16	107.99	22 9 35	1381.2	-26.82	12.21
110.00	12 4 42	3984.22	9.89	150.18	14.03	57.11	13 11 6	3384.2	5.49	143.86

DIFFERENTIAL CORRECTIONS
TDE .6363 TRA-1.4964 TC3 1.2586 BAU .3610
RDE .4871 RRA -.6614 RC3 1.4142 FAU .42411
FDE-4.7952 FRA14.2200 FC-25.7437 BSP 11060
BDE .8014 BRA 1.6361 BC3 1.8931 FSP 8803

MID-COURSE EXECUTION ACCURACY
SGT 2687.9 SGR 1655.3 SG3 2617.3
RRT .9239 RRF -.9728 RTF -.9422
SGB 3156.7 R23 -.1680 R13 -.9649
SG1 3108.9 SG2 547.4 THA 30.69

ORBIT DETERMINATION ACCURACY
ST 1190.7 SR 801.3 SS 2895.4
CRT .9735 CRS .9415 CST .9930
LSA 3219.3 MSA 280.4 SSA 30.5
EL1 1427.0 EL2 152.9 ALF 33.67

LAUNCH DATE OCT 17 1964 FLIGHT TIME 290.00 ARRIVAL DATE AUG 3 1965

HELIOCENTRIC CONIC DISTANCE 673.983 EARTH TO MARS

RL 149.06 LAL .00 LOL 23.66 VL 32.734 GAL -5.43 AZL 89.53 HCA 213.78 SMA 187.15 ECC .22362 INC .4712 V1 29.892
RP 228.89 LAP -.26 LOP 237.44 VP 21.225 GAP -.96 AZP 90.39 TAL 329.54 TAP 183.32 RCA 145.30 APO 229.00 V2 24.029
RC 234.778 GL 4.09 GP 9.17 ZAL 133.89 ZAP 124.35 ETS 172.38 ZAE 160.18 ETE 148.07 ZAC 97.15 ETC 256.07 CLP 124.86

PLANETOCENTRIC CONIC

C3 14.161 VHL 3.763 DLA 12.48 RAL 160.93 RAD 6567.6 VEL 11.642 PTH 2.04 VHP 3.344 DPA 8.64 RAP 186.53 ECC 1.2330

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 43 43	2533.09	-25.81	62.70	20.51	102.08	19 25 56	1933.1	-23.88	54.56
90.00	9 59 7	4381.13	5.85	182.12	16.14	62.25	11 12 8	3781.1	2.09	175.46
100.00	20 11 28	2250.07	-26.90	41.60	20.23	103.56	20 48 58	1650.1	-24.77	33.45
100.00	11 14 3	4139.37	6.84	163.81	15.61	60.83	12 23 2	3539.4	2.90	157.24
110.00	21 34 10	1991.28	-29.78	21.04	19.32	107.62	22 7 22	1391.3	-27.08	12.89
110.00	12 7 50	3970.93	9.40	149.47	14.05	56.98	13 14 1	3370.9	4.98	143.16

DIFFERENTIAL CORRECTIONS
TDE .5963 TRA-1.3824 TC3 1.0975 BAU .3424
RDE .4896 RRA -.6623 RC3 1.4378 FAU .43807
FDE-4.8760 FRA14.6596 FC-26.7820 BSP 10447
BDE .7716 BRA 1.5328 BC3 1.8088 FSP 9129

MID-COURSE EXECUTION ACCURACY
SGT 2480.7 SGR 1671.4 SG3 2710.3
RRT .9159 RRF -.9719 RTF -.9339
SGB 2991.2 R23 -.1718 R13 -.9628
SG1 2937.0 SG2 566.8 THA 33.07

ORBIT DETERMINATION ACCURACY
ST 1115.0 SR 808.0 SS 2925.5
CRT .9747 CRS .9387 CST .9913
LSA 3220.0 MSA 291.4 SSA 30.2
EL1 1369.1 EL2 147.2 ALF 35.71

LAUNCH DATE OCT 17 1964 FLIGHT TIME 292.00 ARRIVAL DATE AUG 5 1965

HELIOCENTRIC CONIC DISTANCE 677.855 EARTH TO MARS

RL 149.06 LAL .00 LOL 23.66 VL 32.726 GAL -5.41 AZL 89.48 HCA 214.82 SMA 187.01 ECC .22292 INC .5171 V1 29.892
RP 228.51 LAP -.30 LOP 238.48 VP 21.259 GAP -1.26 AZP 90.42 TAL 329.58 TAP 184.40 RCA 145.32 APO 228.70 V2 24.070
RC 236.623 GL 4.50 GP 9.09 ZAL 133.80 ZAP 122.74 ETS 172.82 ZAE 158.67 ETE 150.89 ZAC 96.94 ETC 256.11 CLP 123.21

PLANETOCENTRIC CONIC

C3 14.070 VHL 3.751 DLA 12.88 RAL 161.03 RAD 6567.6 VEL 11.639 PTH 2.04 VHP 3.290 DPA 8.83 RAP 185.94 ECC 1.2316

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 40 41	2545.35	-25.98	63.55	20.66	101.68	19 23 7	1945.3	-24.11	55.39
90.00	10 2 58	4366.05	5.37	181.27	16.19	62.16	11 15 44	3766.0	1.61	174.61
100.00	20 8 42	2261.51	-27.08	42.41	20.39	103.17	20 46 23	1661.5	-24.99	34.23
100.00	11 17 38	4125.11	6.36	163.01	15.65	60.73	12 26 23	3525.1	2.41	156.45
110.00	21 31 58	2000.99	-29.98	21.73	19.49	107.26	22 5 19	1401.0	-27.32	13.54
110.00	12 10 52	3958.40	8.93	148.80	14.08	56.87	13 16 50	3358.4	4.51	142.50

DIFFERENTIAL CORRECTIONS
TDE .5551 TRA-1.2644 TC3 .9209 BAU .3247
RDE .4921 RRA -.6639 RC3 1.4601 FAU .45177
FDE-4.9511 FRA15.1050 FC-27.7969 BSP 9829
BDE .7419 BRA 1.4281 BC3 1.7263 FSP 9463

MID-COURSE EXECUTION ACCURACY
SGT 2263.0 SGR 1687.3 SG3 2802.6
RRT .9048 RRF -.9710 RTF -.9224
SGB 2822.8 R23 -.1760 R13 -.9605
SG1 2760.7 SG2 588.9 THA 35.89

ORBIT DETERMINATION ACCURACY
ST 1035.7 SR 814.5 SS 2953.9
CRT .9762 CRS .9357 CST .9891
LSA 3220.1 MSA 302.3 SSA 29.9
EL1 1310.2 EL2 139.7 ALF 38.02

LAUNCH DATE OCT 17 1964 FLIGHT TIME 294.00 ARRIVAL DATE AUG 7 1965

HELIOCENTRIC CONIC DISTANCE 681.736 EARTH TO MARS

RL 149.06 LAL .00 LOL 23.66 VL 32.718 GAL -5.39 AZL 89.44 HCA 215.86 SMA 186.88 ECC .22228 INC .5604 V1 29.892
RP 228.12 LAP -.33 LOP 239.52 VP 21.293 GAP -1.56 AZP 90.45 TAL 329.60 TAP 185.46 RCA 145.34 APO 228.41 V2 24.111
RC 238.446 GL 4.89 GP 9.01 ZAL 133.73 ZAP 121.09 ETS 173.26 ZAE 157.07 ETE 153.40 ZAC 96.73 ETC 256.15 CLP 121.52

PLANETOCENTRIC CONIC

C3 13.991 VHL 3.741 DLA 13.26 RAL 161.14 RAD 6567.6 VEL 11.635 PTH 2.04 VHP 3.239 DPA 9.03 RAP 185.32 ECC 1.2303

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 37 51	2557.12	-26.14	64.38	20.82	101.30	19 20 28	1957.1	-24.32	56.18
90.00	10 6 41	4351.80	4.92	180.47	16.26	62.08	11 19 12	3751.8	1.15	173.82
100.00	20 6 6	2272.49	-27.25	43.18	20.56	102.80	20 43 59	1672.5	-25.21	34.97
100.00	11 21 6	4111.66	5.91	162.27	15.72	60.65	12 29 38	3511.7	1.96	155.71
110.00	21 29 54	2010.30	-30.16	22.39	19.67	106.91	22 3 24	1410.3	-27.55	14.17
110.00	12 13 48	3946.62	8.49	148.17	14.14	56.76	13 19 35	3346.6	4.06	141.88

DIFFERENTIAL CORRECTIONS
TDE .5140 TRA-1.1406 TC3 .7309 BAU .3091
RDE .4950 RRA -.6653 RC3 1.4821 FAU .46548
FDE-5.0301 FRA15.5403 FC-28.8023 BSP 9181
BDE .7136 BRA 1.3205 BC3 1.6525 FSP 9785

MID-COURSE EXECUTION ACCURACY
SGT 2034.9 SGR 1703.1 SG3 2893.7
RRT .8895 RRF -.9702 RTF -.9060
SGB 2653.5 R23 -.1799 R13 -.9580
SG1 2581.7 SG2 613.4 THA 39.31

ORBIT DETERMINATION ACCURACY
ST 954.0 SR 821.4 SS 2982.5
CRT .9784 CRS .9330 CST .9861
LSA 3222.0 MSA 313.1 SSA 29.6
EL1 1252.2 EL2 129.5 ALF 40.64

LAUNCH DATE OCT 17 1964 FLIGHT TIME 296.00 ARRIVAL DATE AUG 9 1965

DISTANCE 685.627

HELIOCENTRIC CONIC

RL 149.06 LAL .00 LOL 23.66 VL 32.711 GAL -5.38 AZL 89.40 HCA 216.90 SMA 186.75 ECC .22168 INC .6021 V1 29.892
RP 227.73 LAP -.36 LOP 240.56 VP 21.328 GAP -1.85 AZP 90.48 TAL 329.62 TAP 186.53 RCA 145.35 APO 228.15 V2 24.152
RC 240.248 GL 5.26 GP 8.94 ZAL 133.67 ZAP 119.40 ETS 173.68 ZAE 155.39 ETE 155.63 ZAC 96.51 ETC 256.20 CLP 119.79

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 13.923 VHL 3.731 DLA 13.61 RAL 161.26 RAD 6567.5 VEL 11.632 PTH 2.04 VHP 3.191 DPA 9.25 RAP 184.67 ECC 1.2291

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 35 11	2568.40	-26.29	65.17	20.99	100.93	19 18 0	1968.4	-24.51	56.95
90.00	10 10 16	4338.36	4.49	179.71	16.35	62.01	11 22 34	3738.4	.71	173.07
100.00	20 3 41	2283.00	-27.40	43.92	20.74	102.44	20 41 44	1683.0	-25.41	35.69
100.00	11 24 27	4098.99	5.49	161.56	15.80	60.57	12 32 46	3499.0	1.53	155.02
110.00	21 27 59	2019.21	-30.34	23.02	19.87	106.57	22 1 39	1419.2	-27.77	14.77
110.00	12 16 38	3935.55	8.08	147.58	14.21	56.67	13 22 14	3335.5	3.64	141.30

DIFFERENTIAL CORRECTIONS

TDE .4746 TRA-1.0100 TC3 .5323 BAU .2971
RDE .4988 RRA -.6662 RC3 1.5047 FAU .47956
FDE-5.1220 FRA15.9568 FC-29.8189 BSP 8484
BDE .6885 BRA 1.2100 BC3 1.5960 FSP 10075

MID-COURSE EXECUTION ACCURACY

SGT 1798.7 SGR 1719.1 SG3 2983.8
RRT .8679 RRF -.9693 RTF -.8822
SGB 2488.1 R23 -.1818 R13 -.9557
SG1 2404.7 SG2 638.7 THA 43.51

ORBIT DETERMINATION ACCURACY

ST 872.0 SR 829.1 SS 3013.5
CRT .9816 CRS .9306 CST .9819
LSA 3228.5 MSA 324.0 SSA 29.1
EL1 1197.7 EL2 115.2 ALF 43.53

LAUNCH DATE OCT 17 1964 FLIGHT TIME 298.00 ARRIVAL DATE AUG 11 1965

DISTANCE 689.526

HELIOCENTRIC CONIC

RL 149.06 LAL .00 LOL 23.66 VL 32.704 GAL -5.36 AZL 89.36 HCA 217.95 SMA 186.63 ECC .22114 INC .6416 V1 29.892
RP 227.34 LAP -.39 LOP 241.61 VP 21.365 GAP -2.14 AZP 90.51 TAL 329.63 TAP 187.58 RCA 145.36 APO 227.90 V2 24.193
RC 242.030 GL 5.62 GP 8.87 ZAL 133.62 ZAP 117.66 ETS 174.09 ZAE 153.64 ETE 157.63 ZAC 96.28 ETC 256.26 CLP 118.02

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 13.865 VHL 3.724 DLA 13.95 RAL 161.38 RAD 6567.5 VEL 11.630 PTH 2.04 VHP 3.146 DPA 9.48 RAP 183.98 ECC 1.2282

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 32 43	2579.20	-26.42	65.93	21.18	100.57	19 15 43	1979.2	-24.70	57.69
90.00	10 13 44	4325.74	4.09	179.00	16.46	61.96	11 25 50	3725.7	.30	172.37
100.00	20 1 27	2293.07	-27.55	44.63	20.93	102.09	20 39 40	1693.1	-25.60	36.37
100.00	11 27 42	4087.11	5.09	160.91	15.91	60.50	12 35 49	3487.1	1.13	154.37
110.00	21 26 14	2027.75	-30.50	23.63	20.08	106.24	22 0 2	1427.7	-27.97	15.35
110.00	12 19 23	3925.20	7.69	147.03	14.31	56.59	13 24 48	3325.2	3.24	140.76

DIFFERENTIAL CORRECTIONS

TDE .4309 TRA -.8775 TC3 .3102 BAU .2882
RDE .5017 RRA -.6680 RC3 1.5233 FAU .49246
FDE-5.1921 FRA16.3856 FC-30.7483 BSP 7877
BDE .6613 BRA 1.1028 BC3 1.5546 FSP 10403

MID-COURSE EXECUTION ACCURACY

SGT 1558.4 SGR 1733.4 SG3 3070.7
RRT .8320 RRF -.9684 RTF -.8437
SGB 2330.9 R23 -.1816 R13 -.9537
SG1 2232.1 SG2 671.4 THA 48.65

ORBIT DETERMINATION ACCURACY

ST 783.5 SR 835.5 SS 3039.2
CRT .9849 CRS .9277 CST .9764
LSA 3230.4 MSA 334.4 SSA 28.9
EL1 1141.0 EL2 99.5 ALF 46.87

LAUNCH DATE OCT 17 1964 FLIGHT TIME 300.00 ARRIVAL DATE AUG 13 1965

DISTANCE 693.434

HELIOCENTRIC CONIC

RL 149.06 LAL .00 LOL 23.66 VL 32.697 GAL -5.35 AZL 89.32 HCA 219.00 SMA 186.52 ECC .22065 INC .6796 V1 29.892
RP 226.95 LAP -.43 LOP 242.66 VP 21.402 GAP -2.42 AZP 90.53 TAL 329.63 TAP 188.63 RCA 145.36 APO 227.67 V2 24.235
RC 243.792 GL 5.96 GP 8.79 ZAL 133.59 ZAP 115.89 ETS 174.50 ZAE 151.83 ETE 159.42 ZAC 96.05 ETC 256.32 CLP 116.22

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 13.818 VHL 3.717 DLA 14.27 RAL 161.52 RAD 6567.5 VEL 11.628 PTH 2.04 VHP 3.104 DPA 9.73 RAP 183.26 ECC 1.2274

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 30 26	2589.55	-26.55	66.66	21.38	100.22	19 13 36	1989.6	-24.87	58.40
90.00	10 17 5	4313.89	3.71	178.34	16.59	61.91	11 28 59	3713.9	-.08	171.71
100.00	19 59 23	2302.71	-27.68	45.32	21.14	101.75	20 37 45	1702.7	-25.78	37.03
100.00	11 30 50	4075.97	4.72	160.29	16.03	60.45	12 38 46	3476.0	.75	153.75
110.00	21 24 39	2035.92	-30.65	24.22	20.30	105.92	21 58 35	1435.9	-28.17	15.91
110.00	12 22 3	3915.53	7.33	146.51	14.42	56.52	13 27 19	3315.5	2.87	140.26

DIFFERENTIAL CORRECTIONS

TDE .3892 TRA -.7374 TC3 .0807 BAU .2853
RDE .5055 RRA -.6689 RC3 1.5421 FAU .50556
FDE-5.2758 FRA16.7852 FC-31.6749 BSP 7244
BDE .6379 BRA .9956 BC3 1.5442 FSP 10681

MID-COURSE EXECUTION ACCURACY

SGT 1318.7 SGR 1747.3 SG3 3154.9
RRT .7742 RRF -.9676 RTF -.7809
SGB 2189.1 R23 -.1740 R13 -.9531
SG1 2072.9 SG2 703.6 THA 55.11

ORBIT DETERMINATION ACCURACY

ST 695.5 SR 842.6 SS 3066.8
CRT .9893 CRS .9253 CST .9679
LSA 3237.2 MSA 345.0 SSA 28.5
EL1 1089.7 EL2 78.6 ALF 50.52

LAUNCH DATE OCT 17 1964 FLIGHT TIME 302.00 ARRIVAL DATE AUG 15 1965

DISTANCE 697.351

HELIOCENTRIC CONIC

RL 149.06 LAL .00 LOL 23.66 VL 32.691 GAL -5.35 AZL 89.28 HCA 220.06 SMA 186.42 ECC .22020 INC .7160 V1 29.892
RP 226.56 LAP -.46 LOP 243.71 VP 21.440 GAP -2.70 AZP 90.55 TAL 329.61 TAP 189.67 RCA 145.37 APO 227.47 V2 24.277
RC 245.534 GL 6.29 GP 8.72 ZAL 133.57 ZAP 114.07 ETS 174.89 ZAE 149.96 ETE 161.04 ZAC 95.81 ETC 256.38 CLP 114.37

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 13.781 VHL 3.712 DLA 14.57 RAL 161.66 RAD 6567.5 VEL 11.626 PTH 2.04 VHP 3.066 DPA 9.99 RAP 182.51 ECC 1.2268

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 28 20	2599.44	-26.67	67.36	21.60	99.89	19 11 39	1999.4	-25.03	59.08
90.00	10 20 20	4302.82	3.35	177.72	16.73	61.87	11 32 2	3702.8	-.44	171.09
100.00	19 57 29	2311.92	-27.81	45.97	21.36	101.43	20 36 1	1711.9	-25.95	37.67
100.00	11 33 51	4065.58	4.37	159.72	16.17	60.40	12 41 37	3465.6	.40	153.18
110.00	21 23 12	2043.72	-30.80	24.78	20.53	105.62	21 57 16	1443.7	-28.35	16.44
110.00	12 24 38	3906.54	6.99	146.04	14.56	56.45	13 29 45	3306.5	2.53	139.79

DIFFERENTIAL CORRECTIONS

TDE .3451 TRA -.5939 TC3 -.1667 BAU .2886
RDE .5089 RRA -.6699 RC3 1.5578 FAU .51774
FDE-5.3485 FRA17.1794 FC-32.5253 BSP 6709
BDE .6149 BRA .8952 BC3 1.5667 FSP 10971

MID-COURSE EXECUTION ACCURACY

SGT 1093.5 SGR 1759.5 SG3 3234.9
RRT .6688 RRF -.9666 RTF -.6680
SGB 2071.6 R23 -.1545 R13 -.9547
SG1 1935.2 SG2 739.1 THA 63.22

ORBIT DETERMINATION ACCURACY

ST 603.6 SR 849.0 SS 3091.5
CRT .9936 CRS .9227 CST .9551
LSA 3242.8 MSA 355.0 SSA 28.2
EL1 1040.3 EL2 55.5 ALF 54.65

LAUNCH DATE OCT 17 1964 FLIGHT TIME 304.00 ARRIVAL DATE AUG 17 1965

HELIOCENTRIC CONIC DISTANCE 701.275 EARTH TO MARS

RL 149.06 LAL .00 LOL 23.66 VL 32.686 GAL -5.34 AZL 89.25 HCA 221.11 SMA 186.32 ECC .21980 INC .7510 V1 29.892
RP 226.17 LAP -.49 LOP 244.77 VP 21.478 GAP -2.98 AZP 90.57 TAL 329.58 TAP 190.70 RCA 145.37 APO 227.27 V2 24.318
RC 247.256 GL 6.60 GP 8.65 ZAL 133.56 ZAP 112.23 ETS 175.28 ZAE 148.03 ETE 162.51 ZAC 95.56 ETC 256.45 CLP 112.50

PLANETOCENTRIC CONIC

C3 13.754 VHL 3.709 DLA 14.84 RAL 161.81 RAD 6567.5 VEL 11.625 PTH 2.04 VHP 3.031 DPA 10.27 RAP 181.73 ECC 1.2263

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 26 25	2608.88	-26.78	68.03	21.83	99.57	19 9 54	2008.9	-25.18	59.73
90.00	10 23 27	4292.52	3.02	177.14	16.90	61.83	11 35 0	3692.5	-.77	170.51
100.00	19 55 47	2320.71	-27.93	46.60	21.59	101.12	20 34 27	1720.7	-26.11	38.27
100.00	11 36 47	4055.92	4.04	159.18	16.33	60.36	12 44 23	3455.9	.07	152.65
110.00	21 21 55	2051.18	-30.93	25.32	20.78	105.33	21 56 6	1451.2	-28.52	16.95
110.00	12 27 8	3898.21	6.68	145.59	14.71	56.40	13 32 6	3298.2	2.21	139.35

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .3009 TRA -.4445 TC3 -.4263 BAU .2994 SGT 906.0 SGR 1770.0 SG3 3310.0 ST 511.5 SR 855.2 SS 3114.8
RDE .5125 RRA -.6702 RC3 1.5714 FAU .52931 RRT .4743 RRF -.9657 RTF -.4612 CRT .9973 CRS .9201 CST .9335
FDE-5.4202 FRA17.5507 FC-33.3181 BSP 6268 SGB 1988.4 R23 -.1169 R13 -.9586 LSA 3249.8 MSA 365.0 SSA 27.9
BDE .5943 BRA .8042 BC3 1.6282 FSP 11237 SG1 1833.2 SG2 770.1 THA 73.33 EL1 996.0 EL2 32.5 ALF 59.15

LAUNCH DATE OCT 17 1964 FLIGHT TIME 306.00 ARRIVAL DATE AUG 19 1965

HELIOCENTRIC CONIC DISTANCE 705.208 EARTH TO MARS

RL 149.06 LAL .00 LOL 23.66 VL 32.681 GAL -5.34 AZL 89.22 HCA 222.17 SMA 186.23 ECC .21945 INC .7845 V1 29.892
RP 225.78 LAP -.53 LOP 245.83 VP 21.518 GAP -3.25 AZP 90.58 TAL 329.55 TAP 191.72 RCA 145.36 APO 227.10 V2 24.360
RC 248.959 GL 6.90 GP 8.57 ZAL 133.58 ZAP 110.35 ETS 175.66 ZAE 146.06 ETE 163.84 ZAC 95.31 ETC 256.52 CLP 110.59

PLANETOCENTRIC CONIC

C3 13.736 VHL 3.706 DLA 15.10 RAL 161.98 RAD 6567.5 VEL 11.624 PTH 2.04 VHP 2.999 DPA 10.55 RAP 180.93 ECC 1.2261

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 24 42	2617.87	-26.88	68.67	22.07	99.27	19 8 19	2017.9	-25.32	60.35
90.00	10 26 29	4282.97	2.71	176.61	17.08	61.80	11 37 52	3683.0	-1.08	169.98
100.00	19 54 14	2329.08	-28.03	47.20	21.84	100.82	20 33 3	1729.1	-26.25	38.85
100.00	11 39 37	4046.99	3.74	158.69	16.51	60.32	12 47 4	3447.0	-.24	152.17
110.00	21 20 47	2058.30	-31.06	25.84	21.04	105.05	21 55 5	1458.3	-28.68	17.44
110.00	12 29 34	3890.54	6.39	145.19	14.88	56.35	13 34 24	3290.5	1.92	138.95

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2555 TRA -.2905 TC3 -.6973 BAU .3176 SGT 799.7 SGR 1778.8 SG3 3380.1 ST 419.2 SR 861.1 SS 3136.5
RDE .5161 RRA -.6700 RC3 1.5827 FAU .54021 RRT .1461 RRF -.9647 RTF -.1164 CRT .9960 CRS .9176 CST .8947
FDE-5.4883 FRA17.9001 FC-34.0473 BSP 5980 SGB 1950.3 R23 -.0597 R13 -.9631 LSA 3257.8 MSA 374.7 SSA 27.6
BDE .5759 BRA .7303 BC3 1.7295 FSP 11488 SG1 1783.6 SG2 789.0 THA 85.32 EL1 957.1 EL2 33.6 ALF 64.10

LAUNCH DATE OCT 17 1964 FLIGHT TIME 308.00 ARRIVAL DATE AUG 21 1965

HELIOCENTRIC CONIC DISTANCE 709.147 EARTH TO MARS

RL 149.06 LAL .00 LOL 23.66 VL 32.676 GAL -5.35 AZL 89.18 HCA 223.24 SMA 186.15 ECC .21914 INC .8168 V1 29.892
RP 225.38 LAP -.56 LOP 246.90 VP 21.557 GAP -3.52 AZP 90.60 TAL 329.50 TAP 192.74 RCA 145.36 APO 226.94 V2 24.402
RC 250.643 GL 7.19 GP 8.49 ZAL 133.61 ZAP 108.44 ETS 176.04 ZAE 144.04 ETE 165.06 ZAC 95.05 ETC 256.60 CLP 108.65

PLANETOCENTRIC CONIC

C3 13.729 VHL 3.705 DLA 15.35 RAL 162.15 RAD 6567.5 VEL 11.624 PTH 2.04 VHP 2.971 DPA 10.84 RAP 180.10 ECC 1.2259

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 23 10	2626.41	-26.97	69.28	22.33	98.98	19 6 56	2026.4	-25.45	60.94
90.00	10 29 24	4274.20	2.43	176.12	17.29	61.78	11 40 38	3674.2	-1.36	169.49
100.00	19 52 54	2337.04	-28.14	47.77	22.10	100.54	20 31 51	1737.0	-26.39	39.40
100.00	11 42 21	4038.80	3.47	158.24	16.71	60.29	12 49 40	3438.8	-.51	151.72
110.00	21 19 49	2065.06	-31.18	26.33	21.32	104.78	21 54 14	1465.1	-28.84	17.91
110.00	12 31 55	3883.54	6.12	144.82	15.07	56.30	13 36 39	3283.5	1.65	138.58

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2053 TRA -.1348 TC3 -.9931 BAU .3433 SGT 830.2 SGR 1783.1 SG3 3441.8 ST 324.8 SR 863.8 SS 3146.6
RDE .5176 RRA -.6715 RC3 1.5848 FAU .54778 RRT -.2550 RRF -.9635 RTF .2964 CRT .9776 CRS .9137 CST .8172
FDE-5.5000 FRA18.2803 FC-34.5432 BSP 5945 SGB 1966.9 R23 .0107 R13 -.9648 LSA 3256.5 MSA 383.8 SSA 27.7
BDE .5568 BRA .6849 BC3 1.8703 FSP 11832 SG1 1798.7 SG2 795.7 THA 98.43 EL1 920.6 EL2 64.1 ALF 69.72

LAUNCH DATE OCT 17 1964 FLIGHT TIME 310.00 ARRIVAL DATE AUG 23 1965

HELIOCENTRIC CONIC DISTANCE 713.098 EARTH TO MARS

RL 149.06 LAL .00 LOL 23.66 VL 32.671 GAL -5.35 AZL 89.15 HCA 224.31 SMA 186.07 ECC .21888 INC .8480 V1 29.892
RP 224.99 LAP -.59 LOP 247.97 VP 21.598 GAP -3.78 AZP 90.61 TAL 329.44 TAP 193.75 RCA 145.34 APO 226.80 V2 24.444
RC 252.307 GL 7.47 GP 8.41 ZAL 133.65 ZAP 106.50 ETS 176.40 ZAE 141.98 ETE 166.19 ZAC 94.78 ETC 256.68 CLP 106.69

PLANETOCENTRIC CONIC

C3 13.730 VHL 3.705 DLA 15.57 RAL 162.33 RAD 6567.5 VEL 11.624 PTH 2.04 VHP 2.946 DPA 11.14 RAP 179.25 ECC 1.2260

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 21 49	2634.53	-27.05	69.86	22.60	98.70	19 5 43	2034.5	-25.57	61.51
90.00	10 32 13	4266.13	2.17	175.67	17.51	61.76	11 43 19	3666.1	-1.62	169.04
100.00	19 51 43	2344.61	-28.23	48.31	22.38	100.27	20 30 47	1744.6	-26.52	39.93
100.00	11 45 0	4031.28	3.21	157.83	16.93	60.26	12 52 11	3431.3	-.77	151.30
110.00	21 19 0	2071.51	-31.29	26.80	21.61	104.52	21 53 31	1471.5	-28.98	18.36
110.00	12 34 12	3877.14	5.88	144.48	15.28	56.27	13 38 49	3277.1	1.41	138.25

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1613 TRA .0311 TC3-1.2770 BAU .3749 SGT 980.0 SGR 1788.9 SG3 3499.8 ST 251.5 SR 870.6 SS 3170.5
RDE .5226 RRA -.6685 RC3 1.5941 FAU .55817 RRT -.5533 RRF -.9624 RTF .6049 CRT .8941 CRS .9121 CST .6389
FDE-5.5926 FRA18.5418 FC-35.1935 BSP 6039 SGB 2039.7 R23 .0596 R13 -.9644 LSA 3273.8 MSA 393.3 SSA 27.1
BDE .5469 BRA .6692 BC3 2.0426 FSP 11972 SG1 1887.3 SG2 773.7 THA 110.45 EL1 899.6 EL2 109.0 ALF 75.30

LAUNCH DATE OCT 17 1964 FLIGHT TIME 312.00 ARRIVAL DATE AUG 25 1965

HELIOCENTRIC CONIC DISTANCE 717.055 EARTH TO MARS

RL 149.06 LAL .00 LOL 23.66 VL 32.667 GAL -5.36 AZL 89.12 HCA 225.38 SMA 186.00 ECC .21866 INC .8782 V1 29.892
RP 224.60 LAP -.63 LOP 249.04 VP 21.639 GAP -4.04 AZP 90.62 TAL 329.37 TAP 194.75 RCA 145.33 APO 226.67 V2 24.486
RC 253.951 GL 7.73 GP 8.33 ZAL 133.71 ZAP 104.54 ETS 176.76 ZAE 139.88 ETE 167.22 ZAC 94.51 ETC 256.77 CLP 104.70

PLANETOCENTRIC CONIC

C3 13.742 VHL 3.707 DLA 15.78 RAL 162.53 RAD 6567.5 VEL 11.624 PTH 2.04 VHP 2.925 DPA 11.45 RAP 178.38 ECC 1.2262

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 20 39	2642.21	-27.13	70.41	22.89	98.43	19 4 41	2042.2	-25.69	62.04
90.00	10 34 55	4258.81	1.94	175.26	17.75	61.74	11 45 54	3658.8	-1.86	168.63
100.00	19 50 43	2351.77	-28.31	48.83	22.68	100.01	20 29 54	1751.8	-26.64	40.43
100.00	11 47 32	4024.48	2.98	157.45	17.17	60.24	12 54 37	3424.5	-1.00	150.93
110.00	21 18 20	2077.63	-31.39	27.25	21.91	104.27	21 52 57	1477.6	-29.12	18.78
110.00	12 36 25	3871.39	5.66	144.18	15.50	56.23	13 40 56	3271.4	1.19	137.95

DIFFERENTIAL CORRECTIONS
TDE .1147 TRA .2000 TC3-1.5755 BAU .4122
RDE .5265 RRA -.6654 RC3 1.5978 FAU .56653
FDE-5.6552 FRA18.7926 FC-35.6912 BSP 6399
BDE .5389 BRA .6948 BC3 2.2439 FSP 12132

MID-COURSE EXECUTION ACCURACY
SGT 1224.3 SGR 1791.1 SG3 3549.4
RRT -.7218 RRF -.9611 RTF .7765
SGB 2169.5 R23 .0879 R13 -.9645
SG1 2037.7 SG2 744.8 THA 120.82

ORBIT DETERMINATION ACCURACY
ST 204.8 SR 875.4 SS 3187.1
CRT .6254 CRS .9099 CST .2513
LSA 3286.8 MSA 402.5 SSA 26.7
EL1 885.1 EL2 158.0 ALF 81.40

LAUNCH DATE OCT 17 1964 FLIGHT TIME 314.00 ARRIVAL DATE AUG 27 1965

HELIOCENTRIC CONIC DISTANCE 721.020 EARTH TO MARS

RL 149.06 LAL .00 LOL 23.66 VL 32.663 GAL -5.37 AZL 89.09 HCA 226.46 SMA 185.94 ECC .21849 INC .9074 V1 29.892
RP 224.21 LAP -.66 LOP 250.11 VP 21.681 GAP -4.29 AZP 90.63 TAL 329.28 TAP 195.74 RCA 145.31 APO 226.56 V2 24.527
RC 255.576 GL 7.98 GP 8.24 ZAL 133.78 ZAP 102.56 ETS 177.11 ZAE 137.76 ETE 168.17 ZAC 94.23 ETC 256.86 CLP 102.70

PLANETOCENTRIC CONIC

C3 13.763 VHL 3.710 DLA 15.97 RAL 162.73 RAD 6567.5 VEL 11.625 PTH 2.04 VHP 2.908 DPA 11.75 RAP 177.49 ECC 1.2265

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 19 41	2649.46	-27.20	70.93	23.20	98.18	19 3 50	2049.5	-25.79	62.55
90.00	10 37 31	4252.22	1.72	174.89	18.01	61.73	11 48 24	3652.2	-2.07	168.27
100.00	19 49 54	2358.54	-28.39	49.32	22.99	99.76	20 29 12	1758.5	-26.75	40.90
100.00	11 50 0	4018.39	2.78	157.12	17.42	60.22	12 56 58	3418.4	-1.21	150.60
110.00	21 17 49	2083.43	-31.49	27.67	22.24	104.04	21 52 33	1483.4	-29.24	19.19
110.00	12 38 33	3866.26	5.47	143.91	15.75	56.20	13 43 0	3266.3	.99	137.68

DIFFERENTIAL CORRECTIONS
TDE .0665 TRA .5727 TC3-1.8815 BAU .4542
RDE .5304 RRA -.6616 RC3 1.5980 FAU .57364
FDE-5.7107 FRA19.0125 FC-36.0840 BSP 6976
BDE .5345 BRA .7594 BC3 2.4686 FSP 12272

MID-COURSE EXECUTION ACCURACY
SGT 1522.5 SGR 1790.7 SG3 3590.9
RRT -.8097 RRF -.9598 RTF .8654
SGB 2350.4 R23 .0972 R13 -.9666
SG1 2239.2 SG2 714.4 THA 129.31

ORBIT DETERMINATION ACCURACY
ST 211.1 SR 879.7 SS 3201.2
CRT .1366 CRS .9076 CST -.2875
LSA 3301.0 MSA 411.2 SSA 26.3
EL1 880.2 EL2 209.0 ALF 88.01

LAUNCH DATE OCT 17 1964 FLIGHT TIME 316.00 ARRIVAL DATE AUG 29 1965

HELIOCENTRIC CONIC DISTANCE 724.992 EARTH TO MARS

RL 149.06 LAL .00 LOL 23.66 VL 32.660 GAL -5.38 AZL 89.06 HCA 227.54 SMA 185.88 ECC .21836 INC .9356 V1 29.892
RP 223.82 LAP -.69 LOP 251.19 VP 21.723 GAP -4.54 AZP 90.63 TAL 329.19 TAP 196.73 RCA 145.29 APO 226.47 V2 24.569
RC 257.180 GL 8.22 GP 8.15 ZAL 133.88 ZAP 100.57 ETS 177.46 ZAE 135.60 ETE 169.06 ZAC 93.94 ETC 256.96 CLP 100.68

PLANETOCENTRIC CONIC

C3 13.794 VHL 3.714 DLA 16.14 RAL 162.95 RAD 6567.5 VEL 11.627 PTH 2.04 VHP 2.893 DPA 12.06 RAP 176.59 ECC 1.2270

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 18 54	2656.28	-27.27	71.42	23.52	97.95	19 3 11	2056.3	-25.89	63.02
90.00	10 40 2	4246.39	1.54	174.57	18.28	61.72	11 50 48	3646.4	-2.26	167.94
100.00	19 49 15	2364.91	-28.47	49.78	23.32	99.53	20 28 40	1764.9	-26.85	41.34
100.00	11 52 22	4012.99	2.60	156.82	17.70	60.21	12 59 15	3413.0	-1.39	150.30
110.00	21 17 28	2088.90	-31.58	28.07	22.57	103.82	21 52 17	1488.9	-29.36	19.57
110.00	12 40 38	3861.76	5.30	143.67	16.02	56.18	13 45 0	3261.8	.82	137.45

DIFFERENTIAL CORRECTIONS
TDE .0174 TRA .5492 TC3-2.1959 BAU .5004
RDE .5339 RRA -.6571 RC3 1.5940 FAU .57915
FDE-5.7556 FRA19.2007 FC-36.3494 BSP 7730
BDE .5342 BRA .8564 BC3 2.7134 FSP 12391

MID-COURSE EXECUTION ACCURACY
SGT 1854.5 SGR 1787.2 SG3 3623.4
RRT -.8569 RRF -.9583 RTF .9129
SGB 2575.5 R23 .0956 R13 -.9700
SG1 2481.7 SG2 688.5 THA 136.24

ORBIT DETERMINATION ACCURACY
ST 270.4 SR 883.1 SS 3212.0
CRT -.2653 CRS .9052 CST -.6472
LSA 3315.6 MSA 419.8 SSA 25.9
EL1 886.3 EL2 259.8 ALF 95.08

LAUNCH DATE OCT 17 1964 FLIGHT TIME 318.00 ARRIVAL DATE AUG 31 1965

HELIOCENTRIC CONIC DISTANCE 728.972 EARTH TO MARS

RL 149.06 LAL .00 LOL 23.66 VL 32.657 GAL -5.40 AZL 89.04 HCA 228.62 SMA 185.83 ECC .21827 INC .9629 V1 29.892
RP 223.44 LAP -.72 LOP 252.28 VP 21.766 GAP -4.79 AZP 90.64 TAL 329.08 TAP 197.70 RCA 145.27 APO 226.39 V2 24.611
RC 258.763 GL 8.45 GP 8.05 ZAL 133.98 ZAP 98.56 ETS 177.80 ZAE 133.43 ETE 169.88 ZAC 93.66 ETC 257.06 CLP 98.65

PLANETOCENTRIC CONIC

C3 13.834 VHL 3.719 DLA 16.30 RAL 163.18 RAD 6567.5 VEL 11.628 PTH 2.04 VHP 2.883 DPA 12.37 RAP 175.68 ECC 1.2277

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 18 20	2662.66	-27.33	71.87	23.86	97.72	19 2 42	2062.7	-25.98	63.47
90.00	10 42 26	4241.28	1.37	174.28	18.58	61.71	11 53 7	3641.3	-2.42	167.65
100.00	19 48 48	2370.89	-28.53	50.21	23.66	99.31	20 28 19	1770.9	-26.95	41.76
100.00	11 54 38	4008.29	2.44	156.56	17.99	60.20	13 1 26	3408.3	-1.55	150.04
110.00	21 17 17	2094.06	-31.66	28.45	22.92	103.61	21 52 11	1494.1	-29.47	19.93
110.00	12 42 39	3857.88	5.15	143.47	16.30	56.16	13 46 57	3257.9	.67	137.25

DIFFERENTIAL CORRECTIONS
TDE -.0326 TRA .7294 TC3-2.5139 BAU .5498
RDE .5375 RRA -.6513 RC3 1.5871 FAU .58352
FDE-5.7959 FRA19.3466 FC-36.5175 BSP 8628
BDE .5385 BRA .9779 BC3 2.9730 FSP 12478

MID-COURSE EXECUTION ACCURACY
SGT 2206.8 SGR 1781.0 SG3 3647.0
RRT -.8836 RRF -.9567 RTF .9404
SGB 2835.9 R23 .0882 R13 -.9740
SG1 2756.1 SG2 667.6 THA 141.87

ORBIT DETERMINATION ACCURACY
ST 359.2 SR 886.1 SS 3220.3
CRT -.4829 CRS .9028 CST -.8108
LSA 3331.8 MSA 428.1 SSA 25.5
EL1 905.2 EL2 307.9 ALF 102.55

LAUNCH DATE OCT 17 1964 FLIGHT TIME 320.00 ARRIVAL DATE SEP 2 1965

HELIOCENTRIC CONIC DISTANCE 732.959 EARTH TO MARS

RL	149.06	LAL	.00	LOL	23.66	VL	32.654	GAL	-5.42	AZL	89.01	HCA	229.71	SMA	185.78	ECC	.21823	INC	.9894	V1	29.892
RP	223.05	LAP	-.75	LOP	253.37	VP	21.809	GAP	-5.03	AZP	90.64	TAL	328.96	TAP	198.67	RCA	145.24	APO	226.32	V2	24.653
RC	260.326	GL	8.67	GP	7.95	ZAL	134.11	ZAP	96.55	ETS	178.12	ZAE	131.25	ETE	170.64	ZAC	93.36	ETC	257.16	CLP	96.61

PLANETOCENTRIC CONIC

C3	13.884	VHL	3.726	DLA	16.44	RAL	163.42	RAD	6567.5	VEL	11.631	PTH	2.04	VHP	2.876	DPA	12.67	RAP	174.76	ECC	1.2285

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 17 56	2668.62	-27.38	72.30	24.22	97.52	19 2 25	2068.6	-26.06	63.89
90.00	10 44 44	4236.90	1.23	174.04	18.89	61.71	11 55 21	3636.9	-2.56	167.41
100.00	19 48 32	2376.48	-28.59	50.61	24.02	99.11	20 28 8	1776.5	-27.04	42.15
100.00	11 56 49	4004.28	2.30	156.34	18.30	60.19	13 3 33	3404.3	-1.68	149.82
110.00	21 17 15	2098.91	-31.74	28.81	23.29	103.41	21 52 14	1498.9	-29.57	20.27
110.00	12 44 36	3854.61	5.03	143.30	16.60	56.14	13 48 50	3254.6	.55	137.08

DIFFERENTIAL CORRECTIONS					MID-COURSE EXECUTION ACCURACY			ORBIT DETERMINATION ACCURACY		
TDE -.0836	TRA .9130	TC3-2.8344	BAU .6020		SGT 2573.1	SGR 1771.8	SG3 3661.0	ST 461.9	SR 888.1	SS 3224.9
RDE .5407	RRA -.6447	RC3 1.5761	FAU .58628		RRT -.8995	RRF -.9549	RTF .9571	CRT -.5979	CRS .9003	CST -.8861
FDE-5.8242	FRA19.4568	FC-36.5580	BSP 9635		SGB 3124.1	R23 .0790	R13 -.9778	LSA 3348.4	MSA 436.1	SSA 25.1
BDE .5472	BRA 1.1177	BC3 3.2432	FSP 12537		SG1 3055.3	SG2 652.0	THA 146.50	EL1 937.6	EL2 350.7	ALF 110.22

LAUNCH DATE OCT 17 1964 FLIGHT TIME 322.00 ARRIVAL DATE SEP 4 1965

HELIOCENTRIC CONIC DISTANCE 736.953 EARTH TO MARS

RL	149.06	LAL	.00	LOL	23.66	VL	32.652	GAL	-5.44	AZL	88.98	HCA	230.80	SMA	185.74	ECC	.21822	INC	1.0152	V1	29.892
RP	222.66	LAP	-.79	LOP	254.46	VP	21.853	GAP	-5.27	AZP	90.64	TAL	328.83	TAP	199.63	RCA	145.21	APO	226.27	V2	24.695
RC	261.869	GL	8.87	GP	7.85	ZAL	134.25	ZAP	94.53	ETS	178.44	ZAE	129.05	ETE	171.36	ZAC	93.07	ETC	257.27	CLP	94.58

PLANETOCENTRIC CONIC

C3	13.943	VHL	3.734	DLA	16.56	RAL	163.67	RAD	6567.5	VEL	11.633	PTH	2.04	VHP	2.873	DPA	12.96	RAP	173.84	ECC	1.2295

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 17 45	2674.16	-27.43	72.70	24.59	97.32	19 2 19	2074.2	-26.13	64.27
90.00	10 46 56	4233.24	1.11	173.83	19.23	61.70	11 57 29	3633.2	-2.68	167.21
100.00	19 48 27	2381.68	-28.65	50.99	24.39	98.92	20 28 8	1781.7	-27.12	42.52
100.00	11 58 55	4000.96	2.19	156.16	18.63	60.18	13 5 36	3401.0	-1.80	149.64
110.00	21 17 22	2103.45	-31.81	29.14	23.68	103.22	21 52 26	1503.5	-29.67	20.59
110.00	12 46 29	3851.95	4.93	143.16	16.92	56.13	13 50 41	3252.0	.45	136.94

DIFFERENTIAL CORRECTIONS					MID-COURSE EXECUTION ACCURACY			ORBIT DETERMINATION ACCURACY		
TDE -.1354	TRA 1.0995	TC3-3.1553	BAU .6563		SGT 2948.5	SGR 1759.8	SG3 3665.4	ST 571.8	SR 889.8	SS 3227.5
RDE .5440	RRA -.6370	RC3 1.5618	FAU .58763		RRT -.9090	RRF -.9529	RTF .9680	CRT -.6632	CRS .8978	CST -.9243
FDE-5.8488	FRA19.5236	FC-36.4857	BSP 10722		SGB 3433.8	R23 .0700	R13 -.9812	LSA 3367.2	MSA 443.9	SSA 24.7
BDE .5606	BRA 1.2707	BC3 3.5206	FSP 12562		SG1 3373.4	SG2 641.2	THA 150.34	EL1 984.4	EL2 386.8	ALF 117.72

LAUNCH DATE OCT 17 1964 FLIGHT TIME 324.00 ARRIVAL DATE SEP 6 1965

HELIOCENTRIC CONIC DISTANCE 740.955 EARTH TO MARS

RL	149.06	LAL	.00	LOL	23.66	VL	32.650	GAL	-5.46	AZL	88.96	HCA	231.90	SMA	185.70	ECC	.21826	INC	1.0403	V1	29.892
RP	222.28	LAP	-.82	LOP	255.55	VP	21.897	GAP	-5.51	AZP	90.64	TAL	328.68	TAP	200.58	RCA	145.17	APO	226.24	V2	24.737
RC	263.392	GL	9.07	GP	7.74	ZAL	134.41	ZAP	92.52	ETS	178.75	ZAE	126.85	ETE	172.02	ZAC	92.78	ETC	257.37	CLP	92.54

PLANETOCENTRIC CONIC

C3	14.013	VHL	3.743	DLA	16.67	RAL	163.93	RAD	6567.6	VEL	11.636	PTH	2.04	VHP	2.873	DPA	13.25	RAP	172.93	ECC	1.2306

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 17 45	2679.28	-27.47	73.07	24.98	97.14	19 2 24	2079.3	-26.20	64.63
90.00	10 49 1	4230.31	1.02	173.67	19.58	61.70	11 59 32	3630.3	-2.77	167.04
100.00	19 48 32	2386.50	-28.70	51.34	24.79	98.74	20 28 19	1786.5	-27.19	42.86
100.00	12 0 55	3998.32	2.10	156.02	18.97	60.17	13 7 34	3398.3	-1.89	149.49
110.00	21 17 39	2107.69	-31.88	29.46	24.08	103.05	21 52.47	1507.7	-29.75	20.89
110.00	12 48 18	3849.89	4.85	143.05	17.26	56.12	13 52 28	3249.9	.37	136.83

DIFFERENTIAL CORRECTIONS					MID-COURSE EXECUTION ACCURACY			ORBIT DETERMINATION ACCURACY		
TDE -.1882	TRA 1.2889	TC3-3.4757	BAU .7125		SGT 3331.0	SGR 1745.2	SG3 3660.3	ST 686.1	SR 890.7	SS 3226.7
RDE .5472	RRA -.6281	RC3 1.5445	FAU .58768		RRT -.9146	RRF -.9507	RTF .9753	CRT -.7036	CRS .8953	CST -.9459
FDE-5.8647	FRA19.5460	FC-36.3080	BSP 11864		SGB 3760.4	R23 .0619	R13 -.9841	LSA 3386.9	MSA 451.3	SSA 24.2
BDE .5787	BRA 1.4338	BC3 3.8034	FSP 12551		SG1 3706.6	SG2 634.0	THA 153.56	EL1 1044.6	EL2 415.7	ALF 124.72

LAUNCH DATE OCT 17 1964 FLIGHT TIME 326.00 ARRIVAL DATE SEP 8 1965

HELIOCENTRIC CONIC DISTANCE 744.963 EARTH TO MARS

RL	149.06	LAL	.00	LOL	23.66	VL	32.648	GAL	-5.49	AZL	88.94	HCA	233.00	SMA	185.67	ECC	.21834	INC	1.0647	V1	29.892
RP	221.89	LAP	-.85	LOP	256.65	VP	21.942	GAP	-5.74	AZP	90.64	TAL	328.52	TAP	201.52	RCA	145.13	APO	226.21	V2	24.779
RC	264.895	GL	9.26	GP	7.63	ZAL	134.58	ZAP	90.51	ETS	179.06	ZAE	124.65	ETE	172.64	ZAC	92.48	ETC	257.49	CLP	90.51

PLANETOCENTRIC CONIC

C3	14.092	VHL	3.754	DLA	16.76	RAL	164.21	RAD	6567.6	VEL	11.639	PTH	2.04	VHP	2.876	DPA	13.53	RAP	172.02	ECC	1.2319

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 17 57	2683.97	-27.51	73.41	25.39	96.98	19 2 41	2084.0	-26.26	64.96
90.00	10 51 1	4228.11	.95	173.55	19.94	61.70	12 1 29	3628.1	-2.84	166.92
100.00	19 48 49	2390.95	-28.74	51.66	25.20	98.58	20 28 40	1790.9	-27.26	43.17
100.00	12 2 50	3996.36	2.03	155.91	19.34	60.17	13 9 27	3396.4	-1.95	149.39
110.00	21 18 5	2111.63	-31.94	29.75	24.50	102.89	21 53 17	1511.6	-29.84	21.17
110.00	12 50 3	3848.44	4.79	142.97	17.62	56.11	13 54 12	3248.4	.31	136.75

DIFFERENTIAL CORRECTIONS					MID-COURSE EXECUTION ACCURACY			ORBIT DETERMINATION ACCURACY		
TDE -.2418	TRA 1.4804	TC3-3.7936	BAU .7702		SGT 3717.1	SGR 1727.7	SG3 3645.3	ST 802.9	SR 891.0	SS 3223.3
RDE .5503	RRA -.6182	RC3 1.5237	FAU .58614		RRT -.9177	RRF -.9483	RTF .9804	CRT -.7299	CRS .8928	CST -.9592
FDE-5.8739	FRA19.5275	FC-36.0082	BSP 13052		SGB 4099.0	R23 .0552	R13 -.9865	LSA 3408.4	MSA 458.5	SSA 23.8
BDE .6011	BRA 1.6043	BC3 4.0881	FSP 12513		SG1 4050.3	SG2 630.0	THA 156.29	EL1 1116.6	EL2 438.0	ALF 130.93

LAUNCH DATE OCT 17 1964 FLIGHT TIME 328.00 ARRIVAL DATE SEP 10 1965

HELIOCENTRIC CONIC DISTANCE 748.978 EARTH TO MARS

RL 149.06 LAL .00 LOL 23.66 VL 32.646 GAL -5.52 AZL 88.91 HCA 234.10 SMA 185.65 ECC .21846 INC 1.0885 V1 29.892
RP 221.51 LAP -.88 LOP 257.75 VP 21.986 GAP -5.97 AZP 90.64 TAL 328.35 TAP 202.45 RCA 145.09 APO 226.20 V2 24.820
RC 266.379 GL 9.44 GP 7.51 ZAL 134.77 ZAP 88.51 ETS 179.35 ZAE 122.45 ETE 173.23 ZAC 92.18 ETC 257.60 CLP 88.49

PLANETOCENTRIC CONIC

C3 14.182 VHL 3.766 DLA 16.84 RAL 164.49 RAD 6567.6 VEL 11.643 PTH 2.04 VHP 2.884 DPA 15.80 RAP 171.12 ECC 1.2334

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 18 20	2688.25	-27.55	73.71	25.81	96.83	19 3 9	2088.3	-26.32	65.26
90.00	10 52 55	4226.62	.90	173.46	20.33	61.70	12 3 22	3626.6	-2.89	166.84
100.00	19 49 16	2395.02	-28.79	51.96	25.63	98.43	20 29 11	1795.0	-27.32	43.46
100.00	12 4 40	3995.09	1.99	155.84	19.72	60.17	13 11 15	3395.1	-2.00	149.32
110.00	21 18 41	2115.28	-31.99	30.02	24.93	102.74	21 53 56	1515.3	-29.91	21.43
110.00	12 51 45	3847.59	4.76	142.93	18.00	56.11	13 55 53	3247.6	.28	136.71

DIFFERENTIAL CORRECTIONS
TDE -.2962 TRA 1.6743 TC3-4.1064 BAU .8289
RDE .5532 RRA -.6075 RC3 1.4997 FAU .58312
FDE-5.8744 FRA19.4714 FC-35.5966 BSP 14274
BDE .6275 BRA 1.7811 BC3 4.3717 FSP 12443

MID-COURSE EXECUTION ACCURACY
SGT 4105.1 SGR 1707.9 SG3 3621.3
RRT -.9190 RRF -.9457 RTF .9841
SGB 4446.2 R23 .0498 R13 -.9884
SG1 4401.6 SG2 628.1 THA 158.62

ORBIT DETERMINATION ACCURACY
ST 921.5 SR 890.8 SS 3217.1
CRT -.7477 CRS .8902 CST -.9678
LSA 3431.5 MSA 465.6 SSA 23.3
EL1 1198.2 EL2 454.9 ALF 136.30

LAUNCH DATE OCT 17 1964 FLIGHT TIME 330.00 ARRIVAL DATE SEP 12 1965

HELIOCENTRIC CONIC DISTANCE 752.999 EARTH TO MARS

RL 149.06 LAL .00 LOL 23.66 VL 32.645 GAL -5.55 AZL 88.89 HCA 235.21 SMA 185.62 ECC .21863 INC 1.1118 V1 29.892
RP 221.13 LAP -.91 LOP 258.86 VP 22.031 GAP -6.19 AZP 90.63 TAL 328.17 TAP 203.37 RCA 145.04 APO 226.21 V2 24.862
RC 267.844 GL 9.60 GP 7.40 ZAL 134.98 ZAP 86.52 ETS 179.63 ZAE 120.26 ETE 173.78 ZAC 91.89 ETC 257.71 CLP 86.49

PLANETOCENTRIC CONIC

C3 14.282 VHL 3.779 DLA 16.90 RAL 164.79 RAD 6567.6 VEL 11.648 PTH 2.04 VHP 2.894 DPA 14.06 RAP 170.24 ECC 1.2350

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 18 56	2692.13	-27.58	73.99	26.26	96.69	19 3 48	2092.1	-26.37	65.54
90.00	10 54 43	4225.85	.87	173.42	20.73	61.70	12 5 9	3625.8	-2.92	166.79
100.00	19 49 55	2398.72	-28.82	52.23	26.07	98.29	20 29 53	1798.7	-27.38	43.72
100.00	12 6 25	3994.49	1.97	155.81	20.13	60.17	13 12 59	3394.5	-2.02	149.28
110.00	21 19 25	2118.65	-32.04	30.27	25.38	102.60	21 54 44	1518.6	-29.98	21.66
110.00	12 53 23	3847.33	4.75	142.91	18.39	56.11	13 57 31	3247.3	.27	136.70

DIFFERENTIAL CORRECTIONS
TDE -.3517 TRA 1.8698 TC3-4.4140 BAU .8885
RDE .5561 RRA -.5958 RC3 1.4731 FAU .57879
FDE-5.8675 FRA19.3736 FC-35.0845 BSP 15512
BDE .6580 BRA 1.9624 BC3 4.6533 FSP 12342

MID-COURSE EXECUTION ACCURACY
SGT 4493.6 SGR 1685.8 SG3 3588.1
RRT -.9190 RRF -.9428 RTF .9868
SGB 4799.4 R23 .0454 R13 -.9900
SG1 4758.2 SG2 627.8 THA 160.63

ORBIT DETERMINATION ACCURACY
ST 1041.3 SR 890.0 SS 3208.0
CRT -.7603 CRS .8876 CST -.9738
LSA 3456.0 MSA 472.2 SSA 22.8
EL1 1287.6 EL2 467.6 ALF 140.86

LAUNCH DATE OCT 17 1964 FLIGHT TIME 332.00 ARRIVAL DATE SEP 14 1965

HELIOCENTRIC CONIC DISTANCE 757.027 EARTH TO MARS

RL 149.06 LAL .00 LOL 23.66 VL 32.644 GAL -5.59 AZL 88.87 HCA 236.32 SMA 185.61 ECC .21883 INC 1.1345 V1 29.892
RP 220.75 LAP -.94 LOP 259.97 VP 22.076 GAP -6.41 AZP 90.63 TAL 327.97 TAP 204.29 RCA 144.99 APO 226.22 V2 24.903
RC 269.292 GL 9.76 GP 7.27 ZAL 135.21 ZAP 84.55 ETS 179.90 ZAE 118.08 ETE 174.29 ZAC 91.60 ETC 257.82 CLP 84.51

PLANETOCENTRIC CONIC

C3 14.392 VHL 3.794 DLA 16.95 RAL 165.10 RAD 6567.6 VEL 11.652 PTH 2.05 VHP 2.908 DPA 14.30 RAP 169.37 ECC 1.2369

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 19 42	2695.60	-27.61	74.24	26.71	96.57	19 4 38	2095.6	-26.41	65.78
90.00	10 56 25	4225.79	.87	173.42	21.16	61.70	12 6 50	3625.8	-2.92	166.79
100.00	19 50 44	2402.06	-28.85	52.47	26.53	98.17	20 30 46	1802.1	-27.42	43.96
100.00	12 8 4	3994.56	1.97	155.81	20.54	60.17	13 14 39	3394.6	-2.01	149.29
110.00	21 20 19	2121.73	-32.09	30.50	25.85	102.47	21 55 41	1521.7	-30.04	21.88
110.00	12 54 58	3847.66	4.76	142.93	18.81	56.11	13 59 5	3247.7	.28	136.71

DIFFERENTIAL CORRECTIONS
TDE -.4078 TRA 2.0666 TC3-4.7133 BAU .9485
RDE .5588 RRA -.5833 RC3 1.4439 FAU .57308
FDE-5.8525 FRA19.2365 FC-34.4721 BSP 16763
BDE .6918 BRA 2.1474 BC3 4.9295 FSP 12210

MID-COURSE EXECUTION ACCURACY
SGT 4880.0 SGR 1661.5 SG3 3546.2
RRT -.9179 RRF -.9397 RTF .9889
SGB 5155.1 R23 .0419 R13 -.9913
SG1 5116.6 SG2 628.8 THA 162.37

ORBIT DETERMINATION ACCURACY
ST 1161.5 SR 888.7 SS 3195.8
CRT -.7691 CRS .8850 CST -.9780
LSA 3481.8 MSA 478.6 SSA 22.4
EL1 1382.4 EL2 477.2 ALF 144.70

LAUNCH DATE OCT 17 1964 FLIGHT TIME 334.00 ARRIVAL DATE SEP 16 1965

HELIOCENTRIC CONIC DISTANCE 761.059 EARTH TO MARS

RL 149.06 LAL .00 LOL 23.66 VL 32.643 GAL -5.63 AZL 88.84 HCA 237.43 SMA 185.59 ECC .21908 INC 1.1567 V1 29.892
RP 220.37 LAP -.97 LOP 261.08 VP 22.122 GAP -6.63 AZP 90.62 TAL 327.76 TAP 205.19 RCA 144.93 APO 226.25 V2 24.944
RC 270.721 GL 9.91 GP 7.15 ZAL 135.45 ZAP 82.60 ETS 180.16 ZAE 115.92 ETE 174.77 ZAC 91.32 ETC 257.93 CLP 82.55

PLANETOCENTRIC CONIC

C3 14.514 VHL 3.810 DLA 16.98 RAL 165.43 RAD 6567.6 VEL 11.658 PTH 2.05 VHP 2.926 DPA 14.53 RAP 168.53 ECC 1.2389

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 20 41	2698.65	-27.63	74.46	27.19	96.46	19 5 39	2098.6	-26.45	66.00
90.00	10 58 1	4226.47	.89	173.46	21.60	61.70	12 8 27	3626.5	-2.90	166.83
100.00	19 51 44	2405.02	-28.88	52.68	27.01	98.06	20 31 49	1805.0	-27.47	44.17
100.00	12 9 38	3995.33	2.00	155.85	20.98	60.17	13 16 14	3395.3	-1.99	149.33
110.00	21 21 23	2124.52	-32.13	30.70	26.33	102.35	21 56 48	1524.5	-30.10	22.08
110.00	12 56 29	3848.60	4.80	142.98	19.24	56.11	14 0 37	3248.6	.32	136.76

DIFFERENTIAL CORRECTIONS
TDE -.4611 TRA 2.2711 TC3-4.9933 BAU 1.0065
RDE .5590 RRA -.5727 RC3 1.4047 FAU .56263
FDE-5.7601 FRA19.1360 FC-33.5597 BSP 18147
BDE .7246 BRA 2.3422 BC3 5.1872 FSP 12198

MID-COURSE EXECUTION ACCURACY
SGT 5264.1 SGR 1631.9 SG3 3492.9
RRT -.9163 RRF -.9359 RTF .9903
SGB 5511.2 R23 .0385 R13 -.9922
SG1 5475.3 SG2 628.5 THA 163.93

ORBIT DETERMINATION ACCURACY
ST 1281.3 SR 883.6 SS 3168.7
CRT -.7738 CRS .8799 CST -.9817
LSA 3496.8 MSA 485.0 SSA 22.2
EL1 1479.0 EL2 484.9 ALF 148.09

LAUNCH DATE OCT 17 1964 FLIGHT TIME 336.00 ARRIVAL DATE SEP 18 1965

HELIOCENTRIC CONIC DISTANCE 765.101 EARTH TO MARS

RL 149.06 LAL .00 LOL 23.66 VL 32.642 GAL -5.67 AZL 88.82 HCA 238.55 SMA 185.58 ECC .21937 INC 1.1784 V1 29.892
RP 220.00 LAP -1.01 LOP 262.20 VP 22.167 GAP -6.85 AZP 90.61 TAL 327.53 TAP 206.08 RCA 144.87 APO 226.29 V2 24.986
RC 272.134 GL 10.05 GP 7.02 ZAL 135.70 ZAP 80.68 ETS 180.41 ZAE 113.78 ETE 175.22 ZAC 91.03 ETC 258.04 CLP 80.61

PLANETOCENTRIC CONIC

C3 14.646 VHL 3.827 DLA 17.00 RAL 165.76 RAD 6567.6 VEL 11.663 PTH 2.05 VHP 2.947 DPA 14.75 RAP 167.71 ECC 1.2410

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 21 50	2701.34	-27.65	74.66	27.69	96.36	19 6 51	2101.3	-26.48	66.19
90.00	10 59 31	4227.81	.94	173.53	22.06	61.70	12 9 59	3627.8	-2.85	166.90
100.00	19 52 54	2407.66	-28.91	52.88	27.51	97.96	20 33 2	1807.7	-27.51	44.35
100.00	12 11 8	3996.72	2.04	155.93	21.44	60.17	13 17 44	3396.7	-1.94	149.41
110.00	21 22 35	2127.05	-32.17	30.89	26.83	102.24	21 58 2	1527.1	-30.15	22.26
110.00	12 57 56	3850.09	4.86	143.06	19.69	56.12	14 2 6	3250.1	.37	136.84

DIFFERENTIAL CORRECTIONS
TDE -.5208 TRA 2.4676 TC3-5.2774 BAU 1.0678
RDE .5629 RRA -.5576 RC3 1.3748 FAU .55609
FDE-5.7663 FRA18.8974 FC-32.8702 BSP 19340
BDE .7669 BRA 2.5298 BC3 5.4535 FSP 11941

MID-COURSE EXECUTION ACCURACY
SGT 5643.4 SGR 1606.0 SG3 3437.3
RRT -.9135 RRF -.9324 RTF .9917
SGB 5867.5 R23 .0368 R13 -.9931
SG1 5833.3 SG2 632.1 THA 165.25

ORBIT DETERMINATION ACCURACY
ST 1402.1 SR 883.0 SS 3158.0
CRT -.7790 CRS .8785 CST -.9837
LSA 3532.3 MSA 490.7 SSA 21.6
EL1 1582.7 EL2 490.5 ALF 150.79

LAUNCH DATE OCT 17 1964 FLIGHT TIME 338.00 ARRIVAL DATE SEP 20 1965

HELIOCENTRIC CONIC DISTANCE 769.148 EARTH TO MARS

RL 149.06 LAL .00 LOL 23.66 VL 32.642 GAL -5.72 AZL 88.80 HCA 239.67 SMA 185.58 ECC .21970 INC 1.1997 V1 29.892
RP 219.62 LAP -1.04 LOP 263.32 VP 22.213 GAP -7.06 AZP 90.61 TAL 327.30 TAP 206.97 RCA 144.81 APO 226.35 V2 25.027
RC 273.529 GL 10.19 GP 6.90 ZAL 135.98 ZAP 78.78 ETS 180.65 ZAE 111.66 ETE 175.65 ZAC 90.76 ETC 258.15 CLP 78.70

PLANETOCENTRIC CONIC

C3 14.790 VHL 3.846 DLA 17.00 RAL 166.10 RAD 6567.6 VEL 11.669 PTH 2.05 VHP 2.971 DPA 14.94 RAP 166.92 ECC 1.2434

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 23 10	2703.64	-27.67	74.82	28.20	96.28	19 8 14	2103.6	-26.51	66.35
90.00	11 0 55	4229.86	1.00	173.65	22.53	61.70	12 11 25	3629.9	-2.79	167.02
100.00	19 54 15	2409.95	-28.93	53.04	28.02	97.87	20 34 25	1809.9	-27.54	44.52
100.00	12 12 32	3998.78	2.11	156.04	21.91	60.18	13 19 11	3398.8	-1.87	149.52
110.00	21 23 56	2129.33	-32.20	31.06	27.35	102.15	21 59 25	1529.3	-30.19	22.42
110.00	12 59 20	3852.17	4.93	143.17	20.16	56.13	14 3 32	3252.2	.45	136.95

DIFFERENTIAL CORRECTIONS
TDE -.5814 TRA 2.6657 TC3-5.5484 BAU 1.1287
RDE .5664 RRA -.5424 RC3 1.3416 FAU .54775
FDE-5.7564 FRA18.6399 FC-32.0623 BSP 20534
BDE .8117 BRA 2.7203 BC3 5.7083 FSP 41683

MID-COURSE EXECUTION ACCURACY
SGT 6017.4 SGR 1578.2 SG3 3374.0
RRT -.9102 RRF -.9284 RTF .9927
SGB 6220.9 R23 .0356 R13 -.9939
SG1 6188.4 SG2 635.8 THA 166.43

ORBIT DETERMINATION ACCURACY
ST 1522.8 SR 881.7 SS 3143.6
CRT -.7826 CRS .8769 CST -.9854
LSA 3568.2 MSA 496.1 SSA 21.0
EL1 1688.6 EL2 494.9 ALF 153.13

LAUNCH DATE OCT 17 1964 FLIGHT TIME 340.00 ARRIVAL DATE SEP 22 1965

HELIOCENTRIC CONIC DISTANCE 773.200 EARTH TO MARS

RL 149.06 LAL .00 LOL 23.66 VL 32.642 GAL -5.77 AZL 88.78 HCA 240.80 SMA 185.58 ECC .22007 INC 1.2206 V1 29.892
RP 219.25 LAP -1.07 LOP 264.45 VP 22.259 GAP -7.27 AZP 90.60 TAL 327.05 TAP 207.84 RCA 144.74 APO 226.42 V2 25.067
RC 274.906 GL 10.31 GP 6.77 ZAL 136.26 ZAP 76.92 ETS 180.88 ZAE 109.57 ETE 176.05 ZAC 90.49 ETC 258.26 CLP 76.83

PLANETOCENTRIC CONIC

C3 14.946 VHL 3.866 DLA 16.99 RAL 166.46 RAD 6567.6 VEL 11.676 PTH 2.05 VHP 2.998 DPA 15.13 RAP 166.16 ECC 1.2460

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 24 42	2705.56	-27.68	74.96	28.73	96.21	19 9 47	2105.6	-26.53	66.48
90.00	11 2 14	4232.61	1.09	173.80	23.02	61.70	12 12 46	3632.6	-2.70	167.17
100.00	19 55 46	2411.90	-28.95	53.19	28.55	97.80	20 35 57	1811.9	-27.57	44.66
100.00	12 13 51	4001.50	2.21	156.19	22.40	60.18	13 20 33	3401.5	-1.78	149.67
110.00	21 25 26	2131.34	-32.23	31.21	27.88	102.07	22 0 57	1531.3	-30.23	22.57
110.00	13 0 40	3854.82	5.04	143.31	20.64	56.15	14 4 55	3254.8	.55	137.09

DIFFERENTIAL CORRECTIONS
TDE -.6424 TRA 2.8652 TC3-5.8056 BAU 1.1890
RDE .5695 RRA -.5271 RC3 1.3058 FAU .53791
FDE-5.7275 FRA18.3653 FC-31.1589 BSP 21737
BDE .8588 BRA 2.9132 BC3 5.9506 FSP 11432

MID-COURSE EXECUTION ACCURACY
SGT 6385.2 SGR 1548.9 SG3 3304.1
RRT -.9063 RRF -.9241 RTF .9935
SGB 6570.3 R23 .0346 R13 -.9945
SG1 6539.2 SG2 639.3 THA 167.48

ORBIT DETERMINATION ACCURACY
ST 1642.9 SR 879.3 SS 3124.4
CRT -.7850 CRS .8748 CST -.9867
LSA 3603.1 MSA 501.2 SSA 20.5
EL1 1795.5 EL2 498.4 ALF 155.17

LAUNCH DATE OCT 17 1964 FLIGHT TIME 342.00 ARRIVAL DATE SEP 24 1965

HELIOCENTRIC CONIC DISTANCE 777.258 EARTH TO MARS

RL 149.06 LAL .00 LOL 23.66 VL 32.642 GAL -5.82 AZL 88.76 HCA 241.93 SMA 185.58 ECC .22048 INC 1.2411 V1 29.892
RP 218.89 LAP -1.10 LOP 265.58 VP 22.305 GAP -7.48 AZP 90.58 TAL 326.78 TAP 208.71 RCA 144.66 APO 226.50 V2 25.108
RC 276.266 GL 10.42 GP 6.64 ZAL 136.57 ZAP 75.09 ETS 181.10 ZAE 107.51 ETE 176.42 ZAC 90.22 ETC 258.36 CLP 74.98

PLANETOCENTRIC CONIC

C3 15.113 VHL 3.888 DLA 16.96 RAL 166.82 RAD 6567.6 VEL 11.683 PTH 2.05 VHP 3.029 DPA 15.29 RAP 165.43 ECC 1.2487

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 26 24	2707.12	-27.69	75.08	29.28	96.16	19 11 32	2107.1	-26.55	66.59
90.00	11 3 27	4236.04	1.20	173.99	23.53	61.71	12 14 3	3636.0	-2.59	167.36
100.00	19 57 27	2413.53	-28.96	53.30	29.10	97.74	20 37 40	1813.5	-27.59	44.77
100.00	12 15 5	4004.86	2.32	156.37	22.91	60.19	13 21 50	3404.9	-1.66	149.85
110.00	21 27 4	2133.10	-32.25	31.34	28.43	101.99	22 2 38	1533.1	-30.27	22.69
110.00	13 1 57	3858.05	5.16	143.48	21.15	56.16	14 6 15	3258.0	.68	137.26

DIFFERENTIAL CORRECTIONS
TDE -.7044 TRA 3.0662 TC3-6.0485 BAU 1.2487
RDE .5723 RRA -.5118 RC3 1.2684 FAU .52691
FDE-5.6878 FRA18.0727 FC-30.1834 BSP 22933
BDE .9076 BRA 3.1086 BC3 6.1801 FSP 11174

MID-COURSE EXECUTION ACCURACY
SGT 6746.6 SGR 1518.6 SG3 3228.8
RRT -.9019 RRF -.9194 RTF .9941
SGB 6915.4 R23 .0339 R13 -.9950
SG1 6885.4 SG2 642.8 THA 168.42

ORBIT DETERMINATION ACCURACY
ST 1762.5 SR 876.5 SS 3102.5
CRT -.7865 CRS .8726 CST -.9879
LSA 3639.2 MSA 506.0 SSA 20.0
EL1 1903.6 EL2 501.2 ALF 156.95

LAUNCH DATE OCT 17 1964 FLIGHT TIME 344.00 ARRIVAL DATE SEP 26 1965

HELIOCENTRIC CONIC DISTANCE 781.322 EARTH TO MARS

RL 149.06 LAL .00 LOL 23.66 VL 32.643 GAL -5.88 AZL 88.74 HCA 243.06 SMA 185.59 ECC .22093 INC 1.2612 V1 29.892
RP 218.52 LAP -1.12 LOP 266.71 VP 22.351 GAP -7.68 AZP 90.57 TAL 326.50 TAP 209.56 RCA 144.58 APO 226.59 V2 25.148
RC 277.609 GL 10.53 GP 6.51 ZAL 136.89 ZAP 73.29 ETS 181.30 ZAE 105.48 ETE 176.77 ZAC 89.97 ETC 258.45 CLP 73.18

PLANETOCENTRIC CONIC

C3 15.293 VHL 3.911 DLA 16.92 RAL 167.20 RAD 6567.6 VEL 11.691 PTH 2.06 VHP 3.062 DPA 15.44 RAP 164.74 ECC 1.2517

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 28 18	2708.32	-27.70	75.16	29.84	96.12	19 13 26	2108.3	-26.57	66.68
90.00	11 4 34	4240.16	1.34	174.22	24.06	61.71	12 15 14	3640.2	-2.46	167.59
100.00	19 59 18	2414.84	-28.97	53.40	29.67	97.69	20 39 33	1814.8	-27.61	44.86
100.00	12 16 15	4008.87	2.46	156.60	23.44	60.20	13 23 4	3408.9	-1.53	150.07
110.00	21 28 52	2134.63	-32.27	31.46	29.00	101.93	22 4 26	1534.6	-30.30	22.80
110.00	13 3 11	3861.85	5.30	143.68	21.67	56.18	14 7 33	3261.8	.82	137.45

DIFFERENTIAL CORRECTIONS
TDE -.7672 TRA 3.2676 TC3-6.2758 BAU 1.3075
RDE .5751 RRA -.4963 RC3 1.2297 FAU .51492
FDE-5.6403 FRA17.7598 FC-29.1492 BSP 24115
BDE .9588 BRA 3.3051 BC3 6.3952 FSP 10906

MID-COURSE EXECUTION ACCURACY
SGT 7099.2 SGR 1487.5 SG3 3148.3
RRT -.8969 RRF -.9144 RTF .9946
SGB 7253.4 R23 .0335 R13 -.9953
SG1 7224.5 SG2 646.4 THA 169.27

ORBIT DETERMINATION ACCURACY
ST 1881.2 SR 873.4 SS 3078.0
CRT -.7874 CRS .8704 CST -.9888
LSA 3676.3 MSA 510.4 SSA 19.5
EL1 2012.0 EL2 503.4 ALF 158.51

LAUNCH DATE OCT 17 1964 FLIGHT TIME 346.00 ARRIVAL DATE SEP 28 1965

HELIOCENTRIC CONIC DISTANCE 785.390 EARTH TO MARS

RL 149.06 LAL .00 LOL 23.66 VL 32.643 GAL -5.94 AZL 88.72 HCA 244.20 SMA 185.60 ECC .22143 INC 1.2810 V1 29.892
RP 218.16 LAP -1.15 LOP 267.85 VP 22.397 GAP -7.89 AZP 90.56 TAL 326.21 TAP 210.41 RCA 144.50 APO 226.69 V2 25.188
RC 278.933 GL 10.63 GP 6.38 ZAL 137.22 ZAP 71.53 ETS 181.50 ZAE 103.49 ETE 177.10 ZAC 89.72 ETC 258.54 CLP 71.41

PLANETOCENTRIC CONIC

C3 15.486 VHL 3.935 DLA 16.87 RAL 167.59 RAD 6567.6 VEL 11.699 PTH 2.06 VHP 3.099 DPA 15.57 RAP 164.09 ECC 1.2549

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 30 21	2709.17	-27.71	75.22	30.42	96.09	19 15 31	2109.2	-26.58	66.74
90.00	11 5 36	4244.95	1.49	174.49	24.61	61.72	12 16 21	3645.0	-2.30	167.86
100.00	20 1 19	2415.84	-28.98	53.47	30.25	97.65	20 41 35	1815.8	-27.62	44.93
100.00	12 17 20	4013.52	2.61	156.85	23.99	60.21	13 24 13	3413.5	-1.37	150.33
110.00	21 30 47	2135.92	-32.29	31.55	29.59	101.87	22 6 23	1535.9	-30.32	22.89
110.00	13 4 21	3866.21	5.47	143.91	22.21	56.20	14 8 47	3266.2	.99	137.68

DIFFERENTIAL CORRECTIONS
TDE -.8310 TRA 3.4697 TC3-6.4886 BAU 1.3658
RDE .5779 RRA -.4807 RC3 1.1906 FAU .50229
FDE-5.5862 FRA17.4290 FC-28.0798 BSP 25275
BDE 1.0121 BRA 3.5029 BC3 6.5969 FSP 10625

MID-COURSE EXECUTION ACCURACY
SGT 7443.9 SGR 1456.3 SG3 3064.1
RRT -.8915 RRF -.9090 RTF .9950
SGB 7585.0 R23 .0333 R13 -.9957
SG1 7557.1 SG2 649.9 THA 170.03

ORBIT DETERMINATION ACCURACY
ST 1998.8 SR 869.9 SS 3051.5
CRT -.7877 CRS .8682 CST -.9895
LSA 3714.6 MSA 514.6 SSA 19.1
EL1 2120.6 EL2 505.2 ALF 159.89

LAUNCH DATE OCT 17 1964 FLIGHT TIME 348.00 ARRIVAL DATE SEP 30 1965

HELIOCENTRIC CONIC DISTANCE 789.463 EARTH TO MARS

RL 149.06 LAL .00 LOL 23.66 VL 32.644 GAL -6.00 AZL 88.70 HCA 245.34 SMA 185.61 ECC .22197 INC 1.3005 V1 29.892
RP 217.80 LAP -1.18 LOP 268.99 VP 22.443 GAP -8.09 AZP 90.54 TAL 325.90 TAP 211.24 RCA 144.41 APO 226.81 V2 25.228
RC 280.240 GL 10.72 GP 6.25 ZAL 137.57 ZAP 69.81 ETS 181.69 ZAE 101.53 ETE 177.41 ZAC 89.49 ETC 258.63 CLP 69.68

PLANETOCENTRIC CONIC

C3 15.693 VHL 3.961 DLA 16.81 RAL 167.99 RAD 6567.6 VEL 11.708 PTH 2.06 VHP 3.139 DPA 15.68 RAP 163.48 ECC 1.2583

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 32 35	2709.70	-27.71	75.26	31.02	96.07	19 17 45	2109.7	-26.58	66.78
90.00	11 6 33	4250.41	1.67	174.79	25.18	61.73	12 17 24	3650.4	-2.13	168.16
100.00	20 3 30	2416.54	-28.99	53.52	30.85	97.63	20 43 46	1816.5	-27.63	44.98
100.00	12 18 20	4018.80	2.79	157.14	24.55	60.23	13 25 19	3418.8	-1.19	150.62
110.00	21 32 51	2136.98	-32.31	31.63	30.19	101.83	22 8 28	1537.0	-30.34	22.97
110.00	13 5 28	3871.12	5.65	144.16	22.77	56.23	14 9 59	3271.1	1.18	137.94

DIFFERENTIAL CORRECTIONS
TDE -.8963 TRA 3.6725 TC3-6.6850 BAU 1.4231
RDE .5808 RRA -.4651 RC3 1.1509 FAU .48894
FDE-5.5306 FRA17.0821 FC-26.9737 BSP 26408
BDE 1.0680 BRA 3.7018 BC3 6.7834 FSP 10331

MID-COURSE EXECUTION ACCURACY
SGT 7779.5 SGR 1425.1 SG3 2976.5
RRT -.8855 RRF -.9032 RTF .9954
SGB 7908.9 R23 .0334 R13 -.9959
SG1 7881.9 SG2 653.4 THA 170.72

ORBIT DETERMINATION ACCURACY
ST 2115.8 SR 866.5 SS 3024.0
CRT -.7877 CRS .8662 CST -.9901
LSA 3755.4 MSA 518.5 SSA 18.7
EL1 2229.5 EL2 506.5 ALF 161.11

LAUNCH DATE OCT 17 1964 FLIGHT TIME 350.00 ARRIVAL DATE OCT 2 1965

HELIOCENTRIC CONIC DISTANCE 793.541 EARTH TO MARS

RL 149.06 LAL .00 LOL 23.66 VL 32.645 GAL -6.07 AZL 88.68 HCA 246.48 SMA 185.63 ECC .22256 INC 1.3197 V1 29.892
RP 217.44 LAP -1.21 LOP 270.14 VP 22.489 GAP -8.29 AZP 90.53 TAL 325.58 TAP 212.07 RCA 144.31 APO 226.94 V2 25.268
RC 281.529 GL 10.80 GP 6.12 ZAL 137.94 ZAP 68.13 ETS 181.86 ZAE 99.60 ETE 177.70 ZAC 89.26 ETC 258.71 CLP 68.00

PLANETOCENTRIC CONIC

C3 15.913 VHL 3.989 DLA 16.73 RAL 168.40 RAD 6567.6 VEL 11.717 PTH 2.06 VHP 3.181 DPA 15.77 RAP 162.91 ECC 1.2619

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 35 0	2709.90	-27.71	75.28	31.64	96.06	19 20 10	2109.9	-26.58	66.79
90.00	11 7 25	4256.54	1.86	175.13	25.76	61.74	12 18 21	3656.5	-1.93	168.51
100.00	20 5 50	2416.96	-28.99	53.55	31.47	97.61	20 46 7	1817.0	-27.64	45.01
100.00	12 19 16	4024.70	2.99	157.47	25.13	60.24	13 26 20	3424.7	-.99	150.94
110.00	21 35 3	2137.83	-32.32	31.70	30.81	101.79	22 10 40	1537.8	-30.36	23.03
110.00	13 6 32	3876.60	5.86	144.45	23.35	56.26	14 11 9	3276.6	1.39	138.22

DIFFERENTIAL CORRECTIONS
TDE -.9619 TRA 3.8773 TC3-6.8627 BAU 1.4790
RDE .5835 RRA -.4498 RC3 1.1105 FAU .47482
FDE-5.4626 FRA16.7286 FC-25.8317 BSP 27546
BDE 1.1251 BRA 3.9033 BC3 6.9520 FSP 10044

MID-COURSE EXECUTION ACCURACY
SGT 8105.6 SGR 1393.7 SG3 2886.0
RRT -.8792 RRF -.8970 RTF .9956
SGB 8224.5 R23 .0334 R13 -.9961
SG1 8198.3 SG2 656.6 THA 171.35

ORBIT DETERMINATION ACCURACY
ST 2231.4 SR 862.5 SS 2993.2
CRT -.7873 CRS .8639 CST -.9906
LSA 3796.0 MSA 522.0 SSA 18.3
EL1 2337.8 EL2 507.6 ALF 162.21

LAUNCH DATE OCT 17 1964 FLIGHT TIME 352.00 ARRIVAL DATE OCT 4 1965

HELIOCENTRIC CONIC DISTANCE 797.624 EARTH TO MARS

RL	149.06	LAL	.00	LOL	23.66	VL	32.646	GAL	-6.14	AZL	88.66	HCA	247.63	SMA	185.65	ECC	.22319	INC	1.3386
RP	217.09	LAP	-1.24	LOP	271.28	VP	22.534	GAP	-8.48	AZP	90.51	TAL	325.25	TAP	212.88	RCA	144.21	APO	227.08
RC	282.801	GL	10.88	GP	5.99	ZAL	138.32	ZAP	66.49	ETS	182.03	ZAE	97.72	ETE	177.98	ZAC	89.04	ETC	258.79

V1	29.892	V2	25.307	CLP	66.35														

PLANETOCENTRIC CONIC

C3	16.148	VHL	4.019	DLA	16.63	RAL	168.82	RAD	6567.6	VEL	11.727	PTH	2.07	VHP	3.227	DPA	15.85	RAP	162.39
ECC	1.2658																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 37 33	2709.80	-27.71	75.27	32.28	96.06	19 22 43	2109.8	-26.58	66.78
90.00	11 8 11	4263.30	2.08	175.51	26.36	61.75	12 19 15	3663.3	-1.71	168.88
100.00	20 8 19	2417.12	-29.00	53.57	32.10	97.61	20 48 36	1817.1	-27.64	45.03
100.00	12 20 7	4031.21	3.21	157.82	25.73	60.26	13 27 18	3431.2	-.77	151.30
110.00	21 37 22	2138.48	-32.33	31.74	31.44	101.76	22 13 1	1538.5	-30.37	23.08
110.00	13 7 33	3882.61	6.09	144.77	23.95	56.30	14 12 16	3282.6	1.62	138.54

DIFFERENTIAL CORRECTIONS

TDE	-1.0309	TRA	4.0804	TC3	-7.0295	BAU	1.5351
RDE	.5867	RRA	-.4342	RC3	1.0716	FAU	.46093
FDE	-5.4032	FRA	16.3542	FC	-24.7112	BSP	28599
BDE	1.1862	BRA	4.1034	BC3	7.1108	FSP	9725

MID-COURSE EXECUTION ACCURACY

SGT	8423.0	SGR	1363.4	SG3	2794.4		
RRT	-.8724	RRF	-.8906	RTF	.9959		
SGB	8532.6	R23	.0337	R13	-.9963		
SG1	8507.1	SG2	660.0	THA	171.91		

ORBIT DETERMINATION ACCURACY

ST	2346.8	SR	859.1	SS	2963.7		
CRT	-.7872	CRS	.8623	CST	-.9910		
LSA	3840.9	MSA	525.0	SSA	17.9		
EL1	2446.9	EL2	508.1	ALF	163.18		

LAUNCH DATE OCT 17 1964 FLIGHT TIME 354.00 ARRIVAL DATE OCT 6 1965

HELIOCENTRIC CONIC DISTANCE 801.711 EARTH TO MARS

RL	149.06	LAL	.00	LOL	23.66	VL	32.648	GAL	-6.21	AZL	88.64	HCA	248.78	SMA	185.67	ECC	.22386	INC	1.3573
RP	216.74	LAP	-1.27	LOP	272.44	VP	22.580	GAP	-8.67	AZP	90.49	TAL	324.90	TAP	213.68	RCA	144.10	APO	227.23
RC	284.057	GL	10.94	GP	5.86	ZAL	138.71	ZAP	64.89	ETS	182.18	ZAE	95.87	ETE	178.23	ZAC	88.83	ETC	258.86

V1	29.892	V2	25.346	CLP	64.75														

PLANETOCENTRIC CONIC

C3	16.398	VHL	4.050	DLA	16.53	RAL	169.24	RAD	6567.7	VEL	11.738	PTH	2.07	VHP	3.275	DPA	15.91	RAP	161.91
ECC	1.2699																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 40 17	2709.41	-27.71	75.24	32.93	96.08	19 25 26	2109.4	-26.58	66.76
90.00	11 8 53	4270.71	2.32	175.93	26.98	61.77	12 20 4	3670.7	-1.47	169.30
100.00	20 10 57	2417.01	-28.99	53.56	32.75	97.61	20 51 14	1817.0	-27.64	45.02
100.00	12 20 54	4038.34	3.45	158.22	26.35	60.29	13 28 12	3438.3	-.53	151.69
110.00	21 39 50	2138.94	-32.33	31.78	32.09	101.75	22 15 28	1538.9	-30.38	23.11
110.00	13 8 31	3889.17	6.33	145.12	24.56	56.34	14 13 20	3289.2	1.87	138.88

DIFFERENTIAL CORRECTIONS

TDE	-1.1009	TRA	4.2852	TC3	-7.1778	BAU	1.5898
RDE	.5900	RRA	-.4189	RC3	1.0325	FAU	.44653
FDE	-5.3388	FRA	15.9755	FC	-23.5741	BSP	29646
BDE	1.2490	BRA	4.3056	BC3	7.2517	FSP	9411

MID-COURSE EXECUTION ACCURACY

SGT	8730.4	SGR	1333.5	SG3	2701.3		
RRT	-.8651	RRF	-.8838	RTF	.9960		
SGB	8831.6	R23	.0342	R13	-.9964		
SG1	8806.7	SG2	663.1	THA	172.43		

ORBIT DETERMINATION ACCURACY

ST	2461.0	SR	855.5	SS	2932.6		
CRT	-.7868	CRS	.8608	CST	-.9914		
LSA	3887.1	MSA	527.9	SSA	17.5		
EL1	2555.3	EL2	508.5	ALF	164.06		

LAUNCH DATE OCT 17 1964 FLIGHT TIME 356.00 ARRIVAL DATE OCT 8 1965

HELIOCENTRIC CONIC DISTANCE 805.802 EARTH TO MARS

RL	149.06	LAL	.00	LOL	23.66	VL	32.649	GAL	-6.29	AZL	88.62	HCA	249.94	SMA	185.70	ECC	.22458	INC	1.3757
RP	216.39	LAP	-1.29	LOP	273.59	VP	22.626	GAP	-8.87	AZP	90.47	TAL	324.54	TAP	214.47	RCA	143.99	APO	227.40
RC	285.296	GL	11.00	GP	5.74	ZAL	139.12	ZAP	63.33	ETS	182.33	ZAE	94.06	ETE	178.47	ZAC	88.64	ETC	258.92

V1	29.892	V2	25.385	CLP	63.18														

PLANETOCENTRIC CONIC

C3	16.664	VHL	4.082	DLA	16.41	RAL	169.68	RAD	6567.7	VEL	11.749	PTH	2.07	VHP	3.326	DPA	15.95	RAP	161.47
ECC	1.2743																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 43 9	2708.74	-27.71	75.19	33.60	96.10	19 28 18	2108.7	-26.57	66.71
90.00	11 9 30	4278.74	2.58	176.37	27.61	61.79	12 20 48	3678.7	-1.21	169.75
100.00	20 13 44	2416.65	-28.99	53.53	33.42	97.62	20 54 1	1816.6	-27.63	44.99
100.00	12 21 36	4046.06	3.71	158.64	26.99	60.32	13 29 2	3446.1	-.27	152.11
110.00	21 42 24	2139.21	-32.34	31.80	32.76	101.73	22 18 3	1539.2	-30.38	23.13
110.00	13 9 25	3896.27	6.60	145.49	25.20	56.38	14 14 22	3296.3	2.14	139.25

DIFFERENTIAL CORRECTIONS

TDE	-1.1720	TRA	4.4915	TC3	-7.3096	BAU	1.6435
RDE	.5932	RRA	-.4040	RC3	.9938	FAU	.43183
FDE	-5.2682	FRA	15.5931	FC	-22.4343	BSP	30668
BDE	1.3136	BRA	4.5097	BC3	7.3768	FSP	9099

MID-COURSE EXECUTION ACCURACY

SGT	9028.3	SGR	1304.2	SG3	2607.4		
RRT	-.8574	RRF	-.8767	RTF	.9962		
SGB	9122.0	R23	.0346	R13	-.9965		
SG1	9097.7	SG2	666.0	THA	172.90		

ORBIT DETERMINATION ACCURACY

ST	2573.9	SR	851.7	SS	2899.6		
CRT	-.7863	CRS	.8592	CST	-.9917		
LSA	3934.0	MSA	530.3	SSA	17.2		
EL1	2663.0	EL2	508.6	ALF	164.85		

LAUNCH DATE OCT 17 1964 FLIGHT TIME 358.00 ARRIVAL DATE OCT 10 1965

HELIOCENTRIC CONIC DISTANCE 809.896 EARTH TO MARS

RL	149.06	LAL	.00	LOL	23.66	VL	32.651	GAL	-6.37	AZL	88.61	HCA	251.10	SMA	185.73	ECC	.22535	INC	1.3939
RP	216.05	LAP	-1.32	LOP	274.75	VP	22.671	GAP	-9.06	AZP	90.45	TAL	324.16	TAP	215.26	RCA	143.87	APO	227.58
RC	286.520	GL	11.06	GP	5.61	ZAL	139.54	ZAP	61.81	ETS	182.47	ZAE	92.29	ETE	178.70	ZAC	88.45	ETC	258.97

V1	29.892	V2	25.423	CLP	61.66														

PLANETOCENTRIC CONIC

C3	16.947	VHL	4.117	DLA	16.28	RAL	170.13	RAD	6567.7	VEL	11.761	PTH	2.08	VHP	3.379	DPA	15.98	RAP	161.08
ECC	1.2789																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 46 11	2707.80	-27.70	75.13	34.29	96.13	19 31 19	2107.8	-26.56	66.64
90.00	11 10 2	4287.39	2.86	176.86	28.27	61.82	12 21 29	3687.4	-.93	170.23
100.00	20 16 39	2416.06	-28.99	53.49	34.11	97.65	20 56 55	1816.1	-27.63	44.95
100.00	12 22 15	4054.37	3.99	159.10	27.64	60.35	13 29 49	3454.4	.01	152.57
110.00	21 45 6	2139.30	-32.34	31.81	33.44	101.73	22 20 46	1539.3	-30.39	23.13
110.00	13 10 17	3903.89	6.89	145.90	25.85	56.44	14 15 21	3303.9	2.43	139.65

DIFFERENTIAL CORRECTIONS

TDE	-1.2445	TRA	4.6987	TC3	-7.4246	BAU	1.6960
RDE	.5967	RRA	-.3893	RC3	.9558	FAU	.41701
FDE	-5.1952	FRA	15.2054	FC	-21.3030	BSP	31659
BDE	1.3802	BRA	4.7148	BC3	7.4859	FSP	8782

MID-COURSE EXECUTION ACCURACY

SGT	9315.8	SGR	1275.7	SG3	2513.0		
RRT	-.8494	RRF	-.8692	RTF	.9963		
SGB	9402.7	R23	.0352	R13	-.9966		
SG1	9378.9	SG2	668.7	THA	173.33		

ORBIT DETERMINATION ACCURACY

ST	2685.4	SR	847.8	SS	2865.4		
CRT	-.7857	CRS	.8578	CST	-.9919		
LSA	3982.1	MSA	532.4	SSA	16.9		
EL1	2769.8	EL2	508.5	ALF	165.57		

LAUNCH DATE OCT 17 1964 FLIGHT TIME 360.00 ARRIVAL DATE OCT 12 1965

DISTANCE 813.995

HELIOCENTRIC CONIC

RL 149.06 LAL .00 LOL 23.66 VL 32.653 GAL -6.45 AZL 88.59 HCA 252.26 SMA 185.76 ECC .22617 INC 1.4119 V1 29.892
RP 215.71 LAP -1.34 LOP 275.92 VP 22.716 GAP -9.25 AZP 90.43 TAL 323.76 TAP 216.03 RCA 143.75 APO 227.77 V2 25.461
RC 287.729 GL 11.10 GP 5.49 ZAL 139.97 ZAP 60.34 ETS 182.60 ZAE 90.56 ETE 178.91 ZAC 88.27 ETC 259.02 CLP 60.19

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 17.246 VHL 4.153 DLA 16.14 RAL 170.58 RAD 6567.7 VEL 11.774 PTH 2.08 VHP 3.436 DPA 15.99 RAP 160.73 ECC 1.2838

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 49 21	2706.63	-27.69	75.04	34.99	96.18	19 34 28	2106.6	-26.55	66.56
90.00	11 10 30	4296.66	3.15	177.38	28.94	61.84	12 22 6	3696.7	-.63	170.74
100.00	20 19 42	2415.25	-28.98	53.43	34.81	97.68	20 59 58	1815.3	-27.61	44.89
100.00	12 22 50	4063.26	4.29	159.59	28.31	60.39	13 30 33	3463.3	.32	153.06
110.00	21 47 55	2139.24	-32.34	31.80	34.14	101.73	22 23 35	1539.2	-30.39	23.13
110.00	13 11 6	3912.04	7.20	146.33	26.52	56.49	14 16 18	3312.0	2.74	140.07

DIFFERENTIAL CORRECTIONS

TDE-1.3193 TRA 4.9077 TC3-7.5241 BAU 1.7477
RDE .6003 RRA -.3751 RC3 .9186 FAU .40218
FDE-5.1216 FRA14.8160 FC-20.1885 BSP 32629
BDE 1.4495 BRA 4.9220 BC3 7.5800 FSP 8470

MID-COURSE EXECUTION ACCURACY

SGT 9594.4 SGR 1248.3 SG3 2419.1
RRT -.8410 RRF -.8615 RTF .9963
SGB 9675.3 R23 .0358 R13 -.9966
SG1 9651.9 SG2 671.3 THA 173.72

ORBIT DETERMINATION ACCURACY

ST 2796.4 SR 844.1 SS 2830.7
CRT -.7852 CRS .8566 CST -.9921
LSA 4032.4 MSA 534.2 SSA 16.6
EL1 2876.5 EL2 508.1 ALF 166.23

LAUNCH DATE OCT 17 1964 FLIGHT TIME 362.00 ARRIVAL DATE OCT 14 1965

DISTANCE 818.096

HELIOCENTRIC CONIC

RL 149.06 LAL .00 LOL 23.66 VL 32.655 GAL -6.54 AZL 88.57 HCA 253.43 SMA 185.79 ECC .22703 INC 1.4297 V1 29.892
RP 215.38 LAP -1.37 LOP 277.08 VP 22.761 GAP -9.43 AZP 90.41 TAL 323.36 TAP 216.78 RCA 143.61 APO 227.97 V2 25.498
RC 288.924 GL 11.14 GP 5.37 ZAL 140.42 ZAP 58.90 ETS 182.72 ZAE 88.87 ETE 179.11 ZAC 88.11 ETC 259.06 CLP 58.75

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 17.564 VHL 4.191 DLA 15.99 RAL 171.05 RAD 6567.7 VEL 11.788 PTH 2.08 VHP 3.494 DPA 15.98 RAP 160.42 ECC 1.2891

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 52 40	2705.22	-27.68	74.94	35.71	96.23	19 37 45	2105.2	-26.53	66.46
90.00	11 10 53	4306.52	3.47	177.93	29.63	61.88	12 22 40	3706.5	-.32	171.29
100.00	20 22 53	2414.24	-28.97	53.36	35.53	97.71	21 3 8	1814.2	-27.60	44.82
100.00	12 23 21	4072.72	4.61	160.11	29.00	60.43	13 31 13	3472.7	.64	153.58
110.00	21 50 51	2139.03	-32.34	31.79	34.86	101.74	22 26 30	1539.0	-30.38	23.11
110.00	13 11 52	3920.71	7.52	146.79	27.21	56.56	14 17 13	3320.7	3.07	140.53

DIFFERENTIAL CORRECTIONS

TDE-1.3960 TRA 5.1182 TC3-7.6076 BAU 1.7984
RDE .6041 RRA -.3612 RC3 .8823 FAU .38732
FDE-5.0464 FRA14.4268 FC-19.0911 BSP 33560
BDE 1.5211 BRA 5.1309 BC3 7.6586 FSP 8156

MID-COURSE EXECUTION ACCURACY

SGT 9863.2 SGR 1221.8 SG3 2325.7
RRT -.8324 RRF -.8535 RTF .9964
SGB 9938.6 R23 .0366 R13 -.9967
SG1 9915.7 SG2 673.6 THA 174.09

ORBIT DETERMINATION ACCURACY

ST 2906.4 SR 840.4 SS 2795.2
CRT -.7848 CRS .8556 CST -.9922
LSA 4084.0 MSA 535.7 SSA 16.3
EL1 2982.5 EL2 507.5 ALF 166.83

LAUNCH DATE OCT 17 1964 FLIGHT TIME 364.00 ARRIVAL DATE OCT 16 1965

DISTANCE 822.200

HELIOCENTRIC CONIC

RL 149.06 LAL .00 LOL 23.66 VL 32.657 GAL -6.63 AZL 88.55 HCA 254.60 SMA 185.83 ECC .22794 INC 1.4475 V1 29.892
RP 215.05 LAP -1.40 LOP 278.25 VP 22.806 GAP -9.62 AZP 90.38 TAL 322.93 TAP 217.53 RCA 143.47 APO 228.19 V2 25.535
RC 290.105 GL 11.17 GP 5.26 ZAL 140.88 ZAP 57.51 ETS 182.84 ZAE 87.22 ETE 179.30 ZAC 87.95 ETC 259.10 CLP 57.36

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 17.901 VHL 4.231 DLA 15.82 RAL 171.52 RAD 6567.7 VEL 11.802 PTH 2.09 VHP 3.556 DPA 15.96 RAP 160.16 ECC 1.2946

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 56 6	2703.60	-27.67	74.82	36.45	96.28	19 41 10	2103.6	-26.51	66.35
90.00	11 11 12	4316.97	3.81	178.51	30.34	61.92	12 23 9	3717.0	.02	171.88
100.00	20 26 12	2413.04	-28.96	53.27	36.27	97.76	21 6 25	1813.0	-27.58	44.74
100.00	12 23 48	4082.75	4.95	160.67	29.71	60.48	13 31 50	3482.8	.98	154.13
110.00	21 53 53	2138.68	-32.33	31.76	35.60	101.76	22 29 32	1538.7	-30.37	23.09
110.00	13 12 36	3929.88	7.87	147.27	27.92	56.63	14 18 6	3329.9	3.42	141.01

DIFFERENTIAL CORRECTIONS

TDE-1.4732 TRA 5.3317 TC3-7.6734 BAU 1.8475
RDE .6079 RRA -.3480 RC3 .8468 FAU .37244
FDE-4.9651 FRA14.0411 FC-18.0121 BSP 34493
BDE 1.5937 BRA 5.3430 BC3 7.7200 FSP 7854

MID-COURSE EXECUTION ACCURACY

SGT10122.1 SGR 1196.3 SG3 2233.2
RRT -.8234 RRF -.8453 RTF .9964
SGB10192.6 R23 .0373 R13 -.9967
SG110170.2 SG2 675.6 THA 174.42

ORBIT DETERMINATION ACCURACY

ST 3014.4 SR 836.5 SS 2757.7
CRT -.7842 CRS .8545 CST -.9924
LSA 4135.5 MSA 536.9 SSA 16.1
EL1 3087.0 EL2 506.9 ALF 167.38

LAUNCH DATE OCT 17 1964 FLIGHT TIME 366.00 ARRIVAL DATE OCT 18 1965

DISTANCE 826.306

HELIOCENTRIC CONIC

RL 149.06 LAL .00 LOL 23.66 VL 32.659 GAL -6.73 AZL 88.53 HCA 255.77 SMA 185.87 ECC .22891 INC 1.4650 V1 29.892
RP 214.72 LAP -1.42 LOP 279.43 VP 22.850 GAP -9.81 AZP 90.36 TAL 322.49 TAP 218.27 RCA 143.32 APO 228.42 V2 25.572
RC 291.272 GL 11.19 GP 5.14 ZAL 141.35 ZAP 56.16 ETS 182.94 ZAE 85.61 ETE 179.48 ZAC 87.81 ETC 259.13 CLP 56.00

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 18.257 VHL 4.273 DLA 15.64 RAL 172.00 RAD 6567.7 VEL 11.817 PTH 2.09 VHP 3.620 DPA 15.92 RAP 159.95 ECC 1.3005

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 59 40	2701.78	-27.65	74.69	37.21	96.35	19 44 42	2101.8	-26.49	66.22
90.00	11 11 28	4327.99	4.16	179.13	31.07	61.97	12 23 36	3728.0	.38	172.49
100.00	20 29 38	2411.67	-28.95	53.17	37.02	97.81	21 9 50	1811.7	-27.56	44.64
100.00	12 24 11	4093.33	5.30	161.25	30.44	60.54	13 32 25	3493.3	1.34	154.71
110.00	21 57 2	2138.20	-32.32	31.72	36.35	101.78	22 32 40	1538.2	-30.36	23.06
110.00	13 13 17	3939.57	8.23	147.79	28.64	56.70	14 18 56	3339.6	3.79	141.51

DIFFERENTIAL CORRECTIONS

TDE-1.5536 TRA 5.5464 TC3-7.7266 BAU 1.8963
RDE .6121 RRA -.3351 RC3 .8126 FAU .35779
FDE-4.8862 FRA13.6554 FC-16.9660 BSP 35374
BDE 1.6698 BRA 5.5565 BC3 7.7692 FSP 7550

MID-COURSE EXECUTION ACCURACY

SGT10372.5 SGR 1172.0 SG3 2142.2
RRT -.8143 RRF -.8369 RTF .9964
SGB10438.5 R23 .0380 R13 -.9966
SG110416.5 SG2 677.4 THA 174.72

ORBIT DETERMINATION ACCURACY

ST 3122.1 SR 832.8 SS 2720.3
CRT -.7839 CRS .8538 CST -.9925
LSA 4189.5 MSA 537.6 SSA 15.9
EL1 3191.5 EL2 505.9 ALF 167.88

LAUNCH DATE OCT 17 1964 FLIGHT TIME 368.00 ARRIVAL DATE OCT 20 1965

HELIOCENTRIC CONIC DISTANCE 830.415 EARTH TO MARS

RL 149.06 LAL .00 LOL 23.66 VL 32.662 GAL -6.83 AZL 88.52 HCA 256.95 SMA 185.91 ECC .22992 INC 1.4825 V1 29.892
RP 214.40 LAP -1.44 LOP 280.61 VP 22.895 GAP -9.99 AZP 90.33 TAL 322.04 TAP 218.99 RCA 143.17 APO 228.66 V2 25.608
RC 292.426 GL 11.21 GP 5.03 ZAL 141.84 ZAP 54.84 ETS 183.04 ZAE 84.03 ETE 179.64 ZAC 87.68 ETC 259.15 CLP 54.69

PLANETOCENTRIC CONIC

C3 18.635 VHL 4.317 DLA 15.46 RAL 172.49 RAD 6567.8 VEL 11.833 PTH 2.10 VHP 3.686 DPA 15.87 RAP 159.77 ECC 1.3067

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 3 22	2699.78	-27.64	74.55	37.98	96.42	19 48 22	2099.8	-26.46	66.08
90.00	11 11 39	4339.58	4.53	179.78	31.82	62.02	12 23 59	3739.6	.75	173.14
100.00	20 33 11	2410.14	-28.93	53.06	37.80	97.87	21 13 21	1810.1	-27.54	44.53
100.00	12 24 32	4104.45	5.67	161.87	31.19	60.60	13 32 56	3504.5	1.71	155.32
110.00	22 0 17	2137.61	-32.32	31.68	37.11	101.80	22 35 54	1537.6	-30.35	23.01
110.00	13 13 55	3949.74	8.61	148.33	29.39	56.79	14 19 45	3349.7	4.18	142.05

DIFFERENTIAL CORRECTIONS
TDE-1.6347 TRA 5.7654 TC3-7.7619 BAU 1.9434
RDE .6163 RRA -.3228 RC3 .7793 FAU .34321
FDE-4.8030 FRA13.2755 FC-15.9450 BSP 36260
BDE 1.7471 BRA 5.7745 BC3 7.8009 FSP 7258

MID-COURSE EXECUTION ACCURACY
SGT10613.7 SGR 1148.7 SG3 2052.5
RRT -.8049 RRF -.8283 RTF .9964
SGB10675.7 R23 .0389 R13 -.9966
SG110654.0 SG2 679.0 THA 175.00

ORBIT DETERMINATION ACCURACY
ST 3228.2 SR 829.1 SS 2681.3
CRT -.7834 CRS .8531 CST -.9926
LSA 4243.6 MSA 538.3 SSA 15.6
EL1 3294.5 EL2 504.9 ALF 168.35

LAUNCH DATE OCT 17 1964 FLIGHT TIME 370.00 ARRIVAL DATE OCT 22 1965

HELIOCENTRIC CONIC DISTANCE 834.525 EARTH TO MARS

RL 149.06 LAL .00 LOL 23.66 VL 32.665 GAL -6.93 AZL 88.50 HCA 258.13 SMA 185.96 ECC .23099 INC 1.4997 V1 29.892
RP 214.08 LAP -1.47 LOP 281.79 VP 22.938 GAP -10.17 AZP 90.31 TAL 321.57 TAP 219.70 RCA 143.00 APO 228.92 V2 25.644
RC 293.566 GL 11.22 GP 4.92 ZAL 142.34 ZAP 53.57 ETS 183.13 ZAE 82.49 ETE 179.80 ZAC 87.55 ETC 259.16 CLP 53.41

PLANETOCENTRIC CONIC

C3 19.034 VHL 4.363 DLA 15.26 RAL 172.98 RAD 6567.8 VEL 11.850 PTH 2.10 VHP 3.755 DPA 15.81 RAP 159.64 ECC 1.3132

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 7 11	2697.62	-27.62	74.39	38.77	96.50	19 52 8	2097.6	-26.43	65.92
90.00	11 11 47	4351.72	4.92	180.46	32.58	62.08	12 24 19	3751.7	1.14	173.81
100.00	20 36 50	2408.46	-28.92	52.93	38.58	97.93	21 16 59	1808.5	-27.52	44.41
100.00	12 24 49	4116.11	6.06	162.51	31.95	60.67	13 33 25	3516.1	2.11	155.96
110.00	22 3 37	2136.92	-32.31	31.63	37.90	101.83	22 39 14	1536.9	-30.34	22.96
110.00	13 14 31	3960.41	9.01	148.90	30.15	56.88	14 20 31	3360.4	4.58	142.61

DIFFERENTIAL CORRECTIONS
TDE-1.7185 TRA 5.9861 TC3-7.7845 BAU 1.9900
RDE .6208 RRA -.3111 RC3 .7472 FAU .32891
FDE-4.7204 FRA12.8975 FC-14.9600 BSP 37110
BDE 1.8272 BRA 5.9941 BC3 7.8203 FSP 6969

MID-COURSE EXECUTION ACCURACY
SGT10845.8 SGR 1126.6 SG3 1964.7
RRT -.7954 RRF -.8197 RTF .9963
SGB10904.1 R23 .0397 R13 -.9966
SG110882.9 SG2 680.4 THA 175.26

ORBIT DETERMINATION ACCURACY
ST 3333.3 SR 825.4 SS 2642.0
CRT -.7831 CRS .8526 CST -.9926
LSA 4299.1 MSA 538.6 SSA 15.5
EL1 3396.9 EL2 503.7 ALF 168.78

LAUNCH DATE OCT 17 1964 FLIGHT TIME 372.00 ARRIVAL DATE OCT 24 1965

HELIOCENTRIC CONIC DISTANCE 838.636 EARTH TO MARS

RL 149.06 LAL .00 LOL 23.66 VL 32.667 GAL -7.04 AZL 88.48 HCA 259.32 SMA 186.01 ECC .23212 INC 1.5169 V1 29.892
RP 213.77 LAP -1.49 LOP 282.97 VP 22.982 GAP -10.36 AZP 90.28 TAL 321.09 TAP 220.40 RCA 142.83 APO 229.18 V2 25.679
RC 294.693 GL 11.22 GP 4.82 ZAL 142.84 ZAP 52.34 ETS 183.22 ZAE 80.99 ETE 179.95 ZAC 87.44 ETC 259.17 CLP 52.18

PLANETOCENTRIC CONIC

C3 19.456 VHL 4.411 DLA 15.05 RAL 173.48 RAD 6567.8 VEL 11.867 PTH 2.11 VHP 3.826 DPA 15.73 RAP 159.55 ECC 1.3202

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 11 6	2695.31	-27.60	74.22	39.58	96.58	19 56 1	2095.3	-26.41	65.76
90.00	11 11 52	4364.40	5.32	181.18	33.37	62.15	12 24 36	3764.4	1.55	174.52
100.00	20 40 36	2406.65	-28.90	52.80	39.39	98.00	21 20 43	1806.7	-27.49	44.28
100.00	12 25 2	4128.29	6.47	163.19	32.74	60.75	13 33 51	3528.3	2.52	156.63
110.00	22 7 4	2136.14	-32.30	31.57	38.70	101.86	22 42 40	1536.1	-30.33	22.91
110.00	13 15 4	3971.56	9.42	149.50	30.94	56.99	14 21 16	3371.6	5.01	143.19

DIFFERENTIAL CORRECTIONS
TDE-1.8051 TRA 6.2096 TC3-7.7941 BAU 2.0359
RDE .6256 RRA -.2998 RC3 .7164 FAU .31487
FDE-4.6383 FRA12.5245 FC-14.0107 BSP 37929
BDE 1.9105 BRA 6.2169 BC3 7.8269 FSP 6684

MID-COURSE EXECUTION ACCURACY
SGT11069.7 SGR 1105.7 SG3 1878.8
RRT -.7860 RRF -.8111 RTF .9963
SGB11124.8 R23 .0406 R13 -.9965
SG111103.9 SG2 681.5 THA 175.49

ORBIT DETERMINATION ACCURACY
ST 3437.9 SR 821.8 SS 2602.3
CRT -.7831 CRS .8523 CST -.9927
LSA 4356.2 MSA 538.5 SSA 15.3
EL1 3498.9 EL2 502.2 ALF 169.17

LAUNCH DATE OCT 17 1964 FLIGHT TIME 374.00 ARRIVAL DATE OCT 26 1965

HELIOCENTRIC CONIC DISTANCE 842.748 EARTH TO MARS

RL 149.06 LAL .00 LOL 23.66 VL 32.670 GAL -7.15 AZL 88.47 HCA 260.50 SMA 186.06 ECC .23330 INC 1.5341 V1 29.892
RP 213.46 LAP -1.51 LOP 284.16 VP 23.025 GAP -10.54 AZP 90.25 TAL 320.59 TAP 221.09 RCA 142.65 APO 229.47 V2 25.714
RC 295.805 GL 11.22 GP 4.72 ZAL 143.36 ZAP 51.14 ETS 183.30 ZAE 79.52 ETE 180.09 ZAC 87.34 ETC 259.17 CLP 50.98

PLANETOCENTRIC CONIC

C3 19.903 VHL 4.461 DLA 14.83 RAL 173.99 RAD 6567.8 VEL 11.886 PTH 2.11 VHP 3.899 DPA 15.64 RAP 159.50 ECC 1.3275

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 15 7	2692.87	-27.59	74.05	40.40	96.66	20 0 0	2092.9	-26.38	65.59
90.00	11 11 53	4377.61	5.74	181.92	34.17	62.22	12 24 51	3777.6	1.98	175.26
100.00	20 44 28	2404.74	-28.88	52.66	40.21	98.07	21 24 33	1804.7	-27.46	44.15
100.00	12 25 13	4140.98	6.89	163.90	33.54	60.84	13 34 14	3541.0	2.95	157.32
110.00	22 10 35	2135.29	-32.28	31.51	39.51	101.90	22 46 10	1535.3	-30.31	22.85
110.00	13 15 36	3983.19	9.85	150.13	31.74	57.10	14 21 59	3383.2	5.45	143.80

DIFFERENTIAL CORRECTIONS
TDE-1.8932 TRA 6.4377 TC3-7.7894 BAU 2.0807
RDE .6306 RRA -.2893 RC3 .6867 FAU .30105
FDE-4.5535 FRA12.1578 FC-13.0951 BSP 38736
BDE 1.9955 BRA 6.4442 BC3 7.8196 FSP 6408

MID-COURSE EXECUTION ACCURACY
SGT11285.7 SGR 1085.8 SG3 1795.0
RRT -.7764 RRF -.8025 RTF .9962
SGB11337.8 R23 .0415 R13 -.9964
SG111317.2 SG2 682.4 THA 175.71

ORBIT DETERMINATION ACCURACY
ST 3541.0 SR 818.2 SS 2561.4
CRT -.7830 CRS .8522 CST -.9927
LSA 4413.5 MSA 538.2 SSA 15.2
EL1 3599.7 EL2 500.6 ALF 169.54

LAUNCH DATE OCT 17 1964 FLIGHT TIME 376.00 ARRIVAL DATE OCT 28 1965

DISTANCE 846.861

HELIOCENTRIC CONIC

RL 149.06 LAL .00 LOL 23.66 VL 32.674 GAL -7.27 AZL 88.45 HCA 261.70 SMA 186.11 ECC .23454 INC 1.5511 V1 29.892
RP 213.16 LAP -1.53 LOP 285.35 VP 23.067 GAP -10.72 AZP 90.22 TAL 320.07 TAP 221.77 RCA 142.46 APO 229.76 V2 25.748
RC 296.904 GL 11.21 GP 4.62 ZAL 143.89 ZAP 49.97 ETS 183.38 ZAE 78.09 ETE 180.22 ZAC 87.25 ETC 259.16 CLP 49.82

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 20.375 VHL 4.514 DLA 14.60 RAL 174.50 RAD 6567.8 VEL 11.906 PTH 2.12 VHP 3.975 DPA 15.54 RAP 159.49 ECC 1.3353

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 19 15	2690.32	-27.56	73.86	41.24	96.75	20 4 6	2090.3	-26.34	65.41
90.00	11 11 51	4391.34	6.18	182.69	34.99	62.31	12 25 2	3791.3	2.42	176.03
100.00	20 48 26	2402.72	-28.86	52.52	41.05	98.14	21 28 29	1802.7	-27.43	44.00
100.00	12 25 21	4154.17	7.33	164.63	34.37	60.94	13 34 36	3554.2	3.39	158.05
110.00	22 14 12	2134.37	-32.27	31.44	40.35	101.94	22 49 46	1534.4	-30.29	22.78
110.00	13 16 5	3995.29	10.30	150.78	32.57	57.22	14 22 40	3395.3	5.90	144.44

DIFFERENTIAL CORRECTIONS

TDE-1.9835 TRA 6.6696 TC3-7.7717 BAU 2.1245
RDE .6358 RRA -.2792 RC3 .6581 FAU .28756
FDE-4.4688 FRA11.7962 FC-12.2183 BSP 39532
BDE 2.0829 BRA 6.6754 BC3 7.7995 FSP 6140

MID-COURSE EXECUTION ACCURACY

SGT11493.4 SGR 1067.0 SG3 1713.4
RRT -.7669 RRF -.7939 RTF .9961
SGB11542.8 R23 .0426 R13 -.9963
SG111522.6 SG2 683.0 THA 175.91

ORBIT DETERMINATION ACCURACY

ST 3642.9 SR 814.7 SS 2520.0
CRT -.7831 CRS .8522 CST -.9927
LSA 4471.6 MSA 537.7 SSA 15.0
EL1 3699.4 EL2 499.0 ALF 169.88

LAUNCH DATE OCT 17 1964 FLIGHT TIME 378.00 ARRIVAL DATE OCT 30 1965

DISTANCE 850.973

HELIOCENTRIC CONIC

RL 149.06 LAL .00 LOL 23.66 VL 32.677 GAL -7.39 AZL 88.43 HCA 262.89 SMA 186.17 ECC .23584 INC 1.5681 V1 29.892
RP 212.87 LAP -1.56 LOP 286.55 VP 23.110 GAP -10.90 AZP 90.19 TAL 319.54 TAP 222.43 RCA 142.26 APO 230.07 V2 25.782
RC 297.989 GL 11.19 GP 4.52 ZAL 144.43 ZAP 48.85 ETS 183.45 ZAE 76.69 ETE 180.35 ZAC 87.16 ETC 259.15 CLP 48.69

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 20.874 VHL 4.569 DLA 14.36 RAL 175.02 RAD 6567.8 VEL 11.927 PTH 2.12 VHP 4.053 DPA 15.42 RAP 159.51 ECC 1.3435

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 23 29	2687.68	-27.54	73.67	42.10	96.85	20 8 16	2087.7	-26.31	65.22
90.00	11 11 46	4405.57	6.62	183.50	35.84	62.41	12 25 12	3805.6	2.88	176.82
100.00	20 52 29	2400.63	-28.84	52.36	41.90	98.22	21 32 30	1800.6	-27.40	43.86
100.00	12 25 27	4167.85	7.78	165.40	35.21	61.05	13 34 55	3567.9	3.86	158.80
110.00	22 17 53	2133.40	-32.26	31.37	41.20	101.98	22 53 27	1533.4	-30.27	22.71
110.00	13 16 32	4007.84	10.76	151.46	33.41	57.36	14 23 20	3407.8	6.38	145.10

DIFFERENTIAL CORRECTIONS

TDE-2.0770 TRA 6.9048 TC3-7.7426 BAU 2.1679
RDE .6413 RRA -.2698 RC3 .6308 FAU .27436
FDE-4.3849 FRA11.4395 FC-11.3789 BSP 40289
BDE 2.1738 BRA 6.9101 BC3 7.7682 FSP 5877

MID-COURSE EXECUTION ACCURACY

SGT11693.2 SGR 1049.3 SG3 1633.9
RRT -.7575 RRF -.7855 RTF .9960
SGB11740.2 R23 .0436 R13 -.9962
SG111720.3 SG2 683.4 THA 176.10

ORBIT DETERMINATION ACCURACY

ST 3744.3 SR 811.3 SS 2478.2
CRT -.7834 CRS .8524 CST -.9927
LSA 4531.1 MSA 536.9 SSA 14.9
EL1 3798.8 EL2 497.0 ALF 170.20

LAUNCH DATE OCT 17 1964 FLIGHT TIME 380.00 ARRIVAL DATE NOV 1 1965

DISTANCE 855.085

HELIOCENTRIC CONIC

RL 149.06 LAL .00 LOL 23.66 VL 32.680 GAL -7.52 AZL 88.41 HCA 264.09 SMA 186.22 ECC .23721 INC 1.5851 V1 29.892
RP 212.57 LAP -1.58 LOP 287.75 VP 23.151 GAP -11.09 AZP 90.16 TAL 318.99 TAP 223.08 RCA 142.05 APO 230.40 V2 25.815
RC 299.061 GL 11.17 GP 4.43 ZAL 144.98 ZAP 47.76 ETS 183.52 ZAE 75.32 ETE 180.47 ZAC 87.09 ETC 259.13 CLP 47.60

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 21.402 VHL 4.626 DLA 14.11 RAL 175.55 RAD 6567.9 VEL 11.949 PTH 2.13 VHP 4.134 DPA 15.29 RAP 159.58 ECC 1.3522

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 27 47	2684.95	-27.52	73.48	42.97	96.94	20 12 32	2085.0	-26.27	65.03
90.00	11 11 39	4420.30	7.09	184.33	36.70	62.51	12 25 19	3820.3	3.35	177.65
100.00	20 56 37	2398.46	-28.82	52.21	42.77	98.30	21 36 36	1798.5	-27.37	43.70
100.00	12 25 30	4182.02	8.24	166.19	36.08	61.17	13 35 12	3582.0	4.33	159.59
110.00	22 21 39	2132.40	-32.24	31.29	42.06	102.02	22 57 12	1532.4	-30.25	22.64
110.00	13 16 57	4020.85	11.24	152.16	34.28	57.50	14 23 58	3420.8	6.87	145.79

DIFFERENTIAL CORRECTIONS

TDE-2.1724 TRA 7.1450 TC3-7.7019 BAU 2.2105
RDE .6471 RRA -.2610 RC3 .6046 FAU .26153
FDE-4.2992 FRA11.0894 FC-10.5790 BSP 41042
BDE 2.2667 BRA 7.1498 BC3 7.7256 FSP 5622

MID-COURSE EXECUTION ACCURACY

SGT11886.0 SGR 1032.6 SG3 1556.9
RRT -.7483 RRF -.7773 RTF .9959
SGB11930.7 R23 .0447 R13 -.9960
SG111911.1 SG2 683.6 THA 176.27

ORBIT DETERMINATION ACCURACY

ST 3844.1 SR 807.8 SS 2435.3
CRT -.7837 CRS .8528 CST -.9927
LSA 4590.6 MSA 535.8 SSA 14.8
EL1 3896.8 EL2 495.0 ALF 170.49

LAUNCH DATE OCT 17 1964 FLIGHT TIME 382.00 ARRIVAL DATE NOV 3 1965

DISTANCE 859.196

HELIOCENTRIC CONIC

RL 149.06 LAL .00 LOL 23.66 VL 32.684 GAL -7.65 AZL 88.40 HCA 265.29 SMA 186.28 ECC .23863 INC 1.6020 V1 29.892
RP 212.29 LAP -1.60 LOP 288.95 VP 23.192 GAP -11.27 AZP 90.13 TAL 318.43 TAP 223.72 RCA 141.83 APO 230.74 V2 25.847
RC 300.120 GL 11.14 GP 4.34 ZAL 145.54 ZAP 46.70 ETS 183.58 ZAE 73.99 ETE 180.58 ZAC 87.03 ETC 259.11 CLP 46.54

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 21.960 VHL 4.686 DLA 13.85 RAL 176.08 RAD 6567.9 VEL 11.972 PTH 2.13 VHP 4.217 DPA 15.15 RAP 159.68 ECC 1.3614

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 32 11	2682.17	-27.50	73.28	43.86	97.04	20 16 54	2082.2	-26.24	64.84
90.00	11 11 28	4435.51	7.57	185.19	37.58	62.63	12 25 24	3835.5	3.84	178.50
100.00	21 0 51	2396.25	-28.80	52.05	43.66	98.38	21 40 47	1796.2	-27.34	43.55
100.00	12 25 30	4196.66	8.72	167.01	36.96	61.30	13 35 27	3596.7	4.83	160.39
110.00	22 25 30	2131.37	-32.23	31.21	42.94	102.06	23 1 1	1531.4	-30.23	22.57
110.00	13 17 20	4034.30	11.73	152.90	35.16	57.66	14 24 35	3434.3	7.37	146.51

DIFFERENTIAL CORRECTIONS

TDE-2.2708 TRA 7.3901 TC3-7.6507 BAU 2.2526
RDE .6531 RRA -.2528 RC3 .5795 FAU .24902
FDE-4.2136 FRA10.7455 FC3-9.8170 BSP 41776
BDE 2.3629 BRA 7.3944 BC3 7.6726 FSP 5375

MID-COURSE EXECUTION ACCURACY

SGT12071.9 SGR 1016.9 SG3 1482.2
RRT -.7392 RRF -.7693 RTF .9957
SGB12114.7 R23 .0458 R13 -.9959
SG112095.4 SG2 683.5 THA 176.43

ORBIT DETERMINATION ACCURACY

ST 3943.3 SR 804.4 SS 2392.0
CRT -.7841 CRS .8533 CST -.9927
LSA 4651.0 MSA 534.5 SSA 14.7
EL1 3994.2 EL2 492.9 ALF 170.77

LAUNCH DATE OCT 17 1964 FLIGHT TIME 384.00 ARRIVAL DATE NOV 5 1965

HELIOCENTRIC CONIC DISTANCE 863.305 EARTH TO MARS

RL	149.06	LAL	.00	LOL	23.66	VL	32.687	GAL	-7.79	AZL	88.38	HCA	266.49	SMA	186.34	ECC	.24013
RP	212.01	LAP	-1.62	LOP	290.15	VP	23.233	GAP	-11.46	AZP	90.10	TAL	317.85	TAP	224.34	RCA	141.60
RC	301.167	GL	11.11	GP	4.25	ZAL	146.11	ZAP	45.67	ETS	183.64	ZAE	72.68	ETE	180.69	ZAC	86.97

INC	1.6189	V1	29.892	APO	231.09	V2	25.879	CLP	45.52	ETC	259.08						

PLANETOCENTRIC CONIC

C3	22.550	VHL	4.749	DLA	13.59	RAL	176.61	RAD	6567.9	VEL	11.997	PTH	2.14	VHP	4.303	DPA	15.00
RAP	159.81	ECC	1.3711	PO	CST TIM	INJ 2 LAT	INJ 2 LONG										

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 36 40	2679.33	-27.47	73.07	44.77	97.14	20 21 19	2079.3	-26.20	64.64
90.00	11 11 16	4451.19	8.06	186.09	38.49	62.76	12 25 27	3851.2	4.34	179.38
100.00	21 5 9	2394.00	-28.78	51.88	44.57	98.47	21 45 3	1794.0	-27.31	43.39
100.00	12 25 28	4211.76	9.22	167.86	37.87	61.44	13 35 40	3611.8	5.33	161.23
110.00	22 29 25	2130.33	-32.21	31.14	43.84	102.11	23 4 55	1530.3	-30.21	22.49
110.00	13 17 42	4048.19	12.23	153.66	36.07	57.83	14 25 10	3448.2	7.90	147.24

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-2.3719	TRA	7.6394	TC3	-7.5900	BAU	2.2943	SGT	12250.6	SGR	1002.1	SG3	1409.9	ST	4041.0	SR	801.1
RDE	.6595	RRA	-.2452	RC3	.5557	FAU	.23689	RRT	-.7305	RRF	-.7616	RTF	.9955	CRT	-.7847	CRS	.8540
FDE	-4.1283	FRA	10.4070	FC3	-9.0947	BSP	42482	SGB	12291.5	R23	.0470	R13	-.9957	LSA	4711.8	MSA	533.0
BDE	2.4618	BRA	7.6434	BC3	7.6103	FSP	5134	SG1	12272.5	SG2	683.2	THA	176.57	EL1	4090.3	EL2	490.5

SS	2348.1	CST	-.9926	SSA	14.6
ALF	171.03				

LAUNCH DATE OCT 17 1964 FLIGHT TIME 386.00 ARRIVAL DATE NOV 7 1965

HELIOCENTRIC CONIC DISTANCE 867.412 EARTH TO MARS

RL	149.06	LAL	.00	LOL	23.66	VL	32.691	GAL	-7.93	AZL	88.36	HCA	267.70	SMA	186.41	ECC	.24169
RP	211.73	LAP	-1.63	LOP	291.36	VP	23.273	GAP	-11.64	AZP	90.07	TAL	317.25	TAP	224.95	RCA	141.36
RC	302.203	GL	11.07	GP	4.16	ZAL	146.68	ZAP	44.68	ETS	183.69	ZAE	71.41	ETE	180.79	ZAC	86.93

INC	1.6358	V1	29.892	APO	231.46	V2	25.911	CLP	44.52	ETC	259.05						

PLANETOCENTRIC CONIC

C3	23.174	VHL	4.814	DLA	13.31	RAL	177.15	RAD	6567.9	VEL	12.023	PTH	2.15	VHP	4.391	DPA	14.84
RAP	159.98	ECC	1.3814	PO	CST TIM	INJ 2 LAT	INJ 2 LONG										

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 41 13	2676.47	-27.45	72.87	45.69	97.24	20 25 50	2076.5	-26.16	64.44
90.00	11 11 1	4467.33	8.56	187.01	39.41	62.90	12 25 28	3867.3	4.86	180.28
100.00	21 9 31	2391.72	-28.75	51.72	45.49	98.55	21 49 23	1791.7	-27.27	43.23
100.00	12 25 24	4227.31	9.72	168.74	38.79	61.59	13 35 52	3627.3	5.85	162.09
110.00	22 33 23	2129.28	-32.20	31.06	44.76	102.15	23 8 52	1529.3	-30.19	22.42
110.00	13 18 1	4062.52	12.75	154.44	37.00	58.01	14 25 44	3462.5	8.43	148.01

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-2.4770	TRA	7.8938	TC3	-7.5201	BAU	2.3357	SGT	12422.8	SGR	988.3	SG3	1340.0	ST	4138.6	SR	797.9
RDE	.6662	RRA	-.2383	RC3	.5328	FAU	.22514	RRT	-.7221	RRF	-.7542	RTF	.9953	CRT	-.7856	CRS	.8551
FDE	-4.0444	FRA	10.0733	FC3	-8.4108	BSP	43158	SGB	12462.1	R23	.0482	R13	-.9955	LSA	4774.0	MSA	531.2
BDE	2.5650	BRA	7.8974	BC3	7.5390	FSP	4900	SG1	12443.4	SG2	682.6	THA	176.70	EL1	4186.4	EL2	488.0

SS	2304.1	CST	-.9925	SSA	14.5
ALF	171.27				

LAUNCH DATE OCT 17 1964 FLIGHT TIME 388.00 ARRIVAL DATE NOV 9 1965

HELIOCENTRIC CONIC DISTANCE 871.515 EARTH TO MARS

RL	149.06	LAL	.00	LOL	23.66	VL	32.695	GAL	-8.08	AZL	88.35	HCA	268.91	SMA	186.47	ECC	.24333
RP	211.47	LAP	-1.65	LOP	292.57	VP	23.313	GAP	-11.83	AZP	90.03	TAL	316.64	TAP	225.55	RCA	141.10
RC	303.228	GL	11.03	GP	4.08	ZAL	147.27	ZAP	43.71	ETS	183.74	ZAE	70.17	ETE	180.89	ZAC	86.89

INC	1.6527	V1	29.892	APO	231.85	V2	25.941	CLP	43.56	ETC	259.01						

PLANETOCENTRIC CONIC

C3	23.833	VHL	4.882	DLA	13.03	RAL	177.69	RAD	6568.0	VEL	12.050	PTH	2.15	VHP	4.481	DPA	14.67
RAP	160.19	ECC	1.3922	PO	CST TIM	INJ 2 LAT	INJ 2 LONG										

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 45 51	2673.59	-27.43	72.66	46.63	97.34	20 30 24	2073.6	-26.12	64.23
90.00	11 10 43	4483.92	9.07	187.96	40.36	63.06	12 25 27	3883.9	5.38	181.22
100.00	21 13 57	2389.44	-28.73	51.55	46.43	98.63	21 53 47	1789.4	-27.24	43.07
100.00	12 25 18	4243.30	10.24	169.65	39.74	61.76	13 36 1	3643.3	6.38	162.98
110.00	22 37 25	2128.25	-32.18	30.98	45.69	102.19	23 12 54	1528.3	-30.17	22.35
110.00	13 18 19	4077.26	13.28	155.26	37.95	58.21	14 26 17	3477.3	8.98	148.80

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-2.5851	TRA	8.1536	TC3	-7.4438	BAU	2.3774	SGT	12589.8	SGR	975.4	SG3	1272.6	ST	4235.0	SR	794.7
RDE	.6732	RRA	-.2319	RC3	.5112	FAU	.21384	RRT	-.7141	RRF	-.7474	RTF	.9951	CRT	-.7866	CRS	.8562
FDE	-3.9604	FRA	9.7453	FC3	-7.7677	BSP	43808	SGB	12627.5	R23	.0496	R13	-.9953	LSA	4836.4	MSA	529.1
BDE	2.6713	BRA	8.1569	BC3	7.4613	FSP	4670	SG1	12609.1	SG2	681.8	THA	176.82	EL1	4281.4	EL2	485.3

SS	2259.4	CST	-.9925	SSA	14.4
ALF	171.49				

LAUNCH DATE OCT 17 1964 FLIGHT TIME 390.00 ARRIVAL DATE NOV 11 1965

HELIOCENTRIC CONIC DISTANCE 875.615 EARTH TO MARS

RL	149.06	LAL	.00	LOL	23.66	VL	32.699	GAL	-8.23	AZL	88.33	HCA	270.13	SMA	186.54	ECC	.24504
RP	211.20	LAP	-1.67	LOP	293.79	VP	23.352	GAP	-12.01	AZP	90.00	TAL	316.01	TAP	226.13	RCA	140.83
RC	304.242	GL	10.98	GP	4.00	ZAL	147.86	ZAP	42.78	ETS	183.79	ZAE	68.95	ETE	180.98	ZAC	86.86

INC	1.6697	V1	29.892	APO	232.25	V2	25.971	CLP	42.63	ETC	258.96						

PLANETOCENTRIC CONIC

C3	24.531	VHL	4.953	DLA	12.74	RAL	178.24	RAD	6568.0	VEL	12.079	PTH	2.16	VHP	4.574	DPA	14.49
RAP	160.42	ECC	1.4037	PO	CST TIM	INJ 2 LAT	INJ 2 LONG										

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 50 32	2670.70	-27.40	72.45	47.59	97.44	20 35 3	2070.7	-26.09	64.03
90.00	11 10 24	4500.95	9.59	188.93	41.33	63.23	12 25 25	3901.0	5.93	182.17
100.00	21 18 27	2387.16	-28.71	51.39	47.38	98.72	21 58 14	1787.2	-27.20	42.91
100.00	12 25 10	4259.74	10.76	170.58	40.71	61.94	13 36 10	3659.7	6.93	163.89
110.00	22 41 31	2127.24	-32.17	30.91	46.64	102.24	23 16 58	1527.2	-30.15	22.27
110.00	13 18 36	4092.41	13.82	156.10	38.92	58.42	14 26 48	3492.4	9.54	149.61

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-2.6964	TRA	8.4192	TC3	-7.3581	BAU	2.4184	SGT	12750.0	SGR	963.2	SG3	1207.4	ST	4330.3	SR	791.5
RDE	.6805	RRA	-.2262	RC3	.4905	FAU	.20283	RRT	-.7064	RRF	-.7409	RTF	.9949	CRT	-.7878	CRS	.8575
FDE	-3.8759	FRA	9.4231	FC3	-7.1582	BSP	44450	SGB	12786.3	R23	.0510	R13	-.9950	LSA	4899.2	MSA	526.9
BDE	2.7810	BRA	8.4222	BC3	7.3744	FSP	4449	SG1	12768.2	SG2	680.8	THA	176.94	EL1	4375.5	EL2	482.5

SS	2214.0	CST	-.9924	SSA	14.3
ALF	171.70				

LAUNCH DATE OCT 17 1964 FLIGHT TIME 392.00 ARRIVAL DATE NOV 13 1965

HELIOCENTRIC CONIC DISTANCE 879.711 EARTH TO MARS

RL 149.06 LAL .00 LOL 23.66 VL 32.703 GAL -8.39 AZL 88.31 HCA 271.34 SMA 186.61 ECC .24682 INC 1.6867 V1 29.892
RP 210.95 LAP -1.69 LOP 295.00 VP 23.390 GAP -12.20 AZP 89.96 TAL 315.36 TAP 226.70 RCA 140.55 APO 232.67 V2 26.001
RC 305.247 GL 10.92 GP 3.92 ZAL 148.46 ZAP 41.87 ETS 183.83 ZAE 67.76 ETE 181.07 ZAC 86.84 ETC 258.91 CLP 41.72

PLANETOCENTRIC CONIC

C3 25.268 VHL 5.027 DLA 12.44 RAL 178.79 RAD 6568.0 VEL 12.110 PTH 2.17 VHP 4.669 DPA 14.30 RAP 160.69 ECC 1.4158

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 55 17	2667.83	-27.37	72.25	48.56	97.54	20 39 45	2067.8	-26.05	63.83
90.00	11 10 3	4518.41	10.13	189.94	42.32	63.41	12 25 22	3918.4	6.48	183.16
100.00	21 23 1	2384.89	-28.68	51.22	48.35	98.80	22 2 46	1784.9	-27.17	42.75
100.00	12 25 1	4276.58	11.30	171.54	41.70	62.14	13 36 17	3676.6	7.49	164.83
110.00	22 45 40	2126.26	-32.16	30.83	47.60	102.28	23 21 6	1526.3	-30.13	22.20
110.00	13 18 51	4107.97	14.37	156.96	39.91	58.65	14 27 19	3508.0	10.12	150.45

DIFFERENTIAL CORRECTIONS
TDE-2.8113 TRA 8.6906 TC3-7.2662 BAU 2.4597
RDE .6882 RRA -.2211 RC3 .4709 FAU .19222
FDE-3.7923 FRA 9.1054 FC3-6.5860 BSP 45058
BDE 2.8943 BRA 8.6934 BC3 7.2814 FSP 4233

MID-COURSE EXECUTION ACCURACY
SGT12904.6 SGR 951.9 SG3 1144.5
RRT -.6993 RRF -.7350 RTF .9946
SGB12939.7 R23 .0525 R13 -.9948
SG112921.8 SG2 679.5 THA 177.04

ORBIT DETERMINATION ACCURACY
ST 4424.6 SR 788.4 SS 2168.2
CRT -.7890 CRS .8591 CST -.9923
LSA 4962.3 MSA 524.5 SSA 14.2
EL1 4468.6 EL2 479.6 ALF 171.90

LAUNCH DATE OCT 17 1964 FLIGHT TIME 394.00 ARRIVAL DATE NOV 15 1965

HELIOCENTRIC CONIC DISTANCE 883.801 EARTH TO MARS

RL 149.06 LAL .00 LOL 23.66 VL 32.707 GAL -8.56 AZL 88.30 HCA 272.56 SMA 186.68 ECC .24869 INC 1.7038 V1 29.892
RP 210.70 LAP -1.70 LOP 298.22 VP 23.428 GAP -12.39 AZP 89.92 TAL 314.70 TAP 227.26 RCA 140.26 APO 233.11 V2 26.029
RC 306.243 GL 10.86 GP 3.85 ZAL 149.07 ZAP 40.99 ETS 183.87 ZAE 66.60 ETE 181.15 ZAC 86.83 ETC 258.86 CLP 40.85

PLANETOCENTRIC CONIC

C3 26.048 VHL 5.104 DLA 12.13 RAL 179.35 RAD 6568.1 VEL 12.142 PTH 2.18 VHP 4.767 DPA 14.10 RAP 160.99 ECC 1.4287

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 0 6	2664.98	-27.35	72.04	49.55	97.64	20 44 31	2065.0	-26.01	63.63
90.00	11 9 40	4536.28	10.67	190.97	43.33	63.61	12 25 17	3936.3	7.04	184.17
100.00	21 27 38	2382.66	-28.66	51.06	49.34	98.88	22 7 21	1782.7	-27.13	42.59
100.00	12 24 49	4293.84	11.85	172.53	42.72	62.36	13 36 23	3693.8	8.06	165.80
110.00	22 49 52	2125.33	-32.14	30.76	48.58	102.32	23 25 18	1525.3	-30.11	22.14
110.00	13 19 4	4128.93	14.94	157.86	40.93	58.89	14 27 48	3523.9	10.71	151.31

DIFFERENTIAL CORRECTIONS
TDE-2.9301 TRA 8.9685 TC3-7.1679 BAU 2.5011
RDE .6962 RRA -.2167 RC3 .4521 FAU .18198
FDE-3.7081 FRA 8.7934 FC3-6.0483 BSP 45637
BDE 3.0117 BRA 8.9711 BC3 7.1821 FSP 4022

MID-COURSE EXECUTION ACCURACY
SGT13054.0 SGR 941.2 SG3 1084.0
RRT -.6926 RRF -.7296 RTF .9943
SGB13087.9 R23 .0541 R13 -.9945
SG113070.4 SG2 678.0 THA 177.13

ORBIT DETERMINATION ACCURACY
ST 4518.1 SR 785.3 SS 2121.7
CRT -.7905 CRS .8608 CST -.9921
LSA 5025.9 MSA 521.8 SSA 14.1
EL1 4561.0 EL2 476.4 ALF 172.09

LAUNCH DATE OCT 17 1964 FLIGHT TIME 396.00 ARRIVAL DATE NOV 17 1965

HELIOCENTRIC CONIC DISTANCE 887.885 EARTH TO MARS

RL 149.06 LAL .00 LOL 23.66 VL 32.711 GAL -8.73 AZL 88.28 HCA 273.79 SMA 186.76 ECC .25064 INC 1.7209 V1 29.892
RP 210.46 LAP -1.72 LOP 297.45 VP 23.465 GAP -12.59 AZP 89.89 TAL 314.02 TAP 227.80 RCA 139.95 APO 233.57 V2 26.057
RC 307.229 GL 10.80 GP 3.78 ZAL 149.68 ZAP 40.14 ETS 183.91 ZAE 65.47 ETE 181.24 ZAC 86.83 ETC 258.80 CLP 40.00

PLANETOCENTRIC CONIC

C3 26.874 VHL 5.184 DLA 11.82 RAL 179.91 RAD 6568.1 VEL 12.176 PTH 2.19 VHP 4.867 DPA 13.89 RAP 161.31 ECC 1.4423

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 4 57	2662.18	-27.32	71.84	50.56	97.74	20 49 20	2062.2	-25.97	63.43
90.00	11 9 16	4554.56	11.22	192.03	44.37	63.83	12 25 11	3954.6	7.61	185.21
100.00	21 32 18	2380.47	-28.64	50.90	50.34	98.96	22 11 59	1780.5	-27.10	42.44
100.00	12 24 36	4311.50	12.41	173.55	43.75	62.58	13 36 28	3711.5	8.64	166.79
110.00	22 54 7	2124.45	-32.13	30.70	49.58	102.35	23 29 32	1524.5	-30.09	22.08
110.00	13 19 17	4140.28	15.51	158.78	41.97	59.15	14 28 17	3540.3	11.31	152.20

DIFFERENTIAL CORRECTIONS
TDE-3.0531 TRA 9.2529 TC3-7.0637 BAU 2.5426
RDE .7046 RRA -.2129 RC3 .4343 FAU .17210
FDE-3.6248 FRA 8.4857 FC3-5.5441 BSP 46190
BDE 3.1333 BRA 9.2553 BC3 7.0770 FSP 3818

MID-COURSE EXECUTION ACCURACY
SGT13198.1 SGR 931.2 SG3 1025.6
RRT -.6865 RRF -.7248 RTF .9940
SGB13230.9 R23 .0558 R13 -.9942
SG113213.6 SG2 676.2 THA 177.22

ORBIT DETERMINATION ACCURACY
ST 4610.8 SR 782.2 SS 2074.9
CRT -.7921 CRS .8627 CST -.9920
LSA 5090.0 MSA 518.9 SSA 14.0
EL1 4652.7 EL2 473.2 ALF 172.27

LAUNCH DATE OCT 17 1964 FLIGHT TIME 398.00 ARRIVAL DATE NOV 19 1965

HELIOCENTRIC CONIC DISTANCE 891.962 EARTH TO MARS

RL 149.06 LAL .00 LOL 23.66 VL 32.716 GAL -8.90 AZL 88.26 HCA 275.01 SMA 186.83 ECC .25268 INC 1.7381 V1 29.892
RP 210.22 LAP -1.73 LOP 298.67 VP 23.501 GAP -12.78 AZP 89.85 TAL 313.32 TAP 228.33 RCA 139.62 APO 234.04 V2 26.085
RC 308.206 GL 10.73 GP 3.71 ZAL 150.30 ZAP 39.32 ETS 183.95 ZAE 64.36 ETE 181.31 ZAC 86.84 ETC 258.74 CLP 39.17

PLANETOCENTRIC CONIC

C3 27.747 VHL 5.268 DLA 11.50 RAL 180.47 RAD 6568.1 VEL 12.212 PTH 2.19 VHP 4.971 DPA 13.67 RAP 161.66 ECC 1.4567

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 9 52	2659.42	-27.30	71.64	51.58	97.84	20 54 11	2059.4	-25.93	63.24
90.00	11 8 50	4573.23	11.78	193.12	45.42	64.06	12 25 3	3973.2	8.20	186.27
100.00	21 37 1	2378.34	-28.61	50.75	51.36	99.04	22 16 40	1778.3	-27.07	42.28
100.00	12 24 22	4329.55	12.97	174.59	44.81	62.83	13 36 32	3729.5	9.22	167.80
110.00	22 58 25	2123.64	-32.12	30.64	50.59	102.39	23 33 49	1523.6	-30.08	22.02
110.00	13 19 28	4157.01	16.09	159.72	43.04	59.43	14 28 45	3557.0	11.92	153.11

DIFFERENTIAL CORRECTIONS
TDE-3.1815 TRA 9.5421 TC3-6.9568 BAU 2.5853
RDE .7135 RRA -.2097 RC3 .4174 FAU .16263
FDE-3.5431 FRA 8.1812 FC3-5.0743 BSP 46683
BDE 3.2606 BRA 9.5445 BC3 6.9693 FSP 3617

MID-COURSE EXECUTION ACCURACY
SGT13337.0 SGR 921.9 SG3 969.4
RRT -.6811 RRF -.7208 RTF .9937
SGB13368.8 R23 .0577 R13 -.9938
SG113351.8 SG2 674.3 THA 177.30

ORBIT DETERMINATION ACCURACY
ST 4703.2 SR 779.3 SS 2028.0
CRT -.7940 CRS .8650 CST -.9918
LSA 5155.0 MSA 515.8 SSA 13.9
EL1 4744.2 EL2 469.6 ALF 172.43

LAUNCH DATE OCT 18 1964 FLIGHT TIME 240.00 ARRIVAL DATE JUN 15 1965

HELIOCENTRIC CONIC DISTANCE 580.022 EARTH TO MARS

RL 149.02 LAL .00 LOL 24.65 VL 33.163 GAL -6.71 AZL 93.52 HCA 188.44 SMA 194.77 ECC .26089 INC 3.5232 V1 29.900
RP 237.81 LAP .52 LOP 213.08 VP 20.851 GAP 8.18 AZP 86.51 TAL 326.70 TAP 155.15 RCA 143.96 APO 245.59 V2 23.106
RC 183.786 GL -24.18 GP 19.09 ZAL 133.24 ZAP 147.42 ETS 145.76 ZAE 156.42 ETE 54.94 ZAC 107.65 ETC 255.28 CLP 153.09

PLANETOCENTRIC CONIC

C3 24.427 VHL 4.942 DLA -15.76 RAL 155.24 RAD 6568.0 VEL 12.075 PTH 2.16 VHP 5.787 DPA 16.01 RAP 194.33 ECC 1.4020

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 59 46	1749.75	-6.25	13.88	18.55	117.67	22 28 55	1149.7	-2.50	7.21
90.00	5 49 47	5419.83	28.10	249.01	25.86	86.31	7 20 6	4819.8	27.29	240.44
100.00	23 12 24	1515.37	-7.50	355.97	17.87	119.02	23 37 39	915.4	-3.57	349.38
100.00	7 19 49	5129.43	29.51	227.53	25.73	84.98	8 45 19	4529.4	28.50	218.87
110.00	0 5 14	1362.18	-10.70	342.42	15.94	122.66	0 27 56	762.2	-6.32	336.06
110.00	8 47 25	4855.39	33.21	206.20	25.22	81.38	10 8 20	4255.4	31.66	197.32

DIFFERENTIAL CORRECTIONS
TDE 1.8087 TRA-3.1372 TC3 1.6191 BAU .6557
RDE .9866 RRA-1.2172 RC3 1.1875 FAU .16207
FDE-4.0445 FRA 5.3527 FC3-5.7443 BSP 17535
BDE 2.0603 BRA 3.3650 BC3 2.0079 FSP 2685

MID-COURSE EXECUTION ACCURACY
SGT 4608.5 SGR 2199.0 SG3 845.6
RRT .9688 RRF -.9981 RTF -.9596
SGB 5106.2 R23 -.2320 R13 -.9712
SG1 5082.2 SG2 494.6 THA 25.06

ORBIT DETERMINATION ACCURACY
ST 2384.2 SR 1225.9 SS 2537.5
CRT .9917 CRS .9997 CST .9945
LSA 3685.9 MSA 201.1 SSA 8.2
EL1 2677.2 EL2 140.2 ALF 27.10

LAUNCH DATE OCT 18 1964 FLIGHT TIME 242.00 ARRIVAL DATE JUN 17 1965

HELIOCENTRIC CONIC DISTANCE 583.583 EARTH TO MARS

RL 149.02 LAL .00 LOL 24.65 VL 33.136 GAL -6.61 AZL 92.98 HCA 189.40 SMA 194.25 ECC .25838 INC 2.9836 V1 29.900
RP 237.48 LAP .49 LOP 214.04 VP 20.844 GAP 7.74 AZP 87.06 TAL 326.93 TAP 156.32 RCA 144.06 APO 244.45 V2 23.140
RC 186.049 GL -21.00 GP 17.67 ZAL 134.12 ZAP 147.63 ETS 148.41 ZAE 157.89 ETE 54.43 ZAC 106.33 ETC 255.38 CLP 152.42

PLANETOCENTRIC CONIC

C3 22.861 VHL 4.781 DLA -12.67 RAL 156.13 RAD 6567.9 VEL 12.010 PTH 2.14 VHP 5.611 DPA 14.61 RAP 193.95 ECC 1.3762

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 35 44	1841.91	-9.13	19.12	18.15	116.92	22 6 26	1241.9	-5.45	12.38
90.00	6 20 54	5295.28	27.22	240.01	24.14	81.88	7 49 9	4695.3	25.82	231.62
100.00	22 50 32	1600.55	-10.28	.77	17.54	118.22	23 17 13	1000.5	-6.43	354.10
100.00	7 48 47	5011.87	28.50	218.94	23.91	80.57	9 12 19	4411.9	26.90	210.50
110.00	23 44 3	1432.95	-13.27	346.29	15.78	121.80	24 7 56	833.0	-8.97	339.83
110.00	9 11 45	4752.23	31.89	198.45	23.14	76.97	10 30 58	4152.2	29.77	189.88

DIFFERENTIAL CORRECTIONS
TDE 1.7008 TRA-3.0939 TC3 1.7277 BAU .6396
RDE .8696 RRA-1.1251 RC3 1.1808 FAU .17094
FDE-3.9658 FRA 5.7007 FC3-6.4732 BSP 17384
BDE 1.9102 BRA 3.2922 BC3 2.0927 FSP 2875

MID-COURSE EXECUTION ACCURACY
SGT 4617.8 SGR 2066.5 SG3 905.9
RRT .9683 RRF -.9977 RTF -.9608
SGB 5059.1 R23 -.2299 R13 -.9711
SG1 5036.9 SG2 473.0 THA 23.65

ORBIT DETERMINATION ACCURACY
ST 2335.8 SR 1122.0 SS 2520.6
CRT .9913 CRS .9993 CST .9955
LSA 3610.3 MSA 183.7 SSA 10.5
EL1 2587.9 EL2 132.9 ALF 25.54

LAUNCH DATE OCT 18 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUN 19 1965

HELIOCENTRIC CONIC DISTANCE 587.162 EARTH TO MARS

RL 149.02 LAL .00 LOL 24.65 VL 33.109 GAL -6.52 AZL 92.54 HCA 190.36 SMA 193.76 ECC .25598 INC 2.5428 V1 29.900
RP 237.15 LAP .46 LOP 215.00 VP 20.840 GAP 7.31 AZP 87.50 TAL 327.14 TAP 157.50 RCA 144.16 APO 243.36 V2 23.174
RC 188.300 GL -18.28 GP 16.49 ZAL 134.72 ZAP 147.59 ETS 150.78 ZAE 159.21 ETE 54.35 ZAC 105.24 ETC 255.45 CLP 151.70

PLANETOCENTRIC CONIC

C3 21.643 VHL 4.652 DLA -10.02 RAL 156.85 RAD 6567.9 VEL 11.959 PTH 2.13 VHP 5.453 DPA 13.45 RAP 193.64 ECC 1.3562

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 16 34	1917.22	-11.42	23.47	18.01	116.09	21 48 32	1317.2	-7.82	16.64
90.00	6 45 49	5193.44	26.03	232.79	22.74	78.45	8 12 22	4593.4	24.18	224.61
100.00	22 32 58	1670.77	-12.51	4.79	17.45	117.37	23 0 48	1070.8	-8.74	358.02
100.00	8 12 7	4915.11	27.22	212.03	22.45	77.15	9 34 2	4315.1	25.18	203.83
110.00	23 29 57	1492.31	-15.37	349.60	15.80	120.91	23 54 49	892.3	-11.16	343.03
110.00	9 31 36	4666.34	30.40	192.20	21.50	73.55	10 49 23	4066.3	27.84	183.93

DIFFERENTIAL CORRECTIONS
TDE 1.6071 TRA-3.0511 TC3 1.8152 BAU .6248
RDE .7801 RRA-1.0504 RC3 1.1693 FAU .17909
FDE-3.8956 FRA 6.0413 FC3-7.1636 BSP 17368
BDE 1.7864 BRA 3.2268 BC3 2.1592 FSP 3092

MID-COURSE EXECUTION ACCURACY
SGT 4618.5 SGR 1957.7 SG3 964.2
RRT .9680 RRF -.9973 RTF -.9621
SGB 5016.3 R23 -.2266 R13 -.9713
SG1 4995.7 SG2 454.4 THA 22.50

ORBIT DETERMINATION ACCURACY
ST 2287.0 SR 1038.9 SS 2501.6
CRT .9909 CRS .9986 CST .9964
LSA 3541.1 MSA 167.5 SSA 13.2
EL1 2508.7 EL2 127.8 ALF 24.30

LAUNCH DATE OCT 18 1964 FLIGHT TIME 246.00 ARRIVAL DATE JUN 21 1965

HELIOCENTRIC CONIC DISTANCE 590.762 EARTH TO MARS

RL 149.02 LAL .00 LOL 24.65 VL 33.084 GAL -6.43 AZL 92.17 HCA 191.32 SMA 193.29 ECC .25366 INC 2.1739 V1 29.900
RP 236.81 LAP .43 LOP 215.96 VP 20.839 GAP 6.89 AZP 87.87 TAL 327.35 TAP 158.67 RCA 144.26 APO 242.32 V2 23.209
RC 190.540 GL -15.93 GP 15.51 ZAL 135.11 ZAP 147.37 ETS 152.90 ZAE 160.40 ETE 54.71 ZAC 104.32 ETC 255.51 CLP 150.92

PLANETOCENTRIC CONIC

C3 20.661 VHL 4.545 DLA -7.71 RAL 157.43 RAD 6567.8 VEL 11.918 PTH 2.12 VHP 5.307 DPA 12.48 RAP 193.38 ECC 1.3400

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 0 37	1980.74	-13.29	27.19	18.00	115.23	21 33 38	1380.7	-9.79	20.27
90.00	7 6 27	5107.58	24.73	226.84	21.61	75.74	8 31 35	4507.6	22.53	218.87
100.00	22 18 15	1730.30	-14.35	8.25	17.48	116.51	22 47 6	1130.3	-10.67	1.39
100.00	8 31 30	4833.25	25.86	206.34	21.27	74.45	9 52 4	4233.3	23.47	198.35
110.00	23 18 1	1543.15	-17.13	352.50	15.92	120.04	23 43 45	943.2	-13.01	345.81
110.00	9 48 13	4593.17	28.87	187.05	20.21	70.85	11 4 47	3993.2	25.99	179.05

DIFFERENTIAL CORRECTIONS
TDE 1.5506 TRA-2.9821 TC3 1.9369 BAU .6250
RDE .7169 RRA -.9819 RC3 1.1695 FAU .18870
FDE-3.8746 FRA 6.3359 FC3-7.9070 BSP 16758
BDE 1.7083 BRA 3.1396 BC3 2.2626 FSP 3241

MID-COURSE EXECUTION ACCURACY
SGT 4616.3 SGR 1872.8 SG3 1024.0
RRT .9689 RRF -.9967 RTF -.9646
SGB 4981.7 R23 -.2177 R13 -.9726
SG1 4963.0 SG2 430.9 THA 21.63

ORBIT DETERMINATION ACCURACY
ST 2262.3 SR 978.8 SS 2500.7
CRT .9910 CRS .9978 CST .9976
LSA 3508.2 MSA 146.9 SSA 16.5
EL1 2462.0 EL2 120.6 ALF 23.27

LAUNCH DATE OCT 18 1964 FLIGHT TIME 248.00 ARRIVAL DATE JUN 23 1965

HELIOCENTRIC CONIC DISTANCE 594.374 EARTH TO MARS

RL 149.02 LAL .00 LOL 24.65 VL 33.060 GAL -6.35 AZL 91.86 HCA 192.29 SMA 192.84 ECC .25145 INC 1.8621 V1 29.900
RP 236.46 LAP .40 LOP 216.93 VP 20.839 GAP 6.47 AZP 88.18 TAL 327.56 TAP 159.85 RCA 144.35 APO 241.33 V2 23.244
RC 192.768 GL -13.87 GP 14.67 ZAL 135.35 ZAP 142.00 ETS 154.80 ZAE 161.49 ETE 55.48 ZAC 103.54 ETC 255.55 CLP 150.11

PLANETOCENTRIC CONIC

C3 19.847 VHL 4.455 DLA -5.68 RAL 157.92 RAD 6567.8 VEL 11.884 PTH 2.11 VHP 5.171 DPA 11.67 RAP 193.15 ECC 1.3266

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 46 58	2035.51	-14.86	30.45	18.07	114.38	21 20 54	1435.5	-11.44	23.44
90.00	7 24 0	5033.64	23.40	221.84	20.69	73.58	8 47 53	4433.6	20.92	214.04
100.00	22 5 37	1781.78	-15.89	11.30	17.57	115.66	22 35 19	1181.8	-12.30	4.34
100.00	8 48 2	4762.61	24.48	201.54	20.32	72.29	10 7 24	4162.6	21.83	193.75
110.00	23 7 43	1587.40	-18.62	355.06	16.09	119.20	23 34 10	987.4	-14.58	348.27
110.00	10 2 26	4529.75	27.38	182.72	19.18	68.69	11 17 56	3929.7	24.23	174.96

DIFFERENTIAL CORRECTIONS
TDE 1.4752 TRA-2.9388 TC3 1.9941 BAU .6123
RDE .6632 RRA -.9291 RC3 1.1610 FAU .19704
FDE-3.8394 FRA 6.6549 FC3-8.5949 BSP 16841
BDE 1.6174 BRA 3.0822 BC3 2.3075 FSP 3457

MID-COURSE EXECUTION ACCURACY
SGT 4602.6 SGR 1799.8 SG3 1082.6
RRT .9678 RRF -.9960 RTF -.9649
SGB 4942.0 R23 -.2152 R13 -.9724
SG1 4923.8 SG2 423.5 THA 20.89

ORBIT DETERMINATION ACCURACY
ST 2213.8 SR 926.4 SS 2491.4
CRT .9900 CRS .9966 CST .9981
LSA 3456.3 MSA 139.0 SSA 19.6
EL1 2396.8 EL2 120.7 ALF 22.56

LAUNCH DATE OCT 18 1964 FLIGHT TIME 250.00 ARRIVAL DATE JUN 25 1965

HELIOCENTRIC CONIC DISTANCE 598.003 EARTH TO MARS

RL 149.02 LAL .00 LOL 24.65 VL 33.037 GAL -6.27 AZL 91.59 HCA 193.25 SMA 192.41 ECC .24933 INC 1.5946 V1 29.900
RP 236.12 LAP .37 LOP 217.90 VP 20.842 GAP 6.06 AZP 88.45 TAL 327.76 TAP 161.02 RCA 144.44 APO 240.38 V2 23.279
RC 194.983 GL -12.05 GP 13.96 ZAL 135.47 ZAP 146.52 ETS 156.51 ZAE 162.52 ETE 56.69 ZAC 102.87 ETC 255.59 CLP 149.25

PLANETOCENTRIC CONIC

C3 19.156 VHL 4.377 DLA -3.89 RAL 158.33 RAD 6567.8 VEL 11.855 PTH 2.10 VHP 5.043 DPA 10.97 RAP 192.95 ECC 1.3153

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 35 1	2083.50	-16.19	33.35	18.17	113.55	21 9 44	1483.5	-12.86	26.25
90.00	7 39 11	4968.86	22.08	217.54	19.93	71.81	9 2 0	4368.9	19.39	209.90
100.00	21 54 32	1826.97	-17.20	14.01	17.69	114.83	22 24 59	1227.0	-13.71	6.96
100.00	9 2 21	4700.62	23.13	197.43	19.54	70.52	10 20 42	4100.6	20.26	189.81
110.00	22 58 36	1626.39	-19.90	357.36	16.27	118.39	23 25 43	1026.4	-15.95	350.46
110.00	10 14 46	4473.97	25.94	179.02	18.34	66.92	11 29 20	3874.0	22.59	171.46

DIFFERENTIAL CORRECTIONS
TDE 1.4084 TRA-2.8921 TC3 2.0436 BAU .6012
RDE .6208 RRA -.8838 RC3 1.1552 FAU .20556
FDE-3.8171 FRA 6.9703 FC3-9.2901 BSP 16883
BDE 1.5391 BRA 3.0242 BC3 2.3475 FSP 3676

MID-COURSE EXECUTION ACCURACY
SGT 4582.5 SGR 1740.0 SG3 1142.1
RRT .9666 RRF -.9951 RTF -.9652
SGB 4901.8 R23 -.2121 R13 -.9724
SG1 4883.9 SG2 418.1 THA 20.31

ORBIT DETERMINATION ACCURACY
ST 2167.5 SR 884.5 SS 2486.3
CRT .9889 CRS .9952 CST .9985
LSA 3412.3 MSA 133.0 SSA 22.8
EL1 2337.9 EL2 121.7 ALF 22.04

LAUNCH DATE OCT 18 1964 FLIGHT TIME 252.00 ARRIVAL DATE JUN 27 1965

HELIOCENTRIC CONIC DISTANCE 601.648 EARTH TO MARS

RL 149.02 LAL .00 LOL 24.65 VL 33.014 GAL -6.19 AZL 91.36 HCA 194.23 SMA 192.00 ECC .24730 INC 1.3612 V1 29.900
RP 235.77 LAP .33 LOP 218.87 VP 20.847 GAP 5.65 AZP 88.68 TAL 327.96 TAP 162.19 RCA 144.52 APO 239.48 V2 23.315
RC 197.185 GL -10.43 GP 13.35 ZAL 135.51 ZAP 145.93 ETS 158.04 ZAE 163.47 ETE 58.34 ZAC 102.29 ETC 255.62 CLP 148.36

PLANETOCENTRIC CONIC

C3 18.559 VHL 4.308 DLA -2.28 RAL 158.67 RAD 6567.8 VEL 11.830 PTH 2.10 VHP 4.922 DPA 10.38 RAP 192.75 ECC 1.3054

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 24 21	2126.13	-17.33	35.96	18.28	112.75	20 59 47	1526.1	-14.10	28.77
90.00	7 52 33	4911.31	20.81	213.80	19.30	70.35	9 14 25	4311.3	17.94	206.30
100.00	21 44 38	1867.16	-18.33	16.46	17.83	114.03	22 15 45	1267.2	-14.93	9.32
100.00	9 14 57	4645.51	21.84	193.85	18.89	69.06	10 32 23	4045.5	18.79	186.37
110.00	22 50 27	1661.14	-21.01	359.45	16.45	117.61	23 18 8	1061.1	-17.14	352.45
110.00	10 25 38	4424.30	24.58	175.80	17.64	65.46	11 39 22	3824.3	21.06	168.43

DIFFERENTIAL CORRECTIONS
TDE 1.3515 TRA-2.8390 TC3 2.0941 BAU .5934
RDE .5882 RRA -.8437 RC3 1.1550 FAU .21480
FDE-3.8164 FRA 7.2746 FC-10.0200 BSP 16786
BDE 1.4739 BRA 2.9617 BC3 2.3915 FSP 3876

MID-COURSE EXECUTION ACCURACY
SGT 4557.0 SGR 1692.1 SG3 1203.6
RRT .9655 RRF -.9942 RTF -.9655
SGB 4861.0 R23 -.2082 R13 -.9724
SG1 4843.3 SG2 414.4 THA 19.88

ORBIT DETERMINATION ACCURACY
ST 2125.8 SR 852.2 SS 2489.4
CRT .9878 CRS .9936 CST .9989
LSA 3380.1 MSA 129.2 SSA 25.8
EL1 2287.0 EL2 123.3 ALF 21.67

LAUNCH DATE OCT 18 1964 FLIGHT TIME 254.00 ARRIVAL DATE JUN 29 1965

HELIOCENTRIC CONIC DISTANCE 605.308 EARTH TO MARS

RL 149.02 LAL .00 LOL 24.65 VL 32.993 GAL -6.12 AZL 91.16 HCA 195.20 SMA 191.61 ECC .24536 INC 1.1575 V1 29.900
RP 235.42 LAP .30 LOP 219.85 VP 20.853 GAP 5.25 AZP 88.88 TAL 328.15 TAP 163.35 RCA 144.60 APO 238.63 V2 23.351
RC 199.372 GL -8.98 GP 12.81 ZAL 135.49 ZAP 145.26 ETS 159.44 ZAE 164.36 ETE 60.47 ZAC 101.78 ETC 255.65 CLP 147.43

PLANETOCENTRIC CONIC

C3 18.034 VHL 4.247 DLA -.83 RAL 158.95 RAD 6567.7 VEL 11.807 PTH 2.09 VHP 4.806 DPA 9.88 RAP 192.57 ECC 1.2968

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 14 44	2164.41	-18.32	38.33	18.40	111.98	20 50 48	1564.4	-15.18	31.06
90.00	8 4 28	4859.60	19.59	210.50	18.76	69.14	9 25 27	4259.6	16.58	203.12
100.00	21 35 41	1903.26	-19.32	18.69	17.96	113.27	22 7 25	1303.3	-16.00	11.46
100.00	9 26 11	4595.98	20.60	190.69	18.34	67.85	10 42 47	3996.0	17.41	183.34
110.00	22 43 3	1692.39	-21.98	1.35	16.63	116.86	23 11 15	1092.4	-18.20	354.26
110.00	10 35 19	4379.62	23.28	172.98	17.06	64.24	11 48 18	3779.6	19.63	165.75

DIFFERENTIAL CORRECTIONS
TDE 1.2992 TRA-2.7833 TC3 2.1356 BAU .5854
RDE .5614 RRA -.8097 RC3 1.1557 FAU .22397
FDE-3.8193 FRA 7.5864 FC-10.7521 BSP 16684
BDE 1.4153 BRA 2.8987 BC3 2.4283 FSP 4096

MID-COURSE EXECUTION ACCURACY
SGT 4524.1 SGR 1652.6 SG3 1266.1
RRT .9646 RRF -.9932 RTF -.9660
SGB 4816.5 R23 -.2033 R13 -.9726
SG1 4798.9 SG2 411.0 THA 19.56

ORBIT DETERMINATION ACCURACY
ST 2084.5 SR 825.8 SS 2493.5
CRT .9867 CRS .9917 CST .9992
LSA 3350.8 MSA 126.8 SSA 28.6
EL1 2238.6 EL2 124.8 ALF 21.42

LAUNCH DATE OCT 18 1964 FLIGHT TIME 256.00 ARRIVAL DATE JUL 1 1965

HELIOCENTRIC CONIC DISTANCE 608.982 EARTH TO MARS

RL 149.02 LAL .00 LOL 24.65 VL 32.973 GAL -6.04 AZL 90.98 HCA 196.18 SMA 191.24 ECC .24350 INC .9770 V1 29.900
RP 235.06 LAP .27 LOP 220.83 VP 20.862 GAP 4.86 AZP 89.06 TAL 328.33 TAP 164.52 RCA 144.68 APO 237.81 V2 23.387
RC 201.544 GL -7.67 GP 12.35 ZAL 135.42 ZAP 144.52 ETS 160.70 ZAE 165.20 ETE 63.11 ZAC 101.33 ETC 255.67 CLP 146.47

PLANETOCENTRIC CONIC

C3 17.567 VHL 4.191 DLA .49 RAL 159.20 RAD 6567.7 VEL 11.788 PTH 2.08 VHP 4.695 DPA 9.45 RAP 192.39 ECC 1.2891

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 5 56	2199.11	-19.19	40.50	18.52	111.23	20 42 36	1599.1	-16.14	33.16
90.00	8 15 11	4812.71	18.43	207.55	18.31	68.11	9 35 23	4212.7	15.30	200.27
100.00	21 27 31	1935.99	-20.18	20.73	18.09	112.53	21 59 47	1336.0	-16.96	13.43
100.00	9 36 18	4551.06	19.42	187.87	17.87	66.82	10 52 9	3951.1	16.11	180.64
110.00	22 36 17	1720.74	-22.84	3.10	16.80	116.15	23 4 58	1120.7	-19.14	355.92
110.00	10 44 1	4339.08	22.06	170.47	16.56	63.20	11 56 20	3739.1	18.29	163.37

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.2512 TRA-2.7243 TC3 2.1715 BAU .5782 SGT 4484.4 SGR 1621.0 SG3 1330.6 ST 2043.8 SR 805.1 SS 2501.8
RDE .5400 RRA -.7801 RC3 1.1599 FAU .23361 RRT .9636 RRF -.9921 RTF -.9664 CRT .9856 CRS .9895 CST .9995
FDE-3.8333 FRA 7.8985 FC-11.5125 BSP 16518 SGB 4768.4 R23 -.1982 R13 -.9729 LSA 3326.7 MSA 127.0 SSA 30.9
BDE 1.3628 BRA 2.8338 BC3 2.4618 FSP 4313 SG1 4750.8 SG2 409.2 THA 19.35 EL1 2193.0 EL2 126.8 ALF 21.29

LAUNCH DATE OCT 18 1964 FLIGHT TIME 258.00 ARRIVAL DATE JUL 3 1965

HELIOCENTRIC CONIC DISTANCE 612.670 EARTH TO MARS

RL 149.02 LAL .00 LOL 24.65 VL 32.953 GAL -5.98 AZL 90.82 HCA 197.16 SMA 190.89 ECC .24172 INC .8167 V1 29.900
RP 234.71 LAP .24 LOP 221.81 VP 20.873 GAP 4.47 AZP 89.22 TAL 328.51 TAP 165.68 RCA 144.75 APO 237.03 V2 23.424
RC 203.699 GL -6.48 GP 11.94 ZAL 135.31 ZAP 143.71 ETS 161.85 ZAE 165.96 ETE 66.30 ZAC 100.93 ETC 255.69 CLP 145.48

PLANETOCENTRIC CONIC

C3 17.149 VHL 4.141 DLA 1.69 RAL 159.40 RAD 6567.7 VEL 11.770 PTH 2.08 VHP 4.588 DPA 9.09 RAP 192.20 ECC 1.2822

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 57 51	2230.81	-19.96	42.51	18.63	110.51	20 35 2	1630.8	-16.99	35.10
90.00	8 24 55	4769.85	17.32	204.89	17.91	67.24	9 44 25	4169.8	14.09	197.71
100.00	21 19 59	1965.89	-20.95	22.62	18.22	111.82	21 52 45	1365.9	-17.81	15.24
100.00	9 45 29	4510.00	18.30	185.34	17.47	65.94	11 0 39	3910.0	14.89	178.20
110.00	22 30 2	1746.63	-23.61	4.72	16.96	115.47	22 59 8	1146.6	-19.98	357.45
110.00	10 51 55	4302.03	20.91	168.21	16.12	62.32	12 3 37	3702.0	17.04	161.22

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.2034 TRA-2.6657 TC3 2.1942 BAU .5695 SGT 4437.4 SGR 1595.5 SG3 1396.8 ST 2000.2 SR 788.0 SS 2510.5
RDE .5221 RRA -.7552 RC3 1.1650 FAU .24328 RRT .9624 RRF -.9909 RTF -.9667 CRT .9843 CRS .9871 CST .9996
FDE-3.8486 FRA 8.2225 FC-12.2818 BSP 16404 SGB 4715.5 R23 -.1934 R13 -.9730 LSA 3302.5 MSA 129.9 SSA 32.5
BDE 1.3118 BRA 2.7706 BC3 2.4843 FSP 4551 SG1 4697.7 SG2 409.5 THA 19.24 EL1 2145.9 EL2 129.6 ALF 21.28

LAUNCH DATE OCT 18 1964 FLIGHT TIME 260.00 ARRIVAL DATE JUL 5 1965

HELIOCENTRIC CONIC DISTANCE 616.372 EARTH TO MARS

RL 149.02 LAL .00 LOL 24.65 VL 32.935 GAL -5.91 AZL 90.67 HCA 198.15 SMA 190.56 ECC .24002 INC .6721 V1 29.900
RP 234.35 LAP .21 LOP 222.80 VP 20.885 GAP 4.08 AZP 89.36 TAL 328.69 TAP 166.83 RCA 144.82 APO 236.29 V2 23.461
RC 205.837 GL -5.38 GP 11.58 ZAL 135.17 ZAP 142.85 ETS 162.91 ZAE 166.65 ETE 70.09 ZAC 100.57 ETC 255.71 CLP 144.45

PLANETOCENTRIC CONIC

C3 16.770 VHL 4.095 DLA 2.80 RAL 159.58 RAD 6567.7 VEL 11.754 PTH 2.07 VHP 4.485 DPA 8.78 RAP 192.01 ECC 1.2760

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 50 20	2259.99	-20.64	44.38	18.74	109.82	20 28 0	1660.0	-17.76	36.89
90.00	8 33 51	4730.39	16.27	202.48	17.57	66.50	9 52 41	4130.4	12.95	195.37
100.00	21 12 59	1993.41	-21.64	24.38	18.34	111.14	21 46 12	1393.4	-18.57	16.92
100.00	9 53 53	4472.21	17.23	183.04	17.12	65.19	11 8 25	3872.2	13.75	175.98
110.00	22 24 13	1770.43	-24.30	6.22	17.11	114.82	22 53 44	1170.4	-20.75	358.88
110.00	10 59 8	4267.95	19.82	166.17	15.75	61.56	12 10 16	3667.9	15.86	159.28

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.1623 TRA-2.6006 TC3 2.2185 BAU .5628 SGT 4383.7 SGR 1576.4 SG3 1465.6 ST 1960.1 SR 775.7 SS 2525.3
RDE .5084 RRA -.7327 RC3 1.1747 FAU .25372 RRT .9614 RRF -.9897 RTF -.9671 CRT .9832 CRS .9845 CST .9997
FDE-3.8799 FRA 8.5426 FC-13.0980 BSP 16154 SGB 4658.6 R23 -.1879 R13 -.9733 LSA 3286.5 MSA 134.4 SSA 33.5
BDE 1.2686 BRA 2.7019 BC3 2.5103 FSP 4775 SG1 4640.5 SG2 409.6 THA 19.23 EL1 2103.8 EL2 131.8 ALF 21.35

LAUNCH DATE OCT 18 1964 FLIGHT TIME 262.00 ARRIVAL DATE JUL 7 1965

HELIOCENTRIC CONIC DISTANCE 620.209 EARTH TO MARS

RL 149.02 LAL .00 LOL 24.65 VL 32.917 GAL -5.83 AZL 90.54 HCA 199.14 SMA 190.24 ECC .23830 INC .5413 V1 29.900
RP 233.98 LAP .18 LOP 223.79 VP 20.899 GAP 3.68 AZP 89.49 TAL 328.92 TAP 168.05 RCA 144.90 APO 235.57 V2 23.498
RC 207.958 GL -4.39 GP 11.28 ZAL 134.93 ZAP 141.86 ETS 163.89 ZAE 167.25 ETE 74.77 ZAC 100.25 ETC 255.73 CLP 143.32

PLANETOCENTRIC CONIC

C3 16.386 VHL 4.048 DLA 3.85 RAL 159.65 RAD 6567.7 VEL 11.738 PTH 2.07 VHP 4.380 DPA 8.56 RAP 191.76 ECC 1.2697

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 42 47	2287.30	-21.26	46.14	18.72	109.15	20 20 55	1687.3	-18.46	38.59
90.00	8 41 57	4692.45	15.22	200.18	17.15	65.83	10 0 9	4092.5	11.83	193.14
100.00	21 5 56	2019.12	-22.26	26.03	18.33	110.48	21 39 35	1419.1	-19.27	18.51
100.00	10 1 30	4435.86	16.18	180.85	16.69	64.52	11 15 25	3835.9	12.62	173.87
110.00	22 18 19	1792.60	-24.92	7.64	17.14	114.19	22 48 11	1192.6	-21.44	.22
110.00	11 5 36	4235.15	18.74	164.23	15.30	60.88	12 16 11	3635.1	14.72	157.43

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.8946 TRA-1.7727 TC3 4.1362 BAU .9609 SGT 4972.8 SGR 1685.1 SG3 1627.8 ST 2787.6 SR 895.5 SS 3009.0
RDE .6066 RRA -.5921 RC3 1.4598 FAU .32081 RRT .9991 RRF -.9897 RTF -.9849 CRT .9999 CRS .9916 CST .9900
FDE-5.1344 FRA 7.5206 FC-16.9498 BSP 4041 SGB 5250.6 R23 -.1321 R13 -.9854 LSA 4188.1 MSA 294.3 SSA 2.0
BDE 1.9894 BRA 1.8689 BC3 4.3863 FSP 2362 SG1 5250.2 SG2 66.2 THA 18.71 EL1 2927.9 EL2 10.0 ALF 17.81

LAUNCH DATE OCT 18 1964 FLIGHT TIME 264.00 ARRIVAL DATE JUL 9 1965

HELIOCENTRIC CONIC DISTANCE 623.812 EARTH TO MARS

RL 149.02 LAL .00 LOL 24.65 VL 32.900 GAL -5.79 AZL 90.42 HCA 200.13 SMA 189.93 ECC .23685 INC .4227 V1 29.900
RP 233.62 LAP .15 LOP 224.78 VP 20.915 GAP 3.33 AZP 89.60 TAL 329.01 TAP 169.14 RCA 144.95 APO 234.92 V2 23.536
RC 210.060 GL -3.46 GP 10.97 ZAL 134.86 ZAP 140.95 ETS 164.77 ZAE 167.75 ETE 79.53 ZAC 99.94 ETC 255.75 CLP 142.28

PLANETOCENTRIC CONIC

C3 16.113 VHL 4.014 DLA 4.76 RAL 159.87 RAD 6567.6 VEL 11.726 PTH 2.07 VHP 4.291 DPA 8.30 RAP 191.58 ECC 1.2652

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 36 46	2312.17	-21.81	47.76	18.93	108.52	20 15 18	1712.2	-19.08	40.15
90.00	8 49 43	4659.93	14.31	198.23	17.01	65.30	10 7 23	4059.9	10.86	191.25
100.00	21 0 21	2042.57	-22.81	27.56	18.56	109.86	21 34 23	1442.6	-19.90	19.97
100.00	10 8 49	4404.76	15.26	179.00	16.54	63.98	11 22 14	3804.8	11.64	172.08
110.00	22 13 44	1812.91	-25.48	8.95	17.39	113.59	22 43 57	1212.9	-22.07	1.46
110.00	11 11 56	4207.19	17.81	162.60	15.14	60.33	12 22 3	3607.2	13.72	155.87

DIFFERENTIAL CORRECTIONS
TDE 1.0715 TRA-2.4764 TC3 2.2073 BAU .5407
RDE .4869 RRA -.6988 RC3 1.1954 FAU .27468
FDE-3.9394 FRA 9.2276 FC-14.7580 BSP 15883
BDE 1.1769 BRA 2.5731 BC3 2.5102 FSP 5290

MID-COURSE EXECUTION ACCURACY
SGT 4249.7 SGR 1551.0 SG3 1608.7
RRT .9578 RRF -.9871 RTF -.9665
SGB 4523.9 R23 -.1816 R13 -.9730
SG1 4504.3 SG2 420.5 THA 19.44

ORBIT DETERMINATION ACCURACY
ST 1863.9 SR 757.6 SS 2554.0
CRT .9800 CRS .9787 CST .9997
LSA 3247.7 MSA 149.8 SSA 34.4
EL1 2007.1 EL2 139.9 ALF 21.83

LAUNCH DATE OCT 18 1964 FLIGHT TIME 266.00 ARRIVAL DATE JUL 11 1965

HELIOCENTRIC CONIC DISTANCE 627.553 EARTH TO MARS

RL 149.02 LAL .00 LOL 24.65 VL 32.884 GAL -5.73 AZL 90.32 HCA 201.12 SMA 189.64 ECC .23538 INC .3150 V1 29.900
RP 233.25 LAP .11 LOP 225.77 VP 20.932 GAP 2.96 AZP 89.71 TAL 329.16 TAP 170.28 RCA 145.01 APO 234.28 V2 23.574
RC 212.144 GL -2.60 GP 10.72 ZAL 134.68 ZAP 139.92 ETS 165.60 ZAE 168.12 ETE 85.18 ZAC 99.66 ETC 255.76 CLP 141.15

PLANETOCENTRIC CONIC

C3 15.825 VHL 3.978 DLA 5.64 RAL 159.99 RAD 6567.6 VEL 11.714 PTH 2.06 VHP 4.198 DPA 8.13 RAP 191.35 ECC 1.2604

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 30 34	2335.71	-22.31	49.30	19.02	107.90	20 9 30	1735.7	-19.66	41.64
90.00	8 56 51	4628.21	13.39	196.35	16.78	64.82	10 13 59	4028.2	9.89	189.42
100.00	20 54 35	2064.74	-23.32	29.01	18.66	109.26	21 29 0	1464.7	-20.48	21.36
100.00	10 15 32	4374.42	14.35	177.21	16.31	63.49	11 28 26	3774.4	10.67	170.35
110.00	22 8 57	1832.03	-26.00	10.20	17.52	113.02	22 39 29	1232.0	-22.65	2.64
110.00	11 17 39	4179.89	16.88	161.03	14.89	59.82	12 27 19	3579.9	12.74	154.36

DIFFERENTIAL CORRECTIONS
TDE 1.0345 TRA-2.4041 TC3 2.2042 BAU .5321
RDE .4799 RRA -.6846 RC3 1.2106 FAU .28610
FDE-3.9856 FRA 9.5730 FC-15.6510 BSP 15550
BDE 1.1404 BRA 2.4997 BC3 2.5148 FSP 5540

MID-COURSE EXECUTION ACCURACY
SGT 4171.5 SGR 1545.1 SG3 1684.2
RRT .9568 RRF -.9858 RTF -.9666
SGB 4448.5 R23 -.1765 R13 -.9732
SG1 4428.3 SG2 423.4 THA 19.70

ORBIT DETERMINATION ACCURACY
ST 1819.9 SR 752.9 SS 2574.3
CRT .9790 CRS .9757 CST .9996
LSA 3237.2 MSA 158.5 SSA 34.3
EL1 1964.4 EL2 142.0 ALF 22.17

LAUNCH DATE OCT 18 1964 FLIGHT TIME 268.00 ARRIVAL DATE JUL 13 1965

HELIOCENTRIC CONIC DISTANCE 631.304 EARTH TO MARS

RL 149.02 LAL .00 LOL 24.65 VL 32.869 GAL -5.68 AZL 90.22 HCA 202.12 SMA 189.37 ECC .23397 INC .2153 V1 29.900
RP 232.88 LAP .08 LOP 226.77 VP 20.951 GAP 2.60 AZP 89.80 TAL 329.31 TAP 171.43 RCA 145.06 APO 233.68 V2 23.612
RC 214.210 GL -1.79 GP 10.49 ZAL 134.50 ZAP 138.85 ETS 166.38 ZAE 168.35 ETE 91.33 ZAC 99.40 ETC 255.78 CLP 139.97

PLANETOCENTRIC CONIC

C3 15.562 VHL 3.945 DLA 6.46 RAL 160.09 RAD 6567.6 VEL 11.702 PTH 2.06 VHP 4.109 DPA 8.00 RAP 191.09 ECC 1.2561

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 24 44	2357.83	-22.77	50.77	19.11	107.31	20 4 2	1757.8	-20.18	43.04
90.00	9 3 33	4598.48	12.53	194.60	16.58	64.40	10 20 11	3998.5	8.98	187.71
100.00	20 49 9	2085.[illegible]	-23.78	30.38	18.76	108.67	21 23 55	1485.5	-21.01	22.68
100.00	10 21 49	434[illegible].00	13.48	175.55	16.10	63.06	11 34 15	3746.0	9.76	168.73
110.00	22 4 26	1849.95	-26.47	11.38	17.64	112.46	22 35 16	1249.9	-23.19	3.75
110.00	11 23 1	4154.36	16.00	159.57	14.67	59.38	12 32 15	3554.4	11.82	152.96

DIFFERENTIAL CORRECTIONS
TDE .9960 TRA-2.3310 TC3 2.1850 BAU .5214
RDE .4744 RRA -.6727 RC3 1.2271 FAU .29783
FDE-4.0348 FRA 9.9280 FC-16.5689 BSP 15241
BDE 1.1032 BRA 2.4261 BC3 2.5060 FSP 5801

MID-COURSE EXECUTION ACCURACY
SGT 4083.4 SGR 1542.4 SG3 1761.9
RRT .9552 RRF -.9845 RTF -.9663
SGB 4365.0 R23 -.1728 R13 -.9731
SG1 4343.8 SG2 429.0 THA 20.04

ORBIT DETERMINATION ACCURACY
ST 1772.1 SR 750.0 SS 2595.5
CRT .9779 CRS .9726 CST .9994
LSA 3226.4 MSA 168.2 SSA 34.0
EL1 1918.8 EL2 144.9 ALF 22.62

LAUNCH DATE OCT 18 1964 FLIGHT TIME 270.00 ARRIVAL DATE JUL 15 1965

HELIOCENTRIC CONIC DISTANCE 635.068 EARTH TO MARS

RL 149.02 LAL .00 LOL 24.65 VL 32.854 GAL -5.63 AZL 90.13 HCA 203.12 SMA 189.11 ECC .23264 INC .1247 V1 29.900
RP 232.51 LAP .05 LOP 227.77 VP 20.971 GAP 2.24 AZP 89.88 TAL 329.45 TAP 172.56 RCA 145.12 APO 233.10 V2 23.650
RC 216.258 GL -1.05 GP 10.29 ZAL 134.32 ZAP 137.72 ETS 167.10 ZAE 168.41 ETE 97.86 ZAC 99.16 ETC 255.80 CLP 138.76

PLANETOCENTRIC CONIC

C3 15.319 VHL 3.914 DLA 7.23 RAL 160.19 RAD 6567.6 VEL 11.692 PTH 2.06 VHP 4.023 DPA 7.90 RAP 190.82 ECC 1.2521

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 19 12	2378.69	-23.18	52.15	19.20	106.73	19 58 51	1778.7	-20.67	44.38
90.00	9 9 51	4570.55	11.70	192.96	16.41	64.03	10 26 1	3970.5	8.11	186.12
100.00	20 44 0	2105.16	-24.20	31.69	18.85	108.11	21 19 6	1505.2	-21.50	23.93
100.00	10 27 44	4319.31	12.65	174.00	15.92	62.69	11 39 43	3719.3	8.89	167.23
110.00	22 0 10	1866.81	-26.90	12.50	17.76	111.93	22 31 17	1266.8	-23.69	4.81
110.00	11 28 3	4130.42	15.17	158.22	14.48	58.99	12 36 54	3530.4	10.94	151.66

DIFFERENTIAL CORRECTIONS
TDE .9567 TRA-2.2568 TC3 2.1501 BAU .5087
RDE .4697 RRA -.6632 RC3 1.2440 FAU .30964
FDE-4.0822 FRA10.2986 FC-17.4990 BSP 14939
BDE 1.0658 BRA 2.3522 BC3 2.4841 FSP 6081

MID-COURSE EXECUTION ACCURACY
SGT 3985.5 SGR 1542.3 SG3 1841.5
RRT .9535 RRF -.9832 RTF -.9657
SGB 4273.6 R23 -.1699 R13 -.9729
SG1 4251.3 SG2 436.0 THA 20.48

ORBIT DETERMINATION ACCURACY
ST 1721.0 SR 748.2 SS 2616.4
CRT .9767 CRS .9693 CST .9992
LSA 3214.7 MSA 178.7 SSA 33.7
EL1 1870.8 EL2 147.7 ALF 23.16

LAUNCH DATE OCT 18 1964 FLIGHT TIME 272.00 ARRIVAL DATE JUL 17 1965

HELIOCENTRIC CONIC DISTANCE 638.842 EARTH TO MARS

RL 149.02 LAL .00 LOL 24.65 VL 32.840 GAL -5.58 AZL 90.04 HCA 204.12 SMA 188.86 ECC .23137 INC .0396 V1 29.900
RP 232.14 LAP .02 LOP 228.77 VP 20.993 GAP 1.89 AZP 89.96 TAL 329.57 TAP 173.70 RCA 145.16 APO 232.56 V2 23.689
RC 218.287 GL -.35 GP 10.10 ZAL 134.14 ZAP 136.55 ETS 167.78 ZAE 168.29 ETE 104.57 ZAC 98.93 ETC 255.82 CLP 137.51

PLANETOCENTRIC CONIC

C3 15.096 VHL 3.885 DLA 7.95 RAL 160.28 RAD 6567.6 VEL 11.683 PTH 2.05 VHP 3.940 DPA 7.83 RAP 190.52 ECC 1.2484

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 13 57	2398.42	-23.56	53.47	19.29	106.17	19 53 56	1798.4	-21.12	45.65
90.00	9 15 49	4544.23	10.91	191.43	16.27	63.71	10 31 33	3944.2	7.29	184.62
100.00	20 39 8	2123.70	-24.58	32.93	18.95	107.56	21 14 32	1523.7	-21.95	25.12
100.00	10 33 19	4294.19	11.86	172.55	15.77	62.36	11 44 53	3694.2	8.07	165.82
110.00	21 56 8	1882.73	-27.30	13.56	17.88	111.41	22 27 31	1282.7	-24.15	5.82
110.00	11 32 48	4107.92	14.37	156.96	14.31	58.65	12 41 16	3507.9	10.12	150.44

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .9169 TRA-2.1803 TC3 2.1042 BAU .4952 SGT 3878.2 SGR 1545.1 SG3 1923.5 ST 1667.1 SB 747.8 SS 2638.4
RDE .4662 RRA -.6553 RC3 1.2624 FAU .32183 RRT .9515 RRF -.9819 RTF -.9649 CRT .9755 CRS .9659 CST .9989
FDE-4.1329 FRA10.6786 FC-18.4561 BSP 14620 SGB 4174.7 R23 -.1676 R13 -.9726 LSA 3203.5 MSA 189.4 SSA 33.4
BDE 1.0287 BRA 2.2766 BC3 2.4539 FSP 6370 SG1 4151.0 SG2 444.2 THA 21.01 EL1 1821.0 EL2 150.6 ALF 23.81

LAUNCH DATE OCT 18 1964 FLIGHT TIME 274.00 ARRIVAL DATE JUL 19 1965

HELIOCENTRIC CONIC DISTANCE 642.628 EARTH TO MARS

RL 149.02 LAL .00 LOL 24.65 VL 32.827 GAL -5.53 AZL 89.96 HCA 205.13 SMA 188.63 ECC .23017 INC .0350 V1 29.900
RP 231.76 LAP -.02 LOP 229.78 VP 21.016 GAP 1.54 AZP 90.03 TAL 329.70 TAP 174.82 RCA 145.21 APO 232.04 V2 23.728
RC 220.299 GL .31 GP 9.93 ZAL 133.97 ZAP 135.34 ETS 168.42 ZAE 167.99 ETE 111.24 ZAC 98.70 ETC 255.84 CLP 136.23

PLANETOCENTRIC CONIC

C3 14.891 VHL 3.859 DLA 8.63 RAL 160.36 RAD 6567.6 VEL 11.674 PTH 2.05 VHP 3.859 DPA 7.80 RAP 190.20 ECC 1.2451

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 8 59	2417.15	-23.91	54.74	19.38	105.64	19 49 16	1817.2	-21.54	46.87
90.00	9 21 28	4519.38	10.16	189.99	16.14	63.43	10 36 47	3919.4	6.51	183.22
100.00	20 34 31	2141.27	-24.94	34.11	19.05	107.04	21 10 12	1541.3	-22.37	26.26
100.00	10 38 37	4270.49	11.11	171.20	15.64	62.07	11 49 47	3670.5	7.29	164.49
110.00	21 52 19	1897.80	-27.67	14.58	18.00	110.92	22 23 57	1297.8	-24.58	6.78
110.00	11 37 18	4086.73	13.62	155.78	14.17	58.34	12 45 25	3486.7	9.33	149.30

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .8787 TRA-2.0996 TC3 2.0468 BAU .4808 SGT 3760.3 SGR 1550.3 SG3 2007.8 ST 1612.3 SR 748.9 SS 2662.6
RDE .4640 RRA -.6488 RC3 1.2824 FAU .33442 RRT .9494 RRF -.9806 RTF -.9638 CRT .9745 CRS .9626 CST .9985
FDE-4.1901 FRA11.0651 FC-19.4425 BSP 14250 SGB 4067.4 R23 -.1658 R13 -.9721 LSA 3195.1 MSA 200.5 SSA 33.1
BDE .9937 BRA 2.1976 BC3 2.4153 FSP 6660 SG1 4042.0 SG2 453.1 THA 21.66 EL1 1771.1 EL2 152.9 ALF 24.55

LAUNCH DATE OCT 18 1964 FLIGHT TIME 276.00 ARRIVAL DATE JUL 21 1965

HELIOCENTRIC CONIC DISTANCE 646.425 EARTH TO MARS

RL 149.02 LAL .00 LOL 24.65 VL 32.814 GAL -5.49 AZL 89.89 HCA 206.14 SMA 188.40 ECC .22904 INC .1081 V1 29.900
RP 231.38 LAP -.05 LOP 230.79 VP 21.041 GAP 1.20 AZP 90.10 TAL 329.81 TAP 175.95 RCA 145.25 APO 231.56 V2 23.768
RC 222.292 GL .94 GP 9.78 ZAL 133.80 ZAP 134.07 ETS 169.02 ZAE 167.50 ETE 117.67 ZAC 98.48 ETC 255.86 CLP 134.90

PLANETOCENTRIC CONIC

C3 14.703 VHL 3.834 DLA 9.27 RAL 160.45 RAD 6567.6 VEL 11.666 PTH 2.05 VHP 3.782 DPA 7.79 RAP 189.85 ECC 1.2420

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 4 15	2434.96	-24.23	55.94	19.47	105.11	19 44 50	1835.0	-21.92	48.03
90.00	9 26 51	4495.89	9.44	188.64	16.04	63.18	10 41 47	3895.9	5.76	181.89
100.00	20 30 7	2157.98	-25.27	35.25	19.15	106.53	21 6 5	1558.0	-22.76	27.35
100.00	10 43 40	4248.10	10.39	169.92	15.54	61.81	11 54 28	3648.1	6.54	163.25
110.00	21 48 42	1912.10	-28.02	15.55	18.12	110.43	22 20 34	1312.1	-24.98	7.70
110.00	11 41 35	4066.75	12.90	154.68	14.06	58.07	12 49 21	3466.8	8.59	148.23

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .8405 TRA-2.0159 TC3 1.9767 BAU .4654 SGT 3632.0 SGR 1557.6 SG3 2094.0 ST 1554.9 SR 751.0 SS 2687.5
RDE .4625 RRA -.6436 RC3 1.3032 FAU .34730 RRT .9470 RRF -.9794 RTF -.9624 CRT .9737 CRS .9592 CST .9980
FDE-4.2496 FRA11.4609 FC-20.4504 BSP 13848 SGB 3951.9 R23 -.1647 R13 -.9715 LSA 3187.3 MSA 211.7 SSA 32.7
BDE .9594 BRA 2.1162 BC3 2.3677 FSP 6960 SG1 3924.7 SG2 463.0 THA 22.43 EL1 1719.9 EL2 154.7 ALF 25.41

LAUNCH DATE OCT 18 1964 FLIGHT TIME 278.00 ARRIVAL DATE JUL 23 1965

HELIOCENTRIC CONIC DISTANCE 650.233 EARTH TO MARS

RL 149.02 LAL .00 LOL 24.65 VL 32.802 GAL -5.45 AZL 89.82 HCA 207.15 SMA 188.19 ECC .22796 INC .1774 V1 29.900
RP 231.01 LAP -.08 LOP 231.81 VP 21.067 GAP .87 AZP 90.16 TAL 329.91 TAP 177.07 RCA 145.29 APO 231.09 V2 23.807
RC 224.266 GL 1.52 GP 9.65 ZAL 133.63 ZAP 132.77 ETS 169.60 ZAE 166.84 ETE 123.70 ZAC 98.27 ETC 255.88 CLP 133.53

PLANETOCENTRIC CONIC

C3 14.530 VHL 3.812 DLA 9.87 RAL 160.53 RAD 6567.6 VEL 11.658 PTH 2.05 VHP 3.708 DPA 7.81 RAP 189.47 ECC 1.2391

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 59 45	2451.93	-24.53	57.10	19.57	104.61	19 40 37	1851.9	-22.28	49.15
90.00	9 32 0	4473.66	8.75	187.37	15.97	62.96	10 46 33	3873.7	5.06	180.64
100.00	20 25 57	2173.88	-25.57	36.33	19.26	106.03	21 2 11	1573.9	-23.13	28.39
100.00	10 48 28	4226.94	9.71	168.72	15.46	61.59	11 58 55	3626.9	5.84	162.07
110.00	21 45 16	1925.69	-28.34	16.48	18.25	109.97	22 17 22	1325.7	-25.35	8.57
110.00	11 45 39	4047.90	12.22	153.64	13.96	57.82	12 53 7	3447.9	7.88	147.23

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .8015 TRA-1.9292 TC3 1.8927 BAU .4487 SGT 3492.4 SGR 1566.6 SG3 2182.0 ST 1494.4 SR 753.7 SS 2712.2
RDE .4616 RRA -.6399 RC3 1.3245 FAU .36036 RRT .9443 RRF -.9782 RTF -.9606 CRT .9729 CRS .9557 CST .9974
FDE-4.3080 FRA11.8686 FC-21.4717 BSP 13428 SGB 3827.7 R23 -.1642 R13 -.9708 LSA 3179.1 MSA 223.2 SSA 32.3
BDE .9250 BRA 2.0325 BC3 2.3101 FSP 7272 SG1 3798.2 SG2 474.0 THA 23.34 EL1 1666.4 EL2 156.2 ALF 26.39

LAUNCH DATE OCT 18 1964 FLIGHT TIME 280.00 ARRIVAL DATE JUL 25 1965

HELIOCENTRIC CONIC DISTANCE 654.050 EARTH TO MARS

RL 149.02 LAL .00 LOL 24.65 VL 32.790 GAL -5.42 AZL 89.76 HCA 208.17 SMA 187.99 ECC .22695 INC .2417 V1 29.900
RP 230.62 LAP -.11 LOP 232.82 VP 21.094 GAP .53 AZP 90.21 TAL 330.01 TAP 178.18 RCA 145.33 APO 230.66 V2 23.847
RC 226.222 GL 2.08 GP 9.52 ZAL 133.48 ZAP 131.41 ETS 170.15 ZAE 166.00 ETE 129.23 ZAC 98.06 ETC 255.91 CLP 132.12

PLANETOCENTRIC CONIC

C3 14.371 VHL 3.791 DLA 10.44 RAL 160.61 RAD 6567.6 VEL 11.651 PTH 2.05 VHP 3.636 DPA 7.86 RAP 189.06 ECC 1.2365

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 55 28	2468.13	-24.80	58.20	19.68	104.12	19 36 36	1868.1	-22.62	50.21
90.00	9 36 55	4452.61	8.10	186.17	15.91	62.77	10 51 7	3852.6	4.39	179.46
100.00	20 22 0	2189.05	-25.85	37.37	19.37	105.55	20 58 29	1589.0	-23.47	29.38
100.00	10 53 4	4206.92	9.06	167.59	15.40	61.39	12 3 11	3606.9	5.17	160.96
110.00	21 42 1	1938.64	-28.64	17.37	18.38	109.52	22 14 20	1338.0	-25.71	9.41
110.00	11 49 32	4030.09	11.57	152.67	13.89	57.61	12 56 42	3430.1	7.22	146.28

DIFFERENTIAL CORRECTIONS
TDE .7628 TRA-1.8394 TC3 1.7939 BAU .4309
RDE .4613 RRA -.6373 RC3 1.3463 FAU .37360
FDE-4.3683 FRA12.2861 FC-22.5055 BSP 12989
BDE .8914 BRA 1.9467 BC3 2.2429 FSP 7595

MID-COURSE EXECUTION ACCURACY
SGT 3342.1 SGR 1577.1 SG3 2271.6
RRT .9411 RRF -.9770 RTF -.9582
SGB 3695.5 R23 -.1647 R13 -.9698
SG1 3663.4 SG2 486.3 THA 24.40

ORBIT DETERMINATION ACCURACY
ST 1431.7 SR 757.2 SS 2737.7
CRT .9724 CRS .9522 CST .9967
LSA 3172.1 MSA 234.8 SSA 32.0
EL1 1612.0 EL2 157.0 ALF 27.50

LAUNCH DATE OCT 18 1964 FLIGHT TIME 282.00 ARRIVAL DATE JUL 27 1965

HELIOCENTRIC CONIC DISTANCE 657.879 EARTH TO MARS

RL 149.02 LAL .00 LOL 24.65 VL 32.780 GAL -5.38 AZL 89.70 HCA 209.19 SMA 187.80 ECC .22599 INC .3006 V1 29.900
RP 230.24 LAP -.15 LOP 233.84 VP 21.123 GAP .21 AZP 90.26 TAL 330.09 TAP 179.28 RCA 145.36 APO 230.25 V2 23.887
RC 228.159 GL 2.61 GP 9.40 ZAL 133.33 ZAP 130.01 ETS 170.67 ZAE 165.02 ETE 134.22 ZAC 97.86 ETC 255.93 CLP 130.67

PLANETOCENTRIC CONIC

C3 14.227 VHL 3.772 DLA 10.97 RAL 160.69 RAD 6567.6 VEL 11.645 PTH 2.04 VHP 3.568 DPA 7.93 RAP 188.63 ECC 1.2341

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 51 25	2483.61	-25.06	59.27	19.79	103.64	19 32 48	1883.6	-22.93	51.24
90.00	9 41 37	4432.66	7.48	185.03	15.87	62.61	10 55 30	3832.7	3.75	178.34
100.00	20 18 15	2203.54	-26.11	38.37	19.49	105.09	20 54 59	1603.5	-23.79	30.34
100.00	10 57 28	4187.97	8.44	166.52	15.35	61.22	12 7 16	3588.0	4.53	159.91
110.00	21 38 57	1950.99	-28.91	18.22	18.52	109.08	22 11 28	1351.0	-26.04	10.22
110.00	11 53 15	4013.28	10.96	151.75	13.84	57.42	13 0 8	3413.3	6.58	145.39

DIFFERENTIAL CORRECTIONS
TDE .7250 TRA-1.7437 TC3 1.6852 BAU .4130
RDE .4620 RRA -.6351 RC3 1.3696 FAU .38736
FDE-4.4372 FRA12.7007 FC-23.5715 BSP 12468
BDE .8597 BRA 1.8557 BC3 2.1716 FSP 7908

MID-COURSE EXECUTION ACCURACY
SGT 3179.4 SGR 1589.2 SG3 2362.7
RRT .9376 RRF -.9759 RTF -.9552
SGB 3554.4 R23 -.1655 R13 -.9687
SG1 3519.2 SG2 499.1 THA 25.66

ORBIT DETERMINATION ACCURACY
ST 1367.3 SR 761.8 SS 2765.2
CRT .9722 CRS .9489 CST .9959
LSA 3167.8 MSA 246.2 SSA 31.6
EL1 1557.3 EL2 156.6 ALF 28.76

LAUNCH DATE OCT 18 1964 FLIGHT TIME 284.00 ARRIVAL DATE JUL 29 1965

HELIOCENTRIC CONIC DISTANCE 661.716 EARTH TO MARS

RL 149.02 LAL .00 LOL 24.65 VL 32.769 GAL -5.35 AZL 89.64 HCA 210.22 SMA 187.63 ECC .22510 INC .3570 V1 29.900
RP 229.86 LAP -.18 LOP 234.87 VP 21.152 GAP -.11 AZP 90.31 TAL 330.17 TAP 180.38 RCA 145.39 APO 229.86 V2 23.927
RC 230.076 GL 3.11 GP 9.30 ZAL 133.20 ZAP 128.57 ETS 171.18 ZAE 163.90 ETE 138.68 ZAC 97.65 ETC 255.96 CLP 129.18

PLANETOCENTRIC CONIC

C3 14.096 VHL 3.754 DLA 11.48 RAL 160.77 RAD 6567.6 VEL 11.640 PTH 2.04 VHP 3.502 DPA 8.03 RAP 188.16 ECC 1.2320

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 47 34	2498.42	-25.29	60.29	19.91	103.18	19 29 12	1898.4	-23.23	52.23
90.00	9 46 9	4413.76	6.88	183.96	15.86	62.46	10 59 43	3813.8	3.14	177.28
100.00	20 14 42	2217.38	-26.36	39.33	19.61	104.64	20 51 39	1617.4	-24.09	31.26
100.00	11 1 42	4170.03	7.85	165.52	15.33	61.06	12 11 12	3570.0	3.93	158.92
110.00	21 36 4	1962.78	-29.17	19.04	18.66	108.66	22 8 47	1362.8	-26.35	11.00
110.00	11 56 49	3997.40	10.37	150.89	13.81	57.25	13 3 27	3397.4	5.98	144.55

DIFFERENTIAL CORRECTIONS
TDE .6860 TRA-1.6456 TC3 1.5581 BAU .3938
RDE .4629 RRA -.6341 RC3 1.3922 FAU .40104
FDE-4.5027 FRA13.1293 FC-24.6313 BSP 11954
BDE .8275 BRA 1.7636 BC3 2.0895 FSP 8237

MID-COURSE EXECUTION ACCURACY
SGT 3005.3 SGR 1602.2 SG3 2454.9
RRT .9331 RRF -.9749 RTF -.9512
SGB 3405.7 R23 -.1676 R13 -.9673
SG1 3366.6 SG2 514.2 THA 27.13

ORBIT DETERMINATION ACCURACY
ST 1299.3 SR 766.6 SS 2792.1
CRT .9721 CRS .9455 CST .9949
LSA 3163.0 MSA 257.6 SSA 31.3
EL1 1500.6 EL2 155.6 ALF 30.20

LAUNCH DATE OCT 18 1964 FLIGHT TIME 286.00 ARRIVAL DATE JUL 31 1965

HELIOCENTRIC CONIC DISTANCE 665.565 EARTH TO MARS

RL 149.02 LAL .00 LOL 24.65 VL 32.760 GAL -5.32 AZL 89.59 HCA 211.24 SMA 187.46 ECC .22425 INC .4100 V1 29.900
RP 229.47 LAP -.21 LOP 235.90 VP 21.183 GAP -.43 AZP 90.35 TAL 330.23 TAP 181.48 RCA 145.42 APO 229.50 V2 23.968
RC 231.973 GL 3.58 GP 9.20 ZAL 133.07 ZAP 127.08 ETS 171.66 ZAE 162.65 ETE 142.63 ZAC 97.44 ETC 255.99 CLP 127.64

PLANETOCENTRIC CONIC

C3 13.977 VHL 3.739 DLA 11.96 RAL 160.86 RAD 6567.6 VEL 11.635 PTH 2.04 VHP 3.440 DPA 8.15 RAP 187.66 ECC 1.2300

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 43 55	2512.61	-25.51	61.27	20.03	102.73	19 25 47	1912.6	-23.50	53.18
90.00	9 50 30	4395.85	6.32	182.95	15.86	62.34	11 3 46	3795.8	2.57	176.28
100.00	20 11 20	2230.63	-26.58	40.25	19.75	104.21	20 48 31	1630.6	-24.37	32.15
100.00	11 5 46	4153.05	7.29	164.57	15.33	60.93	12 14 59	3553.1	3.36	157.99
110.00	21 33 21	1974.05	-29.42	19.83	18.81	108.25	22 6 15	1374.0	-26.64	11.74
110.00	12 0 15	3982.40	9.82	150.09	13.80	57.09	13 6 37	3382.4	5.42	143.76

DIFFERENTIAL CORRECTIONS
TDE .6472 TRA-1.5428 TC3 1.4185 BAU .3744
RDE .4642 RRA -.6337 RC3 1.4153 FAU .41493
FDE-4.5699 FRA13.5602 FC-25.7013 BSP 11393
BDE .7964 BRA 1.6678 BC3 2.0038 FSP 8565

MID-COURSE EXECUTION ACCURACY
SGT 2819.5 SGR 1616.0 SG3 2547.9
RRT .9278 RRF -.9738 RTF -.9462
SGB 3249.8 R23 -.1703 R13 -.9656
SG1 3206.3 SG2 530.3 THA 28.87

ORBIT DETERMINATION ACCURACY
ST 1229.0 SR 771.9 SS 2819.2
CRT .9725 CRS .9421 CST .9937
LSA 3159.3 MSA 269.1 SSA 31.0
EL1 1443.2 EL2 153.2 ALF 31.82

LAUNCH DATE OCT 18 1964 FLIGHT TIME 288.00 ARRIVAL DATE AUG 2 1965

HELIOCENTRIC CONIC DISTANCE 669.422 EARTH TO MARS

RL	149.02	LAL	.00	LOL	24.65	VL	32.750	GAL	-5.30	AZL	89.54	HCA	212.27	SMA	187.30	ECC	.22347	INC	.4600
RP	229.09	LAP	-.25	LOP	236.93	VP	21.215	GAP	-.74	AZP	90.39	TAL	330.29	TAP	182.57	RCA	145.44	APO	229.15
RC	233.848	GL	4.03	GP	9.10	ZAL	132.96	ZAP	125.54	ETS	172.13	ZAE	161.30	ETE	146.12	ZAC	97.23	ETC	256.03

PLANETOCENTRIC CONIC

C3	13.870	VHL	3.724	DLA	12.41	RAL	160.95	RAD	6567.5	VEL	11.630	PTH	2.04	VHP	3.380	DPA	8.29	RAP	187.12

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 40 28	2526.19	-25.71	62.22	20.17	102.30	19 22 34	1926.2	-23.76	54.09
90.00	9 54 42	4378.89	5.78	181.99	15.88	62.23	11 7 41	3778.9	2.02	175.33
100.00	20 8 10	2243.32	-26.79	41.13	19.89	103.78	20 45 34	1643.3	-24.63	33.00
100.00	11 9 40	4137.00	6.76	163.67	15.35	60.81	12 18 37	3537.0	2.81	157.11
110.00	21 30 47	1984.82	-29.64	20.58	18.97	107.86	22 3 52	1384.8	-26.92	12.46
110.00	12 3 33	3968.26	9.30	149.33	13.80	56.96	13 9 41	3368.3	4.88	143.02

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6084	TRA	-1.4350	TC3	1.2643	BAU	.3551	SGT	2621.5	SGR	1630.4	SG3	2641.0	ST	1156.1	SR	777.7	SS	2846.7
RDE	.4660	RRA	-.6337	RC3	1.4383	FAU	.42892	RRT	.9210	RRF	-.9728	RTF	-.9394	CRT	.9732	CRS	.9388	CST	.9921
FDE	-4.6399	FRA	13.9906	FC	-26.7729	BSP	10799	SGB	3087.2	R23	-.1737	R13	-.9637	LSA	3156.9	MSA	280.5	SSA	30.7
BDE	.7663	BRA	1.5687	BC3	1.9150	FSP	8893	SG1	3038.1	SG2	548.2	THA	30.92	EL1	1385.3	EL2	149.1	ALF	33.65

LAUNCH DATE OCT 18 1964 FLIGHT TIME 290.00 ARRIVAL DATE AUG 4 1965

HELIOCENTRIC CONIC DISTANCE 673.289 EARTH TO MARS

RL	149.02	LAL	.00	LOL	24.65	VL	32.742	GAL	-5.28	AZL	89.49	HCA	213.31	SMA	187.15	ECC	.22274	INC	.5077
RP	228.70	LAP	-.28	LOP	237.96	VP	21.248	GAP	-1.04	AZP	90.42	TAL	330.34	TAP	183.65	RCA	145.46	APO	228.83
RC	235.703	GL	4.47	GP	9.01	ZAL	132.85	ZAP	123.96	ETS	172.58	ZAE	159.84	ETE	149.20	ZAC	97.02	ETC	256.07

PLANETOCENTRIC CONIC

C3	13.774	VHL	3.711	DLA	12.83	RAL	161.05	RAD	6567.5	VEL	11.626	PTH	2.04	VHP	3.323	DPA	8.46	RAP	186.56

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 37 13	2539.20	-25.89	63.12	20.32	101.88	19 19 32	1939.2	-24.00	54.97
90.00	9 58 44	4362.86	5.27	181.09	15.93	62.14	11 11 27	3762.9	1.50	174.44
100.00	20 5 11	2255.46	-26.98	41.98	20.04	103.38	20 42 47	1655.5	-24.87	33.82
100.00	11 13 26	4121.83	6.25	162.83	15.39	60.71	12 22 8	3521.8	2.30	156.27
110.00	21 28 23	1995.12	-29.86	21.31	19.14	107.48	22 1 38	1395.1	-27.18	13.15
110.00	12 6 44	3954.93	8.80	148.61	13.83	56.84	13 12 39	3354.9	4.37	142.32

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5691	TRA	-1.3231	TC3	1.0946	BAU	.3361	SGT	2412.6	SGR	1645.1	SG3	2734.0	ST	1080.5	SR	783.6	SS	2874.0
RDE	.4681	RRA	-.6343	RC3	1.4606	FAU	.44280	RRT	.9120	RRF	-.9718	RTF	-.9303	CRT	.9744	CRS	.9356	CST	.9902
FDE	-4.7088	FRA	14.4259	FC	-27.8302	BSP	10183	SGB	2920.1	R23	-.1778	R13	-.9614	LSA	3155.2	MSA	291.9	SSA	30.3
BDE	.7369	BRA	1.4673	BC3	1.8252	FSP	9227	SG1	2864.3	SG2	568.3	THA	33.36	EL1	1327.0	EL2	143.3	ALF	35.73

LAUNCH DATE OCT 18 1964 FLIGHT TIME 292.00 ARRIVAL DATE AUG 6 1965

HELIOCENTRIC CONIC DISTANCE 677.166 EARTH TO MARS

RL	149.02	LAL	.00	LOL	24.65	VL	32.734	GAL	-5.26	AZL	89.45	HCA	214.35	SMA	187.01	ECC	.22206	INC	.5528
RP	228.31	LAP	-.31	LOP	239.00	VP	21.281	GAP	-1.35	AZP	90.46	TAL	330.38	TAP	184.72	RCA	145.48	APO	228.53
RC	237.537	GL	4.88	GP	8.93	ZAL	132.77	ZAP	122.34	ETS	173.02	ZAE	158.30	ETE	151.93	ZAC	96.81	ETC	256.11

PLANETOCENTRIC CONIC

C3	13.690	VHL	3.700	DLA	13.24	RAL	161.16	RAD	6567.5	VEL	11.622	PTH	2.04	VHP	3.270	DPA	8.64	RAP	185.96

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 34 9	2551.67	-26.07	64.00	20.47	101.48	19 16 41	1951.7	-24.22	55.81
90.00	10 2 38	4347.71	4.79	180.24	15.99	62.06	11 15 6	3747.7	1.01	173.59
100.00	20 2 24	2267.08	-27.16	42.80	20.21	102.98	20 40 11	1667.1	-25.10	34.60
100.00	11 17 5	4107.53	5.78	162.04	15.45	60.62	12 25 32	3507.5	1.82	155.49
110.00	21 26 9	2004.98	-30.06	22.01	19.32	107.11	21 59 34	1405.0	-27.42	13.81
110.00	12 9 48	3942.39	8.33	147.94	13.88	56.73	13 15 30	3342.4	3.90	141.66

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5297	TRA	-1.2066	TC3	.9091	BAU	.3183	SGT	2193.0	SGR	1659.9	SG3	2826.4	ST	1002.3	SR	789.9	SS	2901.7
RDE	.4706	RRA	-.6351	RC3	1.4824	FAU	.45667	RRT	.8997	RRF	-.9709	RTF	-.9174	CRT	.9761	CRS	.9324	CST	.9876
FDE	-4.7807	FRA	14.8573	FC	-28.8788	BSP	9557	SGB	2750.4	R23	-.1825	R13	-.9589	LSA	3155.3	MSA	303.1	SSA	30.1
BDE	.7085	BRA	1.3635	BC3	1.7390	FSP	9559	SG1	2686.0	SG2	591.6	THA	36.29	EL1	1269.0	EL2	135.5	ALF	38.08

LAUNCH DATE OCT 18 1964 FLIGHT TIME 294.00 ARRIVAL DATE AUG 8 1965

HELIOCENTRIC CONIC DISTANCE 681.051 EARTH TO MARS

RL	149.02	LAL	.00	LOL	24.65	VL	32.726	GAL	-5.24	AZL	89.40	HCA	215.39	SMA	186.87	ECC	.22143	INC	.5960
RP	227.92	LAP	-.35	LOP	240.04	VP	21.316	GAP	-1.64	AZP	90.49	TAL	330.40	TAP	185.79	RCA	145.50	APO	228.25
RC	239.350	GL	5.27	GP	8.85	ZAL	132.69	ZAP	120.67	ETS	173.45	ZAE	156.67	ETE	154.35	ZAC	96.58	ETC	256.15

PLANETOCENTRIC CONIC

C3	13.617	VHL	3.690	DLA	13.62	RAL	161.27	RAD	6567.5	VEL	11.619	PTH	2.04	VHP	3.219	DPA	8.84	RAP	185.32

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 31 17	2563.60	-26.22	64.83	20.64	101.08	19 14 1	1963.6	-24.43	56.63
90.00	10 6 24	4333.42	4.33	179.43	16.07	61.99	11 18 37	3733.4	.55	172.79
100.00	19 59 47	2278.20	-27.33	43.58	20.38	102.60	20 37 45	1678.2	-25.32	35.36
100.00	11 20 35	4094.05	5.32	161.29	15.52	60.54	12 28 49	3494.1	1.36	154.75
110.00	21 24 5	2014.40	-30.24	22.68	19.51	106.75	21 57 40	1414.4	-27.65	14.44
110.00	12 12 46	3930.62	7.89	147.31	13.95	56.63	13 18 17	3330.6	3.45	141.04

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4896	TRA	-1.0849	TC3	.7097	BAU	.3026	SGT	1963.8	SGR	1674.2	SG3	2917.2	ST	921.2	SR	796.0	SS	2927.7
RDE	.4731	RRA	-.6362	RC3	1.5030	FAU	.47028	RRT	.8824	RRF	-.9699	RTF	-.8990	CRT	.9785	CRS	.9292	CST	.9842
FDE	-4.8478	FRA	15.2867	FC	-29.8999	BSP	8905	SGB	2580.7	R23	-.1866	R13	-.9562	LSA	3155.0	MSA	314.3	SSA	29.7
BDE	.6808	BRA	1.2577	BC3	1.6621	FSP	9887	SG1	2505.7	SG2	617.5	THA	39.85	EL1	1211.1	EL2	124.9	ALF	40.74

LAUNCH DATE OCT 18 1964 FLIGHT TIME 296.00 ARRIVAL DATE AUG 10 1965

HELIOCENTRIC CONIC DISTANCE 684.946 EARTH TO MARS

RL 149.02 LAL .00 LOL 24.65 VL 32.719 GAL -5.23 AZL 89.36 HCA 216.43 SMA 186.75 ECC .22085 INC .6364 V1 29.900
RP 227.53 LAP -.38 LOP 241.08 VP 21.352 GAP -1.93 AZP 90.51 TAL 330.42 TAP 186.85 RCA 145.51 APO 227.99 V2 24.173
RC 241.142 GL 5.64 GP 8.77 ZAL 132.63 ZAP 118.96 ETS 173.87 ZAE 154.96 ETE 156.51 ZAC 96.36 ETC 256.20 CLP 119.34

PLANETOCENTRIC CONIC

C3 13.554 VHL 3.682 DLA 13.97 RAL 161.39 RAD 6567.5 VEL 11.616 PTH 2.04 VHP 3.172 DPA 9.06 RAP 184.66 ECC 1.2231

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 28 36	2575.03	-26.37	65.64	20.82	100.71	19 11 31	1975.0	-24.63	57.41
90.00	10 10 2	4319.96	3.90	178.68	16.17	61.93	11 22 1	3720.0	.12	172.04
100.00	19 57 21	2288.85	-27.49	44.34	20.57	102.24	20 35 30	1688.8	-25.52	36.08
100.00	11 23 58	4081.38	4.90	160.59	15.62	60.48	12 32 0	3481.4	.93	154.05
110.00	21 22 11	2023.42	-30.42	23.32	19.72	106.41	21 55 54	1423.4	-27.87	15.06
110.00	12 15 38	3919.58	7.48	146.73	14.03	56.55	13 20 57	3319.6	3.03	140.47

DIFFERENTIAL CORRECTIONS
TDE .4520 TRA -.9560 TC3 .5028 BAU .2910
RDE .4769 RRA -.6362 RC3 1.5255 FAU .48465
FDE-4.9389 FRA15.6857 FC-30.9570 BSP 8196
BDE .6571 BRA 1.1484 BC3 1.6062 FSP 10163

MID-COURSE EXECUTION ACCURACY
SGT 1727.1 SGR 1689.3 SG3 3007.3
RRT .8577 RRF -.9690 RTF -.8720
SGB 2415.9 R23 -.1883 R13 -.9539
SG1 2328.4 SG2 644.2 THA 44.26

ORBIT DETERMINATION ACCURACY
ST 840.6 SR 803.6 SS 2958.4
CRT .9820 CRS .9268 CST .9794
LSA 3161.9 MSA 325.2 SSA 29.3
EL1 1157.7 EL2 110.2 ALF 43.69

LAUNCH DATE OCT 18 1964 FLIGHT TIME 298.00 ARRIVAL DATE AUG 12 1965

HELIOCENTRIC CONIC DISTANCE 688.849 EARTH TO MARS

RL 149.02 LAL .00 LOL 24.65 VL 32.712 GAL -5.21 AZL 89.32 HCA 217.48 SMA 186.63 ECC .22032 INC .6757 V1 29.900
RP 227.14 LAP -.41 LOP 242.13 VP 21.388 GAP -2.22 AZP 90.54 TAL 330.42 TAP 187.91 RCA 145.51 APO 227.75 V2 24.214
RC 242.914 GL 6.00 GP 8.69 ZAL 132.58 ZAP 117.22 ETS 174.27 ZAE 153.19 ETE 158.43 ZAC 96.12 ETC 256.26 CLP 117.56

PLANETOCENTRIC CONIC

C3 13.501 VHL 3.674 DLA 14.31 RAL 161.52 RAD 6567.5 VEL 11.614 PTH 2.04 VHP 3.128 DPA 9.30 RAP 183.96 ECC 1.2222

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 26 8	2585.95	-26.51	66.41	21.02	100.34	19 9 14	1986.0	-24.81	58.15
90.00	10 13 32	4307.34	3.50	177.97	16.29	61.88	11 25 19	3707.3	-.29	171.34
100.00	19 55 6	2299.01	-27.63	45.06	20.77	101.88	20 33 25	1699.0	-25.71	36.78
100.00	11 27 15	4069.51	4.50	159.93	15.73	60.42	12 35 4	3469.5	.53	153.40
110.00	21 20 26	2032.02	-30.58	23.94	19.93	106.07	21 54 18	1432.0	-28.08	15.64
110.00	12 18 24	3909.27	7.09	146.18	14.14	56.47	13 23 33	3309.3	2.64	139.93

DIFFERENTIAL CORRECTIONS
TDE .4099 TRA -.8256 TC3 .2701 BAU .2826
RDE .4796 RRA -.6376 RC3 1.5424 FAU .49731
FDE-4.9990 FRA16.1065 FC-31.8900 BSP 7587
BDE .6308 BRA 1.0432 BC3 1.5659 FSP 10492

MID-COURSE EXECUTION ACCURACY
SGT 1487.6 SGR 1702.1 SG3 3093.3
RRT .8160 RRF -.9680 RTF -.8275
SGB 2260.5 R23 -.1870 R13 -.9520
SG1 2156.2 SG2 678.7 THA 49.70

ORBIT DETERMINATION ACCURACY
ST 753.2 SR 809.4 SS 2982.0
CRT .9855 CRS .9235 CST .9729
LSA 3162.5 MSA 335.9 SSA 29.1
EL1 1101.7 EL2 93.9 ALF 47.09

LAUNCH DATE OCT 18 1964 FLIGHT TIME 300.00 ARRIVAL DATE AUG 14 1965

HELIOCENTRIC CONIC DISTANCE 692.762 EARTH TO MARS

RL 149.02 LAL .00 LOL 24.65 VL 32.706 GAL -5.21 AZL 89.29 HCA 218.54 SMA 186.53 ECC .21984 INC .7131 V1 29.900
RP 226.75 LAP -.44 LOP 243.19 VP 21.426 GAP -2.50 AZP 90.56 TAL 330.42 TAP 188.95 RCA 145.52 APO 227.53 V2 24.256
RC 244.666 GL 6.34 GP 8.61 ZAL 132.55 ZAP 115.43 ETS 174.67 ZAE 151.36 ETE 160.17 ZAC 95.88 ETC 256.32 CLP 115.74

PLANETOCENTRIC CONIC

C3 13.458 VHL 3.668 DLA 14.63 RAL 161.66 RAD 6567.5 VEL 11.612 PTH 2.03 VHP 3.088 DPA 9.55 RAP 183.23 ECC 1.2215

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 23 50	2596.39	-26.63	67.15	21.23	99.99	19 7 7	1996.4	-24.98	58.87
90.00	10 16 55	4295.52	3.12	177.31	16.43	61.84	11 28 30	3695.5	-.67	170.68
100.00	19 53 2	2308.72	-27.77	45.75	20.98	101.54	20 31 31	1708.7	-25.89	37.45
100.00	11 30 24	4058.42	4.13	159.32	15.87	60.37	12 38 3	3458.4	.15	152.79
110.00	21 18 50	2040.25	-30.73	24.53	20.16	105.76	21 52 51	1440.2	-28.27	16.20
110.00	12 21 5	3899.66	6.73	145.67	14.26	56.41	13 26 5	3299.7	2.27	139.43

DIFFERENTIAL CORRECTIONS
TDE .3693 TRA -.6882 TC3 .0292 BAU .2807
RDE .4831 RRA -.6380 RC3 1.5600 FAU .51032
FDE-5.0753 FRA16.4950 FC-32.8289 BSP 6973
BDE .6081 BRA .9384 BC3 1.5603 FSP 10774

MID-COURSE EXECUTION ACCURACY
SGT 1251.9 SGR 1714.6 SG3 3176.8
RRT .7471 RRF -.9671 RTF -.7531
SGB 2123.0 R23 -.1769 R13 -.9519
SG1 1999.5 SG2 713.6 THA 56.58

ORBIT DETERMINATION ACCURACY
ST 666.2 SR 816.1 SS 3008.2
CRT .9900 CRS .9208 CST .9631
LSA 3168.3 MSA 346.5 SSA 28.7
EL1 1050.9 EL2 72.9 ALF 50.83

LAUNCH DATE OCT 18 1964 FLIGHT TIME 302.00 ARRIVAL DATE AUG 16 1965

HELIOCENTRIC CONIC DISTANCE 696.682 EARTH TO MARS

RL 149.02 LAL .00 LOL 24.65 VL 32.700 GAL -5.20 AZL 89.25 HCA 219.59 SMA 186.42 ECC .21941 INC .7489 V1 29.900
RP 226.36 LAP -.48 LOP 244.24 VP 21.464 GAP -2.78 AZP 90.58 TAL 330.40 TAP 189.99 RCA 145.52 APO 227.33 V2 24.297
RC 246.398 GL 6.67 GP 8.54 ZAL 132.54 ZAP 113.61 ETS 175.06 ZAE 149.47 ETE 161.73 ZAC 95.64 ETC 256.38 CLP 113.89

PLANETOCENTRIC CONIC

C3 13.425 VHL 3.664 DLA 14.92 RAL 161.80 RAD 6567.5 VEL 11.611 PTH 2.03 VHP 3.050 DPA 9.81 RAP 182.47 ECC 1.2209

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 21 44	2606.34	-26.75	67.85	21.45	99.66	19 5 11	2006.3	-25.14	59.55
90.00	10 20 11	4284.50	2.76	176.70	16.58	61.81	11 31 35	3684.5	-1.03	170.07
100.00	19 51 9	2317.98	-27.89	46.41	21.21	101.22	20 29 47	1718.0	-26.06	38.08
100.00	11 33 27	4048.09	3.78	158.75	16.02	60.33	12 40 55	3448.1	-.20	152.23
110.00	21 17 25	2048.09	-30.88	25.10	20.40	105.45	21 51 33	1448.1	-28.45	16.74
110.00	12 23 41	3890.75	6.39	145.20	14.40	56.35	13 28 32	3290.7	1.93	138.96

DIFFERENTIAL CORRECTIONS
TDE .3273 TRA -.5467 TC3 -.2271 BAU .2856
RDE .4864 RRA -.6383 RC3 1.5749 FAU .52251
FDE-5.1411 FRA16.8755 FC-33.6960 BSP 6450
BDE .5863 BRA .8404 BC3 1.5912 FSP 11056

MID-COURSE EXECUTION ACCURACY
SGT 1035.6 SGR 1725.6 SG3 3256.0
RRT .6219 RRF -.9661 RTF -.6193
SGB 2012.5 R23 -.1520 R13 -.9543
SG1 1867.8 SG2 749.3 THA 65.30

ORBIT DETERMINATION ACCURACY
ST 576.5 SR 822.1 SS 3031.3
CRT .9945 CRS .9179 CST .9478
LSA 3173.1 MSA 356.9 SSA 28.4
EL1 1002.9 EL2 49.4 ALF 55.01

LAUNCH DATE OCT 18 1964 FLIGHT TIME 304.00 ARRIVAL DATE AUG 18 1965

HELIOCENTRIC CONIC DISTANCE 700.611 EARTH TO MARS

RL	149.02	LAL	.00	LOL	24.65	VL	32.694	GAL	-5.20	AZL	89.22	HCA	220.65	SMA	186.33	ECC	.21902	INC	.7834
RP	225.97	LAP	-.51	LOP	245.30	VP	21.503	GAP	-3.05	AZP	90.59	TAL	330.37	TAP	191.02	RCA	145.52	APO	227.14
RC	248.110	GL	6.98	GP	8.46	ZAL	132.54	ZAP	111.75	ETS	175.44	ZAE	147.52	ETE	163.15	ZAC	95.39	ETC	256.45

V1 29.900 V2 24.339 CLP 112.00

PLANETOCENTRIC CONIC

C3	13.401	VHL	3.661	DLA	15.20	RAL	161.96	RAD	6567.5	VEL	11.610	PTH	2.03	VHP	3.016	DPA	10.09	RAP	181.69

ECC 1.2206

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 19 50	2615.81	-26.85	68.53	21.68	99.34	19 3 26	2015.8	-25.29	60.21
90.00	10 23 20	4274.27	2.43	176.12	16.76	61.78	11 34 34	3674.3	-1.36	169.50
100.00	19 49 27	2326.80	-28.01	47.04	21.45	100.90	20 28 14	1726.8	-26.21	38.69
100.00	11 36 24	4038.51	3.46	158.23	16.19	60.29	12 43 43	3438.5	-.52	151.70
110.00	21 16 9	2055.56	-31.01	25.64	20.65	105.15	21 50 24	1455.6	-28.62	17.25
110.00	12 26 12	3882.52	6.08	144.77	14.56	56.30	13 30 55	3282.5	1.61	138.53

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2846	TRA	-.4001	TC3	-.4973	BAU	.2980	SGT	867.2	SGR	1734.7	SG3	3330.0	ST	486.3	SR	827.9	SS	3053.1
RDE	.4898	RRA	-.6382	RC3	1.5871	FAU	.53390	RRT	.3923	RRF	-.9650	RTF	-.3762	CRT	.9975	CRS	.9151	CST	.9221
FDE	-5.2051	FRA	17.2358	FC	-34.4904	BSP	6046	SGB	1939.4	R23	-.1059	R13	-.9592	LSA	3179.3	MSA	367.0	SSA	28.1
BDE	.5665	BRA	.7532	BC3	1.6632	FSP	11322	SG1	1776.0	SG2	779.2	THA	76.20	EL1	959.7	EL2	29.4	ALF	59.60

LAUNCH DATE OCT 18 1964 FLIGHT TIME 306.00 ARRIVAL DATE AUG 20 1965

HELIOCENTRIC CONIC DISTANCE 704.548 EARTH TO MARS

RL	149.02	LAL	.00	LOL	24.65	VL	32.689	GAL	-5.20	AZL	89.18	HCA	221.71	SMA	186.24	ECC	.21868	INC	.8163
RP	225.58	LAP	-.54	LOP	246.36	VP	21.542	GAP	-3.32	AZP	90.61	TAL	330.33	TAP	192.05	RCA	145.51	APO	226.97
RC	249.803	GL	7.28	GP	8.38	ZAL	132.55	ZAP	109.86	ETS	175.82	ZAE	145.53	ETE	164.44	ZAC	95.13	ETC	256.52

V1 29.900 V2 24.381 CLP 110.08

PLANETOCENTRIC CONIC

C3	13.387	VHL	3.659	DLA	15.45	RAL	162.13	RAD	6567.5	VEL	11.609	PTH	2.03	VHP	2.985	DPA	10.37	RAP	180.87

ECC 1.2203

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 18 8	2624.81	-26.95	69.17	21.94	99.03	19 1 53	2024.8	-25.43	60.83
90.00	10 26 22	4264.81	2.13	175.60	16.95	61.76	11 37 27	3664.8	-1.66	168.97
100.00	19 47 57	2335.18	-28.11	47.64	21.71	100.61	20 26 52	1735.2	-26.36	39.27
100.00	11 39 15	4029.68	3.16	157.74	16.38	60.26	12 46 24	3429.7	-.82	151.22
110.00	21 15 2	2062.67	-31.14	26.16	20.92	104.87	21 49 25	1462.7	-28.78	17.74
110.00	12 28 38	3874.96	5.80	144.37	14.74	56.25	13 33 13	3275.0	1.32	138.14

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2411	TRA	-.2489	TC3	-.7798	BAU	.3181	SGT	794.8	SGR	1742.2	SG3	3398.7	ST	396.9	SR	833.4	SS	3073.4
RDE	.4933	RRA	-.6376	RC3	1.5969	FAU	.54452	RRT	.0316	RRF	-.9639	RTF	.0014	CRT	.9938	CRS	.9123	CST	.8752
FDE	-5.2654	FRA	17.5758	FC	-35.2130	BSP	5809	SGB	1914.9	R23	-.0398	R13	-.9636	LSA	3186.7	MSA	376.9	SSA	27.8
BDE	.5491	BRA	.6845	BC3	1.7771	FSP	11572	SG1	1742.4	SG2	794.3	THA	88.96	EL1	922.2	EL2	39.8	ALF	64.62

LAUNCH DATE OCT 18 1964 FLIGHT TIME 308.00 ARRIVAL DATE AUG 22 1965

HELIOCENTRIC CONIC DISTANCE 708.492 EARTH TO MARS

RL	149.02	LAL	.00	LOL	24.65	VL	32.684	GAL	-5.20	AZL	89.15	HCA	222.78	SMA	186.16	ECC	.21839	INC	.8480
RP	225.19	LAP	-.58	LOP	247.43	VP	21.582	GAP	-3.59	AZP	90.62	TAL	330.28	TAP	193.06	RCA	145.51	APO	226.82
RC	251.477	GL	7.57	GP	8.30	ZAL	132.59	ZAP	107.94	ETS	176.18	ZAE	143.49	ETE	165.62	ZAC	94.86	ETC	256.60

V1 29.900 V2 24.423 CLP 108.14

PLANETOCENTRIC CONIC

C3	13.383	VHL	3.658	DLA	15.69	RAL	162.30	RAD	6567.5	VEL	11.609	PTH	2.03	VHP	2.958	DPA	10.66	RAP	180.04

ECC 1.2203

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 16 38	2633.34	-27.04	69.78	22.20	98.74	19 0 31	2033.3	-25.56	61.42
90.00	10 29 18	4256.15	1.85	175.11	17.17	61.74	11 40 14	3656.2	-1.94	168.48
100.00	19 46 38	2343.11	-28.21	48.21	21.98	100.32	20 25 41	1743.1	-26.50	39.82
100.00	11 41 59	4021.61	2.89	157.30	16.59	60.23	12 49 1	3421.6	-1.10	150.77
110.00	21 14 6	2069.41	-31.25	26.65	21.21	104.60	21 48 36	1469.4	-28.93	18.21
110.00	12 31 0	3868.08	5.54	144.00	14.94	56.21	13 35 28	3268.1	1.06	137.78

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1933	TRA	-.0955	TC3	-1.0854	BAU	.3456	SGT	864.0	SGR	1745.2	SG3	3458.7	ST	307.2	SR	835.8	SS	3082.5
RDE	.4947	RRA	-.6385	RC3	1.5977	FAU	.55192	RRT	-.3531	RRF	-.9626	RTF	.3964	CRT	.9667	CRS	.9080	CST	.7797
FDE	-5.2712	FRA	17.9421	FC	-35.7033	BSP	5827	SGB	1947.4	R23	.0340	R13	-.9639	LSA	3185.1	MSA	386.3	SSA	27.9
BDE	.5311	BRA	.6456	BC3	1.9315	FSP	11905	SG1	1778.5	SG2	793.2	THA	102.42	EL1	887.4	EL2	74.0	ALF	70.30

LAUNCH DATE OCT 18 1964 FLIGHT TIME 310.00 ARRIVAL DATE AUG 24 1965

HELIOCENTRIC CONIC DISTANCE 712.446 EARTH TO MARS

RL	149.02	LAL	.00	LOL	24.65	VL	32.680	GAL	-5.21	AZL	89.12	HCA	223.85	SMA	186.09	ECC	.21813	INC	.8787
RP	224.80	LAP	-.61	LOP	248.50	VP	21.623	GAP	-3.85	AZP	90.63	TAL	330.22	TAP	194.07	RCA	145.50	APO	226.68
RC	253.132	GL	7.84	GP	8.21	ZAL	132.64	ZAP	105.99	ETS	176.54	ZAE	141.42	ETE	166.70	ZAC	94.59	ETC	256.68

V1 29.900 V2 24.465 CLP 106.16

PLANETOCENTRIC CONIC

C3	13.388	VHL	3.659	DLA	15.91	RAL	162.49	RAD	6567.5	VEL	11.609	PTH	2.03	VHP	2.935	DPA	10.96	RAP	179.18

ECC 1.2203

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 15 19	2641.42	-27.12	70.35	22.48	98.46	18 59 20	2041.4	-25.67	61.98
90.00	10 32 7	4248.21	1.59	174.67	17.40	61.72	11 42 55	3648.2	-2.20	168.04
100.00	19 45 29	2350.64	-28.30	48.75	22.27	100.05	20 24 40	1750.6	-26.62	40.35
100.00	11 44 38	4014.23	2.64	156.89	16.82	60.21	12 51 32	3414.2	-1.35	150.37
110.00	21 13 19	2075.81	-31.36	27.11	21.50	104.35	21 47 55	1475.8	-29.08	18.66
110.00	12 33 17	3861.82	5.30	143.67	15.16	56.18	13 37 39	3261.8	.82	137.45

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1509	TRA	.0670	TC3	-1.3803	BAU	.3790	SGT	1043.1	SGR	1749.8	SG3	3515.3	ST	240.5	SR	842.1	SS	3104.6
RDE	.4995	RRA	-.6351	RC3	1.6057	FAU	.56208	RRT	-.6109	RRF	-.9614	RTF	.6626	CRT	.8572	CRS	.9061	CST	.5659
FDE	-5.3551	FRA	18.1926	FC	-36.3480	BSP	6000	SGB	2037.1	R23	.0792	R13	-.9629	LSA	3201.2	MSA	395.8	SSA	27.3
BDE	.5218	BRA	.6386	BC3	2.1175	FSP	12045	SG1	1887.8	SG2	765.4	THA	114.24	EL1	867.5	EL2	120.2	ALF	75.97

LAUNCH DATE OCT 18 1964 FLIGHT TIME 312.00 ARRIVAL DATE AUG 26 1965

HELIOCENTRIC CONIC DISTANCE 716.408 EARTH TO MARS

RL 149.02 LAL .00 LOL 24.65 VL 32.676 GAL -5.21 AZL 89.09 HCA 224.93 SMA 186.02 ECC .21793 INC .9083 V1 29.900
RP 224.41 LAP -.64 LOP 249.58 VP 21.665 GAP -4.10 AZP 90.64 TAL 330.14 TAP 195.07 RCA 145.48 APO 226.56 V2 24.506
RC 254.766 GL 8.10 GP 8.12 ZAL 132.70 ZAP 104.03 ETS 176.89 ZAE 139.31 ETE 167.70 ZAC 94.31 ETC 256.77 CLP 104.17

PLANETOCENTRIC CONIC

C3 13.402 VHL 3.661 DLA 16.11 RAL 162.69 RAD 6567.5 VEL 11.610 PTH 2.03 VHP 2.914 DPA 11.26 RAP 178.30 ECC 1.2206

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 14 12	2649.04	-27.20	70.90	22.78	98.20	18 58 21	2049.0	-25.78	62.52
90.00	10 34 49	4241.04	1.36	174.27	17.65	61.71	11 45 31	3641.0	-2.43	167.64
100.00	19 44 31	2357.74	-28.38	49.26	22.57	99.79	20 23 49	1757.7	-26.74	40.84
100.00	11 47 11	4007.58	2.41	156.52	17.06	60.20	12 53 58	3407.6	-1.57	150.00
110.00	21 12 42	2081.87	-31.47	27.56	21.82	104.10	21 47 24	1481.9	-29.21	19.08
110.00	12 35 30	3856.22	5.09	143.38	15.40	56.15	13 39 46	3256.2	.61	137.16

DIFFERENTIAL CORRECTIONS
TDE .1067 TRA .2329 TC3-1.6881 BAU .4178
RDE .5036 RRA -.6315 RC3 1.6086 FAU .57039
FDE-5.4207 FRA18.4270 FC-36.8473 BSP 6431
BDE .5148 BRA .6731 BC3 2.3318 FSP 12187

MID-COURSE EXECUTION ACCURACY
SGT 1303.6 SGR 1751.2 SG3 3563.4
RRT -.7510 RRF -.9601 RTF .8057
SGB 2183.2 R23 .1008 R13 -.9634
SG1 2056.4 SG2 733.1 THA 124.13

ORBIT DETERMINATION ACCURACY
ST 205.5 SR 847.2 SS 3122.0
CRT .5467 CRS .9039 CST .1419
LSA 3215.9 MSA 405.1 SSA 26.9
EL1 855.0 EL2 170.5 ALF 82.13

LAUNCH DATE OCT 18 1964 FLIGHT TIME 314.00 ARRIVAL DATE AUG 28 1965

HELIOCENTRIC CONIC DISTANCE 720.377 EARTH TO MARS

RL 149.02 LAL .00 LOL 24.65 VL 32.672 GAL -5.23 AZL 89.06 HCA 226.01 SMA 185.96 ECC .21776 INC .9369 V1 29.900
RP 224.02 LAP -.67 LOP 250.65 VP 21.707 GAP -4.36 AZP 90.65 TAL 330.05 TAP 196.06 RCA 145.46 APO 226.45 V2 24.548
RC 256.380 GL 8.35 GP 8.03 ZAL 132.78 ZAP 102.04 ETS 177.24 ZAE 137.17 ETE 168.62 ZAC 94.03 ETC 256.86 CLP 102.16

PLANETOCENTRIC CONIC

C3 13.425 VHL 3.664 DLA 16.30 RAL 162.90 RAD 6567.5 VEL 11.611 PTH 2.03 VHP 2.898 DPA 11.57 RAP 177.41 ECC 1.2209

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 13 17	2656.20	-27.27	71.41	23.09	97.95	18 57 33	2056.2	-25.89	63.02
90.00	10 37 26	4234.64	1.16	173.91	17.91	61.70	11 48 0	3634.6	-2.63	167.28
100.00	19 43 45	2364.42	-28.46	49.74	22.88	99.55	20 23 10	1764.4	-26.85	41.31
100.00	11 49 38	4001.65	2.21	156.20	17.33	60.18	12 56 20	3401.7	-1.77	149.68
110.00	21 12 14	2087.58	-31.56	27.97	22.14	103.87	21 47 2	1487.6	-29.33	19.48
110.00	12 37 38	3851.26	4.90	143.12	15.65	56.13	13 41 50	3251.3	.42	136.90

DIFFERENTIAL CORRECTIONS
TDE .0607 TRA .4024 TC3-2.0051 BAU .4612
RDE .5072 RRA -.6275 RC3 1.6069 FAU .57701
FDE-5.4677 FRA18.6404 FC-37.2102 BSP 7073
BDE .5109 BRA .7455 BC3 2.5696 FSP 12324

MID-COURSE EXECUTION ACCURACY
SGT 1611.8 SGR 1749.6 SG3 3602.9
RRT -.8246 RRF -.9586 RTF .8803
SGB 2378.8 R23 .1052 R13 -.9660
SG1 2272.9 SG2 701.9 THA 132.16

ORBIT DETERMINATION ACCURACY
ST 222.7 SR 851.2 SS 3134.7
CRT .0705 CRS .9013 CST -.3646
LSA 3229.3 MSA 414.0 SSA 26.5
EL1 851.3 EL2 222.1 ALF 88.87

LAUNCH DATE OCT 18 1964 FLIGHT TIME 316.00 ARRIVAL DATE AUG 30 1965

HELIOCENTRIC CONIC DISTANCE 724.354 EARTH TO MARS

RL 149.02 LAL .00 LOL 24.65 VL 32.669 GAL -5.24 AZL 89.04 HCA 227.09 SMA 185.90 ECC .21764 INC .9644 V1 29.900
RP 223.63 LAP -.71 LOP 251.74 VP 21.749 GAP -4.61 AZP 90.66 TAL 329.95 TAP 197.04 RCA 145.44 APO 226.36 V2 24.590
RC 257.974 GL 8.59 GP 7.94 ZAL 132.88 ZAP 100.04 ETS 177.57 ZAE 135.01 ETE 169.47 ZAC 93.74 ETC 256.96 CLP 100.14

PLANETOCENTRIC CONIC

C3 13.457 VHL 3.668 DLA 16.47 RAL 163.13 RAD 6567.5 VEL 11.612 PTH 2.03 VHP 2.884 DPA 11.87 RAP 176.50 ECC 1.2215

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 12 34	2662.91	-27.33	71.89	23.42	97.71	18 56 57	2062.9	-25.98	63.48
90.00	10 39 55	4228.98	.97	173.60	18.20	61.70	11 50 24	3629.0	-2.82	166.97
100.00	19 43 11	2370.68	-28.53	50.19	23.22	99.32	20 22 41	1770.7	-26.95	41.75
100.00	11 51 59	3996.44	2.04	155.91	17.61	60.17	12 58 36	3396.4	-1.95	149.39
110.00	21 11 57	2092.96	-31.65	28.37	22.49	103.65	21 46 50	1493.0	-29.45	19.85
110.00	12 39 43	3846.93	4.74	142.89	15.93	56.11	13 43 50	3246.9	.25	136.68

DIFFERENTIAL CORRECTIONS
TDE .0137 TRA .5756 TC3-2.3280 BAU .5084
RDE .5108 RRA -.6225 RC3 1.6021 FAU .58242
FDE-5.5097 FRA18.8129 FC-37.4683 BSP 7883
BDE .5110 BRA .8478 BC3 2.8260 FSP 12430

MID-COURSE EXECUTION ACCURACY
SGT 1948.5 SGR 1745.3 SG3 3633.5
RRT -.8648 RRF -.9570 RTF .9213
SGB 2615.8 R23 .0996 R13 -.9699
SG1 2527.1 SG2 675.6 THA 138.64

ORBIT DETERMINATION ACCURACY
ST 286.6 SR 854.6 SS 3144.7
CRT -.2870 CRS .8987 CST -.6756
LSA 3243.8 MSA 422.6 SSA 26.1
EL1 859.0 EL2 273.2 ALF 96.12

LAUNCH DATE OCT 18 1964 FLIGHT TIME 318.00 ARRIVAL DATE SEP 1 1965

HELIOCENTRIC CONIC DISTANCE 728.338 EARTH TO MARS

RL 149.02 LAL .00 LOL 24.65 VL 32.666 GAL -5.26 AZL 89.01 HCA 228.17 SMA 185.85 ECC .21756 INC .9913 V1 29.900
RP 223.24 LAP -.74 LOP 252.82 VP 21.792 GAP -4.85 AZP 90.66 TAL 329.84 TAP 198.02 RCA 145.42 APO 226.29 V2 24.632
RC 259.547 GL 8.81 GP 7.84 ZAL 133.00 ZAP 98.03 ETS 177.90 ZAE 132.83 ETE 170.27 ZAC 93.45 ETC 257.06 CLP 98.11

PLANETOCENTRIC CONIC

C3 13.499 VHL 3.674 DLA 16.62 RAL 163.36 RAD 6567.5 VEL 11.614 PTH 2.04 VHP 2.875 DPA 12.17 RAP 175.59 ECC 1.2222

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 12 3	2669.17	-27.39	72.34	23.77	97.50	18 56 32	2069.2	-26.06	63.92
90.00	10 42 18	4224.08	.82	173.32	18.50	61.69	11 52 43	3624.1	-2.97	166.69
100.00	19 42 47	2376.54	-28.59	50.62	23.57	99.11	20 22 24	1776.5	-27.04	42.16
100.00	11 54 15	3991.94	1.88	155.67	17.91	60.16	13 0 47	3391.9	-2.10	149.14
110.00	21 11 49	2098.01	-31.73	28.74	22.85	103.45	21 46 47	1498.0	-29.55	20.21
110.00	12 41 43	3843.24	4.60	142.70	16.22	56.09	13 45 46	3243.2	.11	136.48

DIFFERENTIAL CORRECTIONS
TDE -.0340 TRA .7523 TC3-2.6553 BAU .5589
RDE .5142 RRA -.6167 RC3 1.5932 FAU .58623
FDE-5.5414 FRA18.9534 FC-37.5961 BSP 8830
BDE .5153 BRA .9728 BC3 3.0966 FSP 12515

MID-COURSE EXECUTION ACCURACY
SGT 2304.1 SGR 1738.0 SG3 3654.7
RRT -.8879 RRF -.9552 RTF .9452
SGB 2886.1 R23 .0902 R13 -.9741
SG1 2810.7 SG2 655.5 THA 143.92

ORBIT DETERMINATION ACCURACY
ST 375.7 SR 857.2 SS 3151.5
CRT -.4819 CRS .8959 CST -.8193
LSA 3259.0 MSA 431.0 SSA 25.7
EL1 879.1 EL2 321.0 ALF 103.80

LAUNCH DATE OCT 18 1964 FLIGHT TIME 320.00 ARRIVAL DATE SEP 3 1965

HELIOCENTRIC CONIC DISTANCE 732.330 EARTH TO MARS

RL 149.02 LAL .00 LOL 24.65 VL 32.663 GAL -5.28 AZL 88.98 HCA 229.26 SMA 185.81 ECC .21753 INC 1.0172 V1 29.900
RP 222.85 LAP -.77 LOP 253.91 VP 21.835 GAP -5.09 AZP 90.66 TAL 329.72 TAP 198.98 RCA 145.39 APO 226.22 V2 24.674
RC 261.100 GL 9.03 GP 7.74 ZAL 133.13 ZAP 96.02 ETS 178.22 ZAE 130.64 ETE 171.00 ZAC 93.16 ETC 257.16 CLP 96.07

PLANETOCENTRIC CONIC

C3 13.551 VHL 3.681 DLA 16.75 RAL 163.61 RAD 6567.5 VEL 11.616 PTH 2.04 VHP 2.869 DPA 12.47 RAP 174.68 ECC 1.2230

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 11 44	2674.97	-27.44	72.76	24.13	97.29	18 56 19	2075.0	-26.14	64.33
90.00	10 44 35	4219.92	.68	173.09	18.83	61.69	11 54 55	3619.9	-3.11	166.46
100.00	19 42 35	2381.98	-28.65	51.01	23.93	98.91	20 22 17	1782.0	-27.12	42.54
100.00	11 56 25	3988.15	1.75	155.46	18.23	60.15	13 2 53	3388.2	-2.23	148.94
110.00	21 11 50	2102.73	-31.80	29.09	23.22	103.25	21 46 53	1502.7	-29.65	20.54
110.00	12 43 39	3840.17	4.48	142.54	16.53	56.08	13 47 39	3240.2	-.01	136.32

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.0827 TRA .9320 TC3-2.9848 BAU .6119 SGT 2672.1 SGR 1728.1 SG3 3666.5 ST 476.9 SR 859.4 SS 3156.1
RDE .5175 RRA -.6099 RC3 1.5809 FAU .58865 RRT -.9016 RRF -.9533 RTF .9601 CRT -.5885 CRS .8932 CST -.8881
FDE-5.5688 FRA19.0527 FC-37.6085 BSP 9869 SGB 3182.2 R23 .0799 R13 -.9780 LSA 3276.2 MSA 439.0 SSA 25.3
BDE .5241 BRA 1.1138 BC3 3.3776 FSP 12564 SG1 3117.0 SG2 641.0 THA 148.26 EL1 913.4 EL2 362.8 ALF 111.67

LAUNCH DATE OCT 18 1964 FLIGHT TIME 322.00 ARRIVAL DATE SEP 5 1965

HELIOCENTRIC CONIC DISTANCE 736.328 EARTH TO MARS

RL 149.02 LAL .00 LOL 24.65 VL 32.661 GAL -5.30 AZL 88.96 HCA 230.36 SMA 185.77 ECC .21753 INC 1.0424 V1 29.900
RP 222.47 LAP -.80 LOP 255.00 VP 21.879 GAP -5.33 AZP 90.67 TAL 329.58 TAP 199.94 RCA 145.36 APO 226.18 V2 24.716
RC 262.633 GL 9.23 GP 7.63 ZAL 133.28 ZAP 94.00 ETS 178.53 ZAE 128.44 ETE 171.69 ZAC 92.86 ETC 257.27 CLP 94.03

PLANETOCENTRIC CONIC

C3 13.611 VHL 3.689 DLA 16.87 RAL 163.87 RAD 6567.5 VEL 11.619 PTH 2.04 VHP 2.866 DPA 12.77 RAP 173.76 ECC 1.2240

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 11 37	2680.34	-27.48	73.14	24.51	97.10	18 56 17	2080.3	-26.21	64.71
90.00	10 46 46	4216.51	.57	172.90	19.17	61.69	11 57 2	3616.5	-3.22	166.27
100.00	19 42 34	2387.02	-28.70	51.38	24.32	98.72	20 22 21	1787.0	-27.20	42.90
100.00	11 58 30	3985.06	1.65	155.29	18.57	60.15	13 4 55	3385.1	-2.33	148.77
110.00	21 12 2	2107.12	-31.87	29.41	23.61	103.07	21 47 9	1507.1	-29.74	20.85
110.00	12 45 31	3837.72	4.39	142.41	16.86	56.07	13 49 29	3237.7	-.10	136.20

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.1322 TRA 1.1148 TC3-3.3144 BAU .6670 SGT 3049.0 SGR 1715.6 SG3 3668.8 ST 584.9 SR 861.2 SS 3158.7
RDE .5210 RRA -.6019 RC3 1.5657 FAU .58980 RRT -.9097 RRF -.9512 RTF .9699 CRT -.6506 CRS .8906 CST -.9240
FDE-5.5934 FRA19.1075 FC-37.5136 BSP 10978 SGB 3498.5 R23 .0702 R13 -.9815 LSA 3295.5 MSA 446.8 SSA 24.9
BDE .5375 BRA 1.2669 BC3 3.6656 FSP 12579 SG1 3441.1 SG2 631.2 THA 151.86 EL1 962.1 EL2 397.6 ALF 119.32

LAUNCH DATE OCT 18 1964 FLIGHT TIME 324.00 ARRIVAL DATE SEP 7 1965

HELIOCENTRIC CONIC DISTANCE 740.334 EARTH TO MARS

RL 149.02 LAL .00 LOL 24.65 VL 32.659 GAL -5.32 AZL 88.93 HCA 231.45 SMA 185.73 ECC .21758 INC 1.0670 V1 29.900
RP 222.08 LAP -.83 LOP 256.10 VP 21.923 GAP -5.56 AZP 90.66 TAL 329.43 TAP 200.89 RCA 145.32 APO 226.14 V2 24.758
RC 264.145 GL 9.42 GP 7.53 ZAL 133.45 ZAP 91.98 ETS 178.83 ZAE 126.23 ETE 172.34 ZAC 92.57 ETC 257.38 CLP 92.00

PLANETOCENTRIC CONIC

C3 13.682 VHL 3.699 DLA 16.97 RAL 164.14 RAD 6567.5 VEL 11.622 PTH 2.04 VHP 2.867 DPA 13.05 RAP 172.85 ECC 1.2252

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 11 42	2685.25	-27.52	73.50	24.91	96.93	18 56 28	2085.3	-26.28	65.05
90.00	10 48 50	4213.84	.49	172.75	19.53	61.69	11 59 4	3613.8	-3.30	166.12
100.00	19 42 45	2391.65	-28.75	51.71	24.72	98.55	20 22 37	1791.7	-27.27	43.22
100.00	12 0 28	3982.68	1.57	155.16	18.92	60.14	13 6 51	3382.7	-2.42	148.64
110.00	21 12 23	2111.21	-31.93	29.72	24.02	102.90	21 47 34	1511.2	-29.83	21.14
110.00	12 47 20	3835.89	4.32	142.31	17.21	56.06	13 51 16	3235.9	-.17	136.10

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.1825 TRA 1.3005 TC3-3.6424 BAU .7238 SGT 3431.7 SGR 1700.3 SG3 3661.3 ST 696.9 SR 862.0 SS 3156.8
RDE .5240 RRA -.5932 RC3 1.5467 FAU .58928 RRT -.9145 RRF -.9488 RTF .9766 CRT -.6897 CRS .8878 CST -.9450
FDE-5.6030 FRA19.1268 FC-37.2880 BSP 12147 SGB 3829.8 R23 .0619 R13 -.9843 LSA 3314.7 MSA 454.4 SSA 24.4
BDE .5549 BRA 1.4294 BC3 3.9572 FSP 12565 SG1 3778.5 SG2 624.8 THA 154.89 EL1 1023.8 EL2 424.9 ALF 126.37

LAUNCH DATE OCT 18 1964 FLIGHT TIME 326.00 ARRIVAL DATE SEP 9 1965

HELIOCENTRIC CONIC DISTANCE 744.347 EARTH TO MARS

RL 149.02 LAL .00 LOL 24.65 VL 32.657 GAL -5.35 AZL 88.91 HCA 232.55 SMA 185.70 ECC .21767 INC 1.0909 V1 29.900
RP 221.70 LAP -.87 LOP 257.20 VP 21.968 GAP -5.79 AZP 90.66 TAL 329.27 TAP 201.83 RCA 145.28 APO 226.12 V2 24.799
RC 265.639 GL 9.61 GP 7.41 ZAL 133.63 ZAP 89.97 ETS 179.13 ZAE 124.03 ETE 172.94 ZAC 92.27 ETC 257.49 CLP 89.98

PLANETOCENTRIC CONIC

C3 13.762 VHL 3.710 DLA 17.05 RAL 164.42 RAD 6567.5 VEL 11.625 PTH 2.04 VHP 2.872 DPA 13.33 RAP 171.94 ECC 1.2265

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 12 0	2689.73	-27.56	73.82	25.32	96.77	18 56 49	2089.7	-26.34	65.37
90.00	10 50 48	4211.91	.42	172.65	19.90	61.69	12 1 0	3611.9	-3.36	166.01
100.00	19 43 7	2395.90	-28.79	52.02	25.13	98.40	20 23 3	1795.9	-27.33	43.52
100.00	12 2 22	3980.99	1.51	155.06	19.30	60.14	13 8 43	3381.0	-2.47	148.54
110.00	21 12 54	2114.98	-31.99	30.00	24.44	102.75	21 48 9	1515.0	-29.90	21.40
110.00	12 49 4	3834.67	4.27	142.25	17.58	56.05	13 52 59	3234.7	-.22	136.04

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2338 TRA 1.4885 TC3-3.9674 BAU .7620 SGT 3818.0 SGR 1682.6 SG3 3644.5 ST 811.5 SR 862.6 SS 3153.5
RDE .5271 RRA -.5836 RC3 1.5246 FAU .58731 RRT -.9169 RRF -.9463 RTF .9813 CRT -.7157 CRS .8850 CST -.9581
FDE-5.6106 FRA19.1064 FC-36.9476 BSP 13351 SGB 4172.3 R23 .0550 R13 -.9867 LSA 3336.7 MSA 461.7 SSA 24.0
BDE .5766 BRA 1.5988 BC3 4.2502 FSP 12523 SG1 4125.8 SG2 621.4 THA 157.46 EL1 1097.3 EL2 445.5 ALF 132.56

LAUNCH DATE OCT 18 1964 FLIGHT TIME 328.00 ARRIVAL DATE SEP 11 1965

HELIOCENTRIC CONIC DISTANCE 748.366 EARTH TO MARS

RL	149.02	LAL	.00	LOL	24.65	VL	32.656	GAL	-5.38	AZL	88.89	HCA	233.66	SMA	185.68	ECC	.21780	INC	1.1141
RP	221.32	LAP	-.90	LOP	258.31	VP	22.012	GAP	-6.02	AZP	90.66	TAL	329.10	TAP	202.75	RCA	145.24	APO	226.12
RC	267.114	GL	9.78	GP	7.30	ZAL	133.83	ZAP	87.98	ETS	179.41	ZAE	121.83	ETE	173.50	ZAC	91.98	ETC	257.60

V1	29.900	V2	24.841	CLP	87.96														

PLANETOCENTRIC CONIC

C3	13.851	VHL	3.722	DLA	17.12	RAL	164.71	RAD	6567.5	VEL	11.629	PTH	2.04	VHP	2.880	DPA	13.60	RAP	171.05

ECC	1.2280	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	18 12 29	2693.78	-27.59	74.11	25.75	96.63	18 57 23	2093.8	-26.39	65.65							
		90.00	10 52 40	4210.72	.38	172.58	20.30	61.69	12 2 50	3610.7	-3.40	165.95							
		100.00	19 43 40	2399.75	-28.83	52.30	25.57	98.25	20 23 40	1799.7	-27.39	43.79							
		100.00	12 4 10	3979.99	1.48	155.01	19.69	60.14	13 10 30	3380.0	-2.51	148.49							
		110.00	21 13 34	2118.44	-32.04	30.25	24.88	102.60	21 48 53	1518.4	-29.97	21.65							
		110.00	12 50 45	3834.06	4.25	142.22	17.96	56.05	13 54 39	3234.1	-.24	136.00							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2858	TRA	1.6782	TC3	-4.2868	BAU	.8410	SGT	4205.2	SGR	1662.6	SG3	3618.4	ST	927.6	SR	862.6	SS	3147.4
RDE	.5302	RRA	-.5729	RC3	1.4998	FAU	.58405	RRT	-.9177	RRF	-.9435	RTF	.9848	CRT	-.7334	CRS	.8824	CST	-.9667
FDE	-5.6118	FRA	19.0420	FC	-36.5040	BSP	14583	SGB	4521.9	R23	.0495	R13	-.9886	LSA	3360.1	MSA	468.7	SSA	23.5
BDE	.6024	BRA	1.7733	BC3	4.5416	FSP	12439	SG1	4479.2	SG2	620.1	THA	159.65	EL1	1179.8	EL2	461.0	ALF	137.83

LAUNCH DATE OCT 18 1964 FLIGHT TIME 330.00 ARRIVAL DATE SEP 13 1965

HELIOCENTRIC CONIC DISTANCE 752.392 EARTH TO MARS

RL	149.02	LAL	.00	LOL	24.65	VL	32.655	GAL	-5.42	AZL	88.86	HCA	234.77	SMA	185.66	ECC	.21797	INC	1.1369
RP	220.94	LAP	-.93	LOP	259.41	VP	22.057	GAP	-6.24	AZP	90.66	TAL	328.91	TAP	203.67	RCA	145.19	APO	226.12
RC	268.570	GL	9.94	GP	7.18	ZAL	134.05	ZAP	85.99	ETS	179.68	ZAE	119.64	ETE	174.03	ZAC	91.68	ETC	257.71

V1	29.900	V2	24.883	CLP	85.96														

PLANETOCENTRIC CONIC

C3	13.951	VHL	3.735	DLA	17.18	RAL	165.02	RAD	6567.5	VEL	11.633	PTH	2.04	VHP	2.892	DPA	13.85	RAP	170.17

ECC	1.2296	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	18 13 10	2697.40	-27.62	74.37	26.20	96.50	18 58 8	2097.4	-26.43	65.91							
		90.00	10 54 25	4210.26	.37	172.55	20.71	61.69	12 4 35	3610.3	-3.42	165.92							
		100.00	19 44 24	2403.21	-28.87	52.55	26.02	98.12	20 24 27	1803.2	-27.44	44.04							
		100.00	12 5 52	3979.68	1.47	154.99	20.10	60.14	13 12 12	3379.7	-2.52	148.47							
		110.00	21 14 24	2121.61	-32.09	30.49	25.34	102.47	21 49 46	1521.6	-30.04	21.87							
		110.00	12 52 21	3834.05	4.25	142.22	18.37	56.05	13 56 16	3234.1	-.24	136.00							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3386	TRA	1.8700	TC3	-4.5998	BAU	.9008	SGT	4592.6	SGR	1640.3	SG3	3583.2	ST	1044.8	SR	862.1	SS	3138.4
RDE	.5332	RRA	-.5614	RC3	1.4720	FAU	.57927	RRT	-.9172	RRF	-.9404	RTF	.9873	CRT	-.7458	CRS	.8796	CST	-.9727
FDE	-5.6044	FRA	18.9422	FC	-35.9457	BSP	15828	SGB	4876.7	R23	.0451	R13	-.9902	LSA	3384.9	MSA	475.5	SSA	23.0
BDE	.6316	BRA	1.9525	BC3	4.8295	FSP	12331	SG1	4837.1	SG2	620.4	THA	161.55	EL1	1269.4	EL2	472.7	ALF	142.27

LAUNCH DATE OCT 18 1964 FLIGHT TIME 332.00 ARRIVAL DATE SEP 15 1965

HELIOCENTRIC CONIC DISTANCE 756.424 EARTH TO MARS

RL	149.02	LAL	.00	LOL	24.65	VL	32.654	GAL	-5.46	AZL	88.84	HCA	235.88	SMA	185.64	ECC	.21818	INC	1.1589
RP	220.56	LAP	-.96	LOP	260.53	VP	22.103	GAP	-6.46	AZP	90.65	TAL	328.70	TAP	204.59	RCA	145.14	APO	226.14
RC	270.009	GL	10.10	GP	7.06	ZAL	134.29	ZAP	84.03	ETS	179.94	ZAE	117.47	ETE	174.52	ZAC	91.40	ETC	257.82

V1	29.900	V2	24.924	CLP	83.98														

PLANETOCENTRIC CONIC

C3	14.062	VHL	3.750	DLA	17.22	RAL	165.34	RAD	6567.6	VEL	11.638	PTH	2.04	VHP	2.907	DPA	14.09	RAP	169.31

ECC	1.2314	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	18 14 3	2700.60	-27.65	74.60	26.67	96.39	18 59 4	2100.6	-26.47	66.13							
		90.00	10 56 4	4210.52	.38	172.57	21.14	61.69	12 6 15	3610.5	-3.41	165.93							
		100.00	19 45 19	2406.30	-28.90	52.78	26.49	98.01	20 25 25	1806.3	-27.49	44.26							
		100.00	12 7 30	3980.05	1.48	155.01	20.53	60.14	13 13 50	3380.1	-2.50	148.49							
		110.00	21 15 24	2124.48	-32.13	30.70	25.81	102.35	21 50 48	1524.5	-30.10	22.08							
		110.00	12 53 55	3834.64	4.27	142.25	18.79	56.05	13 57 49	3234.6	-.22	136.03							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3928	TRA	2.0625	TC3	-4.9054	BAU	.9612	SGT	4977.9	SGR	1616.4	SG3	3539.7	ST	1162.7	SR	861.3	SS	3127.5
RDE	.5363	RRA	-.5491	RC3	1.4423	FAU	.57340	RRT	-.9158	RRF	-.9371	RTF	.9893	CRT	-.7550	CRS	.8770	CST	-.9770
FDE	-5.5949	FRA	18.8006	FC	-35.3023	BSP	17076	SGB	5233.7	R23	.0417	R13	-.9914	LSA	3412.2	MSA	481.8	SSA	22.6
BDE	.6647	BRA	2.1343	BC3	5.1131	FSP	12184	SG1	5196.7	SG2	621.9	THA	163.19	EL1	1364.7	EL2	481.2	ALF	145.99

LAUNCH DATE OCT 18 1964 FLIGHT TIME 334.00 ARRIVAL DATE SEP 17 1965

HELIOCENTRIC CONIC DISTANCE 760.461 EARTH TO MARS

RL	149.02	LAL	.00	LOL	24.65	VL	32.653	GAL	-5.50	AZL	88.82	HCA	237.00	SMA	185.63	ECC	.21843	INC	1.1806
RP	220.18	LAP	-.99	LOP	261.64	VP	22.148	GAP	-6.68	AZP	90.64	TAL	328.49	TAP	205.49	RCA	145.08	APO	226.17
RC	271.430	GL	10.24	GP	6.93	ZAL	134.54	ZAP	82.09	ETS	180.20	ZAE	115.31	ETE	174.99	ZAC	91.11	ETC	257.93

V1	29.900	V2	24.965	CLP	82.03														

PLANETOCENTRIC CONIC

C3	14.183	VHL	3.766	DLA	17.24	RAL	165.67	RAD	6567.6	VEL	11.643	PTH	2.04	VHP	2.925	DPA	14.32	RAP	168.48

ECC	1.2334	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	18 15 9	2703.36	-27.67	74.80	27.15	96.29	19 0 12	2103.4	-26.51	66.33							
		90.00	10 57 37	4211.54	.41	172.62	21.59	61.69	12 7 49	3611.5	-3.38	165.99							
		100.00	19 46 26	2409.00	-28.92	52.97	26.98	97.91	20 26 35	1809.0	-27.52	44.45							
		100.00	12 9 2	3981.14	1.52	155.07	20.98	60.14	13 15 23	3381.1	-2.47	148.55							
		110.00	21 16 33	2127.04	-32.17	30.89	26.31	102.25	21 52 0	1527.0	-30.15	22.26							
		110.00	12 55 24	3835.86	4.32	142.31	19.23	56.06	13 59 20	3235.9	-.17	136.10							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.4430	TRA	2.2635	TC3	-5.1886	BAU	1.0191	SGT	5359.9	SGR	1586.7	SG3	3484.0	ST	1279.9	SR	856.3	SS	3099.7
RDE	.5364	RRA	-.5390	RC3	1.4016	FAU	.56227	RRT	-.9138	RRF	-.9330	RTF	.9906	CRT	-.7594	CRS	.8713	CST	-.9808
FDE	-5.4971	FRA	18.7055	FC	-34.3213	BSP	18475	SGB	5589.8	R23	.0381	R13	-.9922	LSA	3426.4	MSA	488.2	SSA	22.4
BDE	.6957	BRA	2.3268	BC3	5.3746	FSP	12177	SG1	5555.1	SG2	621.8	THA	164.67	EL1	1460.5	EL2	488.2	ALF	149.26

LAUNCH DATE OCT 18 1964 FLIGHT TIME 336.00 ARRIVAL DATE SEP 19 1965

HELIOCENTRIC CONIC DISTANCE 764.507 EARTH TO MARS

RL 149.02 LAL .00 LOL 24.65 VL 32.652 GAL -5.54 AZL 88.80 HCA 238.12 SMA 185.62 ECC .21872 INC 1.2018 V1 29.900
RP 219.81 LAP -1.02 LOP 262.76 VP 22.194 GAP -6.89 AZP 90.63 TAL 328.26 TAP 206.38 RCA 145.02 APO 226.22 V2 25.006
RC 272.833 GL 10.38 GP 6.81 ZAL 134.81 ZAP 80.17 ETS 180.44 ZAE 113.18 ETE 175.42 ZAC 90.83 ETC 258.04 CLP 80.10

PLANETOCENTRIC CONIC

C3 14.314 VHL 3.783 DLA 17.25 RAL 166.01 RAD 6567.6 VEL 11.649 PTH 2.05 VHP 2.946 DPA 14.53 RAP 167.67 ECC 1.2356

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 16 25	2705.75	-27.68	74.98	27.65	96.21	19 1 31	2105.7	-26.53	66.50
90.00	10 59 4	4213.23	.47	172.72	22.06	61.69	12 9 18	3613.2	-3.32	166.09
100.00	19 47 43	2411.35	-28.94	53.15	27.48	97.82	20 27 54	1811.4	-27.56	44.62
100.00	12 10 28	3982.86	1.57	155.17	21.44	60.15	13 16 51	3382.9	-2.41	148.65
110.00	21 17 51	2129.35	-32.20	31.06	26.81	102.15	21 53 20	1529.3	-30.19	22.42
110.00	12 56 50	3837.63	4.38	142.40	19.69	56.07	14 0 47	3237.6	-.10	136.19

DIFFERENTIAL CORRECTIONS
TDE -.5010 TRA 2.4558 TC3-5.4777 BAU 1.0806
RDE .5407 RRA -.5242 RC3 1.3713 FAU .55555
FDE-5.5116 FRA18.4635 FC-33.5996 BSP 19661
BDE .7372 BRA 2.5111 BC3 5.6467 FSP 11907

MID-COURSE EXECUTION ACCURACY
SGT 5737.6 SGR 1561.4 SG3 3427.0
RRT -.9107 RRF -.9292 RTF .9919
SGB 5946.3 R23 .0365 R13 -.9932
SG1 5913.3 SG2 625.8 THA 165.92

ORBIT DETERMINATION ACCURACY
ST 1398.6 SR 856.5 SS 3090.7
CRT -.7651 CRS .8701 CST -.9829
LSA 3463.8 MSA 493.7 SSA 21.8
EL1 1564.1 EL2 493.2 ALF 151.85

LAUNCH DATE OCT 18 1964 FLIGHT TIME 338.00 ARRIVAL DATE SEP 21 1965

HELIOCENTRIC CONIC DISTANCE 768.559 EARTH TO MARS

RL 149.02 LAL .00 LOL 24.65 VL 32.652 GAL -5.59 AZL 88.78 HCA 239.24 SMA 185.62 ECC .21905 INC 1.2226 V1 29.900
RP 219.44 LAP -1.05 LOP 263.89 VP 22.239 GAP -7.10 AZP 90.63 TAL 328.02 TAP 207.26 RCA 144.96 APO 226.28 V2 25.047
RC 274.220 GL 10.51 GP 6.68 ZAL 135.09 ZAP 78.28 ETS 180.67 ZAE 111.06 ETE 175.83 ZAC 90.56 ETC 258.14 CLP 78.20

PLANETOCENTRIC CONIC

C3 14.457 VHL 3.802 DLA 17.24 RAL 166.36 RAD 6567.6 VEL 11.655 PTH 2.05 VHP 2.971 DPA 14.72 RAP 166.89 ECC 1.2379

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 17 53	2707.73	-27.70	75.12	28.17	96.14	19 3 1	2107.7	-26.56	66.64
90.00	11 0 26	4215.64	.54	172.85	22.54	61.69	12 10 41	3615.6	-3.25	166.22
100.00	19 49 10	2413.35	-28.96	53.29	28.00	97.75	20 29 24	1813.4	-27.59	44.76
100.00	12 11 50	3985.25	1.66	155.30	21.92	60.15	13 18 15	3385.3	-2.33	148.78
110.00	21 19 18	2131.38	-32.23	31.21	27.34	102.06	21 54 49	1531.4	-30.23	22.57
110.00	12 58 12	3839.99	4.47	142.53	20.17	56.08	14 2 12	3240.0	-.01	136.31

DIFFERENTIAL CORRECTIONS
TDE -.5590 TRA 2.6501 TC3-5.7522 BAU 1.1414
RDE .5443 RRA -.5095 RC3 1.3374 FAU .54689
FDE-5.5002 FRA18.2100 FC-32.7496 BSP 20863
BDE .7802 BRA 2.6986 BC3 5.9056 FSP 11652

MID-COURSE EXECUTION ACCURACY
SGT 6109.6 SGR 1534.0 SG3 3362.3
RRT -.9070 RRF -.9251 RTF .9928
SGB 6299.2 R23 .0353 R13 -.9939
SG1 6267.7 SG2 629.6 THA 167.04

ORBIT DETERMINATION ACCURACY
ST 1516.6 SR 855.4 SS 3075.9
CRT -.7688 CRS .8683 CST -.9846
LSA 3499.1 MSA 499.2 SSA 21.2
EL1 1668.7 EL2 497.2 ALF 154.09

LAUNCH DATE OCT 18 1964 FLIGHT TIME 340.00 ARRIVAL DATE SEP 23 1965

HELIOCENTRIC CONIC DISTANCE 772.616 EARTH TO MARS

RL 149.02 LAL .00 LOL 24.65 VL 32.652 GAL -5.64 AZL 88.76 HCA 240.37 SMA 185.62 ECC .21943 INC 1.2428 V1 29.900
RP 219.07 LAP -1.08 LOP 265.01 VP 22.285 GAP -7.31 AZP 90.61 TAL 327.76 TAP 208.13 RCA 144.89 APO 226.34 V2 25.088
RC 275.589 GL 10.63 GP 6.55 ZAL 135.39 ZAP 76.43 ETS 180.89 ZAE 108.98 ETE 176.22 ZAC 90.29 ETC 258.25 CLP 76.34

PLANETOCENTRIC CONIC

C3 14.611 VHL 3.822 DLA 17.22 RAL 166.73 RAD 6567.6 VEL 11.662 PTH 2.05 VHP 2.999 DPA 14.90 RAP 166.14 ECC 1.2405

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 19 33	2709.32	-27.71	75.23	28.71	96.08	19 4 42	2109.3	-26.58	66.75
90.00	11 1 41	4218.76	.64	173.03	23.04	61.69	12 12 0	3618.8	-3.14	166.40
100.00	19 50 49	2415.00	-28.98	53.41	28.54	97.68	20 31 4	1815.0	-27.61	44.88
100.00	12 13 6	3988.31	1.76	155.47	22.42	60.15	13 19 34	3388.3	-2.22	148.95
110.00	21 20 54	2133.14	-32.25	31.35	27.88	101.99	21 56 27	1533.1	-30.27	22.69
110.00	12 59 30	3842.94	4.58	142.68	20.66	56.09	14 3 33	3242.9	.10	136.47

DIFFERENTIAL CORRECTIONS
TDE -.6183 TRA 2.8454 TC3-6.0135 BAU 1.2019
RDE .5477 RRA -.4947 RC3 1.3016 FAU .53699
FDE-5.4786 FRA17.9364 FC-31.8175 BSP 22052
BDE .8260 BRA 2.8881 BC3 6.1527 FSP 11386

MID-COURSE EXECUTION ACCURACY
SGT 6475.5 SGR 1505.6 SG3 3291.6
RRT -.9028 RRF -.9205 RTF .9936
SGB 6648.3 R23 .0343 R13 -.9945
SG1 6618.0 SG2 633.5 THA 168.03

ORBIT DETERMINATION ACCURACY
ST 1634.8 SR 853.8 SS 3058.4
CRT -.7716 CRS .8664 CST -.9860
LSA 3535.7 MSA 504.1 SSA 20.7
EL1 1775.2 EL2 500.2 ALF 156.03

LAUNCH DATE OCT 18 1964 FLIGHT TIME 342.00 ARRIVAL DATE SEP 25 1965

HELIOCENTRIC CONIC DISTANCE 776.678 EARTH TO MARS

RL 149.02 LAL .00 LOL 24.65 VL 32.653 GAL -5.69 AZL 88.74 HCA 241.50 SMA 185.62 ECC .21984 INC 1.2628 V1 29.900
RP 218.70 LAP -1.11 LOP 266.15 VP 22.331 GAP -7.52 AZP 90.60 TAL 327.49 TAP 208.99 RCA 144.81 APO 226.43 V2 25.128
RC 276.940 GL 10.74 GP 6.42 ZAL 135.71 ZAP 74.61 ETS 181.10 ZAE 106.93 ETE 176.58 ZAC 90.03 ETC 258.34 CLP 74.51

PLANETOCENTRIC CONIC

C3 14.777 VHL 3.844 DLA 17.19 RAL 167.10 RAD 6567.6 VEL 11.669 PTH 2.05 VHP 3.031 DPA 15.06 RAP 165.43 ECC 1.2432

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 21 23	2710.53	-27.72	75.32	29.26	96.04	19 6 34	2110.5	-26.59	66.84
90.00	11 2 50	4222.58	.77	173.24	23.56	61.69	12 13 13	3622.6	-3.02	166.61
100.00	19 52 37	2416.31	-28.99	53.51	29.09	97.64	20 32 54	1816.3	-27.63	44.97
100.00	12 14 17	3992.04	1.89	155.67	22.94	60.16	13 20 49	3392.0	-2.10	149.15
110.00	21 22 39	2134.64	-32.27	31.46	28.43	101.93	21 58 13	1534.6	-30.30	22.80
110.00	13 0 45	3846.47	4.72	142.87	21.18	56.10	14 4 52	3246.5	.24	136.65

DIFFERENTIAL CORRECTIONS
TDE -.6780 TRA 3.0424 TC3-6.2584 BAU 1.2614
RDE .5508 RRA -.4800 RC3 1.2636 FAU .52568
FDE-5.4431 FRA17.6493 FC-30.7969 BSP 23244
BDE .8736 BRA 3.0800 BC3 6.3847 FSP 11123

MID-COURSE EXECUTION ACCURACY
SGT 6834.0 SGR 1476.0 SG3 3215.0
RRT -.8981 RRF -.9155 RTF .9942
SGB 6991.5 R23 .0337 R13 -.9950
SG1 6962.4 SG2 637.2 THA 168.93

ORBIT DETERMINATION ACCURACY
ST 1752.1 SR 851.6 SS 3037.5
CRT -.7732 CRS .8641 CST -.9872
LSA 3572.4 MSA 508.9 SSA 20.2
EL1 1882.1 EL2 502.7 ALF 157.73

LAUNCH DATE OCT 18 1964 FLIGHT TIME 344.00 ARRIVAL DATE SEP 27 1965

HELIOCENTRIC CONIC DISTANCE 780.746 EARTH TO MARS
RL 149.02 LAL .00 LOL 24.65 VL 32.653 GAL -5.75 AZL 88.72 HCA 242.64 SMA 185.63 ECC .22030 INC 1.2823 V1 29.900
RP 218.34 LAP -1.14 LOP 267.28 VP 22.377 GAP -7.72 AZP 90.59 TAL 327.21 TAP 209.85 RCA 144.73 APO 226.52 V2 25.168
RC 278.273 GL 10.84 GP 6.30 ZAL 136.04 ZAP 72.82 ETS 181.29 ZAE 104.91 ETE 176.91 ZAC 89.78 ETC 258.44 CLP 72.71

PLANETOCENTRIC CONIC
C3 14.956 VHL 3.867 DLA 17.14 RAL 167.49 RAD 6567.6 VEL 11.676 PTH 2.05 VHP 3.065 DPA 15.20 RAP 164.75 ECC 1.2461

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 23 25	2711.37	-27.72	75.38	29.84	96.01	19 8 36	2111.4	-26.60	66.90
90.00	11 3 54	4227.10	.91	173.49	24.10	61.70	12 14 21	3627.1	-2.88	166.86
100.00	19 54 36	2417.29	-29.00	53.58	29.66	97.60	20 34 54	1817.3	-27.64	45.04
100.00	12 15 24	3996.41	2.03	155.91	23.48	60.17	13 22 0	3396.4	-1.95	149.39
110.00	21 24 32	2135.90	-32.29	31.55	29.01	101.87	22 0 8	1535.9	-30.32	22.89
110.00	13 1 57	3850.57	4.87	143.08	21.71	56.12	14 6 7	3250.6	.39	136.87

DIFFERENTIAL CORRECTIONS
TDE -.7388 TRA 3.2403 TC3-6.4876 BAU 1.3201
RDE .5539 RRA -.4652 RC3 1.2246 FAU .51347
FDE-5.4005 FRA17.3421 FC-29.7231 BSP 24419
BDE .9234 BRA 3.2735 BC3 6.6022 FSP 10851

MID-COURSE EXECUTION ACCURACY
SGT 7184.4 SGR 1445.9 SG3 3133.7
RRT -.8928 RRF -.9102 RTF .9947
SGB 7328.4 R23 .0333 R13 -.9954
SG1 7300.4 SG2 641.0 THA 169.73

ORBIT DETERMINATION ACCURACY
ST 1868.8 SR 849.1 SS 3014.3
CRT -.7743 CRS .8619 CST -.9881
LSA 3610.4 MSA 513.3 SSA 19.7
EL1 1989.6 EL2 504.7 ALF 159.22

LAUNCH DATE OCT 18 1964 FLIGHT TIME 346.00 ARRIVAL DATE SEP 29 1965

HELIOCENTRIC CONIC DISTANCE 784.819 EARTH TO MARS
RL 149.02 LAL .00 LOL 24.65 VL 32.654 GAL -5.81 AZL 88.70 HCA 243.77 SMA 185.64 ECC .22080 INC 1.3016 V1 29.900
RP 217.98 LAP -1.17 LOP 268.42 VP 22.423 GAP -7.92 AZP 90.58 TAL 326.91 TAP 210.69 RCA 144.65 APO 226.63 V2 25.208
RC 279.589 GL 10.93 GP 6.17 ZAL 136.38 ZAP 71.07 ETS 181.48 ZAE 102.92 ETE 177.23 ZAC 89.54 ETC 258.53 CLP 70.96

PLANETOCENTRIC CONIC
C3 15.147 VHL 3.892 DLA 17.08 RAL 167.89 RAD 6567.6 VEL 11.685 PTH 2.06 VHP 3.102 DPA 15.33 RAP 164.11 ECC 1.2493

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 25 37	2711.86	-27.73	75.42	30.43	95.99	19 10 49	2111.9	-26.61	66.93
90.00	11 4 52	4232.29	1.08	173.78	24.65	61.70	12 15 25	3632.3	-2.71	167.15
100.00	19 56 45	2417.96	-29.00	53.63	30.25	97.57	20 37 3	1818.0	-27.65	45.08
100.00	12 16 25	4001.43	2.20	156.19	24.03	60.18	13 23 7	3401.4	-1.78	149.67
110.00	21 26 35	2136.91	-32.31	31.63	29.60	101.83	22 2 12	1536.9	-30.34	22.96
110.00	13 3 5	3855.24	5.05	143.33	22.26	56.15	14 7 20	3255.2	.57	137.11

DIFFERENTIAL CORRECTIONS
TDE -.8010 TRA 3.4389 TC3-6.7019 BAU 1.3782
RDE .5570 RRA -.4502 RC3 1.1852 FAU .50062
FDE-5.3536 FRA17.0185 FC-28.6136 BSP 25569
BDE .9756 BRA 3.4683 BC3 6.8059 FSP 10565

MID-COURSE EXECUTION ACCURACY
SGT 7526.8 SGR 1415.7 SG3 3048.7
RRT -.8870 RRF -.9045 RTF .9951
SGB 7658.8 R23 .0331 R13 -.9957
SG1 7631.6 SG2 644.7 THA 170.46

ORBIT DETERMINATION ACCURACY
ST 1984.8 SR 846.4 SS 2989.5
CRT -.7749 CRS .8598 CST -.9889
LSA 3650.3 MSA 517.4 SSA 19.3
EL1 2097.5 EL2 506.3 ALF 160.54

LAUNCH DATE OCT 18 1964 FLIGHT TIME 348.00 ARRIVAL DATE OCT 1 1965

HELIOCENTRIC CONIC DISTANCE 788.897 EARTH TO MARS
RL 149.02 LAL .00 LOL 24.65 VL 32.655 GAL -5.87 AZL 88.68 HCA 244.92 SMA 185.65 ECC .22134 INC 1.3205 V1 29.900
RP 217.62 LAP -1.20 LOP 269.56 VP 22.469 GAP -8.12 AZP 90.56 TAL 326.60 TAP 211.52 RCA 144.56 APO 226.75 V2 25.248
RC 280.887 GL 11.02 GP 6.04 ZAL 136.75 ZAP 69.36 ETS 181.66 ZAE 100.97 ETE 177.53 ZAC 89.31 ETC 258.61 CLP 69.24

PLANETOCENTRIC CONIC
C3 15.351 VHL 3.918 DLA 17.00 RAL 168.30 RAD 6567.6 VEL 11.693 PTH 2.06 VHP 3.143 DPA 15.44 RAP 163.52 ECC 1.2526

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 27 59	2712.01	-27.73	75.43	31.03	95.98	19 13 11	2112.0	-26.61	66.94
90.00	11 5 45	4238.17	1.27	174.11	25.23	61.71	12 16 23	3638.2	-2.52	167.48
100.00	19 59 4	2418.32	-29.01	53.65	30.86	97.56	20 39 22	1818.3	-27.66	45.11
100.00	12 17 22	4007.09	2.40	156.50	24.60	60.19	13 24 9	3407.1	-1.59	149.98
110.00	21 28 45	2137.69	-32.32	31.69	30.20	101.80	22 4 23	1537.7	-30.36	23.02
110.00	13 4 10	3860.48	5.25	143.60	22.83	56.17	14 8 30	3260.5	.77	137.38

DIFFERENTIAL CORRECTIONS
TDE -.8644 TRA 3.6381 TC3-6.8993 BAU 1.4353
RDE .5601 RRA -.4354 RC3 1.1454 FAU .48715
FDE-5.3013 FRA16.6815 FC-27.4729 BSP 26699
BDE 1.0300 BRA 3.6641 BC3 6.9937 FSP 10270

MID-COURSE EXECUTION ACCURACY
SGT 7859.8 SGR 1385.5 SG3 2960.7
RRT -.8808 RRF -.8984 RTF .9954
SGB 7981.0 R23 .0331 R13 -.9959
SG1 7954.6 SG2 648.3 THA 171.12

ORBIT DETERMINATION ACCURACY
ST 2099.9 SR 843.5 SS 2962.9
CRT -.7752 CRS .8578 CST -.9896
LSA 3691.7 MSA 521.0 SSA 18.9
EL1 2205.4 EL2 507.4 ALF 161.70

LAUNCH DATE OCT 18 1964 FLIGHT TIME 350.00 ARRIVAL DATE OCT 3 1965

HELIOCENTRIC CONIC DISTANCE 792.980 EARTH TO MARS
RL 149.02 LAL .00 LOL 24.65 VL 32.656 GAL -5.94 AZL 88.66 HCA 246.06 SMA 185.67 ECC .22193 INC 1.3391 V1 29.900
RP 217.27 LAP -1.22 LOP 270.71 VP 22.515 GAP -8.31 AZP 90.54 TAL 326.28 TAP 212.34 RCA 144.47 APO 226.88 V2 25.287
RC 282.167 GL 11.09 GP 5.91 ZAL 137.13 ZAP 67.69 ETS 181.83 ZAE 99.05 ETE 177.81 ZAC 89.08 ETC 258.69 CLP 67.56

PLANETOCENTRIC CONIC
C3 15.569 VHL 3.946 DLA 16.91 RAL 168.72 RAD 6567.6 VEL 11.703 PTH 2.06 VHP 3.186 DPA 15.53 RAP 162.97 ECC 1.2562

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 30 32	2711.82	-27.73	75.42	31.66	95.99	19 15 44	2111.8	-26.61	66.93
90.00	11 6 33	4244.71	1.48	174.47	25.82	61.72	12 17 17	3644.7	-2.31	167.85
100.00	20 1 32	2418.38	-29.01	53.66	31.48	97.56	20 41 50	1818.4	-27.66	45.12
100.00	12 18 14	4013.38	2.61	156.84	25.19	60.21	13 25 8	3413.4	-1.38	150.32
110.00	21 31 4	2138.25	-32.33	31.73	30.83	101.77	22 6 42	1538.3	-30.37	23.06
110.00	13 5 11	3866.28	5.47	143.91	23.41	56.20	14 9 38	3266.3	.99	137.68

DIFFERENTIAL CORRECTIONS
TDE -.9275 TRA 3.8403 TC3-7.0753 BAU 1.4905
RDE .5629 RRA -.4209 RC3 1.1045 FAU .47261
FDE-5.2339 FRA16.3412 FC-26.2801 BSP 27846
BDE 1.0850 BRA 3.8633 BC3 7.1610 FSP 9992

MID-COURSE EXECUTION ACCURACY
SGT 8182.9 SGR 1355.0 SG3 2869.4
RRT -.8740 RRF -.8918 RTF .9957
SGB 8294.3 R23 .0330 R13 -.9961
SG1 8268.7 SG2 651.6 THA 171.71

ORBIT DETERMINATION ACCURACY
ST 2213.4 SR 840.0 SS 2932.5
CRT -.7747 CRS .8553 CST -.9902
LSA 3732.1 MSA 524.5 SSA 18.5
EL1 2312.2 EL2 508.5 ALF 162.76

LAUNCH DATE OCT 18 1964 FLIGHT TIME 352.00 ARRIVAL DATE OCT 5 1965

HELIOCENTRIC CONIC DISTANCE 797.068 EARTH TO MARS

RL 149.02 LAL .00 LOL 24.65 VL 32.657 GAL -6.01 AZL 88.64 HCA 247.21 SMA 185.69 ECC .22256 INC 1.3576 V1 29.900
RP 216.91 LAP -1.25 LOP 271.86 VP 22.560 GAP -8.51 AZP 90.53 TAL 325.94 TAP 213.15 RCA 144.37 APO 227.02 V2 25.327
RC 283.431 GL 11.16 GP 5.79 ZAL 137.52 ZAP 66.06 ETS 181.99 ZAE 97.18 ETE 178.07 ZAC 88.87 ETC 258.76 CLP 65.93

PLANETOCENTRIC CONIC

C3 15.801 VHL 3.975 DLA 16.81 RAL 169.15 RAD 6567.6 VEL 11.713 PTH 2.06 VHP 3.232 DPA 15.60 RAP 162.45 ECC 1.2600

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 33 15	2711.33	-27.72	75.38	32.30	96.01	19 18 26	2111.3	-26.60	66.89
90.00	11 7 15	4251.88	1.71	174.87	26.43	61.73	12 18 7	3651.9	-2.08	168.25
100.00	20 4 9	2418.18	-29.01	53.64	32.13	97.57	20 44 28	1818.2	-27.65	45.10
100.00	12 19 2	4020.28	2.84	157.22	25.80	60.23	13 26 2	3420.3	-1.14	150.70
110.00	21 33 31	2138.60	-32.33	31.75	31.47	101.76	22 9 9	1538.6	-30.37	23.08
110.00	13 6 10	3872.62	5.71	144.24	24.02	56.24	14 10 43	3272.6	1.24	138.02

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.9953 TRA 4.0392 TC3-7.2439 BAU 1.5467 SGT 8497.9 SGR 1326.2 SG3 2777.9 ST 2327.5 SR 837.5 SS 2905.6
RDE .5666 RRA -.4058 RC3 1.0660 FAU .45888 RRT -.8668 RRF -.8851 RTF .9959 CRT -.7750 CRS .8541 CST -.9906
FDE-5.1864 FRA15.9718 FC-25.1413 BSP 28877 SGB 8600.7 R23 .0335 R13 -.9963 LSA 3779.2 MSA 527.5 SSA 18.1
BDE 1.1453 BRA 4.0596 BC3 7.3219 FSP 9663 SG1 8575.7 SG2 655.2 THA 172.25 EL1 2420.6 EL2 508.9 ALF 163.68

LAUNCH DATE OCT 18 1964 FLIGHT TIME 354.00 ARRIVAL DATE OCT 7 1965

HELIOCENTRIC CONIC DISTANCE 801.159 EARTH TO MARS

RL 149.02 LAL .00 LOL 24.65 VL 32.658 GAL -6.08 AZL 88.62 HCA 248.37 SMA 185.72 ECC .22323 INC 1.3757 V1 29.900
RP 216.57 LAP -1.28 LOP 273.01 VP 22.606 GAP -8.70 AZP 90.51 TAL 325.58 TAP 213.95 RCA 144.26 APO 227.18 V2 25.365
RC 284.679 GL 11.22 GP 5.66 ZAL 137.93 ZAP 64.47 ETS 182.13 ZAE 95.34 ETE 178.32 ZAC 88.67 ETC 258.83 CLP 64.34

PLANETOCENTRIC CONIC

C3 16.048 VHL 4.006 DLA 16.69 RAL 169.58 RAD 6567.6 VEL 11.723 PTH 2.07 VHP 3.280 DPA 15.66 RAP 161.99 ECC 1.2641

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 36 7	2710.54	-27.72	75.32	32.96	96.04	19 21 18	2110.5	-26.59	66.84
90.00	11 7 53	4259.73	1.97	175.31	27.05	61.75	12 18 52	3659.7	-1.83	168.68
100.00	20 6 56	2417.70	-29.00	53.61	32.78	97.58	20 47 14	1817.7	-27.65	45.07
100.00	12 19 45	4027.80	3.10	157.64	26.42	60.25	13 26 53	3427.8	-.89	151.11
110.00	21 36 5	2138.76	-32.33	31.76	32.13	101.75	22 11 44	1538.8	-30.38	23.10
110.00	13 7 5	3879.51	5.97	144.61	24.64	56.28	14 11 45	3279.5	1.50	138.37

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.0633 TRA 4.2416 TC3-7.3912 BAU 1.6010 SGT 8803.0 SGR 1297.4 SG3 2684.6 ST 2440.1 SR 834.4 SS 2875.4
RDE .5701 RRA -.3914 RC3 1.0269 FAU .44431 RRT -.8592 RRF -.8780 RTF .9960 CRT -.7748 CRS .8525 CST -.9909
FDE-5.1249 FRA15.6053 FC-23.9685 BSP 29928 SGB 8898.1 R23 .0338 R13 -.9964 LSA 3825.8 MSA 530.2 SSA 17.7
BDE 1.2065 BRA 4.2596 BC3 7.4622 FSP 9352 SG1 8873.7 SG2 658.4 THA 172.74 EL1 2528.1 EL2 509.2 ALF 164.52

LAUNCH DATE OCT 18 1964 FLIGHT TIME 356.00 ARRIVAL DATE OCT 9 1965

HELIOCENTRIC CONIC DISTANCE 805.255 EARTH TO MARS

RL 149.02 LAL .00 LOL 24.65 VL 32.660 GAL -6.16 AZL 88.61 HCA 249.53 SMA 185.75 ECC .22395 INC 1.3936 V1 29.900
RP 216.22 LAP -1.31 LOP 274.17 VP 22.651 GAP -8.89 AZP 90.49 TAL 325.21 TAP 214.74 RCA 144.15 APO 227.34 V2 25.404
RC 285.910 GL 11.28 GP 5.54 ZAL 138.35 ZAP 62.93 ETS 182.27 ZAE 93.54 ETE 178.55 ZAC 88.48 ETC 258.89 CLP 62.79

PLANETOCENTRIC CONIC

C3 16.311 VHL 4.039 DLA 16.56 RAL 170.03 RAD 6567.7 VEL 11.734 PTH 2.07 VHP 3.332 DPA 15.70 RAP 161.57 ECC 1.2684

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 39 9	2709.47	-27.71	75.25	33.64	96.07	19 24 18	2109.5	-26.58	66.76
90.00	11 8 25	4268.19	2.24	175.78	27.70	61.76	12 19 33	3668.2	-1.55	169.16
100.00	20 9 51	2416.98	-28.99	53.56	33.46	97.61	20 50 8	1817.0	-27.64	45.02
100.00	12 20 24	4035.92	3.37	158.08	27.07	60.28	13 27 40	3435.9	-.61	151.56
110.00	21 38 47	2138.72	-32.33	31.76	32.80	101.75	22 14 26	1538.7	-30.38	23.09
110.00	13 7 58	3886.94	6.25	145.00	25.28	56.32	14 12 45	3286.9	1.78	138.76

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.1334 TRA 4.4444 TC3-7.5226 BAU 1.6545 SGT 9098.2 SGR 1269.6 SG3 2590.8 ST 2552.1 SR 831.4 SS 2844.8
RDE .5738 RRA -.3772 RC3 .9886 FAU .42966 RRT -.8513 RRF -.8705 RTF .9962 CRT -.7747 CRS .8512 CST -.9912
FDE-5.0641 FRA15.2320 FC-22.8049 BSP 30927 SGB 9186.4 R23 .0344 R13 -.9965 LSA 3874.7 MSA 532.5 SSA 17.4
BDE 1.2704 BRA 4.4603 BC3 7.5873 FSP 9032 SG1 9162.5 SG2 661.6 THA 173.19 EL1 2635.3 EL2 509.1 ALF 165.27

LAUNCH DATE OCT 18 1964 FLIGHT TIME 358.00 ARRIVAL DATE OCT 11 1965

HELIOCENTRIC CONIC DISTANCE 809.355 EARTH TO MARS

RL 149.02 LAL .00 LOL 24.65 VL 32.662 GAL -6.24 AZL 88.59 HCA 250.69 SMA 185.78 ECC .22472 INC 1.4113 V1 29.900
RP 215.88 LAP -1.33 LOP 275.33 VP 22.697 GAP -9.08 AZP 90.47 TAL 324.83 TAP 215.52 RCA 144.03 APO 227.52 V2 25.442
RC 287.127 GL 11.32 GP 5.42 ZAL 138.78 ZAP 61.42 ETS 182.41 ZAE 91.78 ETE 178.77 ZAC 88.30 ETC 258.94 CLP 61.28

PLANETOCENTRIC CONIC

C3 16.590 VHL 4.073 DLA 16.42 RAL 170.49 RAD 6567.7 VEL 11.746 PTH 2.07 VHP 3.386 DPA 15.72 RAP 161.19 ECC 1.2730

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 42 20	2708.14	-27.70	75.15	34.33	96.12	19 27 28	2108.1	-26.56	66.67
90.00	11 8 53	4277.28	2.53	176.29	28.36	61.79	12 20 10	3677.3	-1.26	169.66
100.00	20 12 55	2416.02	-28.99	53.49	34.15	97.65	20 53 11	1816.0	-27.62	44.95
100.00	12 20 59	4044.63	3.66	158.56	27.73	60.31	13 28 24	3444.6	-.32	152.04
110.00	21 41 36	2138.51	-32.33	31.75	33.49	101.76	22 17 15	1538.5	-30.37	23.08
110.00	13 8 47	3894.90	6.55	145.42	25.94	56.38	14 13 42	3294.9	2.09	139.18

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.2045 TRA 4.6491 TC3-7.6359 BAU 1.7066 SGT 9383.4 SGR 1242.4 SG3 2496.6 ST 2662.6 SR 828.3 SS 2812.1
RDE .5775 RRA -.3633 RC3 .9506 FAU .41475 RRT -.8429 RRF -.8627 RTF .9963 CRT -.7745 CRS .8499 CST -.9915
FDE-4.9970 FRA14.6565 FC-21.6437 BSP 31927 SGB 9465.3 R23 .0349 R13 -.9966 LSA 3923.9 MSA 534.5 SSA 17.1
BDE 1.3358 BRA 4.6632 BC3 7.6948 FSP 8723 SG1 9441.9 SG2 664.4 THA 173.60 EL1 2741.6 EL2 509.0 ALF 165.96

LAUNCH DATE OCT 18 1964 FLIGHT TIME 360.00 ARRIVAL DATE OCT 13 1965

HELIOCENTRIC CONIC DISTANCE 813.458 EARTH TO MARS

RL 149.02 LAL .00 LOL 24.65 VL 32.664 GAL -6.33 AZL 88.57 HCA 251.85 SMA 185.81 ECC .22553 INC 1.4287 V1 29.900
RP 215.54 LAP -1.36 LOP 276.50 VP 22.742 GAP -9.26 AZP 90.44 TAL 324.43 TAP 216.28 RCA 143.90 APO 227.72 V2 25.480
RC 288.329 GL 11.36 GP 5.30 ZAL 139.23 ZAP 59.96 ETS 182.53 ZAE 90.07 ETE 178.97 ZAC 88.12 ETC 258.99 CLP 59.82

PLANETOCENTRIC CONIC

C3 16.886 VHL 4.109 DLA 16.27 RAL 170.95 RAD 6567.7 VEL 11.759 PTH 2.08 VHP 3.442 DPA 15.73 RAP 160.85 ECC 1.2779

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 45 39	2706.55	-27.69	75.03	35.04	96.18	19 30 45	2106.6	-26.54	66.56
90.00	11 9 17	4286.98	2.84	176.83	29.04	61.81	12 20 44	3687.0	-.95	170.21
100.00	20 16 6	2414.84	-28.97	53.40	34.86	97.69	20 56 21	1814.8	-27.61	44.86
100.00	12 21 30	4053.93	3.98	159.07	28.41	60.35	13 29 4	3453.9	-.00	152.55
110.00	21 44 32	2138.14	-32.32	31.72	34.20	101.78	22 20 11	1538.1	-30.36	23.05
110.00	13 9 34	3903.39	6.87	145.87	26.62	56.43	14 14 37	3303.4	2.41	139.62

DIFFERENTIAL CORRECTIONS
TDE-1.2780 TRA 4.8551 TC3-7.7344 BAU 1.7581
RDE .5815 RRA -.3498 RC3 .9137 FAU .39992
FDE-4.9306 FRA14.4786 FC-20.5040 BSP 32876
BDE 1.4040 BRA 4.8677 BC3 7.7882 FSP 8407

MID-COURSE EXECUTION ACCURACY
SGT 9659.8 SGR 1216.3 SG3 2402.9
RRT -.8342 RRF -.8547 RTF .9963
SGB 9736.1 R23 .0356 R13 -.9966
SG1 9713.2 SG2 667.1 THA 173.98

ORBIT DETERMINATION ACCURACY
ST 2772.6 SR 825.3 SS 2779.3
CRT -.7742 CRS .8489 CST -.9917
LSA 3975.5 MSA 536.2 SSA 16.8
EL1 2847.8 EL2 508.6 ALF 166.59

LAUNCH DATE OCT 18 1964 FLIGHT TIME 362.00 ARRIVAL DATE OCT 15 1965

HELIOCENTRIC CONIC DISTANCE 817.564 EARTH TO MARS

RL 149.02 LAL .00 LOL 24.65 VL 32.666 GAL -6.41 AZL 88.55 HCA 253.02 SMA 185.85 ECC .22639 INC 1.4461 V1 29.900
RP 215.21 LAP -1.38 LOP 277.67 VP 22.787 GAP -9.45 AZP 90.42 TAL 324.02 TAP 217.04 RCA 143.77 APO 227.92 V2 25.517
RC 289.516 GL 11.39 GP 5.18 ZAL 139.69 ZAP 58.54 ETS 182.64 ZAE 88.38 ETE 179.16 ZAC 87.96 ETC 259.03 CLP 58.39

PLANETOCENTRIC CONIC

C3 17.199 VHL 4.147 DLA 16.11 RAL 171.43 RAD 6567.7 VEL 11.772 PTH 2.08 VHP 3.501 DPA 15.72 RAP 160.56 ECC 1.2831

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 49 7	2704.73	-27.68	74.90	35.77	96.24	19 34 11	2104.7	-26.52	66.43
90.00	11 9 36	4297.28	3.17	177.41	29.74	61.85	12 21 13	3697.3	-.61	170.78
100.00	20 19 26	2413.45	-28.96	53.30	35.59	97.74	20 59 39	1813.5	-27.59	44.77
100.00	12 21 57	4063.80	4.31	159.62	29.11	60.39	13 29 41	3463.8	.33	153.09
110.00	21 47 36	2137.62	-32.32	31.68	34.92	101.80	22 23 13	1537.6	-30.35	23.01
110.00	13 10 17	3912.40	7.21	146.35	27.32	56.50	14 15 30	3312.4	2.75	140.09

DIFFERENTIAL CORRECTIONS
TDE-1.3527 TRA 5.0635 TC3-7.8148 BAU 1.8082
RDE .5855 RRA -.3367 RC3 .8776 FAU .38502
FDE-4.8594 FRA14.1018 FC-19.3801 BSP 33807
BDE 1.4740 BRA 5.0747 BC3 7.8639 FSP 8096

MID-COURSE EXECUTION ACCURACY
SGT 9925.9 SGR 1191.0 SG3 2309.8
RRT -.8252 RRF -.8464 RTF .9964
SGB 9997.1 R23 .0362 R13 -.9966
SG1 9974.7 SG2 669.5 THA 174.32

ORBIT DETERMINATION ACCURACY
ST 2881.3 SR 822.1 SS 2744.7
CRT -.7739 CRS .8480 CST -.9919
LSA 4027.6 MSA 537.5 SSA 16.5
EL1 2952.9 EL2 508.0 ALF 167.16

LAUNCH DATE OCT 18 1964 FLIGHT TIME 364.00 ARRIVAL DATE OCT 17 1965

HELIOCENTRIC CONIC DISTANCE 821.673 EARTH TO MARS

RL 149.02 LAL .00 LOL 24.65 VL 32.668 GAL -6.51 AZL 88.54 HCA 254.19 SMA 185.88 ECC .22730 INC 1.4632 V1 29.900
RP 214.88 LAP -1.41 LOP 278.84 VP 22.831 GAP -9.63 AZP 90.40 TAL 323.59 TAP 217.78 RCA 143.63 APO 228.14 V2 25.554
RC 290.691 GL 11.42 GP 5.07 ZAL 140.17 ZAP 57.15 ETS 182.75 ZAE 86.74 ETE 179.34 ZAC 87.82 ETC 259.06 CLP 57.01

PLANETOCENTRIC CONIC

C3 17.531 VHL 4.187 DLA 15.93 RAL 171.91 RAD 6567.7 VEL 11.786 PTH 2.08 VHP 3.563 DPA 15.69 RAP 160.32 ECC 1.2885

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 52 42	2702.70	-27.66	74.76	36.52	96.32	19 37 45	2102.7	-26.50	66.28
90.00	11 9 51	4308.17	3.52	178.02	30.46	61.89	12 21 39	3708.2	-.26	171.39
100.00	20 22 53	2411.87	-28.95	53.18	36.33	97.80	21 3 5	1811.9	-27.57	44.65
100.00	12 22 21	4074.23	4.66	160.20	29.83	60.44	13 30 15	3474.2	.69	153.66
110.00	21 50 45	2136.95	-32.31	31.63	35.66	101.83	22 26 22	1537.0	-30.34	22.97
110.00	13 10 58	3921.92	7.57	146.85	28.04	56.57	14 16 20	3321.9	3.12	140.59

DIFFERENTIAL CORRECTIONS
TDE-1.4293 TRA 5.2743 TC3-7.8804 BAU 1.8575
RDE .5897 RRA -.3241 RC3 .8426 FAU .37025
FDE-4.7870 FRA13.7266 FC-18.2838 BSP 34720
BDE 1.5462 BRA 5.2842 BC3 7.9253 FSP 7792

MID-COURSE EXECUTION ACCURACY
SGT10183.7 SGR 1166.9 SG3 2217.8
RRT -.8159 RRF -.8379 RTF .9964
SGB10250.3 R23 .0369 R13 -.9966
SG110228.3 SG2 671.7 THA 174.64

ORBIT DETERMINATION ACCURACY
ST 2989.1 SR 819.0 SS 2709.5
CRT -.7737 CRS .8472 CST -.9920
LSA 4081.2 MSA 538.6 SSA 16.3
EL1 3057.4 EL2 507.3 ALF 167.69

LAUNCH DATE OCT 18 1964 FLIGHT TIME 366.00 ARRIVAL DATE OCT 19 1965

HELIOCENTRIC CONIC DISTANCE 825.784 EARTH TO MARS

RL 149.02 LAL .00 LOL 24.65 VL 32.671 GAL -6.60 AZL 88.52 HCA 255.37 SMA 185.93 ECC .22827 INC 1.4802 V1 29.900
RP 214.56 LAP -1.43 LOP 280.02 VP 22.875 GAP -9.82 AZP 90.37 TAL 323.15 TAP 218.52 RCA 143.49 APO 228.37 V2 25.590
RC 291.851 GL 11.43 GP 4.96 ZAL 140.65 ZAP 55.81 ETS 182.85 ZAE 85.14 ETE 179.51 ZAC 87.68 ETC 259.08 CLP 55.67

PLANETOCENTRIC CONIC

C3 17.883 VHL 4.229 DLA 15.74 RAL 172.40 RAD 6567.7 VEL 11.801 PTH 2.09 VHP 3.627 DPA 15.66 RAP 160.11 ECC 1.2943

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 56 25	2700.47	-27.64	74.60	37.28	96.39	19 41 26	2100.5	-26.47	66.13
90.00	11 10 2	4319.63	3.89	178.66	31.19	61.93	12 22 2	3719.6	.11	172.03
100.00	20 26 27	2410.12	-28.93	53.06	37.10	97.87	21 6 38	1810.1	-27.54	44.53
100.00	12 22 41	4085.22	5.03	160.80	30.57	60.49	13 30 46	3485.2	1.06	154.26
110.00	21 54 1	2136.16	-32.30	31.57	36.42	101.86	22 29 37	1536.2	-30.33	22.91
110.00	13 11 37	3931.94	7.94	147.38	28.77	56.64	14 17 9	3331.9	3.50	141.11

DIFFERENTIAL CORRECTIONS
TDE-1.5082 TRA 5.4872 TC3-7.9290 BAU 1.9055
RDE .5941 RRA -.3120 RC3 .8085 FAU .35557
FDE-4.7139 FRA13.3540 FC-17.2130 BSP 35606
BDE 1.6210 BRA 5.4960 BC3 7.9701 FSP 7493

MID-COURSE EXECUTION ACCURACY
SGT10431.2 SGR 1143.9 SG3 2127.1
RRT -.8065 RRF -.8292 RTF .9964
SGB10493.7 R23 .0377 R13 -.9966
SG110472.1 SG2 673.7 THA 174.92

ORBIT DETERMINATION ACCURACY
ST 3096.0 SR 815.9 SS 2673.6
CRT -.7736 CRS .8466 CST -.9922
LSA 4136.2 MSA 539.3 SSA 16.0
EL1 3161.4 EL2 506.3 ALF 168.17

LAUNCH DATE OCT 18 1964 FLIGHT TIME 368.00 ARRIVAL DATE OCT 21 1965

HELIOCENTRIC CONIC DISTANCE 829.898 EARTH TO MARS

RL	149.02	LAL	.00	LOL	24.65	VL	32.673	GAL	-6.70	AZL	88.50	HCA	256.55	SMA	185.97	ECC	.22928	INC	1.4970	V1	29.900
RP	214.24	LAP	-1.46	LOP	281.20	VP	22.919	GAP	-10.00	AZP	90.35	TAL	322.69	TAP	219.24	RCA	143.33	APO	228.61	V2	25.626
RC	292.998	GL	11.44	GP	4.85	ZAL	141.15	ZAP	54.51	ETS	182.95	ZAE	83.57	ETE	179.67	ZAC	87.55	ETC	259.10	CLP	54.37

PLANETOCENTRIC CONIC

C3	18.256	VHL	4.273	DLA	15.54	RAL	172.90	RAD	6567.7	VEL	11.817	PTH	2.09	VHP	3.694	DPA	15.60	RAP	159.95	ECC	1.3004

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 0 16	2698.07	-27.63	74.42	38.06	96.48	19 45 14	2098.1	-26.44	65.96
90.00	11 10 9	4331.66	4.28	179.34	31.95	61.98	12 22 21	3731.7	.50	172.70
100.00	20 30 9	2408.21	-28.91	52.92	37.87	97.94	21 10 17	1808.2	-27.51	44.39
100.00	12 22 58	4096.75	5.41	161.44	31.32	60.56	13 31 14	3496.7	1.45	154.89
110.00	21 57 23	2135.26	-32.28	31.50	37.19	101.90	22 32 58	1535.3	-30.31	22.85
110.00	13 12 13	3942.47	8.34	147.95	29.53	56.73	14 17 55	3342.5	3.90	141.67

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.5891	TRA	5.7030	TC3	-7.9632	BAU	1.9527	SGT	10670.3	SGR	1121.9	SG3	2037.9	ST	3202.1	SR	812.9	SS	2636.9
RDE	.5987	RRA	-.3004	RC3	.7756	FAU	.34108	RRT	-.7969	RRF	-.8205	RTF	.9964	CRT	-.7736	CRS	.8462	CST	-.9922
FDE	-4.6396	FRA	12.9836	FC	-16.1749	BSP	36462	SGB	10729.2	R23	.0385	R13	-.9966	LSA	4192.4	MSA	539.8	SSA	15.8
BDE	1.6981	BRA	5.7109	BC3	8.0009	FSP	7196	SG1	10707.9	SG2	675.4	THA	175.19	EL1	3264.8	EL2	505.2	ALF	168.61

LAUNCH DATE OCT 18 1964 FLIGHT TIME 370.00 ARRIVAL DATE OCT 23 1965

HELIOCENTRIC CONIC DISTANCE 834.013 EARTH TO MARS

RL	149.02	LAL	.00	LOL	24.65	VL	32.676	GAL	-6.81	AZL	88.49	HCA	257.73	SMA	186.02	ECC	.23034	INC	1.5138	V1	29.900
RP	213.93	LAP	-1.48	LOP	282.38	VP	22.963	GAP	-10.18	AZP	90.32	TAL	322.21	TAP	219.94	RCA	143.17	APO	228.87	V2	25.662
RC	294.131	GL	11.45	GP	4.75	ZAL	141.67	ZAP	53.25	ETS	183.04	ZAE	82.04	ETE	179.82	ZAC	87.43	ETC	259.11	CLP	53.10

PLANETOCENTRIC CONIC

C3	18.650	VHL	4.319	DLA	15.33	RAL	173.40	RAD	6567.8	VEL	11.833	PTH	2.10	VHP	3.763	DPA	15.54	RAP	159.84	ECC	1.3069

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 4 14	2695.50	-27.61	74.24	38.85	96.57	19 49 9	2095.5	-26.41	65.77
90.00	11 10 13	4344.24	4.68	180.04	32.72	62.04	12 22 37	3744.2	.90	173.40
100.00	20 33 57	2406.16	-28.89	52.77	38.67	98.01	21 14 3	1806.2	-27.48	44.25
100.00	12 23 11	4108.81	5.82	162.11	32.10	60.63	13 31 40	3508.8	1.86	155.56
110.00	22 0 51	2134.25	-32.27	31.43	37.98	101.94	22 36 25	1534.3	-30.29	22.77
110.00	13 12 46	3953.48	8.75	148.53	30.30	56.82	14 18 40	3353.5	4.32	142.24

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.6725	TRA	5.9217	TC3	-7.9830	BAU	1.9990	SGT	10900.9	SGR	1101.2	SG3	1950.6	ST	3307.5	SR	809.9	SS	2599.8
RDE	.6036	RRA	-.2893	RC3	.7439	FAU	.32682	RRT	-.7872	RRF	-.8116	RTF	.9963	CRT	-.7738	CRS	.8460	CST	-.9923
FDE	-4.5649	FRA	12.6181	FC	-15.1716	BSP	37309	SGB	10956.4	R23	.0394	R13	-.9965	LSA	4250.0	MSA	539.9	SSA	15.6
BDE	1.7780	BRA	5.9288	BC3	8.0176	FSP	6910	SG1	10935.5	SG2	676.9	THA	175.44	EL1	3367.7	EL2	503.9	ALF	169.02

LAUNCH DATE OCT 18 1964 FLIGHT TIME 372.00 ARRIVAL DATE OCT 25 1965

HELIOCENTRIC CONIC DISTANCE 838.130 EARTH TO MARS

RL	149.02	LAL	.00	LOL	24.65	VL	32.679	GAL	-6.92	AZL	88.47	HCA	258.92	SMA	186.07	ECC	.23147	INC	1.5305	V1	29.900
RP	213.62	LAP	-1.50	LOP	283.57	VP	23.006	GAP	-10.36	AZP	90.29	TAL	321.72	TAP	220.64	RCA	143.00	APO	229.14	V2	25.697
RC	295.251	GL	11.45	GP	4.64	ZAL	142.19	ZAP	52.02	ETS	183.12	ZAE	80.55	ETE	179.96	ZAC	87.32	ETC	259.12	CLP	51.88

PLANETOCENTRIC CONIC

C3	19.066	VHL	4.367	DLA	15.11	RAL	173.91	RAD	6567.8	VEL	11.851	PTH	2.10	VHP	3.834	DPA	15.46	RAP	159.76	ECC	1.3138

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 8 18	2692.79	-27.58	74.04	39.67	96.67	19 53 11	2092.8	-26.37	65.58
90.00	11 10 13	4357.35	5.10	180.78	33.51	62.11	12 22 51	3757.4	1.32	174.13
100.00	20 37 51	2403.99	-28.87	52.61	39.48	98.10	21 17 55	1804.0	-27.45	44.09
100.00	12 23 21	4121.39	6.24	162.81	32.89	60.71	13 32 3	3521.4	2.29	156.25
110.00	22 4 24	2133.16	-32.25	31.35	38.78	101.99	22 39 57	1533.2	-30.27	22.70
110.00	13 13 17	3964.98	9.17	149.15	31.10	56.93	14 19 22	3365.0	4.76	142.85

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.7569	TRA	6.1443	TC3	-7.9875	BAU	2.0441	SGT	11122.6	SGR	1081.3	SG3	1865.2	ST	3411.0	SR	806.8	SS	2561.0
RDE	.6086	RRA	-.2788	RC3	.7132	FAU	.31276	RRT	-.7774	RRF	-.8027	RTF	.9963	CRT	-.7738	CRS	.8458	CST	-.9924
FDE	-4.4863	FRA	12.2577	FC	-14.2014	BSP	38129	SGB	11175.1	R23	.0403	R13	-.9965	LSA	4307.3	MSA	539.9	SSA	15.5
BDE	1.8593	BRA	6.1506	BC3	8.0192	FSP	6629	SG1	11154.5	SG2	678.2	THA	175.66	EL1	3468.9	EL2	502.5	ALF	169.40

LAUNCH DATE OCT 18 1964 FLIGHT TIME 374.00 ARRIVAL DATE OCT 27 1965

HELIOCENTRIC CONIC DISTANCE 842.247 EARTH TO MARS

RL	149.02	LAL	.00	LOL	24.65	VL	32.682	GAL	-7.03	AZL	88.45	HCA	260.11	SMA	186.12	ECC	.23264	INC	1.5470	V1	29.900
RP	213.31	LAP	-1.52	LOP	284.76	VP	23.049	GAP	-10.54	AZP	90.27	TAL	321.22	TAP	221.32	RCA	142.82	APO	229.42	V2	25.731
RC	296.356	GL	11.44	GP	4.55	ZAL	142.72	ZAP	50.84	ETS	183.19	ZAE	79.09	ETE	180.10	ZAC	87.23	ETC	259.12	CLP	50.69

PLANETOCENTRIC CONIC

C3	19.507	VHL	4.417	DLA	14.88	RAL	174.43	RAD	6567.8	VEL	11.870	PTH	2.11	VHP	3.908	DPA	15.36	RAP	159.72	ECC	1.3210

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 12 28	2689.96	-27.56	73.84	40.50	96.77	19 57 18	2090.0	-26.34	65.38
90.00	11 10 10	4370.99	5.53	181.55	34.33	62.18	12 23 1	3771.0	1.76	174.89
100.00	20 41 51	2401.70	-28.85	52.44	40.31	98.18	21 21 53	1801.7	-27.42	43.93
100.00	12 23 29	4134.48	6.67	163.53	33.70	60.79	13 32 23	3534.5	2.73	156.97
110.00	22 8 3	2132.00	-32.24	31.26	39.61	102.04	22 43 35	1532.0	-30.24	22.41
110.00	13 13 46	3976.95	9.62	149.79	31.91	57.04	14 20 3	3376.9	5.21	143.48

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.8441	TRA	6.3704	TC3	-7.9794	BAU	2.0886	SGT	11336.7	SGR	1062.6	SG3	1781.8	ST	3514.0	SR	803.8	SS	2521.7
RDE	.6138	RRA	-.2688	RC3	.6838	FAU	.29898	RRT	-.7677	RRF	-.7939	RTF	.9962	CRT	-.7741	CRS	.8458	CST	-.9924
FDE	-4.4078	FRA	11.9019	FC	-13.2690	BSP	38932	SGB	11386.4	R23	.0412	R13	-.9964	LSA	4366.0	MSA	539.5	SSA	15.3
BDE	1.9436	BRA	6.3760	BC3	8.0086	FSP	6355	SG1	11366.1	SG2	679.2	THA	175.87	EL1	3569.8	EL2	500.9	ALF	169.75

LAUNCH DATE OCT 18 1964 FLIGHT TIME 376.00 ARRIVAL DATE OCT 29 1965

HELIOCENTRIC CONIC DISTANCE 846.365 EARTH TO MARS

RL 149.02 LAL .00 LOL 24.65 VL 32.685 GAL -7.15 AZL 88.44 HCA 261.30 SMA 186.17 ECC .23388 INC 1.5635 V1 29.900
RP 213.01 LAP -1.55 LOP 285.95 VP 23.091 GAP -10.73 AZP 90.24 TAL 320.70 TAP 222.00 RCA 142.63 APO 229.71 V2 25.765
RC 297.448 GL 11.42 GP 4.45 ZAL 143.26 ZAP 49.68 ETS 183.27 ZAE 77.67 ETE 180.23 ZAC 87.14 ETC 259.11 CLP 49.54

PLANETOCENTRIC CONIC

C3 19.973 VHL 4.469 DLA 14.64 RAL 174.95 RAD 6567.8 VEL 11.889 PTH 2.11 VHP 3.984 DPA 15.26 RAP 159.72 ECC 1.3287

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 16 45	2687.01	-27.54	73.63	41.34	96.87	20 1 32	2087.0	-26.30	65.18
90.00	11 10 5	4385.15	5.98	182.34	35.16	62.27	12 23 10	3785.1	2.22	175.68
100.00	20 45 57	2399.32	-28.83	52.27	41.15	98.27	21 25 56	1799.3	-27.38	43.76
100.00	12 23 33	4148.07	7.12	164.29	34.54	60.89	13 32 41	3548.1	3.19	157.71
110.00	22 11 47	2130.77	-32.22	31.17	40.44	102.09	22 47 17	1530.8	-30.22	22.53
110.00	13 14 13	3989.38	10.08	150.46	32.74	57.16	14 20 42	3389.4	5.68	144.13

DIFFERENTIAL CORRECTIONS
TDE-1.9347 TRA 6.5997 TC3-7.9596 BAU 2.1326
RDE .6194 RRA -.2594 RC3 .6557 FAU .28563
FDE-4.3310 FRA11.5509 FC-12.3807 BSP 39703
BDE 2.0314 BRA 6.6048 BC3 7.9865 FSP 6087

MID-COURSE EXECUTION ACCURACY
SGT11543.0 SGR 1045.1 SG3 1700.9
RRT -.7581 RRF -.7852 RTF .9961
SGB11590.3 R23 .0422 R13 -.9963
SG111570.3 SG2 680.0 THA 176.06

ORBIT DETERMINATION ACCURACY
ST 3616.7 SR 801.0 SS 2482.5
CRT -.7746 CRS .8462 CST -.9924
LSA 4426.5 MSA 538.8 SSA 15.2
EL1 3670.5 EL2 499.1 ALF 170.08

LAUNCH DATE OCT 18 1964 FLIGHT TIME 378.00 ARRIVAL DATE OCT 31 1965

HELIOCENTRIC CONIC DISTANCE 850.483 EARTH TO MARS

RL 149.02 LAL .00 LOL 24.65 VL 32.688 GAL -7.27 AZL 88.42 HCA 262.50 SMA 186.23 ECC .23517 INC 1.5800 V1 29.900
RP 212.72 LAP -1.57 LOP 287.15 VP 23.133 GAP -10.91 AZP 90.21 TAL 320.16 TAP 222.66 RCA 142.43 APO 230.02 V2 25.798
RC 298.526 GL 11.40 GP 4.36 ZAL 143.82 ZAP 48.57 ETS 183.33 ZAE 76.28 ETE 180.35 ZAC 87.06 ETC 259.10 CLP 48.42

PLANETOCENTRIC CONIC

C3 20.466 VHL 4.524 DLA 14.39 RAL 175.48 RAD 6567.8 VEL 11.910 PTH 2.12 VHP 4.062 DPA 15.14 RAP 159.76 ECC 1.3368

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 21 6	2683.98	-27.51	73.41	42.21	96.98	20 5 50	2084.0	-26.26	64.96
90.00	11 9 56	4399.81	6.44	183.17	36.01	62.37	12 23 16	3799.8	2.69	176.50
100.00	20 50 8	2396.86	-28.80	52.09	42.01	98.36	21 30 5	1796.9	-27.35	43.59
100.00	12 23 35	4162.16	7.59	165.08	35.39	61.00	13 32 57	3562.2	3.66	158.49
110.00	22 15 35	2129.50	-32.20	31.07	41.30	102.14	22 51 5	1529.5	-30.20	22.44
110.00	13 14 38	4002.28	10.55	151.16	33.60	57.30	14 21 20	3402.3	6.17	144.81

DIFFERENTIAL CORRECTIONS
TDE-2.0263 TRA 6.8346 TC3-7.9251 BAU 2.1752
RDE .6251 RRA -.2506 RC3 .6285 FAU .27245
FDE-4.2506 FRA11.2069 FC-11.5249 BSP 40474
BDE 2.1206 BRA 6.8392 BC3 7.9500 FSP 5828

MID-COURSE EXECUTION ACCURACY
SGT11741.5 SGR 1028.4 SG3 1622.0
RRT -.7485 RRF -.7766 RTF .9960
SGB11786.5 R23 .0432 R13 -.9961
SG111766.8 SG2 680.5 THA 176.24

ORBIT DETERMINATION ACCURACY
ST 3717.5 SR 798.0 SS 2441.7
CRT -.7750 CRS .8465 CST -.9924
LSA 4486.5 MSA 538.0 SSA 15.1
EL1 3769.5 EL2 497.3 ALF 170.39

LAUNCH DATE OCT 18 1964 FLIGHT TIME 380.00 ARRIVAL DATE NOV 2 1965

HELIOCENTRIC CONIC DISTANCE 854.600 EARTH TO MARS

RL 149.02 LAL .00 LOL 24.65 VL 32.692 GAL -7.40 AZL 88.40 HCA 263.70 SMA 186.29 ECC .23653 INC 1.5963 V1 29.900
RP 212.43 LAP -1.59 LOP 288.35 VP 23.175 GAP -11.09 AZP 90.18 TAL 319.61 TAP 223.30 RCA 142.22 APO 230.35 V2 25.831
RC 299.592 GL 11.37 GP 4.26 ZAL 144.38 ZAP 47.49 ETS 183.39 ZAE 74.92 ETE 180.46 ZAC 86.99 ETC 259.08 CLP 47.34

PLANETOCENTRIC CONIC

C3 20.987 VHL 4.581 DLA 14.13 RAL 176.01 RAD 6567.9 VEL 11.932 PTH 2.12 VHP 4.143 DPA 15.01 RAP 159.84 ECC 1.3454

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 25 34	2680.87	-27.49	73.18	43.09	97.09	20 10 15	2080.9	-26.22	64.74
90.00	11 9 44	4414.95	6.92	184.03	36.88	62.47	12 23 19	3815.0	3.18	177.35
100.00	20 54 25	2394.34	-28.78	51.91	42.89	98.45	21 34 19	1794.3	-27.31	43.41
100.00	12 23 35	4176.72	8.07	165.89	36.26	61.12	13 33 11	3576.7	4.15	159.29
110.00	22 19 28	2128.20	-32.18	30.98	42.17	102.20	22 54 56	1528.2	-30.17	22.34
110.00	13 15 0	4015.63	11.04	151.88	34.47	57.44	14 21 56	3415.6	6.67	145.52

DIFFERENTIAL CORRECTIONS
TDE-2.1216 TRA 7.0728 TC3-7.8816 BAU 2.2178
RDE .6312 RRA -.2424 RC3 .6027 FAU .25969
FDE-4.1719 FRA10.8669 FC-10.7127 BSP 41215
BDE 2.2135 BRA 7.0770 BC3 7.9046 FSP 5575

MID-COURSE EXECUTION ACCURACY
SGT11933.0 SGR 1012.8 SG3 1545.5
RRT -.7392 RRF -.7683 RTF .9958
SGB11975.9 R23 .0443 R13 -.9960
SG111956.6 SG2 680.8 THA 176.40

ORBIT DETERMINATION ACCURACY
ST 3817.9 SR 795.1 SS 2400.8
CRT -.7757 CRS .8471 CST -.9924
LSA 4548.0 MSA 536.8 SSA 14.9
EL1 3868.3 EL2 495.3 ALF 170.67

LAUNCH DATE OCT 18 1964 FLIGHT TIME 382.00 ARRIVAL DATE NOV 4 1965

HELIOCENTRIC CONIC DISTANCE 858.716 EARTH TO MARS

RL 149.02 LAL .00 LOL 24.65 VL 32.695 GAL -7.53 AZL 88.39 HCA 264.90 SMA 186.35 ECC .23795 INC 1.6127 V1 29.900
RP 212.15 LAP -1.61 LOP 289.55 VP 23.216 GAP -11.27 AZP 90.14 TAL 319.04 TAP 223.94 RCA 142.01 APO 230.69 V2 25.863
RC 300.645 GL 11.34 GP 4.18 ZAL 144.96 ZAP 46.44 ETS 183.45 ZAE 73.59 ETE 180.57 ZAC 86.93 ETC 259.05 CLP 46.29

PLANETOCENTRIC CONIC

C3 21.537 VHL 4.641 DLA 13.86 RAL 176.55 RAD 6567.9 VEL 11.955 PTH 2.13 VHP 4.226 DPA 14.87 RAP 159.95 ECC 1.3545

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 30 6	2677.71	-27.46	72.96	43.98	97.20	20 14 44	2077.7	-26.18	64.52
90.00	11 9 30	4430.58	7.41	184.91	37.78	62.59	12 23 21	3830.6	3.68	178.22
100.00	20 58 46	2391.78	-28.75	51.72	43.78	98.55	21 38 37	1791.8	-27.27	43.23
100.00	12 23 32	4191.74	8.56	166.74	37.16	61.25	13 33 23	3591.7	4.66	160.12
110.00	22 23 25	2126.87	-32.16	30.88	43.06	102.25	22 58 52	1526.9	-30.14	22.25
110.00	13 15 21	4029.42	11.55	152.63	35.36	57.60	14 22 31	3429.4	7.19	146.25

DIFFERENTIAL CORRECTIONS
TDE-2.2190 TRA 7.3162 TC3-7.8257 BAU 2.2594
RDE .6375 RRA -.2347 RC3 .5779 FAU..24725
FDE-4.0916 FRA10.5332 FC3-9.9388 BSP 41946
BDE 2.3088 BRA 7.3199 BC3 7.8470 FSP 5331

MID-COURSE EXECUTION ACCURACY
SGT12116.9 SGR 998.1 SG3 1471.4
RRT -.7301 RRF -.7602 RTF .9957
SGB12157.9 R23 .0454 R13 -.9958
SG112138.8 SG2 680.8 THA 176.55

ORBIT DETERMINATION ACCURACY
ST 3917.0 SR 792.2 SS 2358.8
CRT -.7765 CRS .8479 CST -.9924
LSA 4609.5 MSA 535.4 SSA 14.8
EL1 3965.8 EL2 493.1 ALF 170.93

LAUNCH DATE OCT 18 1964 FLIGHT TIME 384.00 ARRIVAL DATE NOV 6 1965

HELIOCENTRIC CONIC DISTANCE 862.831 EARTH TO MARS

RL	149.02	LAL	.00	LOL	24.65	VL	32.699	GAL	-7.67	AZL	88.37	HCA	266.11	SMA	186.41	ECC	.23944	INC	1.6290
RP	211.87	LAP	-1.63	LOP	290.76	VP	23.256	GAP	-11.45	AZP	90.11	TAL	318.45	TAP	224.56	RCA	141.78	APO	231.04
RC	301.687	GL	11.30	GP	4.09	ZAL	145.54	ZAP	45.42	ETS	183.51	ZAE	72.30	ETE	180.67	ZAC	86.88	ETC	259.02

PLANETOCENTRIC CONIC

C3	22.120	VHL	4.703	DLA	13.58	RAL	177.10	RAD	6567.9	VEL	11.979	PTH	2.13	VHP	4.311	DPA	14.72	RAP	160.10

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 34 43	2674.51	-27.43	72.73	44.90	97.31	20 19 17	2074.5	-26.14	64.30
90.00	11 9 14	4446.67	7.91	185.83	38.69	62.72	12 23 20	3846.7	4.20	179.12
100.00	21 3 41	2389.18	-28.73	51.53	44.69	98.64	21 43 0	1789.2	-27.23	43.05
100.00	12 23 27	4207.23	9.07	167.61	38.07	61.39	13 33 34	3607.2	5.18	160.98
110.00	22 27 27	2125.53	-32.14	30.78	43.96	102.31	23 2 52	1525.5	-30.12	22.15
110.00	13 15 40	4043.64	12.07	153.41	36.28	57.77	14 23 4	3443.6	7.73	147.00

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-2.3205	TRA	7.5636	TC3	-7.7622	BAU	2.3013	SGT	12294.7	SGR	984.4	SG3	1399.7	ST	4015.9	SR	789.5	SS	2317.2
RDE	.6441	RRA	-.2276	RC3	.5544	FAU	.23528	RRT	-.7213	RRF	-.7526	RTF	.9955	CRT	-.7775	CRS	.8490	CST	-.9924
FDE	-4.0142	FRA	10.2031	FC3	-9.2086	BSP	42634	SGB	12334.1	R23	.0467	R13	-.9956	LSA	4672.7	MSA	533.9	SSA	14.7
BDE	2.4083	BRA	7.5670	BC3	7.7820	FSP	5090	SG1	12315.3	SG2	680.7	THA	176.68	EL1	4063.2	EL2	490.7	ALF	171.18

LAUNCH DATE OCT 18 1964 FLIGHT TIME 386.00 ARRIVAL DATE NOV 8 1965

HELIOCENTRIC CONIC DISTANCE 866.943 EARTH TO MARS

RL	149.02	LAL	.00	LOL	24.65	VL	32.703	GAL	-7.81	AZL	88.35	HCA	267.32	SMA	186.48	ECC	.24099	INC	1.6454
RP	211.60	LAP	-1.64	LOP	291.97	VP	23.296	GAP	-11.63	AZP	90.08	TAL	317.85	TAP	225.16	RCA	141.54	APO	231.41
RC	302.717	GL	11.25	GP	4.01	ZAL	146.13	ZAP	44.43	ETS	183.56	ZAE	71.03	ETE	180.77	ZAC	86.84	ETC	258.99

PLANETOCENTRIC CONIC

C3	22.735	VHL	4.768	DLA	13.30	RAL	177.65	RAD	6567.9	VEL	12.005	PTH	2.14	VHP	4.399	DPA	14.56	RAP	160.28

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 39 24	2671.28	-27.40	72.49	45.83	97.42	20 23 55	2071.3	-26.09	64.07
90.00	11 8 55	4463.22	8.43	186.77	39.62	62.87	12 23 18	3863.2	4.73	180.05
100.00	21 7 41	2386.57	-28.70	51.34	45.62	98.74	21 47 28	1786.6	-27.19	42.86
100.00	12 23 19	4223.16	9.59	168.51	39.01	61.55	13 33 42	3623.2	5.71	161.86
110.00	22 31 32	2124.20	-32.13	30.68	44.88	102.36	23 6 56	1524.2	-30.09	22.06
110.00	13 15 58	4058.30	12.60	154.21	37.22	57.96	14 23 36	3458.3	8.27	147.78

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-2.4237	TRA	7.8184	TC3	-7.6865	BAU	2.3419	SGT	12466.2	SGR	971.4	SG3	1330.4	ST	4113.1	SR	786.7	SS	2273.7
RDE	.6510	RRA	-.2212	RC3	.5317	FAU	.22353	RRT	-.7128	RRF	-.7451	RTF	.9953	CRT	-.7785	CRS	.8500	CST	-.9923
FDE	-3.9324	FRA	9.8819	FC3	-8.5116	BSP	43332	SGB	12504.0	R23	.0478	R13	-.9955	LSA	4735.3	MSA	532.0	SSA	14.6
BDE	2.5096	BRA	7.8216	BC3	7.7049	FSP	4860	SG1	12485.5	SG2	680.2	THA	176.81	EL1	4159.1	EL2	488.3	ALF	171.41

LAUNCH DATE OCT 18 1964 FLIGHT TIME 388.00 ARRIVAL DATE NOV 10 1965

HELIOCENTRIC CONIC DISTANCE 871.052 EARTH TO MARS

RL	149.02	LAL	.00	LOL	24.65	VL	32.707	GAL	-7.96	AZL	88.34	HCA	268.53	SMA	186.54	ECC	.24262	INC	1.6617
RP	211.33	LAP	-1.66	LOP	293.18	VP	23.335	GAP	-11.82	AZP	90.04	TAL	317.23	TAP	225.76	RCA	141.28	APO	231.80
RC	303.736	GL	11.20	GP	3.93	ZAL	146.73	ZAP	43.48	ETS	183.60	ZAE	69.80	ETE	180.87	ZAC	86.81	ETC	258.95

PLANETOCENTRIC CONIC

C3	23.386	VHL	4.836	DLA	13.00	RAL	178.20	RAD	6567.9	VEL	12.032	PTH	2.15	VHP	4.489	DPA	14.39	RAP	160.49

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 44 9	2668.05	-27.38	72.26	46.77	97.54	20 28 37	2068.0	-26.05	63.84
90.00	11 8 34	4480.21	8.96	187.74	40.58	63.02	12 23 15	3880.2	5.27	181.01
100.00	21 12 15	2383.95	-28.67	51.15	46.56	98.84	21 51 59	1784.0	-27.15	42.68
100.00	12 23 10	4239.53	10.12	169.43	39.96	61.72	13 33 50	3639.5	6.26	162.77
110.00	22 35 41	2122.88	-32.11	30.58	45.81	102.42	23 11 4	1522.9	-30.06	21.96
110.00	13 16 14	4073.37	13.14	155.04	38.18	58.16	14 24 7	3473.4	8.84	148.59

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-2.5307	TRA	8.0769	TC3	-7.6040	BAU	2.3828	SGT	12630.8	SGR	959.3	SG3	1263.3	ST	4209.5	SR	783.9	SS	2230.2
RDE	.6582	RRA	-.2153	RC3	.5102	FAU	.21223	RRT	-.7048	RRF	-.7382	RTF	.9951	CRT	-.7797	CRS	.8513	CST	-.9922
FDE	-3.8530	FRA	9.5629	FC3	-7.8567	BSP	43987	SGB	12667.2	R23	.0492	R13	-.9952	LSA	4798.7	MSA	530.0	SSA	14.5
BDE	2.6149	BRA	8.0798	BC3	7.6211	FSP	4634	SG1	12648.9	SG2	679.6	THA	176.93	EL1	4254.3	EL2	485.7	ALF	171.63

LAUNCH DATE OCT 18 1964 FLIGHT TIME 390.00 ARRIVAL DATE NOV 12 1965

HELIOCENTRIC CONIC DISTANCE 875.158 EARTH TO MARS

RL	149.02	LAL	.00	LOL	24.65	VL	32.711	GAL	-8.11	AZL	88.32	HCA	269.74	SMA	186.61	ECC	.24432	INC	1.6781
RP	211.08	LAP	-1.68	LOP	294.39	VP	23.374	GAP	-12.00	AZP	90.01	TAL	316.59	TAP	226.34	RCA	141.02	APO	232.20
RC	304.746	GL	11.14	GP	3.85	ZAL	147.33	ZAP	42.55	ETS	183.65	ZAE	68.59	ETE	180.95	ZAC	86.79	ETC	258.90

PLANETOCENTRIC CONIC

C3	24.074	VHL	4.907	DLA	12.70	RAL	178.75	RAD	6568.0	VEL	12.060	PTH	2.16	VHP	4.582	DPA	14.20	RAP	160.73

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 48 58	2664.82	-27.35	72.03	47.74	97.65	20 33 23	2064.8	-26.01	63.62
90.00	11 8 12	4497.63	9.49	188.74	41.56	63.20	12 23 9	3897.6	5.82	181.99
100.00	21 16 52	2381.35	-28.65	50.96	47.52	98.93	21 56 33	1781.3	-27.11	42.50
100.00	12 22 59	4256.34	10.66	170.39	40.94	61.91	13 33 56	3656.3	6.82	163.70
110.00	22 39 53	2121.59	-32.09	30.49	46.77	102.47	23 15 14	1521.6	-30.04	21.87
110.00	13 16 28	4088.85	13.69	155.90	39.16	58.37	14 24 37	3488.8	9.41	149.42

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-2.6425	TRA	8.3404	TC3	-7.5161	BAU	2.4242	SGT	12790.4	SGR	948.1	SG3	1198.8	ST	4305.9	SR	781.3	SS	2186.7
RDE	.6658	RRA	-.2101	RC3	.4899	FAU	.20139	RRT	-.6973	RRF	-.7319	RTF	.9948	CRT	-.7813	CRS	.8530	CST	-.9922
FDE	-3.7750	FRA	9.2492	FC3	-7.2420	BSP	44594	SGB	12825.5	R23	.0506	R13	-.9950	LSA	4863.6	MSA	527.6	SSA	14.4
BDE	2.7251	BRA	8.3430	BC3	7.5320	FSP	4412	SG1	12807.5	SG2	678.7	THA	177.03	EL1	4349.5	EL2	482.8	ALF	171.83

LAUNCH DATE OCT 18 1964 FLIGHT TIME 392.00 ARRIVAL DATE NOV 14 1965

HELIOCENTRIC CONIC DISTANCE 879.259 EARTH TO MARS

RL 149.02 LAL .00 LOL 24.65 VL 32.715 GAL -8.27 AZL 88.31 HCA 270.96 SMA 186.68 ECC .24609 INC 1.6945 V1 29.900
RP 210.82 LAP -1.69 LOP 295.61 VP 23.412 GAP -12.19 AZP 89.97 TAL 315.94 TAP 226.90 RCA 140.74 APO 232.62 V2 26.015
RC 305.746 GL 11.08 GP 3.78 ZAL 147.95 ZAP 41.65 ETS 183.69 ZAE 67.41 ETE 181.04 ZAC 86.77 ETC 258.85 CLP 41.51

PLANETOCENTRIC CONIC

C3 24.802 VHL 4.980 DLA 12.39 RAL 179.31 RAD 6568.0 VEL 12.090 PTH 2.16 VHP 4.677 DPA 14.01 RAP 161.01 ECC 1.4082

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 53 51	2661.61	-27.32	71.80	48.71	97.76	20 38 12	2061.6	-25.96	63.39
90.00	11 7 47	4515.47	10.04	189.77	42.56	63.38	12 23 3	3915.5	6.38	182.99
100.00	21 21 33	2378.77	-28.62	50.78	48.50	99.03	22 1 11	1778.8	-27.07	42.32
100.00	12 22 47	4273.54	11.21	171.37	41.94	62.11	13 34 0	3673.5	7.39	164.66
110.00	22 44 8	2120.35	-32.07	30.39	47.74	102.52	23 19 28	1520.3	-30.01	21.78
110.00	13 16 41	4104.73	14.26	156.78	40.16	58.60	14 25 5	3504.7	10.00	150.27

DIFFERENTIAL CORRECTIONS
TDE-2.7566 TRA 8.6114 TC3-7.4188 BAU 2.4649
RDE .6737 RRA -.2054 RC3 .4704 FAU .19082
FDE-3.6956 FRA 8.9410 FC3-6.6606 BSP 45206
BDE 2.8378 BRA 8.6139 BC3 7.4337 FSP 4198

MID-COURSE EXECUTION ACCURACY
SGT12944.2 SGR 937.4 SG3 1136.4
RRT -.6902 RRF -.7260 RTF .9946
SGB12978.1 R23 .0521 R13 -.9947
SG112960.4 SG2 677.5 THA 177.13

ORBIT DETERMINATION ACCURACY
ST 4400.8 SR 778.6 SS 2142.1
CRT -.7828 CRS .8547 CST -.9920
LSA 4928.1 MSA 525.2 SSA 14.4
EL1 4443.3 EL2 479.9 ALF 172.02

LAUNCH DATE OCT 18 1964 FLIGHT TIME 394.00 ARRIVAL DATE NOV 16 1965

HELIOCENTRIC CONIC DISTANCE 883.355 EARTH TO MARS

RL 149.02 LAL .00 LOL 24.65 VL 32.719 GAL -8.44 AZL 88.29 HCA 272.18 SMA 186.75 ECC .24795 INC 1.7109 V1 29.900
RP 210.58 LAP -1.71 LOP 296.84 VP 23.449 GAP -12.38 AZP 89.93 TAL 315:27 TAP 227.46 RCA 140.45 APO 233.06 V2 26.043
RC 306.737 GL 11.02 GP 3.71 ZAL 148.57 ZAP 40.78 ETS 183.73 ZAE 66.25 ETE 181.12 ZAC 86.77 ETC 258.80 CLP 40.64

PLANETOCENTRIC CONIC

C3 25.573 VHL 5.057 DLA 12.07 RAL 179.88 RAD 6568.0 VEL 12.122 PTH 2.17 VHP 4.775 DPA 13.81 RAP 161.31 ECC 1.4209

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 58 47	2658.43	-27.29	71.57	49.71	97.87	20 43 5	2058.4	-25.92	63.17
90.00	11 7 21	4533.72	10.59	190.82	43.58	63.59	12 22 55	3933.7	6.96	184.03
100.00	21 26 17	2376.23	-28.59	50.59	49.49	99.12	22 5 53	1776.2	-27.03	42.14
100.00	12 22 32	4291.16	11.76	172.38	42.97	62.32	13 34 4	3691.2	7.97	165.65
110.00	22 48 26	2119.15	-32.05	30.30	48.72	102.57	23 23 45	1519.1	-29.99	21.70
110.00	13 16 52	4121.00	14.83	157.69	41.19	58.84	14 25 33	3521.0	10.60	151.15

DIFFERENTIAL CORRECTIONS
TDE-2.8752 TRA 8.8878 TC3-7.3161 BAU 2.5060
RDE .6819 RRA -.2014 RC3 .4518 FAU .18065
FDE-3.6166 FRA 8.6368 FC3-6.1157 BSP 45779
BDE 2.9550 BRA 8.8901 BC3 7.3300 FSP 3990

MID-COURSE EXECUTION ACCURACY
SGT13092.3 SGR 927.5 SG3 1076.3
RRT -.6836 RRF -.7207 RTF .9943
SGB13125.1 R23 .0537 R13 -.9944
SG113107.7 SG2 676.1 THA 177.22

ORBIT DETERMINATION ACCURACY
ST 4495.1 SR 775.9 SS 2097.0
CRT -.7845 CRS .8566 CST -.9919
LSA 4993.2 MSA 522.5 SSA 14.3
EL1 4536.6 EL2 476.8 ALF 172.20

LAUNCH DATE OCT 18 1964 FLIGHT TIME 396.00 ARRIVAL DATE NOV 18 1965

HELIOCENTRIC CONIC DISTANCE 887.445 EARTH TO MARS

RL 149.02 LAL .00 LOL 24.65 VL 32.723 GAL -8.61 AZL 88.27 HCA 273.41 SMA 186.83 ECC .24989 INC 1.7275 V1 29.900
RP 210.34 LAP -1.72 LOP 298.06 VP 23.486 GAP -12.57 AZP 89.90 TAL 314.59 TAP 227.99 RCA 140.14 APO 233.51 V2 26.071
RC 307.719 GL 10.95 GP 3.64 ZAL 149.19 ZAP 39.94 ETS 183.76 ZAE 65.12 ETE 181.20 ZAC 86.77 ETC 258.74 CLP 39.80

PLANETOCENTRIC CONIC

C3 26.388 VHL 5.137 DLA 11.75 RAL 180.44 RAD 6568.1 VEL 12.156 PTH 2.18 VHP 4.875 DPA 13.60 RAP 161.65 ECC 1.4343

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 3 45	2655.31	-27.26	71.35	50.72	97.98	20 48 1	2055.3	-25.87	62.95
90.00	11 6 54	4552.37	11.16	191.90	44.62	63.80	12 22 46	3952.4	7.55	185.08
100.00	21 31 3	2373.74	-28.56	50.41	50.50	99.21	22 10 37	1773.7	-27.00	41.96
100.00	12 22 17	4309.17	12.33	173.42	44.01	62.55	13 34 6	3709.2	8.56	166.66
110.00	22 52 47	2118.01	-32.03	30.22	49.72	102.62	23 28 5	1518.0	-29.97	21.62
110.00	13 17 3	4137.67	15.42	158.63	42.24	59.11	14 26 0	3537.7	11.21	152.05

DIFFERENTIAL CORRECTIONS
TDE-2.9972 TRA 9.1714 TC3-7.2072 BAU 2.5471
RDE .6905 RRA -.1980 RC3 .4341 FAU .17082
FDE-3.5372 FRA 8.3379 FC3-5.6042 BSP 46339
BDE 3.0758 BRA 9.1735 BC3 7.2203 FSP 3789

MID-COURSE EXECUTION ACCURACY
SGT13235.4 SGR 918.2 SG3 1018.4
RRT -.6776 RRF -.7160 RTF .9940
SGB13267.2 R23 .0554 R13 -.9941
SG113250.0 SG2 674.5 THA 177.30

ORBIT DETERMINATION ACCURACY
ST 4588.1 SR 773.3 SS 2051.2
CRT -.7864 CRS .8587 CST -.9918
LSA 5058.3 MSA 519.6 SSA 14.2
EL1 4628.7 EL2 473.5 ALF 172.37

LAUNCH DATE OCT 18 1964 FLIGHT TIME 398.00 ARRIVAL DATE NOV 20 1965

HELIOCENTRIC CONIC DISTANCE 891.529 EARTH TO MARS

RL 149.02 LAL .00 LOL 24.65 VL 32.728 GAL -8.79 AZL 88.26 HCA 274.63 SMA 186.90 ECC .25191 INC 1.7440 V1 29.900
RP 210.10 LAP -1.74 LOP 299.29 VP 23.522 GAP -12.76 AZP 89.86 TAL 313.88 TAP 228.52 RCA 139.82 APO 233.99 V2 26.098
RC 308.691 GL 10.87 GP 3.57 ZAL 149.83 ZAP 39.12 ETS 183.79 ZAE 64.02 ETE 181.28 ZAC 86.78 ETC 258.68 CLP 38.98

PLANETOCENTRIC CONIC

C3 27.250 VHL 5.220 DLA 11.42 RAL 181.01 RAD 6568.1 VEL 12.191 PTH 2.19 VHP 4.978 DPA 13.38 RAP 162.01 ECC 1.4485

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 8 47	2652.24	-27.23	71.13	51.75	98.09	20 52 59	2052.2	-25.83	62.74
90.00	11 6 25	4571.41	11.72	193.01	45.69	64.04	12 22 36	3971.4	8.14	186.17
100.00	21 35 53	2371.31	-28.54	50.24	51.52	99.30	22 15 25	1771.3	-26.96	41.79
100.00	12 22 0	4327.57	12.91	174.48	45.08	62.80	13 34 7	3727.6	9.16	167.69
110.00	22 57 11	2116.94	-32.02	30.14	50.74	102.67	23 32 27	1516.9	-29.94	21.54
110.00	13 17 12	4154.70	16.01	159.59	43.31	59.39	14 26 26	3554.7	11.83	152.98

DIFFERENTIAL CORRECTIONS
TDE-3.1241 TRA 9.4611 TC3-7.0948 BAU 2.5892
RDE .6995 RRA -.1952 RC3 .4174 FAU .16138
FDE-3.4585 FRA 8.0422 FC3-5.1271 BSP 46850
BDE 3.2014 BRA 9.4632 BC3 7.1071 FSP 3591

MID-COURSE EXECUTION ACCURACY
SGT13373.9 SGR 909.5 SG3 962.7
RRT -.6722 RRF -.7120 RTF .9936
SGB13404.8 R23 .0573 R13 -.9938
SG113387.9 SG2 672.6 THA 177.38

ORBIT DETERMINATION ACCURACY
ST 4680.6 SR 770.7 SS 2005.1
CRT -.7884 CRS .8611 CST -.9916
LSA 5124.0 MSA 516.5 SSA 14.1
EL1 4720.3 EL2 470.1 ALF 172.53

LAUNCH DATE OCT 19 1964 FLIGHT TIME 240.00 ARRIVAL DATE JUN 16 1965

HELIOCENTRIC CONIC DISTANCE 579.211 EARTH TO MARS

RL	148.98	LAL	.00	LOL	25.64	VL	33.166	GAL	-6.53	AZL	93.64	HCA	187.93	SMA	194.68	ECC	.25945	INC	3.6414	V1	29.909
RP	237.65	LAP	.50	LOP	213.56	VP	20.861	GAP	8.04	AZP	86.39	TAL	327.50	TAP	155.42	RCA	144.17	APO	245.19	V2	23.123
RC	184.919	GL	-25.27	GP	19.64	ZAL	132.05	ZAP	146.97	ETS	145.27	ZAE	156.04	ETE	55.99	ZAC	108.24	ETC	255.22	CLP	152.89

PLANETOCENTRIC CONIC

C3	24.046	VHL	4.904	DLA	-16.80	RAL	154.88	RAD	6568.0	VEL	12.059	PTH	2.16	VHP	5.772	DPA	16.39	RAP	194.82	ECC	1.3957

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	22 4 22	1707.50	-4.91	11.50	18.13	117.92	22 32 49	1107.5	-1.14	4.85
90.00	5 34 27	5454.36	28.22	251.53	25.67	87.57	7 5 22	4854.4	27.58	242.92
100.00	23 16 9	1475.87	-6.19	353.77	17.43	119.30	23 40 45	875.9	-2.24	347.21
100.00	7 5 21	5161.23	29.67	229.88	25.58	86.21	8 31 23	4561.2	28.83	221.18
110.00	0 7 14	1328.16	-9.44	340.58	15.45	123.01	0 29 22	728.2	-5.03	334.27
110.00	8 34 42	4881.70	33.46	208.21	25.14	82.55	9 56 3	4281.7	32.07	199.26

DIFFERENTIAL CORRECTIONS

TDE	1.8222	TRA	-3.0416	TC3	1.6637	BAU	.6692
RDE	1.0232	RRA	-1.2141	RC3	1.2511	FAU	.16284
FDE	-4.1188	FRA	5.1711	FC3	-5.8628	BSP	17438
BDE	2.0898	BRA	3.2749	BC3	2.0816	FSP	2671

MID-COURSE EXECUTION ACCURACY

SGT	4580.0	SGR	2265.1	SG3	846.8		
RRT	.9686	RRF	-.9983	RTF	-.9592		
SGB	5109.5	R23	-.2314	R13	-.9716		
SG1	5084.2	SG2	507.3	THA	25.87		

ORBIT DETERMINATION ACCURACY

ST	2403.3	SR	1276.0	SS	2580.6
CRT	.9920	CRS	.9998	CST	.9942
LSA	3744.4	MSA	206.5	SSA	7.4
EL1	2717.3	EL2	142.0	ALF	27.86

LAUNCH DATE OCT 19 1964 FLIGHT TIME 242.00 ARRIVAL DATE JUN 18 1965

HELIOCENTRIC CONIC DISTANCE 582.777 EARTH TO MARS

RL	148.98	LAL	.00	LOL	25.64	VL	33.139	GAL	-6.43	AZL	93.06	HCA	188.88	SMA	194.17	ECC	.25697	INC	3.0574	V1	29.909
RP	237.31	LAP	.47	LOP	214.52	VP	20.856	GAP	7.61	AZP	86.98	TAL	327.72	TAP	156.60	RCA	144.27	APO	244.06	V2	23.157
RC	187.176	GL	-21.80	GP	18.07	ZAL	133.03	ZAP	147.27	ETS	148.06	ZAE	157.64	ETE	55.36	ZAC	106.78	ETC	255.33	CLP	152.23

PLANETOCENTRIC CONIC

C3	22.374	VHL	4.730	DLA	-13.44	RAL	155.88	RAD	6567.9	VEL	11.990	PTH	2.14	VHP	5.589	DPA	14.85	RAP	194.38	ECC	1.3682

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 37 24	1810.48	-8.16	17.32	17.63	117.21	22 7 35	1210.5	-4.45	10.61
90.00	6 9 23	5316.23	27.41	241.51	23.82	82.61	7 37 59	4716.2	26.11	233.09
100.00	22 51 43	1570.73	-9.31	359.08	17.01	118.53	23 17 53	970.7	-5.43	352.44
100.00	7 37 45	5031.22	28.71	220.34	23.62	81.28	9 1 36	4431.2	27.20	211.86
110.00	23 44 9	1406.48	-12.31	344.83	15.22	122.14	24 7 36	806.5	-7.98	338.41
110.00	9 1 48	4768.23	32.13	199.63	22.88	77.64	10 21 16	4168.2	30.09	191.01

DIFFERENTIAL CORRECTIONS

TDE	1.6955	TRA	-3.0071	TC3	1.7745	BAU	.6473
RDE	.8864	RRA	-1.1203	RC3	1.2384	FAU	.17150
FDE	-4.0043	FRA	5.5491	FC3	-6.6362	BSP	17423
BDE	1.9132	BRA	3.2090	BC3	2.1639	FSP	2901

MID-COURSE EXECUTION ACCURACY

SGT	4589.3	SGR	2114.7	SG3	909.0		
RRT	.9683	RRF	-.9980	RTF	-.9606		
SGB	5053.0	R23	-.2299	R13	-.9714		
SG1	5030.0	SG2	482.2	THA	24.28		

ORBIT DETERMINATION ACCURACY

ST	2341.6	SR	1152.9	SS	2549.0
CRT	.9917	CRS	.9995	CST	.9952
LSA	3643.4	MSA	187.6	SSA	9.6
EL1	2606.6	EL2	133.4	ALF	26.10

LAUNCH DATE OCT 19 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUN 20 1965

HELIOCENTRIC CONIC DISTANCE 586.362 EARTH TO MARS

RL	148.98	LAL	.00	LOL	25.64	VL	33.112	GAL	-6.34	AZL	92.58	HCA	189.85	SMA	193.68	ECC	.25459	INC	2.5846	V1	29.909
RP	236.98	LAP	.44	LOP	215.48	VP	20.853	GAP	7.18	AZP	87.45	TAL	327.94	TAP	157.78	RCA	144.37	APO	242.98	V2	23.191
RC	189.421	GL	-18.85	GP	16.78	ZAL	133.69	ZAP	147.29	ETS	150.55	ZAE	159.04	ETE	55.20	ZAC	105.59	ETC	255.41	CLP	151.51

PLANETOCENTRIC CONIC

C3	21.103	VHL	4.594	DLA	-10.57	RAL	156.68	RAD	6567.9	VEL	11.937	PTH	2.12	VHP	5.427	DPA	13.59	RAP	194.03	ECC	1.3473

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 16 24	1893.16	-10.70	22.07	17.45	116.38	21 47 57	1293.2	-7.07	15.27
90.00	6 36 46	5205.31	26.19	233.63	22.34	78.84	8 3 31	4605.3	24.39	225.42
100.00	22 32 28	1647.71	-11.78	3.46	16.89	117.67	22 59 56	1047.7	-7.99	356.73
100.00	8 3 22	4925.99	27.39	212.80	22.06	77.53	9 25 28	4326.0	25.39	204.57
110.00	23 28 47	1471.40	-14.64	348.43	15.23	121.24	23 53 18	871.4	-10.39	341.90
110.00	9 23 33	4675.07	30.56	192.82	21.13	73.89	10 41 28	4075.1	28.05	184.53

DIFFERENTIAL CORRECTIONS

TDE	1.5986	TRA	-2.9614	TC3	1.8801	BAU	.6336
RDE	.7882	RRA	-1.0397	RC3	1.2284	FAU	.18052
FDE	-3.9275	FRA	5.8877	FC3	-7.4059	BSP	17251
BDE	1.7824	BRA	3.1386	BC3	2.2458	FSP	3100

MID-COURSE EXECUTION ACCURACY

SGT	4590.9	SGR	1995.1	SG3	970.2		
RRT	.9680	RRF	-.9976	RTF	-.9619		
SGB	5005.7	R23	-.2269	R13	-.9716		
SG1	4984.4	SG2	461.3	THA	23.02		

ORBIT DETERMINATION ACCURACY

ST	2291.0	SR	1060.3	SS	2527.6
CRT	.9913	CRS	.9989	CST	.9962
LSA	3568.3	MSA	170.0	SSA	12.2
EL1	2521.3	EL2	126.9	ALF	24.71

LAUNCH DATE OCT 19 1964 FLIGHT TIME 246.00 ARRIVAL DATE JUN 22 1965

HELIOCENTRIC CONIC DISTANCE 589.966 EARTH TO MARS

RL	148.98	LAL	.00	LOL	25.64	VL	33.087	GAL	-6.26	AZL	92.19	HCA	190.81	SMA	193.21	ECC	.25231	INC	2.1944	V1	29.909
RP	236.64	LAP	.41	LOP	216.45	VP	20.851	GAP	6.76	AZP	87.84	TAL	328.15	TAP	158.96	RCA	144.46	APO	241.96	V2	23.226
RC	191.655	GL	-16.32	GP	15.71	ZAL	134.12	ZAP	147.11	ETS	152.77	ZAE	160.31	ETE	55.50	ZAC	104.59	ETC	255.48	CLP	150.73

PLANETOCENTRIC CONIC

C3	20.096	VHL	4.483	DLA	-8.09	RAL	157.32	RAD	6567.8	VEL	11.894	PTH	2.11	VHP	5.279	DPA	12.55	RAP	193.73	ECC	1.3307

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 59 11	1962.08	-12.75	26.09	17.45	115.50	21 31 53	1362.1	-9.21	19.20
90.00	6 59 9	5113.00	24.82	227.22	21.15	75.91	8 24 22	4513.0	22.64	219.22
100.00	22 16 37	1712.27	-13.79	7.20	16.92	116.78	22 45 9	1112.3	-10.09	.36
100.00	8 24 24	4838.04	25.94	206.67	20.83	74.61	9 45 2	4238.0	23.58	198.67
110.00	23 15 57	1526.50	-16.56	351.54	15.36	120.34	23 41 23	926.5	-12.41	344.89
110.00	9 41 33	4596.58	28.95	187.28	19.78	70.97	10 58 10	3996.6	26.08	179.28

DIFFERENTIAL CORRECTIONS

TDE	1.5298	TRA	-2.8999	TC3	1.9978	BAU	.6292
RDE	.7157	RRA	-.9706	RC3	1.2221	FAU	.18984
FDE	-3.8782	FRA	6.2016	FC3	-8.1781	BSP	16784
BDE	1.6889	BRA	3.0581	BC3	2.3419	FSP	3283

MID-COURSE EXECUTION ACCURACY

SGT	4587.6	SGR	1899.3	SG3	1031.1		
RRT	.9689	RRF	-.9970	RTF	-.9643		
SGB	4965.2	R23	-.2188	R13	-.9727		
SG1	4946.0	SG2	436.2	THA	22.04		

ORBIT DETERMINATION ACCURACY

ST	2255.5	SR	989.5	SS	2514.0
CRT	.9913	CRS	.9981	CST	.9974
LSA	3516.3	MSA	148.5	SSA	15.5
EL1	2460.1	EL2	119.2	ALF	23.56

LAUNCH DATE OCT 19 1964 FLIGHT TIME 248.00 ARRIVAL DATE JUN 24 1965

HELIOCENTRIC CONIC DISTANCE 593.584 EARTH TO MARS

RL 148.98 LAL .00 LOL 25.64 VL 33.063 GAL -6.17 AZL 91.87 HCA 191.78 SMA 192.76 ECC .25013 INC 1.8664 V1 29.909
RP 236.29 LAP .38 LOP 217.42 VP 20.853 GAP 6.34 AZP 88.17 TAL 328.36 TAP 160.14 RCA 144.55 APO 240.98 V2 23.261
RC 193.877 GL -14.11 GP 14.82 ZAL 134.38 ZAP 146.77 ETS 154.75 ZAE 161.46 ETE 56.24 ZAC 103.75 ETC 255.53 CLP 149.91

PLANETOCENTRIC CONIC

C3 19.275 VHL 4.390 DLA -5.92 RAL 157.86 RAD 6567.8 VEL 11.860 PTH 2.10 VHP 5.141 DPA 11.68 RAP 193.47 ECC 1.3172

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 44 36	2021.00	-14.45	29.58	17.53	114.62	21 18 17	1421.0	-11.01	22.60
90.00	7 17 58	5034.27	23.41	221.88	20.21	73.59	8 41 53	4434.3	20.94	214.08
100.00	22 3 8	1767.66	-15.47	10.46	17.03	115.90	22 32 36	1167.7	-11.86	3.53
100.00	8 42 7	4762.85	24.48	201.56	19.85	72.29	10 1 30	4162.9	21.83	193.76
110.00	23 4 57	1574.12	-18.17	354.29	15.55	119.46	23 31 11	974.1	-14.11	347.53
110.00	9 56 48	4529.16	27.36	182.68	18.71	68.67	11 12 17	3929.2	24.22	174.92

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.4518 TRA-2.8561 TC3 2.0623 BAU .6164 SGT 4573.0 SGR 1819.2 SG3 1091.4 ST 2203.8 SR 931.3 SS 2500.1
RDE .6577 RRA -.9147 RC3 1.2119 FAU .19862 RRT .9677 RRF -.9964 RTF -.9646 CRT .9904 CRS .9970 CST .9980
FDE-3.8340 FRA 6.5194 FC3-8.9209 BSP 16799 SGB 4921.5 R23 -.2168 R13 -.9725 LSA 3457.6 MSA 139.3 SSA 18.7
BDE 1.5939 BRA 2.9990 BC3 2.3920 FSP 3494 SG1 4902.9 SG2 427.5 THA 21.23 EL1 2389.6 EL2 118.6 ALF 22.77

LAUNCH DATE OCT 19 1964 FLIGHT TIME 250.00 ARRIVAL DATE JUN 26 1965

HELIOCENTRIC CONIC DISTANCE 597.218 EARTH TO MARS

RL 148.98 LAL .00 LOL 25.64 VL 33.040 GAL -6.09 AZL 91.59 HCA 192.75 SMA 192.34 ECC .24803 INC 1.5862 V1 29.909
RP 235.94 LAP .35 LOP 218.39 VP 20.856 GAP 5.93 AZP 88.45 TAL 328.57 TAP 161.31 RCA 144.63 APO 240.05 V2 23.297
RC 196.086 GL -12.18 GP 14.05 ZAL 134.52 ZAP 146.30 ETS 156.53 ZAE 162.53 ETE 57.44 ZAC 103.03 ETC 255.57 CLP 149.05

PLANETOCENTRIC CONIC

C3 18.586 VHL 4.311 DLA -4.02 RAL 158.30 RAD 6567.8 VEL 11.831 PTH 2.10 VHP 5.013 DPA 10.94 RAP 193.24 ECC 1.3059

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 31 56	2072.30	-15.88	32.67	17.66	113.76	21 6 28	1472.3	-12.54	25.59
90.00	7 34 9	4965.83	22.02	217.34	19.44	71.73	8 56 55	4365.8	19.32	209.71
100.00	21 51 24	1815.97	-16.88	13.35	17.18	115.04	22 21 40	1216.0	-13.37	6.32
100.00	8 57 23	4697.39	23.06	197.22	19.06	70.43	10 15 40	4097.4	20.18	189.60
110.00	22 55 19	1615.84	-19.55	356.74	15.76	118.61	23 22 15	1015.8	-15.58	349.87
110.00	10 9 56	4470.29	25.84	178.78	17.86	66.81	11 24 27	3870.3	22.48	171.24

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.3837 TRA-2.8087 TC3 2.1182 BAU .6056 SGT 4551.9 SGR 1754.0 SG3 1152.6 ST 2155.2 SR 885.5 SS 2492.6
RDE .6128 RRA -.8667 RC3 1.2053 FAU .20770 RRT .9665 RRF -.9956 RTF -.9648 CRT .9893 CRS .9957 CST .9984
FDE-3.8081 FRA 6.8282 FC3-9.6748 BSP 16776 SGB 4878.2 R23 -.2144 R13 -.9723 LSA 3409.5 MSA 132.9 SSA 22.0
BDE 1.5133 BRA 2.9394 BC3 2.4371 FSP 3700 SG1 4859.9 SG2 421.8 THA 20.59 EL1 2327.0 EL2 119.4 ALF 22.18

LAUNCH DATE OCT 19 1964 FLIGHT TIME 252.00 ARRIVAL DATE JUN 28 1965

HELIOCENTRIC CONIC DISTANCE 600.867 EARTH TO MARS

RL 148.98 LAL .00 LOL 25.64 VL 33.019 GAL -6.02 AZL 91.35 HCA 193.72 SMA 191.94 ECC .24603 INC 1.3449 V1 29.909
RP 235.59 LAP .32 LOP 219.36 VP 20.861 GAP 5.53 AZP 88.69 TAL 328.77 TAP 162.49 RCA 144.71 APO 239.16 V2 23.333
RC 198.280 GL -10.47 GP 13.40 ZAL 134.56 ZAP 145.72 ETS 158.11 ZAE 163.52 ETE 59.10 ZAC 102.41 ETC 255.60 CLP 148.15

PLANETOCENTRIC CONIC

C3 17.995 VHL 4.242 DLA -2.32 RAL 158.66 RAD 6567.7 VEL 11.806 PTH 2.09 VHP 4.891 DPA 10.32 RAP 193.03 ECC 1.2962

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 20 43	2117.61	-17.10	35.43	17.80	112.92	20 56 1	1517.6	-13.85	28.26
90.00	7 48 18	4905.41	20.68	213.42	18.81	70.21	9 10 3	4305.4	17.79	205.93
100.00	21 40 59	1858.70	-18.10	15.94	17.34	114.21	22 11 58	1258.7	-14.68	8.82
100.00	9 10 43	4639.55	21.69	193.46	18.41	68.91	10 28 2	4039.6	18.63	186.01
110.00	22 46 45	1652.82	-20.74	358.95	15.97	117.80	23 14 18	1052.8	-16.86	351.97
110.00	10 21 26	4418.19	24.40	175.41	17.16	65.29	11 35 4	3818.2	20.87	168.06

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.3249 TRA-2.7560 TC3 2.1721 BAU .5972 SGT 4525.2 SGR 1700.8 SG3 1215.0 ST 2110.6 SR 848.9 SS 2488.9
RDE .5771 RRA -.8257 RC3 1.2017 FAU .21698 RRT .9656 RRF -.9947 RTF -.9653 CRT .9884 CRS .9941 CST .9989
FDE-3.7930 FRA 7.1366 FC-10.4387 BSP 16669 SGB 4834.3 R23 -.2100 R13 -.9724 LSA 3369.4 MSA 126.9 SSA 25.4
BDE 1.4452 BRA 2.8770 BC3 2.4824 FSP 3913 SG1 4816.4 SG2 415.5 THA 20.10 EL1 2271.7 EL2 120.0 ALF 21.74

LAUNCH DATE OCT 19 1964 FLIGHT TIME 254.00 ARRIVAL DATE JUN 30 1965

HELIOCENTRIC CONIC DISTANCE 604.532 EARTH TO MARS

RL 148.98 LAL .00 LOL 25.64 VL 32.997 GAL -5.94 AZL 91.14 HCA 194.70 SMA 191.55 ECC .24411 INC 1.1349 V1 29.909
RP 235.24 LAP .29 LOP 220.34 VP 20.868 GAP 5.13 AZP 88.90 TAL 328.96 TAP 163.66 RCA 144.79 APO 238.31 V2 23.369
RC 200.460 GL -8.95 GP 12.84 ZAL 134.53 ZAP 145.06 ETS 159.55 ZAE 164.44 ETE 61.27 ZAC 101.87 ETC 255.63 CLP 147.22

PLANETOCENTRIC CONIC

C3 17.481 VHL 4.181 DLA -.80 RAL 158.97 RAD 6567.7 VEL 11.784 PTH 2.08 VHP 4.775 DPA 9.79 RAP 192.82 ECC 1.2877

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 10 38	2158.10	-18.16	37.94	17.94	112.11	20 46 37	1558.1	-15.00	30.68
90.00	8 0 49	4851.43	19.39	209.98	18.29	68.95	9 21 41	4251.4	16.36	202.62
100.00	21 31 37	1896.90	-19.15	18.29	17.51	113.40	22 3 14	1296.9	-15.82	11.08
100.00	9 22 32	4587.85	20.39	190.18	17.86	67.65	10 39 0	3987.9	17.18	182.85
110.00	22 39 1	1685.94	-21.78	.95	16.18	117.02	23 7 7	1085.9	-17.98	353.88
110.00	10 31 37	4371.58	23.05	172.48	16.58	64.03	11 44 29	3771.6	19.36	165.27

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.2685 TRA-2.7036 TC3 2.2098 BAU .5875 SGT 4490.7 SGR 1656.7 SG3 1278.3 ST 2064.1 SR 818.8 SS 2486.6
RDE .5479 RRA -.7912 RC3 1.1988 FAU .22616 RRT .9645 RRF -.9937 RTF -.9657 CRT .9872 CRS .9922 CST .9992
FDE-3.7820 FRA 7.4523 FC-11.2007 BSP 16603 SGB 4786.5 R23 -.2057 R13 -.9725 LSA 3331.4 MSA 124.2 SSA 28.4
BDE 1.3818 BRA 2.8170 BC3 2.5141 FSP 4145 SG1 4768.8 SG2 411.9 THA 19.74 EL1 2217.3 EL2 121.7 ALF 21.45

LAUNCH DATE OCT 19 1964 FLIGHT TIME 256.00 ARRIVAL DATE JUL 2 1965

HELIOCENTRIC CONIC DISTANCE 608.211 EARTH TO MARS

RL 148.98 LAL .00 LOL 25.64 VL 32.977 GAL -5.87 AZL 90.95 HCA 195.68 SMA 191.19 ECC .24228 INC .9497 V1 29.909
RP 234.89 LAP .26 LOP 221.32 VP 20.878 GAP 4.73 AZP 89.09 TAL 329.14 TAP 164.82 RCA 144.87 APO 237.51 V2 23.405
RC 202.623 GL -7.57 GP 12.34 ZAL 134.45 ZAP 144.31 ETS 160.84 ZAE 165.29 ETE 63.98 ZAC 101.39 ETC 255.66 CLP 146.25

PLANETOCENTRIC CONIC

C3 17.026 VHL 4.126 DLA .58 RAL 159.23 RAD 6567.7 VEL 11.765 PTH 2.08 VHP 4.664 DPA 9.34 RAP 192.62 ECC 1.2802

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 1 29	2194.65	-19.08	40.22	18.09	111.33	20 38 3	1594.7	-16.01	32.89
90.00	8 12 3	4802.69	18.17	206.93	17.84	67.90	9 32 5	4202.7	15.02	199.67
100.00	21 23 5	1931.40	-20.06	20.44	17.66	112.63	21 55 17	1331.4	-16.82	13.15
100.00	9 33 7	4541.17	19.15	187.26	17.41	66.60	10 48 48	3941.2	15.82	180.05
110.00	22 31 57	1715.85	-22.69	2.80	16.38	116.28	23 0 33	1115.9	-18.98	355.63
110.00	10 40 45	4329.49	21.[illegible]	169.88	16.09	62.97	11 52 54	3729.5	17.97	162.81

DIFFERENTIAL CORRECTIONS
TDE 1.2182 TRA-2.6467 TC3 2.2450 BAU .5795
RDE .5250 RRA -.7609 RC3 1.2006 FAU .23593
FDE-3.7858 FRA 7.7650 FC-11.9968 BSP 16462
BDE 1.3265 BRA 2.7539 BC3 2.5459 FSP 4371

MID-COURSE EXECUTION ACCURACY
SGT 4449.9 SGR 1621.5 SG3 1343.8
RRT .9635 RRF -.9926 RTF -.9661
SGB 4736.1 R23 -.2010 R13 -.9727
SG1 4718.3 SG2 409.7 THA 19.50

ORBIT DETERMINATION ACCURACY
ST 2019.9 SR 795.4 SS 2490.1
CRT .9860 CRS .9900 CST .9995
LSA 3301.0 MSA 124.0 SSA 30.9
EL1 2167.3 EL2 123.7 ALF 21.29

LAUNCH DATE OCT 19 1964 FLIGHT TIME 258.00 ARRIVAL DATE JUL 4 1965

HELIOCENTRIC CONIC DISTANCE 611.904 EARTH TO MARS

RL 148.98 LAL .00 LOL 25.64 VL 32.958 GAL -5.81 AZL 90.79 HCA 196.66 SMA 190.84 ECC .24052 INC .7848 V1 29.909
RP 234.53 LAP .22 LOP 222.31 VP 20.889 GAP 4.34 AZP 89.25 TAL 329.32 TAP 165.99 RCA 144.94 APO 236.74 V2 23.442
RC 204.770 GL -6.33 GP 11.91 ZAL 134.33 ZAP 143.50 ETS 162.02 ZAE 166.07 ETE 67.26 ZAC 100.96 ETC 255.68 CLP 145.24

PLANETOCENTRIC CONIC

C3 16.620 VHL 4.077 DLA 1.83 RAL 159.45 RAD 6567.7 VEL 11.747 PTH 2.07 VHP 4.557 DPA 8.95 RAP 192.42 ECC 1.2735

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 53 4	2227.94	-19.89	42.33	18.22	110.58	20 30 12	1627.9	-16.91	34.92
90.00	8 22 13	4758.31	17.02	204.18	17.46	67.02	9 41 31	4158.3	13.76	197.02
100.00	21 15 16	1962.82	-20.87	22.42	17.81	111.90	21 47 58	1362.8	-17.72	15.05
100.00	9 42 42	4498.67	17.98	184.65	17.02	65.71	10 57 41	3898.7	14.55	177.53
110.00	22 25 28	1743.08	-23.51	4.49	16.57	115.56	22 54 31	1143.1	-19.87	357.24
110.00	10 48 59	4291.17	20.56	167.56	15.68	62.07	12 0 30	3691.2	16.67	160.60

DIFFERENTIAL CORRECTIONS
TDE 1.1721 TRA-2.5868 TC3 2.2718 BAU .5714
RDE .5067 RRA -.7344 RC3 1.2054 FAU .24611
FDE-3.8005 FRA 8.0787 FC-12.8198 BSP 16268
BDE 1.2769 BRA 2.6890 BC3 2.5718 FSP 4596

MID-COURSE EXECUTION ACCURACY
SGT 4401.7 SGR 1593.6 SG3 1411.3
RRT .9623 RRF -.9914 RTF -.9663
SGB 4681.3 R23 -.1964 R13 -.9728
SG1 4663.4 SG2 409.3 THA 19.36

ORBIT DETERMINATION ACCURACY
ST 1976.7 SR 777.2 SS 2497.8
CRT .9847 CRS .9876 CST .9996
LSA 3276.2 MSA 126.3 SSA 32.7
EL1 2120.2 EL2 126.1 ALF 21.24

LAUNCH DATE OCT 19 1964 FLIGHT TIME 260.00 ARRIVAL DATE JUL 6 1965

HELIOCENTRIC CONIC DISTANCE 615.611 EARTH TO MARS

RL 148.98 LAL .00 LOL 25.64 VL 32.940 GAL -5.74 AZL 90.64 HCA 197.65 SMA 190.51 ECC .23885 INC .6381 V1 29.909
RP 234.17 LAP .19 LOP 223.29 VP 20.901 GAP 3.96 AZP 89.39 TAL 329.50 TAP 167.15 RCA 145.00 APO 236.01 V2 23.479
RC 206.900 GL -5.20 GP 11.53 ZAL 134.19 ZAP 142.63 ETS 163.09 ZAE 166.77 ETE 71.16 ZAC 100.58 ETC 255.70 CLP 144.20

PLANETOCENTRIC CONIC

C3 16.254 VHL 4.032 DLA 2.98 RAL 159.63 RAD 6567.7 VEL 11.732 PTH 2.07 VHP 4.455 DPA 8.63 RAP 192.21 ECC 1.2675

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 45 17	2258.48	-20.61	44.28	18.35	109.86	20 22 55	1658.5	-17.72	36.80
90.00	8 31 29	4717.60	15.92	201.70	17.13	66.27	9 50 7	4117.6	12.57	194.62
100.00	21 8 1	1991.63	-21.59	24.26	17.95	111.19	21 41 12	1391.6	-18.52	16.81
100.00	9 51 26	4459.69	16.87	182.28	16.68	64.95	11 5 46	3859.7	13.36	175.25
110.00	22 19 27	1768.04	-24.23	6.07	16.74	114.88	22 48 55	1168.0	-20.67	358.73
110.00	10 56 30	4256.04	19.43	165.46	15.32	61.31	12 7 26	3656.0	15.45	158.60

DIFFERENTIAL CORRECTIONS
TDE 1.1316 TRA-2.5207 TC3 2.2993 BAU .5650
RDE .4922 RRA -.7112 RC3 1.2132 FAU .25673
FDE-3.8241 FRA 8.3950 FC-13.6736 BSP 15972
BDE 1.2340 BRA 2.6191 BC3 2.5998 FSP 4823

MID-COURSE EXECUTION ACCURACY
SGT 4346.4 SGR 1571.8 SG3 1481.0
RRT .9616 RRF -.9902 RTF -.9669
SGB 4621.9 R23 -.1901 R13 -.9733
SG1 4603.9 SG2 407.4 THA 19.33

ORBIT DETERMINATION ACCURACY
ST 1935.8 SR 763.1 SS 2508.9
CRT .9838 CRS .9850 CST .9997
LSA 3256.7 MSA 130.3 SSA 33.9
EL1 2076.9 EL2 127.6 ALF 21.28

LAUNCH DATE OCT 19 1964 FLIGHT TIME 262.00 ARRIVAL DATE JUL 8 1965

HELIOCENTRIC CONIC DISTANCE 619.329 EARTH TO MARS

RL 148.98 LAL .00 LOL 25.64 VL 32.922 GAL -5.68 AZL 90.51 HCA 198.64 SMA 190.19 ECC .23725 INC .5060 V1 29.909
RP 233.80 LAP .16 LOP 224.28 VP 20.916 GAP 3.59 AZP 89.52 TAL 329.67 TAP 168.30 RCA 145.07 APO 235.31 V2 23.517
RC 209.011 GL -4.16 GP 11.20 ZAL 134.03 ZAP 141.70 ETS 164.08 ZAE 167.37 ETE 75.70 ZAC 100.24 ETC 255.72 CLP 143.13

PLANETOCENTRIC CONIC

C3 15.924 VHL 3.990 DLA 4.04 RAL 159.80 RAD 6567.6 VEL 11.718 PTH 2.06 VHP 4.356 DPA 8.36 RAP 191.99 ECC 1.2621

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 38 2	2286.68	-21.25	46.10	18.47	109.17	20 16 9	1686.7	-18.44	38.55
90.00	8 40 2	4680.04	14.87	199.44	16.85	65.62	9 58 2	4080.0	11.46	192.42
100.00	21 1 16	2018.22	-22.24	25.97	18.09	110.51	21 34 54	1418.2	-19.25	18.45
100.00	9 59 29	4423.74	15.83	180.13	16.39	64.31	11 13 12	3823.7	12.24	173.17
110.00	22 13 51	1791.05	-24.88	7.54	16.90	114.23	22 43 42	1191.1	-21.40	.13
110.00	11 3 23	4223.67	18.36	163.56	15.01	60.65	12 13 47	3623.7	14.31	156.79

DIFFERENTIAL CORRECTIONS
TDE 1.0844 TRA-2.4614 TC3 2.2956 BAU .5535
RDE .4794 RRA -.6926 RC3 1.2205 FAU .26713
FDE-3.8415 FRA 8.7324 FC-14.5231 BSP 15863
BDE 1.1856 BRA 2.5570 BC3 2.5999 FSP 5085

MID-COURSE EXECUTION ACCURACY
SGT 4281.8 SGR 1554.5 SG3 1552.2
RRT .9598 RRF -.9889 RTF -.9666
SGB 4555.2 R23 -.1869 R13 -.9731
SG1 4536.5 SG2 411.9 THA 19.38

ORBIT DETERMINATION ACCURACY
ST 1886.0 SR 751.0 SS 2518.1
CRT .9821 CRS .9820 CST .9997
LSA 3231.4 MSA 137.7 SSA 34.5
EL1 2025.7 EL2 131.5 ALF 21.46

LAUNCH DATE OCT 19 1964 FLIGHT TIME 264.00 ARRIVAL DATE JUL 10 1965

HELIOCENTRIC CONIC DISTANCE 623.060 EARTH TO MARS

RL 148.98 LAL .00 LOL 25.64 VL 32.905 GAL -5.62 AZL 90.39 HCA 199.63 SMA 189.89 ECC .23573 INC .3856 V1 29.909
RP 233.44 LAP .13 LOP 225.27 VP 20.932 GAP 3.21 AZP 89.64 TAL 329.83 TAP 169.46 RCA 145.13 APO 234.65 V2 23.555
RC 211.104 GL -3.20 GP 10.90 ZAL 133.85 ZAP 140.71 ETS 164.98 ZAE 167.86 ETE 80.89 ZAC 99.92 ETC 255.74 CLP 142.02

PLANETOCENTRIC CONIC

C3 15.623 VHL 3.953 DLA 5.01 RAL 159.94 RAD 6567.6 VEL 11.705 PTH 2.06 VHP 4.261 DPA 8.14 RAP 191.76 ECC 1.2571

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 31 15	2312.87	-21.83	47.81	18.59	108.50	20 9 48	1712.9	-19.10	40.19
90.00	8 47 56	4645.21	13.88	197.36	16.61	65.07	10 5 21	4045.2	10.41	190.40
100.00	20 54 58	2042.90	-22.82	27.58	18.21	109.85	21 29 0	1442.9	-19.91	19.99
100.00	10 6 55	4390.42	14.83	178.15	16.14	63.75	11 20 5	3790.4	11.19	171.26
110.00	22 8 37	1812.39	-25.47	8.92	17.06	113.61	22 38 49	1212.4	-22.06	1.43
110.00	11 9 45	4193.69	17.35	161.82	14.74	60.07	12 19 39	3593.7	13.24	155.12

DIFFERENTIAL CORRECTIONS
TDE 1.0370 TRA-2.4014 TC3 2.2769 BAU .5405
RDE .4688 RRA -.6767 RC3 1.2296 FAU .27778
FDE-3.8626 FRA 9.0793 FC-15.3933 BSP 15761
BDE 1.1381 BRA 2.4950 BC3 2.5877 FSP 5358

MID-COURSE EXECUTION ACCURACY
SGT 4208.4 SGR 1541.6 SG3 1625.6
RRT .9576 RRF -.9876 RTF -.9660
SGB 4481.9 R23 -.1849 R13 -.9727
SG1 4462.3 SG2 419.0 THA 19.51

ORBIT DETERMINATION ACCURACY
ST 1833.5 SR 741.6 SS 2529.1
CRT .9803 CRS .9788 CST .9997
LSA 3207.1 MSA 146.4 SSA 34.8
EL1 1973.1 EL2 136.3 ALF 21.74

LAUNCH DATE OCT 19 1964 FLIGHT TIME 266.00 ARRIVAL DATE JUL 12 1965

HELIOCENTRIC CONIC DISTANCE 626.805 EARTH TO MARS

RL 148.98 LAL .00 LOL 25.64 VL 32.890 GAL -5.57 AZL 90.28 HCA 200.63 SMA 189.60 ECC .23428 INC .2771 V1 29.909
RP 233.07 LAP .10 LOP 226.27 VP 20.950 GAP 2.85 AZP 89.74 TAL 329.98 TAP 170.60 RCA 145.18 APO 234.02 V2 23.593
RC 213.179 GL -2.32 GP 10.63 ZAL 133.67 ZAP 139.68 ETS 165.82 ZAE 168.22 ETE 86.69 ZAC 99.63 ETC 255.76 CLP 140.87

PLANETOCENTRIC CONIC

C3 15.347 VHL 3.918 DLA 5.91 RAL 160.06 RAD 6567.6 VEL 11.693 PTH 2.06 VHP 4.169 DPA 7.96 RAP 191.51 ECC 1.2526

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 24 53	2337.33	-22.35	49.41	18.69	107.86	20 3 50	1737.3	-19.70	41.74
90.00	8 55 17	4612.73	12.94	195.43	16.40	64.59	10 12 10	4012.7	9.42	188.53
100.00	20 49 2	2065.92	-23.34	29.09	18.33	109.22	21 23 28	1465.9	-20.51	21.44
100.00	10 13 50	4359.36	13.89	176.33	15.92	63.26	11 26 29	3759.4	10.19	169.49
110.00	22 3 41	1832.26	-26.00	10.22	17.20	113.01	22 34 14	1232.3	-22.66	2.65
110.00	11 15 39	4165.79	16.40	160.22	14.51	59.58	12 25 5	3565.8	12.23	153.59

DIFFERENTIAL CORRECTIONS
TDE 1.0004 TRA-2.3293 TC3 2.2735 BAU .5317
RDE .4614 RRA -.6620 RC3 1.2439 FAU .28947
FDE-3.9021 FRA 9.4183 FC-16.3290 BSP 15388
BDE 1.1017 BRA 2.4215 BC3 2.5915 FSP 5606

MID-COURSE EXECUTION ACCURACY
SGT 4128.4 SGR 1533.8 SG3 1702.0
RRT .9565 RRF -.9863 RTF -.9661
SGB 4404.1 R23 -.1796 R13 -.9729
SG1 4383.9 SG2 421.3 THA 19.75

ORBIT DETERMINATION ACCURACY
ST 1788.6 SR 735.9 SS 2546.5
CRT .9793 CRS .9756 CST .9996
LSA 3193.7 MSA 155.4 SSA 34.6
EL1 1929.1 EL2 138.2 ALF 22.06

LAUNCH DATE OCT 19 1964 FLIGHT TIME 268.00 ARRIVAL DATE JUL 14 1965

HELIOCENTRIC CONIC DISTANCE 630.561 EARTH TO MARS

RL 148.98 LAL .00 LOL 25.64 VL 32.874 GAL -5.51 AZL 90.18 HCA 201.62 SMA 189.33 ECC .23290 INC .1769 V1 29.909
RP 232.70 LAP .07 LOP 227.27 VP 20.969 GAP 2.49 AZP 89.84 TAL 330.12 TAP 171.75 RCA 145.24 APO 233.43 V2 23.631
RC 215.236 GL -1.49 GP 10.39 ZAL 133.48 ZAP 138.59 ETS 166.60 ZAE 168.42 ETE 93.00 ZAC 99.35 ETC 255.77 CLP 139.68

PLANETOCENTRIC CONIC

C3 15.095 VHL 3.885 DLA 6.76 RAL 160.17 RAD 6567.6 VEL 11.682 PTH 2.05 VHP 4.080 DPA 7.82 RAP 191.24 ECC 1.2484

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 18 52	2360.25	-22.82	50.93	18.80	107.24	19 58 13	1760.3	-20.24	43.20
90.00	9 2 11	4582.36	12.05	193.65	16.21	64.18	10 18 33	3982.4	8.48	186.79
100.00	20 43 26	2087.50	-23.82	30.51	18.45	108.62	21 18 14	1487.5	-21.06	22.81
100.00	10 20 18	4330.35	12.99	174.64	15.73	62.84	11 32 28	3730.4	9.25	167.85
110.00	21 59 3	1850.85	-26.49	11.44	17.34	112.43	22 29 54	1250.9	-23.22	3.81
110.00	11 21 10	4139.76	15.49	158.75	14.30	59.14	12 30 10	3539.8	11.29	152.17

DIFFERENTIAL CORRECTIONS
TDE .9614 TRA-2.2578 TC3 2.2491 BAU .5201
RDE .4554 RRA -.6497 RC3 1.2588 FAU .30128
FDE-3.9430 FRA 9.7702 FC-17.2796 BSP 15097
BDE 1.0638 BRA 2.3494 BC3 2.5774 FSP 5875

MID-COURSE EXECUTION ACCURACY
SGT 4038.1 SGR 1529.3 SG3 1780.4
RRT .9549 RRF -.9849 RTF -.9657
SGB 4318.0 R23 -.1762 R13 -.9728
SG1 4296.8 SG2 427.0 THA 20.09

ORBIT DETERMINATION ACCURACY
ST 1739.2 SR 731.9 SS 2564.6
CRT .9780 CRS .9723 CST .9994
LSA 3179.5 MSA 165.4 SSA 34.4
EL1 1881.6 EL2 141.2 ALF 22.50

LAUNCH DATE OCT 19 1964 FLIGHT TIME 270.00 ARRIVAL DATE JUL 16 1965

HELIOCENTRIC CONIC DISTANCE 634.329 EARTH TO MARS

RL 148.98 LAL .00 LOL 25.64 VL 32.860 GAL -5.46 AZL 90.09 HCA 202.63 SMA 189.08 ECC .23159 INC .0862 V1 29.909
RP 232.32 LAP .03 LOP 228.27 VP 20.990 GAP 2.13 AZP 89.92 TAL 330.26 TAP 172.89 RCA 145.29 APO 232.86 V2 23.670
RC 217.275 GL -.73 GP 10.18 ZAL 133.30 ZAP 137.45 ETS 167.33 ZAE 168.45 ETE 99.65 ZAC 99.10 ETC 255.79 CLP 138.46

PLANETOCENTRIC CONIC

C3 14.863 VHL 3.855 DLA 7.54 RAL 160.27 RAD 6567.6 VEL 11.673 PTH 2.05 VHP 3.995 DPA 7.72 RAP 190.96 ECC 1.2446

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 13 12	2381.83	-23.24	52.36	18.90	106.64	19 52 54	1781.8	-20.74	44.58
90.00	9 8 39	4553.87	11.20	191.99	16.06	63.82	10 24 33	3953.9	7.59	185.17
100.00	20 38 10	2107.78	-24.25	31.86	18.56	108.03	21 13 17	1507.8	-21.56	24.10
100.00	10 26 23	4303.15	12.14	173.07	15.57	62.47	11 38 6	3703.2	8.36	166.32
110.00	21 54 41	1868.31	-26.94	12.60	17.48	111.88	22 25 49	1268.3	-23.73	4.91
110.00	11 26 21	4115.39	14.64	157.38	14.13	58.76	12 34 56	3515.4	10.39	150.85

DIFFERENTIAL CORRECTIONS
TDE .9224 TRA-2.1846 TC3 2.2118 BAU .5073
RDE .4505 RRA -.6397 RC3 1.2748 FAU .31333
FDE-3.9844 FRA10.1350 FC-18.2504 BSP 14777
BDE 1.0266 BRA 2.2763 BC3 2.5529 FSP 6157

MID-COURSE EXECUTION ACCURACY
SGT 3938.7 SGR 1527.8 SG3 1861.0
RRT .9530 RRF -.9836 RTF -.9651
SGB 4224.6 R23 -.1733 R13 -.9725
SG1 4202.3 SG2 433.7 THA 20.52

ORBIT DETERMINATION ACCURACY
ST 1687.4 SR 729.3 SS 2583.3
CRT .9767 CRS .9688 CST .9991
LSA 3165.5 MSA 176.2 SSA 34.0
EL1 1832.6 EL2 144.0 ALF 23.04

LAUNCH DATE OCT 19 1964 FLIGHT TIME 272.00 ARRIVAL DATE JUL 18 1965

HELIOCENTRIC CONIC DISTANCE 638.108 EARTH TO MARS

RL	148.98	LAL	.00	LOL	25.64	VL	32.846	GAL	-5.42	AZL	90.00	HCA	203.63	SMA	188.83	ECC	.23034	INC	.0000	V1	29.909
RP	231.95	LAP	.00	LOP	229.28	VP	21.012	GAP	1.78	AZP	90.00	TAL	330.39	TAP	174.02	RCA	145.34	APO	232.33	V2	23.709
RC	219.295	GL	-.01	GP	9.99	ZAL	133.11	ZAP	136.27	ETS	168.01	ZAE	168.29	ETE	106.44	ZAC	98.85	ETC	255.81	CLP	137.20

PLANETOCENTRIC CONIC

C3	14.651	VHL	3.828	DLA	8.28	RAL	160.37	RAD	6567.6	VEL	11.663	PTH	2.05	VHP	3.912	DPA	7.65	RAP	190.65	ECC	1.2411

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 7 49	2402.20	-23.63	53.73	19.01	106.07	19 47 51	1802.2	-21.21	45.90
90.00	9 14 47	4527.08	10.39	190.44	15.93	63.51	10 30 14	3927.1	6.75	183.65
100.00	20 33 10	2126.93	-24.65	33.15	18.67	107.47	21 8 37	1526.9	-22.03	25.33
100.00	10 32 7	4277.59	11.33	171.60	15.44	62.15	11 43 24	3677.6	7.52	164.89
110.00	21 50 33	1884.76	-27.35	13.70	17.61	111.35	22 21 58	1284.8	-24.21	5.95
110.00	11 31 13	4092.53	13.82	156.10	13.98	58.42	12 39 25	3492.5	9.55	149.61

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8838	TRA	-2.1083	TC3	2.1621	BAU	.4934	SGT	3828.9	SGR	1529.1	SG3	1943.8	ST	1633.5	SR	728.3	SS	2603.5
RDE	.4469	RRA	-.6311	RC3	1.2925	FAU	.32578	RRT	.9509	RRF	-.9823	RTF	-.9642	CRT	.9755	CRS	.9652	CST	.9987
FDE	-4.0305	FRA	10.5060	FC	-19.2503	BSP	14423	SGB	4123.0	R23	-.1712	R13	-.9721	LSA	3152.8	MSA	187.3	SSA	33.6
BDE	.9904	BRA	2.2008	BC3	2.5190	FSP	6442	SG1	4099.2	SG2	441.9	THA	21.05	EL1	1782.4	EL2	146.8	ALF	23.68

LAUNCH DATE OCT 19 1964 FLIGHT TIME 274.00 ARRIVAL DATE JUL 20 1965

HELIOCENTRIC CONIC DISTANCE 641.898 EARTH TO MARS

RL	148.98	LAL	.00	LOL	25.64	VL	32.833	GAL	-5.37	AZL	89.92	HCA	204.64	SMA	188.60	ECC	.22916	INC	.0737	V1	29.909
RP	231.57	LAP	-.03	LOP	230.29	VP	21.036	GAP	1.44	AZP	90.07	TAL	330.51	TAP	175.15	RCA	145.38	APO	231.82	V2	23.748
RC	221.297	GL	.66	GP	9.81	ZAL	132.93	ZAP	135.04	ETS	168.65	ZAE	167.95	ETE	113.13	ZAC	98.62	ETC	255.83	CLP	135.90

PLANETOCENTRIC CONIC

C3	14.456	VHL	3.802	DLA	8.97	RAL	160.45	RAD	6567.6	VEL	11.655	PTH	2.05	VHP	3.833	DPA	7.61	RAP	190.31	ECC	1.2379

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 2 43	2421.50	-23.99	55.03	19.11	105.51	19 43 5	1821.5	-21.63	47.15
90.00	9 20 34	4501.83	9.62	188.98	15.82	63.24	10 35 36	3901.8	5.95	182.22
100.00	20 28 26	2145.04	-25.02	34.37	18.78	106.92	21 4 11	1545.0	-22.46	26.50
100.00	10 37 32	4253.60	10.57	170.23	15.32	61.87	11 48 26	3653.6	6.72	163.55
110.00	21 46 39	1900.30	-27.74	14.75	17.75	110.83	22 18 19	1300.3	-24.65	6.94
110.00	11 35 49	4071.04	13.06	154.91	13.85	58.12	12 43 40	3471.0	8.75	148.46

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8449	TRA	-2.0296	TC3	2.0986	BAU	.4782	SGT	3708.8	SGR	1532.8	SG3	2028.7	ST	1576.8	SR	728.5	SS	2624.6
RDE	.4443	RRA	-.6243	RC3	1.3114	FAU	.33851	RRT	.9486	RRF	-.9810	RTF	-.9630	CRT	.9743	CRS	.9616	CST	.9983
FDE	-4.0786	FRA	10.8882	FC	-20.2726	BSP	14066	SGB	4013.0	R23	-.1698	R13	-.9716	LSA	3140.9	MSA	198.7	SSA	33.3
BDE	.9546	BRA	2.1234	BC3	2.4746	FSP	6739	SG1	3987.6	SG2	451.3	THA	21.70	EL1	1730.6	EL2	149.4	ALF	24.43

LAUNCH DATE OCT 19 1964 FLIGHT TIME 276.00 ARRIVAL DATE JUL 22 1965

HELIOCENTRIC CONIC DISTANCE 645.699 EARTH TO MARS

RL	148.98	LAL	.00	LOL	25.64	VL	32.820	GAL	-5.33	AZL	89.85	HCA	205.65	SMA	188.38	ECC	.22805	INC	.1487	V1	29.909
RP	231.20	LAP	-.06	LOP	231.30	VP	21.061	GAP	1.10	AZP	90.13	TAL	330.62	TAP	176.28	RCA	145.42	APO	231.34	V2	23.788
RC	223.281	GL	1.29	GP	9.65	ZAL	132.75	ZAP	133.77	ETS	169.25	ZAE	167.42	ETE	119.54	ZAC	98.39	ETC	255.85	CLP	134.56

PLANETOCENTRIC CONIC

C3	14.277	VHL	3.778	DLA	9.62	RAL	160.54	RAD	6567.6	VEL	11.647	PTH	2.04	VHP	3.756	DPA	7.60	RAP	189.95	ECC	1.2350

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 57 53	2439.83	-24.32	56.27	19.22	104.97	19 38 33	1839.8	-22.03	48.35
90.00	9 26 5	4478.00	8.89	187.62	15.74	63.00	10 40 43	3878.0	5.20	180.88
100.00	20 23 57	2162.23	-25.35	35.54	18.90	106.39	20 59 59	1562.2	-22.86	27.62
100.00	10 42 42	4230.83	9.83	168.94	15.23	61.63	11 53 13	3630.8	5.97	162.29
110.00	21 42 57	1915.01	-28.09	15.75	17.88	110.34	22 14 52	1315.0	-25.06	7.88
110.00	11 40 11	4050.81	12.33	153.80	13.75	57.86	12 47 42	3450.8	7.99	147.38

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8070	TRA	-1.9472	TC3	2.0225	BAU	.4621	SGT	3578.1	SGR	1538.6	SG3	2115.5	ST	1518.8	SR	729.7	SS	2646.5
RDE	.4424	RRA	-.6188	RC3	1.3309	FAU	.35146	RRT	.9461	RRF	-.9797	RTF	-.9614	CRT	.9734	CRS	.9578	CST	.9978
FDE	-4.1282	FRA	11.2796	FC	-21.3118	BSP	13659	SGB	3894.8	R23	-.1688	R13	-.9709	LSA	3130.1	MSA	210.4	SSA	32.9
BDE	.9203	BRA	2.0432	BC3	2.4211	FSP	7046	SG1	3867.4	SG2	461.2	THA	22.47	EL1	1678.2	EL2	151.2	ALF	25.28

LAUNCH DATE OCT 19 1964 FLIGHT TIME 278.00 ARRIVAL DATE JUL 24 1965

HELIOCENTRIC CONIC DISTANCE 649.511 EARTH TO MARS

RL	148.98	LAL	.00	LOL	25.64	VL	32.808	GAL	-5.29	AZL	89.78	HCA	206.67	SMA	188.17	ECC	.22699	INC	.2174	V1	29.909
RP	230.82	LAP	-.10	LOP	232.31	VP	21.088	GAP	.76	AZP	90.19	TAL	330.73	TAP	177.40	RCA	145.46	APO	230.89	V2	23.827
RC	225.247	GL	1.89	GP	9.51	ZAL	132.58	ZAP	132.45	ETS	169.83	ZAE	166.71	ETE	125.50	ZAC	98.17	ETC	255.88	CLP	133.18

PLANETOCENTRIC CONIC

C3	14.113	VHL	3.757	DLA	10.23	RAL	160.62	RAD	6567.6	VEL	11.640	PTH	2.04	VHP	3.682	DPA	7.62	RAP	189.56	ECC	1.2323

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 53 17	2457.26	-24.62	57.46	19.33	104.45	19 34 14	1857.3	-22.40	49.50
90.00	9 31 20	4455.47	8.19	186.33	15.67	62.80	10 45 35	3855.5	4.48	179.62
100.00	20 19 42	2178.56	-25.66	36.65	19.01	105.88	20 56 0	1578.6	-23.23	28.69
100.00	10 47 36	4209.40	9.14	167.73	15.16	61.42	11 57 46	3609.4	5.25	161.10
110.00	21 39 27	1928.97	-28.41	16.70	18.02	109.86	22 11 36	1329.0	-25.44	8.79
110.00	11 44 20	4031.75	11.63	152.76	13.67	57.63	12 51 32	3431.8	7.28	146.37

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.7689	TRA	-1.8615	TC3	1.9321	BAU	.4448	SGT	3435.9	SGR	1546.1	SG3	2204.0	ST	1458.1	SR	731.8	SS	2669.2
RDE	.4413	RRA	-.6145	RC3	1.3512	FAU	.36464	RRT	.9432	RRF	-.9784	RTF	-.9594	CRT	.9726	CRS	.9541	CST	.9971
FDE	-4.1804	FRA	11.6792	FC	-22.3679	BSP	13219	SGB	3767.8	R23	-.1685	R13	-.9701	LSA	3120.3	MSA	222.2	SSA	32.5
BDE	.8865	BRA	1.9603	BC3	2.3577	FSP	7359	SG1	3738.0	SG2	472.3	THA	23.39	EL1	1624.3	EL2	152.7	ALF	26.27

LAUNCH DATE OCT 19 1964 FLIGHT TIME 280.00 ARRIVAL DATE JUL 26 1965

HELIOCENTRIC CONIC DISTANCE 653.333 EARTH TO MARS

RL 148.98 LAL .00 LOL 25.64 VL 32.797 GAL -5.26 AZL 89.72 HCA 207.69 SMA 187.97 ECC .22600 INC .2805 V1 29.909
RP 230.43 LAP -.13 LOP 233.33 VP 21.115 GAP .44 AZP 90.25 TAL 330.82 TAP 178.51 RCA 145.49 APO 230.46 V2 23.867
RC 227.193 GL 2.45 GP 9.38 ZAL 132.42 ZAP 131.08 ETS 170.37 ZAE 165.83 ETE 130.94 ZAC 97.96 ETC 255.90 CLP 131.76

PLANETOCENTRIC CONIC

C3 13.963 VHL 3.737 DLA 10.80 RAL 160.70 RAD 6567.5 VEL 11.634 PTH 2.04 VHP 3.612 DPA 7.67 RAP 189.14 ECC 1.2298

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 48 56	2473.87	-24.90	58.60	19.44	103.94	19 30 9	1873.9	-22.74	50.59
90.00	9 36 21	4434.17	7.52	185.12	15.63	62.62	10 50 15	3834.2	3.80	178.42
100.00	20 15 40	2194.11	-25.94	37.72	19.14	105.39	20 52 14	1594.1	-23.58	29.72
100.00	10 52 18	4189.16	8.48	166.59	15.11	61.23	12 2 7	3589.2	4.57	159.98
110.00	21 36 9	1942.25	-28.72	17.62	18.16	109.39	22 8 32	1342.2	-25.80	9.65
110.00	11 48 18	4013.78	10.98	151.78	13.61	57.42	12 55 11	3413.8	6.60	145.42

DIFFERENTIAL CORRECTIONS
TDE .7318 TRA-1.7718 TC3 1.8302 BAU .4271
RDE .4411 RRA -.6111 RC3 1.3728 FAU .37826
FDE-4.2380 FRA12.0836 FC-23.4523 BSP 12745
BDE .8544 BRA 1.8743 BC3 2.2879 FSP 7675

MID-COURSE EXECUTION ACCURACY
SGT 3283.2 SGR 1555.6 SG3 2294.4
RRT .9399 RRF -.9772 RTF -.9569
SGB 3633.1 R23 -.1689 R13 -.9691
SG1 3600.7 SG2 484.3 THA 24.48

ORBIT DETERMINATION ACCURACY
ST 1396.1 SR 735.0 SS 2693.7
CRT .9721 CRS .9504 CST .9963
LSA 3112.8 MSA 234.0 SSA 32.1
EL1 1570.3 EL2 153.2 ALF 27.39

LAUNCH DATE OCT 19 1964 FLIGHT TIME 282.00 ARRIVAL DATE JUL 28 1965

HELIOCENTRIC CONIC DISTANCE 657.166 EARTH TO MARS

RL 148.98 LAL .00 LOL 25.64 VL 32.786 GAL -5.23 AZL 89.66 HCA 208.71 SMA 187.79 ECC .22506 INC .3395 V1 29.909
RP 230.05 LAP -.16 LOP 234.36 VP 21.144 GAP .11 AZP 90.30 TAL 330.90 TAP 179.62 RCA 145.52 APO 230.05 V2 23.907
RC 229.120 GL 2.99 GP 9.25 ZAL 132.27 ZAP 129.67 ETS 170.90 ZAE 164.80 ETE 135.81 ZAC 97.74 ETC 255.93 CLP 130.30

PLANETOCENTRIC CONIC

C3 13.827 VHL 3.718 DLA 11.34 RAL 160.79 RAD 6567.5 VEL 11.628 PTH 2.04 VHP 3.544 DPA 7.74 RAP 188.69 ECC 1.2276

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 44 47	2489.72	-25.15	59.69	19.56	103.45	19 26 17	1889.7	-23.06	51.65
90.00	9 41 9	4414.00	6.89	183.98	15.61	62.47	10 54 43	3814.0	3.15	177.29
100.00	20 11 51	2208.94	-26.21	38.74	19.26	104.92	20 48 40	1608.9	-23.90	30.70
100.00	10 56 47	4170.02	7.85	165.52	15.09	61.06	12 6 17	3570.0	3.93	158.92
110.00	21 33 2	1954.88	-29.00	18.49	18.31	108.94	22 5 37	1354.9	-26.14	10.48
110.00	11 52 5	3996.84	10.35	150.86	13.57	57.24	12 58 42	3396.8	5.96	144.52

DIFFERENTIAL CORRECTIONS
TDE .6941 TRA-1.6787 TC3 1.7118 BAU .4082
RDE .4414 RRA -.6087 RC3 1.3947 FAU .39199
FDE-4.2960 FRA12.4960 FC-24.5436 BSP 12241
BDE .8226 BRA 1.7857 BC3 2.2080 FSP 7998

MID-COURSE EXECUTION ACCURACY
SGT 3118.5 SGR 1566.3 SG3 2386.0
RRT .9359 RRF -.9760 RTF -.9536
SGB 3489.7 R23 -.1704 R13 -.9678
SG1 3454.0 SG2 498.1 THA 25.75

ORBIT DETERMINATION ACCURACY
ST 1331.1 SR 738.8 SS 2718.4
CRT .9718 CRS .9467 CST .9954
LSA 3105.8 MSA 245.8 SSA 31.8
EL1 1514.7 EL2 153.1 ALF 28.66

LAUNCH DATE OCT 19 1964 FLIGHT TIME 284.00 ARRIVAL DATE JUL 30 1965

HELIOCENTRIC CONIC DISTANCE 661.008 EARTH TO MARS

RL 148.98 LAL .00 LOL 25.64 VL 32.776 GAL -5.20 AZL 89.60 HCA 209.74 SMA 187.61 ECC .22418 INC .3954 V1 29.909
RP 229.67 LAP -.20 LOP 235.38 VP 21.174 GAP -.21 AZP 90.34 TAL 330.98 TAP 180.72 RCA 145.55 APO 229.67 V2 23.948
RC 231.027 GL 3.49 GP 9.14 ZAL 132.13 ZAP 128.21 ETS 171.40 ZAE 163.64 ETE 140.15 ZAC 97.53 ETC 255.96 CLP 128.79

PLANETOCENTRIC CONIC

C3 13.703 VHL 3.702 DLA 11.86 RAL 160.87 RAD 6567.5 VEL 11.623 PTH 2.04 VHP 3.479 DPA 7.84 RAP 188.20 ECC 1.2255

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 40 52	2504.86	-25.39	60.74	19.69	102.98	19 22 37	1904.9	-23.35	52.66
90.00	9 45 46	4394.93	6.29	182.90	15.60	62.33	10 59 1	3794.9	2.54	176.23
100.00	20 8 14	2223.09	-26.45	39.72	19.40	104.45	20 45 18	1623.1	-24.21	31.64
100.00	11 1 5	4151.93	7.25	164.51	15.08	60.92	12 10 17	3551.9	3.32	157.93
110.00	21 30 6	1966.93	-29.26	19.33	18.46	108.51	22 2 53	1366.9	-26.46	11.27
110.00	11 55 42	3980.86	9.76	150.00	13.55	57.08	13 2 3	3380.9	5.36	143.68

DIFFERENTIAL CORRECTIONS
TDE .6563 TRA-1.5817 TC3 1.5769 BAU .3883
RDE .4421 RRA -.6072 RC3 1.4163 FAU .40575
FDE-4.3548 FRA12.9153 FC-25.6345 BSP 11706
BDE .7914 BRA 1.6943 BC3 2.1195 FSP 8327

MID-COURSE EXECUTION ACCURACY
SGT 2941.5 SGR 1577.9 SG3 2478.4
RRT .9310 RRF -.9749 RTF -.9493
SGB 3338.0 R23 -.1729 R13 -.9662
SG1 3298.3 SG2 513.5 THA 27.26

ORBIT DETERMINATION ACCURACY
ST 1263.5 SR 743.1 SS 2743.5
CRT .9718 CRS .9429 CST .9943
LSA 3099.7 MSA 257.7 SSA 31.5
EL1 1457.9 EL2 151.9 ALF 30.11

LAUNCH DATE OCT 19 1964 FLIGHT TIME 286.00 ARRIVAL DATE AUG 1 1965

HELIOCENTRIC CONIC DISTANCE 664.860 EARTH TO MARS

RL 148.98 LAL .00 LOL 25.64 VL 32.767 GAL -5.17 AZL 89.55 HCA 210.77 SMA 187.45 ECC .22336 INC .4478 V1 29.909
RP 229.28 LAP -.23 LOP 236.41 VP 21.205 GAP -.52 AZP 90.39 TAL 331.05 TAP 181.81 RCA 145.58 APO 229.31 V2 23.988
RC 232.913 GL 3.97 GP 9.04 ZAL 132.00 ZAP 126.70 ETS 171.88 ZAE 162.36 ETE 143.98 ZAC 97.31 ETC 255.99 CLP 127.24

PLANETOCENTRIC CONIC

C3 13.591 VHL 3.687 DLA 12.34 RAL 160.96 RAD 6567.5 VEL 11.618 PTH 2.04 VHP 3.417 DPA 7.96 RAP 187.69 ECC 1.2237

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 37 10	2519.33	-25.61	61.74	19.82	102.52	19 19 9	1919.3	-23.63	53.63
90.00	9 50 11	4376.88	5.72	181.88	15.62	62.22	11 3 8	3776.9	1.95	175.22
100.00	20 4 50	2236.60	-26.68	40.66	19.54	104.01	20 42 7	1636.6	-24.49	32.55
100.00	11 5 13	4134.84	6.68	163.55	15.09	60.80	12 14 7	3534.8	2.74	156.99
110.00	21 27 21	1978.41	-29.51	20.13	18.62	108.09	22 0 19	1378.4	-26.75	12.03
110.00	11 59 11	3965.80	9.21	149.19	13.55	56.93	13 5 17	3365.8	4.79	142.89

DIFFERENTIAL CORRECTIONS
TDE .6189 TRA-1.4801 TC3 1.4307 BAU .3687
RDE .4434 RRA -.6061 RC3 1.4389 FAU .41988
FDE-4.4167 FRA13.3347 FC-26.7456 BSP 11133
BDE .7613 BRA 1.5994 BC3 2.0291 FSP 8655

MID-COURSE EXECUTION ACCURACY
SGT 2753.6 SGR 1590.7 SG3 2571.8
RRT .9252 RRF -.9738 RTF -.9438
SGB 3180.0 R23 -.1758 R13 -.9644
SG1 3135.5 SG2 530.0 THA 29.03

ORBIT DETERMINATION ACCURACY
ST 1193.8 SR 748.0 SS 2769.1
CRT .9722 CRS .9393 CST .9928
LSA 3095.0 MSA 269.5 SSA 31.1
EL1 1400.9 EL2 149.2 ALF 31.75

LAUNCH DATE OCT 19 1964 FLIGHT TIME 288.00 ARRIVAL DATE AUG 3 1965

HELIOCENTRIC CONIC DISTANCE 668.722 EARTH TO MARS

RL	148.98	LAL	.00	LOL	25.64	VL	32.758	GAL	-5.14	AZL	89.50	HCA	211.80	SMA	187.29	ECC	.22259	INC	.4976	V1	29.909
RP	228.89	LAP	-.26	LOP	237.44	VP	21.237	GAP	-.83	AZP	90.42	TAL	331.10	TAP	182.90	RCA	145.60	APO	228.98	V2	24.029
RC	234.778	GL	4.43	GP	8.94	ZAL	131.89	ZAP	125.15	ETS	172.34	ZAE	160.97	ETE	147.36	ZAC	97.10	ETC	256.03	CLP	125.65

PLANETOCENTRIC CONIC

C3	13.491	VHL	3.673	DLA	12.79	RAL	161.06	RAD	6567.5	VEL	11.614	PTH	2.03	VHP	3.358	DPA	8.10	RAP	187.14	ECC	1.2220

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 33 40	2533.17	-25.81	62.70	19.97	102.08	19 15 53	1933.2	-23.89	54.56
90.00	9 54 27	4359.81	5.17	180.92	15.65	62.12	11 7 7	3759.8	1.40	174.27
100.00	20 1 37	2249.52	-26.89	41.57	19.69	103.58	20 39 7	1649.5	-24.75	33.42
100.00	11 9 11	4118.70	6.15	162.66	15.12	60.69	12 17 49	3518.7	2.20	156.10
110.00	21 24 46	1989.37	-29.74	20.91	18.79	107.69	21 57 55	1389.4	-27.03	12.76
110.00	12 2 32	3951.61	8.68	148.43	13.57	56.81	13 8 23	3351.6	4.25	142.14

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5810	TRA	-1.3745	TC3	1.2670	BAU	.3487	SGT	2553.7	SGR	1603.8	SG3	2665.2	ST	1121.2	SR	753.2	SS	2794.7
RDE	.4449	RRA	-.6059	RC3	1.4605	FAU	.43384	RRT	.9177	RRF	-.9727	RTF	-.9363	CRT	.9730	CRS	.9356	CST	.9911
FDE	-4.4777	FRA	13.7604	FC	-27.8400	BSP	10533	SGB	3015.6	R23	-.1798	R13	-.9623	LSA	3091.1	MSA	281.2	SSA	30.8
BDE	.7318	BRA	1.5021	BC3	1.9335	FSP	8989	SG1	2965.2	SG2	548.9	THA	31.14	EL1	1342.9	EL2	145.2	ALF	33.61

LAUNCH DATE OCT 19 1964 FLIGHT TIME 290.00 ARRIVAL DATE AUG 5 1965

HELIOCENTRIC CONIC DISTANCE 672.593 EARTH TO MARS

RL	148.98	LAL	.00	LOL	25.64	VL	32.749	GAL	-5.12	AZL	89.46	HCA	212.83	SMA	187.14	ECC	.22187	INC	.5446	V1	29.909
RP	228.51	LAP	-.30	LOP	238.48	VP	21.270	GAP	-1.13	AZP	90.46	TAL	331.15	TAP	183.98	RCA	145.62	APO	228.66	V2	24.070
RC	236.623	GL	4.86	GP	8.85	ZAL	131.79	ZAP	123.56	ETS	172.79	ZAE	159.48	ETE	150.34	ZAC	96.88	ETC	256.07	CLP	124.02

PLANETOCENTRIC CONIC

C3	13.402	VHL	3.661	DLA	13.22	RAL	161.16	RAD	6567.5	VEL	11.610	PTH	2.03	VHP	3.303	DPA	8.27	RAP	186.57	ECC	1.2206

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 30 23	2546.41	-25.99	63.63	20.12	101.65	19 12 49	1946.4	-24.13	55.46
90.00	9 58 33	4343.69	4.66	180.01	15.71	62.04	11 10 56	3743.7	.88	173.37
100.00	19 58 36	2261.86	-27.08	42.43	19.86	103.16	20 36 18	1661.9	-25.00	34.25
100.00	11 13 0	4103.47	5.64	161.81	15.17	60.60	12 21 23	3503.5	1.68	155.26
110.00	21 22 21	1999.84	-29.95	21.65	18.97	107.30	21 55 41	1399.8	-27.29	13.46
110.00	12 5 45	3938.26	8.18	147.72	13.61	56.69	13 11 23	3338.3	3.74	141.45

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5428	TRA	-1.2641	TC3	1.0881	BAU	.3294	SGT	2342.3	SGR	1617.1	SG3	2758.1	ST	1045.9	SR	758.6	SS	2819.9
RDE	.4468	RRA	-.6058	RC3	1.4820	FAU	.44785	RRT	.9076	RRF	-.9717	RTF	-.9261	CRT	.9742	CRS	.9320	CST	.9888
FDE	-4.5389	FRA	14.1833	FC	-28.9301	BSP	9910	SGB	2846.3	R23	-.1845	R13	-.9598	LSA	3087.8	MSA	292.8	SSA	30.5
BDE	.7030	BRA	1.4018	BC3	1.8386	FSP	9320	SG1	2788.6	SG2	570.2	THA	33.67	EL1	1284.5	EL2	139.3	ALF	35.73

LAUNCH DATE OCT 19 1964 FLIGHT TIME 292.00 ARRIVAL DATE AUG 7 1965

HELIOCENTRIC CONIC DISTANCE 676.474 EARTH TO MARS

RL	148.98	LAL	.00	LOL	25.64	VL	32.741	GAL	-5.10	AZL	89.41	HCA	213.87	SMA	187.00	ECC	.22121	INC	.5892	V1	29.909
RP	228.12	LAP	-.33	LOP	239.52	VP	21.304	GAP	-1.43	AZP	90.49	TAL	331.18	TAP	185.06	RCA	145.64	APO	228.37	V2	24.111
RC	238.446	GL	5.27	GP	8.76	ZAL	131.70	ZAP	121.92	ETS	173.22	ZAE	157.91	ETE	152.97	ZAC	96.65	ETC	256.11	CLP	122.34

PLANETOCENTRIC CONIC

C3	13.324	VHL	3.650	DLA	13.62	RAL	161.27	RAD	6567.5	VEL	11.606	PTH	2.03	VHP	3.250	DPA	8.45	RAP	185.95	ECC	1.2193

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 27 17	2559.06	-26.16	64.52	20.29	101.23	19 9 56	1959.1	-24.35	56.32
90.00	10 2 30	4328.49	4.17	179.16	15.78	61.97	11 14 38	3728.5	.39	172.52
100.00	19 55 47	2273.65	-27.26	43.26	20.03	102.76	20 33 41	1673.7	-25.23	35.05
100.00	11 16 41	4089.13	5.16	161.02	15.24	60.52	12 24 50	3489.1	1.19	154.48
110.00	21 20 6	2009.82	-30.15	22.35	19.15	106.92	21 53 36	1409.8	-27.54	14.14
110.00	12 8 51	3925.73	7.71	147.05	13.67	56.59	13 14 17	3325.7	3.26	140.79

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5044	TRA	-1.1492	TC3	.8939	BAU	.3115	SGT	2120.8	SGR	1630.6	SG3	2850.4	ST	968.1	SR	764.3	SS	2845.3
RDE	.4490	RRA	-.6061	RC3	1.5029	FAU	.46178	RRT	.8938	RRF	-.9706	RTF	-.9118	CRT	.9761	CRS	.9285	CST	.9859
FDE	-4.6015	FRA	14.6048	FC	-30.0051	BSP	9267	SGB	2675.2	R23	-.1894	R13	-.9571	LSA	3086.1	MSA	304.2	SSA	30.2
BDE	.6753	BRA	1.2993	BC3	1.7486	FSP	9651	SG1	2608.3	SG2	594.6	THA	36.72	EL1	1226.4	EL2	131.2	ALF	38.13

LAUNCH DATE OCT 19 1964 FLIGHT TIME 294.00 ARRIVAL DATE AUG 9 1965

HELIOCENTRIC CONIC DISTANCE 680.363 EARTH TO MARS

RL	148.98	LAL	.00	LOL	25.64	VL	32.734	GAL	-5.09	AZL	89.37	HCA	214.92	SMA	186.87	ECC	.22060	INC	.6314	V1	29.909
RP	227.73	LAP	-.36	LOP	240.56	VP	21.339	GAP	-1.73	AZP	90.52	TAL	331.20	TAP	186.12	RCA	145.65	APO	228.10	V2	24.152
RC	240.248	GL	5.67	GP	8.67	ZAL	131.63	ZAP	120.24	ETS	173.64	ZAE	156.25	ETE	155.31	ZAC	96.43	ETC	256.15	CLP	120.63

PLANETOCENTRIC CONIC

C3	13.256	VHL	3.641	DLA	14.00	RAL	161.38	RAD	6567.5	VEL	11.604	PTH	2.03	VHP	3.200	DPA	8.65	RAP	185.31	ECC	1.2182

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 24 24	2571.16	-26.32	65.37	20.47	100.84	19 7 15	1971.2	-24.56	57.14
90.00	10 6 18	4314.17	3.72	178.36	15.87	61.91	11 18 12	3714.2	-.07	171.72
100.00	19 53 9	2284.92	-27.43	44.06	20.21	102.37	20 31 14	1684.9	-25.45	35.82
100.00	11 20 14	4075.65	4.71	160.27	15.33	60.45	12 28 9	3475.6	.74	153.74
110.00	21 18 1	2019.36	-30.34	23.03	19.35	106.56	21 51 41	1419.4	-27.77	14.78
110.00	12 11 51	3913.97	7.27	146.43	13.75	56.51	13 17 5	3314.0	2.81	140.17

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4663	TRA	-1.0294	TC3	.6849	BAU	.2959	SGT	1890.7	SGR	1643.8	SG3	2941.1	ST	888.5	SR	770.2	SS	2871.0
RDE	.4516	RRA	-.6065	RC3	1.5228	FAU	.47553	RRT	.8741	RRF	-.9696	RTF	-.8909	CRT	.9786	CRS	.9251	CST	.9820
FDE	-4.6666	FRA	15.0197	FC	-31.0573	BSP	8607	SGB	2505.4	R23	-.1938	R13	-.9542	LSA	3086.3	MSA	315.6	SSA	29.9
BDE	.6491	BRA	1.1948	BC3	1.6698	FSP	9971	SG1	2426.9	SG2	622.0	THA	40.44	EL1	1169.8	EL2	120.3	ALF	40.83

LAUNCH DATE OCT 19 1964 FLIGHT TIME 296.00 ARRIVAL DATE AUG 11 1965

DISTANCE 684.263

HELIOCENTRIC CONIC

RL 148.98 LAL .00 LOL 25.64 VL 32.726 GAL -5.08 AZL 89.33 HCA 215.97 SMA 186.75 ECC .22003 INC .6719 V1 29.909
RP 227.34 LAP -.39 LOP 241.61 VP 21.375 GAP -2.02 AZP 90.54 TAL 331.22 TAP 187.18 RCA 145.66 APO 227.84 V2 24.193
RC 242.030 GL 6.04 GP 8.59 ZAL 131.57 ZAP 118.52 ETS 174.06 ZAE 154.52 ETE 157.39 ZAC 96.19 ETC 256.21 CLP 118.87

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 13.197 VHL 3.633 DLA 14.36 RAL 161.50 RAD 6567.5 VEL 11.601 PTH 2.03 VHP 3.154 DPA 8.87 RAP 184.63 ECC 1.2172

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 21 42	2582.72	-26.47	66.18	20.65	100.45	19 4 45	1982.7	-24.76	57.93
90.00	10 9 58	4300.71	3.28	177.60	15.98	61.86	11 21 39	3700.7	-.50	170.97
100.00	19 50 43	2295.67	-27.58	44.82	20.40	102.00	20 28 58	1695.7	-25.65	36.55
100.00	11 23 39	4062.99	4.28	159.57	15.43	60.39	12 31 22	3463.0	.31	153.04
110.00	21 16 7	2028.46	-30.51	23.69	19.56	106.21	21 49 55	1428.5	-27.99	15.40
110.00	12 14 44	3902.97	6.86	145.85	13.84	56.43	13 19 47	3303.0	2.39	139.60

DIFFERENTIAL CORRECTIONS

TDE .4297 TRA -.9028 TC3 .4686 BAU .2846
RDE .4550 RRA -.6062 RC3 1.5437 FAU .48971
FDE-4.7441 FRA15.4126 FC-32.1246 BSP 7894
BDE .6258 BRA 1.0874 BC3 1.6132 FSP 10253

MID-COURSE EXECUTION ACCURACY

SGT 1653.9 SGR 1657.3 SG3 3030.6
RRT .8459 RRF -.9686 RTF -.8601
SGB 2341.4 R23 -.1949 R13 -.9519
SG1 2249.4 SG2 649.9 THA 45.07

ORBIT DETERMINATION ACCURACY

ST 808.6 SR 777.0 SS 2898.6
CRT .9824 CRS .9222 CST .9763
LSA 3090.6 MSA 327.0 SSA 29.4
EL1 1116.5 EL2 105.1 ALF 43.84

LAUNCH DATE OCT 19 1964 FLIGHT TIME 298.00 ARRIVAL DATE AUG 13 1965

DISTANCE 688.170

HELIOCENTRIC CONIC

RL 148.98 LAL .00 LOL 25.64 VL 32.720 GAL -5.06 AZL 89.29 HCA 217.02 SMA 186.64 ECC .21952 INC .7105 V1 29.909
RP 226.95 LAP -.43 LOP 242.66 VP 21.412 GAP -2.30 AZP 90.57 TAL 331.22 TAP 188.24 RCA 145.67 APO 227.61 V2 24.235
RC 243.792 GL 6.40 GP 8.51 ZAL 131.52 ZAP 116.76 ETS 174.46 ZAE 152.73 ETE 159.24 ZAC 95.95 ETC 256.26 CLP 117.08

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 13.149 VHL 3.626 DLA 14.69 RAL 161.64 RAD 6567.5 VEL 11.599 PTH 2.03 VHP 3.111 DPA 9.11 RAP 183.92 ECC 1.2164

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 19 13	2593.74	-26.60	66.96	20.86	100.08	19 2 27	1993.7	-24.94	58.69
90.00	10 13 31	4288.11	2.88	176.90	16.11	61.82	11 24 59	3688.1	-.91	170.27
100.00	19 48 28	2305.92	-27.73	45.55	20.61	101.64	20 26 54	1705.9	-25.84	37.25
100.00	11 26 57	4051.16	3.88	158.92	15.56	60.34	12 34 28	3451.2	-.09	152.39
110.00	21 14 22	2037.13	-30.68	24.31	19.79	105.88	21 48 19	1437.1	-28.20	15.99
110.00	12 17 32	3892.72	6.47	145.30	13.96	56.36	13 22 25	3292.7	2.00	139.06

DIFFERENTIAL CORRECTIONS

TDE .3890 TRA -.7749 TC3 .2239 BAU .2769
RDE .4575 RRA -.6071 RC3 1.5593 FAU .50228
FDE-4.7969 FRA15.8236 FC-33.0693 BSP 7298
BDE .6005 BRA .9844 BC3 1.5753 FSP 10583

MID-COURSE EXECUTION ACCURACY

SGT 1416.4 SGR 1668.8 SG3 3116.1
RRT .7967 RRF -.9676 RTF -.8078
SGB 2188.9 R23 -.1926 R13 -.9502
SG1 2078.1 SG2 687.5 THA 50.84

ORBIT DETERMINATION ACCURACY

ST 722.5 SR 782.4 SS 2920.9
CRT .9861 CRS .9186 CST .9688
LSA 3090.5 MSA 337.8 SSA 29.3
EL1 1061.3 EL2 88.5 ALF 47.31

LAUNCH DATE OCT 19 1964 FLIGHT TIME 300.00 ARRIVAL DATE AUG 15 1965

DISTANCE 692.087

HELIOCENTRIC CONIC

RL 148.98 LAL .00 LOL 25.64 VL 32.714 GAL -5.06 AZL 89.25 HCA 218.07 SMA 186.53 ECC .21905 INC .7472 V1 29.909
RP 226.56 LAP -.46 LOP 243.71 VP 21.450 GAP -2.58 AZP 90.59 TAL 331.21 TAP 189.28 RCA 145.67 APO 227.39 V2 24.277
RC 245.534 GL 6.74 GP 8.43 ZAL 131.49 ZAP 114.96 ETS 174.85 ZAE 150.87 ETE 160.91 ZAC 95.71 ETC 256.32 CLP 115.25

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 13.111 VHL 3.621 DLA 15.01 RAL 161.78 RAD 6567.5 VEL 11.597 PTH 2.03 VHP 3.071 DPA 9.36 RAP 183.18 ECC 1.2158

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 16 55	2604.25	-26.72	67.71	21.07	99.73	19 0 20	2004.3	-25.11	59.41
90.00	10 16 55	4276.33	2.50	176.24	16.26	61.78	11 28 12	3676.3	-1.29	169.61
100.00	19 46 24	2315.70	-27.86	46.24	20.83	101.30	20 25 0	1715.7	-26.02	37.93
100.00	11 30 8	4040.12	3.51	158.31	15.70	60.30	12 37 28	3440.1	-.47	151.79
110.00	21 12 47	2045.39	-30.83	24.90	20.02	105.55	21 46 53	1445.4	-28.39	16.55
110.00	12 20 14	3883.19	6.11	144.80	14.09	56.30	13 24 57	3283.2	1.64	138.57

DIFFERENTIAL CORRECTIONS

TDE .3508 TRA -.6394 TC3 -.0265 BAU .2763
RDE .4610 RRA -.6068 RC3 1.5761 FAU .51535
FDE-4.8696 FRA16.1969 FC-34.0301 BSP 6684
BDE .5793 BRA .8815 BC3 1.5763 FSP 10855

MID-COURSE EXECUTION ACCURACY

SGT 1185.6 SGR 1680.2 SG3 3198.9
RRT .7149 RRF -.9665 RTF -.7198
SGB 2056.4 R23 -.1790 R13 -.9507
SG1 1924.9 SG2 723.6 THA 58.23

ORBIT DETERMINATION ACCURACY

ST 637.8 SR 788.9 SS 2946.3
CRT .9910 CRS .9157 CST .9571
LSA 3096.4 MSA 348.7 SSA 28.9
EL1 1012.3 EL2 66.7 ALF 51.10

LAUNCH DATE OCT 19 1964 FLIGHT TIME 302.00 ARRIVAL DATE AUG 17 1965

DISTANCE 696.012

HELIOCENTRIC CONIC

RL 148.98 LAL .00 LOL 25.64 VL 32.708 GAL -5.05 AZL 89.22 HCA 219.13 SMA 186.43 ECC .21863 INC .7825 V1 29.909
RP 226.17 LAP -.49 LOP 244.77 VP 21.488 GAP -2.86 AZP 90.61 TAL 331.19 TAP 190.32 RCA 145.67 APO 227.19 V2 24.318
RC 247.256 GL 7.07 GP 8.34 ZAL 131.48 ZAP 113.12 ETS 175.23 ZAE 148.96 ETE 162.42 ZAC 95.46 ETC 256.38 CLP 113.38

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 13.082 VHL 3.617 DLA 15.30 RAL 161.93 RAD 6567.5 VEL 11.596 PTH 2.03 VHP 3.035 DPA 9.62 RAP 182.41 ECC 1.2153

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 14 50	2614.25	-26.84	68.42	21.30	99.39	18 58 25	2014.2	-25.26	60.10
90.00	10 20 13	4265.38	2.15	175.63	16.43	61.76	11 31 18	3665.4	-1.64	169.00
100.00	19 44 32	2324.99	-27.98	46.91	21.07	100.97	20 23 17	1725.0	-26.18	38.57
100.00	11 33 12	4029.86	3.17	157.75	15.86	60.26	12 40 22	3429.9	-.82	151.23
110.00	21 11 23	2053.25	-30.97	25.47	20.27	105.25	21 45 36	1453.2	-28.57	17.09
110.00	12 22 51	3874.37	5.78	144.34	14.24	56.25	13 27 25	3274.4	1.30	138.11

DIFFERENTIAL CORRECTIONS

TDE .3100 TRA -.5004 TC3 -.2949 BAU .2827
RDE .4640 RRA -.6067 RC3 1.5892 FAU .52726
FDE-4.9244 FRA16.5676 FC-34.8939 BSP 6195
BDE .5581 BRA .7864 BC3 1.6164 FSP 11142

MID-COURSE EXECUTION ACCURACY

SGT 980.9 SGR 1689.6 SG3 3276.8
RRT .5640 RRF -.9654 RTF -.5594
SGB 1953.7 R23 -.1473 R13 -.9543
SG1 1799.6 SG2 760.5 THA 67.68

ORBIT DETERMINATION ACCURACY

ST 549.6 SR 794.3 SS 2967.1
CRT .9954 CRS .9123 CST .9389
LSA 3099.5 MSA 359.3 SSA 28.6
EL1 964.9 EL2 43.5 ALF 55.36

LAUNCH DATE OCT 19 1964 FLIGHT TIME 304.00 ARRIVAL DATE AUG 19 1965

HELIOCENTRIC CONIC DISTANCE 699.945 EARTH TO MARS

RL	148.98	LAL	.00	LOL	25.64	VL	32.702	GAL	-5.05	AZL	89.18	HCA	220.19	SMA	186.34	ECC	.21826	INC	.8162
RP	225.78	LAP	-.53	LOP	245.83	VP	21.527	GAP	-3.13	AZP	90.62	TAL	331.16	TAP	191.35	RCA	145.67	APO	227.01
RC	248.959	GL	7.38	GP	8.26	ZAL	131.49	ZAP	111.25	ETS	175.61	ZAE	146.99	ETE	163.79	ZAC	95.20	ETC	256.45

V1	29.909	V2	24.360	CLP	111.49														

PLANETOCENTRIC CONIC

C3	13.062	VHL	3.614	DLA	15.57	RAL	162.09	RAD	6567.5	VEL	11.595	PTH	2.03	VHP	3.002	DPA	9.90	RAP	181.62

ECC	1.2150																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 12 57	2623.74	-26.94	69.09	21.54	99.07	18 56 41	2023.7	-25.41	60.76
90.00	10 23 23	4255.23	1.82	175.06	16.61	61.74	11 34 18	3655.2	-1.97	168.43
100.00	19 42 51	2333.81	-28.09	47.54	21.32	100.65	20 21 45	1733.8	-26.34	39.18
100.00	11 36 10	4020.38	2.85	157.23	16.04	60.23	12 43 10	3420.4	-1.14	150.71
110.00	21 10 8	2060.71	-31.10	26.01	20.53	104.95	21 44 29	1460.7	-28.74	17.61
110.00	12 25 22	3866.25	5.47	143.91	14.42	56.20	13 29 48	3266.3	.99	137.68

DIFFERENTIAL CORRECTIONS

TDE	.2695	TRA	-.3565	TC3	-.5747	BAU	.2970
RDE	.4674	RRA	-.6061	RC3	1.6005	FAU	.53864
FDE	-4.9844	FRA	16.9164	FC	-35.7009	BSP	5824
BDE	.5396	BRA	.7032	BC3	1.7006	FSP	11400

MID-COURSE EXECUTION ACCURACY

SGT	836.2	SGR	1697.8	SG3	3350.1		
RRT	.2967	RRF	-.9643	RTF	-.2772		
SGB	1892.6	R23	-.0912	R13	-.9600		
SG1	1720.7	SG2	787.9	THA	79.45		

ORBIT DETERMINATION ACCURACY

ST	462.3	SR	799.9	SS	2988.5		
CRT	.9975	CRS	.9093	CST	.9079		
LSA	3106.0	MSA	369.6	SSA	28.3		
EL1	923.5	EL2	28.3	ALF	60.01		

LAUNCH DATE OCT 19 1964 FLIGHT TIME 306.00 ARRIVAL DATE AUG 21 1965

HELIOCENTRIC CONIC DISTANCE 703.886 EARTH TO MARS

RL	148.98	LAL	.00	LOL	25.64	VL	32.697	GAL	-5.05	AZL	89.15	HCA	221.25	SMA	186.25	ECC	.21793	INC	.8486
RP	225.38	LAP	-.56	LOP	246.90	VP	21.567	GAP	-3.40	AZP	90.64	TAL	331.12	TAP	192.37	RCA	145.66	APO	226.84
RC	250.643	GL	7.67	GP	8.18	ZAL	131.51	ZAP	109.35	ETS	175.97	ZAE	144.98	ETE	165.03	ZAC	94.93	ETC	256.53

V1	29.909	V2	24.402	CLP	109.56														

PLANETOCENTRIC CONIC

C3	13.051	VHL	3.613	DLA	15.82	RAL	162.26	RAD	6567.5	VEL	11.595	PTH	2.03	VHP	2.972	DPA	10.18	RAP	180.80

ECC	1.2148																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 11 16	2632.74	-27.04	69.73	21.80	98.76	18 55 9	2032.7	-25.55	61.38
90.00	10 26 26	4245.87	1.52	174.54	16.82	61.72	11 37 12	3645.9	-2.27	167.91
100.00	19 41 22	2342.18	-28.20	48.14	21.58	100.35	20 20 24	1742.2	-26.48	39.76
100.00	11 39 1	4011.67	2.55	156.75	16.24	60.21	12 45 53	3411.7	-1.43	150.23
110.00	21 9 4	2067.80	-31.23	26.53	20.80	104.67	21 43 32	1467.8	-28.90	18.10
110.00	12 27 49	3858.82	5.19	143.52	14.61	56.17	13 32 8	3258.8	.71	137.30

DIFFERENTIAL CORRECTIONS

TDE	.2281	TRA	-.2080	TC3	-.8677	BAU	.3190
RDE	.4708	RRA	-.6050	RC3	1.6090	FAU	.54911
FDE	-5.0380	FRA	17.2428	FC	-36.4244	BSP	5642
BDE	.5231	BRA	.6397	BC3	1.8281	FSP	11644

MID-COURSE EXECUTION ACCURACY

SGT	800.9	SGR	1704.0	SG3	3417.3		
RRT	-.0856	RRF	-.9631	RTF	.1220		
SGB	1882.8	R23	-.0165	R13	-.9638		
SG1	1705.8	SG2	797.2	THA	92.95		

ORBIT DETERMINATION ACCURACY

ST	376.6	SR	805.1	SS	3007.4		
CRT	.9902	CRS	.9061	CST	.8509		
LSA	3112.8	MSA	379.7	SSA	28.0		
EL1	887.5	EL2	47.6	ALF	65.07		

LAUNCH DATE OCT 19 1964 FLIGHT TIME 308.00 ARRIVAL DATE AUG 23 1965

HELIOCENTRIC CONIC DISTANCE 707.834 EARTH TO MARS

RL	148.98	LAL	.00	LOL	25.64	VL	32.693	GAL	-5.06	AZL	89.12	HCA	222.32	SMA	186.17	ECC	.21765	INC	.8799
RP	224.99	LAP	-.59	LOP	247.97	VP	21.607	GAP	-3.66	AZP	90.65	TAL	331.06	TAP	193.39	RCA	145.65	APO	226.69
RC	252.307	GL	7.96	GP	8.09	ZAL	131.55	ZAP	107.43	ETS	176.33	ZAE	142.93	ETE	166.17	ZAC	94.66	ETC	256.60

V1	29.909	V2	24.444	CLP	107.61														

PLANETOCENTRIC CONIC

C3	13.050	VHL	3.612	DLA	16.06	RAL	162.44	RAD	6567.5	VEL	11.595	PTH	2.03	VHP	2.946	DPA	10.47	RAP	179.96

ECC	1.2148																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 9 48	2641.23	-27.12	70.34	22.07	98.47	18 53 49	2041.2	-25.67	61.97
90.00	10 29 22	4237.34	1.24	174.06	17.04	61.71	11 39 59	3637.3	-2.55	167.43
100.00	19 40 5	2350.07	-28.29	48.71	21.86	100.07	20 19 15	1750.1	-26.61	40.31
100.00	11 41 46	4003.73	2.28	156.31	16.46	60.19	12 48 30	3403.7	-1.70	149.79
110.00	21 8 10	2074.49	-31.34	27.02	21.09	104.40	21 42 44	1474.5	-29.05	18.56
110.00	12 30 11	3852.08	4.93	143.16	14.82	56.13	13 34 23	3252.1	.45	136.94

DIFFERENTIAL CORRECTIONS

TDE	.1821	TRA	-.0574	TC3	-1.1844	BAU	.3484
RDE	.4720	RRA	-.6055	RC3	1.6081	FAU	.55612
FDE	-5.0355	FRA	17.5996	FC	-36.8934	BSP	5727
BDE	.5059	BRA	.6082	BC3	1.9972	FSP	11977

MID-COURSE EXECUTION ACCURACY

SGT	908.1	SGR	1705.6	SG3	3475.4		
RRT	-.4412	RRF	-.9617	RTF	.4859		
SGB	1932.3	R23	.0589	R13	-.9623		
SG1	1764.4	SG2	787.8	THA	106.62		

ORBIT DETERMINATION ACCURACY

ST	291.3	SR	807.2	SS	3015.2		
CRT	.9519	CRS	.9013	CST	.7341		
LSA	3110.6	MSA	389.1	SSA	28.1		
EL1	854.0	EL2	84.4	ALF	70.85		

LAUNCH DATE OCT 19 1964 FLIGHT TIME 310.00 ARRIVAL DATE AUG 25 1965

HELIOCENTRIC CONIC DISTANCE 711.793 EARTH TO MARS

RL	148.98	LAL	.00	LOL	25.64	VL	32.689	GAL	-5.06	AZL	89.09	HCA	223.40	SMA	186.10	ECC	.21741	INC	.9098
RP	224.60	LAP	-.63	LOP	249.04	VP	21.648	GAP	-3.92	AZP	90.66	TAL	331.00	TAP	194.39	RCA	145.64	APO	226.56
RC	253.951	GL	8.23	GP	8.01	ZAL	131.60	ZAP	105.47	ETS	176.68	ZAE	140.84	ETE	167.22	ZAC	94.39	ETC	256.69

V1	29.909	V2	24.486	CLP	105.63														

PLANETOCENTRIC CONIC

C3	13.057	VHL	3.613	DLA	16.27	RAL	162.64	RAD	6567.5	VEL	11.595	PTH	2.03	VHP	2.923	DPA	10.77	RAP	179.09

ECC	1.2149																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 8 31	2649.26	-27.20	70.91	22.36	98.19	18 52 41	2049.3	-25.79	62.53
90.00	10 32 11	4229.55	.99	173.63	17.28	61.70	11 42 41	3629.6	-2.80	167.00
100.00	19 38 59	2357.54	-28.38	49.24	22.15	99.80	20 18 16	1757.5	-26.74	40.83
100.00	11 44 25	3996.50	2.04	155.92	16.70	60.17	12 51 1	3396.5	-1.95	149.39
110.00	21 7 25	2080.84	-31.45	27.48	21.40	104.15	21 42 6	1480.8	-29.19	19.01
110.00	12 32 28	3845.97	4.70	142.84	15.04	56.10	13 36 34	3246.0	.22	136.63

DIFFERENTIAL CORRECTIONS

TDE	.1420	TRA	.1021	TC3	-1.4893	BAU	.3835
RDE	.4767	RRA	-.6016	RC3	1.6151	FAU	.56617
FDE	-5.1151	FRA	17.8351	FC	-37.5390	BSP	5980
BDE	.4975	BRA	.6102	BC3	2.1969	FSP	12103

MID-COURSE EXECUTION ACCURACY

SGT	1112.5	SGR	1709.2	SG3	3530.4		
RRT	-.6593	RRF	-.9604	RTF	.7115		
SGB	2039.3	R23	.0976	R13	-.9611		
SG1	1894.6	SG2	754.6	THA	118.06		

ORBIT DETERMINATION ACCURACY

ST	233.1	SR	813.3	SS	3036.2		
CRT	.8125	CRS	.8993	CST	.4828		
LSA	3126.4	MSA	398.9	SSA	27.5		
EL1	835.7	EL2	132.3	ALF	76.55		

LAUNCH DATE OCT 19 1964 FLIGHT TIME 312.00 ARRIVAL DATE AUG 27 1965

HELIOCENTRIC CONIC DISTANCE 715.759 EARTH TO MARS

RL 148.98 LAL .00 LOL 25.64 VL 32.685 GAL -5.07 AZL 89.06 HCA 224.47 SMA 186.04 ECC .21721 INC .9387 V1 29.909
RP 224.21 LAP -.66 LOP 250.11 VP 21.690 GAP -4.17 AZP 90.67 TAL 330.92 TAP 195.39 RCA 145.63 APO 226.45 V2 24.527
RC 255.576 GL 8.48 GP 7.92 ZAL 131.67 ZAP 103.50 ETS 177.03 ZAE 138.72 ETE 168.18 ZAC 94.11 ETC 256.77 CLP 103.63

PLANETOCENTRIC CONIC

C3 13.074 VHL 3.616 DLA 16.47 RAL 162.84 RAD 6567.5 VEL 11.596 PTH 2.03 VHP 2.904 DPA 11.07 RAP 178.21 ECC 1.2152

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 7 27	2656.80	-27.27	71.45	22.66	97.93	18 51 44	2056.8	-25.89	63.06
90.00	10 34 54	4222.55	.77	173.24	17.54	61.69	11 45 16	3622.6	-3.02	166.61
100.00	19 38 4	2364.56	-28.46	49.75	22.46	99.55	20 17 29	1764.6	-26.85	41.32
100.00	11 46 58	3990.02	1.82	155.56	16.96	60.16	12 53 28	3390.0	-2.17	149.04
110.00	21 6 51	2086.81	-31.55	27.92	21.72	103.90	21 41 38	1486.8	-29.31	19.42
110.00	12 34 41	3840.54	4.49	142.56	15.29	56.08	13 38 41	3240.5	.01	136.34

DIFFERENTIAL CORRECTIONS
TDE .0996 TRA .2647 TC3-1.8083 BAU .4239
RDE .4808 RRA -.5977 RC3 1.6164 FAU .57414
FDE-5.1733 FRA18.0589 FC-38.0195 BSP 6485
BDE .4910 BRA .6537 BC3 2.4254 FSP 12241

MID-COURSE EXECUTION ACCURACY
SGT 1387.8 SGR 1709.4 SG3 3576.6
RRT -.7757 RRF -.9589 RTF .8304
SGB 2201.9 R23 .1126 R13 -.9621
SG1 2081.0 SG2 719.5 THA 127.43

ORBIT DETERMINATION ACCURACY
ST 208.9 SR 818.2 SS 3052.2
CRT .4677 CRS .8968 CST .0340
LSA 3140.4 MSA 408.1 SSA 27.1
EL1 824.3 EL2 183.3 ALF 82.83

LAUNCH DATE OCT 19 1964 FLIGHT TIME 314.00 ARRIVAL DATE AUG 29 1965

HELIOCENTRIC CONIC DISTANCE 719.732 EARTH TO MARS

RL 148.98 LAL .00 LOL 25.64 VL 32.681 GAL -5.08 AZL 89.03 HCA 225.55 SMA 185.98 ECC .21706 INC .9668 V1 29.909
RP 223.82 LAP -.69 LOP 251.19 VP 21.732 GAP -4.42 AZP 90.68 TAL 330.83 TAP 196.38 RCA 145.61 APO 226.34 V2 24.569
RC 257.180 GL 8.73 GP 7.82 ZAL 131.76 ZAP 101.51 ETS 177.30 ZAE 136.58 ETE 169.07 ZAC 93.82 ETC 256.87 CLP 101.62

PLANETOCENTRIC CONIC

C3 13.099 VHL 3.619 DLA 16.65 RAL 163.06 RAD 6567.5 VEL 11.597 PTH 2.03 VHP 2.888 DPA 11.38 RAP 177.31 ECC 1.2156

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 6 35	2663.86	-27.34	71.96	22.98	97.68	18 50 59	2063.9	-25.99	63.55
90.00	10 37 29	4216.33	.57	172.89	17.82	61.69	11 47 46	3616.3	-3.22	166.26
100.00	19 37 22	2371.14	-28.54	50.23	22.78	99.31	20 16 53	1771.1	-26.95	41.78
100.00	11 49 24	3984.28	1.62	155.24	17.23	60.15	12 55 48	3384.3	-2.36	148.72
110.00	21 6 26	2092.43	-31.64	28.33	22.05	103.68	21 41 19	1492.4	-29.43	19.82
110.00	12 36 49	3835.76	4.31	142.30	15.55	56.06	13 40 45	3235.8	-.17	136.09

DIFFERENTIAL CORRECTIONS
TDE .0563 TRA .4310 TC3-2.1346 BAU .4686
RDE .4845 RRA -.5932 RC3 1.6136 FAU .58059
FDE-5.2212 FRA18.2552 FC-38.3726 BSP 7195
BDE .4878 BRA .7333 BC3 2.6759 FSP 12364

MID-COURSE EXECUTION ACCURACY
SGT 1703.7 SGR 1706.9 SG3 3614.1
RRT -.8372 RRF -.9573 RTF .8933
SGB 2411.7 R23 .1115 R13 -.9655
SG1 2311.4 SG2 688.1 THA 134.94

ORBIT DETERMINATION ACCURACY
ST 236.1 SR 822.2 SS 3065.1
CRT .0200 CRS .8941 CST -.4260
LSA 3154.6 MSA 417.4 SSA 26.7
EL1 822.2 EL2 236.0 ALF 89.64

LAUNCH DATE OCT 19 1964 FLIGHT TIME 316.00 ARRIVAL DATE AUG 31 1965

HELIOCENTRIC CONIC DISTANCE 723.713 EARTH TO MARS

RL 148.98 LAL .00 LOL 25.64 VL 32.678 GAL -5.10 AZL 89.01 HCA 226.64 SMA 185.92 ECC .21695 INC .9939 V1 29.909
RP 223.44 LAP -.72 LOP 252.28 VP 21.774 GAP -4.67 AZP 90.68 TAL 330.73 TAP 197.36 RCA 145.59 APO 226.26 V2 24.611
RC 258.763 GL 8.96 GP 7.73 ZAL 131.87 ZAP 99.50 ETS 177.69 ZAE 134.41 ETE 169.89 ZAC 93.53 ETC 256.96 CLP 99.59

PLANETOCENTRIC CONIC

C3 13.133 VHL 3.624 DLA 16.81 RAL 163.29 RAD 6567.5 VEL 11.598 PTH 2.03 VHP 2.876 DPA 11.68 RAP 176.41 ECC 1.2161

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 5 56	2670.43	-27.40	72.43	23.32	97.45	18 50 27	2070.4	-26.08	64.01
90.00	10 39 58	4210.89	.39	172.59	18.11	61.69	11 50 9	3610.9	-3.40	165.96
100.00	19 36 51	2377.27	-28.60	50.67	23.12	99.08	20 16 28	1777.3	-27.05	42.21
100.00	11 51 45	3979.28	1.45	154.97	17.52	60.14	12 58 4	3379.3	-2.53	148.45
110.00	21 6 12	2097.69	-31.72	28.72	22.40	103.46	21 41 10	1497.7	-29.55	20.19
110.00	12 38 53	3831.63	4.15	142.09	15.84	56.04	13 42 44	3231.6	-.33	135.88

DIFFERENTIAL CORRECTIONS
TDE .0116 TRA .6009 TC3-2.4676 BAU .5170
RDE .4879 RRA -.5883 RC3 1.6068 FAU .58545
FDE-5.2545 FRA18.4262 FC-38.5926 BSP 8063
BDE .4880 BRA .8409 BC3 2.9446 FSP 12475

MID-COURSE EXECUTION ACCURACY
SGT 2045.4 SGR 1701.6 SG3 3642.7
RRT -.8714 RRF -.9556 RTF .9285
SGB 2660.7 R23 .1029 R13 -.9699
SG1 2576.9 SG2 662.6 THA 141.00

ORBIT DETERMINATION ACCURACY
ST 303.1 SR 825.4 SS 3074.0
CRT -.2980 CRS .8910 CST -.6963
LSA 3168.6 MSA 426.2 SSA 26.3
EL1 831.0 EL2 287.3 ALF 97.10

LAUNCH DATE OCT 19 1964 FLIGHT TIME 318.00 ARRIVAL DATE SEP 2 1965

HELIOCENTRIC CONIC DISTANCE 727.702 EARTH TO MARS

RL 148.98 LAL .00 LOL 25.64 VL 32.675 GAL -5.12 AZL 88.98 HCA 227.72 SMA 185.87 ECC .21688 INC 1.0200 V1 29.909
RP 223.05 LAP -.75 LOP 253.37 VP 21.817 GAP -4.91 AZP 90.69 TAL 330.61 TAP 198.34 RCA 145.56 APO 226.18 V2 24.653
RC 260.326 GL 9.18 GP 7.63 ZAL 131.99 ZAP 97.49 ETS 178.01 ZAE 132.22 ETE 170.65 ZAC 93.24 ETC 257.06 CLP 97.56

PLANETOCENTRIC CONIC

C3 13.177 VHL 3.630 DLA 16.95 RAL 163.53 RAD 6567.5 VEL 11.600 PTH 2.03 VHP 2.867 DPA 11.98 RAP 175.49 ECC 1.2169

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 5 30	2676.54	-27.45	72.87	23.67	97.24	18 50 6	2076.5	-26.16	64.44
90.00	10 42 20	4206.21	.24	172.33	18.43	61.68	11 52 26	3606.2	-3.55	165.69
100.00	19 36 31	2382.98	-28.66	51.08	23.48	98.87	20 16 14	1783.0	-27.14	42.61
100.00	11 53 59	3975.00	1.31	154.74	17.83	60.13	13 0 14	3375.0	-2.68	148.21
110.00	21 6 8	2102.61	-31.80	29.08	22.77	103.26	21 41 11	1502.6	-29.65	20.53
110.00	12 40 52	3828.14	4.02	141.91	16.14	56.03	13 44 40	3228.1	-.47	135.70

DIFFERENTIAL CORRECTIONS
TDE -.0339 TRA .7737 TC3-2.8041 BAU .5685
RDE .4914 RRA -.5822 RC3 1.5971 FAU .58913
FDE-5.2865 FRA18.5514 FC-38.7074 BSP 9041
BDE .4926 BRA .9683 BC3 3.2271 FSP 12538

MID-COURSE EXECUTION ACCURACY
SGT 2403.6 SGR 1693.8 SG3 3662.0
RRT -.8913 RRF -.9537 RTF .9496
SGB 2940.5 R23 .0916 R13 -.9743
SG1 2869.2 SG2 643.5 THA 145.92

ORBIT DETERMINATION ACCURACY
ST 391.5 SR 828.2 SS 3080.8
CRT -.4750 CRS .8882 CST -.8247
LSA 3184.5 MSA 434.5 SSA 25.9
EL1 852.8 EL2 334.6 ALF 105.02

LAUNCH DATE OCT 19 1964 FLIGHT TIME 320.00 ARRIVAL DATE SEP 4 1965

HELIOCENTRIC CONIC DISTANCE 731.698 EARTH TO MARS

RL	148.98	LAL	.00	LOL	25.64	VL	32.673	GAL	-5.14	AZL	88.95	HCA	228.82	SMA	185.83	ECC	.21685	INC	1.0453	V1	29.909
RP	222.66	LAP	-.79	LOP	254.46	VP	21.861	GAP	-5.15	AZP	90.69	TAL	330.48	TAP	199.30	RCA	145.53	APO	226.13	V2	24.695
RC	261.869	GL	9.40	GP	7.52	ZAL	132.13	ZAP	95.47	ETS	178.32	ZAE	130.02	ETE	171.37	ZAC	92.94	ETC	257.17	CLP	95.52

PLANETOCENTRIC CONIC

C3	13.229	VHL	3.637	DLA	17.08	RAL	163.78	RAD	6567.5	VEL	11.602	PTH	2.03	VHP	2.862	DPA	12.28	RAP	174.58	ECC	1.2177

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 5 15	2682.17	-27.50	73.28	24.04	97.04	18 49 58	2082.2	-26.24	64.84
90.00	10 44 36	4202.30	.11	172.11	18.76	61.68	11 54 38	3602.3	-3.67	165.47
100.00	19 36 24	2388.25	-28.72	51.47	23.85	98.68	20 16 12	1788.3	-27.22	42.98
100.00	11 56 8	3971.45	1.19	154.54	18.16	60.13	13 2 20	3371.4	-2.80	148.02
110.00	21 6 14	2107.18	-31.87	29.42	23.15	103.07	21 41 21	1507.2	-29.74	20.85
110.00	12 42 48	3825.28	3.91	141.76	16.46	56.01	13 46 33	3225.3	-.57	135.55

DIFFERENTIAL CORRECTIONS

TDE	-.0804	TRA	.9502	TC3	-3.1428	BAU	.6224	SGT	2774.0	SGR	1683.1
RDE	.4948	RRA	-.5752	RC3	1.5836	FAU	.59121	RRT	-.9031	RRF	-.9516
FDE	-5.3108	FRA	18.6402	FC	-38.6894	BSP	10112	SGB	3244.7	R23	.0802
BDE	.5013	BRA	1.1107	BC3	3.5193	FSP	12580	SG1	3182.9	SG2	629.9

MID-COURSE EXECUTION ACCURACY

SG3	3671.4	RTF	.9629	R13	-.9784
THA	149.98				

ORBIT DETERMINATION ACCURACY

ST	491.3	SR	830.4	SS	3084.8
CRT	-.5751	CRS	.8852	CST	-.8885
LSA	3201.6	MSA	442.6	SSA	25.5
EL1	888.8	EL2	375.6	ALF	113.16

LAUNCH DATE OCT 19 1964 FLIGHT TIME 322.00 ARRIVAL DATE SEP 6 1965

HELIOCENTRIC CONIC DISTANCE 735.701 EARTH TO MARS

RL	148.98	LAL	.00	LOL	25.64	VL	32.670	GAL	-5.16	AZL	88.93	HCA	229.91	SMA	185.79	ECC	.21686	INC	1.0701	V1	29.909
RP	222.28	LAP	-.82	LOP	255.55	VP	21.905	GAP	-5.38	AZP	90.69	TAL	330.34	TAP	200.25	RCA	145.50	APO	226.08	V2	24.737
RC	263.392	GL	9.60	GP	7.41	ZAL	132.29	ZAP	93.45	ETS	178.62	ZAE	127.81	ETE	172.03	ZAC	92.65	ETC	257.27	CLP	93.48

PLANETOCENTRIC CONIC

C3	13.291	VHL	3.646	DLA	17.19	RAL	164.05	RAD	6567.5	VEL	11.605	PTH	2.03	VHP	2.860	DPA	12.57	RAP	173.66	ECC	1.2187

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 5 14	2687.33	-27.54	73.65	24.43	96.86	18 50 1	2087.3	-26.30	65.20
90.00	10 46 45	4199.15	.01	171.93	19.11	61.68	11 56 44	3599.2	-3.77	165.30
100.00	19 36 28	2393.11	-28.77	51.82	24.24	98.50	20 16 21	1793.1	-27.29	43.33
100.00	11 58 11	3968.61	1.09	154.38	18.51	60.13	13 4 20	3368.6	-2.89	147.86
110.00	21 6 30	2111.42	-31.93	29.73	23.55	102.90	21 41 41	1511.4	-29.83	21.15
110.00	12 44 39	3823.06	3.83	141.64	16.80	56.01	13 48 22	3223.1	-.66	135.43

DIFFERENTIAL CORRECTIONS

TDE	-.1271	TRA	1.1294	TC3	-3.4801	BAU	.6781	SGT	3151.3	SGR	1669.9
RDE	.4980	RRA	-.5674	RC3	1.5664	FAU	.59171	RRT	-.9100	RRF	-.9493
FDE	-5.3273	FRA	18.6932	FC	-38.5429	BSP	11257	SGB	3566.4	R23	.0702
BDE	.5140	BRA	1.2639	BC3	3.8164	FSP	12597	SG1	3511.9	SG2	621.1

MID-COURSE EXECUTION ACCURACY

SG3	3671.3	RTF	.9717	R13	-.9818
THA	153.36				

ORBIT DETERMINATION ACCURACY

ST	597.0	SR	832.0	SS	3086.1
CRT	-.6343	CRS	.8822	CST	-.9228
LSA	3220.0	MSA	450.7	SSA	25.1
EL1	938.8	EL2	409.0	ALF	120.97

LAUNCH DATE OCT 19 1964 FLIGHT TIME 324.00 ARRIVAL DATE SEP 8 1965

HELIOCENTRIC CONIC DISTANCE 739.711 EARTH TO MARS

RL	148.98	LAL	.00	LOL	25.64	VL	32.668	GAL	-5.19	AZL	88.91	HCA	231.01	SMA	185.76	ECC	.21692	INC	1.0939	V1	29.909
RP	221.89	LAP	-.85	LOP	256.65	VP	21.949	GAP	-5.62	AZP	90.69	TAL	330.19	TAP	201.20	RCA	145.46	APO	226.05	V2	24.779
RC	264.895	GL	9.78	GP	7.30	ZAL	132.47	ZAP	91.44	ETS	178.91	ZAE	125.61	ETE	172.65	ZAC	92.35	ETC	257.38	CLP	91.45

PLANETOCENTRIC CONIC

C3	13.362	VHL	3.655	DLA	17.28	RAL	164.33	RAD	6567.5	VEL	11.608	PTH	2.03	VHP	2.862	DPA	12.85	RAP	172.75	ECC	1.2199

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 5 24	2692.03	-27.58	73.99	24.83	96.69	18 50 16	2092.0	-26.36	65.53
90.00	10 48 47	4196.76	-.07	171.80	19.48	61.68	11 58 44	3596.8	-3.85	165.16
100.00	19 36 44	2397.54	-28.81	52.14	24.65	98.33	20 16 41	1797.5	-27.36	43.64
100.00	12 0 9	3966.49	1.02	154.27	18.87	60.12	13 6 15	3366.5	-2.96	147.75
110.00	21 6 56	2115.33	-31.99	30.02	23.96	102.73	21 42 11	1515.3	-29.91	21.43
110.00	12 46 26	3821.47	3.77	141.56	17.16	56.00	13 50 8	3221.5	-.72	135.35

DIFFERENTIAL CORRECTIONS

TDE	-.1753	TRA	1.3107	TC3	-3.8169	BAU	.7357	SGT	3534.4	SGR	1654.3
RDE	.5014	RRA	-.5585	RC3	1.5467	FAU	.59101	RRT	-.9140	RRF	-.9468
FDE	-5.3423	FRA	18.7000	FC	-38.2925	BSP	12434	SGB	3902.4	R23	.0617
BDE	.5312	BRA	1.4248	BC3	4.1184	FSP	12562	SG1	3853.5	SG2	615.7

MID-COURSE EXECUTION ACCURACY

SG3	3661.7	RTF	.9778	R13	-.9846
THA	156.19				

ORBIT DETERMINATION ACCURACY

ST	706.5	SR	833.4	SS	3085.3
CRT	-.6731	CRS	.8794	CST	-.9435
LSA	3240.8	MSA	458.1	SSA	24.7
EL1	1002.5	EL2	434.3	ALF	128.08

LAUNCH DATE OCT 19 1964 FLIGHT TIME 326.00 ARRIVAL DATE SEP 10 1965

HELIOCENTRIC CONIC DISTANCE 743.728 EARTH TO MARS

RL	148.98	LAL	.00	LOL	25.64	VL	32.667	GAL	-5.22	AZL	88.88	HCA	232.11	SMA	185.73	ECC	.21701	INC	1.1172	V1	29.909
RP	221.51	LAP	-.88	LOP	257.75	VP	21.994	GAP	-5.84	AZP	90.69	TAL	330.02	TAP	202.14	RCA	145.42	APO	226.03	V2	24.820
RC	266.379	GL	9.96	GP	7.19	ZAL	132.66	ZAP	89.43	ETS	179.20	ZAE	123.40	ETE	173.23	ZAC	92.06	ETC	257.49	CLP	89.43

PLANETOCENTRIC CONIC

C3	13.442	VHL	3.666	DLA	17.36	RAL	164.62	RAD	6567.5	VEL	11.612	PTH	2.03	VHP	2.868	DPA	13.13	RAP	171.85	ECC	1.2212

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 5 48	2696.27	-27.61	74.29	25.25	96.54	18 50 44	2096.3	-26.42	65.83
90.00	10 50 43	4195.13	-.12	171.71	19.86	61.68	12 0 38	3595.1	-3.90	165.07
100.00	19 37 11	2401.56	-28.85	52.43	25.07	98.19	20 17 13	1801.6	-27.42	43.92
100.00	12 2 0	3965.09	.97	154.19	19.25	60.12	13 8 5	3365.1	-3.01	147.67
110.00	21 7 32	2118.91	-32.05	30.29	24.39	102.58	21 42 50	1518.9	-29.98	21.68
110.00	12 48 9	3820.50	3.73	141.51	17.53	56.00	13 51 50	3220.5	-.76	135.30

DIFFERENTIAL CORRECTIONS

TDE	-.2240	TRA	1.4949	TC3	-4.1488	BAU	.7943	SGT	3920.3	SGR	1636.2
RDE	.5046	RRA	-.5490	RC3	1.5232	FAU	.58853	RRT	-.9158	RRF	-.9440
FDE	-5.3463	FRA	18.6757	FC	-37.9034	BSP	13656	SGB	4248.1	R23	.0547
BDE	.5521	BRA	1.5926	BC3	4.4196	FSP	12516	SG1	4203.6	SG2	613.0

MID-COURSE EXECUTION ACCURACY

SG3	3642.5	RTF	.9822	R13	-.9869
THA	158.61				

ORBIT DETERMINATION ACCURACY

ST	818.6	SR	834.0	SS	3081.5
CRT	-.6989	CRS	.8764	CST	-.9565
LSA	3262.6	MSA	465.4	SSA	24.2
EL1	1077.1	EL2	453.4	ALF	134.24

LAUNCH DATE OCT 19 1964 FLIGHT TIME 328.00 ARRIVAL DATE SEP 12 1965

HELIOCENTRIC CONIC DISTANCE 747.752 EARTH TO MARS

RL 148.98 LAL .00 LOL 25.64 VL 32.665 GAL -5.25 AZL 88.86 HCA 233.22 SMA 185.71 ECC .21715 INC 1.1400 V1 29.909
RP 221.13 LAP -.91 LOP 258.86 VP 22.038 GAP -6.07 AZP 90.68 TAL 329.84 TAP 203.06 RCA 145.38 APO 226.03 V2 24.862
RC 267.844 GL 10.13 GP 7.07 ZAL 132.87 ZAP 87.44 ETS 179.47 ZAE 121.20 ETE 173.77 ZAC 91.76 ETC 257.60 CLP 87.42

PLANETOCENTRIC CONIC

C3 13.532 VHL 3.679 DLA 17.42 RAL 164.92 RAD 6567.5 VEL 11.615 PTH 2.04 VHP 2.877 DPA 13.39 RAP 170.96 ECC 1.2227

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 6 23	2700.06	-27.64	74.57	25.69	96.41	18 51 23	2100.1	-26.47	66.10
90.00	10 52 32	4194.25	-.15	171.66	20.26	61.68	12 2 26	3594.3	-3.93	165.02
100.00	19 37 50	2405.17	-28.88	52.69	25.51	98.05	20 17 55	1805.2	-27.47	44.18
100.00	12 3 46	3964.38	.95	154.15	19.65	60.12	13 9 50	3364.4	-3.03	147.63
110.00	21 8 17	2122.17	-32.10	30.53	24.84	102.45	21 43 39	1522.2	-30.05	21.91
110.00	12 49 48	3820.14	3.72	141.49	17.93	56.00	13 53 29	3220.1	-.77	135.28

DIFFERENTIAL CORRECTIONS
TDE -.2737 TRA 1.6808 TC3-4.4752 BAU .8538
RDE .5078 RRA -.5385 RC3 1.4975 FAU .58495
FDE-5.3470 FRA18.6071 FC-37.4224 BSP 14888
BDE .5769 BRA 1.7649 BC3 4.7192 FSP 12424

MID-COURSE EXECUTION ACCURACY
SGT 4307.0 SGR 1616.2 SG3 3614.4
RRT -.9161 RRF -.9410 RTF .9854
SGB 4600.3 R23 .0491 R13 -.9888
SG1 4559.4 SG2 612.3 THA 160.67

ORBIT DETERMINATION ACCURACY
ST 932.2 SR 834.3 SS 3075.4
CRT -.7168 CRS .8735 CST -.9652
LSA 3286.2 MSA 472.4 SSA 23.7
EL1 1160.5 EL2 467.3 ALF 139.41

LAUNCH DATE OCT 19 1964 FLIGHT TIME 330.00 ARRIVAL DATE SEP 14 1965

HELIOCENTRIC CONIC DISTANCE 751.782 EARTH TO MARS

RL 148.98 LAL .00 LOL 25.64 VL 32.664 GAL -5.28 AZL 88.84 HCA 234.33 SMA 185.69 ECC .21732 INC 1.1621 V1 29.909
RP 220.75 LAP -.94 LOP 259.97 VP 22.083 GAP -6.29 AZP 90.68 TAL 329.65 TAP 203.98 RCA 145.33 APO 226.04 V2 24.903
RC 269.292 GL 10.29 GP 6.96 ZAL 133.10 ZAP 85.46 ETS 179.73 ZAE 119.02 ETE 174.28 ZAC 91.47 ETC 257.71 CLP 85.42

PLANETOCENTRIC CONIC

C3 13.632 VHL 3.692 DLA 17.47 RAL 165.23 RAD 6567.5 VEL 11.620 PTH 2.04 VHP 2.889 DPA 13.64 RAP 170.09 ECC 1.2244

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 7 11	2703.40	-27.67	74.81	26.15	96.29	18 52 15	2103.4	-26.51	66.33
90.00	10 54 14	4194.12	-.15	171.65	20.69	61.68	12 4 9	3594.1	-3.94	165.02
100.00	19 38 41	2408.37	-28.92	52.93	25.97	97.93	20 18 49	1808.4	-27.52	44.40
100.00	12 5 26	3964.38	.95	154.15	20.07	60.12	13 11 31	3364.4	-3.03	147.63
110.00	21 9 13	2125.12	-32.14	30.75	25.30	102.33	21 44 38	1525.1	-30.11	22.12
110.00	12 51 24	3820.40	3.73	141.50	18.34	56.00	13 55 4	3220.4	-.76	135.29

DIFFERENTIAL CORRECTIONS
TDE -.3241 TRA 1.8687 TC3-4.7942 BAU .9138
RDE .5108 RRA -.5274 RC3 1.4686 FAU .57971
FDE-5.3392 FRA18.5065 FC-36.8154 BSP 16149
BDE .6050 BRA 1.9417 BC3 5.0141 FSP 12310

MID-COURSE EXECUTION ACCURACY
SGT 4693.4 SGR 1593.9 SG3 3577.2
RRT -.9152 RRF -.9377 RTF .9878
SGB 4956.6 R23 .0448 R13 -.9903
SG1 4918.6 SG2 613.1 THA 162.45

ORBIT DETERMINATION ACCURACY
ST 1046.9 SR 834.1 SS 3066.5
CRT -.7294 CRS .8705 CST -.9713
LSA 3311.4 MSA 479.2 SSA 23.3
EL1 1250.4 EL2 477.8 ALF 143.72

LAUNCH DATE OCT 19 1964 FLIGHT TIME 332.00 ARRIVAL DATE SEP 16 1965

HELIOCENTRIC CONIC DISTANCE 755.819 EARTH TO MARS

RL 148.98 LAL .00 LOL 25.64 VL 32.663 GAL -5.32 AZL 88.82 HCA 235.45 SMA 185.67 ECC .21754 INC 1.1836 V1 29.909
RP 220.37 LAP -.97 LOP 261.08 VP 22.129 GAP -6.51 AZP 90.67 TAL 329.44 TAP 204.89 RCA 145.28 APO 226.06 V2 24.945
RC 270.721 GL 10.44 GP 6.83 ZAL 133.35 ZAP 83.50 ETS 179.98 ZAE 116.84 ETE 174.76 ZAC 91.18 ETC 257.82 CLP 83.45

PLANETOCENTRIC CONIC

C3 13.742 VHL 3.707 DLA 17.50 RAL 165.56 RAD 6567.5 VEL 11.624 PTH 2.04 VHP 2.905 DPA 13.88 RAP 169.24 ECC 1.2262

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 8 12	2706.30	-27.69	75.02	26.62	96.19	18 53 18	2106.3	-26.54	66.54
90.00	10 55 51	4194.73	-.13	171.69	21.12	61.68	12 5 46	3594.7	-3.92	165.05
100.00	19 39 43	2411.19	-28.94	53.13	26.44	97.83	20 19 54	1811.2	-27.56	44.60
100.00	12 7 1	3965.08	.97	154.19	20.51	60.12	13 13 6	3365.1	-3.01	147.67
110.00	21 10 18	2127.76	-32.18	30.94	25.78	102.22	21 45 46	1527.8	-30.16	22.31
110.00	12 52 55	3821.27	3.76	141.55	18.77	56.00	13 56 36	3221.3	-.73	135.34

DIFFERENTIAL CORRECTIONS
TDE -.3759 TRA 2.0573 TC3-5.1047 BAU .9743
RDE .5140 RRA -.5154 RC3 1.4377 FAU .57331
FDE-5.3280 FRA18.3657 FC-36.1178 BSP 17402
BDE .6368 BRA 2.1209 BC3 5.3032 FSP 12160

MID-COURSE EXECUTION ACCURACY
SGT 5077.1 SGR 1570.0 SG3 3531.5
RRT -.9134 RRF -.9341 RTF .9896
SGB 5314.3 R23 .0413 R13 -.9915
SG1 5278.6 SG2 614.8 THA 164.01

ORBIT DETERMINATION ACCURACY
ST 1162.3 SR 833.6 SS 3055.5
CRT -.7388 CRS .8677 CST -.9758
LSA 3338.5 MSA 485.4 SSA 22.8
EL1 1345.5 EL2 485.3 ALF 147.31

LAUNCH DATE OCT 19 1964 FLIGHT TIME 334.00 ARRIVAL DATE SEP 18 1965

HELIOCENTRIC CONIC DISTANCE 759.860 EARTH TO MARS

RL 148.98 LAL .00 LOL 25.64 VL 32.663 GAL -5.36 AZL 88.80 HCA 236.56 SMA 185.66 ECC .21779 INC 1.2047 V1 29.909
RP 220.00 LAP -1.01 LOP 262.20 VP 22.174 GAP -6.72 AZP 90.66 TAL 329.22 TAP 205.79 RCA 145.23 APO 226.10 V2 24.986
RC 272.134 GL 10.58 GP 6.71 ZAL 133.61 ZAP 81.57 ETS 180.23 ZAE 114.69 ETE 175.20 ZAC 90.90 ETC 257.93 CLP 81.51

PLANETOCENTRIC CONIC

C3 13.863 VHL 3.723 DLA 17.51 RAL 165.90 RAD 6567.5 VEL 11.630 PTH 2.04 VHP 2.924 DPA 14.10 RAP 168.42 ECC 1.2281

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 9 25	2708.75	-27.71	75.19	27.11	96.10	18 54 33	2108.8	-26.57	66.71
90.00	10 57 21	4196.11	-.09	171.76	21.58	61.68	12 7 17	3596.1	-3.87	165.13
100.00	19 40 56	2413.59	-28.96	53.31	26.94	97.74	20 21 10	1813.6	-27.59	44.78
100.00	12 8 30	3966.50	1.02	154.27	20.97	60.12	13 14 37	3366.5	-2.96	147.75
110.00	21 11 33	2130.08	-32.21	31.12	26.28	102.12	21 47 3	1530.1	-30.21	22.48
110.00	12 54 23	3822.77	3.82	141.62	19.22	56.00	13 58 5	3222.8	-.67	135.42

DIFFERENTIAL CORRECTIONS
TDE -.4238 TRA 2.2542 TC3-5.3923 BAU 1.0324
RDE .5146 RRA -.5054 RC3 1.3970 FAU .56213
FDE-5.2383 FRA18.2650 FC-35.1050 BSP 18800
BDE .6667 BRA 2.3101 BC3 5.5703 FSP 12140

MID-COURSE EXECUTION ACCURACY
SGT 5457.1 SGR 1540.9 SG3 3474.3
RRT -.9110 RRF -.9298 RTF .9908
SGB 5670.4 R23 .0377 R13 -.9923
SG1 5637.0 SG2 615.3 THA 165.40

ORBIT DETERMINATION ACCURACY
ST 1277.0 SR 829.4 SS 3029.6
CRT -.7433 CRS .8619 CST -.9797
LSA 3354.8 MSA 491.8 SSA 22.6
EL1 1441.1 EL2 491.6 ALF 150.46

LAUNCH DATE OCT 19 1964 FLIGHT TIME 336.00 ARRIVAL DATE SEP 20 1965

HELIOCENTRIC CONIC DISTANCE 763.911 EARTH TO MARS

RL 148.98 LAL .00 LOL 25.64 VL 32.662 GAL -5.41 AZL 88.77 HCA 237.69 SMA 185.66 ECC .21809 INC 1.2253 V1 29.909
RP 219.62 LAP -1.04 LOP 263.32 VP 22.220 GAP -6.93 AZP 90.65 TAL 328.99 TAP 206.68 RCA 145.17 APO 226.14 V2 25.027
RC 273.529 GL 10.71 GP 6.59 ZAL 133.89 ZAP 79.66 ETS 180.46 ZAE 112.56 ETE 175.62 ZAC 90.62 ETC 258.03 CLP 79.59

PLANETOCENTRIC CONIC

C3 13.993 VHL 3.741 DLA 17.51 RAL 166.25 RAD 6567.6 VEL 11.635 PTH 2.04 VHP 2.947 DPA 14.31 RAP 167.62 ECC 1.2303

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 10 49	2710.81	-27.72	75.34	27.62	96.03	18 55 59	2110.8	-26.60	66.86
90.00	10 58 45	4198.17	-.02	171.88	22.06	61.68	12 8 43	3598.2	-3.81	165.24
100.00	19 42 20	2415.65	-28.98	53.46	27.45	97.66	20 22 36	1815.6	-27.62	44.92
100.00	12 9 54	3968.56	1.09	154.38	21.44	60.13	13 16 2	3368.6	-2.89	147.86
110.00	21 12 57	2132.14	-32.24	31.27	26.79	102.03	21 48 29	1532.1	-30.25	22.62
110.00	12 55 46	3824.84	3.90	141.73	19.69	56.01	13 59 31	3224.8	-.59	135.52

DIFFERENTIAL CORRECTIONS
TDE -.4791 TRA 2.4430 TC3-5.6848 BAU 1.0938
RDE .5189 RRA -.4912 RC3 1.3656 FAU .55491
FDE-5.2515 FRA18.0282 FC-34.3308 BSP 19996
BDE .7063 BRA 2.4919 BC3 5.8465 FSP 11868

MID-COURSE EXECUTION ACCURACY
SGT 5832.9 SGR 1515.9 SG3 3415.6
RRT -.9075 RRF -.9258 RTF .9920
SGB 6026.7 R23 .0362 R13 -.9932
SG1 5994.7 SG2 619.6 THA 166.58

ORBIT DETERMINATION ACCURACY
ST 1393.0 SR 829.9 SS 3020.5
CRT -.7490 CRS .8606 CST -.9819
LSA 3391.8 MSA 497.5 SSA 22.0
EL1 1543.7 EL2 496.2 ALF 152.93

LAUNCH DATE OCT 19 1964 FLIGHT TIME 338.00 ARRIVAL DATE SEP 22 1965

HELIOCENTRIC CONIC DISTANCE 767.967 EARTH TO MARS

RL 148.98 LAL .00 LOL 25.64 VL 32.662 GAL -5.46 AZL 88.75 HCA 238.81 SMA 185.65 ECC .21843 INC 1.2455 V1 29.909
RP 219.25 LAP -1.07 LOP 264.45 VP 22.265 GAP -7.14 AZP 90.64 TAL 328.74 TAP 207.56 RCA 145.10 APO 226.20 V2 25.067
RC 274.906 GL 10.84 GP 6.46 ZAL 134.19 ZAP 77.78 ETS 180.68 ZAE 110.46 ETE 176.01 ZAC 90.35 ETC 258.14 CLP 77.70

PLANETOCENTRIC CONIC

C3 14.135 VHL 3.760 DLA 17.50 RAL 166.61 RAD 6567.6 VEL 11.641 PTH 2.04 VHP 2.972 DPA 14.50 RAP 166.85 ECC 1.2326

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 12 24	2712.44	-27.73	75.46	28.14	95.97	18 57 37	2112.4	-26.62	66.97
90.00	11 0 2	4200.97	.07	172.03	22.55	61.68	12 10 3	3601.0	-3.72	165.40
100.00	19 43 55	2417.33	-29.00	53.58	27.97	97.60	20 24 13	1817.3	-27.64	45.04
100.00	12 11 12	3971.31	1.18	154.53	21.93	60.13	13 17 24	3371.3	-2.80	148.01
110.00	21 14 30	2133.91	-32.26	31.40	27.32	101.96	21 50 4	1533.9	-30.28	22.75
110.00	12 57 7	3827.50	4.00	141.87	20.17	56.02	14 0 54	3227.5	-.49	135.66

DIFFERENTIAL CORRECTIONS
TDE -.5355 TRA 2.6331 TC3-5.9636 BAU 1.1547
RDE .5228 RRA -.4771 RC3 1.3314 FAU .54607
FDE-5.2466 FRA17.7774 FC-33.4457 BSP 21184
BDE .7484 BRA 2.6759 BC3 6.1104 FSP 11602

MID-COURSE EXECUTION ACCURACY
SGT 6202.9 SGR 1489.4 SG3 3350.0
RRT -.9035 RRF -.9213 RTF .9930
SGB 6379.2 R23 .0350 R13 -.9940
SG1 6348.7 SG2 623.6 THA 167.64

ORBIT DETERMINATION ACCURACY
ST 1509.1 SR 829.4 SS 3007.3
CRT -.7533 CRS .8589 CST -.9837
LSA 3428.8 MSA 502.6 SSA 21.4
EL1 1648.0 EL2 499.5 ALF 155.06

LAUNCH DATE OCT 19 1964 FLIGHT TIME 340.00 ARRIVAL DATE SEP 24 1965

HELIOCENTRIC CONIC DISTANCE 772.029 EARTH TO MARS

RL 148.98 LAL .00 LOL 25.64 VL 32.662 GAL -5.51 AZL 88.73 HCA 239.94 SMA 185.65 ECC .21880 INC 1.2652 V1 29.909
RP 218.89 LAP -1.10 LOP 265.58 VP 22.311 GAP -7.35 AZP 90.63 TAL 328.48 TAP 208.42 RCA 145.03 APO 226.28 V2 25.108
RC 276.266 GL 10.95 GP 6.33 ZAL 134.50 ZAP 75.93 ETS 180.89 ZAE 108.38 ETE 176.38 ZAC 90.09 ETC 258.24 CLP 75.84

PLANETOCENTRIC CONIC

C3 14.288 VHL 3.780 DLA 17.47 RAL 166.99 RAD 6567.6 VEL 11.648 PTH 2.04 VHP 3.001 DPA 14.67 RAP 166.11 ECC 1.2351

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 14 12	2713.68	-27.74	75.55	28.69	95.92	18 59 26	2113.7	-26.63	67.06
90.00	11 1 14	4204.48	.18	172.23	23.06	61.68	12 11 18	3604.5	-3.60	165.60
100.00	19 45 41	2418.65	-29.01	53.68	28.52	97.55	20 26 0	1818.6	-27.66	45.13
100.00	12 12 26	3974.74	1.30	154.72	22.44	60.13	13 18 40	3374.7	-2.68	148.20
110.00	21 16 13	2135.40	-32.29	31.51	27.87	101.89	21 51 48	1535.4	-30.31	22.86
110.00	12 58 23	3830.76	4.12	142.04	20.68	56.04	14 2 14	3230.8	-.37	135.83

DIFFERENTIAL CORRECTIONS
TDE -.5930 TRA 2.8244 TC3-6.2288 BAU 1.2151
RDE .5264 RRA -.4629 RC3 1.2951 FAU .53584
FDE-5.2292 FRA17.5069 FC-32.4679 BSP 22367
BDE .7930 BRA 2.8621 BC3 6.3615 FSP 11335

MID-COURSE EXECUTION ACCURACY
SGT 6566.7 SGR 1461.6 SG3 3277.8
RRT -.8990 RRF -.9165 RTF .9937
SGB 6727.4 R23 .0341 R13 -.9945
SG1 6698.1 SG2 627.6 THA 168.58

ORBIT DETERMINATION ACCURACY
ST 1625.1 SR 828.4 SS 2990.8
CRT -.7565 CRS .8570 CST -.9852
LSA 3466.1 MSA 507.4 SSA 20.9
EL1 1753.6 EL2 502.0 ALF 156.91

LAUNCH DATE OCT 19 1964 FLIGHT TIME 342.00 ARRIVAL DATE SEP 26 1965

HELIOCENTRIC CONIC DISTANCE 776.096 EARTH TO MARS

RL 148.98 LAL .00 LOL 25.64 VL 32.663 GAL -5.56 AZL 88.72 HCA 241.07 SMA 185.66 ECC .21922 INC 1.2846 V1 29.909
RP 218.52 LAP -1.12 LOP 266.71 VP 22.357 GAP -7.55 AZP 90.62 TAL 328.21 TAP 209.28 RCA 144.96 APO 226.36 V2 25.148
RC 277.609 GL 11.05 GP 6.21 ZAL 134.83 ZAP 74.12 ETS 181.09 ZAE 106.33 ETE 176.73 ZAC 89.83 ETC 258.33 CLP 74.02

PLANETOCENTRIC CONIC

C3 14.452 VHL 3.802 DLA 17.42 RAL 167.37 RAD 6567.6 VEL 11.655 PTH 2.05 VHP 3.033 DPA 14.83 RAP 165.41 ECC 1.2379

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 16 11	2714.52	-27.75	75.61	29.25	95.90	19 1 25	2114.5	-26.64	67.12
90.00	11 2 19	4208.71	.32	172.47	23.59	61.68	12 12 28	3608.7	-3.47	165.83
100.00	19 47 38	2419.62	-29.02	53.75	29.08	97.51	20 27 57	1819.6	-27.67	45.20
100.00	12 13 34	3978.84	1.44	154.95	22.96	60.14	13 19 52	3378.8	-2.55	148.42
110.00	21 18 5	2136.62	-32.30	31.61	28.43	101.84	21 53 41	1536.6	-30.33	22.94
110.00	12 59 36	3834.60	4.27	142.24	21.20	56.05	14 3 30	3234.6	-.22	136.03

DIFFERENTIAL CORRECTIONS
TDE -.6505 TRA 3.0179 TC3-6.4752 BAU 1.2745
RDE .5298 RRA -.4488 RC3 1.2568 FAU .52430
FDE-5.1978 FRA17.2249 FC-31.4068 BSP 23554
BDE .8390 BRA 3.0510 BC3 6.5960 FSP 11069

MID-COURSE EXECUTION ACCURACY
SGT 6922.7 SGR 1432.9 SG3 3200.2
RRT -.8939 RRF -.9112 RTF .9943
SGB 7069.5 R23 .0334 R13 -.9950
SG1 7041.2 SG2 631.6 THA 169.43

ORBIT DETERMINATION ACCURACY
ST 1740.2 SR 826.8 SS 2970.9
CRT -.7584 CRS .8548 CST -.9864
LSA 3503.6 MSA 512.1 SSA 20.4
EL1 1859.4 EL2 504.3 ALF 158.53

LAUNCH DATE OCT 19 1964 FLIGHT TIME 344.00 ARRIVAL DATE SEP 28 1965

DISTANCE 780.169

HELIOCENTRIC CONIC

RL 148.98 LAL .00 LOL 25.64 VL 32.663 GAL -5.62 AZL 88.70 HCA 242.21 SMA 185.67 ECC .21968 INC 1.3036 V1 29.909
RP 218.16 LAP -1.15 LOP 267.85 VP 22.403 GAP -7.75 AZP 90.61 TAL 327.92 TAP 210.13 RCA 144.88 APO 226.46 V2 25.188
RC 278.933 GL 11.15 GP 6.08 ZAL 135.17 ZAP 72.34 ETS 181.28 ZAE 104.32 ETE 177.05 ZAC 89.59 ETC 258.42 CLP 72.24

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 14.629 VHL 3.825 DLA 17.36 RAL 167.77 RAD 6567.6 VEL 11.663 PTH 2.05 VHP 3.068 DPA 14.97 RAP 164.75 ECC 1.2408

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 18 21	2714.98	-27.75	75.64	29.83	95.88	19 3 36	2115.0	-26.65	67.15
90.00	11 3 19	4213.64	.48	172.74	24.13	61.69	12 13 33	3613.6	-3.31	166.11
100.00	19 49 45	2420.25	-29.02	53.79	29.66	97.49	20 30 5	1820.3	-27.68	45.25
100.00	12 14 37	3983.60	1.60	155.21	23.51	60.15	13 21 0	3383.6	-2.38	148.69
110.00	21 20 5	2137.59	-32.32	31.68	29.01	101.80	21 55 43	1537.6	-30.35	23.01
110.00	13 0 45	3839.03	4.44	142.48	21.74	56.07	14 4 44	3239.0	-.05	136.26

DIFFERENTIAL CORRECTIONS
TDE -.7097 TRA 3.2117 TC3-6.7076 BAU 1.3333
RDE .5332 RRA -.4345 RC3 1.2179 FAU .51202
FDE-5.1619 FRA16.9236 FC-30.3012 BSP 24714
BDE .8877 BRA 3.2409 BC3 6.8173 FSP 10787

MID-COURSE EXECUTION ACCURACY
SGT 7271.0 SGR 1403.9 SG3 3118.3
RRT -.8882 RRF -.9056 RTF .9948
SGB 7405.3 R23 .0330 R13 -.9954
SG1 7378.0 SG2 635.6 THA 170.19

ORBIT DETERMINATION ACCURACY
ST 1855.0 SR 825.0 SS 2949.3
CRT -.7599 CRS .8527 CST -.9875
LSA 3543.0 MSA 516.3 SSA 19.9
EL1 1966.1 EL2 506.0 ALF 159.94

LAUNCH DATE OCT 19 1964 FLIGHT TIME 346.00 ARRIVAL DATE SEP 30 1965

DISTANCE 784.247

HELIOCENTRIC CONIC

RL 148.98 LAL .00 LOL 25.64 VL 32.664 GAL -5.68 AZL 88.68 HCA 243.35 SMA 185.68 ECC .22018 INC 1.3223 V1 29.909
RP 217.80 LAP -1.18 LOP 268.99 VP 22.449 GAP -7.95 AZP 90.59 TAL 327.62 TAP 210.97 RCA 144.80 APO 226.57 V2 25.228
RC 280.240 GL 11.24 GP 5.95 ZAL 135.53 ZAP 70.60 ETS 181.46 ZAE 102.34 ETE 177.36 ZAC 89.35 ETC 258.51 CLP 70.49

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 14.818 VHL 3.849 DLA 17.29 RAL 168.18 RAD 6567.6 VEL 11.671 PTH 2.05 VHP 3.106 DPA 15.09 RAP 164.13 ECC 1.2439

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 20 42	2715.07	-27.75	75.65	30.43	95.88	19 5 57	2115.1	-26.65	67.16
90.00	11 4 13	4219.26	.66	173.05	24.69	61.69	12 14 32	3619.3	-3.13	166.42
100.00	19 52 2	2420.56	-29.03	53.82	30.26	97.48	20 32 22	1820.6	-27.69	45.27
100.00	12 15 35	3989.01	1.78	155.50	24.07	60.16	13 22 4	3389.0	-2.20	148.98
110.00	21 22 15	2138.31	-32.33	31.73	29.61	101.77	21 57 53	1538.3	-30.37	23.06
110.00	13 1 51	3844.03	4.63	142.74	22.30	56.09	14 5 55	3244.0	.14	136.52

DIFFERENTIAL CORRECTIONS
TDE -.7696 TRA 3.4071 TC3-6.9220 BAU 1.3910
RDE .5365 RRA -.4203 RC3 1.1782 FAU .49889
FDE-5.1179 FRA16.6090 FC-29.1474 BSP 25870
BDE .9381 BRA 3.4329 BC3 7.0215 FSP 10503

MID-COURSE EXECUTION ACCURACY
SGT 7610.6 SGR 1374.7 SG3 3032.6
RRT -.8821 RRF -.8995 RTF .9951
SGB 7733.7 R23 .0328 R13 -.9957
SG1 7707.3 SG2 639.5 THA 170.88

ORBIT DETERMINATION ACCURACY
ST 1968.9 SR 822.8 SS 2925.3
CRT -.7606 CRS .8505 CST -.9883
LSA 3583.3 MSA 520.4 SSA 19.5
EL1 2072.7 EL2 507.4 ALF 161.20

LAUNCH DATE OCT 19 1964 FLIGHT TIME 348.00 ARRIVAL DATE OCT 2 1965

DISTANCE 788.329

HELIOCENTRIC CONIC

RL 148.98 LAL .00 LOL 25.64 VL 32.665 GAL -5.74 AZL 88.66 HCA 244.50 SMA 185.70 ECC .22073 INC 1.3407 V1 29.909
RP 217.44 LAP -1.21 LOP 270.14 VP 22.495 GAP -8.15 AZP 90.58 TAL 327.30 TAP 211.80 RCA 144.71 APO 226.69 V2 25.268
RC 281.529 GL 11.32 GP 5.83 ZAL 135.91 ZAP 68.91 ETS 181.63 ZAE 100.40 ETE 177.64 ZAC 89.12 ETC 258.59 CLP 68.79

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 15.020 VHL 3.876 DLA 17.20 RAL 168.60 RAD 6567.6 VEL 11.679 PTH 2.05 VHP 3.147 DPA 15.19 RAP 163.55 ECC 1.2472

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 23 14	2714.82	-27.75	75.63	31.04	95.88	19 8 29	2114.8	-26.64	67.14
90.00	11 5 2	4225.56	.86	173.41	25.27	61.70	12 15 27	3625.6	-2.93	166.78
100.00	19 54 29	2420.55	-29.03	53.82	30.87	97.48	20 34 50	1820.6	-27.69	45.27
100.00	12 16 28	3995.06	1.99	155.84	24.65	60.17	13 23 3	3395.1	-2.00	149.32
110.00	21 24 32	2138.79	-32.33	31.77	30.22	101.75	22 0 11	1538.8	-30.38	23.10
110.00	13 2 54	3849.59	4.84	143.03	22.88	56.12	14 7 3	3249.6	.35	136.81

DIFFERENTIAL CORRECTIONS
TDE -.8309 TRA 3.6032 TC3-7.1195 BAU 1.4478
RDE .5399 RRA -.4061 RC3 1.1383 FAU .48522
FDE-5.0713 FRA16.2809 FC-27.9679 BSP 26989
BDE .9909 BRA 3.6260 BC3 7.2099 FSP 10207

MID-COURSE EXECUTION ACCURACY
SGT 7940.9 SGR 1345.6 SG3 2944.0
RRT -.8755 RRF -.8931 RTF .9954
SGB 8054.1 R23 .0328 R13 -.9959
SG1 8028.4 SG2 643.3 THA 171.51

ORBIT DETERMINATION ACCURACY
ST 2082.1 SR 820.6 SS 2900.2
CRT -.7611 CRS .8485 CST -.9890
LSA 3625.6 MSA 524.1 SSA 19.1
EL1 2179.4 EL2 508.5 ALF 162.31

LAUNCH DATE OCT 19 1964 FLIGHT TIME 350.00 ARRIVAL DATE OCT 4 1965

DISTANCE 792.416

HELIOCENTRIC CONIC

RL 148.98 LAL .00 LOL 25.64 VL 32.666 GAL -5.81 AZL 88.64 HCA 245.65 SMA 185.72 ECC .22132 INC 1.3587 V1 29.909
RP 217.09 LAP -1.24 LOP 271.28 VP 22.540 GAP -8.34 AZP 90.56 TAL 326.97 TAP 212.62 RCA 144.62 APO 226.82 V2 25.307
RC 282.801 GL 11.39 GP 5.70 ZAL 136.30 ZAP 67.25 ETS 181.79 ZAE 98.50 ETE 177.91 ZAC 88.90 ETC 258.67 CLP 67.13

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 15.235 VHL 3.903 DLA 17.10 RAL 169.03 RAD 6567.6 VEL 11.688 PTH 2.06 VHP 3.191 DPA 15.28 RAP 163.01 ECC 1.2507

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 25 56	2714.23	-27.74	75.59	31.67	95.91	19 11 10	2114.2	-26.64	67.10
90.00	11 5 45	4232.54	1.09	173.80	25.87	61.70	12 16 17	3632.5	-2.70	167.17
100.00	19 57 6	2420.24	-29.02	53.79	31.50	97.49	20 37 26	1820.2	-27.68	45.25
100.00	12 17 16	4001.76	2.22	156.20	25.25	60.18	13 23 58	3401.8	-1.77	149.68
110.00	21 26 58	2139.04	-32.34	31.79	30.85	101.74	22 2 37	1539.0	-30.38	23.12
110.00	13 3 53	3855.73	5.07	143.35	23.47	56.15	14 8 9	3255.7	.59	137.13

DIFFERENTIAL CORRECTIONS
TDE -.8910 TRA 3.8032 TC3-7.2932 BAU 1.5022
RDE .5428 RRA -.3926 RC3 1.0969 FAU .47024
FDE-5.0022 FRA15.9575 FC-26.7208 BSP 28161
BDE 1.0433 BRA 3.8235 BC3 7.3752 FSP 9939

MID-COURSE EXECUTION ACCURACY
SGT 8261.0 SGR 1315.9 SG3 2852.1
RRT -.8683 RRF -.8861 RTF .9957
SGB 8365.2 R23 .0326 R13 -.9961
SG1 8340.1 SG2 646.5 THA 172.08

ORBIT DETERMINATION ACCURACY
ST 2193.2 SR 817.4 SS 2869.7
CRT -.7605 CRS .8457 CST -.9896
LSA 3665.4 MSA 527.4 SSA 18.8
EL1 2284.5 EL2 509.6 ALF 163.32

LAUNCH DATE OCT 19 1964 FLIGHT TIME 352.00 ARRIVAL DATE OCT 6 1965

HELIOCENTRIC CONIC DISTANCE 796.509 EARTH TO MARS

RL	148.98	LAL	.00	LOL	25.64	VL	32.667	GAL	-5.88	AZL	88.62	HCA	246.80	SMA	185.74	ECC	.22195	INC	1.3766	V1	29.909
RP	216.74	LAP	-1.27	LOP	272.44	VP	22.586	GAP	-8.53	AZP	90.54	TAL	326.63	TAP	213.42	RCA	144.52	APO	226.96	V2	25.346
RC	284.057	GL	11.45	GP	5.58	ZAL	136.71	ZAP	65.63	ETS	181.94	ZAE	96.63	ETE	178.16	ZAC	88.70	ETC	258.74	CLP	65.51

PLANETOCENTRIC CONIC

C3	15.465	VHL	3.933	DLA	16.99	RAL	169.46	RAD	6567.6	VEL	11.698	PTH	2.06	VHP	3.237	DPA	15.35	RAP	162.52	ECC	1.2545

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 28 48	2713.32	-27.74	75.52	32.32	95.94	19 14 1	2113.3	-26.63	67.03
90.00	11 6 23	4240.17	1.34	174.22	26.49	61.71	12 17 3	3640.2	-2.46	167.59
100.00	19 59 52	2419.66	-29.02	53.75	32.15	97.51	20 40 11	1819.7	-27.68	45.21
100.00	12 18 0	4009.07	2.46	156.61	25.86	60.20	13 24 49	3409.1	-1.52	150.08
110.00	21 29 32	2139.08	-32.34	31.79	31.50	101.74	22 5 11	1539.1	-30.38	23.12
110.00	13 4 49	3862.41	5.32	143.71	24.09	56.18	14 9 11	3262.4	.84	137.48

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.9589	TRA	3.9977	TC3	-7.4646	BAU	1.5587	SGT	8573.9	SGR	1288.8	SG3	2760.6	ST	2306.8	SR	816.0	SS	2846.1
RDE	.5471	RRA	-.3781	RC3	1.0591	FAU	.45672	RRT	-.8608	RRF	-.8791	RTF	.9959	CRT	-.7617	CRS	.8451	CST	-.9900
FDE	-4.9692	FRA	15.5903	FC	-25.5679	BSP	29151	SGB	8670.3	R23	.0332	R13	-.9963	LSA	3715.6	MSA	530.1	SSA	18.3
BDE	1.1040	BRA	4.0156	BC3	7.5393	FSP	9593	SG1	8645.8	SG2	650.4	THA	172.58	EL1	2393.2	EL2	509.6	ALF	164.18

LAUNCH DATE OCT 19 1964 FLIGHT TIME 354.00 ARRIVAL DATE OCT 8 1965

HELIOCENTRIC CONIC DISTANCE 800.606 EARTH TO MARS

RL	148.98	LAL	.00	LOL	25.64	VL	32.669	GAL	-5.96	AZL	88.61	HCA	247.95	SMA	185.77	ECC	.22262	INC	1.3942	V1	29.909
RP	216.39	LAP	-1.29	LOP	273.59	VP	22.632	GAP	-8.72	AZP	90.52	TAL	326.27	TAP	214.22	RCA	144.41	APO	227.12	V2	25.385
RC	285.296	GL	11.51	GP	5.46	ZAL	137.13	ZAP	64.05	ETS	182.08	ZAE	94.81	ETE	178.40	ZAC	88.50	ETC	258.80	CLP	63.93

PLANETOCENTRIC CONIC

C3	15.709	VHL	3.963	DLA	16.86	RAL	169.91	RAD	6567.6	VEL	11.709	PTH	2.06	VHP	3.286	DPA	15.40	RAP	162.06	ECC	1.2585

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 31 50	2712.11	-27.73	75.44	32.99	95.98	19 17 2	2112.1	-26.61	66.95
90.00	11 6 56	4248.44	1.60	174.68	27.12	61.72	12 17 44	3648.4	-2.19	168.06
100.00	20 2 47	2418.80	-29.01	53.69	32.82	97.54	20 43 6	1818.8	-27.66	45.14
100.00	12 18 40	4017.00	2.73	157.04	26.50	60.22	13 25 37	3417.0	-1.25	150.52
110.00	21 32 14	2138.92	-32.33	31.78	32.16	101.75	22 7 53	1538.9	-30.38	23.11
110.00	13 5 42	3869.64	5.60	144.09	24.72	56.22	14 10 11	3269.6	1.12	137.86

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.0253	TRA	4.1965	TC3	-7.6116	BAU	1.6128	SGT	8876.2	SGR	1261.4	SG3	2667.4	ST	2417.9	SR	813.7	SS	2817.8
RDE	.5509	RRA	-.3643	RC3	1.0203	FAU	.44216	RRT	-.8528	RRF	-.8717	RTF	.9961	CRT	-.7618	CRS	.8437	CST	-.9904
FDE	-4.9158	FRA	15.2328	FC	-24.3682	BSP	30187	SGB	8965.4	R23	.0336	R13	-.9964	LSA	3763.5	MSA	532.7	SSA	17.9
BDE	1.1639	BRA	4.2123	BC3	7.6797	FSP	9281	SG1	8941.5	SG2	653.9	THA	173.05	EL1	2499.7	EL2	509.9	ALF	164.98

LAUNCH DATE OCT 19 1964 FLIGHT TIME 356.00 ARRIVAL DATE OCT 10 1965

HELIOCENTRIC CONIC DISTANCE 804.706 EARTH TO MARS

RL	148.98	LAL	.00	LOL	25.64	VL	32.671	GAL	-6.03	AZL	88.59	HCA	249.11	SMA	185.79	ECC	.22334	INC	1.4115	V1	29.909
RP	216.05	LAP	-1.32	LOP	274.75	VP	22.677	GAP	-8.91	AZP	90.50	TAL	325.89	TAP	215.01	RCA	144.30	APO	227.29	V2	25.423
RC	286.520	GL	11.55	GP	5.34	ZAL	137.56	ZAP	62.52	ETS	182.21	ZAE	93.02	ETE	178.62	ZAC	88.31	ETC	258.86	CLP	62.39

PLANETOCENTRIC CONIC

C3	15.968	VHL	3.996	DLA	16.73	RAL	170.37	RAD	6567.6	VEL	11.720	PTH	2.06	VHP	3.338	DPA	15.44	RAP	161.66	ECC	1.2628

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 35 1	2710.62	-27.72	75.33	33.67	96.03	19 20 11	2110.6	-26.59	66.84
90.00	11 7 24	4257.37	1.89	175.18	27.78	61.74	12 18 21	3657.4	-1.90	168.55
100.00	20 5 51	2417.69	-29.00	53.61	33.50	97.58	20 46 9	1817.7	-27.65	45.07
100.00	12 19 15	4025.53	3.02	157.51	27.15	60.25	13 26 20	3425.5	-.96	150.99
110.00	21 35 3	2138.57	-32.33	31.75	32.84	101.76	22 10 42	1538.6	-30.37	23.08
110.00	13 6 32	3877.42	5.89	144.50	25.37	56.27	14 11 9	3277.4	1.42	138.27

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.0934	TRA	4.3968	TC3	-7.7410	BAU	1.6658	SGT	9168.6	SGR	1234.7	SG3	2573.4	ST	2528.2	SR	811.2	SS	2788.0
RDE	.5548	RRA	-.3509	RC3	.9820	FAU	.42734	RRT	-.8445	RRF	-.8638	RTF	.9962	CRT	-.7619	CRS	.8424	CST	-.9908
FDE	-4.8580	FRA	14.8714	FC	-23.1689	BSP	31196	SGB	9251.4	R23	.0341	R13	-.9965	LSA	3812.7	MSA	534.9	SSA	17.6
BDE	1.2261	BRA	4.4107	BC3	7.8031	FSP	8967	SG1	9228.0	SG2	657.1	THA	173.48	EL1	2605.8	EL2	509.8	ALF	165.70

LAUNCH DATE OCT 19 1964 FLIGHT TIME 358.00 ARRIVAL DATE OCT 12 1965

HELIOCENTRIC CONIC DISTANCE 808.811 EARTH TO MARS

RL	148.98	LAL	.00	LOL	25.64	VL	32.672	GAL	-6.12	AZL	88.57	HCA	250.28	SMA	185.83	ECC	.22411	INC	1.4286	V1	29.909
RP	215.71	LAP	-1.34	LOP	275.92	VP	22.722	GAP	-9.10	AZP	90.48	TAL	325.50	TAP	215.78	RCA	144.18	APO	227.47	V2	25.461
RC	287.729	GL	11.59	GP	5.22	ZAL	138.01	ZAP	61.03	ETS	182.34	ZAE	91.27	ETE	178.83	ZAC	88.14	ETC	258.91	CLP	60.89

PLANETOCENTRIC CONIC

C3	16.243	VHL	4.030	DLA	16.57	RAL	170.84	RAD	6567.7	VEL	11.731	PTH	2.07	VHP	3.393	DPA	15.46	RAP	161.29	ECC	1.2673

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 38 21	2708.85	-27.71	75.20	34.37	96.10	19 23 30	2108.9	-26.57	66.72
90.00	11 7 47	4266.91	2.20	175.71	28.45	61.76	12 18 54	3666.9	-1.59	169.09
100.00	20 9 3	2416.34	-28.99	53.51	34.20	97.63	20 49 20	1816.3	-27.63	44.97
100.00	12 19 46	4034.66	3.33	158.01	27.82	60.28	13 27 1	3434.7	-.65	151.49
110.00	21 38 0	2138.03	-32.32	31.71	33.53	101.78	22 13 38	1538.0	-30.36	23.04
110.00	13 7 18	3885.73	6.20	144.93	26.04	56.32	14 12 4	3285.7	1.74	138.70

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.1632	TRA	4.5988	TC3	-7.8535	BAU	1.7177	SGT	9451.7	SGR	1209.0	SG3	2479.5	ST	2637.8	SR	808.8	SS	2757.4
RDE	.5588	RRA	-.3377	RC3	.9444	FAU	.41245	RRT	-.8357	RRF	-.8557	RTF	.9963	CRT	-.7619	CRS	.8414	CST	-.9910
FDE	-4.7990	FRA	14.5072	FC	-21.9831	BSP	32173	SGB	9528.7	R23	.0346	R13	-.9966	LSA	3863.6	MSA	536.9	SSA	17.3
BDE	1.2905	BRA	4.6111	BC3	7.9100	FSP	8652	SG1	9505.8	SG2	660.1	THA	173.87	EL1	2711.6	EL2	509.6	ALF	166.36

LAUNCH DATE OCT 19 1964 FLIGHT TIME 360.00 ARRIVAL DATE OCT 14 1965

HELIOCENTRIC CONIC DISTANCE 812.919 EARTH TO MARS

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RL  148.98 LAL    .00 LOL  25.64 VL  32.675 GAL  -6.20 AZL  88.55 HCA 251.44 SMA 185.86 ECC .22492 INC 1.4455 V1  29.909
RP  215.38 LAP  -1.37 LOP 277.08 VP  22.767 GAP  -9.28 AZP  90.46 TAL 325.10 TAP 216.54 RCA 144.06 APO 227.66 V2  25.498
RC 288.924 GL   11.63 GP    5.11 ZAL 138.48 ZAP  59.58 ETS 182.46 ZAE  89.56 ETE 179.02 ZAC  87.97 ETC 258.95 CLP  59.44
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PLANETOCENTRIC CONIC

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C3  16.535 VHL  4.066 DLA  16.41 RAL 171.31 RAD 6567.7 VEL 11.744 PTH   2.07 VHP  3.449 DPA  15.47 RAP 160.97 ECC 1.2721
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LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 41 50	2706.84	-27.69	75.06	35.09	96.17	19 26 56	2106.8	-26.55	66.58
90.00	11 8 6	4277.07	2.52	176.28	29.14	61.79	12 19 23	3677.1	-1.27	169.65
100.00	20 12 24	2414.76	-28.97	53.39	34.91	97.69	20 52 39	1814.8	-27.61	44.86
100.00	12 20 13	4044.38	3.66	158.55	28.51	60.31	13 27 38	3444.4	-.32	152.02
110.00	21 41 4	2137.33	-32.31	31.66	34.25	101.81	22 16 41	1537.3	-30.35	22.99
110.00	13 8 2	3894.57	6.54	145.40	26.72	56.37	14 12 57	3294.6	2.07	139.16

DIFFERENTIAL CORRECTIONS

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TDE-1.2353 TRA 4.8023 TC3-7.9496 BAU 1.7687
RDE  .5631 RRA -.3250 RC3  .9078 FAU .39757
FDE-4.7390 FRA14.1419 FC-20.8156 BSP  33124
BDE 1.3576 BRA 4.8133 BC3 8.0012 FSP   8341
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MID-COURSE EXECUTION ACCURACY

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SGT 9725.5 SGR 1184.2 SG3 2386.1
RRT -.8267 RRF -.8474 RTF  .9963
SGB 9797.3 R23  .0353 R13 -.9966
SG1 9774.9 SG2  662.9 THA 174.23
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ORBIT DETERMINATION ACCURACY

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ST  2746.9 SR   806.5 SS  2726.3
CRT -.7621 CRS  .8406 CST -.9913
LSA 3916.4 MSA  538.4 SSA   17.0
EL1 2817.2 EL2  509.2 ALF 166.95
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LAUNCH DATE OCT 19 1964 FLIGHT TIME 362.00 ARRIVAL DATE OCT 16 1965

HELIOCENTRIC CONIC DISTANCE 817.030 EARTH TO MARS

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RL  148.98 LAL    .00 LOL  25.64 VL  32.677 GAL  -6.29 AZL  88.54 HCA 252.61 SMA 185.90 ECC .22578 INC 1.4623 V1  29.909
RP  215.05 LAP  -1.40 LOP 278.25 VP  22.812 GAP  -9.47 AZP  90.44 TAL 324.68 TAP 217.30 RCA 143.93 APO 227.87 V2  25.535
RC 290.105 GL   11.65 GP    4.99 ZAL 138.95 ZAP  58.17 ETS 182.56 ZAE  87.89 ETE 179.21 ZAC  87.82 ETC 258.99 CLP  58.03
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PLANETOCENTRIC CONIC

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C3  16.845 VHL  4.104 DLA  16.23 RAL 171.80 RAD 6567.7 VEL 11.757 PTH   2.08 VHP  3.509 DPA  15.45 RAP 160.70 ECC 1.2772
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LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 45 27	2704.59	-27.67	74.89	35.83	96.25	19 30 31	2104.6	-26.52	66.42
90.00	11 8 21	4287.82	2.87	176.88	29.84	61.82	12 19 49	3687.8	-.92	170.25
100.00	20 15 52	2412.98	-28.96	53.26	35.65	97.76	20 56 5	1813.0	-27.58	44.73
100.00	12 20 36	4054.67	4.00	159.12	29.22	60.35	13 28 11	3454.7	.02	152.59
110.00	21 44 15	2136.48	-32.30	31.60	34.98	101.85	22 19 51	1536.5	-30.33	22.93
110.00	13 8 44	3903.93	6.89	145.90	27.43	56.44	14 13 48	3303.9	2.43	139.65

DIFFERENTIAL CORRECTIONS

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TDE-1.3097 TRA 5.0075 TC3-8.0295 BAU 1.8188
RDE  .5675 RRA -.3126 RC3  .8721 FAU .38274
FDE-4.6771 FRA13.7752 FC-19.6709 BSP  34031
BDE 1.4273 BRA 5.0173 BC3 8.0767 FSP   8029
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MID-COURSE EXECUTION ACCURACY

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SGT 9989.7 SGR 1160.4 SG3 2293.3
RRT -.8174 RRF -.8388 RTF  .9964
SGB10056.9 R23  .0359 R13 -.9966
SG110034.8 SG2  665.5 THA 174.55
```

ORBIT DETERMINATION ACCURACY

```
ST  2855.3 SR   804.1 SS  2694.2
CRT -.7624 CRS  .8399 CST -.9915
LSA 3970.7 MSA  539.5 SSA   16.7
EL1 2922.5 EL2  508.4 ALF 167.50
```

LAUNCH DATE OCT 19 1964 FLIGHT TIME 364.00 ARRIVAL DATE OCT 18 1965

HELIOCENTRIC CONIC DISTANCE 821.144 EARTH TO MARS

```
RL  148.98 LAL    .00 LOL  25.64 VL  32.679 GAL  -6.38 AZL  88.52 HCA 253.79 SMA 185.94 ECC .22668 INC 1.4789 V1  29.909
RP  214.72 LAP  -1.42 LOP 279.43 VP  22.856 GAP  -9.65 AZP  90.41 TAL 324.25 TAP 218.04 RCA 143.79 APO 228.09 V2  25.572
RC 291.272 GL   11.67 GP    4.88 ZAL 139.44 ZAP  56.80 ETS 182.67 ZAE  86.26 ETE 179.38 ZAC  87.67 ETC 259.02 CLP  56.66
```

PLANETOCENTRIC CONIC

```
C3  17.172 VHL  4.144 DLA  16.04 RAL 172.29 RAD 6567.7 VEL 11.771 PTH   2.08 VHP  3.571 DPA  15.43 RAP 160.47 ECC 1.2826
```

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 49 12	2702.13	-27.66	74.72	36.58	96.34	19 34 14	2102.1	-26.49	66.24
90.00	11 8 31	4299.16	3.23	177.52	30.57	61.85	12 20 11	3699.2	-.55	170.88
100.00	20 19 28	2411.01	-28.94	53.12	36.40	97.83	20 59 39	1811.0	-27.55	44.59
100.00	12 20 56	4065.52	4.37	159.71	29.94	60.40	13 28 42	3465.5	.39	153.18
110.00	21 47 32	2135.49	-32.29	31.52	35.72	101.89	22 23 7	1535.5	-30.31	22.86
110.00	13 9 22	3913.80	7.26	146.42	28.16	56.51	14 14 36	3313.8	2.81	140.17

DIFFERENTIAL CORRECTIONS

```
TDE-1.3847 TRA 5.2161 TC3-8.0907 BAU 1.8674
RDE  .5719 RRA -.3007 RC3  .8373 FAU .36794
FDE-4.6104 FRA13.4124 FC-18.5494 BSP  34941
BDE 1.4981 BRA 5.2247 BC3 8.1339 FSP   7727
```

MID-COURSE EXECUTION ACCURACY

```
SGT10244.2 SGR 1137.6 SG3 2201.6
RRT -.8078 RRF -.8299 RTF  .9964
SGB10307.1 R23  .0366 R13 -.9966
SG110285.5 SG2  667.8 THA 174.85
```

ORBIT DETERMINATION ACCURACY

```
ST  2962.1 SR   801.6 SS  2660.4
CRT -.7624 CRS  .8393 CST -.9916
LSA 4025.2 MSA  540.5 SSA   16.5
EL1 3026.4 EL2  507.7 ALF 168.00
```

LAUNCH DATE OCT 19 1964 FLIGHT TIME 366.00 ARRIVAL DATE OCT 20 1965

HELIOCENTRIC CONIC DISTANCE 825.260 EARTH TO MARS

```
RL  148.98 LAL    .00 LOL  25.64 VL  32.682 GAL  -6.48 AZL  88.50 HCA 254.97 SMA 185.98 ECC .22764 INC 1.4953 V1  29.909
RP  214.40 LAP  -1.44 LOP 280.61 VP  22.900 GAP  -9.83 AZP  90.39 TAL 323.80 TAP 218.76 RCA 143.64 APO 228.32 V2  25.608
RC 292.426 GL   11.68 GP    4.78 ZAL 139.94 ZAP  55.47 ETS 182.76 ZAE  84.67 ETE 179.54 ZAC  87.54 ETC 259.04 CLP  55.33
```

PLANETOCENTRIC CONIC

```
C3  17.519 VHL  4.186 DLA  15.85 RAL 172.79 RAD 6567.7 VEL 11.786 PTH   2.08 VHP  3.635 DPA  15.39 RAP 160.28 ECC 1.2883
```

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 53 5	2699.48	-27.64	74.52	37.35	96.43	19 38 4	2099.5	-26.46	66.06
90.00	11 8 38	4311.08	3.62	178.18	31.31	61.90	12 20 29	3711.1	-.17	171.55
100.00	20 23 11	2408.86	-28.92	52.96	37.17	97.91	21 3 20	1808.9	-27.52	44.44
100.00	12 21 12	4076.93	4.75	160.34	30.69	60.45	13 29 9	3476.9	.78	153.81
110.00	21 50 55	2134.37	-32.27	31.44	36.48	101.94	22 26 30	1534.4	-30.29	22.78
110.00	13 9 58	3924.18	7.65	146.97	28.90	56.58	14 15 22	3324.2	3.20	140.71

DIFFERENTIAL CORRECTIONS

```
TDE-1.4626 TRA 5.4271 TC3-8.1373 BAU 1.9152
RDE  .5767 RRA -.2893 RC3  .8036 FAU .35327
FDE-4.5443 FRA13.0521 FC-17.4569 BSP  35821
BDE 1.5721 BRA 5.4348 BC3 8.1769 FSP   7429
```

MID-COURSE EXECUTION ACCURACY

```
SGT10490.3 SGR 1115.9 SG3 2111.4
RRT -.7981 RRF -.8210 RTF  .9964
SGB10549.4 R23  .0374 R13 -.9966
SG110528.2 SG2  669.9 THA 175.13
```

ORBIT DETERMINATION ACCURACY

```
ST  3068.7 SR   799.2 SS  2626.5
CRT -.7627 CRS  .8390 CST -.9918
LSA 4081.8 MSA  541.2 SSA   16.2
EL1 3130.4 EL2  506.7 ALF 168.46
```

LAUNCH DATE OCT 19 1964 FLIGHT TIME 368.00 ARRIVAL DATE OCT 22 1965

HELIOCENTRIC CONIC DISTANCE 829.379 EARTH TO MARS

RL	148.98	LAL	.00	LOL	25.64	VL	32.684	GAL	-6.58	AZL	88.49	HCA	256.15	SMA	186.03	ECC	.22865	INC	1.5116
RP	214.08	LAP	-1.47	LOP	281.79	VP	22.944	GAP	-10.01	AZP	90.36	TAL	323.33	TAP	219.48	RCA	143.49	APO	228.56
RC	293.566	GL	11.68	GP	4.67	ZAL	140.46	ZAP	54.18	ETS	182.85	ZAE	83.11	ETE	179.70	ZAC	87.42	ETC	259.06

V1	29.909	V2	25.644	CLP	54.04														

PLANETOCENTRIC CONIC

C3	17.887	VHL	4.229	DLA	15.63	RAL	173.30	RAD	6567.7	VEL	11.801	PTH	2.09	VHP	3.702	DPA	15.33	RAP	160.13

ECC	1.2944	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	18 57 4	2696.65	-27.61	74.32	38.13	96.53	19 42 1	2096.6	-26.42	65.86							
		90.00	11 8 41	4323.56	4.02	178.88	32.08	61.95	12 20 45	3723.6	.23	172.24							
		100.00	20 27 2	2406.56	-28.90	52.80	37.95	98.00	21 7 8	1806.6	-27.49	44.28							
		100.00	12 21 25	4088.87	5.15	161.00	31.45	60.51	13 29 34	3488.9	1.19	154.46							
		110.00	21 54 25	2133.14	-32.25	31.35	37.26	101.99	22 29 58	1533.1	-30.27	22.69							
		110.00	13 10 31	3935.06	8.06	147.55	29.66	56.67	14 16 6	3335.1	3.62	141.28							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.5426	TRA	5.6409	TC3	-8.1685	BAU	1.9620	SGT	10727.5	SGR	1095.3	SG3	2022.8	ST	3174.6	SR	796.8	SS	2591.7
RDE	.5816	RRA	-.2784	RC3	.7711	FAU	.33883	RRT	-.7882	RRF	-.8120	RTF	.9963	CRT	-.7631	CRS	.8388	CST	-.9919
FDE	-4.4765	FRA	12.6942	FC	-16.3996	BSP	36673	SGB	10783.3	R23	.0382	R13	-.9965	LSA	4139.6	MSA	541.5	SSA	16.0
BDE	1.6486	BRA	5.6477	BC3	8.2048	FSP	7136	SG1	10762.4	SG2	671.8	THA	175.38	EL1	3233.8	EL2	505.6	ALF	168.88

LAUNCH DATE OCT 19 1964 FLIGHT TIME 370.00 ARRIVAL DATE OCT 24 1965

HELIOCENTRIC CONIC DISTANCE 833.499 EARTH TO MARS

RL	148.98	LAL	.00	LOL	25.64	VL	32.687	GAL	-6.69	AZL	88.47	HCA	257.33	SMA	186.08	ECC	.22971	INC	1.5279
RP	213.77	LAP	-1.49	LOP	282.97	VP	22.987	GAP	-10.19	AZP	90.33	TAL	322.85	TAP	220.19	RCA	143.33	APO	228.82
RC	294.693	GL	11.68	GP	4.57	ZAL	140.98	ZAP	52.92	ETS	182.93	ZAE	81.59	ETE	179.84	ZAC	87.30	ETC	259.07

V1	29.909	V2	25.679	CLP	52.79														

PLANETOCENTRIC CONIC

C3	18.276	VHL	4.275	DLA	15.41	RAL	173.81	RAD	6567.7	VEL	11.818	PTH	2.09	VHP	3.771	DPA	15.27	RAP	160.03

ECC	1.3008	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	19 1 11	2693.66	-27.59	74.10	38.94	96.64	19 46 5	2093.7	-26.39	65.64							
		90.00	11 8 40	4336.58	4.43	179.61	32.86	62.00	12 20 57	3736.6	.65	172.97							
		100.00	20 30 58	2404.12	-28.87	52.62	38.75	98.09	21 11 2	1804.1	-27.45	44.10							
		100.00	12 21 35	4101.35	5.57	161.70	32.23	60.58	13 29 56	3501.4	1.61	155.15							
		110.00	21 58 0	2131.81	-32.23	31.25	38.06	102.05	22 33 32	1531.8	-30.24	22.60							
		110.00	13 11 2	3946.43	8.48	148.16	30.45	56.76	14 16 49	3346.4	4.05	141.87							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.6243	TRA	5.8579	TC3	-8.1848	BAU	2.0079	SGT	10956.0	SGR	1075.7	SG3	1936.0	ST	3279.1	SR	794.4	SS	2555.7
RDE	.5867	RRA	-.2680	RC3	.7398	FAU	.32463	RRT	-.7783	RRF	-.8029	RTF	.9963	CRT	-.7635	CRS	.8388	CST	-.9920
FDE	-4.4066	FRA	12.3404	FC	-15.3779	BSP	37514	SGB	11008.7	R23	.0391	R13	-.9965	LSA	4197.8	MSA	541.6	SSA	15.9
BDE	1.7270	BRA	5.8640	BC3	8.2182	FSP	6851	SG1	10988.1	SG2	673.5	THA	175.61	EL1	3336.0	EL2	504.3	ALF	169.27

LAUNCH DATE OCT 19 1964 FLIGHT TIME 372.00 ARRIVAL DATE OCT 26 1965

HELIOCENTRIC CONIC DISTANCE 837.621 EARTH TO MARS

RL	148.98	LAL	.00	LOL	25.64	VL	32.690	GAL	-6.80	AZL	88.46	HCA	258.52	SMA	186.13	ECC	.23083	INC	1.5439
RP	213.46	LAP	-1.51	LOP	284.16	VP	23.030	GAP	-10.37	AZP	90.31	TAL	322.36	TAP	220.88	RCA	143.16	APO	229.09
RC	295.805	GL	11.67	GP	4.47	ZAL	141.52	ZAP	51.71	ETS	183.01	ZAE	80.11	ETE	179.98	ZAC	87.20	ETC	259.07

V1	29.909	V2	25.714	CLP	51.57														

PLANETOCENTRIC CONIC

C3	18.687	VHL	4.323	DLA	15.18	RAL	174.33	RAD	6567.8	VEL	11.835	PTH	2.10	VHP	3.843	DPA	15.18	RAP	159.96

ECC	1.3075	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	19 5 25	2690.53	-27.57	73.88	39.76	96.75	19 50 15	2090.5	-26.35	65.42							
		90.00	11 8 36	4350.15	4.87	180.37	33.66	62.07	12 21 7	3750.1	1.09	173.73							
		100.00	20 35 1	2401.56	-28.85	52.43	39.57	98.19	21 15 3	1801.6	-27.42	43.92							
		100.00	12 21 41	4114.35	6.00	162.42	33.04	60.66	13 30 16	3514.3	2.05	155.86							
		110.00	22 1 41	2130.40	-32.21	31.14	38.87	102.10	22 37 11	1530.4	-30.21	22.50							
		110.00	13 11 31	3958.27	8.93	148.79	31.25	56.87	14 17 29	3358.3	4.50	142.49							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.7090	TRA	6.0777	TC3	-8.1873	BAU	2.0531	SGT	11176.1	SGR	1057.2	SG3	1851.2	ST	3383.2	SR	792.0	SS	2519.4
RDE	.5920	RRA	-.2581	RC3	.7096	FAU	.31069	RRT	-.7683	RRF	-.7938	RTF	.9962	CRT	-.7641	CRS	.8390	CST	-.9921
FDE	-4.3370	FRA	11.9905	FC	-14.3940	BSP	38318	SGB	11226.0	R23	.0400	R13	-.9964	LSA	4257.6	MSA	541.3	SSA	15.7
BDE	1.8086	BRA	6.0832	BC3	8.2180	FSP	6570	SG1	11205.7	SG2	674.9	THA	175.83	EL1	3438.1	EL2	502.8	ALF	169.63

LAUNCH DATE OCT 19 1964 FLIGHT TIME 374.00 ARRIVAL DATE OCT 28 1965

HELIOCENTRIC CONIC DISTANCE 841.744 EARTH TO MARS

RL	148.98	LAL	.00	LOL	25.64	VL	32.693	GAL	-6.91	AZL	88.44	HCA	259.71	SMA	186.18	ECC	.23200	INC	1.5600
RP	213.16	LAP	-1.53	LOP	285.35	VP	23.073	GAP	-10.55	AZP	90.28	TAL	321.85	TAP	221.56	RCA	142.98	APO	229.37
RC	296.904	GL	11.66	GP	4.37	ZAL	142.07	ZAP	50.53	ETS	183.08	ZAE	78.66	ETE	180.11	ZAC	87.11	ETC	259.07

V1	29.909	V2	25.748	CLP	50.40														

PLANETOCENTRIC CONIC

C3	19.122	VHL	4.373	DLA	14.94	RAL	174.86	RAD	6567.8	VEL	11.853	PTH	2.10	VHP	3.916	DPA	15.09	RAP	159.94

ECC	1.3147	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	19 9 44	2687.28	-27.54	73.64	40.59	96.86	19 54 31	2087.3	-26.30	65.20							
		90.00	11 8 29	4364.23	5.32	181.17	34.48	62.15	12 21 14	3764.2	1.55	174.51							
		100.00	20 39 10	2398.89	-28.82	52.24	40.40	98.28	21 19 9	1798.9	-27.38	43.73							
		100.00	12 21 45	4127.85	6.45	163.17	33.86	60.75	13 30 33	3527.9	2.51	156.60							
		110.00	22 5 27	2128.91	-32.19	31.03	39.70	102.17	22 40 56	1528.9	-30.18	22.39							
		110.00	13 11 57	3970.60	9.38	149.45	32.07	56.98	14 18 8	3370.6	4.97	143.14							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.7951	TRA	6.3025	TC3	-8.1744	BAU	2.0969	SGT	11388.1	SGR	1039.6	SG3	1768.4	ST	3486.0	SR	789.6	SS	2481.9
RDE	.5975	RRA	-.2487	RC3	.6804	FAU	.29694	RRT	-.7584	RRF	-.7848	RTF	.9961	CRT	-.7646	CRS	.8392	CST	-.9921
FDE	-4.2647	FRA	11.6465	FC	-13.4438	BSP	39126	SGB	11435.4	R23	.0409	R13	-.9963	LSA	4317.7	MSA	540.9	SSA	15.5
BDE	1.8919	BRA	6.3074	BC3	8.2027	FSP	6300	SG1	11415.4	SG2	676.0	THA	176.03	EL1	3539.0	EL2	501.3	ALF	169.97

LAUNCH DATE OCT 19 1964 FLIGHT TIME 376.00 ARRIVAL DATE OCT 30 1965

HELIOCENTRIC CONIC DISTANCE 845.867 EARTH TO MARS

RL 148.98 LAL .00 LOL 25.64 VL 32.696 GAL -7.03 AZL 88.42 HCA 260.91 SMA 186.23 ECC .23323 INC 1.5759 V1 29.909
RP 212.87 LAP -1.56 LOP 286.55 VP 23.115 GAP -10.73 AZP 90.25 TAL 321.32 TAP 222.23 RCA 142.80 APO 229.67 V2 25.782
RC 297.989 GL 11.63 GP 4.28 ZAL 142.63 ZAP 49.39 ETS 183.15 ZAE 77.25 ETE 180.23 ZAC 87.03 ETC 259.06 CLP 49.25

PLANETOCENTRIC CONIC

C3 19.581 VHL 4.425 DLA 14.69 RAL 175.39 RAD 6567.8 VEL 11.873 PTH 2.11 VHP 3.992 DPA 14.98 RAP 159.95 ECC 1.3223

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 14 10	2683.93	-27.51	73.40	41.45	96.98	19 58 53	2083.9	-26.26	64.96
90.00	11 8 19	4378.83	5.78	181.99	35.32	62.23	12 21 18	3778.8	2.02	175.33
100.00	20 43 24	2396.13	-28.80	52.04	41.25	98.39	21 23 20	1796.1	-27.34	43.54
100.00	12 21 46	4141.86	6.92	163.95	34.70	60.85	13 30 48	3541.9	2.98	157.37
110.00	22 9 18	2127.36	-32.17	30.92	40.54	102.23	22 44 45	1527.4	-30.15	22.28
110.00	13 12 21	3983.38	9.86	150.14	32.91	57.10	14 18 45	3383.4	5.45	143.81

DIFFERENTIAL CORRECTIONS
TDE-1.8844 TRA 6.5305 TC3-8.1502 BAU 2.1404
RDE .6033 RRA -.2399 RC3 .6526 FAU .28360
FDE-4.1924 FRA11.3069 FC-12.5384 BSP 39894
BDE 1.9786 BRA 6.5349 BC3 8.1763 FSP 6034

MID-COURSE EXECUTION ACCURACY
SGT11592.7 SGR 1023.2 SG3 1687.9
RRT -.7486 RRF -.7759 RTF .9960
SGB11637.7 R23 .0418 R13 -.9962
SG111618.0 SG2 676.9 THA 176.21

ORBIT DETERMINATION ACCURACY
ST 3588.4 SR 787.2 SS 2443.8
CRT -.7654 CRS .8397 CST -.9921
LSA 4379.1 MSA 540.1 SSA 15.4
EL1 3639.6 EL2 499.5 ALF 170.28

LAUNCH DATE OCT 19 1964 FLIGHT TIME 378.00 ARRIVAL DATE NOV 1 1965

HELIOCENTRIC CONIC DISTANCE 849.990 EARTH TO MARS

RL 148.98 LAL .00 LOL 25.64 VL 32.700 GAL -7.15 AZL 88.41 HCA 262.10 SMA 186.29 ECC .23452 INC 1.5917 V1 29.909
RP 212.57 LAP -1.58 LOP 287.75 VP 23.157 GAP -10.91 AZP 90.22 TAL 320.78 TAP 222.88 RCA 142.60 APO 229.98 V2 25.815
RC 299.061 GL 11.61 GP 4.19 ZAL 143.20 ZAP 48.28 ETS 183.21 ZAE 75.86 ETE 180.34 ZAC 86.96 ETC 259.05 CLP 48.15

PLANETOCENTRIC CONIC

C3 20.068 VHL 4.480 DLA 14.42 RAL 175.93 RAD 6567.8 VEL 11.893 PTH 2.11 VHP 4.071 DPA 14.86 RAP 160.01 ECC 1.3303

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 18 40	2680.49	-27.48	73.16	42.32	97.10	20 3 21	2080.5	-26.22	64.72
90.00	11 8 6	4393.92	6.26	182.84	36.18	62.33	12 21 20	3793.9	2.50	176.17
100.00	20 47 44	2393.30	-28.77	51.83	42.12	98.49	21 27 37	1793.3	-27.30	43.34
100.00	12 21 44	4156.34	7.40	164.75	35.56	60.96	13 31 1	3556.3	3.47	158.17
110.00	22 13 13	2125.78	-32.15	30.80	41.40	102.30	22 48 39	1525.8	-30.12	22.17
110.00	13 12 44	3996.63	10.35	150.85	33.78	57.24	14 19 20	3396.6	5.96	144.51

DIFFERENTIAL CORRECTIONS
TDE-1.9755 TRA 6.7631 TC3-8.1129 BAU 2.1830
RDE .6093 RRA -.2317 RC3 .6259 FAU .27055
FDE-4.1186 FRA10.9729 FC-11.6718 BSP 40660
BDE 2.0673 BRA 6.7671 BC3 8.1370 FSP 5778

MID-COURSE EXECUTION ACCURACY
SGT11789.4 SGR 1007.7 SG3 1609.7
RRT -.7389 RRF -.7672 RTF .9959
SGB11832.4 R23 .0429 R13 -.9961
SG111813.0 SG2 677.6 THA 176.37

ORBIT DETERMINATION ACCURACY
ST 3689.3 SR 784.8 SS 2404.8
CRT -.7662 CRS .8403 CST -.9922
LSA 4440.6 MSA 539.2 SSA 15.2
EL1 3738.9 EL2 497.6 ALF 170.57

LAUNCH DATE OCT 19 1964 FLIGHT TIME 380.00 ARRIVAL DATE NOV 3 1965

HELIOCENTRIC CONIC DISTANCE 854.112 EARTH TO MARS

RL 148.98 LAL .00 LOL 25.64 VL 32.703 GAL -7.28 AZL 88.39 HCA 263.31 SMA 186.35 ECC .23587 INC 1.6076 V1 29.909
RP 212.29 LAP -1.60 LOP 288.95 VP 23.198 GAP -11.09 AZP 90.19 TAL 320.22 TAP 223.52 RCA 142.40 APO 230.30 V2 25.847
RC 300.120 GL 11.57 GP 4.10 ZAL 143.78 ZAP 47.21 ETS 183.27 ZAE 74.52 ETE 180.45 ZAC 86.89 ETC 259.02 CLP 47.08

PLANETOCENTRIC CONIC

C3 20.582 VHL 4.537 DLA 14.15 RAL 176.47 RAD 6567.8 VEL 11.915 PTH 2.12 VHP 4.152 DPA 14.73 RAP 160.09 ECC 1.3387

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 23 16	2676.99	-27.45	72.90	43.20	97.22	20 7 53	2077.0	-26.17	64.47
90.00	11 7 51	4409.49	6.75	183.72	37.06	62.43	12 21 20	3809.5	3.00	177.04
100.00	20 52 8	2390.41	-28.74	51.62	43.00	98.60	21 31 58	1790.4	-27.25	43.14
100.00	12 21 40	4171.31	7.89	165.59	36.44	61.07	13 31 11	3571.3	3.97	158.99
110.00	22 17 14	2124.16	-32.12	30.68	42.27	102.37	22 52 38	1524.2	-30.09	22.06
110.00	13 13 4	4010.32	10.85	151.59	34.66	57.38	14 19 54	3410.3	6.47	145.24

DIFFERENTIAL CORRECTIONS
TDE-2.0699 TRA 7.0003 TC3-8.0638 BAU 2.2250
RDE .6156 RRA -.2240 RC3 .6003 FAU .25783
FDE-4.0451 FRA10.6442 FC-10.8451 BSP 41394
BDE 2.1595 BRA 7.0038 BC3 8.0861 FSP 5527

MID-COURSE EXECUTION ACCURACY
SGT11979.0 SGR 993.1 SG3 1533.8
RRT -.7295 RRF -.7588 RTF .9958
SGB12020.1 R23 .0439 R13 -.9959
SG112001.0 SG2 678.0 THA 176.53

ORBIT DETERMINATION ACCURACY
ST 3789.9 SR 782.5 SS 2365.4
CRT -.7672 CRS .8412 CST -.9922
LSA 4503.5 MSA 538.0 SSA 15.1
EL1 3838.0 EL2 495.6 ALF 170.84

LAUNCH DATE OCT 19 1964 FLIGHT TIME 382.00 ARRIVAL DATE NOV 5 1965

HELIOCENTRIC CONIC DISTANCE 858.234 EARTH TO MARS

RL 148.98 LAL .00 LOL 25.64 VL 32.707 GAL -7.41 AZL 88.38 HCA 264.51 SMA 186.41 ECC .23728 INC 1.6233 V1 29.909
RP 212.01 LAP -1.62 LOP 290.15 VP 23.239 GAP -11.27 AZP 90.16 TAL 319.64 TAP 224.15 RCA 142.18 APO 230.64 V2 25.879
RC 301.167 GL 11.53 GP 4.02 ZAL 144.36 ZAP 46.17 ETS 183.32 ZAE 73.20 ETE 180.56 ZAC 86.84 ETC 259.00 CLP 46.04

PLANETOCENTRIC CONIC

C3 21.125 VHL 4.596 DLA 13.87 RAL 177.02 RAD 6567.9 VEL 11.938 PTH 2.12 VHP 4.235 DPA 14.59 RAP 160.22 ECC 1.3477

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 27 57	2673.44	-27.42	72.65	44.11	97.35	20 12 30	2073.4	-26.12	64.22
90.00	11 7 33	4425.54	7.25	184.63	37.96	62.55	12 21 18	3825.5	3.52	177.94
100.00	20 56 37	2387.48	-28.71	51.41	43.90	98.71	21 36 25	1787.5	-27.21	42.93
100.00	12 21 34	4186.73	8.40	166.45	37.35	61.21	13 31 21	3586.7	4.49	159.85
110.00	22 21 18	2122.52	-32.10	30.56	43.17	102.43	22 56 40	1522.5	-30.06	21.94
110.00	13 13 22	4024.46	11.37	152.36	35.56	57.54	14 20 27	3424.5	7.00	145.98

DIFFERENTIAL CORRECTIONS
TDE-2.1673 TRA 7.2419 TC3-8.0052 BAU 2.2667
RDE .6221 RRA -.2169 RC3 .5759 FAU .24551
FDE-3.9716 FRA10.3202 FC-10.0612 BSP 42106
BDE 2.2548 BRA 7.2451 BC3 8.0259 FSP 5282

MID-COURSE EXECUTION ACCURACY
SGT12162.2 SGR 979.5 SG3 1460.3
RRT -.7203 RRF -.7507 RTF .9956
SGB12201.5 R23 .0450 R13 -.9958
SG112182.7 SG2 678.2 THA 176.67

ORBIT DETERMINATION ACCURACY
ST 3889.8 SR 780.2 SS 2325.4
CRT -.7684 CRS .8422 CST -.9921
LSA 4567.1 MSA 536.5 SSA 15.0
EL1 3936.4 EL2 493.4 ALF 171.10

LAUNCH DATE OCT 19 1964 FLIGHT TIME 384.00 ARRIVAL DATE NOV 7 1965

HELIOCENTRIC CONIC DISTANCE 862.354 EARTH TO MARS

RL	148.98	LAL	.00	LOL	25.64	VL	32.710	GAL	-7.55	AZL	88.36	HCA	265.72	SMA	186.48	ECC	.23876	INC	1.6391
RP	211.73	LAP	-1.63	LOP	291.36	VP	23.279	GAP	-11.45	AZP	90.12	TAL	319.05	TAP	224.77	RCA	141.95	APO	231.00
RC	302.203	GL	11.49	GP	3.93	ZAL	144.96	ZAP	45.16	ETS	183.37	ZAE	71.91	ETE	180.66	ZAC	86.79	ETC	258.97

V1 29.909 V2 25.911 CLP 45.03

PLANETOCENTRIC CONIC

C3	21.700	VHL	4.658	DLA	13.58	RAL	177.58	RAD	6567.9	VEL	11.962	PTH	2.13	VHP	4.320	DPA	14.44	RAP	160.37

ECC 1.3571

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 32 42	2669.85	-27.39	72.39	45.03	97.47	20 17 12	2069.9	-26.07	63.97
90.00	11 7 13	4442.05	7.77	185.57	38.89	62.68	12 21 15	3842.1	4.05	178.86
100.00	21 1 11	2384.53	-28.68	51.20	44.82	98.81	21 40 55	1784.5	-27.16	42.72
100.00	12 21 25	4202.61	8.92	167.35	38.27	61.35	13 31 28	3602.6	5.02	160.72
110.00	22 25 26	2120.88	-32.08	30.43	44.08	102.50	23 0 47	1520.9	-30.02	21.82
110.00	13 13 39	4039.02	11.90	153.16	36.49	57.72	14 20 58	3439.0	7.55	146.76

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-2.2670	TRA	7.4892	TC3	-7.9356	BAU	2.3077	SGT	12338.6	SGR	966.6	SG3	1389.1	ST	3988.3	SR	777.9	SS	2284.5
RDE	.6290	RRA	-.2104	RC3	.5526	FAU	.23351	RRT	-.7115	RRF	-.7429	RTF	.9955	CRT	-.7696	CRS	.8434	CST	-.9921
FDE	-3.8969	FRA	10.0025	FC3	-9.3162	BSP	42809	SGB	12376.4	R23	.0462	R13	-.9956	LSA	4630.8	MSA	534.9	SSA	14.9
BDE	2.3526	BRA	7.4922	BC3	7.9548	FSP	5048	SG	112357.8	SG2	678.2	THA	176.80	EL1	4033.7	EL2	491.1	ALF	171.33

LAUNCH DATE OCT 19 1964 FLIGHT TIME 386.00 ARRIVAL DATE NOV 9 1965

HELIOCENTRIC CONIC DISTANCE 866.472 EARTH TO MARS

RL	148.98	LAL	.00	LOL	25.64	VL	32.714	GAL	-7.69	AZL	88.35	HCA	266.93	SMA	186.54	ECC	.24031	INC	1.6548
RP	211.47	LAP	-1.65	LOP	292.57	VP	23.318	GAP	-11.63	AZP	90.09	TAL	318.45	TAP	225.37	RCA	141.71	APO	231.37
RC	303.228	GL	11.43	GP	3.85	ZAL	145.56	ZAP	44.19	ETS	183.42	ZAE	70.65	ETE	180.75	ZAC	86.76	ETC	258.93

V1 29.909 V2 25.941 CLP 44.05

PLANETOCENTRIC CONIC

C3	22.307	VHL	4.723	DLA	13.29	RAL	178.14	RAD	6567.9	VEL	11.987	PTH	2.14	VHP	4.408	DPA	14.27	RAP	160.57

ECC 1.3671

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 37 32	2666.25	-27.36	72.13	45.96	97.60	20 21 58	2066.3	-26.03	63.72
90.00	11 6 50	4459.01	8.30	186.53	39.83	62.83	12 21 9	3859.0	4.59	179.82
100.00	21 5 48	2381.57	-28.65	50.98	45.75	98.92	21 45 30	1781.6	-27.12	42.51
100.00	12 21 15	4218.93	9.45	168.27	39.22	61.51	13 31 34	3618.9	5.57	161.63
110.00	22 29 38	2119.25	-32.05	30.31	45.00	102.57	23 4 57	1519.3	-29.99	21.71
110.00	13 13 54	4054.01	12.44	153.98	37.44	57.90	14 21 28	3454.0	8.11	147.55

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-2.3701	TRA	7.7418	TC3	-7.8561	BAU	2.3482	SGT	12508.3	SGR	954.6	SG3	1320.3	ST	4086.2	SR	775.6	SS	2242.8
RDE	.6361	RRA	-.2044	RC3	.5302	FAU	.22188	RRT	-.7030	RRF	-.7355	RTF	.9953	CRT	-.7710	CRS	.8447	CST	-.9921
FDE	-3.8218	FRA	9.6888	FC3	-8.6110	BSP	43487	SGB	12544.7	R23	.0475	R13	-.9954	LSA	4695.1	MSA	533.0	SSA	14.8
BDE	2.4539	BRA	7.7445	BC3	7.8739	FSP	4818	SG	112526.3	SG2	677.9	THA	176.92	EL1	4130.3	EL2	488.7	ALF	171.56

LAUNCH DATE OCT 19 1964 FLIGHT TIME 388.00 ARRIVAL DATE NOV 11 1965

HELIOCENTRIC CONIC DISTANCE 870.587 EARTH TO MARS

RL	148.98	LAL	.00	LOL	25.64	VL	32.718	GAL	-7.84	AZL	88.33	HCA	268.14	SMA	186.61	ECC	.24193	INC	1.6706
RP	211.20	LAP	-1.67	LOP	293.79	VP	23.357	GAP	-11.81	AZP	90.05	TAL	317.82	TAP	225.96	RCA	141.46	APO	231.75
RC	304.242	GL	11.38	GP	3.78	ZAL	146.18	ZAP	43.24	ETS	183.46	ZAE	69.42	ETE	180.84	ZAC	86.73	ETC	258.89

V1 29.909 V2 25.971 CLP 43.11

PLANETOCENTRIC CONIC

C3	22.950	VHL	4.791	DLA	12.98	RAL	178.70	RAD	6567.9	VEL	12.014	PTH	2.14	VHP	4.498	DPA	14.10	RAP	160.79

ECC 1.3777

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 42 25	2662.65	-27.33	71.87	46.91	97.72	20 26 47	2062.7	-25.98	63.47
90.00	11 6 26	4476.41	8.84	187.53	40.79	62.99	12 21 2	3876.4	5.15	180.79
100.00	21 10 29	2378.61	-28.62	50.77	46.70	99.03	21 50 8	1778.6	-27.07	42.30
100.00	12 21 3	4235.68	9.99	169.22	40.18	61.68	13 31 38	3635.7	6.13	162.56
110.00	22 33 53	2117.64	-32.03	30.19	45.94	102.64	23 9 11	1517.6	-29.96	21.59
110.00	13 14 8	4069.42	13.00	154.82	38.40	58.10	14 21 57	3469.4	8.69	148.38

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-2.4773	TRA	7.9993	TC3	-7.7702	BAU	2.3891	SGT	12672.8	SGR	943.4	SG3	1254.0	ST	4183.8	SR	773.3	SS	2201.1
RDE	.6436	RRA	-.1990	RC3	.5091	FAU	.21070	RRT	-.6951	RRF	-.7287	RTF	.9950	CRT	-.7726	CRS	.8464	CST	-.9920
FDE	-3.7482	FRA	9.3803	FC3	-7.9482	BSP	44136	SGB	12707.8	R23	.0488	R13	-.9952	LSA	4760.8	MSA	530.8	SSA	14.7
BDE	2.5595	BRA	8.0018	BC3	7.7869	FSP	4593	SG	112689.8	SG2	677.3	THA	177.03	EL1	4226.8	EL2	486.0	ALF	171.76

LAUNCH DATE OCT 19 1964 FLIGHT TIME 390.00 ARRIVAL DATE NOV 13 1965

HELIOCENTRIC CONIC DISTANCE 874.698 EARTH TO MARS

RL	148.98	LAL	.00	LOL	25.64	VL	32.722	GAL	-8.00	AZL	88.31	HCA	269.36	SMA	186.68	ECC	.24362	INC	1.6864
RP	210.95	LAP	-1.69	LOP	295.00	VP	23.395	GAP	-11.99	AZP	90.02	TAL	317.18	TAP	226.54	RCA	141.20	APO	232.16
RC	305.247	GL	11.31	GP	3.70	ZAL	146.80	ZAP	42.32	ETS	183.50	ZAE	68.22	ETE	180.93	ZAC	86.71	ETC	258.84

V1 29.909 V2 26.001 CLP 42.19

PLANETOCENTRIC CONIC

C3	23.629	VHL	4.861	DLA	12.67	RAL	179.26	RAD	6568.0	VEL	12.042	PTH	2.15	VHP	4.591	DPA	13.92	RAP	161.04

ECC 1.3889

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 47 22	2659.07	-27.29	71.62	47.88	97.85	20 31 41	2059.1	-25.93	63.22
90.00	11 6 0	4494.23	9.39	188.55	41.78	63.16	12 20 54	3894.2	5.71	181.80
100.00	21 15 14	2375.67	-28.58	50.55	47.66	99.14	21 54 50	1775.7	-27.03	42.10
100.00	12 20 49	4252.78	10.54	170.19	41.17	61.87	13 31 41	3652.8	6.70	163.51
110.00	22 38 12	2116.07	-32.01	30.08	46.90	102.70	23 13 28	1516.1	-29.93	21.48
110.00	13 14 20	4085.23	13.56	155.70	39.39	58.32	14 22 25	3485.2	9.28	149.22

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-2.5869	TRA	8.2632	TC3	-7.6751	BAU	2.4295	SGT	12830.8	SGR	932.9	SG3	1189.8	ST	4279.8	SR	771.0	SS	2158.2
RDE	.6513	RRA	-.1943	RC3	.4888	FAU	.19982	RRT	-.6875	RRF	-.7223	RTF	.9948	CRT	-.7742	CRS	.8481	CST	-.9919
FDE	-3.6729	FRA	9.0766	FC3	-7.3211	BSP	44776	SGB	12864.7	R23	.0502	R13	-.9949	LSA	4825.9	MSA	528.6	SSA	14.6
BDE	2.6677	BRA	8.2655	BC3	7.6906	FSP	4377	SG	112846.9	SG2	676.5	THA	177.13	EL1	4321.8	EL2	483.3	ALF	171.96

LAUNCH DATE OCT 19 1964 FLIGHT TIME 392.00 ARRIVAL DATE NOV 15 1965

HELIOCENTRIC CONIC DISTANCE 878.805 EARTH TO MARS

RL 148.98 LAL .00 LOL 25.64 VL 32.726 GAL -8.16 AZL 88.30 HCA 270.58 SMA 186.75 ECC .24538 INC 1.7021 V1 29.909
RP 210.70 LAP -1.70 LOP 296.22 VP 23.433 GAP -12.18 AZP 89.98 TAL 316.52 TAP 227.10 RCA 140.92 APO 232.58 V2 26.029
RC 306.243 GL 11.25 GP 3.63 ZAL 147.42 ZAP 41.43 ETS 183.54 ZAE 67.05 ETE 181.01 ZAC 86.70 ETC 258.79 CLP 41.30

PLANETOCENTRIC CONIC

C3 24.348 VHL 4.934 DLA 12.35 RAL 179.83 RAD 6568.0 VEL 12.072 PTH 2.16 VHP 4.686 DPA 13.72 RAP 161.33 ECC 1.4007

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 52 22	2655.51	-27.26	71.36	48.86	97.97	20 36 37	2055.5	-25.88	62.97
90.00	11 5 32	4512.46	9.95	189.60	42.79	63.35	12 20 44	3912.5	6.29	182.82
100.00	21 20 2	2372.77	-28.55	50.34	48.64	99.25	21 59 35	1772.8	-26.98	41.89
100.00	12 20 33	4270.45	11.11	171.19	42.18	62.07	13 31 43	3670.4	7.28	164.49
110.00	22 42 34	2114.54	-31.98	29.96	47.87	102.77	23 17 48	1514.5	-29.90	21.37
110.00	13 14 31	4101.44	14.14	156.60	40.41	58.55	14 22 52	3501.4	9.88	150.09

DIFFERENTIAL CORRECTIONS
TDE-2.7014 TRA 8.5325 TC3-7.5744 BAU 2.4702
RDE .6594 RRA -.1900 RC3 .4696 FAU .18937
FDE-3.5993 FRA 8.7768 FC3-6.7334 BSP 45358
BDE 2.7808 BRA 8.5346 BC3 7.5889 FSP 4163

MID-COURSE EXECUTION ACCURACY
SGT12983.7 SGR 923.1 SG3 1128.0
RRT -.6806 RRF -.7166 RTF .9945
SGB13016.5 R23 .0517 R13 -.9947
SG112998.9 SG2 675.5 THA 177.22

ORBIT DETERMINATION ACCURACY
ST 4375.8 SR 768.8 SS 2115.4
CRT -.7762 CRS .8501 CST -.9918
LSA 4892.5 MSA 526.0 SSA 14.5
EL1 4416.8 EL2 480.3 ALF 172.14

LAUNCH DATE OCT 19 1964 FLIGHT TIME 394.00 ARRIVAL DATE NOV 17 1965

HELIOCENTRIC CONIC DISTANCE 882.907 EARTH TO MARS

RL 148.98 LAL .00 LOL 25.64 VL 32.731 GAL -8.32 AZL 88.28 HCA 271.80 SMA 186.82 ECC .24723 INC 1.7180 V1 29.909
RP 210.46 LAP -1.72 LOP 297.45 VP 23.470 GAP -12.36 AZP 89.95 TAL 315.85 TAP 227.65 RCA 140.64 APO 233.01 V2 26.057
RC 307.229 GL 11.17 GP 3.56 ZAL 148.06 ZAP 40.57 ETS 183.58 ZAE 65.90 ETE 181.09 ZAC 86.70 ETC 258.74 CLP 40.44

PLANETOCENTRIC CONIC

C3 25.108 VHL 5.011 DLA 12.02 RAL 180.40 RAD 6568.0 VEL 12.103 PTH 2.17 VHP 4.783 DPA 13.52 RAP 161.64 ECC 1.4132

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 57 25	2652.00	-27.23	71.11	49.87	98.09	20 41 37	2052.0	-25.83	62.72
90.00	11 5 3	4531.10	10.51	190.67	43.82	63.56	12 20 34	3931.1	6.88	183.88
100.00	21 24 53	2369.91	-28.52	50.14	49.64	99.35	22 4 23	1769.9	-26.93	41.69
100.00	12 20 16	4288.43	11.68	172.22	43.21	62.29	13 31 44	3688.4	7.88	165.49
110.00	22 46 58	2113.07	-31.96	29.85	48.86	102.83	23 22 11	1513.1	-29.87	21.27
110.00	13 14 40	4118.04	14.73	157.53	41.44	58.80	14 23 18	3518.0	10.49	150.99

DIFFERENTIAL CORRECTIONS
TDE-2.8196 TRA 8.8076 TC3-7.4677 BAU 2.5113
RDE .6679 RRA -.1864 RC3 .4513 FAU .17929
FDE-3.5255 FRA 8.4809 FC3-6.1822 BSP 45920
BDE 2.8976 BRA 8.8096 BC3 7.4814 FSP 3957

MID-COURSE EXECUTION ACCURACY
SGT13131.1 SGR 914.0 SG3 1068.5
RRT -.6742 RRF -.7114 RTF .9942
SGB13162.8 R23 .0534 R13 -.9944
SG113145.6 SG2 674.3 THA 177.31

ORBIT DETERMINATION ACCURACY
ST 4470.7 SR 766.6 SS 2071.8
CRT -.7782 CRS .8523 CST -.9917
LSA 4959.1 MSA 523.3 SSA 14.4
EL1 4510.8 EL2 477.2 ALF 172.31

LAUNCH DATE OCT 19 1964 FLIGHT TIME 396.00 ARRIVAL DATE NOV 19 1965

HELIOCENTRIC CONIC DISTANCE 887.003 EARTH TO MARS

RL 148.98 LAL .00 LOL 25.64 VL 32.735 GAL -8.49 AZL 88.27 HCA 273.03 SMA 186.90 ECC .24915 INC 1.7339 V1 29.909
RP 210.22 LAP -1.73 LOP 298.67 VP 23.506 GAP -12.55 AZP 89.91 TAL 315.16 TAP 228.18 RCA 140.33 APO 233.47 V2 26.085
RC 308.206 GL 11.10 GP 3.49 ZAL 148.70 ZAP 39.73 ETS 183.61 ZAE 64.78 ETE 181.17 ZAC 86.71 ETC 258.68 CLP 39.60

PLANETOCENTRIC CONIC

C3 25.912 VHL 5.090 DLA 11.68 RAL 180.98 RAD 6568.0 VEL 12.136 PTH 2.18 VHP 4.883 DPA 13.30 RAP 161.98 ECC 1.4265

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 2 31	2648.55	-27.19	70.86	50.88	98.21	20 46 40	2048.5	-25.78	62.48
90.00	11 4 32	4550.13	11.09	191.77	44.87	63.78	12 20 22	3950.1	7.47	184.96
100.00	21 29 47	2367.11	-28.49	49.93	50.65	99.45	22 9 14	1767.1	-26.89	41.50
100.00	12 19 57	4306.80	12.26	173.28	44.27	62.52	13 31 44	3706.8	8.48	166.52
110.00	22 51 25	2111.66	-31.94	29.75	49.87	102.89	23 26 37	1511.7	-29.84	21.17
110.00	13 14 48	4135.02	15.33	158.48	42.50	59.06	14 23 43	3535.0	11.11	151.91

DIFFERENTIAL CORRECTIONS
TDE-2.9406 TRA 9.0904 TC3-7.3539 BAU 2.5520
RDE .6767 RRA -.1834 RC3 .4338 FAU .16952
FDE-3.4497 FRA 8.1900 FC3-5.6638 BSP 46480
BDE 3.0174 BRA 9.0922 BC3 7.3667 FSP 3757

MID-COURSE EXECUTION ACCURACY
SGT13273.1 SGR 905.3 SG3 1011.1
RRT -.6683 RRF -.7068 RTF .9939
SGB13303.9 R23 .0550 R13 -.9940
SG113286.9 SG2 672.8 THA 177.38

ORBIT DETERMINATION ACCURACY
ST 4564.0 SR 764.4 SS 2027.0
CRT -.7803 CRS .8546 CST -.9916
LSA 5025.1 MSA 520.4 SSA 14.3
EL1 4603.2 EL2 474.0 ALF 172.47

LAUNCH DATE OCT 19 1964 FLIGHT TIME 398.00 ARRIVAL DATE NOV 21 1965

HELIOCENTRIC CONIC DISTANCE 891.092 EARTH TO MARS

RL 148.98 LAL .00 LOL 25.64 VL 32.740 GAL -8.67 AZL 88.25 HCA 274.25 SMA 186.98 ECC .25117 INC 1.7498 V1 29.909
RP 209.99 LAP -1.75 LOP 299.90 VP 23.542 GAP -12.75 AZP 89.87 TAL 314.45 TAP 228.70 RCA 140.01 APO 233.94 V2 26.111
RC 309.174 GL 11.01 GP 3.43 ZAL 149.35 ZAP 38.92 ETS 183.64 ZAE 63.68 ETE 181.24 ZAC 86.72 ETC 258.62 CLP 38.79

PLANETOCENTRIC CONIC

C3 26.764 VHL 5.173 DLA 11.34 RAL 181.56 RAD 6568.1 VEL 12.171 PTH 2.18 VHP 4.986 DPA 13.08 RAP 162.35 ECC 1.4405

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 7 40	2645.16	-27.16	70.62	51.91	98.33	20 51 45	2045.2	-25.73	62.25
90.00	11 4 0	4569.54	11.67	192.90	45.95	64.02	12 20 9	3969.5	8.08	186.06
100.00	21 34 43	2364.38	-28.46	49.74	51.68	99.55	22 14 8	1764.4	-26.85	41.31
100.00	12 19 37	4325.56	12.84	174.36	45.35	62.77	13 31 43	3725.6	9.09	167.58
110.00	22 55 54	2110.33	-31.92	29.65	50.89	102.94	23 31 5	1510.3	-29.81	21.08
110.00	13 14 56	4152.37	15.93	159.46	43.59	59.35	14 24 8	3552.4	11.75	152.85

DIFFERENTIAL CORRECTIONS
TDE-3.0671 TRA 9.3795 TC3-7.2368 BAU 2.5937
RDE .6859 RRA -.1810 RC3 .4172 FAU .16015
FDE-3.3752 FRA 7.9028 FC3-5.1803 BSP 46995
BDE 3.1429 BRA 9.3813 BC3 7.2488 FSP 3563

MID-COURSE EXECUTION ACCURACY
SGT13411.0 SGR 897.3 SG3 955.8
RRT -.6630 RRF -.7030 RTF .9936
SGB13441.0 R23 .0569 R13 -.9937
SG113424.2 SG2 671.0 THA 177.45

ORBIT DETERMINATION ACCURACY
ST 4657.4 SR 762.2 SS 1982.1
CRT -.7826 CRS .8571 CST -.9914
LSA 5092.5 MSA 517.3 SSA 14.2
EL1 4695.9 EL2 470.6 ALF 172.63

LAUNCH DATE OCT 20 1964 FLIGHT TIME 240.00 ARRIVAL DATE JUN 17 1965

HELIOCENTRIC CONIC DISTANCE 578.397 EARTH TO MARS

RL	148.94	LAL	.00	LOL	26.64	VL	33.168	GAL	-6.34	AZL	93.78	HCA	187.41	SMA	194.58	ECC	.25802	INC	3.7764
RP	237.48	LAP	.49	LOP	214.04	VP	20.872	GAP	7.90	AZP	86.25	TAL	328.30	TAP	155.71	RCA	144.38	APO	244.79
RC	186.049	GL	-26.47	GP	20.24	ZAL	130.80	ZAP	146.46	ETS	144.74	ZAE	155.61	ETE	57.11	ZAC	108.89	ETC	255.15

PLANETOCENTRIC CONIC

C3	23.727	VHL	4.871	DLA	-17.94	RAL	154.45	RAD	6568.0	VEL	12.046	PTH	2.15	VHP	5.760	DPA	16.83	RAP	195.32

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	22 10 5	1660.96	-3.42	8.89	17.75	118.13	22 37 46	1061.0	.37	2.26
90.00	5 17 27	5494.37	28.30	254.46	25.48	89.03	6 49 2	4894.4	27.87	245.82
100.00	23 20 51	1432.63	-4.74	351.38	17.02	119.55	23 44 43	832.6	-.77	344.84
100.00	6 49 23	5197.93	29.81	232.60	25.43	87.64	8 16 1	4597.9	29.16	223.86
110.00	0 9 51	1291.38	-8.07	338.62	14.97	123.33	0 31 23	691.4	-3.63	332.34
110.00	8 20 47	4911.94	33.70	210.54	25.09	83.91	9 42 39	4311.9	32.49	201.52

DIFFERENTIAL CORRECTIONS

TDE	1.8362	TRA	-2.9496	TC3	1.6988	BAU	.6813
RDE	1.0646	RRA	-1.2139	RC3	1.3142	FAU	.16305
FDE	-4.1926	FRA	4.9912	FC3	-5.9492	BSP	17462
BDE	2.1225	BRA	3.1896	BC3	2.1478	FSP	2676

MID-COURSE EXECUTION ACCURACY

SGT	4549.9	SGR	2336.6	SG3	846.5		
RRT	.9685	RRF	-.9984	RTF	-.9589		
SGB	5114.8	R23	-.2303	R13	-.9721		
SG1	5088.3	SG2	520.4	THA	26.75		

ORBIT DETERMINATION ACCURACY

ST	2421.6	SR	1331.2	SS	2622.8		
CRT	.9923	CRS	.9999	CST	.9939		
LSA	3804.0	MSA	212.0	SSA	6.6		
EL1	2759.6	EL2	144.4	ALF	28.70		

LAUNCH DATE OCT 20 1964 FLIGHT TIME 242.00 ARRIVAL DATE JUN 19 1965

HELIOCENTRIC CONIC DISTANCE 581.968 EARTH TO MARS

RL	148.94	LAL	.00	LOL	26.64	VL	33.141	GAL	-6.25	AZL	93.14	HCA	188.37	SMA	194.08	ECC	.25557	INC	3.1397
RP	237.15	LAP	.46	LOP	215.00	VP	20.867	GAP	7.47	AZP	86.89	TAL	328.52	TAP	156.89	RCA	144.47	APO	243.68
RC	188.300	GL	-22.67	GP	18.50	ZAL	131.90	ZAP	146.88	ETS	147.69	ZAE	157.35	ETE	56.34	ZAC	107.27	ETC	255.28

PLANETOCENTRIC CONIC

C3	21.922	VHL	4.682	DLA	-14.26	RAL	155.57	RAD	6567.9	VEL	11.971	PTH	2.13	VHP	5.569	DPA	15.13	RAP	194.82

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 39 30	1777.00	-7.11	15.42	17.10	117.48	22 9 7	1177.0	-3.37	8.73
90.00	5 57 0	5339.84	27.61	243.21	23.50	83.44	7 26 0	4739.8	26.41	234.75
100.00	22 53 15	1539.05	-8.28	357.30	16.47	118.83	23 18 54	939.1	-4.37	350.69
100.00	7 25 56	5053.02	28.92	221.93	23.32	82.09	8 50 9	4453.0	27.53	213.40
110.00	23 44 30	1378.55	-11.30	343.31	14.65	122.48	24 7 28	778.6	-6.93	336.93
110.00	8 51 11	4786.29	32.38	200.98	22.62	78.40	10 10 57	4186.3	30.44	192.30

DIFFERENTIAL CORRECTIONS

TDE	1.6954	TRA	-2.9176	TC3	1.8237	BAU	.6565
RDE	.9078	RRA	-1.1145	RC3	1.3007	FAU	.17220
FDE	-4.0536	FRA	5.3865	FC3	-6.8005	BSP	17412
BDE	1.9231	BRA	3.1232	BC3	2.2400	FSP	2916

MID-COURSE EXECUTION ACCURACY

SGT	4559.7	SGR	2167.4	SG3	912.0		
RRT	.9682	RRF	-.9982	RTF	-.9603		
SGB	5048.6	R23	-.2295	R13	-.9718		
SG1	5024.6	SG2	492.1	THA	24.97		

ORBIT DETERMINATION ACCURACY

ST	2351.2	SR	1188.9	SS	2582.3		
CRT	.9920	CRS	.9996	CST	.9950		
LSA	3684.2	MSA	191.7	SSA	8.7		
EL1	2631.3	EL2	134.1	ALF	26.71		

LAUNCH DATE OCT 20 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUN 21 1965

HELIOCENTRIC CONIC DISTANCE 585.558 EARTH TO MARS

RL	148.94	LAL	.00	LOL	26.64	VL	33.115	GAL	-6.16	AZL	92.63	HCA	189.33	SMA	193.59	ECC	.25323	INC	2.6311
RP	236.81	LAP	.43	LOP	215.96	VP	20.865	GAP	7.04	AZP	87.40	TAL	328.74	TAP	158.08	RCA	144.57	APO	242.61
RC	190.540	GL	-19.46	GP	17.09	ZAL	132.64	ZAP	146.98	ETS	150.32	ZAE	158.87	ETE	56.09	ZAC	105.95	ETC	255.38

PLANETOCENTRIC CONIC

C3	20.586	VHL	4.537	DLA	-11.14	RAL	156.46	RAD	6567.8	VEL	11.915	PTH	2.12	VHP	5.401	DPA	13.76	RAP	194.42

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 16 21	1868.17	-9.94	20.63	16.88	116.65	21 47 29	1268.2	-6.28	13.86
90.00	6 27 16	5218.42	26.36	234.55	21.92	79.27	7 54 14	4618.4	24.62	226.31
100.00	22 32 5	1623.80	-11.02	2.09	16.31	117.96	22 59 9	1023.8	-7.20	355.39
100.00	7 54 12	4938.02	27.56	213.65	21.65	77.94	9 16 30	4338.0	25.62	205.39
110.00	23 27 39	1449.79	-13.87	347.22	14.64	121.56	23 51 49	849.8	-9.59	340.73
110.00	9 15 8	4684.79	30.74	193.52	20.75	74.26	10 33 13	4084.8	28.28	185.19

DIFFERENTIAL CORRECTIONS

TDE	1.5886	TRA	-2.8747	TC3	1.9398	BAU	.6410
RDE	.7973	RRA	-1.0298	RC3	1.2890	FAU	.18169
FDE	-3.9579	FRA	5.7356	FC3	-7.6410	BSP	17210
BDE	1.7774	BRA	3.0536	BC3	2.3290	FSP	3120

MID-COURSE EXECUTION ACCURACY

SGT	4562.0	SGR	2034.4	SG3	975.8		
RRT	.9679	RRF	-.9979	RTF	-.9616		
SGB	4995.1	R23	-.2273	R13	-.9718		
SG1	4973.0	SG2	469.3	THA	23.57		

ORBIT DETERMINATION ACCURACY

ST	2293.3	SR	1083.1	SS	2553.0		
CRT	.9916	CRS	.9991	CST	.9960		
LSA	3594.4	MSA	173.3	SSA	11.2		
EL1	2533.0	EL2	126.7	ALF	25.16		

LAUNCH DATE OCT 20 1964 FLIGHT TIME 246.00 ARRIVAL DATE JUN 23 1965

HELIOCENTRIC CONIC DISTANCE 589.167 EARTH TO MARS

RL	148.94	LAL	.00	LOL	26.64	VL	33.091	GAL	-6.08	AZL	92.22	HCA	190.30	SMA	193.13	ECC	.25097	INC	2.2158
RP	236.46	LAP	.40	LOP	216.93	VP	20.864	GAP	6.62	AZP	87.82	TAL	328.96	TAP	159.26	RCA	144.66	APO	241.60
RC	192.768	GL	-16.73	GP	15.93	ZAL	133.11	ZAP	146.84	ETS	152.65	ZAE	160.21	ETE	56.32	ZAC	104.86	ETC	255.45

PLANETOCENTRIC CONIC

C3	19.550	VHL	4.422	DLA	-8.47	RAL	157.18	RAD	6567.8	VEL	11.871	PTH	2.11	VHP	5.250	DPA	12.63	RAP	194.08

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 57 42	1943.17	-12.19	24.98	16.87	115.76	21 30 5	1343.2	-8.63	18.12
90.00	6 51 37	5118.82	24.91	227.62	20.68	76.09	8 16 56	4518.8	22.76	219.61
100.00	22 14 56	1694.01	-13.23	6.13	16.34	117.05	22 43 10	1094.0	-9.50	359.33
100.00	8 17 4	4843.21	26.04	207.02	20.35	74.77	9 37 47	4243.2	23.69	199.01
110.00	23 13 48	1509.66	-15.98	350.58	14.78	120.63	23 38 58	909.7	-11.79	343.97
110.00	9 34 41	4600.33	29.03	187.54	19.32	71.11	10 51 21	4000.3	26.18	179.52

DIFFERENTIAL CORRECTIONS

TDE	1.5154	TRA	-2.8119	TC3	2.0710	BAU	.6366
RDE	.7174	RRA	-.9565	RC3	1.2818	FAU	.19161
FDE	-3.8970	FRA	6.0499	FC3	-8.4852	BSP	16662
BDE	1.6766	BRA	2.9701	BC3	2.4356	FSP	3296

MID-COURSE EXECUTION ACCURACY

SGT	4558.7	SGR	1928.6	SG3	1039.1		
RRT	.9689	RRF	-.9974	RTF	-.9641		
SGB	4949.9	R23	-.2195	R13	-.9729		
SG1	4930.1	SG2	441.6	THA	22.48		

ORBIT DETERMINATION ACCURACY

ST	2254.0	SR	1003.4	SS	2534.0		
CRT	.9917	CRS	.9984	CST	.9972		
LSA	3533.5	MSA	150.1	SSA	14.5		
EL1	2464.4	EL2	117.7	ALF	23.88		

LAUNCH DATE OCT 20 1964 FLIGHT TIME 248.00 ARRIVAL DATE JUN 25 1965

HELIOCENTRIC CONIC DISTANCE 592.790 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 33.067 GAL -6.00 AZL 91.87 HCA 191.27 SMA 192.69 ECC .24882 INC 1.8699 V1 29.917
RP 236.12 LAP .37 LOP 217.90 VP 20.866 GAP 6.21 AZP 88.17 TAL 329.17 TAP 160.44 RCA 144.74 APO 240.63 V2 23.279
RC 194.983 GL -14.37 GP 14.97 ZAL 133.39 ZAP 146.53 ETS 154.72 ZAE 161.43 ETE 57.03 ZAC 103.95 ETC 255.51 CLP 149.71

PLANETOCENTRIC CONIC

C3 18.719 VHL 4.327 DLA -6.16 RAL 157.76 RAD 6567.8 VEL 11.836 PTH 2.10 VHP 5.111 DPA 11.70 RAP 193.79 ECC 1.3081

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 42 5	2006.68	-14.04	28.73	16.97	114.84	21 15 32	1406.7	-10.58	21.77
90.00	7 11 52	5034.79	23.42	221.91	19.70	73.61	8 35 47	4434.8	20.95	214.11
100.00	22 0 31	1753.71	-15.05	9.63	16.48	116.13	22 29 44	1153.7	-11.42	2.73
100.00	8 36 8	4763.00	24.49	201.57	19.34	72.30	9 55 31	4163.0	21.84	193.77
110.00	23 2 4	1561.00	-17.73	353.52	14.99	119.71	23 28 5	961.0	-13.65	346.80
110.00	9 51 5	4528.47	27.35	182.63	18.21	68.64	11 6 33	3928.5	24.20	174.88

DIFFERENTIAL CORRECTIONS
TDE 1.4336 TRA-2.7687 TC3 2.1436 BAU .6234
RDE .6542 RRA -.8981 RC3 1.2692 FAU .20082
FDE-3.8414 FRA 6.3687 FC3-9.2880 BSP 16638
BDE 1.5758 BRA 2.9107 BC3 2.4912 FSP 3507

MID-COURSE EXECUTION ACCURACY
SGT 4543.6 SGR 1840.5 SG3 1101.2
RRT .9678 RRF -.9967 RTF -.9644
SGB 4902.3 R23 -.2179 R13 -.9726
SG1 4883.3 SG2 431.3 THA 21.58

ORBIT DETERMINATION ACCURACY
ST 2198.0 SR 938.3 SS 2514.2
CRT .9909 CRS .9974 CST .9978
LSA 3466.0 MSA 139.8 SSA 17.8
EL1 2387.1 EL2 116.5 ALF 22.99

LAUNCH DATE OCT 20 1964 FLIGHT TIME 250.00 ARRIVAL DATE JUN 27 1965

HELIOCENTRIC CONIC DISTANCE 596.429 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 33.044 GAL -5.92 AZL 91.58 HCA 192.24 SMA 192.27 ECC .24675 INC 1.5781 V1 29.917
RP 235.77 LAP .33 LOP 218.88 VP 20.870 GAP 5.80 AZP 88.46 TAL 329.38 TAP 161.62 RCA 144.83 APO 239.71 V2 23.315
RC 197.185 GL -12.31 GP 14.15 ZAL 133.53 ZAP 146.07 ETS 156.56 ZAE 162.54 ETE 58.22 ZAC 103.18 ETC 255.55 CLP 148.84

PLANETOCENTRIC CONIC

C3 18.030 VHL 4.246 DLA -4.13 RAL 158.24 RAD 6567.7 VEL 11.807 PTH 2.09 VHP 4.982 DPA 10.91 RAP 193.5 ECC 1.2967

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 28 39	2061.57	-15.59	32.02	17.13	113.94	21 3 1	1461.6	-12.22	24.96
90.00	7 29 8	4962.36	21.94	217.12	18.93	71.64	8 51 50	4362.4	19.23	209.49
100.00	21 48 4	1805.42	-16.58	12.71	16.65	115.24	22 18 9	1205.4	-13.04	5.70
100.00	8 52 25	4693.74	22.98	196.98	18.54	70.33	10 10 38	4093.7	20.09	189.37
110.00	22 51 52	1605.68	-19.22	356.14	15.24	118.83	23 18 37	1005.7	-15.23	349.29
110.00	10 5 6	4466.24	25.74	178.51	17.35	66.68	11 19 32	3866.2	22.36	170.99

DIFFERENTIAL CORRECTIONS
TDE 1.3582 TRA-2.7260 TC3 2.1954 BAU .6097
RDE .6038 RRA -.8500 RC3 1.2560 FAU .20964
FDE-3.7911 FRA 6.6916 FC-10.0660 BSP 16696
BDE 1.4864 BRA 2.8554 BC3 2.5293 FSP 3743

MID-COURSE EXECUTION ACCURACY
SGT 4520.5 SGR 1767.4 SG3 1163.0
RRT .9666 RRF -.9960 RTF -.9646
SGB 4853.8 R23 -.2157 R13 -.9724
SG1 4835.2 SG2 423.8 THA 20.87

ORBIT DETERMINATION ACCURACY
ST 2141.5 SR 885.3 SS 2495.3
CRT .9898 CRS .9961 CST .9983
LSA 3402.7 MSA 131.7 SSA 21.3
EL1 2314.3 EL2 116.7 ALF 22.31

LAUNCH DATE OCT 20 1964 FLIGHT TIME 252.00 ARRIVAL DATE JUN 29 1965

HELIOCENTRIC CONIC DISTANCE 600.084 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 33.022 GAL -5.84 AZL 91.33 HCA 193.22 SMA 191.87 ECC .24477 INC 1.3278 V1 29.917
RP 235.42 LAP .30 LOP 219.85 VP 20.875 GAP 5.40 AZP 88.71 TAL 329.58 TAP 162.80 RCA 144.90 APO 238.83 V2 23.351
RC 199.372 GL -10.50 GP 13.45 ZAL 133.58 ZAP 145.51 ETS 158.20 ZAE 163.57 ETE 59.90 ZAC 102.52 ETC 255.59 CLP 147.93

PLANETOCENTRIC CONIC

C3 17.447 VHL 4.177 DLA -2.34 RAL 158.64 RAD 6567.7 VEL 11.783 PTH 2.08 VHP 4.859 DPA 10.25 RAP 193.29 ECC 1.2871

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 16 50	2109.76	-16.89	34.95	17.30	113.07	20 52 0	1509.8	-13.63	27.80
90.00	7 44 6	4898.87	20.52	213.00	18.30	70.05	9 5 45	4298.9	17.62	205.53
100.00	21 37 6	1850.88	-17.88	15.46	16.85	114.36	22 7 57	1250.9	-14.44	8.36
100.00	9 6 32	4632.98	21.53	193.04	17.89	68.75	10 23 45	4033.0	18.45	185.60
110.00	22 42 50	1645.08	-20.50	358.48	15.48	117.97	23 10 15	1045.1	-16.59	351.53
110.00	10 17 17	4411.55	24.21	174.99	16.65	65.10	11 30 48	3811.5	20.65	167.66

DIFFERENTIAL CORRECTIONS
TDE 1.2940 TRA-2.6774 TC3 2.2444 BAU .5989
RDE .5648 RRA -.8083 RC3 1.2477 FAU .21888
FDE-3.7595 FRA 7.0065 FC-10.8613 BSP 16640
BDE 1.4118 BRA 2.7968 BC3 2.5679 FSP 3970

MID-COURSE EXECUTION ACCURACY
SGT 4491.9 SGR 1708.2 SG3 1226.3
RRT .9655 RRF -.9951 RTF -.9650
SGB 4805.7 R23 -.2122 R13 -.9724
SG1 4787.6 SG2 417.4 THA 20.32

ORBIT DETERMINATION ACCURACY
ST 2090.4 SR 843.8 SS 2483.7
CRT .9887 CRS .9945 CST .9988
LSA 3351.7 MSA 125.5 SSA 24.8
EL1 2251.2 EL2 117.3 ALF 21.82

LAUNCH DATE OCT 20 1964 FLIGHT TIME 254.00 ARRIVAL DATE JUL 1 1965

HELIOCENTRIC CONIC DISTANCE 603.753 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 33.002 GAL -5.77 AZL 91.11 HCA 194.19 SMA 191.49 ECC .24288 INC 1.1108 V1 29.917
RP 235.06 LAP .27 LOP 220.83 VP 20.883 GAP 5.00 AZP 88.92 TAL 329.77 TAP 163.97 RCA 144.98 APO 238.00 V2 23.387
RC 201.544 GL -8.90 GP 12.85 ZAL 133.54 ZAP 144.84 ETS 159.67 ZAE 164.52 ETE 62.11 ZAC 101.94 ETC 255.62 CLP 146.99

PLANETOCENTRIC CONIC

C3 16.942 VHL 4.116 DLA -.74 RAL 158.97 RAD 6567.7 VEL 11.761 PTH 2.08 VHP 4.743 DPA 9.69 RAP 193.07 ECC 1.2788

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 6 17	2152.61	-18.02	37.60	17.47	112.22	20 42 9	1552.6	-14.85	30.35
90.00	7 57 17	4842.45	19.17	209.41	17.78	68.75	9 18 0	4242.5	16.12	202.07
100.00	21 27 17	1891.33	-18.99	17.95	17.04	113.52	21 58 48	1291.3	-15.65	10.75
100.00	9 18 59	4578.96	20.16	189.62	17.36	67.45	10 35 18	3979.0	16.93	182.32
110.00	22 34 44	1680.18	-21.60	.60	15.72	117.16	23 2 44	1080.2	-17.79	353.55
110.00	10 28 1	4362.88	22.79	171.94	16.08	63.80	11 40 43	3762.9	19.08	164.76

DIFFERENTIAL CORRECTIONS
TDE 1.2380 TRA-2.6234 TC3 2.2895 BAU .5901
RDE .5341 RRA -.7720 RC3 1.2436 FAU .22852
FDE-3.7427 FRA 7.3162 FC-11.6774 BSP 16506
BDE 1.3483 BRA 2.7347 BC3 2.6054 FSP 4196

MID-COURSE EXECUTION ACCURACY
SGT 4456.5 SGR 1660.1 SG3 1291.1
RRT .9645 RRF -.9941 RTF -.9655
SGB 4755.6 R23 -.2078 R13 -.9725
SG1 4737.7 SG2 412.1 THA 19.92

ORBIT DETERMINATION ACCURACY
ST 2042.9 SR 811.0 SS 2478.0
CRT .9876 CRS .9926 CST .9992
LSA 3310.0 MSA 121.3 SSA 28.2
EL1 2194.8 EL2 118.3 ALF 21.47

LAUNCH DATE OCT 20 1964 FLIGHT TIME 256.00 ARRIVAL DATE JUL 3 1965

HELIOCENTRIC CONIC DISTANCE 607.437 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 32.982 GAL -5.70 AZL 90.92 HCA 195.18 SMA 191.13 ECC .24107 INC .9203 V1 29.917
RP 234.71 LAP .24 LOP 221.81 VP 20.893 GAP 4.61 AZP 89.11 TAL 329.96 TAP 165.14 RCA 145.05 APO 237.20 V2 23.424
RC 203.699 GL -7.46 GP 12.33 ZAL 133.46 ZAP 144.10 ETS 161.00 ZAE 165.40 ETE 64.88 ZAC 101.43 ETC 255.65 CLP 146.01

PLANETOCENTRIC CONIC

C3 16.499 VHL 4.062 DLA .70 RAL 159.24 RAD 6567.7 VEL 11.742 PTH 2.07 VHP 4.632 DPA 9.22 RAP 192.85 ECC 1.2715

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 56 43	2191.14	-18.99	40.00	17.64	111.41	20 33 14	1591.1	-15.92	32.68
90.00	8 9 3	4791.77	17.89	206.25	17.35	67.68	9 28 55	4191.8	14.71	199.02
100.00	21 18 23	1927.71	-19.97	20.21	17.22	112.72	21 50 31	1327.7	-16.72	12.93
100.00	9 30 5	4530.44	18.86	186.60	16.92	66.37	10 45 35	3930.4	15.51	179.41
110.00	22 27 23	1711.76	-22.57	2.54	15.95	116.38	22 55 54	1111.8	-18.84	355.39
110.00	10 37 34	4319.15	21.45	169.25	15.61	62.72	11 49 33	3719.2	17.62	162.21

DIFFERENTIAL CORRECTIONS
TDE 1.1872 TRA-2.5671 TC3 2.3260 BAU .5818
RDE .5099 RRA -.7405 RC3 1.2432 FAU .23856
FDE-3.7392 FRA 7.6253 FC-12.5175 BSP 16335
BDE 1.2921 BRA 2.6718 BC3 2.6374 FSP 4421

MID-COURSE EXECUTION ACCURACY
SGT 4414.6 SGR 1621.3 SG3 1357.7
RRT .9635 RRF -.9931 RTF -.9658
SGB 4702.9 R23 -.2032 R13 -.9726
SG1 4685.1 SG2 409.2 THA 19.64

ORBIT DETERMINATION ACCURACY
ST 1996.9 SR 785.2 SS 2477.7
CRT .9864 CRS .9904 CST .9994
LSA 3275.3 MSA 120.5 SSA 31.0
EL1 2142.4 EL2 120.1 ALF 21.27

LAUNCH DATE OCT 20 1964 FLIGHT TIME 258.00 ARRIVAL DATE JUL 5 1965

HELIOCENTRIC CONIC DISTANCE 611.134 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 32.963 GAL -5.64 AZL 90.75 HCA 196.16 SMA 190.78 ECC .23935 INC .7516 V1 29.917
RP 234.35 LAP .21 LOP 222.80 VP 20.904 GAP 4.22 AZP 89.28 TAL 330.14 TAP 166.30 RCA 145.12 APO 236.44 V2 23.461
RC 205.837 GL -6.16 GP 11.87 ZAL 133.33 ZAP 143.28 ETS 162.20 ZAE 166.19 ETE 68.26 ZAC 100.98 ETC 255.67 CLP 145.00

PLANETOCENTRIC CONIC

C3 16.106 VHL 4.013 DLA 2.01 RAL 159.48 RAD 6567.6 VEL 11.726 PTH 2.07 VHP 4.526 DPA 8.82 RAP 192.63 ECC 1.2651

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 47 58	2226.09	-19.85	42.21	17.81	110.62	20 25 4	1626.1	-16.86	34.81
90.00	8 19 40	4745.82	16.68	203.42	16.99	66.78	9 38 46	4145.8	13.40	196.28
100.00	21 10 15	1960.70	-20.82	22.29	17.40	111.95	21 42 55	1360.7	-17.66	14.92
100.00	9 40 4	4486.43	17.64	183.90	16.55	65.47	10 54 51	3886.4	14.18	176.82
110.00	22 20 38	1740.40	-23.43	4.33	16.16	115.64	22 49 38	1140.4	-19.78	357.08
110.00	10 46 11	4279.51	20.19	166.86	15.21	61.81	11 57 30	3679.5	16.26	159.93

DIFFERENTIAL CORRECTIONS
TDE 1.1400 TRA-2.5077 TC3 2.3535 BAU .5734
RDE .4906 RRA -.7132 RC3 1.2459 FAU .24898
FDE-3.7458 FRA 7.9356 FC-13.3831 BSP 16133
BDE 1.2411 BRA 2.6072 BC3 2.6629 FSP 4649

MID-COURSE EXECUTION ACCURACY
SGT 4364.8 SGR 1590.2 SG3 1426.3
RRT .9623 RRF -.9919 RTF -.9661
SGB 4649.4 R23 -.1987 R13 -.9727
SG1 4627.5 SG2 408.1 THA 19.48

ORBIT DETERMINATION ACCURACY
ST 1951.2 SR 764.8 SS 2481.5
CRT .9852 CRS .9880 CST .9996
LSA 3245.6 MSA 122.5 SSA 33.0
EL1 2092.2 EL2 122.3 ALF 21.19

LAUNCH DATE OCT 20 1964 FLIGHT TIME 260.00 ARRIVAL DATE JUL 7 1965

HELIOCENTRIC CONIC DISTANCE 614.846 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 32.945 GAL -5.57 AZL 90.60 HCA 197.15 SMA 190.45 ECC .23770 INC .6008 V1 29.917
RP 233.98 LAP .18 LOP 223.79 VP 20.918 GAP 3.84 AZP 89.42 TAL 330.32 TAP 167.47 RCA 145.18 APO 235.72 V2 23.498
RC 207.958 GL -4.98 GP 11.48 ZAL 133.18 ZAP 142.40 ETS 163.30 ZAE 166.90 ETE 72.28 ZAC 100.58 ETC 255.69 CLP 143.95

PLANETOCENTRIC CONIC

C3 15.754 VHL 3.969 DLA 3.20 RAL 159.67 RAD 6567.6 VEL 11.711 PTH 2.06 VHP 4.424 DPA 8.48 RAP 192.40 ECC 1.2593

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 39 54	2258.05	-20.60	44.25	17.96	109.87	20 17 32	1658.0	-17.71	36.77
90.00	8 29 19	4703.81	15.54	200.87	16.68	66.03	9 47 43	4103.8	12.17	193.81
100.00	21 2 44	1990.87	-21.58	24.21	17.57	111.21	21 35 55	1390.9	-18.50	16.77
100.00	9 49 10	4446.22	16.48	181.47	16.23	64.71	11 3 16	3846.2	12.94	174.47
110.00	22 14 24	1766.55	-24.19	5.98	16.36	114.93	22 43 51	1166.6	-20.62	358.64
110.00	10 53 59	4243.30	19.01	164.71	14.87	61.04	12 4 42	3643.3	15.00	157.89

DIFFERENTIAL CORRECTIONS
TDE 1.0992 TRA-2.4428 TC3 2.3806 BAU .5666
RDE .4756 RRA -.6891 RC3 1.2527 FAU .25999
FDE-3.7658 FRA 8.2449 FC-14.2875 BSP 15813
BDE 1.1976 BRA 2.5381 BC3 2.6901 FSP 4869

MID-COURSE EXECUTION ACCURACY
SGT 4308.4 SGR 1566.2 SG3 1497.2
RRT .9614 RRF -.9907 RTF -.9665
SGB 4584.2 R23 -.1930 R13 -.9731
SG1 4566.2 SG2 406.5 THA 19.42

ORBIT DETERMINATION ACCURACY
ST 1908.8 SR 749.4 SS 2490.5
CRT .9841 CRS .9853 CST .9997
LSA 3223.4 MSA 126.5 SSA 34.2
EL1 2046.9 EL2 124.0 ALF 21.21

LAUNCH DATE OCT 20 1964 FLIGHT TIME 262.00 ARRIVAL DATE JUL 9 1965

HELIOCENTRIC CONIC DISTANCE 618.569 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 32.927 GAL -5.51 AZL 90.47 HCA 198.14 SMA 190.14 ECC .23612 INC .4666 V1 29.917
RP 233.62 LAP .15 LOP 224.78 VP 20.933 GAP 3.47 AZP 89.56 TAL 330.49 TAP 168.63 RCA 145.24 APO 235.04 V2 23.536
RC 210.060 GL -3.91 GP 11.12 ZAL 133.01 ZAP 141.46 ETS 164.29 ZAE 167.50 ETE 76.98 ZAC 100.22 ETC 255.71 CLP 142.86

PLANETOCENTRIC CONIC

C3 15.436 VHL 3.929 DLA 4.29 RAL 159.84 RAD 6567.6 VEL 11.697 PTH 2.06 VHP 4.326 DPA 8.20 RAP 192.17 ECC 1.2540

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 32 25	2287.47	-21.27	46.15	18.10	109.15	20 10 32	1687.5	-18.46	38.60
90.00	8 38 10	4665.18	14.45	198.55	16.42	65.38	9 55 55	4065.2	11.01	191.56
100.00	20 55 46	2018.62	-22.25	26.00	17.72	110.50	21 29 24	1418.6	-19.26	18.48
100.00	9 57 30	4409.26	15.40	179.27	15.96	64.06	11 10 59	3809.3	11.78	172.34
110.00	22 8 37	1790.60	-24.87	7.51	16.54	114.25	22 38 28	1190.6	-21.38	.10
110.00	11 1 8	4210.04	17.90	162.77	14.58	60.38	12 11 18	3610.0	13.83	156.03

DIFFERENTIAL CORRECTIONS
TDE 1.0515 TRA-2.3841 TC3 2.3747 BAU .5546
RDE .4621 RRA -.6698 RC3 1.2580 FAU .27056
FDE-3.7749 FRA 8.5781 FC-15.1749 BSP 15691
BDE 1.1486 BRA 2.4764 BC3 2.6873 FSP 5134

MID-COURSE EXECUTION ACCURACY
SGT 4241.5 SGR 1546.2 SG3 1569.2
RRT .9596 RRF -.9894 RTF -.9662
SGB 4514.5 R23 -.1899 R13 -.9728
SG1 4495.8 SG2 410.4 THA 19.45

ORBIT DETERMINATION ACCURACY
ST 1857.1 SR 735.8 SS 2495.8
CRT .9825 CRS .9822 CST .9997
LSA 3193.8 MSA 133.9 SSA 34.9
EL1 1993.5 EL2 127.8 ALF 21.36

LAUNCH DATE OCT 20 1964 FLIGHT TIME 264.00 ARRIVAL DATE JUL 11 1965

HELIOCENTRIC CONIC DISTANCE 622.304 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 32.911 GAL -5.45 AZL 90.35 HCA 199.13 SMA 189.84 ECC .23463 INC .3470 V1 29.917
RP 233.25 LAP .11 LOP 225.77 VP 20.949 GAP 3.10 AZP 89.67 TAL 330.65 TAP 169.78 RCA 145.30 APO 234.39 V2 23.574
RC 212.144 GL -2.92 GP 10.81 ZAL 132.82 ZAP 140.47 ETS 165.21 ZAE 167.98 ETE 82.33 ZAC 99.88 ETC 255.73 CLP 141.74

PLANETOCENTRIC CONIC

C3 15.147 VHL 3.892 DLA 5.29 RAL 159.99 RAD 6567.6 VEL 11.685 PTH 2.06 VHP 4.231 DPA 7.97 RAP 191.92 ECC 1.2493

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 25 25	2314.72	-21.87	47.93	18.24	108.45	20 4 0	1714.7	-19.14	40.31
90.00	8 46 20	4629.44	13.43	196.42	16.20	64.84	10 3 30	4029.4	9.93	189.49
100.00	20 49 15	2044.31	-22.85	27.67	17.87	109.81	21 23 20	1444.3	-19.94	20.08
100.00	10 5 11	4375.09	14.37	177.25	15.73	63.50	11 18 6	3775.1	10.70	170.39
110.00	22 3 13	1812.83	-25.48	8.95	16.72	113.60	22 33 26	1212.8	-22.07	1.46
110.00	11 7 43	4179.34	16.86	161.00	14.33	59.81	12 17 22	3579.3	12.72	154.33

DIFFERENTIAL CORRECTIONS
TDE 1.0006 TRA-2.3279 TC3 2.3456 BAU .5395
RDE .4502 RRA -.6544 RC3 1.2632 FAU .28094
FDE-3.7777 FRA 8.9321 FC-16.0571 BSP 15647
BDE 1.0972 BRA 2.4182 BC3 2.6641 FSP 5432

MID-COURSE EXECUTION ACCURACY
SGT 4165.3 SGR 1530.3 SG3 1642.8
RRT .9572 RRF -.9881 RTF -.9655
SGB 4437.5 R23 -.1883 R13 -.9723
SG1 4417.8 SG2 417.8 THA 19.56

ORBIT DETERMINATION ACCURACY
ST 1799.8 SR 724.1 SS 2499.8
CRT .9803 CRS .9788 CST .9997
LSA 3160.8 MSA 143.1 SSA 35.3
EL1 1935.4 EL2 132.9 ALF 21.63

LAUNCH DATE OCT 20 1964 FLIGHT TIME 266.00 ARRIVAL DATE JUL 13 1965

HELIOCENTRIC CONIC DISTANCE 626.054 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 32.895 GAL -5.40 AZL 90.24 HCA 200.13 SMA 189.56 ECC .23320 INC .2352 V1 29.917
RP 232.88 LAP .08 LOP 226.77 VP 20.968 GAP 2.73 AZP 89.78 TAL 330.80 TAP 170.93 RCA 145.36 APO 233.77 V2 23.612
RC 214.210 GL -2.01 GP 10.53 ZAL 132.63 ZAP 139.42 ETS 166.06 ZAE 168.32 ETE 88.30 ZAC 99.58 ETC 255.75 CLP 140.58

PLANETOCENTRIC CONIC

C3 14.884 VHL 3.858 DLA 6.22 RAL 160.12 RAD 6567.6 VEL 11.673 PTH 2.05 VHP 4.140 DPA 7.78 RAP 191.66 ECC 1.2449

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 18 51	2340.11	-22.40	49.59	18.36	107.79	19 57 51	1740.1	-19.76	41.92
90.00	8 58 56	4596.20	12.46	194.46	16.00	64.37	10 10 32	3996.2	8.91	187.58
100.00	20 43 9	2068.22	-23.39	29.24	18.01	109.16	21 17 37	1468.2	-20.57	21.58
100.00	10 12 19	4343.32	13.40	175.39	15.53	63.03	11 24 42	3743.3	9.67	168.58
110.00	21 58 9	1833.48	-26.04	10.30	16.88	112.97	22 28 43	1233.5	-22.70	2.73
110.00	11 13 48	4150.83	15.88	159.37	14.11	59.32	12 22 59	3550.8	11.69	152.77

DIFFERENTIAL CORRECTIONS
TDE .9673 TRA-2.2539 TC3 2.3460 BAU .5315
RDE .4431 RRA -.6384 RC3 1.2775 FAU .29317
FDE-3.8195 FRA 9.2569 FC-17.0529 BSP 15210
BDE 1.0640 BRA 2.3426 BC3 2.6713 FSP 5667

MID-COURSE EXECUTION ACCURACY
SGT 4083.9 SGR 1521.3 SG3 1720.5
RRT .9563 RRF -.9867 RTF -.9656
SGB 4358.0 R23 -.1828 R13 -.9726
SG1 4337.9 SG2 419.0 THA 19.80

ORBIT DETERMINATION ACCURACY
ST 1757.1 SR 718.2 SS 2517.5
CRT .9795 CRS .9755 CST .9995
LSA 3149.0 MSA 152.2 SSA 35.0
EL1 1893.4 EL2 134.3 ALF 21.94

LAUNCH DATE OCT 20 1964 FLIGHT TIME 268.00 ARRIVAL DATE JUL 15 1965

HELIOCENTRIC CONIC DISTANCE 629.815 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 32.880 GAL -5.35 AZL 90.14 HCA 201.13 SMA 189.29 ECC .23184 INC .1354 V1 29.917
RP 232.51 LAP .05 LOP 227.77 VP 20.988 GAP 2.38 AZP 89.87 TAL 330.95 TAP 172.08 RCA 145.41 APO 233.18 V2 23.650
RC 216.258 GL -1.17 GP 10.28 ZAL 132.43 ZAP 138.32 ETS 166.84 ZAE 168.49 ETE 94.76 ZAC 99.29 ETC 255.77 CLP 139.39

PLANETOCENTRIC CONIC

C3 14.643 VHL 3.827 DLA 7.08 RAL 160.24 RAD 6567.6 VEL 11.663 PTH 2.05 VHP 4.051 DPA 7.64 RAP 191.38 ECC 1.2410

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 12 41	2363.85	-22.89	51.17	18.49	107.14	19 52 4	1763.9	-20.33	43.43
90.00	9 1 1	4565.19	11.54	192.65	15.84	63.96	10 17 6	3965.2	7.95	185.81
100.00	20 37 24	2090.57	-23.89	30.72	18.14	108.53	21 12 15	1490.6	-21.13	23.00
100.00	10 18 58	4313.72	12.47	173.68	15.35	62.61	11 30 52	3713.7	8.71	166.91
110.00	21 53 24	1852.76	-26.54	11.57	17.04	112.37	22 24 17	1252.8	-23.27	3.93
110.00	11 19 28	4124.29	14.95	157.88	13.93	58.90	12 28 13	3524.3	10.72	151.33

DIFFERENTIAL CORRECTIONS
TDE .9264 TRA-2.1854 TC3 2.3135 BAU .5186
RDE .4363 RRA -.6261 RC3 1.2901 FAU .30495
FDE-3.8471 FRA 9.6098 FC-18.0296 BSP 14938
BDE 1.0240 BRA 2.2733 BC3 2.6489 FSP 5948

MID-COURSE EXECUTION ACCURACY
SGT 3991.4 SGR 1514.6 SG3 1799.5
RRT .9543 RRF -.9853 RTF -.9651
SGB 4269.1 R23 -.1799 R13 -.9723
SG1 4247.9 SG2 425.2 THA 20.12

ORBIT DETERMINATION ACCURACY
ST 1704.5 SR 712.7 SS 2530.8
CRT .9780 CRS .9719 CST .9993
LSA 3129.0 MSA 162.7 SSA 34.7
EL1 1842.3 EL2 137.6 ALF 22.37

LAUNCH DATE OCT 20 1964 FLIGHT TIME 270.00 ARRIVAL DATE JUL 17 1965

HELIOCENTRIC CONIC DISTANCE 633.587 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 32.865 GAL -5.30 AZL 90.04 HCA 202.14 SMA 189.04 ECC .23055 INC .0389 V1 29.917
RP 232.14 LAP .02 LOP 228.77 VP 21.009 GAP 2.02 AZP 89.96 TAL 331.08 TAP 173.22 RCA 145.46 APO 232.62 V2 23.689
RC 218.287 GL -.38 GP 10.06 ZAL 132.24 ZAP 137.18 ETS 167.57 ZAE 168.49 ETE 101.53 ZAC 99.02 ETC 255.79 CLP 138.15

PLANETOCENTRIC CONIC

C3 14.423 VHL 3.798 DLA 7.89 RAL 160.34 RAD 6567.6 VEL 11.654 PTH 2.05 VHP 3.966 DPA 7.53 RAP 191.08 ECC 1.2374

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 6 51	2386.16	-23.33	52.65	18.61	106.52	19 46 37	1786.2	-20.84	44.86
90.00	9 7 41	4536.16	10.67	190.96	15.70	63.61	10 23 17	3936.2	7.04	184.16
100.00	20 31 59	2111.54	-24.33	32.12	18.27	107.92	21 7 11	1511.5	-21.65	24.34
100.00	10 25 13	4286.01	11.60	172.08	15.21	62.26	11 36 39	3686.0	7.80	165.36
110.00	21 48 55	1870.81	-27.01	12.77	17.19	111.80	22 20 6	1270.8	-23.80	5.06
110.00	11 24 47	4099.50	14.07	156.49	13.77	58.52	12 33 7	3499.5	9.81	149.99

DIFFERENTIAL CORRECTIONS
TDE .8891 TRA-2.1115 TC3 2.2760 BAU .5059
RDE .4314 RRA -.6152 RC3 1.3056 FAU .31737
FDE-3.8856 FRA 9.9627 FC-19.0504 BSP 14573
BDE .9882 BRA 2.1993 BC3 2.6239 FSP 6222

MID-COURSE EXECUTION ACCURACY
SGT 3889.8 SGR 1511.6 SG3 1881.0
RRT .9525 RRF -.9840 RTF -.9645
SGB 4173.2 R23 -.1768 R13 -.9721
SG1 4150.9 SG2 431.3 THA 20.54

ORBIT DETERMINATION ACCURACY
ST 1653.1 SR 709.6 SS 2547.9
CRT .9768 CRS .9682 CST .9990
LSA 3114.0 MSA 173.9 SSA 34.3
EL1 1793.5 EL2 140.2 ALF 22.89

LAUNCH DATE OCT 20 1964 FLIGHT TIME 272.00 ARRIVAL DATE JUL 19 1965

HELIOCENTRIC CONIC DISTANCE 637.370 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 32.852 GAL -5.25 AZL 89.96 HCA 203.14 SMA 188.80 ECC .22933 INC .0328 V1 29.917
RP 231.76 LAP -.02 LOP 229.78 VP 21.032 GAP 1.67 AZP 90.04 TAL 331.21 TAP 174.36 RCA 145.50 APO 232.10 V2 23.728
RC 220.299 GL .35 GP 9.86 ZAL 132.04 ZAP 135.98 ETS 168.25 ZAE 168.29 ETE 108.39 ZAC 98.77 ETC 255.81 CLP 136.88

PLANETOCENTRIC CONIC

C3 14.221 VHL 3.771 DLA 8.64 RAL 160.44 RAD 6567.6 VEL 11.645 PTH 2.04 VHP 3.885 DPA 7.46 RAP 190.75 ECC 1.2340

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 1 20	2407.18	-23.73	54.06	18.72	105.92	19 41 27	1807.2	-21.32	46.22
90.00	9 13 57	4508.90	9.84	189.39	15.58	63.31	10 29 6	3908.9	6.18	182.62
100.00	20 26 52	2131.29	-24.74	33.44	18.39	107.34	21 2 24	1531.3	-22.13	25.61
100.00	10 31 6	4260.03	10.77	170.60	15.09	61.95	11 42 6	3660.0	6.94	163.91
110.00	21 44 41	1887.79	-27.43	13.90	17.34	111.25	22 16 9	1287.8	-24.29	6.14
110.00	11 29 46	4076.29	13.24	155.20	13.64	58.20	12 37 43	3476.3	8.94	148.74

DIFFERENTIAL CORRECTIONS
TDE .8503 TRA-2.0369 TC3 2.2207 BAU .4913
RDE .4274 RRA -.6064 RC3 1.3218 FAU .32992
FDE-3.9223 FRA10.3309 FC-20.0848 BSP 14227
BDE .9517 BRA 2.1253 BC3 2.5843 FSP 6516

MID-COURSE EXECUTION ACCURACY
SGT 3777.9 SGR 1511.3 SG3 1964.6
RRT .9503 RRF -.9826 RTF -.9635
SGB 4069.0 R23 -.1748 R13 -.9716
SG1 4045.2 SG2 439.4 THA 21.08

ORBIT DETERMINATION ACCURACY
ST 1597.9 SR 707.6 SS 2565.0
CRT .9754 CRS .9643 CST .9986
LSA 3098.0 MSA 185.4 SSA 33.9
EL1 1741.8 EL2 143.0 ALF 23.53

LAUNCH DATE OCT 20 1964 FLIGHT TIME 274.00 ARRIVAL DATE JUL 21 1965

HELIOCENTRIC CONIC DISTANCE 641.165 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 32.839 GAL -5.21 AZL 89.88 HCA 204.15 SMA 188.57 ECC .22817 INC .1160 V1 29.917
RP 231.38 LAP -.05 LOP 230.79 VP 21.056 GAP 1.33 AZP 90.11 TAL 331.33 TAP 175.49 RCA 145.54 APO 231.60 V2 23.768
RC 222.292 GL 1.03 GP 9.68 ZAL 131.86 ZAP 134.74 ETS 168.89 ZAE 167.90 ETE 115.10 ZAC 98.53 ETC 255.83 CLP 135.57

PLANETOCENTRIC CONIC

C3 14.036 VHL 3.746 DLA 9.34 RAL 160.52 RAD 6567.6 VEL 11.637 PTH 2.04 VHP 3.806 DPA 7.42 RAP 190.41 ECC 1.2310

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 56 7	2427.06	-24.09	55.41	18.84	105.35	19 36 34	1827.1	-21.75	47.51
90.00	9 19 53	4483.25	9.05	187.92	15.49	63.05	10 34 37	3883.3	5.36	181.18
100.00	20 22 2	2149.95	-25.11	34.70	18.52	106.77	20 57 52	1549.9	-22.58	26.82
100.00	10 36 39	4235.59	9.99	169.21	14.99	61.68	11 47 15	3635.6	6.13	162.55
110.00	21 40 42	1903.79	-27.82	14.99	17.49	110.71	22 12 25	1303.8	-24.75	7.16
110.00	11 34 29	4054.52	12.46	154.00	13.53	57.91	12 42 3	3454.5	8.13	147.58

DIFFERENTIAL CORRECTIONS
TDE .8122 TRA-1.9594 TC3 2.1514 BAU .4755
RDE .4245 RRA -.5992 RC3 1.3392 FAU .34277
FDE-3.9631 FRA10.7074 FC-21.1419 BSP 13845
BDE .9165 BRA 2.0490 BC3 2.5341 FSP 6815

MID-COURSE EXECUTION ACCURACY
SGT 3655.7 SGR 1513.5 SG3 2050.2
RRT .9478 RRF -.9813 RTF -.9621
SGB 3956.6 R23 -.1735 R13 -.9710
SG1 3931.0 SG2 448.8 THA 21.72

ORBIT DETERMINATION ACCURACY
ST 1541.2 SR 707.1 SS 2583.7
CRT .9742 CRS .9604 CST .9981
LSA 3084.0 MSA 197.3 SSA 33.5
EL1 1689.4 EL2 145.5 ALF 24.27

LAUNCH DATE OCT 20 1964 FLIGHT TIME 276.00 ARRIVAL DATE JUL 23 1965

HELIOCENTRIC CONIC DISTANCE 644.970 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 32.826 GAL -5.17 AZL 89.81 HCA 205.17 SMA 188.35 ECC .22708 INC .1890 V1 29.917
RP 231.01 LAP -.08 LOP 231.81 VP 21.081 GAP .99 AZP 90.17 TAL 331.44 TAP 176.61 RCA 145.58 APO 231.12 V2 23.807
RC 224.266 GL 1.68 GP 9.51 ZAL 131.67 ZAP 133.45 ETS 169.50 ZAE 167.32 ETE 121.46 ZAC 98.29 ETC 255.85 CLP 134.21

PLANETOCENTRIC CONIC

C3 13.866 VHL 3.724 DLA 10.00 RAL 160.61 RAD 6567.5 VEL 11.630 PTH 2.04 VHP 3.730 DPA 7.41 RAP 190.03 ECC 1.2282

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 51 10	2445.89	-24.43	56.69	18.96	104.79	19 31 56	1845.9	-22.16	48.75
90.00	9 25 31	4459.08	8.30	186.54	15.42	62.83	10 39 50	3859.1	4.59	179.82
100.00	20 17 27	2167.61	-25.45	35.90	18.64	106.23	20 53 35	1567.6	-22.98	27.98
100.00	10 41 55	4212.60	9.24	167.91	14.92	61.45	11 52 8	3612.6	5.36	161.28
110.00	21 36 56	1918.91	-28.18	16.01	17.64	110.20	22 8 54	1318.9	-25.17	8.14
110.00	11 38 56	4034.06	11.72	152.88	13.44	57.66	12 46 10	3434.1	7.37	146.49

DIFFERENTIAL CORRECTIONS
TDE .7748 TRA-1.8782 TC3 2.0694 BAU .4588
RDE .4225 RRA -.5932 RC3 1.3578 FAU .35593
FDE-4.0071 FRA11.0907 FC-22.2224 BSP 13433
BDE .8825 BRA 1.9696 BC3 2.4751 FSP 7123

MID-COURSE EXECUTION ACCURACY
SGT 3522.4 SGR 1518.0 SG3 2137.7
RRT .9451 RRF -.9799 RTF -.9604
SGB 3835.6 R23 -.1728 R13 -.9703
SG1 3808.0 SG2 459.0 THA 22.50

ORBIT DETERMINATION ACCURACY
ST 1482.6 SR 707.7 SS 2603.7
CRT .9732 CRS .9564 CST .9975
LSA 3071.4 MSA 209.3 SSA 33.1
EL1 1636.3 EL2 147.5 ALF 25.14

LAUNCH DATE OCT 20 1964 FLIGHT TIME 278.00 ARRIVAL DATE JUL 25 1965

HELIOCENTRIC CONIC DISTANCE 648.787 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 32.815 GAL -5.13 AZL 89.74 HCA 206.18 SMA 188.15 ECC .22604 INC .2585 V1 29.917
RP 230.62 LAP -.11 LOP 232.82 VP 21.108 GAP .66 AZP 90.23 TAL 331.55 TAP 177.73 RCA 145.62 APO 230.68 V2 23.847
RC 226.222 GL 2.28 GP 9.36 ZAL 131.50 ZAP 132.12 ETS 170.07 ZAE 166.57 ETE 127.35 ZAC 98.06 ETC 255.88 CLP 132.82

PLANETOCENTRIC CONIC

C3 13.711 VHL 3.703 DLA 10.62 RAL 160.70 RAD 6567.5 VEL 11.623 PTH 2.04 VHP 3.657 DPA 7.43 RAP 189.63 ECC 1.2257

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 46 29	2463.78	-24.73	57.91	19.08	104.25	19 27 32	1863.8	-22.53	49.93
90.00	9 30 53	4436.27	7.59	185.24	15.37	62.64	10 44 49	3836.3	3.86	178.54
100.00	20 13 7	2184.37	-25.77	37.05	18.77	105.70	20 49 31	1584.4	-23.36	29.08
100.00	10 46 56	4190.92	8.54	166.69	14.86	61.24	11 56 47	3590.9	4.63	160.08
110.00	21 33 22	1933.24	-28.51	17.00	17.79	109.71	22 5 35	1333.2	-25.56	9.06
110.00	11 43 10	4014.81	11.01	151.84	13.37	57.43	12 50 5	3414.8	6.64	145.47

DIFFERENTIAL CORRECTIONS
TDE .7370 TRA-1.7941 TC3 1.9726 BAU .4410
RDE .4211 RRA -.5887 RC3 1.3767 FAU .36920
FDE-4.0485 FRA11.4866 FC-23.3113 BSP 12993
BDE .8488 BRA 1.8882 BC3 2.4055 FSP 7445

MID-COURSE EXECUTION ACCURACY
SGT 3378.2 SGR 1524.1 SG3 2226.9
RRT .9420 RRF -.9786 RTF -.9583
SGB 3706.1 R23 -.1727 R13 -.9694
SG1 3676.1 SG2 470.1 THA 23.43

ORBIT DETERMINATION ACCURACY
ST 1421.4 SR 709.0 SS 2623.3
CRT .9723 CRS .9522 CST .9967
LSA 3058.5 MSA 221.6 SSA 32.6
EL1 1581.4 EL2 148.9 ALF 26.12

LAUNCH DATE OCT 20 1964 FLIGHT TIME 280.00 ARRIVAL DATE JUL 27 1965

HELIOCENTRIC CONIC DISTANCE 652.613 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 32.804 GAL -5.10 AZL 89.68 HCA 207.21 SMA 187.95 ECC .22507 INC .3207 V1 29.917
RP 230.24 LAP -.15 LOP 233.84 VP 21.136 GAP .34 AZP 90.29 TAL 331.64 TAP 178.84 RCA 145.65 APO 230.26 V2 23.887
RC 228.159 GL 2.85 GP 9.22 ZAL 131.34 ZAP 130.73 ETS 170.61 ZAE 165.64 ETE 132.67 ZAC 97.84 ETC 255.90 CLP 131.38

PLANETOCENTRIC CONIC

C3 13.570 VHL 3.684 DLA 11.20 RAL 160.78 RAD 6567.5 VEL 11.617 PTH 2.04 VHP 3.587 DPA 7.47 RAP 189.19 ECC 1.2233

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 42 2	2480.80	-25.01	59.07	19.20	103.73	19 23 23	1880.8	-22.88	51.05
90.00	9 36 0	4414.72	6.91	184.02	15.34	62.47	10 49 35	3814.7	3.17	177.33
100.00	20 9 0	2200.30	-26.06	38.15	18.90	105.19	20 45 41	1600.3	-23.72	30.13
100.00	10 51 43	4170.46	7.86	165.54	14.83	61.07	12 1 13	3570.5	3.94	158.95
110.00	21 30 0	1946.83	-28.82	17.93	17.94	109.23	22 2 27	1346.8	-25.93	9.95
110.00	11 47 12	3996.69	10.35	150.86	13.33	57.24	12 53 49	3396.7	5.96	144.52

DIFFERENTIAL CORRECTIONS
TDE .7001 TRA-1.7060 TC3 1.8617 BAU .4223
RDE .4206 RRA -.5848 RC3 1.3973 FAU .38294
FDE-4.0978 FRA11.8832 FC-24.4306 BSP 12512
BDE .8168 BRA 1.8035 BC3 2.3277 FSP 7763

MID-COURSE EXECUTION ACCURACY
SGT 3222.5 SGR 1532.1 SG3 2317.7
RRT .9383 RRF -.9773 RTF -.9555
SGB 3568.2 R23 -.1738 R13 -.9682
SG1 3535.3 SG2 483.0 THA 24.53

ORBIT DETERMINATION ACCURACY
ST 1358.7 SR 711.6 SS 2645.3
CRT .9717 CRS .9481 CST .9958
LSA 3048.7 MSA 233.7 SSA 32.3
EL1 1526.4 EL2 149.7 ALF 27.25

LAUNCH DATE OCT 20 1964 FLIGHT TIME 282.00 ARRIVAL DATE JUL 29 1965

HELIOCENTRIC CONIC DISTANCE 656.453 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 32.793 GAL -5.07 AZL 89.62 HCA 208.23 SMA 187.77 ECC .22415 INC .3797 V1 29.917
RP 229.86 LAP -.18 LOP 234.87 VP 21.165 GAP .01 AZP 90.33 TAL 331.72 TAP 179.95 RCA 145.68 APO 229.86 V2 23.927
RC 230.076 GL 3.39 GP 9.10 ZAL 131.18 ZAP 129.31 ETS 171.13 ZAE 164.58 ETE 137.43 ZAC 97.61 ETC 255.93 CLP 129.91

PLANETOCENTRIC CONIC

C3 13.441 VHL 3.666 DLA 11.75 RAL 160.87 RAD 6567.5 VEL 11.612 PTH 2.03 VHP 3.520 DPA 7.55 RAP 188.73 ECC 1.2212

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 37 49	2497.02	-25.27	60.19	19.33	103.22	19 19 26	1897.0	-23.20	52.13
90.00	9 40 54	4394.36	6.27	182.86	15.33	62.33	10 54 8	3794.4	2.52	176.20
100.00	20 5 7	2215.46	-26.32	39.19	19.04	104.70	20 42 3	1615.5	-24.04	31.13
100.00	10 56 17	4151.16	7.23	164.46	14.81	60.92	12 5 28	3551.2	3.29	157.88
110.00	21 26 51	1959.74	-29.11	18.83	18.10	108.77	21 59 30	1359.7	-26.27	10.80
110.00	11 51 3	3979.63	9.72	149.94	13.30	57.07	12 57 22	3379.6	5.31	143.62

DIFFERENTIAL CORRECTIONS
TDE .6631 TRA-1.6147 TC3 1.7348 BAU .4026
RDE .4206 RRA -.5821 RC3 1.4177 FAU .39672
FDE-4.1469 FRA12.2903 FC-25.5517 BSP 12001
BDE .7853 BRA 1.7164 BC3 2.2404 FSP 8090

MID-COURSE EXECUTION ACCURACY
SGT 3055.3 SGR 1541.5 SG3 2409.8
RRT .9339 RRF -.9761 RTF -.9518
SGB 3422.2 R23 -.1757 R13 -.9667
SG1 3385.8 SG2 497.3 THA 25.83

ORBIT DETERMINATION ACCURACY
ST 1293.6 SR 714.7 SS 2667.7
CRT .9713 CRS .9440 CST .9948
LSA 3039.6 MSA 245.9 SSA 32.0
EL1 1470.3 EL2 149.6 ALF 28.54

LAUNCH DATE OCT 20 1964 FLIGHT TIME 284.00 ARRIVAL DATE JUL 31 1965

HELIOCENTRIC CONIC DISTANCE 660.296 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 32.783 GAL -5.04 AZL 89.56 HCA 209.26 SMA 187.60 ECC .22329 INC .4352 V1 29.917
RP 229.47 LAP -.21 LOP 235.90 VP 21.195 GAP -.30 AZP 90.38 TAL 331.80 TAP 181.05 RCA 145.71 APO 229.48 V2 23.968
RC 231.973 GL 3.90 GP 8.98 ZAL 131.04 ZAP 127.83 ETS 171.62 ZAE 163.37 ETE 141.64 ZAC 97.39 ETC 255.96 CLP 128.39

PLANETOCENTRIC CONIC

C3 13.325 VHL 3.650 DLA 12.26 RAL 160.95 RAD 6567.5 VEL 11.607 PTH 2.03 VHP 3.456 DPA 7.64 RAP 188.24 ECC 1.2193

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 33 50	2512.48	-25.51	61.26	19.47	102.74	19 15 43	1912.5	-23.50	53.17
90.00	9 45 35	4375.12	5.66	181.78	15.34	62.21	10 58 30	3775.1	1.90	175.12
100.00	20 1 27	2229.90	-26.57	40.20	19.19	104.23	20 38 37	1629.9	-24.35	32.10
100.00	11 0 39	4132.93	6.62	163.45	14.82	60.78	12 9 32	3532.9	2.68	156.88
110.00	21 23 52	1972.03	-29.37	19.69	18.26	108.33	21 56 44	1372.0	-26.59	11.61
110.00	11 54 44	3963.57	9.12	149.07	13.29	56.91	13 0 47	3363.6	4.70	142.77

DIFFERENTIAL CORRECTIONS
TDE .6266 TRA-1.5188 TC3 1.5939 BAU .3825
RDE .4211 RRA -.5801 RC3 1.4386 FAU .41069
FDE-4.1971 FRA12.6999 FC-26.6827 BSP 11452
BDE .7550 BRA 1.6258 BC3 2.1471 FSP 8422

MID-COURSE EXECUTION ACCURACY
SGT 2876.2 SGR 1551.8 SG3 2502.6
RRT .9287 RRF -.9749 RTF -.9472
SGB 3268.2 R23 -.1783 R13 -.9650
SG1 3227.7 SG2 512.8 THA 27.36

ORBIT DETERMINATION ACCURACY
ST 1226.4 SR 718.4 SS 2690.3
CRT .9713 CRS .9398 CST .9934
LSA 3031.6 MSA 258.3 SSA 31.6
EL1 1413.6 EL2 148.2 ALF 30.00

LAUNCH DATE OCT 20 1964 FLIGHT TIME 286.00 ARRIVAL DATE AUG 2 1965

HELIOCENTRIC CONIC DISTANCE 664.153 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 32.774 GAL -5.01 AZL 89.51 HCA 210.29 SMA 187.43 ECC .22248 INC .4870 V1 29.917
RP 229.09 LAP -.25 LOP 236.93 VP 21.227 GAP -.61 AZP 90.42 TAL 331.86 TAP 182.15 RCA 145.73 APO 229.13 V2 24.009
RC 233.848 GL 4.38 GP 8.87 ZAL 130.91 ZAP 126.31 ETS 172.10 ZAE 162.05 ETE 145.35 ZAC 97.17 ETC 255.99 CLP 126.82

PLANETOCENTRIC CONIC

C3 13.220 VHL 3.636 DLA 12.75 RAL 161.05 RAD 6567.5 VEL 11.602 PTH 2.03 VHP 3.395 DPA 7.76 RAP 187.71 ECC 1.2176

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 30 5	2527.23	-25.72	62.29	19.61	102.27	19 12 12	1927.2	-23.78	54.16
90.00	9 50 5	4356.95	5.08	180.76	15.37	62.11	11 2 42	3756.9	1.31	174.11
100.00	19 58 0	2243.67	-26.79	41.16	19.34	103.77	20 35 24	1643.7	-24.63	33.02
100.00	11 4 51	4115.74	6.05	162.49	14.84	60.67	12 13 26	3515.7	2.10	155.94
110.00	21 21 5	1983.72	-29.62	20.51	18.43	107.90	21 54 8	1383.7	-26.89	12.39
110.00	11 58 15	3948.45	8.56	148.26	13.30	56.78	13 4 4	3348.5	4.13	141.98

DIFFERENTIAL CORRECTIONS
TDE .5901 TRA-1.4188 TC3 1.4381 BAU .3622
RDE .4223 RRA -.5785 RC3 1.4600 FAU .42487
FDE-4.2524 FRA13.1095 FC-27.8226 BSP 10866
BDE .7256 BRA 1.5322 BC3 2.0493 FSP 8748

MID-COURSE EXECUTION ACCURACY
SGT 2685.6 SGR 1563.2 SG3 2596.1
RRT .9222 RRF -.9737 RTF -.9410
SGB 3107.4 R23 -.1819 R13 -.9630
SG1 3061.8 SG2 530.3 THA 29.19

ORBIT DETERMINATION ACCURACY
ST 1156.9 SR 722.8 SS 2714.4
CRT .9717 CRS .9358 CST .9918
LSA 3025.7 MSA 270.2 SSA 31.3
EL1 1356.4 EL2 145.6 ALF 31.67

LAUNCH DATE OCT 20 1964 FLIGHT TIME 288.00 ARRIVAL DATE AUG 4 1965

HELIOCENTRIC CONIC DISTANCE 668.019 EARTH TO MARS

RL	148.94	LAL	.00	LOL	26.64	VL	32.765	GAL	-4.99	AZL	89.46	HCA	211.32	SMA	187.28	ECC	.22173	INC	.5360
RP	228.70	LAP	-.28	LOP	237.96	VP	21.259	GAP	-.92	AZP	90.46	TAL	331.91	TAP	183.24	RCA	145.75	APO	228.80
RC	235.703	GL	4.84	GP	8.76	ZAL	130.79	ZAP	124.75	ETS	172.56	ZAE	160.63	ETE	148.61	ZAC	96.95	ETC	256.03

V1 29.917 V2 24.049 CLP 125.22

PLANETOCENTRIC CONIC

C3	13.127	VHL	3.623	DLA	13.20	RAL	161.14	RAD	6567.5	VEL	11.598	PTH	2.03	VHP	3.337	DPA	7.91	RAP	187.15

ECC 1.2160

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 26 32	2541.32	-25.92	63.27	19.77	101.81	19 8 53	1941.3	-24.03	55.11
90.00	9 54 24	4339.78	4.54	179.79	15.42	62.02	11 6 44	3739.8	.76	173.15
100.00	19 54 45	2256.81	-27.00	42.08	19.50	103.33	20 32 22	1656.8	-24.90	33.91
100.00	11 8 52	4099.53	5.51	161.59	14.88	60.57	12 17 12	3499.5	1.55	155.05
110.00	21 18 28	1994.86	-29.85	21.29	18.61	107.49	21 51 43	1394.9	-27.17	13.13
110.00	12 1 39	3934.24	8.03	147.51	13.34	56.66	13 7 13	3334.2	3.59	141.23

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5533	TRA	-1.3150	TC3	1.2653	BAU	.3418	SGT	2483.8	SGR	1575.1	SG3	2689.8	ST	1084.9	SR	727.5
RDE	.4237	RRA	-.5777	RC3	1.4808	FAU	.43897	RRT	.9137	RRF	-.9726	RTF	-.9327	CRT	.9725	CRS	.9318
FDE	-4.3053	FRA	13.5258	FC	-28.9514	BSP	10259	SGB	2941.1	R23	-.1866	R13	-.9607	LSA	3020.3	MSA	282.2
BDE	.6969	BRA	1.4363	BC3	1.9478	FSP	9083	SG1	2889.2	SG2	550.3	THA	31.36	EL1	1298.6	EL2	141.5

SS 2738.0 CST .9898 SSA 31.0 ALF 33.56

LAUNCH DATE OCT 20 1964 FLIGHT TIME 290.00 ARRIVAL DATE AUG 6 1965

HELIOCENTRIC CONIC DISTANCE 671.894 EARTH TO MARS

RL	148.94	LAL	.00	LOL	26.64	VL	32.756	GAL	-4.97	AZL	89.42	HCA	212.36	SMA	187.13	ECC	.22103	INC	.5825
RP	228.31	LAP	-.31	LOP	239.00	VP	21.293	GAP	-1.22	AZP	90.49	TAL	331.96	TAP	184.32	RCA	145.77	APO	228.50
RC	237.537	GL	5.27	GP	8.67	ZAL	130.69	ZAP	123.14	ETS	173.00	ZAE	159.11	ETE	151.48	ZAC	96.72	ETC	256.07

V1 29.917 V2 24.090 CLP 123.57

PLANETOCENTRIC CONIC

C3	13.044	VHL	3.612	DLA	13.63	RAL	161.25	RAD	6567.5	VEL	11.594	PTH	2.03	VHP	3.282	DPA	8.07	RAP	186.56

ECC 1.2147

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 23 12	2554.77	-26.11	64.21	19.93	101.37	19 5 47	1954.8	-24.28	56.02
90.00	9 58 34	4323.60	4.02	178.88	15.49	61.95	11 10 37	3723.6	.24	172.25
100.00	19 51 42	2269.34	-27.20	42.96	19.67	102.91	20 29 32	1669.3	-25.15	34.76
100.00	11 12 44	4084.26	5.00	160.75	14.95	60.49	12 20 49	3484.3	1.03	154.21
110.00	21 16 2	2005.47	-30.07	22.04	18.79	107.09	21 49 27	1405.5	-27.43	13.84
110.00	12 4 54	3920.89	7.53	146.80	13.39	56.56	13 10 15	3320.9	3.08	140.54

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5163	TRA	-1.2067	TC3	1.0761	BAU	.3220	SGT	2270.5	SGR	1587.0	SG3	2782.6	ST	1010.3	SR	732.4
RDE	.4254	RRA	-.5773	RC3	1.5009	FAU	.45293	RRT	.9024	RRF	-.9714	RTF	-.9213	CRT	.9739	CRS	.9278
FDE	-4.3583	FRA	13.9410	FC	-30.0621	BSP	9626	SGB	2770.2	R23	-.1919	R13	-.9579	LSA	3015.8	MSA	294.1
BDE	.6690	BRA	1.3376	BC3	1.8468	FSP	9418	SG1	2710.3	SG2	572.9	THA	33.97	EL1	1240.5	EL2	135.5

SS 2761.4 CST .9872 SSA 30.7 ALF 35.71

LAUNCH DATE OCT 20 1964 FLIGHT TIME 292.00 ARRIVAL DATE AUG 8 1965

HELIOCENTRIC CONIC DISTANCE 675.779 EARTH TO MARS

RL	148.94	LAL	.00	LOL	26.64	VL	32.748	GAL	-4.95	AZL	89.37	HCA	213.40	SMA	187.00	ECC	.22038	INC	.6269
RP	227.92	LAP	-.35	LOP	240.04	VP	21.327	GAP	-1.52	AZP	90.52	TAL	331.99	TAP	185.39	RCA	145.79	APO	228.21
RC	239.350	GL	5.69	GP	8.57	ZAL	130.60	ZAP	121.49	ETS	173.43	ZAE	157.50	ETE	154.02	ZAC	96.49	ETC	256.11

V1 29.917 V2 24.132 CLP 121.89

PLANETOCENTRIC CONIC

C3	12.971	VHL	3.602	DLA	14.03	RAL	161.36	RAD	6567.5	VEL	11.591	PTH	2.03	VHP	3.230	DPA	8.26	RAP	185.93

ECC 1.2135

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 20 5	2567.60	-26.28	65.12	20.10	100.95	19 2 52	1967.6	-24.50	56.90
90.00	10 2 34	4308.35	3.53	178.03	15.57	61.89	11 14 22	3708.3	-.26	171.40
100.00	19 48 52	2281.28	-27.38	43.80	19.85	102.50	20 26 53	1681.3	-25.38	35.57
100.00	11 16 28	4069.90	4.51	159.96	15.03	60.42	12 24 18	3469.9	.54	153.42
110.00	21 13 47	2015.58	-30.27	22.76	18.99	106.71	21 47 22	1415.6	-27.68	14.52
110.00	12 8 2	3908.37	7.06	146.13	13.46	56.47	13 13 10	3308.4	2.60	139.88

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4797	TRA	-1.0933	TC3	.8729	BAU	.3040	SGT	2047.5	SGR	1599.0	SG3	2874.4	ST	933.9	SR	737.5
RDE	.4274	RRA	-.5771	RC3	1.5201	FAU	.46673	RRT	.8870	RRF	-.9703	RTF	-.9053	CRT	.9760	CRS	.9238
FDE	-4.4112	FRA	14.3545	FC	-31.1516	BSP	8976	SGB	2597.9	R23	-.1970	R13	-.9550	LSA	3012.7	MSA	306.2
BDE	.6425	BRA	1.2363	BC3	1.7529	FSP	9753	SG1	2528.2	SG2	597.9	THA	37.14	EL1	1183.2	EL2	126.8

SS 2784.7 CST .9837 SSA 30.4 ALF 38.14

LAUNCH DATE OCT 20 1964 FLIGHT TIME 294.00 ARRIVAL DATE AUG 10 1965

HELIOCENTRIC CONIC DISTANCE 679.673 EARTH TO MARS

RL	148.94	LAL	.00	LOL	26.64	VL	32.741	GAL	-4.94	AZL	89.33	HCA	214.45	SMA	186.87	ECC	.21979	INC	.6683
RP	227.53	LAP	-.38	LOP	241.08	VP	21.362	GAP	-1.81	AZP	90.55	TAL	332.01	TAP	186.46	RCA	145.80	APO	227.94
RC	241.142	GL	6.08	GP	8.48	ZAL	130.53	ZAP	119.80	ETS	173.84	ZAE	155.82	ETE	156.27	ZAC	96.25	ETC	256.16

V1 29.917 V2 24.173 CLP 120.16

PLANETOCENTRIC CONIC

C3	12.908	VHL	3.593	DLA	14.41	RAL	161.47	RAD	6567.5	VEL	11.589	PTH	2.03	VHP	3.181	DPA	8.46	RAP	185.28

ECC 1.2124

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 17 10	2579.85	-26.43	65.98	20.29	100.55	19 0 10	1979.8	-24.71	57.73
90.00	10 6 25	4294.02	3.07	177.23	15.67	61.84	11 17 59	3694.0	-.72	170.60
100.00	19 46 13	2292.68	-27.54	44.61	20.04	102.10	20 24 25	1692.7	-25.60	36.35
100.00	11 20 3	4056.42	4.06	159.21	15.13	60.36	12 27 39	3456.4	.08	152.68
110.00	21 11 42	2025.21	-30.45	23.45	19.20	106.34	21 45 27	1425.2	-27.91	15.18
110.00	12 11 3	3896.66	6.62	145.51	13.54	56.39	13 16 0	3296.7	2.15	139.27

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4428	TRA	-.9755	TC3	.6535	BAU	.2886	SGT	1816.3	SGR	1611.1	SG3	2965.1	ST	855.0	SR	743.1
RDE	.4299	RRA	-.5769	RC3	1.5394	FAU	.48063	RRT	.8643	RRF	-.9692	RTF	-.8814	CRT	.9787	CRS	.9200
FDE	-4.4698	FRA	14.7566	FC	-32.2352	BSP	8307	SGB	2427.9	R23	-.2017	R13	-.9520	LSA	3011.9	MSA	317.6
BDE	.6171	BRA	1.1333	BC3	1.6723	FSP	10069	SG1	2345.4	SG2	627.6	THA	41.04	EL1	1126.9	EL2	115.7

SS 2808.9 CST .9792 SSA 30.1 ALF 40.91

LAUNCH DATE OCT 20 1964 FLIGHT TIME 296.00 ARRIVAL DATE AUG 12 1965

HELIOCENTRIC CONIC DISTANCE 683.577 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 32.734 GAL -4.92 AZL 89.29 HCA 215.50 SMA 186.75 ECC .21924 INC .7080 V1 29.917
RP 227.14 LAP -.41 LOP 242.13 VP 21.399 GAP -2.10 AZP 90.58 TAL 332.02 TAP 187.52 RCA 145.81 APO 227.69 V2 24.214
RC 242.914 GL 6.46 GP 8.40 ZAL 130.47 ZAP 118.06 ETS 174.25 ZAE 154.07 ETE 158.27 ZAC 96.01 ETC 256.21 CLP 118.39

PLANETOCENTRIC CONIC

C3 12.855 VHL 3.585 DLA 14.77 RAL 161.60 RAD 6567.5 VEL 11.586 PTH 2.03 VHP 3.136 DPA 8.68 RAP 184.59 ECC 1.2116

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 14 28	2591.52	-26.57	66.80	20.48	100.16	18 57 39	1991.5	-24.90	58.53
90.00	10 10 7	4280.57	2.64	176.48	15.80	61.80	11 21 28	3680.6	-1.15	169.85
100.00	19 43 46	2303.53	-27.69	45.38	20.24	101.72	20 22 9	1703.5	-25.80	37.09
100.00	11 23 30	4043.79	3.64	158.52	15.24	60.31	12 30 54	3443.8	-.34	151.99
110.00	21 9 47	2034.37	-30.63	24.11	19.41	105.98	21 43 41	1434.4	-28.13	15.80
110.00	12 13 58	3885.71	6.20	144.93	13.65	56.32	13 18 44	3285.7	1.74	138.70

DIFFERENTIAL CORRECTIONS
TDE .4079 TRA -.8510 TC3 .4258 BAU .2777
RDE .4331 RRA -.5761 RC3 1.5590 FAU .49479
FDE-4.5408 FRA15.1381 FC-33.3222 BSP 7596
BDE .5949 BRA 1.0277 BC3 1.6161 FSP 10347

MID-COURSE EXECUTION ACCURACY
SGT 1579.8 SGR 1623.4 SG3 3054.1
RRT .8311 RRF -.9681 RTF -.8454
SGB 2265.2 R23 -.2026 R13 -.9495
SG1 2167.5 SG2 658.0 THA 45.94

ORBIT DETERMINATION ACCURACY
ST 776.5 SR 749.5 SS 2835.3
CRT .9828 CRS .9168 CST .9726
LSA 3015.7 MSA 329.2 SSA 29.7
EL1 1074.6 EL2 100.1 ALF 43.97

LAUNCH DATE OCT 20 1964 FLIGHT TIME 298.00 ARRIVAL DATE AUG 14 1965

HELIOCENTRIC CONIC DISTANCE 687.488 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 32.728 GAL -4.92 AZL 89.25 HCA 216.55 SMA 186.64 ECC .21874 INC .7461 V1 29.917
RP 226.75 LAP -.44 LOP 243.19 VP 21.436 GAP -2.38 AZP 90.60 TAL 332.02 TAP 188.57 RCA 145.81 APO 227.46 V2 24.256
RC 244.666 GL 6.81 GP 8.31 ZAL 130.43 ZAP 116.29 ETS 174.64 ZAE 152.25 ETE 160.06 ZAC 95.77 ETC 256.26 CLP 116.59

PLANETOCENTRIC CONIC

C3 12.811 VHL 3.579 DLA 15.10 RAL 161.74 RAD 6567.5 VEL 11.584 PTH 2.03 VHP 3.094 DPA 8.92 RAP 183.87 ECC 1.2108

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 11 58	2602.63	-26.71	67.59	20.69	99.78	18 55 21	2002.6	-25.08	59.30
90.00	10 13 41	4268.00	2.23	175.77	15.94	61.76	11 24 49	3668.0	-1.56	169.15
100.00	19 41 31	2313.85	-27.84	46.11	20.45	101.36	20 20 5	1713.9	-25.99	37.80
100.00	11 26 50	4032.01	3.24	157.87	15.38	60.27	12 34 2	3432.0	-.74	151.34
110.00	21 8 3	2043.09	-30.79	24.74	19.64	105.64	21 42 6	1443.1	-28.34	16.40
110.00	12 16 47	3875.54	5.82	144.40	13.78	56.26	13 21 22	3275.5	1.35	138.17

DIFFERENTIAL CORRECTIONS
TDE .3693 TRA -.7247 TC3 .1720 BAU .2711
RDE .4355 RRA -.5764 RC3 1.5736 FAU .50734
FDE-4.5865 FRA15.5354 FC-34.2841 BSP 6993
BDE .5710 BRA .9260 BC3 1.5829 FSP 10673

MID-COURSE EXECUTION ACCURACY
SGT 1344.9 SGR 1633.5 SG3 3138.7
RRT .7735 RRF -.9670 RTF -.7842
SGB 2115.9 R23 -.1982 R13 -.9482
SG1 1997.8 SG2 696.9 THA 52.10

ORBIT DETERMINATION ACCURACY
ST 692.5 SR 754.6 SS 2856.0
CRT .9869 CRS .9128 CST .9636
LSA 3014.8 MSA 340.5 SSA 29.4
EL1 1020.8 EL2 82.7 ALF 47.49

LAUNCH DATE OCT 20 1964 FLIGHT TIME 300.00 ARRIVAL DATE AUG 16 1965

HELIOCENTRIC CONIC DISTANCE 691.409 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 32.722 GAL -4.91 AZL 89.22 HCA 217.61 SMA 186.53 ECC .21829 INC .7821 V1 29.917
RP 226.36 LAP -.48 LOP 244.24 VP 21.473 GAP -2.66 AZP 90.62 TAL 332.01 TAP 189.62 RCA 145.82 APO 227.25 V2 24.297
RC 246.398 GL 7.15 GP 8.23 ZAL 130.41 ZAP 114.47 ETS 175.03 ZAE 150.37 ETE 161.67 ZAC 95.52 ETC 256.32 CLP 114.74

PLANETOCENTRIC CONIC

C3 12.777 VHL 3.574 DLA 15.41 RAL 161.88 RAD 6567.5 VEL 11.583 PTH 2.03 VHP 3.055 DPA 9.17 RAP 183.12 ECC 1.2103

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 9 41	2613.20	-26.83	68.34	20.91	99.43	18 53 14	2013.2	-25.25	60.03
90.00	10 17 8	4256.29	1.85	175.12	16.09	61.74	11 28 4	3656.3	-1.94	168.49
100.00	19 39 28	2323.67	-27.96	46.81	20.68	101.02	20 18 11	1723.7	-26.16	38.48
100.00	11 30 2	4021.04	2.87	157.26	15.53	60.23	12 37 3	3421.0	-1.12	150.74
110.00	21 6 29	2051.37	-30.94	25.34	19.88	105.32	21 40 41	1451.4	-28.53	16.97
110.00	12 19 30	3866.11	5.46	143.90	13.92	56.20	13 23 56	3266.1	.99	137.68

DIFFERENTIAL CORRECTIONS
TDE .3321 TRA -.5920 TC3 -.0896 BAU .2719
RDE .4388 RRA -.5756 RC3 1.5890 FAU .52029
FDE-4.6485 FRA15.8982 FC-35.2538 BSP 6408
BDE .5503 BRA .8257 BC3 1.5915 FSP 10948

MID-COURSE EXECUTION ACCURACY
SGT 1120.9 SGR 1643.5 SG3 3220.6
RRT .6751 RRF -.9658 RTF -.6790
SGB 1989.4 R23 -.1799 R13 -.9496
SG1 1848.5 SG2 735.2 THA 60.07

ORBIT DETERMINATION ACCURACY
ST 608.8 SR 760.5 SS 2879.1
CRT .9918 CRS .9094 CST .9498
LSA 3018.9 MSA 351.4 SSA 29.1
EL1 972.2 EL2 60.9 ALF 51.37

LAUNCH DATE OCT 20 1964 FLIGHT TIME 302.00 ARRIVAL DATE AUG 18 1965

HELIOCENTRIC CONIC DISTANCE 695.338 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 32.716 GAL -4.90 AZL 89.18 HCA 218.66 SMA 186.44 ECC .21788 INC .8167 V1 29.917
RP 225.97 LAP -.51 LOP 245.30 VP 21.512 GAP -2.93 AZP 90.64 TAL 331.99 TAP 190.66 RCA 145.81 APO 227.06 V2 24.339
RC 248.110 GL 7.48 GP 8.14 ZAL 130.40 ZAP 112.63 ETS 175.40 ZAE 148.43 ETE 163.12 ZAC 95.26 ETC 256.39 CLP 112.87

PLANETOCENTRIC CONIC

C3 12.752 VHL 3.571 DLA 15.70 RAL 162.03 RAD 6567.5 VEL 11.582 PTH 2.03 VHP 3.019 DPA 9.43 RAP 182.34 ECC 1.2099

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 7 36	2623.23	-26.94	69.05	21.15	99.08	18 51 20	2023.2	-25.40	60.72
90.00	10 20 26	4245.40	1.50	174.51	16.27	61.72	11 31 12	3645.4	-2.29	167.88
100.00	19 37 37	2332.98	-28.08	47.48	20.92	100.68	20 16 30	1733.0	-26.32	39.12
100.00	11 33 7	4010.88	2.52	156.71	15.71	60.20	12 39 58	3410.9	-1.46	150.18
110.00	21 5 6	2059.23	-31.08	25.91	20.14	105.01	21 39 25	1459.2	-28.71	17.51
110.00	12 22 7	3857.40	5.13	143.44	14.08	56.16	13 26 25	3257.4	.65	137.22

DIFFERENTIAL CORRECTIONS
TDE .2943 TRA -.4552 TC3 -.3672 BAU .2801
RDE .4420 RRA -.5750 RC3 1.6012 FAU .53223
FDE-4.7029 FRA16.2551 FC-36.1341 BSP 5930
BDE .5310 BRA .7334 BC3 1.6427 FSP 11220

MID-COURSE EXECUTION ACCURACY
SGT 931.3 SGR 1652.0 SG3 3297.8
RRT .4953 RRF -.9647 RTF -.4881
SGB 1896.4 R23 -.1399 R13 -.9545
SG1 1732.4 SG2 771.5 THA 70.35

ORBIT DETERMINATION ACCURACY
ST 524.2 SR 766.0 SS 2900.3
CRT .9962 CRS .9059 CST .9277
LSA 3023.4 MSA 362.4 SSA 28.8
EL1 927.4 EL2 37.9 ALF 55.65

LAUNCH DATE OCT 20 1964 FLIGHT TIME 304.00 ARRIVAL DATE AUG 20 1965

HELIOCENTRIC CONIC DISTANCE 699.276 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 32.711 GAL -4.90 AZL 89.15 HCA 219.73 SMA 186.35 ECC .21752 INC .8499 V1 29.917
RP 225.58 LAP -.54 LOP 246.36 VP 21.551 GAP -3.20 AZP 90.65 TAL 331.96 TAP 191.68 RCA 145.81 APO 226.88 V2 24.381
RC 249.803 GL 7.79 GP 8.06 ZAL 130.41 ZAP 110.74 ETS 175.77 ZAE 146.45 ETE 164.43 ZAC 95.00 ETC 256.46 CLP 110.96

PLANETOCENTRIC CONIC

C3 12.785 VHL 3.569 DLA 15.97 RAL 162.20 RAD 6567.5 VEL 11.581 PTH 2.03 VHP 2.987 DPA 9.71 RAP 181.54 ECC 1.2096

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 5 45	2632.73	-27.04	69.73	21.40	98.76	18 49 37	2032.7	-25.55	61.38
90.00	10 23 37	4235.35	1.18	173.95	16.47	61.71	11 34 13	3635.4	-2.61	167.32
100.00	19 35 57	2341.80	-28.19	48.11	21.18	100.37	20 14 59	1741.8	-26.47	39.73
100.00	11 36 6	4001.52	2.21	156.19	15.90	60.18	12 42 47	3401.5	-1.78	149.67
110.00	21 3 53	2066.68	-31.21	26.45	20.41	104.71	21 38 20	1466.7	-28.87	18.02
110.00	12 24 39	3849.40	4.83	143.02	14.26	56.12	13 28 49	3249.4	.35	136.80

DIFFERENTIAL CORRECTIONS
TDE .2553 TRA -.3139 TC3 -.6597 BAU .2964
RDE .4451 RRA -.5740 RC3 1.6108 FAU .54333
FDE-4.7525 FRA16.5921 FC-36.9347 BSP 5611
BDE .5131 BRA .6542 BC3 1.7406 FSP 11480

MID-COURSE EXECUTION ACCURACY
SGT 815.2 SGR 1658.7 SG3 3369.5
RRT .1879 RRF -.9634 RTF -.1648
SGB 1848.2 R23 -.0716 R13 -.9609
SG1 1667.8 SG2 796.2 THA 83.16

ORBIT DETERMINATION ACCURACY
ST 439.3 SR 771.1 SS 2919.4
CRT .9969 CRS .9024 CST .8903
LSA 3028.3 MSA 372.9 SSA 28.5
EL1 886.9 EL2 30.0 ALF 60.37

LAUNCH DATE OCT 20 1964 FLIGHT TIME 306.00 ARRIVAL DATE AUG 22 1965

HELIOCENTRIC CONIC DISTANCE 703.222 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 32.706 GAL -4.91 AZL 89.12 HCA 220.80 SMA 186.26 ECC .21720 INC .8816 V1 29.917
RP 225.19 LAP -.58 LOP 247.43 VP 21.591 GAP -3.47 AZP 90.67 TAL 331.91 TAP 192.71 RCA 145.81 APO 226.72 V2 24.423
RC 251.477 GL 8.08 GP 7.97 ZAL 130.44 ZAP 108.83 ETS 176.13 ZAE 144.42 ETE 165.63 ZAC 94.73 ETC 256.53 CLP 109.02

PLANETOCENTRIC CONIC

C3 12.728 VHL 3.568 DLA 16.22 RAL 162.38 RAD 6567.5 VEL 11.581 PTH 2.03 VHP 2.959 DPA 9.99 RAP 180.71 ECC 1.2095

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 4 5	2641.70	-27.13	70.37	21.66	98.45	18 48 7	2041.7	-25.68	62.00
90.00	10 26 41	4226.13	.88	173.44	16.68	61.70	11 37 7	3626.1	-2.91	166.81
100.00	19 34 30	2350.13	-28.29	48.71	21.45	100.07	20 13 40	1750.1	-26.61	40.31
100.00	11 38 57	3992.93	1.92	155.72	16.11	60.16	12 45 30	3392.9	-2.07	149.20
110.00	21 2 51	2073.72	-31.33	26.96	20.69	104.43	21 37 25	1473.7	-29.03	18.51
110.00	12 27 6	3842.11	4.55	142.64	14.46	56.08	13 31 8	3242.1	.07	136.42

DIFFERENTIAL CORRECTIONS
TDE .2162 TRA -.1681 TC3 -.9630 BAU .3204
RDE .4485 RRA -.5723 RC3 1.6182 FAU .55370
FDE-4.8046 FRA16.9030 FC-37.6620 BSP 5488
BDE .4979 BRA .5965 BC3 1.8831 FSP 11711

MID-COURSE EXECUTION ACCURACY
SGT 819.6 SGR 1663.8 SG3 3435.3
RRT -.2011 RRF -.9621 RTF .2406
SGB 1854.7 R23 .0109 R13 -.9632
SG1 1674.4 SG2 797.8 THA 97.33

ORBIT DETERMINATION ACCURACY
ST 357.8 SR 776.2 SS 2938.2
CRT .9849 CRS .8990 CST .8211
LSA 3035.8 MSA 383.1 SSA 28.2
EL1 852.9 EL2 56.4 ALF 65.47

LAUNCH DATE OCT 20 1964 FLIGHT TIME 308.00 ARRIVAL DATE AUG 24 1965

HELIOCENTRIC CONIC DISTANCE 707.174 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 32.701 GAL -4.91 AZL 89.09 HCA 221.87 SMA 186.19 ECC .21693 INC .9123 V1 29.917
RP 224.80 LAP -.61 LOP 248.50 VP 21.632 GAP -3.73 AZP 90.68 TAL 331.85 TAP 193.72 RCA 145.80 APO 226.57 V2 24.465
RC 253.132 GL 8.36 GP 7.88 ZAL 130.48 ZAP 106.90 ETS 176.48 ZAE 142.36 ETE 166.72 ZAC 94.45 ETC 256.61 CLP 107.06

PLANETOCENTRIC CONIC

C3 12.729 VHL 3.568 DLA 16.44 RAL 162.57 RAD 6567.5 VEL 11.581 PTH 2.03 VHP 2.933 DPA 10.28 RAP 179.86 ECC 1.2095

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 2 40	2650.14	-27.21	70.98	21.94	98.16	18 46 50	2050.1	-25.80	62.59
90.00	10 29 37	4217.74	.61	172.97	16.92	61.69	11 39 55	3617.7	-3.18	166.34
100.00	19 33 16	2357.97	-28.39	49.28	21.73	99.78	20 12 34	1758.0	-26.74	40.86
100.00	11 41 42	3985.15	1.65	155.29	16.34	60.15	12 48 7	3385.1	-2.33	148.77
110.00	21 1 59	2080.35	-31.44	27.45	20.99	104.16	21 36 40	1480.4	-29.17	18.97
110.00	12 29 28	3835.53	4.30	142.29	14.68	56.06	13 33 23	3235.5	-.18	136.08

DIFFERENTIAL CORRECTIONS
TDE .1725 TRA -.0203 TC3-1.2909 BAU .3519
RDE .4495 RRA -.5726 RC3 1.6153 FAU .56027
FDE-4.7894 FRA17.2539 FC-38.1043 BSP 5649
BDE .4815 BRA .5730 BC3 2.0678 FSP 12053

MID-COURSE EXECUTION ACCURACY
SGT 962.5 SGR 1664.0 SG3 3491.5
RRT -.5178 RRF -.9605 RTF .5639
SGB 1922.3 R23 .0845 R13 -.9600
SG1 1757.0 SG2 779.8 THA 110.99

ORBIT DETERMINATION ACCURACY
ST 278.5 SR 777.9 SS 2944.0
CRT .9320 CRS .8935 CST .6787
LSA 3032.2 MSA 392.8 SSA 28.3
EL1 820.7 EL2 95.7 ALF 71.28

LAUNCH DATE OCT 20 1964 FLIGHT TIME 310.00 ARRIVAL DATE AUG 26 1965

HELIOCENTRIC CONIC DISTANCE 711.137 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 32.697 GAL -4.92 AZL 89.06 HCA 222.94 SMA 186.12 ECC .21670 INC .9415 V1 29.917
RP 224.41 LAP -.64 LOP 249.58 VP 21.673 GAP -3.99 AZP 90.69 TAL 331.78 TAP 194.72 RCA 145.78 APO 226.45 V2 24.506
RC 254.766 GL 8.63 GP 7.79 ZAL 130.54 ZAP 104.94 ETS 176.82 ZAE 140.26 ETE 167.73 ZAC 94.17 ETC 256.69 CLP 105.08

PLANETOCENTRIC CONIC

C3 12.739 VHL 3.569 DLA 16.65 RAL 162.76 RAD 6567.5 VEL 11.581 PTH 2.03 VHP 2.911 DPA 10.58 RAP 178.99 ECC 1.2097

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 1 25	2658.10	-27.29	71.55	22.24	97.88	18 45 44	2058.1	-25.91	63.15
90.00	10 32 26	4210.12	.37	172.54	17.16	61.69	11 42 36	3610.1	-3.42	165.91
100.00	19 32 12	2365.36	-28.47	49.81	22.03	99.52	20 11 37	1765.4	-26.86	41.38
100.00	11 44 21	3978.09	1.41	154.90	16.58	60.14	12 50 39	3378.1	-2.57	148.38
110.00	21 1 17	2086.62	-31.54	27.90	21.30	103.91	21 36 4	1486.6	-29.31	19.41
110.00	12 31 45	3829.59	4.08	141.98	14.92	56.03	13 35 35	3229.6	-.41	135.77

DIFFERENTIAL CORRECTIONS
TDE .1345 TRA .1362 TC3-1.6060 BAU .3887
RDE .4543 RRA -.5683 RC3 1.6212 FAU .57018
FDE-4.8667 FRA17.4759 FC-38.7485 BSP 5986
BDE .4738 BRA .5844 BC3 2.2820 FSP 12163

MID-COURSE EXECUTION ACCURACY
SGT 1188.7 SGR 1666.7 SG3 3545.1
RRT -.6999 RRF -.9591 RTF .7526
SGB 2047.1 R23 .1149 R13 -.9590
SG1 1908.1 SG2 741.6 THA 121.90

ORBIT DETERMINATION ACCURACY
ST 229.1 SR 784.0 SS 2964.6
CRT .7611 CRS .8914 CST .3914
LSA 3048.5 MSA 402.7 SSA 27.7
EL1 803.8 EL2 144.9 ALF 77.03

LAUNCH DATE OCT 20 1964 FLIGHT TIME 312.00 ARRIVAL DATE AUG 28 1965

HELIOCENTRIC CONIC DISTANCE 715.107 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 32.693 GAL -4.93 AZL 89.03 HCA 224.02 SMA 186.05 ECC .21652 INC .9698 V1 29.917
RP 224.02 LAP -.67 LOP 250.65 VP 21.715 GAP -4.24 AZP 90.70 TAL 331.70 TAP 195.72 RCA 145.77 APO 226.33 V2 24.548
RC 256.380 GL 8.88 GP 7.70 ZAL 130.62 ZAP 102.96 ETS 177.16 ZAE 138.12 ETE 168.66 ZAC 93.89 ETC 256.78 CLP 103.08

PLANETOCENTRIC CONIC

C3 12.758 VHL 3.572 DLA 16.85 RAL 162.97 RAD 6567.5 VEL 11.582 PTH 2.03 VHP 2.893 DPA 10.88 RAP 178.10 ECC 1.2100

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 0 25	2665.53	-27.35	72.08	22.55	97.62	18 44 50	2065.5	-26.02	63.67
90.00	10 35 8	4203.31	.15	172.17	17.43	61.68	11 45 12	3603.3	-3.64	165.53
100.00	19 31 21	2372.27	-28.55	50.31	22.35	99.26	20 10 53	1772.3	-26.97	41.86
100.00	11 46 53	3971.80	1.20	154.56	16.85	60.13	12 53 5	3371.8	-2.78	148.04
110.00	21 0 46	2092.50	-31.64	28.34	21.62	103.67	21 35 38	1492.5	-29.44	19.82
110.00	12 33 57	3824.34	3.88	141.71	15.18	56.01	13 37 42	3224.3	-.61	135.50

DIFFERENTIAL CORRECTIONS
TDE .0942 TRA .2953 TC3-1.9355 BAU .4306
RDE .4582 RRA -.5641 RC3 1.6211 FAU .57787
FDE-4.9199 FRA17.6887 FC-39.2137 BSP 6564
BDE .4678 BRA .6368 BC3 2.5247 FSP 12294

MID-COURSE EXECUTION ACCURACY
SGT 1476.4 SGR 1666.0 SG3 3589.4
RRT -.7961 RRF -.9576 RTF .8513
SGB 2226.0 R23 .1227 R13 -.9610
SG1 2111.5 SG2 704.9 THA 130.68

ORBIT DETERMINATION ACCURACY
ST 215.9 SR 788.7 SS 2979.8
CRT .3966 CRS .8885 CST -.0633
LSA 3062.2 MSA 412.0 SSA 27.3
EL1 793.6 EL2 197.0 ALF 83.39

LAUNCH DATE OCT 20 1964 FLIGHT TIME 314.00 ARRIVAL DATE AUG 30 1965

HELIOCENTRIC CONIC DISTANCE 719.085 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 32.690 GAL -4.94 AZL 89.00 HCA 225.10 SMA 185.99 ECC .21637 INC .9972 V1 29.917
RP 223.63 LAP -.71 LOP 251.74 VP 21.757 GAP -4.49 AZP 90.70 TAL 331.61 TAP 196.71 RCA 145.75 APO 226.24 V2 24.590
RC 257.974 GL 9.12 GP 7.60 ZAL 130.72 ZAP 100.96 ETS 177.48 ZAE 135.96 ETE 169.51 ZAC 93.60 ETC 256.87 CLP 101.06

PLANETOCENTRIC CONIC

C3 12.785 VHL 3.576 DLA 17.02 RAL 163.20 RAD 6567.5 VEL 11.583 PTH 2.03 VHP 2.878 DPA 11.18 RAP 177.20 ECC 1.2104

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 59 36	2672.46	-27.42	72.58	22.87	97.38	18 44 9	2072.5	-26.11	64.15
90.00	10 37 43	4197.29	-.05	171.83	17.72	61.68	11 47 40	3597.3	-3.83	165.19
100.00	19 30 42	2378.72	-28.62	50.77	22.68	99.03	20 10 20	1778.7	-27.07	42.31
100.00	11 49 19	3966.26	1.01	154.26	17.13	60.12	12 55 25	3366.3	-2.97	147.73
110.00	21 0 25	2098.00	-31.73	28.74	21.96	103.45	21 35 23	1498.0	-29.55	20.21
110.00	12 36 5	3819.75	3.70	141.47	15.45	55.99	13 39 45	3219.8	-.79	135.26

DIFFERENTIAL CORRECTIONS
TDE .0528 TRA .4584 TC3-2.2733 BAU .4768
RDE .4619 RRA -.5594 RC3 1.6169 FAU .58400
FDE-4.9603 FRA17.8732 FC-39.5445 BSP 7337
BDE .4649 BRA .7232 BC3 2.7897 FSP 12409

MID-COURSE EXECUTION ACCURACY
SGT 1800.0 SGR 1662.4 SG3 3624.7
RRT -.8479 RRF -.9558 RTF .9046
SGB 2450.3 R23 .1169 R13 -.9651
SG1 2355.9 SG2 673.3 THA 137.68

ORBIT DETERMINATION ACCURACY
ST 250.3 SR 792.5 SS 2991.0
CRT -.0196 CRS .8854 CST -.4783
LSA 3075.4 MSA 421.2 SSA 26.9
EL1 792.5 EL2 250.2 ALF 90.39

LAUNCH DATE OCT 20 1964 FLIGHT TIME 316.00 ARRIVAL DATE SEP 1 1965

HELIOCENTRIC CONIC DISTANCE 723.071 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 32.687 GAL -4.96 AZL 88.98 HCA 226.19 SMA 185.94 ECC .21627 INC 1.0236 V1 29.917
RP 223.24 LAP -.74 LOP 252.82 VP 21.800 GAP -4.73 AZP 90.71 TAL 331.50 TAP 197.69 RCA 145.73 APO 226.15 V2 24.632
RC 259.547 GL 9.35 GP 7.50 ZAL 130.83 ZAP 98.95 ETS 177.80 ZAE 133.78 ETE 170.31 ZAC 93.31 ETC 256.97 CLP 99.03

PLANETOCENTRIC CONIC

C3 12.821 VHL 3.581 DLA 17.17 RAL 163.43 RAD 6567.5 VEL 11.585 PTH 2.03 VHP 2.867 DPA 11.49 RAP 176.29 ECC 1.2110

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 59 1	2678.89	-27.47	73.04	23.21	97.16	18 43 40	2078.9	-26.19	64.61
90.00	10 40 11	4192.07	-.22	171.54	18.02	61.68	11 50 3	3592.1	-4.00	164.90
100.00	19 30 15	2384.71	-28.68	51.21	23.02	98.81	20 10 0	1784.7	-27.17	42.73
100.00	11 51 39	3961.48	.85	153.99	17.43	60.12	12 57 40	3361.5	-3.13	147.47
110.00	21 0 15	2103.13	-31.81	29.12	22.32	103.24	21 35 18	1503.1	-29.66	20.57
110.00	12 38 8	3815.83	3.55	141.26	15.74	55.98	13 41 44	3215.8	-.94	135.05

DIFFERENTIAL CORRECTIONS
TDE .0106 TRA .6247 TC3-2.6154 BAU .5263
RDE .4654 RRA -.5541 RC3 1.6090 FAU .58860
FDE-4.9931 FRA18.0281 FC-39.7440 BSP 8254
BDE .4655 BRA .8350 BC3 3.0707 FSP 12504

MID-COURSE EXECUTION ACCURACY
SGT 2145.4 SGR 1656.3 SG3 3650.9
RRT -.8770 RRF -.9539 RTF .9350
SGB 2710.4 R23 .1052 R13 -.9700
SG1 2631.6 SG2 648.8 THA 143.31

ORBIT DETERMINATION ACCURACY
ST 319.3 SR 795.8 SS 2999.7
CRT -.3019 CRS .8823 CST -.7128
LSA 3089.9 MSA 430.1 SSA 26.6
EL1 802.5 EL2 301.8 ALF 98.06

LAUNCH DATE OCT 20 1964 FLIGHT TIME 318.00 ARRIVAL DATE SEP 3 1965

HELIOCENTRIC CONIC DISTANCE 727.063 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 32.684 GAL -4.97 AZL 88.95 HCA 227.28 SMA 185.89 ECC .21621 INC 1.0492 V1 29.917
RP 222.85 LAP -.77 LOP 253.91 VP 21.843 GAP -4.97 AZP 90.71 TAL 331.38 TAP 198.66 RCA 145.70 APO 226.09 V2 24.674
RC 261.100 GL 9.57 GP 7.40 ZAL 130.96 ZAP 96.93 ETS 178.11 ZAE 131.59 ETE 171.04 ZAC 93.01 ETC 257.07 CLP 96.99

PLANETOCENTRIC CONIC

C3 12.866 VHL 3.587 DLA 17.31 RAL 163.68 RAD 6567.5 VEL 11.587 PTH 2.03 VHP 2.860 DPA 11.78 RAP 175.38 ECC 1.2117

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 58 39	2684.82	-27.52	73.47	23.57	96.95	18 43 24	2084.8	-26.27	65.02
90.00	10 42 32	4187.64	-.36	171.29	18.35	61.69	11 52 19	3587.6	-4.14	164.65
100.00	19 30 0	2390.25	-28.74	51.61	23.39	98.60	20 9 50	1790.2	-27.25	43.12
100.00	11 53 52	3957.45	.71	153.77	17.75	60.12	12 59 50	3357.4	-3.27	147.25
110.00	21 0 15	2107.90	-31.88	29.47	22.69	103.04	21 35 23	1507.9	-29.76	20.90
110.00	12 40 7	3812.56	3.43	141.09	16.05	55.97	13 43 39	3212.6	-1.06	134.88

DIFFERENTIAL CORRECTIONS
TDE -.0323 TRA .7943 TC3-2.9612 BAU .5787
RDE .4688 RRA -.5480 RC3 1.5974 FAU .59168
FDE-5.0199 FRA18.1483 FC-39.8134 BSP 9275
BDE .4699 BRA .9650 BC3 3.3646 FSP 12570

MID-COURSE EXECUTION ACCURACY
SGT 2506.3 SGR 1647.6 SG3 3667.7
RRT -.8940 RRF -.9518 RTF .9534
SGB 2999.3 R23 .0924 R13 -.9746
SG1 2932.2 SG2 631.1 THA 147.89

ORBIT DETERMINATION ACCURACY
ST 407.0 SR 798.5 SS 3005.9
CRT -.4632 CRS .8790 CST -.8281
LSA 3105.7 MSA 438.7 SSA 26.2
EL1 825.6 EL2 348.9 ALF 106.27

LAUNCH DATE OCT 20 1964 FLIGHT TIME 320.00 ARRIVAL DATE SEP 5 1965

HELIOCENTRIC CONIC DISTANCE 731.064 EARTH TO MARS

RL	148.94	LAL	.00	LOL	26.64	VL	32.682	GAL	-5.00	AZL	88.93	HCA	228.37	SMA	185.85	ECC	.21619	INC	1.0739	V1	29.917
RP	222.47	LAP	-.80	LOP	255.00	VP	21.887	GAP	-5.21	AZP	90.71	TAL	331.25	TAP	199.62	RCA	145.67	APO	226.03	V2	24.716
RC	262.633	GL	9.78	GP	7.30	ZAL	131.11	ZAP	94.91	ETS	178.41	ZAE	129.39	ETE	171.73	ZAC	92.72	ETC	257.17	CLP	94.95

PLANETOCENTRIC CONIC

C3	12.920	VHL	3.594	DLA	17.43	RAL	163.94	RAD	6567.5	VEL	11.589	PTH	2.03	VHP	2.856	DPA	12.08	RAP	174.46	ECC	1.2126

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 58 30	2690.25	-27.56	73.86	23.95	96.76	18 43 20	2090.3	-26.34	65.40
90.00	10 44 46	4184.00	-.48	171.09	18.69	61.69	11 54 30	3584.0	-4.26	164.45
100.00	19 29 57	2395.34	-28.79	51.98	23.76	98.42	20 9 53	1795.3	-27.33	43.48
100.00	11 55 59	3954.15	.60	153.59	18.09	60.11	13 1 54	3354.1	-3.38	147.07
110.00	21 0 25	2112.31	-31.95	29.80	23.08	102.86	21 35 37	1512.3	-29.85	21.22
110.00	12 42 1	3809.94	3.33	140.95	16.38	55.96	13 45 31	3209.9	-1.16	134.75

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0763	TRA	.9668	TC3	-3.3086	BAU	.6335	SGT	2877.7	SGR	1636.7	SG3	3675.5	ST	504.7	SR	801.0	SS	3010.5
RDE	.4724	RRA	-.5408	RC3	1.5831	FAU	.59361	RRT	-.9041	RRF	-.9496	RTF	.9654	CRT	-.5574	CRS	.8760	CST	-.8877
FDE	-5.0458	FRA	18.2272	FC	-39.7771	BSP	10374	SGB	3310.6	R23	.0803	R13	-.9787	LSA	3124.0	MSA	446.8	SSA	25.8
BDE	.4785	BRA	1.1078	BC3	3.6679	FSP	12596	SG1	3252.2	SG2	619.0	THA	151.67	EL1	863.3	EL2	388.8	ALF	114.68

LAUNCH DATE OCT 20 1964 FLIGHT TIME 322.00 ARRIVAL DATE SEP 7 1965

HELIOCENTRIC CONIC DISTANCE 735.071 EARTH TO MARS

RL	148.94	LAL	.00	LOL	26.64	VL	32.679	GAL	-5.02	AZL	88.90	HCA	229.47	SMA	185.81	ECC	.21621	INC	1.0979	V1	29.917
RP	222.08	LAP	-.83	LOP	256.10	VP	21.930	GAP	-5.44	AZP	90.71	TAL	331.10	TAP	200.57	RCA	145.64	APO	225.99	V2	24.758
RC	264.145	GL	9.97	GP	7.19	ZAL	131.28	ZAP	92.89	ETS	178.71	ZAE	127.18	ETE	172.36	ZAC	92.42	ETC	257.28	CLP	92.92

PLANETOCENTRIC CONIC

C3	12.982	VHL	3.603	DLA	17.53	RAL	164.21	RAD	6567.5	VEL	11.592	PTH	2.03	VHP	2.855	DPA	12.37	RAP	173.55	ECC	1.2137

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 58 34	2695.19	-27.60	74.21	24.34	96.58	18 43 29	2095.2	-26.40	65.75
90.00	10 46 52	4181.14	-.57	170.93	19.05	61.69	11 56 34	3581.1	-4.35	164.29
100.00	19 30 7	2399.98	-28.83	52.32	24.16	98.24	20 10 7	1800.0	-27.39	43.81
100.00	11 58 1	3951.58	.51	153.45	18.44	60.11	13 3 52	3351.6	-3.47	146.93
110.00	21 0 46	2116.36	-32.01	30.10	23.48	102.69	21 36 2	1516.4	-29.93	21.50
110.00	12 43 51	3807.96	3.25	140.85	16.73	55.95	13 47 19	3208.0	-1.24	134.64

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1212	TRA	1.1424	TC3	-3.6551	BAU	.6901	SGT	3256.3	SGR	1622.9	SG3	3672.9	ST	608.3	SR	802.9	SS	3011.5
RDE	.4757	RRA	-.5330	RC3	1.5648	FAU	.59374	RRT	-.9100	RRF	-.9471	RTF	.9734	CRT	-.6160	CRS	.8728	CST	-.9213
FDE	-5.0611	FRA	18.2701	FC	-39.5942	BSP	11530	SGB	3638.3	R23	.0698	R13	-.9821	LSA	3142.7	MSA	454.6	SSA	25.3
BDE	.4909	BRA	1.2606	BC3	3.9759	FSP	12596	SG1	3586.7	SG2	611.0	THA	154.82	EL1	915.4	EL2	420.3	ALF	122.73

LAUNCH DATE OCT 20 1964 FLIGHT TIME 324.00 ARRIVAL DATE SEP 9 1965

HELIOCENTRIC CONIC DISTANCE 739.086 EARTH TO MARS

RL	148.94	LAL	.00	LOL	26.64	VL	32.678	GAL	-5.05	AZL	88.88	HCA	230.57	SMA	185.78	ECC	.21627	INC	1.1213	V1	29.917
RP	221.70	LAP	-.87	LOP	257.20	VP	21.975	GAP	-5.67	AZP	90.71	TAL	330.95	TAP	201.51	RCA	145.60	APO	225.96	V2	24.799
RC	265.639	GL	10.16	GP	7.08	ZAL	131.47	ZAP	90.88	ETS	178.99	ZAE	124.97	ETE	172.96	ZAC	92.12	ETC	257.38	CLP	90.89

PLANETOCENTRIC CONIC

C3	13.054	VHL	3.613	DLA	17.62	RAL	164.50	RAD	6567.5	VEL	11.595	PTH	2.03	VHP	2.858	DPA	12.65	RAP	172.64	ECC	1.2148

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 58 51	2699.65	-27.64	74.54	24.75	96.42	18 43 51	2099.6	-26.46	66.07
90.00	10 48 52	4179.05	-.64	170.81	19.42	61.69	11 58 31	3579.1	-4.42	164.17
100.00	19 30 28	2404.18	-28.88	52.62	24.57	98.09	20 10 32	1804.2	-27.46	44.11
100.00	11 59 56	3949.75	.45	153.35	18.82	60.11	13 5 46	3349.8	-3.53	146.82
110.00	21 1 17	2120.07	-32.06	30.37	23.90	102.54	21 36 37	1520.1	-30.01	21.77
110.00	12 45 37	3806.62	3.20	140.78	17.10	55.95	13 49 4	3206.6	-1.29	134.57

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1663	TRA	1.3203	TC3	-3.9987	BAU	.7480	SGT	3639.3	SGR	1606.8	SG3	3660.8	ST	715.1	SR	804.1	SS	3009.8
RDE	.4790	RRA	-.5244	RC3	1.5432	FAU	.59235	RRT	-.9131	RRF	-.9444	RTF	.9789	CRT	-.6534	CRS	.8695	CST	-.9415
FDE	-5.0690	FRA	18.2775	FC	-39.2848	BSP	12739	SGB	3978.2	R23	.0613	R13	-.9848	LSA	3162.7	MSA	462.4	SSA	24.9
BDE	.5071	BRA	1.4206	BC3	4.2862	FSP	12572	SG1	3931.7	SG2	606.5	THA	157.48	EL1	980.2	EL2	444.1	ALF	129.90

LAUNCH DATE OCT 20 1964 FLIGHT TIME 326.00 ARRIVAL DATE SEP 11 1965

HELIOCENTRIC CONIC DISTANCE 743.107 EARTH TO MARS

RL	148.94	LAL	.00	LOL	26.64	VL	32.676	GAL	-5.08	AZL	88.86	HCA	231.67	SMA	185.76	ECC	.21638	INC	1.1440	V1	29.917
RP	221.32	LAP	-.90	LOP	258.31	VP	22.019	GAP	-5.90	AZP	90.71	TAL	330.78	TAP	202.45	RCA	145.56	APO	225.95	V2	24.841
RC	267.114	GL	10.33	GP	6.96	ZAL	131.67	ZAP	88.88	ETS	179.26	ZAE	122.76	ETE	173.52	ZAC	91.83	ETC	257.49	CLP	88.87

PLANETOCENTRIC CONIC

C3	13.135	VHL	3.624	DLA	17.68	RAL	164.80	RAD	6567.5	VEL	11.598	PTH	2.03	VHP	2.864	DPA	12.92	RAP	171.75	ECC	1.2162

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 59 21	2703.62	-27.67	74.82	25.18	96.28	18 44 24	2103.6	-26.51	66.35
90.00	10 50 46	4177.74	-.68	170.74	19.82	61.69	12 0 23	3577.7	-4.46	164.10
100.00	19 31 2	2407.95	-28.91	52.90	25.00	97.95	20 11 10	1808.0	-27.51	44.38
100.00	12 1 45	3948.65	.41	153.29	19.21	60.11	13 7 34	3348.6	-3.57	146.76
110.00	21 1 58	2123.44	-32.11	30.62	24.34	102.40	21 37 21	1523.4	-30.07	22.00
110.00	12 47 19	3805.92	3.18	140.74	17.48	55.95	13 50 45	3205.9	-1.32	134.54

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2128	TRA	1.5004	TC3	-4.3373	BAU	.8070	SGT	4024.4	SGR	1588.7	SG3	3639.5	ST	824.6	SR	805.2	SS	3006.6
RDE	.4824	RRA	-.5148	RC3	1.5192	FAU	.58973	RRT	-.9143	RRF	-.9414	RTF	.9830	CRT	-.6794	CRS	.8665	CST	-.9545
FDE	-5.0768	FRA	18.2412	FC	-38.8708	BSP	13963	SGB	4326.6	R23	.0542	R13	-.9871	LSA	3185.4	MSA	469.7	SSA	24.4
BDE	.5273	BRA	1.5863	BC3	4.5957	FSP	12502	SG1	4284.2	SG2	604.6	THA	159.73	EL1	1056.2	EL2	461.3	ALF	136.00

LAUNCH DATE OCT 20 1964 FLIGHT TIME 328.00 ARRIVAL DATE SEP 13 1965

HELIOCENTRIC CONIC DISTANCE 747.136 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 32.675 GAL -5.11 AZL 88.83 HCA 232.78 SMA 185.73 ECC .21652 INC 1.1661 V1 29.917
RP 220.94 LAP -.93 LOP 259.41 VP 22.064 GAP -6.12 AZP 90.71 TAL 330.59 TAP 203.37 RCA 145.52 APO 225.95 V2 24.883
RC 268.570 GL 10.49 GP 6.85 ZAL 131.89 ZAP 86.88 ETS 179.53 ZAE 120.56 ETE 174.04 ZAC 91.54 ETC 257.60 CLP 86.86

PLANETOCENTRIC CONIC

C3 13.225 VHL 3.637 DLA 17.74 RAL 165.11 RAD 6567.5 VEL 11.602 PTH 2.03 VHP 2.874 DPA 13.18 RAP 170.87 ECC 1.2176

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 0 3	2707.13	-27.69	75.08	25.63	96.16	18 45 10	2107.1	-26.55	66.60
90.00	10 52 32	4177.20	-.70	170.71	20.23	61.69	12 2 9	3577.2	-4.48	164.07
100.00	19 31 47	2411.30	-28.94	53.14	25.45	97.82	20 11 58	1811.3	-27.56	44.61
100.00	12 3 29	3948.26	.40	153.27	19.62	60.11	13 9 17	3348.3	-3.58	146.74
110.00	21 2 49	2126.48	-32.16	30.85	24.79	102.27	21 38 16	1526.5	-30.14	22.22
110.00	12 48 56	3805.84	3.17	140.74	17.89	55.95	13 52 22	3205.8	-1.32	134.53

DIFFERENTIAL CORRECTIONS
TDE -.2601 TRA 1.6822 TC3-4.6709 BAU .8670
RDE .4858 RRA -.5045 RC3 1.4925 FAU .58568
FDE-5.0794 FRA18.1694 FC-38.3408 BSP 15215
BDE .5510 BRA 1.7562 BC3 4.9036 FSP 12402

MID-COURSE EXECUTION ACCURACY
SGT 4410.5 SGR 1568.6 SG3 3609.2
RRT -.9140 RRF -.9382 RTF .9859
SGB 4681.1 R23 .0487 R13 -.9890
SG1 4641.9 SG2 604.6 THA 161.67

ORBIT DETERMINATION ACCURACY
ST 935.5 SR 806.0 SS 3001.2
CRT -.6975 CRS .8635 CST -.9634
LSA 3210.0 MSA 476.7 SSA 24.0
EL1 1140.3 EL2 473.8 ALF 141.05

LAUNCH DATE OCT 20 1964 FLIGHT TIME 330.00 ARRIVAL DATE SEP 15 1965

HELIOCENTRIC CONIC DISTANCE 751.171 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 32.674 GAL -5.15 AZL 88.81 HCA 233.89 SMA 185.72 ECC .21670 INC 1.1875 V1 29.917
RP 220.56 LAP -.96 LOP 260.53 VP 22.109 GAP -6.34 AZP 90.70 TAL 330.39 TAP 204.29 RCA 145.47 APO 225.96 V2 24.924
RC 270.009 GL 10.65 GP 6.73 ZAL 132.13 ZAP 84.91 ETS 179.78 ZAE 118.38 ETE 174.53 ZAC 91.25 ETC 257.71 CLP 84.88

PLANETOCENTRIC CONIC

C3 13.324 VHL 3.650 DLA 17.77 RAL 165.43 RAD 6567.5 VEL 11.606 PTH 2.03 VHP 2.888 DPA 13.43 RAP 170.00 ECC 1.2193

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 0 58	2710.16	-27.72	75.30	26.09	96.05	18 46 8	2110.2	-26.59	66.81
90.00	10 54 12	4177.42	-.69	170.72	20.66	61.69	12 3 49	3577.4	-4.47	164.08
100.00	19 32 44	2414.22	-28.97	53.35	25.92	97.71	20 12 59	1814.2	-27.60	44.82
100.00	12 5 7	3948.59	.41	153.29	20.04	60.11	13 10 55	3348.6	-3.57	146.76
110.00	21 3 50	2129.19	-32.20	31.05	25.26	102.16	21 39 20	1529.2	-30.19	22.41
110.00	12 50 30	3806.38	3.19	140.77	18.31	55.95	13 53 56	3206.4	-1.30	134.56

DIFFERENTIAL CORRECTIONS
TDE -.3084 TRA 1.8656 TC3-4.9962 BAU .9274
RDE .4891 RRA -.4936 RC3 1.4630 FAU .58021
FDE-5.0748 FRA18.0644 FC-37.6983 BSP 16469
BDE .5782 BRA 1.9298 BC3 5.2060 FSP 12279

MID-COURSE EXECUTION ACCURACY
SGT 4795.3 SGR 1546.7 SG3 3570.2
RRT -.9127 RRF -.9347 RTF .9882
SGB 5038.6 R23 .0444 R13 -.9904
SG1 5002.0 SG2 605.8 THA 163.34

ORBIT DETERMINATION ACCURACY
ST 1047.6 SR 806.2 SS 2993.1
CRT -.7108 CRS .8604 CST -.9697
LSA 3236.1 MSA 483.2 SSA 23.5
EL1 1230.6 EL2 482.7 ALF 145.22

LAUNCH DATE OCT 20 1964 FLIGHT TIME 332.00 ARRIVAL DATE SEP 17 1965

HELIOCENTRIC CONIC DISTANCE 755.212 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 32.673 GAL -5.19 AZL 88.79 HCA 235.01 SMA 185.70 ECC .21692 INC 1.2085 V1 29.917
RP 220.18 LAP -.99 LOP 261.64 VP 22.155 GAP -6.55 AZP 90.69 TAL 330.18 TAP 205.19 RCA 145.42 APO 225.99 V2 24.965
RC 271.430 GL 10.79 GP 6.61 ZAL 132.39 ZAP 82.96 ETS 180.02 ZAE 116.21 ETE 174.99 ZAC 90.96 ETC 257.82 CLP 82.91

PLANETOCENTRIC CONIC

C3 13.434 VHL 3.665 DLA 17.79 RAL 165.77 RAD 6567.5 VEL 11.611 PTH 2.03 VHP 2.904 DPA 13.66 RAP 169.16 ECC 1.2211

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 2 6	2712.74	-27.73	75.48	26.57	95.96	18 47 19	2112.7	-26.62	66.99
90.00	10 55 45	4178.40	-.66	170.78	21.11	61.69	12 5 23	3578.4	-4.44	164.13
100.00	19 33 53	2416.74	-28.99	53.54	26.40	97.62	20 14 10	1816.7	-27.63	45.00
100.00	12 6 38	3949.63	.45	153.34	20.49	60.11	13 12 28	3349.6	-3.53	146.82
110.00	21 5 2	2131.59	-32.23	31.23	25.75	102.05	21 40 33	1531.6	-30.24	22.58
110.00	12 51 59	3807.54	3.24	140.83	18.75	55.95	13 55 27	3207.5	-1.25	134.62

DIFFERENTIAL CORRECTIONS
TDE -.3576 TRA 2.0509 TC3-5.3115 BAU .9880
RDE .4924 RRA -.4821 RC3 1.4312 FAU .57339
FDE-5.0643 FRA17.9239 FC-36.9514 BSP 17727
BDE .6086 BRA 2.1068 BC3 5.5010 FSP 12120

MID-COURSE EXECUTION ACCURACY
SGT 5177.8 SGR 1523.0 SG3 3522.7
RRT -.9105 RRF -.9308 RTF .9899
SGB 5397.2 R23 .0410 R13 -.9916
SG1 5362.8 SG2 608.0 THA 164.81

ORBIT DETERMINATION ACCURACY
ST 1160.4 SR 806.1 SS 2982.5
CRT -.7204 CRS .8574 CST -.9743
LSA 3263.6 MSA 489.5 SSA 23.0
EL1 1325.4 EL2 489.5 ALF 148.67

LAUNCH DATE OCT 20 1964 FLIGHT TIME 334.00 ARRIVAL DATE SEP 19 1965

HELIOCENTRIC CONIC DISTANCE 759.257 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 32.672 GAL -5.23 AZL 88.77 HCA 236.13 SMA 185.69 ECC .21718 INC 1.2290 V1 29.917
RP 219.81 LAP -1.02 LOP 262.76 VP 22.200 GAP -6.77 AZP 90.68 TAL 329.96 TAP 206.09 RCA 145.37 APO 226.02 V2 25.006
RC 272.833 GL 10.93 GP 6.48 ZAL 132.67 ZAP 81.03 ETS 180.25 ZAE 114.06 ETE 175.41 ZAC 90.68 ETC 257.92 CLP 80.98

PLANETOCENTRIC CONIC

C3 13.554 VHL 3.682 DLA 17.80 RAL 166.12 RAD 6567.5 VEL 11.616 PTH 2.04 VHP 2.924 DPA 13.88 RAP 168.35 ECC 1.2231

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 3 27	2714.84	-27.75	75.63	27.07	95.88	18 48 42	2114.8	-26.64	67.14
90.00	10 57 11	4180.16	-.60	170.87	21.57	61.69	12 6 51	3580.2	-4.38	164.23
100.00	19 35 14	2418.83	-29.01	53.69	26.90	97.54	20 15 33	1818.8	-27.66	45.15
100.00	12 8 5	3951.41	.51	153.44	20.95	60.11	13 13 56	3351.4	-3.47	146.92
110.00	21 6 23	2133.65	-32.26	31.38	26.25	101.97	21 41 57	1533.7	-30.28	22.73
110.00	12 53 25	3809.35	3.31	140.92	19.21	55.96	13 56 54	3209.3	-1.18	134.72

DIFFERENTIAL CORRECTIONS
TDE -.4031 TRA 2.2440 TC3-5.6027 BAU 1.0460
RDE .4932 RRA -.4725 RC3 1.3895 FAU .56168
FDE-4.9741 FRA17.8277 FC-35.8770 BSP 19135
BDE .6370 BRA 2.2932 BC3 5.7725 FSP 12101

MID-COURSE EXECUTION ACCURACY
SGT 5555.7 SGR 1494.1 SG3 3463.4
RRT -.9078 RRF -.9262 RTF .9911
SGB 5753.1 R23 .0373 R13 -.9924
SG1 5720.8 SG2 608.7 THA 166.12

ORBIT DETERMINATION ACCURACY
ST 1272.7 SR 802.3 SS 2957.1
CRT -.7250 CRS .8510 CST -.9784
LSA 3280.5 MSA 495.8 SSA 22.9
EL1 1420.7 EL2 495.1 ALF 151.70

LAUNCH DATE OCT 20 1964 FLIGHT TIME 336.00 ARRIVAL DATE SEP 21 1965

HELIOCENTRIC CONIC DISTANCE 763.313 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 32.672 GAL -5.27 AZL 88.75 HCA 237.25 SMA 185.69 ECC .21748 INC 1.2490 V1 29.917
RP 219.44 LAP -1.05 LOP 263.89 VP 22.246 GAP -6.98 AZP 90.68 TAL 329.72 TAP 206.98 RCA 145.31 APO 226.07 V2 25.047
RC 274.220 GL 11.05 GP 6.36 ZAL 132.96 ZAP 79.13 ETS 180.48 ZAE 111.94 ETE 175.82 ZAC 90.41 ETC 258.03 CLP 79.06

PLANETOCENTRIC CONIC

C3 13.683 VHL 3.699 DLA 17.79 RAL 166.48 RAD 6567.5 VEL 11.622 PTH 2.04 VHP 2.948 DPA 14.08 RAP 167.56 ECC 1.2252

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 4 59	2716.54	-27.76	75.76	27.58	95.82	18 50 15	2116.5	-26.66	67.26
90.00	10 58 31	4182.62	-.52	171.01	22.05	61.69	12 8 14	3582.6	-4.30	164.37
100.00	19 36 46	2420.56	-29.03	53.82	27.41	97.48	20 17 7	1820.6	-27.69	45.27
100.00	12 9 25	3953.84	.59	153.57	21.43	60.11	13 15 19	3353.8	-3.39	147.05
110.00	21 7 54	2135.44	-32.29	31.52	26.77	101.89	21 43 29	1535.4	-30.31	22.86
110.00	12 54 47	3811.72	3.40	141.05	19.68	55.97	13 58 19	3211.7	-1.09	134.84

DIFFERENTIAL CORRECTIONS
TDE -.4564 TRA 2.4287 TC3-5.9001 BAU 1.1076
RDE .4977 RRA -.4588 RC3 1.3579 FAU .55425
FDE-4.9917 FRA17.5905 FC-35.0665 BSP 20315
BDE .6753 BRA 2.4716 BC3 6.0543 FSP 11818

MID-COURSE EXECUTION ACCURACY
SGT 5929.7 SGR 1469.8 SG3 3403.3
RRT -.9039 RRF -.9219 RTF .9922
SGB 6109.1 R23 .0358 R13 -.9933
SG1 6078.3 SG2 613.3 THA 167.24

ORBIT DETERMINATION ACCURACY
ST 1386.2 SR 803.4 SS 2948.8
CRT -.7312 CRS .8499 CST -.9807
LSA 3318.2 MSA 501.4 SSA 22.2
EL1 1522.5 EL2 499.0 ALF 154.04

LAUNCH DATE OCT 20 1964 FLIGHT TIME 338.00 ARRIVAL DATE SEP 23 1965

HELIOCENTRIC CONIC DISTANCE 767.374 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 32.672 GAL -5.32 AZL 88.73 HCA 238.38 SMA 185.69 ECC .21782 INC 1.2686 V1 29.917
RP 219.07 LAP -1.08 LOP 265.01 VP 22.292 GAP -7.18 AZP 90.67 TAL 329.47 TAP 207.85 RCA 145.24 APO 226.14 V2 25.088
RC 275.589 GL 11.17 GP 6.23 ZAL 133.26 ZAP 77.26 ETS 180.69 ZAE 109.84 ETE 176.19 ZAC 90.14 ETC 258.13 CLP 77.18

PLANETOCENTRIC CONIC

C3 13.824 VHL 3.718 DLA 17.76 RAL 166.85 RAD 6567.5 VEL 11.628 PTH 2.04 VHP 2.974 DPA 14.27 RAP 166.80 ECC 1.2275

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 6 43	2717.81	-27.77	75.85	28.12	95.78	18 52 1	2117.8	-26.68	67.35
90.00	10 59 45	4185.82	-.42	171.19	22.55	61.69	12 9 31	3585.8	-4.20	164.55
100.00	19 38 29	2421.90	-29.04	53.92	27.95	97.43	20 18 51	1821.9	-27.71	45.37
100.00	12 10 40	3956.96	.70	153.75	21.93	60.11	13 16 37	3357.0	-3.28	147.22
110.00	21 9 34	2136.93	-32.31	31.63	27.30	101.83	21 45 11	1536.9	-30.34	22.97
110.00	12 56 5	3814.70	3.51	141.20	20.18	55.98	13 59 39	3214.7	-.98	134.99

DIFFERENTIAL CORRECTIONS
TDE -.5107 TRA 2.6150 TC3-6.1826 BAU 1.1685
RDE .5018 RRA -.4452 RC3 1.3233 FAU .54511
FDE-4.9909 FRA17.3422 FC-34.1384 BSP 21502
BDE .7160 BRA 2.6526 BC3 6.3226 FSP 11547

MID-COURSE EXECUTION ACCURACY
SGT 6297.8 SGR 1444.0 SG3 3336.3
RRT -.8996 RRF -.9172 RTF .9931
SGB 6461.2 R23 .0347 R13 -.9940
SG1 6431.6 SG2 617.6 THA 168.24

ORBIT DETERMINATION ACCURACY
ST 1500.0 SR 803.5 SS 2936.5
CRT -.7360 CRS .8483 CST -.9827
LSA 3355.9 MSA 506.4 SSA 21.7
EL1 1625.9 EL2 501.8 ALF 156.06

LAUNCH DATE OCT 20 1964 FLIGHT TIME 340.00 ARRIVAL DATE SEP 25 1965

HELIOCENTRIC CONIC DISTANCE 771.440 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 32.672 GAL -5.37 AZL 88.71 HCA 239.51 SMA 185.69 ECC .21820 INC 1.2877 V1 29.917
RP 218.70 LAP -1.11 LOP 266.15 VP 22.337 GAP -7.39 AZP 90.65 TAL 329.20 TAP 208.72 RCA 145.17 APO 226.21 V2 25.128
RC 276.940 GL 11.28 GP 6.11 ZAL 133.59 ZAP 75.42 ETS 180.89 ZAE 107.77 ETE 176.55 ZAC 89.88 ETC 258.23 CLP 75.34

PLANETOCENTRIC CONIC

C3 13.975 VHL 3.738 DLA 17.72 RAL 167.23 RAD 6567.6 VEL 11.634 PTH 2.04 VHP 3.004 DPA 14.44 RAP 166.08 ECC 1.2300

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 8 40	2718.66	-27.77	75.91	28.67	95.75	18 53 58	2118.7	-26.69	67.41
90.00	11 0 52	4189.75	-.29	171.41	23.07	61.68	12 10 42	3589.8	-4.08	164.77
100.00	19 40 23	2422.87	-29.05	53.99	28.50	97.39	20 20 46	1822.9	-27.72	45.43
100.00	12 11 50	3960.78	.83	153.95	22.45	60.12	13 17 51	3360.8	-3.16	147.43
110.00	21 11 23	2138.13	-32.32	31.72	27.86	101.78	21 47 2	1538.1	-30.36	23.05
110.00	12 57 19	3818.28	3.65	141.39	20.69	55.99	14 0 57	3218.3	-.84	135.18

DIFFERENTIAL CORRECTIONS
TDE -.5656 TRA 2.8029 TC3-6.4487 BAU 1.2286
RDE .5057 RRA -.4316 RC3 1.2864 FAU .53453
FDE-4.9761 FRA17.0784 FC-33.1129 BSP 22690
BDE .7587 BRA 2.8360 BC3 6.5758 FSP 11280

MID-COURSE EXECUTION ACCURACY
SGT 6658.7 SGR 1417.0 SG3 3262.9
RRT -.8946 RRF -.9120 RTF .9938
SGB 6807.8 R23 .0338 R13 -.9946
SG1 6779.3 SG2 621.9 THA 169.13

ORBIT DETERMINATION ACCURACY
ST 1613.4 SR 803.0 SS 2920.8
CRT -.7393 CRS .8464 CST -.9842
LSA 3393.7 MSA 511.3 SSA 21.1
EL1 1730.2 EL2 504.2 ALF 157.81

LAUNCH DATE OCT 20 1964 FLIGHT TIME 342.00 ARRIVAL DATE SEP 27 1965

HELIOCENTRIC CONIC DISTANCE 775.512 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 32.673 GAL -5.43 AZL 88.69 HCA 240.65 SMA 185.70 ECC .21862 INC 1.3066 V1 29.917
RP 218.34 LAP -1.14 LOP 267.28 VP 22.383 GAP -7.59 AZP 90.64 TAL 328.93 TAP 209.57 RCA 145.10 APO 226.30 V2 25.168
RC 278.273 GL 11.38 GP 5.98 ZAL 133.93 ZAP 73.62 ETS 181.08 ZAE 105.73 ETE 176.88 ZAC 89.63 ETC 258.32 CLP 73.53

PLANETOCENTRIC CONIC

C3 14.138 VHL 3.760 DLA 17.67 RAL 167.63 RAD 6567.6 VEL 11.641 PTH 2.04 VHP 3.036 DPA 14.59 RAP 165.39 ECC 1.2327

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 10 47	2719.10	-27.78	75.94	29.23	95.73	18 56 7	2119.1	-26.69	67.44
90.00	11 1 54	4194.41	-.14	171.67	23.61	61.68	12 11 48	3594.4	-3.93	165.03
100.00	19 42 28	2423.47	-29.05	54.03	29.07	97.37	20 22 51	1823.5	-27.73	45.48
100.00	12 12 54	3965.27	.98	154.20	22.98	60.12	13 19 0	3365.3	-3.00	147.68
110.00	21 13 22	2139.06	-32.34	31.79	28.43	101.74	21 49 1	1539.1	-30.38	23.12
110.00	12 58 30	3822.45	3.81	141.61	21.22	56.00	14 2 12	3222.4	-.68	135.40

DIFFERENTIAL CORRECTIONS
TDE -.6212 TRA 2.9923 TC3-6.6986 BAU 1.2879
RDE .5093 RRA -.4180 RC3 1.2481 FAU .52282
FDE-4.9502 FRA16.8009 FC-32.0140 BSP 23869
BDE .8032 BRA 3.0214 BC3 6.8139 FSP 11008

MID-COURSE EXECUTION ACCURACY
SGT 7012.3 SGR 1389.3 SG3 3184.4
RRT -.8891 RRF -.9064 RTF .9944
SGB 7148.6 R23 .0332 R13 -.9950
SG1 7121.1 SG2 626.1 THA 169.93

ORBIT DETERMINATION ACCURACY
ST 1726.2 SR 802.0 SS 2902.2
CRT -.7416 CRS .8442 CST -.9855
LSA 3432.0 MSA 515.9 SSA 20.6
EL1 1834.9 EL2 506.2 ALF 159.34

LAUNCH DATE OCT 20 1964 FLIGHT TIME 344.00 ARRIVAL DATE SEP 29 1965

HELIOCENTRIC CONIC DISTANCE 779.589 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 32.673 GAL -5.49 AZL 88.67 HCA 241.79 SMA 185.71 ECC .21909 INC 1.3250 V1 29.917
RP 217.98 LAP -1.17 LOP 268.42 VP 22.429 GAP -7.79 AZP 90.63 TAL 328.63 TAP 210.42 RCA 145.02 APO 226.40 V2 25.208
RC 279.589 GL 11.47 GP 5.86 ZAL 134.29 ZAP 71.86 ETS 181.26 ZAE 103.73 ETE 177.19 ZAC 89.39 ETC 258.41 CLP 71.76

PLANETOCENTRIC CONIC

C3 14.313 VHL 3.783 DLA 17.60 RAL 168.04 RAD 6567.6 VEL 11.649 PTH 2.04 VHP 3.072 DPA 14.73 RAP 164.75 ECC 1.2356

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 13 7	2719.15	-27.78	75.95	29.82	95.73	18 58 26	2119.2	-26.69	67.45
90.00	11 2 49	4199.78	.03	171.97	24.16	61.68	12 12 49	3599.8	-3.75	165.33
100.00	19 44 43	2423.73	-29.05	54.05	29.65	97.36	20 25 7	1823.7	-27.73	45.50
100.00	12 13 54	3970.43	1.15	154.48	23.54	60.13	13 20 4	3370.4	-2.83	147.96
110.00	21 15 30	2139.72	-32.35	31.84	29.01	101.71	21 51 10	1539.7	-30.39	23.16
110.00	12 59 36	3827.21	3.99	141.86	21.77	56.02	14 3 24	3227.2	-.50	135.65

DIFFERENTIAL CORRECTIONS
TDE -.6783 TRA 3.1828 TC3-6.9317 BAU 1.3464
RDE .5129 RRA -.4045 RC3 1.2090 FAU .51027
FDE-4.9192 FRA16.5072 FC-30.8647 BSP 25029
BDE .8504 BRA 3.2084 BC3 7.0363 FSP 10722

MID-COURSE EXECUTION ACCURACY
SGT 7357.8 SGR 1361.4 SG3 3101.7
RRT -.8831 RRF -.9004 RTF .9948
SGB 7482.7 R23 .0328 R13 -.9954
SG1 7456.1 SG2 630.3 THA 170.65

ORBIT DETERMINATION ACCURACY
ST 1839.0 SR 800.9 SS 2881.9
CRT -.7434 CRS .8422 CST -.9866
LSA 3472.4 MSA 520.0 SSA 20.2
EL1 1940.5 EL2 507.6 ALF 160.69

LAUNCH DATE OCT 20 1964 FLIGHT TIME 346.00 ARRIVAL DATE OCT 1 1965

HELIOCENTRIC CONIC DISTANCE 783.672 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 32.674 GAL -5.55 AZL 88.66 HCA 242.93 SMA 185.72 ECC .21959 INC 1.3431 V1 29.917
RP 217.62 LAP -1.20 LOP 269.56 VP 22.475 GAP -7.98 AZP 90.61 TAL 328.32 TAP 211.26 RCA 144.94 APO 226.51 V2 25.248
RC 280.887 GL 11.55 GP 5.74 ZAL 134.66 ZAP 70.13 ETS 181.43 ZAE 101.76 ETE 177.48 ZAC 89.16 ETC 258.50 CLP 70.03

PLANETOCENTRIC CONIC

C3 14.500 VHL 3.808 DLA 17.52 RAL 168.45 RAD 6567.6 VEL 11.657 PTH 2.05 VHP 3.110 DPA 14.85 RAP 164.14 ECC 1.2386

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 15 37	2718.83	-27.78	75.92	30.42	95.74	19 0 56	2118.8	-26.69	67.42
90.00	11 3 39	4205.84	.23	172.31	24.73	61.68	12 13 45	3605.8	-3.56	165.67
100.00	19 47 9	2423.66	-29.05	54.04	30.26	97.36	20 27 33	1823.7	-27.73	45.49
100.00	12 14 48	3976.25	1.35	154.80	24.11	60.14	13 21 4	3376.3	-2.63	148.28
110.00	21 17 47	2140.12	-32.35	31.87	29.61	101.70	21 53 27	1540.1	-30.40	23.19
110.00	13 0 40	3832.55	4.19	142.14	22.34	56.04	14 4 32	3232.5	-.30	135.93

DIFFERENTIAL CORRECTIONS
TDE -.7366 TRA 3.3741 TC3-7.1482 BAU 1.4041
RDE .5166 RRA -.3909 RC3 1.1694 FAU .49699
FDE-4.8819 FRA16.1990 FC-29.6741 BSP 26161
BDE .8997 BRA 3.3966 BC3 7.2432 FSP 10434

MID-COURSE EXECUTION ACCURACY
SGT 7694.6 SGR 1333.3 SG3 3015.3
RRT -.8766 RRF -.8940 RTF .9952
SGB 7809.2 R23 .0326 R13 -.9957
SG1 7783.4 SG2 634.3 THA 171.30

ORBIT DETERMINATION ACCURACY
ST 1950.9 SR 799.4 SS 2859.4
CRT -.7447 CRS .8402 CST -.9875
LSA 3513.8 MSA 523.8 SSA 19.7
EL1 2046.0 EL2 508.8 ALF 161.87

LAUNCH DATE OCT 20 1964 FLIGHT TIME 348.00 ARRIVAL DATE OCT 3 1965

HELIOCENTRIC CONIC DISTANCE 787.759 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 32.675 GAL -5.61 AZL 88.64 HCA 244.08 SMA 185.74 ECC .22014 INC 1.3609 V1 29.917
RP 217.27 LAP -1.22 LOP 270.71 VP 22.521 GAP -8.18 AZP 90.59 TAL 328.00 TAP 212.08 RCA 144.85 APO 226.63 V2 25.287
RC 282.167 GL 11.62 GP 5.61 ZAL 135.05 ZAP 68.45 ETS 181.59 ZAE 99.83 ETE 177.75 ZAC 88.93 ETC 258.58 CLP 68.34

PLANETOCENTRIC CONIC

C3 14.699 VHL 3.834 DLA 17.42 RAL 168.88 RAD 6567.6 VEL 11.666 PTH 2.05 VHP 3.152 DPA 14.95 RAP 163.57 ECC 1.2419

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 18 18	2718.15	-27.77	75.87	31.05	95.77	19 3 37	2118.1	-26.68	67.38
90.00	11 4 23	4212.60	.45	172.68	25.32	61.69	12 14 35	3612.6	-3.34	166.05
100.00	19 49 45	2423.26	-29.05	54.01	30.88	97.38	20 30 8	1823.3	-27.73	45.46
100.00	12 15 37	3982.72	1.57	155.16	24.69	60.15	13 22 0	3382.7	-2.41	148.64
110.00	21 20 12	2140.28	-32.35	31.88	30.23	101.69	21 55 52	1540.3	-30.41	23.20
110.00	13 1 40	3838.46	4.41	142.45	22.92	56.07	14 5 38	3238.5	-.07	136.23

DIFFERENTIAL CORRECTIONS
TDE -.7964 TRA 3.5667 TC3-7.3467 BAU 1.4607
RDE .5203 RRA -.3774 RC3 1.1297 FAU .48323
FDE-4.8423 FRA15.8787 FC-28.4605 BSP 27274
BDE .9513 BRA 3.5867 BC3 7.4330 FSP 10134

MID-COURSE EXECUTION ACCURACY
SGT 8022.4 SGR 1305.5 SG3 2926.3
RRT -.8696 RRF -.8873 RTF .9955
SGB 8128.0 R23 .0326 R13 -.9959
SG1 8102.9 SG2 638.3 THA 171.89

ORBIT DETERMINATION ACCURACY
ST 2062.5 SR 797.9 SS 2836.1
CRT -.7456 CRS .8384 CST -.9883
LSA 3557.5 MSA 527.3 SSA 19.3
EL1 2151.9 EL2 509.7 ALF 162.92

LAUNCH DATE OCT 20 1964 FLIGHT TIME 350.00 ARRIVAL DATE OCT 5 1965

HELIOCENTRIC CONIC DISTANCE 791.851 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 32.676 GAL -5.68 AZL 88.62 HCA 245.23 SMA 185.76 ECC .22072 INC 1.3784 V1 29.917
RP 216.91 LAP -1.25 LOP 271.86 VP 22.566 GAP -8.37 AZP 90.58 TAL 327.67 TAP 212.90 RCA 144.76 APO 226.76 V2 25.327
RC 283.431 GL 11.69 GP 5.49 ZAL 135.46 ZAP 66.80 ETS 181.75 ZAE 97.94 ETE 178.01 ZAC 88.72 ETC 258.65 CLP 66.69

PLANETOCENTRIC CONIC

C3 14.912 VHL 3.862 DLA 17.31 RAL 169.32 RAD 6567.6 VEL 11.675 PTH 2.05 VHP 3.196 DPA 15.03 RAP 163.05 ECC 1.2454

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 21 10	2717.12	-27.76	75.80	31.69	95.80	19 6 28	2117.1	-26.67	67.30
90.00	11 5 1	4220.04	.69	173.10	25.93	61.69	12 15 21	3620.0	-3.10	166.47
100.00	19 52 31	2422.55	-29.04	53.96	31.52	97.40	20 32 54	1822.6	-27.72	45.41
100.00	12 16 22	3989.84	1.81	155.55	25.30	60.16	13 22 52	3389.8	-2.17	149.03
110.00	21 22 45	2140.21	-32.35	31.87	30.87	101.69	21 58 26	1540.2	-30.40	23.20
110.00	13 2 37	3844.95	4.66	142.79	23.53	56.10	14 6 42	3244.9	.18	136.57

DIFFERENTIAL CORRECTIONS
TDE -.8530 TRA 3.7656 TC3-7.5160 BAU 1.5140
RDE .5232 RRA -.3649 RC3 1.0875 FAU .46767
FDE-4.7699 FRA15.5735 FC-27.1513 BSP 28490
BDE 1.0006 BRA 3.7833 BC3 7.5943 FSP 9888

MID-COURSE EXECUTION ACCURACY
SGT 8339.3 SGR 1276.6 SG3 2833.6
RRT -.8620 RRF -.8797 RTF .9957
SGB 8436.5 R23 .0322 R13 -.9961
SG1 8412.0 SG2 641.5 THA 172.44

ORBIT DETERMINATION ACCURACY
ST 2171.3 SR 795.1 SS 2805.3
CRT -.7446 CRS .8351 CST -.9890
LSA 3596.4 MSA 530.8 SSA 19.0
EL1 2255.1 EL2 511.0 ALF 163.90

LAUNCH DATE OCT 20 1964 FLIGHT TIME 352.00 ARRIVAL DATE OCT 7 1965

HELIOCENTRIC CONIC DISTANCE 795.949 EARTH TO MARS

RL	148.94	LAL	.00	LOL	26.64	VL	32.678	GAL	-5.75	AZL	88.60	HCA	246.38	SMA	185.79	ECC	.22135	INC	1.3957	V1	29.917
RP	216.57	LAP	-1.28	LOP	273.01	VP	22.612	GAP	-8.56	AZP	90.56	TAL	327.32	TAP	213.70	RCA	144.66	APO	226.91	V2	25.365
RC	284.679	GL	11.74	GP	5.37	ZAL	135.88	ZAP	65.19	ETS	181.89	ZAE	96.08	ETE	178.25	ZAC	88.52	ETC	258.72	CLP	65.08

PLANETOCENTRIC CONIC

C3	15.138	VHL	3.891	DLA	17.18	RAL	169.77	RAD	6567.6	VEL	11.684	PTH	2.05	VHP	3.243	DPA	15.10	RAP	162.57	ECC	1.2491

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 24 12	2715.78	-27.76	75.70	32.34	95.85	19 9 28	2115.8	-26.65	67.21
90.00	11 5 35	4228.13	.95	173.55	26.55	61.70	12 16 3	3628.1	-2.84	166.92
100.00	19 55 26	2421.57	-29.04	53.89	32.17	97.44	20 35 47	1821.6	-27.70	45.34
100.00	12 17 2	3997.57	2.07	155.97	25.92	60.17	13 23 39	3397.6	-1.91	149.45
110.00	21 25 27	2139.93	-32.35	31.85	31.52	101.70	22 1 7	1539.9	-30.40	23.18
110.00	13 3 30	3851.98	4.93	143.16	24.15	56.13	14 7 42	3252.0	.45	136.94

DIFFERENTIAL CORRECTIONS

TDE	-.9206	TRA	3.9554	TC3	-7.6906	BAU	1.5709
RDE	.5280	RRA	-.3508	RC3	1.0509	FAU	.45453
FDE	-4.7529	FRA	15.2093	FC	-25.9937	BSP	29430
BDE	1.0613	BRA	3.9709	BC3	7.7621	FSP	9520

MID-COURSE EXECUTION ACCURACY

SGT	8650.0	SGR	1251.3	SG3	2742.7		
RRT	-.8541	RRF	-.8726	RTF	.9959		
SGB	8740.1	R23	.0330	R13	-.9963		
SG1	8716.2	SG2	645.8	THA	172.92		

ORBIT DETERMINATION ACCURACY

ST	2283.8	SR	794.7	SS	2785.4
CRT	-.7468	CRS	.8352	CST	-.9894
LSA	3649.8	MSA	533.3	SSA	18.5
EL1	2363.5	EL2	510.7	ALF	164.70

LAUNCH DATE OCT 20 1964 FLIGHT TIME 354.00 ARRIVAL DATE OCT 9 1965

HELIOCENTRIC CONIC DISTANCE 800.050 EARTH TO MARS

RL	148.94	LAL	.00	LOL	26.64	VL	32.679	GAL	-5.83	AZL	88.59	HCA	247.54	SMA	185.81	ECC	.22203	INC	1.4127	V1	29.917
RP	216.22	LAP	-1.31	LOP	274.17	VP	22.657	GAP	-8.75	AZP	90.54	TAL	326.95	TAP	214.49	RCA	144.56	APO	227.07	V2	25.404
RC	285.910	GL	11.79	GP	5.25	ZAL	136.32	ZAP	63.63	ETS	182.02	ZAE	94.27	ETE	178.48	ZAC	88.33	ETC	258.78	CLP	63.51

PLANETOCENTRIC CONIC

C3	15.379	VHL	3.922	DLA	17.05	RAL	170.23	RAD	6567.6	VEL	11.695	PTH	2.06	VHP	3.293	DPA	15.15	RAP	162.14	ECC	1.2531

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 27 23	2714.12	-27.74	75.58	33.02	95.91	19 12 38	2114.1	-26.64	67.09
90.00	11 6 3	4236.87	1.23	174.04	27.19	61.71	12 16 40	3636.9	-2.56	167.41
100.00	19 58 30	2420.31	-29.02	53.80	32.84	97.49	20 38 50	1820.3	-27.68	45.25
100.00	12 17 37	4005.92	2.36	156.43	26.57	60.19	13 24 23	3405.9	-1.63	149.91
110.00	21 28 16	2139.43	-32.34	31.82	32.19	101.72	22 3 56	1539.4	-30.39	23.14
110.00	13 4 20	3859.57	5.22	143.56	24.79	56.17	14 8 40	3259.6	.74	137.33

DIFFERENTIAL CORRECTIONS

TDE	-.9854	TRA	4.1515	TC3	-7.8358	BAU	1.6245
RDE	.5321	RRA	-.3379	RC3	1.0121	FAU	.43972
FDE	-4.7037	FRA	14.8639	FC	-24.7528	BSP	30463
BDE	1.1198	BRA	4.1652	BC3	7.9008	FSP	9210

MID-COURSE EXECUTION ACCURACY

SGT	8949.3	SGR	1225.1	SG3	2649.1		
RRT	-.8458	RRF	-.8647	RTF	.9961		
SGB	9032.8	R23	.0334	R13	-.9964		
SG1	9009.4	SG2	649.3	THA	173.36		

ORBIT DETERMINATION ACCURACY

ST	2393.5	SR	793.0	SS	2758.2
CRT	-.7472	CRS	.8339	CST	-.9898
LSA	3698.4	MSA	535.7	SSA	18.2
EL1	2469.1	EL2	510.8	ALF	165.46

LAUNCH DATE OCT 20 1964 FLIGHT TIME 356.00 ARRIVAL DATE OCT 11 1965

HELIOCENTRIC CONIC DISTANCE 804.156 EARTH TO MARS

RL	148.94	LAL	.00	LOL	26.64	VL	32.681	GAL	-5.91	AZL	88.57	HCA	248.70	SMA	185.84	ECC	.22275	INC	1.4295	V1	29.917
RP	215.88	LAP	-1.33	LOP	275.33	VP	22.702	GAP	-8.94	AZP	90.52	TAL	326.57	TAP	215.27	RCA	144.45	APO	227.24	V2	25.442
RC	287.127	GL	11.84	GP	5.13	ZAL	136.77	ZAP	62.11	ETS	182.15	ZAE	92.49	ETE	178.69	ZAC	88.14	ETC	258.83	CLP	61.99

PLANETOCENTRIC CONIC

C3	15.635	VHL	3.954	DLA	16.89	RAL	170.70	RAD	6567.6	VEL	11.706	PTH	2.06	VHP	3.345	DPA	15.18	RAP	161.74	ECC	1.2573

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 30 44	2712.18	-27.73	75.44	33.71	95.98	19 15 57	2112.2	-26.61	66.95
90.00	11 6 26	4246.26	1.53	174.56	27.85	61.72	12 17 12	3646.3	-2.26	167.93
100.00	20 1 43	2418.78	-29.01	53.69	33.53	97.54	20 42 2	1818.8	-27.66	45.14
100.00	12 18 8	4014.89	2.66	156.93	27.23	60.22	13 25 3	3414.9	-1.32	150.40
110.00	21 31 14	2138.74	-32.33	31.76	32.88	101.75	22 6 52	1538.7	-30.38	23.09
110.00	13 5 7	3867.70	5.52	143.98	25.45	56.21	14 9 35	3267.7	1.05	137.76

DIFFERENTIAL CORRECTIONS

TDE	-1.0523	TRA	4.3488	TC3	-7.9651	BAU	1.6773
RDE	.5363	RRA	-.3251	RC3	.9742	FAU	.42490
FDE	-4.6540	FRA	14.5130	FC	-23.5273	BSP	31459
BDE	1.1810	BRA	4.3609	BC3	8.0245	FSP	8896

MID-COURSE EXECUTION ACCURACY

SGT	9239.8	SGR	1199.9	SG3	2555.3		
RRT	-.8370	RRF	-.8565	RTF	.9962		
SGB	9317.4	R23	.0338	R13	-.9965		
SG1	9294.5	SG2	652.7	THA	173.77		

ORBIT DETERMINATION ACCURACY

ST	2502.8	SR	791.3	SS	2730.5
CRT	-.7478	CRS	.8329	CST	-.9902
LSA	3749.2	MSA	537.7	SSA	17.8
EL1	2574.8	EL2	510.7	ALF	166.14

LAUNCH DATE OCT 20 1964 FLIGHT TIME 358.00 ARRIVAL DATE OCT 13 1965

HELIOCENTRIC CONIC DISTANCE 808.265 EARTH TO MARS

RL	148.94	LAL	.00	LOL	26.64	VL	32.683	GAL	-5.99	AZL	88.55	HCA	249.87	SMA	185.88	ECC	.22351	INC	1.4460	V1	29.917
RP	215.54	LAP	-1.36	LOP	276.50	VP	22.747	GAP	-9.12	AZP	90.50	TAL	326.18	TAP	216.04	RCA	144.33	APO	227.42	V2	25.480
RC	288.329	GL	11.87	GP	5.02	ZAL	137.23	ZAP	60.63	ETS	182.27	ZAE	90.75	ETE	178.89	ZAC	87.97	ETC	258.88	CLP	60.50

PLANETOCENTRIC CONIC

C3	15.907	VHL	3.988	DLA	16.73	RAL	171.18	RAD	6567.6	VEL	11.717	PTH	2.06	VHP	3.400	DPA	15.20	RAP	161.40	ECC	1.2618

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 34 14	2709.97	-27.71	75.28	34.41	96.06	19 19 24	2110.0	-26.59	66.80
90.00	11 6 45	4256.28	1.85	175.12	28.53	61.74	12 17 41	3656.3	-1.94	168.49
100.00	20 5 5	2417.02	-28.99	53.56	34.24	97.61	20 45 22	1817.0	-27.64	45.02
100.00	12 18 35	4024.45	2.98	157.45	27.91	60.24	13 25 40	3424.5	-1.00	150.93
110.00	21 34 18	2137.87	-32.32	31.70	33.58	101.79	22 9 56	1537.9	-30.36	23.03
110.00	13 5 51	3876.37	5.85	144.44	26.13	56.26	14 10 28	3276.4	1.38	138.21

DIFFERENTIAL CORRECTIONS

TDE	-1.1211	TRA	4.5476	TC3	-8.0766	BAU	1.7291
RDE	.5407	RRA	-.3127	RC3	.9371	FAU	.41007
FDE	-4.6036	FRA	14.1591	FC	-22.3185	BSP	32423
BDE	1.2446	BRA	4.5584	BC3	8.1308	FSP	8581

MID-COURSE EXECUTION ACCURACY

SGT	9520.3	SGR	1175.6	SG3	2461.7		
RRT	-.8279	RRF	-.8481	RTF	.9963		
SGB	9592.6	R23	.0344	R13	-.9965		
SG1	9570.2	SG2	655.9	THA	174.13		

ORBIT DETERMINATION ACCURACY

ST	2611.4	SR	789.7	SS	2702.2
CRT	-.7484	CRS	.8322	CST	-.9905
LSA	3801.8	MSA	539.5	SSA	17.5
EL1	2680.0	EL2	510.4	ALF	166.76

LAUNCH DATE OCT 20 1964 FLIGHT TIME 360.00 ARRIVAL DATE OCT 15 1965

HELIOCENTRIC CONIC DISTANCE 812.378 EARTH TO MARS
RL 148.94 LAL .00 LOL 26.64 VL 32.685 GAL -6.08 AZL 88.54 HCA 251.04 SMA 185.91 ECC .22432 INC 1.4624 V1 29.917
RP 215.21 LAP -1.38 LOP 277.67 VP 22.792 GAP -9.30 AZP 90.48 TAL 325.77 TAP 216.80 RCA 144.21 APO 227.62 V2 25.517
RC 289.516 GL 11.90 GP 4.91 ZAL 137.71 ZAP 59.19 ETS 182.38 ZAE 89.06 ETE 179.08 ZAC 87.81 ETC 258.92 CLP 59.06
PLANETOCENTRIC CONIC
C3 16.195 VHL 4.024 DLA 16.56 RAL 171.66 RAD 6567.6 VEL 11.729 PTH 2.07 VHP 3.457 DPA 15.20 RAP 161.09 ECC 1.2665

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 37 53	2707.50	-27.70	75.10	35.14	96.14	19 23 1	2107.5	-26.56	66.62
90.00	11 6 59	4266.90	2.20	175.71	29.23	61.76	12 18 6	3666.9	-1.60	169.09
100.00	20 8 35	2415.03	-28.98	53.41	34.96	97.68	20 48 50	1815.0	-27.61	44.88
100.00	12 18 58	4034.60	3.33	158.01	28.60	60.28	13 26 13	3434.6	-.66	151.49
110.00	21 37 30	2136.83	-32.31	31.62	34.30	101.83	22 13 7	1536.8	-30.34	22.96
110.00	13 6 33	3885.58	6.20	144.93	26.82	56.32	14 11 18	3285.6	1.73	138.69

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY
TDE-1.1922 TRA 4.7484 TC3-8.1712 BAU 1.7799 SGT 9791.7 SGR 1152.2 SG3 2368.5 ST 2719.7 SR 788.0 SS 2672.6
RDE .5452 RRA -.3007 RC3 .9008 FAU .39516 RRT -.8186 RRF -.8394 RTF .9963 CRT -.7490 CRS .8316 CST -.9908
FDE-4.5494 FRA13.8056 FC-21.1244 BSP 33353 SGB 9859.2 R23 .0349 R13 -.9966 LSA 3855.9 MSA 540.7 SSA 17.2
BDE 1.3109 BRA 4.7579 BC3 8.2207 FSP 8269 SG1 9837.2 SG2 658.7 THA 174.47 EL1 2785.3 EL2 509.8 ALF 167.32

LAUNCH DATE OCT 20 1964 FLIGHT TIME 362.00 ARRIVAL DATE OCT 17 1965

HELIOCENTRIC CONIC DISTANCE 816.494 EARTH TO MARS
RL 148.94 LAL .00 LOL 26.64 VL 32.688 GAL -6.17 AZL 88.52 HCA 252.21 SMA 185.95 ECC .22918 INC 1.4786 V1 29.917
RP 214.88 LAP -1.41 LOP 278.84 VP 22.837 GAP -9.48 AZP 90.45 TAL 325.34 TAP 217.55 RCA 144.08 APO 227.82 V2 25.554
RC 290.691 GL 11.91 GP 4.80 ZAL 138.20 ZAP 57.79 ETS 182.48 ZAE 87.40 ETE 179.25 ZAC 87.67 ETC 258.96 CLP 57.66
PLANETOCENTRIC CONIC
C3 16.500 VHL 4.062 DLA 16.37 RAL 172.16 RAD 6567.7 VEL 11.742 PTH 2.07 VHP 3.517 DPA 15.19 RAP 160.83 ECC 1.2715

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 41 40	2704.80	-27.68	74.91	35.88	96.24	19 26 45	2104.8	-26.52	66.43
90.00	11 7 9	4278.13	2.56	176.34	29.94	61.79	12 18 27	3678.1	-1.23	169.71
100.00	20 12 12	2412.84	-28.96	53.25	35.70	97.77	20 52 25	1812.8	-27.58	44.72
100.00	12 19 18	4045.33	3.69	158.60	29.32	60.31	13 26 43	3445.3	-.29	152.07
110.00	21 40 48	2135.63	-32.29	31.53	35.03	101.88	22 16 24	1535.6	-30.32	22.87
110.00	13 7 11	3895.30	6.57	145.44	27.54	56.38	14 12 6	3295.3	2.10	139.20

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY
TDE-1.2643 TRA 4.9524 TC3-8.2468 BAU 1.8292 SGT10053.5 SGR 1129.7 SG3 2276.2 ST 2826.9 SR 786.2 SS 2641.7
RDE .5498 RRA -.2891 RC3 .8654 FAU .38028 RRT -.8089 RRF -.8304 RTF .9963 CRT -.7495 CRS .8310 CST -.9910
FDE-4.4920 FRA13.4528 FC-19.9526 BSP 34286 SGB10116.8 R23 .0356 R13 -.9966 LSA 3910.7 MSA 541.9 SSA 16.9
BDE 1.3787 BRA 4.9608 BC3 8.2921 FSP 7964 SG110095.1 SG2 661.5 THA 174.78 EL1 2889.6 EL2 509.2 ALF 167.84

LAUNCH DATE OCT 20 1964 FLIGHT TIME 364.00 ARRIVAL DATE OCT 19 1965

HELIOCENTRIC CONIC DISTANCE 820.613 EARTH TO MARS
RL 148.94 LAL .00 LOL 26.64 VL 32.690 GAL -6.26 AZL 88.51 HCA 253.38 SMA 185.99 ECC .22608 INC 1.4946 V1 29.917
RP 214.56 LAP -1.43 LOP 280.02 VP 22.881 GAP -9.67 AZP 90.43 TAL 324.91 TAP 218.29 RCA 143.94 APO 228.04 V2 25.590
RC 291.851 GL 11.93 GP 4.69 ZAL 138.71 ZAP 56.43 ETS 182.58 ZAE 85.78 ETE 179.42 ZAC 87.53 ETC 258.98 CLP 56.31
PLANETOCENTRIC CONIC
C3 16.823 VHL 4.102 DLA 16.17 RAL 172.66 RAD 6567.7 VEL 11.756 PTH 2.08 VHP 3.579 DPA 15.16 RAP 160.62 ECC 1.2769

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 45 35	2701.90	-27.65	74.70	36.64	96.34	19 30 37	2101.9	-26.49	66.23
90.00	11 7 14	4289.94	2.94	177.00	30.68	61.82	12 18 44	3689.9	-.85	170.37
100.00	20 15 58	2410.45	-28.93	53.08	36.46	97.85	20 56 8	1810.5	-27.55	44.55
100.00	12 19 33	4056.62	4.07	159.22	30.05	60.36	13 27 10	3456.6	.09	152.69
110.00	21 44 13	2134.30	-32.27	31.43	35.78	101.94	22 19 48	1534.3	-30.29	22.78
110.00	13 7 47	3905.54	6.95	145.98	28.27	56.45	14 12 52	3305.5	2.49	139.73

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY
TDE-1.3390 TRA 5.1578 TC3-8.3067 BAU 1.8776 SGT10305.6 SGR 1108.3 SG3 2184.9 ST 2933.4 SR 784.4 SS 2610.4
RDE .5546 RRA -.2778 RC3 .8312 FAU .36553 RRT -.7990 RRF -.8213 RTF .9964 CRT -.7501 CRS .8308 CST -.9912
FDE-4.4345 FRA13.1002 FC-18.8102 BSP 35177 SGB10365.0 R23 .0364 R13 -.9966 LSA 3967.4 MSA 542.7 SSA 16.7
BDE 1.4493 BRA 5.1652 BC3 8.3482 FSP 7661 SG110343.7 SG2 664.0 THA 175.07 EL1 2993.7 EL2 508.3 ALF 168.32

LAUNCH DATE OCT 20 1964 FLIGHT TIME 366.00 ARRIVAL DATE OCT 21 1965

HELIOCENTRIC CONIC DISTANCE 824.734 EARTH TO MARS
RL 148.94 LAL .00 LOL 26.64 VL 32.693 GAL -6.36 AZL 88.49 HCA 254.56 SMA 186.04 ECC .22704 INC 1.5104 V1 29.917
RP 214.24 LAP -1.46 LOP 281.20 VP 22.925 GAP -9.84 AZP 90.40 TAL 324.45 TAP 219.01 RCA 143.80 APO 228.27 V2 25.626
RC 292.998 GL 11.93 GP 4.59 ZAL 139.22 ZAP 55.12 ETS 182.67 ZAE 84.19 ETE 179.57 ZAC 87.40 ETC 259.00 CLP 54.99
PLANETOCENTRIC CONIC
C3 17.166 VHL 4.143 DLA 15.96 RAL 173.17 RAD 6567.7 VEL 11.771 PTH 2.08 VHP 3.644 DPA 15.12 RAP 160.44 ECC 1.2825

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 49 38	2698.79	-27.63	74.47	37.42	96.45	19 34 36	2098.8	-26.45	66.01
90.00	11 7 16	4302.33	3.34	177.69	31.43	61.86	12 18 59	3702.3	-.45	171.06
100.00	20 19 50	2407.90	-28.91	52.89	37.23	97.95	20 59 58	1807.9	-27.51	44.37
100.00	12 19 45	4068.45	4.47	159.88	30.81	60.41	13 27 34	3468.5	.49	153.34
110.00	21 47 45	2132.84	-32.25	31.32	36.55	102.00	22 23 17	1532.8	-30.26	22.67
110.00	13 8 20	3916.28	7.36	146.55	29.02	56.52	14 13 36	3316.3	2.90	140.29

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY
TDE-1.4157 TRA 5.3661 TC3-8.3519 BAU 1.9254 SGT10549.7 SGR 1088.0 SG3 2095.2 ST 3039.3 SR 782.7 SS 2578.2
RDE .5596 RRA -.2671 RC3 .7980 FAU .35098 RRT -.7890 RRF -.8121 RTF .9963 CRT -.7508 CRS .8308 CST -.9914
FDE-4.3749 FRA12.7504 FC-17.7012 BSP 36035 SGB10605.7 R23 .0371 R13 -.9965 LSA 4025.1 MSA 543.2 SSA 16.5
BDE 1.5223 BRA 5.3727 BC3 8.3899 FSP 7362 SG110584.7 SG2 666.2 THA 175.33 EL1 3097.2 EL2 507.3 ALF 168.75

LAUNCH DATE OCT 20 1964 FLIGHT TIME 368.00 ARRIVAL DATE OCT 23 1965

HELIOCENTRIC CONIC DISTANCE 828.858 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 32.695 GAL -6.46 AZL 88.47 HCA 255.75 SMA 186.08 ECC .22804 INC 1.5262 V1 29.917
RP 213.93 LAP -1.48 LOP 282.38 VP 22.968 GAP -10.02 AZP 90.38 TAL 323.98 TAP 219.73 RCA 143.65 APO 228.52 V2 25.662
RC 294.131 GL 11.93 GP 4.49 ZAL 139.75 ZAP 53.84 ETS 182.75 ZAE 82.65 ETE 179.72 ZAC 87.28 ETC 259.02 CLP 53.71

PLANETOCENTRIC CONIC

C3 17.528 VHL 4.187 DLA 15.73 RAL 173.69 RAD 6567.7 VEL 11.786 PTH 2.08 VHP 3.711 DPA 15.06 RAP 160.31 ECC 1.2885

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 53 47	2695.52	-27.61	74.24	38.21	96.57	19 38 43	2095.5	-26.41	65.78
90.00	11 7 15	4315.27	3.75	178.42	32.20	61.91	12 19 10	3715.3	-.03	171.78
100.00	20 23 49	2405.19	-28.88	52.70	38.02	98.05	21 3 54	1805.2	-27.47	44.18
100.00	12 19 54	4080.83	4.88	160.56	31.58	60.47	13 27 55	3480.8	.91	154.02
110.00	21 51 22	2131.27	-32.23	31.21	37.34	102.07	22 26 53	1531.3	-30.23	22.56
110.00	13 8 51	3927.52	7.78	147.15	29.80	56.61	14 14 18	3327.5	3.33	140.88

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.4946 TRA 5.5780 TC3-8.3785 BAU 1.9716 SGT10784.3 SGR 1068.6 SG3 2007.1 ST 3144.6 SR 780.9 SS 2545.1
RDE .5648 RRA -.2568 RC3 .7658 FAU .33652 RRT -.7789 RRF -.8028 RTF .9963 CRT -.7516 CRS .8308 CST -.9915
FDE-4.3134 FRA12.4050 FC-16.6212 BSP 36888 SGB10837.1 R23 .0379 R13 -.9965 LSA 4084.1 MSA 543.5 SSA 16.2
BDE 1.5977 BRA 5.5839 BC3 8.4135 FSP 7072 SG110816.5 SG2 668.2 THA 175.57 EL1 3200.3 EL2 506.1 ALF 169.15

LAUNCH DATE OCT 20 1964 FLIGHT TIME 370.00 ARRIVAL DATE OCT 25 1965

HELIOCENTRIC CONIC DISTANCE 832.983 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 32.698 GAL -6.57 AZL 88.46 HCA 256.93 SMA 186.13 ECC .22910 INC 1.5418 V1 29.917
RP 213.62 LAP -1.50 LOP 283.53 VP 23.012 GAP -10.20 AZP 90.35 TAL 323.50 TAP 220.43 RCA 143.49 APO 228.78 V2 25.697
RC 295.251 GL 11.92 GP 4.39 ZAL 140.29 ZAP 52.60 ETS 182.83 ZAE 81.14 ETE 179.86 ZAC 87.18 ETC 259.03 CLP 52.47

PLANETOCENTRIC CONIC

C3 17.912 VHL 4.232 DLA 15.50 RAL 174.21 RAD 6567.7 VEL 11.802 PTH 2.09 VHP 3.780 DPA 14.99 RAP 160.22 ECC 1.2948

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 58 4	2692.09	-27.58	73.99	39.02	96.69	19 42 56	2092.1	-26.37	65.53
90.00	11 7 9	4328.76	4.18	179.17	32.99	61.97	12 19 18	3728.8	.40	172.53
100.00	20 27 55	2402.34	-28.86	52.49	38.83	98.16	21 7 57	1802.3	-27.43	43.98
100.00	12 20 0	4093.74	5.31	161.27	32.37	60.54	13 28 13	3493.7	1.35	154.73
110.00	21 55 5	2129.60	-32.20	31.08	38.14	102.14	22 30 34	1529.6	-30.20	22.44
110.00	13 9 19	3939.25	8.22	147.77	30.59	56.70	14 14 58	3339.2	3.78	141.50

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.5759 TRA 5.7929 TC3-8.3916 BAU 2.0172 SGT11010.8 SGR 1050.4 SG3 1920.9 ST 3249.3 SR 779.1 SS 2511.3
RDE .5702 RRA -.2471 RC3 .7349 FAU .32236 RRT -.7887 RRF -.7935 RTF .9963 CRT -.7525 CRS .8311 CST -.9916
FDE-4.2509 FRA12.0632 FC-15.5810 BSP 37718 SGB11060.8 R23 .0388 R13 -.9965 LSA 4144.4 MSA 543.4 SSA 16.1
BDE 1.6759 BRA 5.7982 BC3 8.4237 FSP 6789 SG111040.5 SG2 670.0 THA 175.79 EL1 3303.1 EL2 504.8 ALF 169.52

LAUNCH DATE OCT 20 1964 FLIGHT TIME 372.00 ARRIVAL DATE OCT 27 1965

HELIOCENTRIC CONIC DISTANCE 837.110 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 32.701 GAL -6.68 AZL 88.44 HCA 258.12 SMA 186.18 ECC .23021 INC 1.5574 V1 29.917
RP 213.31 LAP -1.52 LOP 284.76 VP 23.054 GAP -10.38 AZP 90.32 TAL 322.99 TAP 221.12 RCA 143.32 APO 229.05 V2 25.731
RC 296.356 GL 11.90 GP 4.29 ZAL 140.85 ZAP 51.39 ETS 182.90 ZAE 79.66 ETE 179.99 ZAC 87.08 ETC 259.03 CLP 51.27

PLANETOCENTRIC CONIC

C3 18.317 VHL 4.280 DLA 15.26 RAL 174.75 RAD 6567.7 VEL 11.819 PTH 2.09 VHP 3.852 DPA 14.91 RAP 160.17 ECC 1.3015

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 2 27	2688.52	-27.55	73.73	39.85	96.82	19 47 15	2088.5	-26.32	65.28
90.00	11 7 1	4342.78	4.63	179.96	33.80	62.03	12 19 24	3742.8	.85	173.32
100.00	20 32 6	2399.37	-28.83	52.27	39.65	98.27	21 12 6	1799.4	-27.39	43.77
100.00	12 20 2	4107.17	5.76	162.02	33.18	60.62	13 28 30	3507.2	1.81	155.47
110.00	21 58 53	2127.84	-32.18	30.95	38.95	102.21	22 34 21	1527.8	-30.16	22.32
110.00	13 9 45	3951.46	8.67	148.43	31.40	56.80	14 15 36	3351.5	4.24	142.14

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.6590 TRA 6.0119 TC3-8.3894 BAU 2.0617 SGT11229.2 SGR 1033.0 SG3 1836.6 ST 3353.0 SR 777.3 SS 2476.2
RDE .5757 RRA -.2378 RC3 .7051 FAU .30842 RRT -.7585 RRF -.7842 RTF .9962 CRT -.7534 CRS .8315 CST -.9917
FDE-4.1857 FRA11.7259 FC-14.5771 BSP 38528 SGB11276.6 R23 .0396 R13 -.9964 LSA 4205.1 MSA 543.0 SSA 15.9
BDE 1.7561 BRA 6.0166 BC3 8.4190 FSP 6513 SG111256.6 SG2 671.5 THA 175.99 EL1 3404.9 EL2 503.3 ALF 169.87

LAUNCH DATE OCT 20 1964 FLIGHT TIME 374.00 ARRIVAL DATE OCT 29 1965

HELIOCENTRIC CONIC DISTANCE 841.238 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 32.704 GAL -6.79 AZL 88.43 HCA 259.31 SMA 186.24 ECC .23138 INC 1.5728 V1 29.917
RP 213.01 LAP -1.55 LOP 285.95 VP 23.097 GAP -10.56 AZP 90.29 TAL 322.48 TAP 221.79 RCA 143.15 APO 229.33 V2 25.765
RC 297.448 GL 11.88 GP 4.20 ZAL 141.41 ZAP 50.23 ETS 182.97 ZAE 78.23 ETE 180.11 ZAC 86.99 ETC 259.02 CLP 50.10

PLANETOCENTRIC CONIC

C3 18.746 VHL 4.330 DLA 15.00 RAL 175.28 RAD 6567.8 VEL 11.838 PTH 2.10 VHP 3.926 DPA 14.81 RAP 160.16 ECC 1.3085

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 6 56	2684.84	-27.52	73.47	40.69	96.95	19 51 40	2084.8	-26.27	65.02
90.00	11 6 49	4357.32	5.10	180.78	34.63	62.11	12 19 27	3757.3	1.32	174.13
100.00	20 36 24	2396.30	-28.80	52.05	40.49	98.38	21 16 20	1796.3	-27.34	43.55
100.00	12 20 2	4121.10	6.23	162.79	34.01	60.70	13 28 43	3521.1	2.28	156.23
110.00	22 2 47	2126.02	-32.15	30.82	39.79	102.29	22 38 13	1526.0	-30.13	22.19
110.00	13 10 9	3964.14	9.14	149.10	32.23	56.92	14 16 13	3364.1	4.72	142.80

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.7445 TRA 6.2347 TC3-8.3731 BAU 2.1053 SGT11439.4 SGR 1016.7 SG3 1754.4 ST 3455.9 SR 775.4 SS 2440.5
RDE .5815 RRA -.2291 RC3 .6764 FAU .29477 RRT -.7484 RRF -.7750 RTF .9961 CRT -.7544 CRS .8320 CST -.9918
FDE-4.1198 FRA11.3930 FC-13.6130 BSP 39320 SGB11484.5 R23 .0405 R13 -.9963 LSA 4266.8 MSA 542.5 SSA 15.7
BDE 1.8389 BRA 6.2389 BC3 8.4004 FSP 6243 SG111464.8 SG2 672.8 THA 176.18 EL1 3506.1 EL2 501.7 ALF 170.19

LAUNCH DATE OCT 20 1964 FLIGHT TIME 376.00 ARRIVAL DATE OCT 31 1965

HELIOCENTRIC CONIC DISTANCE 845.366 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 32.708 GAL -6.91 AZL 88.41 HCA 260.51 SMA 186.29 ECC .23260 INC 1.5882 V1 29.917
RP 212.72 LAP -1.57 LOP 287.15 VP 23.139 GAP -10.73 AZP 90.26 TAL 321.95 TAP 222.46 RCA 142.96 APO 229.63 V2 25.798
RC 298.526 GL 11.85 GP 4.11 ZAL 141.98 ZAP 49.16 ETS 183.03 ZAE 76.82 ETE 180.23 ZAC 86.92 ETC 259.01 CLP 48.97

PLANETOCENTRIC CONIC

C3 19.200 VHL 4.382 DLA 14.74 RAL 175.83 RAD 6567.8 VEL 11.857 PTH 2.10 VHP 4.002 DPA 14.70 RAP 160.18 ECC 1.3160

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 11 30	2681.07	-27.49	73.20	41.55	97.08	19 56 11	2081.1	-26.22	64.76
90.00	11 6 35	4372.37	5.57	181.62	35.48	62.19	12 19 27	3772.4	1.81	174.97
100.00	20 40 47	2393.15	-28.77	51.82	41.35	98.50	21 20 40	1793.2	-27.29	43.33
100.00	12 19 59	4135.52	6.71	163.59	34.86	60.80	13 28 55	3535.5	2.76	157.02
110.00	22 6 45	2124.15	-32.12	30.68	40.63	102.37	22 42 9	1524.1	-30.09	22.05
110.00	13 10 30	3977.29	9.63	149.81	33.08	57.04	14 16 48	3377.3	5.22	143.49

DIFFERENTIAL CORRECTIONS
TDE-1.8329 TRA 6.4614 TC3-8.3443 BAU 2.1483
RDE .5875 RRA -.2209 RC3 .6490 FAU .28149
FDE-4.0537 FRA11.0647 FC-12.6926 BSP 40094
BDE 1.9247 BRA 6.4652 BC3 8.3695 FSP 5981

MID-COURSE EXECUTION ACCURACY
SGT11642.2 SGR 1001.4 SG3 1674.5
RRT -.7385 RRF -.7660 RTF .9960
SGB11685.2 R23 .0415 R13 -.9962
SG111665.7 SG2 673.9 THA 176.35

ORBIT DETERMINATION ACCURACY
ST 3558.2 SR 773.6 SS 2404.2
CRT -.7555 CRS .8328 CST -.9918
LSA 4329.7 MSA 541.7 SSA 15.6
EL1 3606.9 EL2 500.0 ALF 170.49

LAUNCH DATE OCT 20 1964 FLIGHT TIME 378.00 ARRIVAL DATE NOV 2 1965

HELIOCENTRIC CONIC DISTANCE 849.495 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 32.711 GAL -7.03 AZL 88.40 HCA 261.71 SMA 186.35 ECC .23389 INC 1.6034 V1 29.917
RP 212.43 LAP -1.59 LOP 288.35 VP 23.180 GAP -10.91 AZP 90.23 TAL 321.40 TAP 223.11 RCA 142.77 APO 229.94 V2 25.831
RC 299.592 GL 11.82 GP 4.02 ZAL 142.57 ZAP 48.00 ETS 183.09 ZAE 75.45 ETE 180.34 ZAC 86.85 ETC 258.99 CLP 47.87

PLANETOCENTRIC CONIC

C3 19.680 VHL 4.436 DLA 14.46 RAL 176.38 RAD 6567.8 VEL 11.877 PTH 2.11 VHP 4.080 DPA 14.58 RAP 160.25 ECC 1.3239

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 16 10	2677.22	-27.46	72.92	42.43	97.21	20 0 47	2077.2	-26.17	64.49
90.00	11 6 18	4387.91	6.07	182.50	36.35	62.29	12 19 26	3787.9	2.31	175.83
100.00	20 45 15	2389.93	-28.73	51.59	42.22	98.62	21 25 5	1789.9	-27.24	43.10
100.00	12 19 54	4150.42	7.20	164.42	35.73	60.91	13 29 5	3550.4	3.27	157.84
110.00	22 10 48	2122.23	-32.10	30.53	41.50	102.45	22 46 11	1522.2	-30.05	21.92
110.00	13 10 50	3990.89	10.13	150.54	33.95	57.18	14 17 21	3390.9	5.74	144.21

DIFFERENTIAL CORRECTIONS
TDE-1.9241 TRA 6.6922 TC3-8.3039 BAU 2.1909
RDE .5938 RRA -.2132 RC3 .6227 FAU .26854
FDE-3.9869 FRA10.7413 FC-11.8133 BSP 40836
BDE 2.0136 BRA 6.6956 BC3 8.3273 FSP 5726

MID-COURSE EXECUTION ACCURACY
SGT11837.8 SGR 987.1 SG3 1597.0
RRT -.7287 RRF -.7572 RTF .9959
SGB11878.9 R23 .0425 R13 -.9960
SG111859.7 SG2 674.7 THA 176.51

ORBIT DETERMINATION ACCURACY
ST 3660.0 SR 771.8 SS 2367.2
CRT -.7568 CRS .8338 CST -.9919
LSA 4393.4 MSA 540.5 SSA 15.4
EL1 3707.1 EL2 498.0 ALF 170.76

LAUNCH DATE OCT 20 1964 FLIGHT TIME 380.00 ARRIVAL DATE NOV 4 1965

HELIOCENTRIC CONIC DISTANCE 853.622 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 32.715 GAL -7.16 AZL 88.38 HCA 262.91 SMA 186.41 ECC .23523 INC 1.6187 V1 29.917
RP 212.15 LAP -1.61 LOP 289.55 VP 23.221 GAP -11.09 AZP 90.20 TAL 320.83 TAP 223.75 RCA 142.56 APO 230.26 V2 25.863
RC 300.645 GL 11.78 GP 3.94 ZAL 143.16 ZAP 46.94 ETS 183.14 ZAE 74.11 ETE 180.44 ZAC 86.79 ETC 258.97 CLP 46.81

PLANETOCENTRIC CONIC

C3 20.187 VHL 4.493 DLA 14.18 RAL 176.93 RAD 6567.8 VEL 11.898 PTH 2.11 VHP 4.161 DPA 14.45 RAP 160.35 ECC 1.3322

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 20 55	2673.30	-27.42	72.64	43.32	97.35	20 5 28	2073.3	-26.12	64.21
90.00	11 5 58	4403.92	6.57	183.40	37.24	62.39	12 19 22	3803.9	2.83	176.73
100.00	20 49 48	2386.66	-28.70	51.35	43.11	98.74	21 29 34	1786.7	-27.20	42.87
100.00	12 19 46	4165.80	7.71	165.28	36.62	61.03	13 29 12	3565.8	3.79	158.69
110.00	22 14 56	2120.29	-32.07	30.39	42.38	102.53	22 50 16	1520.3	-30.01	21.78
110.00	13 11 8	4004.94	10.65	151.30	34.85	57.33	14 17 53	3404.9	6.27	144.95

DIFFERENTIAL CORRECTIONS
TDE-2.0175 TRA 6.9280 TC3-8.2509 BAU 2.2325
RDE .6003 RRA -.2061 RC3 .5975 FAU .25590
FDE-3.9190 FRA10.4227 FC-10.9746 BSP 41567
BDE 2.1049 BRA 6.9310 BC3 8.2725 FSP 5477

MID-COURSE EXECUTION ACCURACY
SGT12026.0 SGR 973.5 SG3 1521.6
RRT -.7192 RRF -.7487 RTF .9957
SGB12065.3 R23 .0436 R13 -.9959
SG112046.4 SG2 675.3 THA 176.66

ORBIT DETERMINATION ACCURACY
ST 3760.5 SR 770.0 SS 2329.3
CRT -.7582 CRS .8349 CST -.9919
LSA 4457.5 MSA 539.3 SSA 15.3
EL1 3806.4 EL2 496.0 ALF 171.02

LAUNCH DATE OCT 20 1964 FLIGHT TIME 382.00 ARRIVAL DATE NOV 6 1965

HELIOCENTRIC CONIC DISTANCE 857.749 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 32.718 GAL -7.29 AZL 88.37 HCA 264.12 SMA 186.48 ECC .23664 INC 1.6339 V1 29.917
RP 211.87 LAP -1.63 LOP 290.76 VP 23.261 GAP -11.26 AZP 90.17 TAL 320.25 TAP 224.37 RCA 142.35 APO 230.60 V2 25.895
RC 301.687 GL 11.73 GP 3.85 ZAL 143.76 ZAP 45.91 ETS 183.19 ZAE 72.80 ETE 180.54 ZAC 86.74 ETC 258.94 CLP 45.78

PLANETOCENTRIC CONIC

C3 20.723 VHL 4.552 DLA 13.89 RAL 177.49 RAD 6567.8 VEL 11.921 PTH 2.12 VHP 4.244 DPA 14.31 RAP 160.48 ECC 1.3410

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 25 44	2669.35	-27.39	72.35	44.23	97.49	20 10 14	2069.4	-26.07	63.94
90.00	11 5 36	4420.41	7.09	184.34	38.15	62.51	12 19 17	3820.4	3.35	177.65
100.00	20 54 25	2383.36	-28.67	51.11	44.02	98.86	21 34 8	1783.4	-27.14	42.64
100.00	12 19 37	4181.63	8.23	166.17	37.54	61.16	13 29 18	3581.6	4.32	159.56
110.00	22 19 7	2118.33	-32.04	30.24	43.28	102.61	22 54 26	1518.3	-29.97	21.64
110.00	13 11 24	4019.42	11.18	152.09	35.76	57.49	14 18 23	3419.4	6.82	145.72

DIFFERENTIAL CORRECTIONS
TDE-2.1140 TRA 7.1686 TC3-8.1871 BAU 2.2738
RDE .6071 RRA -.1995 RC3 .5734 FAU .24363
FDE-3.8505 FRA10.1096 FC-10.1780 BSP 42278
BDE 2.1995 BRA 7.1713 BC3 8.2072 FSP 5236

MID-COURSE EXECUTION ACCURACY
SGT12207.5 SGR 960.9 SG3 1448.7
RRT -.7100 RRF -.7405 RTF .9956
SGB12245.3 R23 .0447 R13 -.9957
SG112226.6 SG2 675.6 THA 176.79

ORBIT DETERMINATION ACCURACY
ST 3860.6 SR 768.2 SS 2290.8
CRT -.7597 CRS .8361 CST -.9919
LSA 4522.5 MSA 537.8 SSA 15.2
EL1 3905.2 EL2 493.8 ALF 171.26

LAUNCH DATE OCT 20 1964 FLIGHT TIME 384.00 ARRIVAL DATE NOV 8 1965

HELIOCENTRIC CONIC DISTANCE 861.875 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 32.722 GAL -7.43 AZL 88.35 HCA 265.33 SMA 186.54 ECC .23811 INC 1.6491 V1 29.917
RP 211.60 LAP -1.64 LOP 291.97 VP 23.301 GAP -11.44 AZP 90.13 TAL 319.66 TAP 224.99 RCA 142.12 APO 230.96 V2 25.926
RC 302.717 GL 11.68 GP 3.77 ZAL 144.37 ZAP 44.91 ETS 183.24 ZAE 71.52 ETE 180.64 ZAC 86.70 ETC 258.91 CLP 44.78

PLANETOCENTRIC CONIC

C3 21.290 VHL 4.614 DLA 13.59 RAL 178.05 RAD 6567.9 VEL 11.944 PTH 2.13 VHP 4.330 DPA 14.15 RAP 160.65 ECC 1.3504

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 30 38	2665.37	-27.35	72.07	45.15	97.63	20 15 4	2065.4	-26.01	63.66
90.00	11 5 12	4437.34	7.62	185.30	39.08	62.65	12 19 9	3837.3	3.90	178.60
100.00	20 59 7	2380.04	-28.63	50.87	44.94	98.98	21 38 47	1780.0	-27.09	42.41
100.00	12 19 25	4197.91	8.76	167.08	38.47	61.31	13 29 23	3597.9	4.87	160.46
110.00	22 23 22	2116.38	-32.01	30.10	44.19	102.69	22 58 39	1516.4	-29.93	21.50
110.00	13 11 38	4034.34	11.73	152.90	36.69	57.66	14 18 53	3434.3	7.38	146.51

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-2.2136 TRA 7.4141 TC3-8.1137 BAU 2.3147 SGT12382.6 SGR 949.1 SG3 1378.2 ST 3959.8 SR 766.4 SS 2251.6
RDE .6142 RRA -.1935 RC3 .5504 FAU .23176 RRT -.7012 RRF -.7328 RTF .9954 CRT -.7613 CRS .8376 CST -.9918
FDE-3.7817 FRA 9.8009 FC3-9.4242 BSP 42967 SGB12418.9 R23 .0459 R13 -.9955 LSA 4587.9 MSA 536.0 SSA 15.1
BDE 2.2972 BRA 7.4166 BC3 8.1324 FSP 5001 SG112400.5 SG2 675.7 THA 176.91 EL1 4003.2 EL2 491.5 ALF 171.49

LAUNCH DATE OCT 20 1964 FLIGHT TIME 386.00 ARRIVAL DATE NOV 10 1965

HELIOCENTRIC CONIC DISTANCE 865.998 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 32.726 GAL -7.58 AZL 88.34 HCA 266.54 SMA 186.61 ECC .23965 INC 1.6642 V1 29.917
RP 211.33 LAP -1.66 LOP 293.18 VP 23.340 GAP -11.62 AZP 90.10 TAL 319.04 TAP 225.59 RCA 141.89 APO 231.33 V2 25.956
RC 303.736 GL 11.62 GP 3.70 ZAL 144.99 ZAP 43.94 ETS 183.28 ZAE 70.27 ETE 180.73 ZAC 86.67 ETC 258.87 CLP 43.81

PLANETOCENTRIC CONIC

C3 21.889 VHL 4.679 DLA 13.28 RAL 178.62 RAD 6567.9 VEL 11.969 PTH 2.13 VHP 4.417 DPA 13.99 RAP 160.85 ECC 1.3602

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 35 36	2661.39	-27.32	71.78	46.09	97.77	20 19 57	2061.4	-25.96	63.38
90.00	11 4 46	4454.72	8.17	186.29	40.03	62.79	12 19 1	3854.7	4.45	179.57
100.00	21 3 52	2376.72	-28.60	50.63	45.88	99.10	21 43 29	1776.7	-27.04	42.17
100.00	12 19 11	4214.63	9.31	168.02	39.42	61.47	13 29 26	3614.6	5.43	161.39
110.00	22 27 41	2114.44	-31.98	29.96	45.12	102.77	23 2 56	1514.4	-29.89	21.37
110.00	13 11 51	4049.67	12.28	153.74	37.65	57.85	14 19 21	3449.7	7.95	147.32

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-2.3159 TRA 7.6655 TC3-8.0301 BAU 2.3550 SGT12551.3 SGR 937.9 SG3 1310.0 ST 4058.0 SR 764.5 SS 2211.5
RDE .6215 RRA -.1880 RC3 .5285 FAU .22021 RRT -.6928 RRF -.7254 RTF .9952 CRT -.7630 CRS .8392 CST -.9918
FDE-3.7121 FRA 9.4973 FC3-8.7096 BSP 43649 SGB12586.3 R23 .0471 R13 -.9953 LSA 4653.8 MSA 534.1 SSA 15.0
BDE 2.3979 BRA 7.6678 BC3 8.0475 FSP 4774 SG112568.1 SG2 675.5 THA 177.03 EL1 4100.3 EL2 489.1 ALF 171.70

LAUNCH DATE OCT 20 1964 FLIGHT TIME 388.00 ARRIVAL DATE NOV 12 1965

HELIOCENTRIC CONIC DISTANCE 870.118 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 32.730 GAL -7.73 AZL 88.32 HCA 267.76 SMA 186.68 ECC .24125 INC 1.6793 V1 29.917
RP 211.08 LAP -1.68 LOP 294.39 VP 23.379 GAP -11.80 AZP 90.07 TAL 318.41 TAP 226.17 RCA 141.64 APO 231.71 V2 25.986
RC 304.746 GL 11.55 GP 3.62 ZAL 145.62 ZAP 43.00 ETS 183.32 ZAE 69.05 ETE 180.82 ZAC 86.65 ETC 258.83 CLP 42.88

PLANETOCENTRIC CONIC

C3 22.523 VHL 4.746 DLA 12.96 RAL 179.19 RAD 6567.9 VEL 11.996 PTH 2.14 VHP 4.507 DPA 13.81 RAP 161.09 ECC 1.3707

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 40 37	2657.41	-27.28	71.50	47.05	97.91	20 24 55	2057.4	-25.90	63.10
90.00	11 4 18	4472.53	8.72	187.30	41.01	62.95	12 18 50	3872.5	5.02	180.57
100.00	21 8 41	2373.41	-28.56	50.39	46.83	99.22	21 48 15	1773.4	-26.99	41.94
100.00	12 18 55	4231.77	9.86	168.99	40.40	61.64	13 29 27	3631.8	6.00	162.34
110.00	22 32 4	2112.53	-31.95	29.81	46.07	102.85	23 7 16	1512.5	-29.85	21.23
110.00	13 12 2	4065.42	12.85	154.60	38.63	58.05	14 19 48	3465.4	8.54	148.16

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-2.4224 TRA 7.9223 TC3-7.9387 BAU 2.3954 SGT12714.3 SGR 927.6 SG3 1244.2 ST 4156.1 SR 762.8 SS 2171.1
RDE .6292 RRA -.1831 RC3 .5075 FAU .20907 RRT -.6849 RRF -.7186 RTF .9950 CRT -.7650 CRS .8410 CST -.9917
FDE-3.6427 FRA 9.1984 FC3-8.0359 BSP 44286 SGB12748.1 R23 .0484 R13 -.9951 LSA 4720.7 MSA 531.9 SSA 14.9
BDE 2.5028 BRA 7.9244 BC3 7.9549 FSP 4552 SG112730.2 SG2 675.1 THA 177.13 EL1 4197.4 EL2 486.4 ALF 171.90

LAUNCH DATE OCT 20 1964 FLIGHT TIME 390.00 ARRIVAL DATE NOV 14 1965

HELIOCENTRIC CONIC DISTANCE 874.235 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 32.734 GAL -7.88 AZL 88.31 HCA 268.98 SMA 186.75 ECC .24293 INC 1.6945 V1 29.917
RP 210.82 LAP -1.69 LOP 295.61 VP 23.417 GAP -11.98 AZP 90.03 TAL 317.77 TAP 226.74 RCA 141.38 APO 232.11 V2 26.015
RC 305.746 GL 11.48 GP 3.55 ZAL 146.26 ZAP 42.09 ETS 183.36 ZAE 67.86 ETE 180.90 ZAC 86.64 ETC 258.78 CLP 41.97

PLANETOCENTRIC CONIC

C3 23.194 VHL 4.816 DLA 12.63 RAL 179.77 RAD 6567.9 VEL 12.024 PTH 2.15 VHP 4.600 DPA 13.63 RAP 161.35 ECC 1.3817

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 45 42	2653.46	-27.24	71.21	48.03	98.04	20 29 56	2053.5	-25.85	62.82
90.00	11 3 48	4490.76	9.28	188.35	42.00	63.13	12 18 39	3890.8	5.60	181.60
100.00	21 13 33	2370.13	-28.52	50.15	47.80	99.34	21 53 4	1770.1	-26.94	41.71
100.00	12 18 38	4249.32	10.43	169.99	41.40	61.83	13 29 27	3649.3	6.58	163.31
110.00	22 36 29	2110.66	-31.92	29.68	47.03	102.93	23 11 39	1510.7	-29.82	21.10
110.00	13 12 12	4081.56	13.43	155.49	39.63	58.27	14 20 14	3481.6	9.14	149.03

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-2.5320 TRA 8.1842 TC3-7.8398 BAU 2.4357 SGT12871.0 SGR 917.9 SG3 1180.6 ST 4252.8 SR 760.9 SS 2129.9
RDE .6371 RRA -.1787 RC3 .4876 FAU .19830 RRT -.6774 RRF -.7124 RTF .9947 CRT -.7670 CRS .8431 CST -.9917
FDE-3.5732 FRA 8.9030 FC3-7.4018 BSP 44914 SGB12903.7 R23 .0498 R13 -.9949 LSA 4787.6 MSA 529.5 SSA 14.8
BDE 2.6109 BRA 8.1862 BC3 7.8549 FSP 4337 SG112886.1 SG2 674.4 THA 177.23 EL1 4293.2 EL2 483.7 ALF 172.08

LAUNCH DATE OCT 20 1964 FLIGHT TIME 392.00 ARRIVAL DATE NOV 16 1965

HELIOCENTRIC CONIC DISTANCE 878.348 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 32.738 GAL -8.04 AZL 88.29 HCA 270.20 SMA 186.82 ECC .24469 INC 1.7097 V1 29.917
RP 210.58 LAP -1.71 LOP 296.84 VP 23.454 GAP -12.17 AZP 89.99 TAL 317.10 TAP 227.30 RCA 141.11 APO 232.53 V2 26.043
RC 306.737 GL 11.41 GP 3.48 ZAL 146.90 ZAP 41.21 ETS 183.39 ZAE 66.69 ETE 180.98 ZAC 86.63 ETC 258.73 CLP 41.09

PLANETOCENTRIC CONIC

C3 23.903 VHL 4.889 DLA 12.30 RAL 180.34 RAD 6568.0 VEL 12.053 PTH 2.15 VHP 4.695 DPA 13.43 RAP 161.64 ECC 1.3934

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 50 50	2649.55	-27.20	70.93	49.02	98.18	20 35 0	2049.6	-25.79	62.55
90.00	11 3 17	4509.40	9.85	189.42	43.02	63.32	12 18 26	3909.4	6.19	182.65
100.00	21 18 29	2366.89	-28.49	49.92	48.79	99.46	21 57 56	1766.9	-26.89	41.48
100.00	12 18 19	4267.29	11.01	171.01	42.42	62.03	13 29 27	3667.3	7.18	164.31
110.00	22 40 57	2108.84	-31.90	29.54	48.01	103.00	23 16 6	1508.8	-29.78	20.97
110.00	13 12 21	4098.10	14.02	156.41	40.65	58.50	14 20 39	3498.1	9.75	149.91

DIFFERENTIAL CORRECTIONS
TDE-2.6460 TRA 8.4528 TC3-7.7341 BAU 2.4761
RDE .6455 RRA -.1749 RC3 .4686 FAU .18791
FDE-3.5040 FRA 8.6123 FC3-6.8059 BSP 45497
BDE 2.7236 BRA 8.4546 BC3 7.7482 FSP 4126

MID-COURSE EXECUTION ACCURACY
SGT13023.1 SGR 908.9 SG3 1119.4
RRT -.6706 RRF -.7067 RTF .9945
SGB13054.8 R23 .0513 R13 -.9946
SG113037.4 SG2 673.6 THA 177.31

ORBIT DETERMINATION ACCURACY
ST 4349.5 SR 759.2 SS 2088.3
CRT -.7693 CRS .8453 CST -.9916
LSA 4855.7 MSA 526.9 SSA 14.7
EL1 4389.0 EL2 480.7 ALF 172.26

LAUNCH DATE OCT 20 1964 FLIGHT TIME 394.00 ARRIVAL DATE NOV 18 1965

HELIOCENTRIC CONIC DISTANCE 882.456 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 32.742 GAL -8.20 AZL 88.28 HCA 271.42 SMA 186.89 ECC .24652 INC 1.7249 V1 29.917
RP 210.34 LAP -1.72 LOP 298.06 VP 23.491 GAP -12.35 AZP 89.96 TAL 316.42 TAP 227.84 RCA 140.82 APO 232.97 V2 26.071
RC 307.719 GL 11.33 GP 3.42 ZAL 147.55 ZAP 40.35 ETS 183.42 ZAE 65.55 ETE 181.06 ZAC 86.63 ETC 258.67 CLP 40.23

PLANETOCENTRIC CONIC

C3 24.654 VHL 4.965 DLA 11.96 RAL 180.92 RAD 6568.0 VEL 12.084 PTH 2.16 VHP 4.792 DPA 13.23 RAP 161.97 ECC 1.4057

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 56 1	2645.69	-27.17	70.66	50.02	98.31	20 40 7	2045.7	-25.74	62.28
90.00	11 2 44	4528.43	10.43	190.52	44.06	63.53	12 18 13	3928.4	6.79	183.73
100.00	21 23 27	2363.71	-28.45	49.69	49.79	99.58	22 2 51	1763.7	-26.84	41.26
100.00	12 17 59	4285.65	11.59	172.06	43.46	62.25	13 29 25	3685.6	7.79	165.34
110.00	22 45 28	2107.09	-31.87	29.41	49.00	103.07	23 20 35	1507.1	-29.74	20.85
110.00	13 12 28	4115.03	14.62	157.36	41.70	58.75	14 21 3	3515.0	10.38	150.83

DIFFERENTIAL CORRECTIONS
TDE-2.7623 TRA 8.7287 TC3-7.6203 BAU 2.5160
RDE .6541 RRA -.1717 RC3 .4504 FAU .17783
FDE-3.4326 FRA 8.3261 FC3-6.2445 BSP 46080
BDE 2.8387 BRA 8.7304 BC3 7.6336 FSP 3924

MID-COURSE EXECUTION ACCURACY
SGT13169.4 SGR 900.4 SG3 1060.3
RRT -.6642 RRF -.7016 RTF .9942
SGB13200.1 R23 .0529 R13 -.9943
SG113183.0 SG2 672.4 THA 177.39

ORBIT DETERMINATION ACCURACY
ST 4444.4 SR 757.3 SS 2045.3
CRT -.7714 CRS .8476 CST -.9915
LSA 4922.8 MSA 524.2 SSA 14.6
EL1 4483.1 EL2 477.7 ALF 172.42

LAUNCH DATE OCT 20 1964 FLIGHT TIME 396.00 ARRIVAL DATE NOV 20 1965

HELIOCENTRIC CONIC DISTANCE 886.558 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 32.747 GAL -8.38 AZL 88.26 HCA 272.65 SMA 186.97 ECC .24844 INC 1.7402 V1 29.917
RP 210.10 LAP -1.74 LOP 299.29 VP 23.527 GAP -12.54 AZP 89.92 TAL 315.73 TAP 228.37 RCA 140.52 APO 233.42 V2 26.098
RC 308.691 GL 11.25 GP 3.35 ZAL 148.20 ZAP 39.52 ETS 183.45 ZAE 64.43 ETE 181.13 ZAC 86.64 ETC 258.62 CLP 39.40

PLANETOCENTRIC CONIC

C3 25.448 VHL 5.045 DLA 11.62 RAL 181.51 RAD 6568.0 VEL 12.117 PTH 2.17 VHP 4.892 DPA 13.01 RAP 162.32 ECC 1.4188

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 1 14	2641.90	-27.13	70.39	51.04	98.44	20 45 16	2041.9	-25.68	62.02
90.00	11 2 10	4547.84	11.02	191.64	45.13	63.75	12 17 58	3947.8	7.40	184.83
100.00	21 28 28	2360.59	-28.42	49.46	50.81	99.69	22 7 49	1760.6	-26.79	41.04
100.00	12 17 38	4304.39	12.18	173.14	44.52	62.49	13 29 22	3704.4	8.40	166.39
110.00	22 50 1	2105.41	-31.84	29.29	50.01	103.14	23 25 6	1505.4	-29.71	20.73
110.00	13 12 34	4132.33	15.23	158.33	42.77	59.02	14 21 27	3532.3	11.01	151.76

DIFFERENTIAL CORRECTIONS
TDE-2.8842 TRA 9.0096 TC3-7.5043 BAU 2.5573
RDE .6631 RRA -.1690 RC3 .4333 FAU .16823
FDE-3.3628 FRA 8.0428 FC3-5.7230 BSP 46619
BDE 2.9594 BRA 9.0112 BC3 7.5168 FSP 3725

MID-COURSE EXECUTION ACCURACY
SGT13311.5 SGR 892.6 SG3 1003.5
RRT -.6585 RRF -.6973 RTF .9938
SGB13341.4 R23 .0546 R13 -.9940
SG113324.5 SG2 671.0 THA 177.47

ORBIT DETERMINATION ACCURACY
ST 4539.3 SR 755.5 SS 2002.4
CRT -.7740 CRS .8502 CST -.9913
LSA 4991.4 MSA 521.2 SSA 14.5
EL1 4577.2 EL2 474.5 ALF 172.58

LAUNCH DATE OCT 20 1964 FLIGHT TIME 398.00 ARRIVAL DATE NOV 22 1965

HELIOCENTRIC CONIC DISTANCE 890.653 EARTH TO MARS

RL 148.94 LAL .00 LOL 26.64 VL 32.751 GAL -8.55 AZL 88.24 HCA 273.88 SMA 187.05 ECC .25044 INC 1.7555 V1 29.917
RP 209.88 LAP -1.75 LOP 300.52 VP 23.562 GAP -12.73 AZP 89.88 TAL 315.01 TAP 228.89 RCA 140.20 APO 233.89 V2 26.124
RC 309.654 GL 11.16 GP 3.29 ZAL 148.86 ZAP 38.72 ETS 183.48 ZAE 63.34 ETE 181.20 ZAC 86.66 ETC 258.55 CLP 38.60

PLANETOCENTRIC CONIC

C3 26.289 VHL 5.127 DLA 11.27 RAL 182.09 RAD 6568.1 VEL 12.152 PTH 2.18 VHP 4.994 DPA 12.79 RAP 162.69 ECC 1.4326

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 6 30	2638.19	-27.09	70.12	52.08	98.57	20 50 28	2038.2	-25.63	61.76
90.00	11 1 35	4567.63	11.61	192.79	46.21	63.99	12 17 43	3967.6	8.02	185.95
100.00	21 33 31	2357.56	-28.38	49.25	51.85	99.80	22 12 49	1757.6	-26.74	40.83
100.00	12 17 15	4323.50	12.78	174.24	45.61	62.75	13 29 19	3723.5	9.03	167.46
110.00	22 54 36	2103.82	-31.82	29.17	51.04	103.21	23 29 40	1503.8	-29.67	20.62
110.00	13 12 39	4150.00	15.85	159.33	43.86	59.31	14 21 49	3550.0	11.66	152.73

DIFFERENTIAL CORRECTIONS
TDE-3.0103 TRA 9.2969 TC3-7.3819 BAU 2.5985
RDE .6725 RRA -.1670 RC3 .4168 FAU .15890
FDE-3.2925 FRA 7.7628 FC3-5.2328 BSP 47114
BDE 3.0845 BRA 9.2984 BC3 7.3936 FSP 3531

MID-COURSE EXECUTION ACCURACY
SGT13447.4 SGR 885.2 SG3 948.7
RRT -.6535 RRF -.6936 RTF .9935
SGB13476.5 R23 .0564 R13 -.9936
SG113459.9 SG2 669.4 THA 177.53

ORBIT DETERMINATION ACCURACY
ST 4633.3 SR 753.7 SS 1958.7
CRT -.7766 CRS .8530 CST -.9912
LSA 5059.9 MSA 518.0 SSA 14.3
EL1 4670.5 EL2 471.0 ALF 172.73

LAUNCH DATE OCT 21 1964 FLIGHT TIME 240.00 ARRIVAL DATE JUN 18 1965

HELIOCENTRIC CONIC DISTANCE 577.579 EARTH TO MARS

RL 148.89 LAL .00 LOL 27.63 VL 33.171 GAL -6.16 AZL 93.93 HCA 186.90 SMA 194.49 ECC .25661 INC 3.9311 V1 29.926
RP 237.31 LAP .47 LOP 214.52 VP 20.883 GAP 7.76 AZP 86.10 TAL 329.10 TAP 156.00 RCA 144.58 APO 244.39 V2 23.157
RC 187.176 GL -27.81 GP 20.91 ZAL 129.48 ZAP 145.90 ETS 144.17 ZAE 155.12 ETE 58.30 ZAC 109.59 ETC 255.08 CLP 152.43

PLANETOCENTRIC CONIC

C3 23.483 VHL 4.846 DLA -19.19 RAL 153.94 RAD 6568.0 VEL 12.036 PTH 2.15 VHP 5.751 DPA 17.33 RAP 195.85 ECC 1.3865

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	22 17 19	1608.83	-1.74	5.98	17.41	118.27	22 44 8	1008.8	2.05	359.35
90.00	4 58 18	5541.43	28.31	257.90	25.30	90.76	6 30 40	4941.4	28.11	249.24
100.00	23 26 48	1384.63	-3.12	348.73	16.65	119.74	23 49 52	784.6	.86	342.21
100.00	6 31 30	5240.88	29.89	235.79	25.30	89.31	7 58 51	4640.9	29.47	227.01
110.00	0 13 19	1251.20	-6.56	336.48	14.52	123.62	0 34 10	651.2	-2.10	330.24
110.00	8 5 25	4947.07	33.92	213.26	25.09	85.50	9 27 52	4347.1	32.93	204.16

DIFFERENTIAL CORRECTIONS
TDE 1.8548 TRA-2.8582 TC3 1.7270 BAU .6939
RDE 1.1142 RRA-1.2147 RC3 1.3793 FAU .16302
FDE-4.2752 FRA 4.8023 FC3-6.0100 BSP 17529
BDE 2.1638 BRA 3.1056 BC3 2.2102 FSP 2681

MID-COURSE EXECUTION ACCURACY
SGT 4518.3 SGR 2415.6 SG3 844.9
RRT .9683 RRF -.9986 RTF -.9585
SGB 5123.5 R23 -.2291 R13 -.9725
SG1 5095.4 SG2 535.3 THA 27.70

ORBIT DETERMINATION ACCURACY
ST 2442.2 SR 1394.7 SS 2668.0
CRT .9926 CRS .9999 CST .9936
LSA 3870.4 MSA 218.2 SSA 5.8
EL1 2808.5 EL2 147.7 ALF 29.64

LAUNCH DATE OCT 21 1964 FLIGHT TIME 242.00 ARRIVAL DATE JUN 20 1965

HELIOCENTRIC CONIC DISTANCE 581.156 EARTH TO MARS

RL 148.89 LAL .00 LOL 27.63 VL 33.144 GAL -6.07 AZL 93.23 HCA 187.86 SMA 193.98 ECC .25419 INC 3.2318 V1 29.926
RP 236.98 LAP .44 LOP 215.48 VP 20.878 GAP 7.33 AZP 86.80 TAL 329.33 TAP 157.19 RCA 144.67 APO 243.29 V2 23.191
RC 189.421 GL -23.62 GP 18.97 ZAL 130.72 ZAP 146.46 ETS 147.30 ZAE 157.04 ETE 57.38 ZAC 107.78 ETC 255.23 CLP 151.81

PLANETOCENTRIC CONIC

C3 21.512 VHL 4.638 DLA -15.14 RAL 155.21 RAD 6567.9 VEL 11.954 PTH 2.13 VHP 5.550 DPA 15.45 RAP 195.27 ECC 1.3540

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 42 10	1741.02	-5.98	13.39	16.56	117.73	22 11 11	1141.0	-2.22	6.72
90.00	5 43 36	5366.70	27.80	245.15	23.18	84.40	7 13 3	4766.7	26.73	236.65
100.00	22 55 16	1505.13	-7.16	355.40	15.92	119.10	23 20 21	905.1	-3.23	348.82
100.00	7 13 10	5077.82	29.14	223.74	23.02	83.02	8 37 48	4477.8	27.87	215.17
110.00	23 45 9	1348.87	-10.21	341.70	14.07	122.80	24 7 38	748.9	-5.81	335.36
110.00	8 39 47	4806.85	32.65	202.52	22.38	79.27	9 59 54	4206.8	30.83	193.78

DIFFERENTIAL CORRECTIONS
TDE 1.7012 TRA-2.8254 TC3 1.8769 BAU .6682
RDE .9350 RRA-1.1074 RC3 1.3696 FAU .17321
FDE-4.1176 FRA 5.2094 FC3-6.9709 BSP 17317
BDE 1.9413 BRA 3.0346 BC3 2.3235 FSP 2913

MID-COURSE EXECUTION ACCURACY
SGT 4530.1 SGR 2226.3 SG3 914.9
RRT .9681 RRF -.9984 RTF -.9600
SGB 5047.6 R23 -.2288 R13 -.9722
SG1 5022.5 SG2 503.3 THA 25.72

ORBIT DETERMINATION ACCURACY
ST 2365.6 SR 1231.4 SS 2622.3
CRT .9923 CRS .9997 CST .9947
LSA 3735.8 MSA 196.5 SSA 7.8
EL1 2663.5 EL2 135.3 ALF 27.39

LAUNCH DATE OCT 21 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUN 22 1965

HELIOCENTRIC CONIC DISTANCE 584.751 EARTH TO MARS

RL 148.89 LAL .00 LOL 27.63 VL 33.118 GAL -5.99 AZL 92.68 HCA 188.82 SMA 193.50 ECC .25187 INC 2.6823 V1 29.926
RP 236.64 LAP .41 LOP 216.45 VP 20.876 GAP 6.91 AZP 87.35 TAL 329.56 TAP 158.38 RCA 144.76 APO 242.24 V2 23.226
RC 191.655 GL -20.12 GP 17.42 ZAL 131.54 ZAP 146.64 ETS 150.07 ZAE 158.68 ETE 57.02 ZAC 106.33 ETC 255.34 CLP 151.10

PLANETOCENTRIC CONIC

C3 20.096 VHL 4.483 DLA -11.75 RAL 156.21 RAD 6567.8 VEL 11.894 PTH 2.11 VHP 5.376 DPA 13.95 RAP 194.81 ECC 1.3307

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 16 27	1842.08	-9.14	19.13	16.28	116.92	21 47 9	1242.1	-5.45	12.39
90.00	6 17 15	5232.99	26.54	235.58	21.49	79.76	7 44 28	4633.0	24.86	227.31
100.00	22 31 50	1598.88	-10.22	.67	15.71	118.24	22 58 29	998.9	-6.37	354.00
100.00	7 44 34	4951.43	27.75	214.61	21.22	78.41	9 7 5	4351.4	25.87	206.31
110.00	23 26 36	1427.37	-13.07	345.98	14.03	121.87	23 50 23	827.4	-8.76	339.53
110.00	9 6 17	4695.70	30.94	194.31	20.35	74.69	10 24 33	4095.7	28.53	185.94

DIFFERENTIAL CORRECTIONS
TDE 1.5844 TRA-2.7828 TC3 2.0084 BAU .6511
RDE .8099 RRA-1.0178 RC3 1.3564 FAU .18327
FDE-4.0005 FRA 5.5687 FC3-7.8952 BSP 17048
BDE 1.7794 BRA 2.9630 BC3 2.4235 FSP 3121

MID-COURSE EXECUTION ACCURACY
SGT 4532.2 SGR 2077.5 SG3 981.7
RRT .9679 RRF -.9981 RTF -.9614
SGB 4985.6 R23 -.2271 R13 -.9721
SG1 4962.7 SG2 477.1 THA 24.16

ORBIT DETERMINATION ACCURACY
ST 2300.3 SR 1109.9 SS 2584.0
CRT .9920 CRS .9994 CST .9958
LSA 3629.0 MSA 176.3 SSA 10.3
EL1 2551.0 EL2 126.2 ALF 25.64

LAUNCH DATE OCT 21 1964 FLIGHT TIME 246.00 ARRIVAL DATE JUN 24 1965

HELIOCENTRIC CONIC DISTANCE 588.365 EARTH TO MARS

RL 148.89 LAL .00 LOL 27.63 VL 33.094 GAL -5.90 AZL 92.24 HCA 189.79 SMA 193.04 ECC .24965 INC 2.2395 V1 29.926
RP 236.29 LAP .38 LOP 217.42 VP 20.877 GAP 6.49 AZP 87.79 TAL 329.78 TAP 159.57 RCA 144.85 APO 241.24 V2 23.261
RC 193.877 GL -17.16 GP 16.16 ZAL 132.06 ZAP 146.56 ETS 152.52 ZAE 160.11 ETE 57.18 ZAC 105.14 ETC 255.42 CLP 150.32

PLANETOCENTRIC CONIC

C3 19.024 VHL 4.362 DLA -8.87 RAL 157.00 RAD 6567.8 VEL 11.849 PTH 2.10 VHP 5.222 DPA 12.73 RAP 194.42 ECC 1.3131

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 56 10	1923.95	-11.62	23.86	16.27	116.00	21 28 14	1324.0	-8.03	17.02
90.00	6 43 51	5125.13	25.02	228.05	20.17	76.28	8 9 16	4525.1	22.88	220.03
100.00	22 13 12	1675.47	-12.66	5.06	15.74	117.31	22 41 7	1075.5	-8.90	358.29
100.00	8 9 31	4848.84	26.14	207.41	19.86	74.95	9 30 20	4248.8	23.81	199.38
110.00	23 11 36	1492.60	-15.38	349.62	14.18	120.91	23 36 28	892.6	-11.17	343.04
110.00	9 27 36	4604.47	29.12	187.83	18.83	71.26	10 44 21	4004.5	26.29	179.80

DIFFERENTIAL CORRECTIONS
TDE 1.5000 TRA-2.7260 TC3 2.1429 BAU .6433
RDE .7196 RRA -.9426 RC3 1.3439 FAU .19330
FDE-3.9150 FRA 5.8981 FC3-8.7969 BSP 16580
BDE 1.6637 BRA 2.8843 BC3 2.5294 FSP 3317

MID-COURSE EXECUTION ACCURACY
SGT 4529.1 SGR 1959.2 SG3 1046.9
RRT .9688 RRF -.9977 RTF -.9639
SGB 4934.7 R23 -.2203 R13 -.9731
SG1 4914.3 SG2 447.8 THA 22.94

ORBIT DETERMINATION ACCURACY
ST 2251.3 SR 1017.9 SS 2353.6
CRT .9921 CRS .9987 CST .9971
LSA 3550.0 MSA 152.4 SSA 13.5
EL1 2468.0 EL2 116.7 ALF 24.22

LAUNCH DATE OCT 21 1964 FLIGHT TIME 248.00 ARRIVAL DATE JUN 26 1965

HELIOCENTRIC CONIC DISTANCE 591.993 EARTH TO MARS

RL 148.89 LAL .00 LOL 27.63 VL 33.070 GAL -5.82 AZL 91.88 HCA 190.76 SMA 192.61 ECC .24752 INC 1.8749 V1 29.926
RP 235.94 LAP .35 LOP 218.39 VP 20.879 GAP 6.08 AZP 88.16 TAL 329.99 TAP 160.75 RCA 144.93 APO 240.28 V2 23.297
RC 196.086 GL -14.63 GP 15.12 ZAL 132.37 ZAP 146.28 ETS 154.68 ZAE 161.40 ETE 57.85 ZAC 104.16 ETC 255.48 CLP 149.49

PLANETOCENTRIC CONIC

C3 18.179 VHL 4.264 DLA -6.39 RAL 157.64 RAD 6567.7 VEL 11.814 PTH 2.09 VHP 5.081 DPA 11.72 RAP 194.10 ECC 1.2992

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 39 26	1992.55	-13.64	27.89	16.39	115.06	21 12 38	1392.6	-10.15	20.95
90.00	7 5 42	5035.21	23.43	221.94	19.17	73.62	8 29 37	4435.2	20.96	214.14
100.00	21 57 44	1739.95	-14.64	8.82	15.90	116.36	22 26 44	1139.9	-10.98	1.94
100.00	8 30 5	4763.05	24.49	201.57	18.81	72.30	9 49 28	4163.0	21.84	193.78
110.00	22 59 2	1548.05	-17.29	352.78	14.42	119.96	23 24 50	948.0	-13.18	346.08
110.00	9 45 16	4527.71	27.33	182.58	17.69	68.62	11 0 44	3927.7	24.18	174.83

DIFFERENTIAL CORRECTIONS
TDE 1.4094 TRA-2.6879 TC3 2.2131 BAU .6268
RDE .6487 RRA -.8833 RC3 1.3242 FAU .20236
FDE-3.8334 FRA 6.2325 FC3-9.6370 BSP 16622
BDE 1.5515 BRA 2.8294 BC3 2.5790 FSP 3552

MID-COURSE EXECUTION ACCURACY
SGT 4512.2 SGR 1860.6 SG3 1110.1
RRT .9676 RRF -.9971 RTF -.9641
SGB 4880.7 R23 -.2193 R13 -.9727
SG1 4861.2 SG2 435.8 THA 21.94

ORBIT DETERMINATION ACCURACY
ST 2186.2 SR 943.1 SS 2521.4
CRT .9912 CRS .9978 CST .9977
LSA 3465.1 MSA 140.6 SSA 16.8
EL1 2378.2 EL2 114.7 ALF 23.21

LAUNCH DATE OCT 21 1964 FLIGHT TIME 250.00 ARRIVAL DATE JUN 28 1965

HELIOCENTRIC CONIC DISTANCE 595.637 EARTH TO MARS

RL 148.89 LAL .00 LOL 27.63 VL 33.048 GAL -5.74 AZL 91.57 HCA 191.73 SMA 192.19 ECC .24548 INC 1.5689 V1 29.926
RP 235.59 LAP .32 LOP 219.36 VP 20.883 GAP 5.67 AZP 88.46 TAL 330.20 TAP 161.93 RCA 145.01 APO 239.37 V2 23.333
RC 198.280 GL -12.43 GP 14.24 ZAL 132.52 ZAP 145.84 ETS 156.60 ZAE 162.56 ETE 59.02 ZAC 103.33 ETC 255.53 CLP 148.62

PLANETOCENTRIC CONIC

C3 17.490 VHL 4.182 DLA -4.23 RAL 158.16 RAD 6567.7 VEL 11.784 PTH 2.08 VHP 4.950 DPA 10.88 RAP 193.81 ECC 1.2878

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 25 10	2051.36	-15.30	31.40	16.58	114.12	20 59 21	1451.4	-11.92	24.36
90.00	7 24 8	4958.41	21.86	216.86	18.38	71.54	8 46 46	4358.4	19.14	209.24
100.00	21 44 31	1795.37	-16.29	12.11	16.10	115.42	22 14 26	1195.4	-12.73	5.12
100.00	8 47 27	4689.64	22.88	196.71	18.00	70.22	10 5 37	4089.6	19.98	189.12
110.00	22 48 12	1595.97	-18.90	355.56	14.69	119.03	23 14 48	996.0	-14.89	348.75
110.00	10 0 15	4461.80	25.62	178.22	16.81	66.55	11 14 37	3861.8	22.22	170.71

DIFFERENTIAL CORRECTIONS
TDE 1.3324 TRA-2.6439 TC3 2.2744 BAU .6136
RDE .5948 RRA -.8325 RC3 1.3091 FAU .21172
FDE-3.7744 FRA 6.5518 FC-10.4798 BSP 16597
BDE 1.4591 BRA 2.7718 BC3 2.6242 FSP 3780

MID-COURSE EXECUTION ACCURACY
SGT 4488.1 SGR 1780.7 SG3 1173.8
RRT .9665 RRF -.9964 RTF -.9644
SGB 4828.4 R23 -.2172 R13 -.9724
SG1 4809.5 SG2 426.5 THA 21.15

ORBIT DETERMINATION ACCURACY
ST 2126.6 SR 884.8 SS 2497.5
CRT .9902 CRS .9966 CST .9982
LSA 3394.9 MSA 131.1 SSA 20.5
EL1 2300.5 EL2 114.1 ALF 22.45

LAUNCH DATE OCT 21 1964 FLIGHT TIME 252.00 ARRIVAL DATE JUN 30 1965

HELIOCENTRIC CONIC DISTANCE 599.297 EARTH TO MARS

RL 148.89 LAL .00 LOL 27.63 VL 33.026 GAL -5.67 AZL 91.31 HCA 192.71 SMA 191.80 ECC .24353 INC 1.3089 V1 29.926
RP 235.24 LAP .29 LOP 220.34 VP 20.890 GAP 5.27 AZP 88.72 TAL 330.40 TAP 163.11 RCA 145.09 APO 238.51 V2 23.369
RC 200.460 GL -10.52 GP 13.49 ZAL 132.57 ZAP 145.29 ETS 158.30 ZAE 163.63 ETE 60.72 ZAC 102.61 ETC 255.57 CLP 147.71

PLANETOCENTRIC CONIC

C3 16.913 VHL 4.112 DLA -2.34 RAL 158.59 RAD 6567.7 VEL 11.760 PTH 2.08 VHP 4.827 DPA 10.18 RAP 193.55 ECC 1.2783

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 12 42	2102.66	-16.70	34.52	16.78	113.20	20 47 45	1502.7	-13.42	27.38
90.00	7 40 0	4891.60	20.36	212.54	17.76	69.88	9 1 32	4291.6	17.43	205.08
100.00	21 32 57	1843.78	-17.68	15.03	16.33	114.51	22 3 41	1243.8	-14.22	7.94
100.00	9 2 26	4625.72	21.35	192.58	17.36	68.57	10 19 32	4025.7	18.25	185.16
110.00	22 38 42	1637.97	-20.27	358.05	14.98	118.13	23 6 0	1038.0	-16.35	351.12
110.00	10 13 10	4404.30	24.01	174.53	16.12	64.90	11 26 35	3804.3	20.42	167.22

DIFFERENTIAL CORRECTIONS
TDE 1.2657 TRA-2.5962 TC3 2.3263 BAU .6022
RDE .5528 RRA -.7895 RC3 1.2970 FAU .22115
FDE-3.7293 FRA 6.8686 FC-11.3202 BSP 16532
BDE 1.3811 BRA 2.7136 BC3 2.6634 FSP 4016

MID-COURSE EXECUTION ACCURACY
SGT 4458.2 SGR 1715.5 SG3 1238.3
RRT .9655 RRF -.9955 RTF -.9648
SGB 4776.9 R23 -.2138 R13 -.9724
SG1 4758.5 SG2 418.5 THA 20.55

ORBIT DETERMINATION ACCURACY
ST 2071.7 SR 838.6 SS 2479.1
CRT .9892 CRS .9950 CST .9987
LSA 3335.5 MSA 123.4 SSA 24.3
EL1 2232.1 EL2 114.2 ALF 21.88

LAUNCH DATE OCT 21 1964 FLIGHT TIME 254.00 ARRIVAL DATE JUL 2 1965

HELIOCENTRIC CONIC DISTANCE 602.971 EARTH TO MARS

RL 148.89 LAL .00 LOL 27.63 VL 33.006 GAL -5.60 AZL 91.08 HCA 193.69 SMA 191.42 ECC .24167 INC 1.0841 V1 29.926
RP 234.89 LAP .26 LOP 221.32 VP 20.898 GAP 4.87 AZP 88.95 TAL 330.60 TAP 164.29 RCA 145.16 APO 237.68 V2 23.405
RC 202.623 GL -8.82 GP 12.86 ZAL 132.53 ZAP 144.63 ETS 159.82 ZAE 164.62 ETE 62.98 ZAC 102.00 ETC 255.61 CLP 146.76

PLANETOCENTRIC CONIC

C3 16.418 VHL 4.052 DLA -.65 RAL 158.94 RAD 6567.7 VEL 11.739 PTH 2.07 VHP 4.711 DPA 9.59 RAP 193.30 ECC 1.2702

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 1 38	2148.05	-17.90	37.31	16.99	112.31	20 37 26	1548.0	-14.72	30.08
90.00	7 53 54	4832.61	18.93	208.80	17.26	68.54	9 14 27	4232.6	15.85	201.48
100.00	21 22 40	1886.64	-18.87	17.66	16.56	113.63	21 54 7	1286.6	-15.51	10.47
100.00	9 15 33	4569.25	19.90	189.01	16.84	67.22	10 31 42	3969.3	16.64	181.73
110.00	22 30 13	1675.20	-21.45	.30	15.25	117.28	22 58 8	1075.2	-17.62	353.26
110.00	10 24 29	4353.45	22.50	171.35	15.56	63.56	11 37 3	3753.5	18.77	164.21

DIFFERENTIAL CORRECTIONS
TDE 1.2075 TRA-2.5435 TC3 2.3709 BAU .5925
RDE .5204 RRA -.7517 RC3 1.2901 FAU .23110
FDE-3.7045 FRA 7.1748 FC-12.1860 BSP 16394
BDE 1.3149 BRA 2.6522 BC3 2.6992 FSP 4241

MID-COURSE EXECUTION ACCURACY
SGT 4420.9 SGR 1662.7 SG3 1304.3
RRT .9644 RRF -.9946 RTF -.9651
SGB 4723.2 R23 -.2102 R13 -.9724
SG1 4705.1 SG2 413.2 THA 20.10

ORBIT DETERMINATION ACCURACY
ST 2020.7 SR 802.6 SS 2469.0
CRT .9880 CRS .9931 CST .9991
LSA 3287.5 MSA 119.0 SSA 27.9
EL1 2171.1 EL2 115.2 ALF 21.49

LAUNCH DATE OCT 21 1964 FLIGHT TIME 256.00 ARRIVAL DATE JUL 4 1965

HELIOCENTRIC CONIC DISTANCE 606.660 EARTH TO MARS

RL	148.89	LAL	.00	LOL	27.63	VL	32.986	GAL	-5.53	AZL	90.89	HCA	194.67	SMA	191.06	ECC	.23989	INC	.8883	V1	29.926
RP	234.53	LAP	.22	LOP	222.31	VP	20.908	GAP	4.48	AZP	89.14	TAL	330.79	TAP	165.46	RCA	145.23	APO	236.90	V2	23.442
RC	204.770	GL	-7.32	GP	12.31	ZAL	132.44	ZAP	143.88	ETS	161.18	ZAE	165.52	ETE	65.83	ZAC	101.46	ETC	255.64	CLP	145.77

PLANETOCENTRIC CONIC

C3	15.988	VHL	3.998	DLA	.85	RAL	159.24	RAD	6567.6	VEL	11.721	PTH	2.07	VHP	4.600	DPA	9.09	RAP	193.06	ECC	1.2631		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 51 39	2188.65	-18.93	39.85	17.19	111.46	20 28 7	1588.7	-15.85	32.53
90.00	8 6 14	4779.89	17.58	205.51	16.85	67.44	9 25 54	4179.9	14.37	198.31
100.00	21 13 23	1925.00	-19.90	20.04	16.78	112.78	21 45 28	1325.0	-16.64	12.76
100.00	9 27 11	4518.78	18.54	185.88	16.41	66.12	10 42 30	3918.8	15.16	178.72
110.00	22 22 32	1708.54	-22.47	2.34	15.51	116.46	22 51 1	1108.5	-18.74	355.20
110.00	10 34 31	4308.00	21.10	168.57	15.11	62.46	11 46 19	3708.0	17.24	161.57

DIFFERENTIAL CORRECTIONS

TDE	1.1545	TRA	-2.4885	TC3	2.4070	BAU	.5834
RDE	.4945	RRA	-.7195	RC3	1.2866	FAU	.24134
FDE	-3.6898	FRA	7.4831	FC	-13.0686	BSP	16212
BDE	1.2560	BRA	2.5904	BC3	2.7293	FSP	4469

MID-COURSE EXECUTION ACCURACY

SGT	4377.3	SGR	1619.8	SG3	1372.0		
RRT	.9633	RRF	-.9935	RTF	-.9654		
SGB	4667.4	R23	-.2060	R13	-.9724		
SG1	4649.4	SG2	409.6	THA	19.78		

ORBIT DETERMINATION ACCURACY

ST	1971.0	SR	773.8	SS	2463.1
CRT	.9868	CRS	.9909	CST	.9994
LSA	3245.9	MSA	117.5	SSA	31.0
EL1	2114.3	EL2	116.9	ALF	21.24

LAUNCH DATE OCT 21 1964 FLIGHT TIME 258.00 ARRIVAL DATE JUL 6 1965

HELIOCENTRIC CONIC DISTANCE 610.362 EARTH TO MARS

RL	148.89	LAL	.00	LOL	27.63	VL	32.967	GAL	-5.46	AZL	90.72	HCA	195.66	SMA	190.72	ECC	.23819	INC	.7164	V1	29.926		
RP	234.17	LAP	.19	LOP	223.29	VP	20.920	GAP	4.10	AZP	89.31	TAL	330.97	TAP	166.63	RCA	145.30	APO	236.15	V2	23.479		
RC	206.900	GL	-5.96	GP	11.83	ZAL	132.30	ZAP	143.06	ETS	162.40	ZAE	166.33	ETE	69.31	ZAC	100.99	ETC	255.66	CLP	144.74		

PLANETOCENTRIC CONIC

C3	15.607	VHL	3.951	DLA	2.21	RAL	159.49	RAD	6567.6	VEL	11.704	PTH	2.06	VHP	4.494	DPA	8.67	RAP	192.83	ECC	1.2569		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 42 33	2225.35	-19.83	42.16	17.38	110.64	20 19 38	1625.3	-16.84	34.76
90.00	8 17 18	4732.29	16.32	202.59	16.50	66.53	9 36 11	4132.3	13.00	195.48
100.00	21 4 55	1959.65	-20.79	22.22	16.98	111.97	21 37 35	1359.7	-17.63	14.86
100.00	9 37 37	4473.22	17.26	183.10	16.06	65.21	10 52 10	3873.2	13.78	176.04
110.00	22 15 32	1738.65	-23.37	4.22	15.75	115.68	22 44 31	1138.7	-19.73	356.98
110.00	10 43 30	4266.98	19.78	166.11	14.73	61.54	11 54 37	3667.0	15.83	159.22

DIFFERENTIAL CORRECTIONS

TDE	1.1050	TRA	-2.4314	TC3	2.4306	BAU	.5737
RDE	.4736	RRA	-.6919	RC3	1.2856	FAU	.25174
FDE	-3.6822	FRA	7.7961	FC	-13.9638	BSP	16040
BDE	1.2022	BRA	2.5279	BC3	2.7496	FSP	4712

MID-COURSE EXECUTION ACCURACY

SGT	4325.4	SGR	1584.9	SG3	1441.3		
RRT	.9620	RRF	-.9924	RTF	-.9656		
SGB	4606.7	R23	-.2017	R13	-.9725		
SG1	4588.6	SG2	407.8	THA	19.58		

ORBIT DETERMINATION ACCURACY

ST	1921.5	SR	750.7	SS	2460.5
CRT	.9855	CRS	.9883	CST	.9996
LSA	3208.5	MSA	119.1	SSA	33.3
EL1	2059.5	EL2	119.0	ALF	21.13

LAUNCH DATE OCT 21 1964 FLIGHT TIME 260.00 ARRIVAL DATE JUL 8 1965

HELIOCENTRIC CONIC DISTANCE 614.078 EARTH TO MARS

RL	148.89	LAL	.00	LOL	27.63	VL	32.949	GAL	-5.40	AZL	90.56	HCA	196.65	SMA	190.40	ECC	.23656	INC	.5635	V1	29.926		
RP	233.80	LAP	.16	LOP	224.28	VP	20.934	GAP	3.72	AZP	89.46	TAL	331.15	TAP	167.80	RCA	145.36	APO	235.44	V2	23.517		
RC	209.011	GL	-4.74	GP	11.41	ZAL	132.14	ZAP	142.17	ETS	163.52	ZAE	167.04	ETE	73.47	ZAC	100.56	ETC	255.69	CLP	143.68		

PLANETOCENTRIC CONIC

C3	15.268	VHL	3.907	DLA	3.45	RAL	159.70	RAD	6567.6	VEL	11.690	PTH	2.06	VHP	4.392	DPA	8.32	RAP	192.58	ECC	1.2513		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 34 11	2258.78	-20.62	44.30	17.56	109.85	20 11 50	1658.8	-17.72	36.82
90.00	8 27 20	4688.94	15.12	199.97	16.22	65.77	9 45 29	4088.9	11.73	192.94
100.00	20 57 8	1991.22	-21.58	24.23	17.17	111.20	21 30 19	1391.2	-18.51	16.79
100.00	9 47 4	4431.74	16.06	180.60	15.76	64.45	11 0 56	3831.7	12.49	173.63
110.00	22 9 5	1766.06	-24.17	5.95	15.98	114.94	22 38 31	1166.1	-20.61	358.61
110.00	10 51 37	4229.66	18.56	163.91	14.41	60.77	12 2 7	3629.7	14.52	157.12

DIFFERENTIAL CORRECTIONS

TDE	1.0637	TRA	-2.3676	TC3	2.4576	BAU	.5665
RDE	.4577	RRA	-.6673	RC3	1.2899	FAU	.26291
FDE	-3.6924	FRA	8.1041	FC	-14.9079	BSP	15706
BDE	1.1580	BRA	2.4599	BC3	2.7755	FSP	4938

MID-COURSE EXECUTION ACCURACY

SGT	4268.3	SGR	1558.0	SG3	1513.3		
RRT	.9612	RRF	-.9912	RTF	-.9661		
SGB	4543.7	R23	-.1959	R13	-.9728		
SG1	4525.6	SG2	405.3	THA	19.50		

ORBIT DETERMINATION ACCURACY

ST	1877.5	SR	733.4	SS	2465.1
CRT	.9844	CRS	.9855	CST	.9997
LSA	3181.7	MSA	122.9	SSA	34.6
EL1	2012.0	EL2	120.4	ALF	21.11

LAUNCH DATE OCT 21 1964 FLIGHT TIME 262.00 ARRIVAL DATE JUL 10 1965

HELIOCENTRIC CONIC DISTANCE 617.804 EARTH TO MARS

RL	148.89	LAL	.00	LOL	27.63	VL	32.932	GAL	-5.34	AZL	90.43	HCA	197.64	SMA	190.09	ECC	.23502	INC	.4265	V1	29.926		
RP	233.44	LAP	.13	LOP	225.27	VP	20.950	GAP	3.35	AZP	89.59	TAL	331.31	TAP	168.96	RCA	145.42	APO	234.76	V2	23.555		
RC	211.104	GL	-3.63	GP	11.04	ZAL	131.96	ZAP	141.22	ETS	164.53	ZAE	167.64	ETE	78.31	ZAC	100.18	ETC	255.71	CLP	142.59		

PLANETOCENTRIC CONIC

C3	14.964	VHL	3.868	DLA	4.57	RAL	159.88	RAD	6567.6	VEL	11.677	PTH	2.05	VHP	4.295	DPA	8.03	RAP	192.34	ECC	1.2463		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 26 27	2289.46	-21.31	46.28	17.73	109.10	20 4 37	1689.5	-18.51	38.73
90.00	8 36 31	4649.24	14.00	197.60	15.98	65.13	9 54 0	4049.2	10.53	190.63
100.00	20 49 57	2020.17	-22.29	26.10	17.35	110.46	21 23 37	1420.2	-19.30	18.58
100.00	9 55 43	4393.77	14.93	178.35	15.52	63.80	11 8 56	3793.8	11.29	171.45
110.00	22 3 7	1791.17	-24.88	7.55	16.19	114.23	22 32 58	1191.2	-21.40	.13
110.00	10 59 2	4195.54	17.41	161.93	14.14	60.11	12 8 57	3595.5	13.31	155.23

DIFFERENTIAL CORRECTIONS

TDE	1.0010	TRA	-2.3240	TC3	2.4095	BAU	.5465
RDE	.4416	RRA	-.6495	RC3	1.2877	FAU	.27263
FDE	-3.6704	FRA	8.4578	FC	-15.7732	BSP	15910
BDE	1.0941	BRA	2.4131	BC3	2.7320	FSP	5254

MID-COURSE EXECUTION ACCURACY

SGT	4195.0	SGR	1533.5	SG3	1584.7		
RRT	.9575	RRF	-.9898	RTF	-.9644		
SGB	4466.5	R23	-.1981	R13	-.9715		
SG1	4447.0	SG2	417.4	THA	19.47		

ORBIT DETERMINATION ACCURACY

ST	1809.6	SR	716.0	SS	2458.7
CRT	.9814	CRS	.9820	CST	.9997
LSA	3132.7	MSA	132.4	SSA	35.6
EL1	1941.8	EL2	128.2	ALF	21.32

LAUNCH DATE OCT 21 1964 FLIGHT TIME 264.00 ARRIVAL DATE JUL 12 1965

HELIOCENTRIC CONIC DISTANCE 621.546 EARTH TO MARS

RL 148.89 LAL .00 LOL 27.63 VL 32.916 GAL -5.29 AZL 90.31 HCA 198.64 SMA 189.80 ECC .23354 INC .3042 V1 29.926
RP 233.07 LAP .10 LOP 226.27 VP 20.967 GAP 2.98 AZP 89.71 TAL 331.48 TAP 170.11 RCA 145.47 APO 234.12 V2 23.593
RC 213.179 GL -2.61 GP 10.71 ZAL 131.76 ZAP 140.22 ETS 165.46 ZAE 168.11 ETE 83.85 ZAC 99.83 ETC 255.73 CLP 141.46

PLANETOCENTRIC CONIC

C3 14.687 VHL 3.832 DLA 5.61 RAL 160.03 RAD 6567.6 VEL 11.665 PTH 2.05 VHP 4.201 DPA 7.79 RAP 192.07 ECC 1.2417

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 19 14	2317.82	-21.93	48.13	17.89	108.37	19 57 51	1717.8	-19.22	40.51
90.00	8 44 58	4612.56	12.94	195.42	15.77	64.59	10 1 50	4012.6	9.41	188.52
100.00	20 43 13	2046.90	-22.91	27.84	17.52	109.74	21 17 20	1446.9	-20.01	20.24
100.00	10 3 39	4358.71	13.87	176.29	15.30	63.25	11 16 18	3758.7	10.17	169.45
110.00	21 57 32	1814.31	-25.52	9.04	16.38	113.55	22 27 47	1214.3	-22.12	1.55
110.00	11 5 50	4164.06	16.34	160.13	13.91	59.55	12 15 14	3564.1	12.17	153.49

DIFFERENTIAL CORRECTIONS
TDE .9668 TRA-2.2526 TC3 2.4211 BAU .5394
RDE .4318 RRA -.6308 RC3 1.2976 FAU .28456
FDE-3.6954 FRA 8.7750 FC-16.7733 BSP 15470
BDE 1.0589 BRA 2.3393 BC3 2.7469 FSP 5492

MID-COURSE EXECUTION ACCURACY
SGT 4121.2 SGR 1517.8 SG3 1661.0
RRT .9568 RRF -.9885 RTF -.9650
SGB 4391.8 R23 -.1916 R13 -.9720
SG1 4372.1 SG2 415.8 THA 19.60

ORBIT DETERMINATION ACCURACY
ST 1767.2 SR 706.0 SS 2469.8
CRT .9805 CRS .9787 CST .9996
LSA 3114.6 MSA 139.7 SSA 35.7
EL1 1898.6 EL2 129.1 ALF 21.50

LAUNCH DATE OCT 21 1964 FLIGHT TIME 266.00 ARRIVAL DATE JUL 14 1965

HELIOCENTRIC CONIC DISTANCE 625.300 EARTH TO MARS

RL 148.89 LAL .00 LOL 27.63 VL 32.900 GAL -5.23 AZL 90.19 HCA 199.64 SMA 189.52 ECC .23214 INC .1931 V1 29.926
RP 232.70 LAP .07 LOP 227.27 VP 20.986 GAP 2.62 AZP 89.82 TAL 331.63 TAP 171.27 RCA 145.52 APO 233.51 V2 23.631
RC 215.236 GL -1.68 GP 10.42 ZAL 131.56 ZAP 139.16 ETS 166.31 ZAE 168.42 ETE 90.00 ZAC 99.51 ETC 255.75 CLP 140.28

PLANETOCENTRIC CONIC

C3 14.436 VHL 3.799 DLA 6.56 RAL 160.16 RAD 6567.6 VEL 11.654 PTH 2.05 VHP 4.110 DPA 7.60 RAP 191.80 ECC 1.2376

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 12 28	2344.16	-22.49	49.86	18.03	107.68	19 51 32	1744.2	-19.86	42.17
90.00	8 52 48	4578.56	11.94	193.43	15.59	64.13	10 9 6	3978.6	8.36	186.58
100.00	20 36 56	2071.71	-23.47	29.47	17.68	109.06	21 11 28	1471.7	-20.65	21.81
100.00	10 11 1	4326.23	12.87	174.40	15.12	62.78	11 23 7	3726.2	9.12	167.62
110.00	21 52 20	1835.76	-26.10	10.45	16.57	112.90	22 22 56	1235.8	-22.77	2.87
110.00	11 12 6	4134.95	15.32	158.48	13.71	59.06	12 21 1	3535.0	11.11	151.91

DIFFERENTIAL CORRECTIONS
TDE .9307 TRA-2.1818 TC3 2.4140 BAU .5300
RDE .4237 RRA -.6149 RC3 1.3090 FAU .29673
FDE-3.7215 FRA 9.1027 FC-17.7951 BSP 15072
BDE 1.0226 BRA 2.2668 BC3 2.7461 FSP 5743

MID-COURSE EXECUTION ACCURACY
SGT 4037.8 SGR 1506.3 SG3 1739.3
RRT .9557 RRF -.9871 RTF -.9650
SGB 4309.6 R23 -.1864 R13 -.9722
SG1 4289.3 SG2 417.3 THA 19.82

ORBIT DETERMINATION ACCURACY
ST 1720.5 SR 698.3 SS 2481.6
CRT .9794 CRS .9752 CST .9995
LSA 3095.5 MSA 149.4 SSA 35.4
EL1 1852.2 EL2 130.8 ALF 21.79

LAUNCH DATE OCT 21 1964 FLIGHT TIME 268.00 ARRIVAL DATE JUL 16 1965

HELIOCENTRIC CONIC DISTANCE 629.066 EARTH TO MARS

RL 148.89 LAL .00 LOL 27.63 VL 32.885 GAL -5.18 AZL 90.09 HCA 200.64 SMA 189.25 ECC .23080 INC .0879 V1 29.926
RP 232.32 LAP .03 LOP 228.27 VP 21.006 GAP 2.26 AZP 89.91 TAL 331.77 TAP 172.41 RCA 145.57 APO 232.93 V2 23.670
RC 217.275 GL -.81 GP 10.16 ZAL 131.35 ZAP 138.05 ETS 167.10 ZAE 168.57 ETE 96.61 ZAC 99.21 ETC 255.77 CLP 139.08

PLANETOCENTRIC CONIC

C3 14.207 VHL 3.769 DLA 7.45 RAL 160.28 RAD 6567.6 VEL 11.644 PTH 2.04 VHP 4.022 DPA 7.45 RAP 191.50 ECC 1.2338

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 6 7	2368.74	-22.99	51.49	18.17	107.01	19 45 36	1768.7	-20.44	43.74
90.00	9 0 5	4546.91	10.99	191.59	15.45	63.74	10 15 52	3946.9	7.37	184.77
100.00	20 31 2	2094.85	-23.98	31.00	17.83	108.41	21 5 57	1494.9	-21.24	23.27
100.00	10 17 52	4296.03	11.92	172.66	14.97	62.38	11 29 28	3696.0	8.13	165.92
110.00	21 47 27	1855.73	-26.62	11.76	16.74	112.28	22 18 22	1255.7	-23.36	4.12
110.00	11 17 56	4107.91	14.37	156.96	13.54	58.65	12 26 24	3507.9	10.12	150.44

DIFFERENTIAL CORRECTIONS
TDE .8929 TRA-2.1114 TC3 2.3851 BAU .5179
RDE .4172 RRA -.6015 RC3 1.3216 FAU .30907
FDE-3.7500 FRA 9.4408 FC-18.8342 BSP 14721
BDE .9856 BRA 2.1954 BC3 2.7267 FSP 6010

MID-COURSE EXECUTION ACCURACY
SGT 3943.7 SGR 1498.4 SG3 1819.6
RRT .9540 RRF -.9857 RTF -.9646
SGB 4218.7 R23 -.1830 R13 -.9720
SG1 4197.6 SG2 422.2 THA 20.14

ORBIT DETERMINATION ACCURACY
ST 1669.8 SR 692.5 SS 2494.6
CRT .9781 CRS .9714 CST .9992
LSA 3076.4 MSA 160.2 SSA 35.0
EL1 1802.8 EL2 133.6 ALF 22.21

LAUNCH DATE OCT 21 1964 FLIGHT TIME 270.00 ARRIVAL DATE JUL 18 1965

HELIOCENTRIC CONIC DISTANCE 632.842 EARTH TO MARS

RL 148.89 LAL .00 LOL 27.63 VL 32.871 GAL -5.14 AZL 90.00 HCA 201.65 SMA 189.00 ECC .22954 INC .0000 V1 29.926
RP 231.95 LAP .00 LOP 229.28 VP 21.028 GAP 1.91 AZP 90.00 TAL 331.91 TAP 173.56 RCA 145.62 APO 232.39 V2 23.709
RC 219.295 GL -.01 GP 9.93 ZAL 131.15 ZAP 136.89 ETS 167.83 ZAE 168.52 ETE 103.50 ZAC 98.93 ETC 255.79 CLP 137.83

PLANETOCENTRIC CONIC

C3 13.997 VHL 3.741 DLA 8.27 RAL 160.39 RAD 6567.6 VEL 11.635 PTH 2.04 VHP 3.938 DPA 7.33 RAP 191.19 ECC 1.2304

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 0 8	2391.78	-23.44	53.03	18.31	106.36	19 40 0	1791.8	-20.97	45.22
90.00	9 6 56	4517.33	10.09	189.88	15.33	63.40	10 22 13	3917.3	6.44	183.10
100.00	20 25 29	2116.52	-24.44	32.45	17.97	107.78	21 0 45	1516.5	-21.78	24.66
100.00	10 24 16	4267.83	11.02	171.04	14.84	62.04	11 35 24	3667.8	7.20	164.34
110.00	21 42 51	1874.39	-27.10	13.00	16.91	111.68	22 14 5	1274.4	-23.91	5.29
110.00	11 23 23	4082.72	13.47	155.56	13.40	58.28	12 31 26	3482.7	9.18	149.09

DIFFERENTIAL CORRECTIONS
TDE .8530 TRA-2.0417 TC3 2.3345 BAU .5031
RDE .4114 RRA -.5910 RC3 1.3337 FAU .32122
FDE-3.7712 FRA 9.8001 FC-19.8673 BSP 14419
BDE .9470 BRA 2.1256 BC3 2.6886 FSP 6309

MID-COURSE EXECUTION ACCURACY
SGT 3839.4 SGR 1493.1 SG3 1901.5
RRT .9518 RRF -.9843 RTF -.9637
SGB 4119.5 R23 -.1807 R13 -.9715
SG1 4097.1 SG2 429.3 THA 20.55

ORBIT DETERMINATION ACCURACY
ST 1614.9 SR 687.8 SS 2506.1
CRT .9765 CRS .9672 CST .9988
LSA 3054.6 MSA 172.0 SSA 34.5
EL1 1749.9 EL2 136.7 ALF 22.73

LAUNCH DATE OCT 21 1964 FLIGHT TIME 272.00 ARRIVAL DATE JUL 20 1965

HELIOCENTRIC CONIC DISTANCE 636.630 EARTH TO MARS

RL	148.89	LAL	.00	LOL	27.63	VL	32.857	GAL	-5.09	AZL	89.92	HCA	202.65	SMA	188.77	ECC	.22834	INC	.0782	V1	29.926
RP	231.57	LAP	-.03	LOP	230.29	VP	21.051	GAP	1.57	AZP	90.08	TAL	332.04	TAP	174.69	RCA	145.66	APO	231.87	V2	23.748
RC	221.297	GL	.73	GP	9.72	ZAL	130.95	ZAP	135.68	ETS	168.51	ZAE	168.28	ETE	110.42	ZAC	98.67	ETC	255.81	CLP	136.54

PLANETOCENTRIC CONIC

C3	13.806	VHL	3.716	DLA	9.03	RAL	160.49	RAD	6567.5	VEL	11.627	PTH	2.04	VHP	3.857	DPA	7.26	RAP	190.85	ECC	1.2272

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 54 29	2413.45	-23.84	54.49	18.44	105.74	19 34 43	1813.4	-21.46	46.63
90.00	9 13 22	4489.61	9.25	188.28	15.23	63.12	10 28 11	3889.6	5.57	181.54
100.00	20 20 14	2136.88	-24.85	33.82	18.11	107.17	20 55 51	1536.9	-22.27	25.97
100.00	10 30 18	4241.42	10.18	169.54	14.74	61.74	11 40 59	3641.4	6.32	162.87
110.00	21 38 32	1891.89	-27.53	14.18	17.08	111.11	22 10 3	1291.9	-24.41	6.40
110.00	11 28 30	4059.17	12.63	154.26	13.29	57.97	12 36 9	3459.2	8.31	147.83

DIFFERENTIAL CORRECTIONS

TDE	.8162	TRA	-1.9669	TC3	2.2768	BAU	.4885
RDE	.4076	RRA	-.5814	RC3	1.3493	FAU	.33417
FDE	-3.8066	FRA	10.1557	FC	-20.9544	BSP	14029
BDE	.9123	BRA	2.0511	BC3	2.6466	FSP	6592

MID-COURSE EXECUTION ACCURACY

SGT	3725.4	SGR	1491.5	SG3	1986.0		
RRT	.9495	RRF	-.9829	RTF	-.9626		
SGB	4012.8	R23	-.1788	R13	-.9710		
SG1	3989.0	SG2	437.2	THA	21.08		

ORBIT DETERMINATION ACCURACY

ST	1560.5	SR	685.6	SS	2522.4		
CRT	.9752	CRS	.9631	CST	.9984		
LSA	3038.6	MSA	183.9	SSA	34.1		
EL1	1698.8	EL2	139.4	ALF	23.36		

LAUNCH DATE OCT 21 1964 FLIGHT TIME 274.00 ARRIVAL DATE JUL 22 1965

HELIOCENTRIC CONIC DISTANCE 640.429 EARTH TO MARS

RL	148.89	LAL	.00	LOL	27.63	VL	32.845	GAL	-5.05	AZL	89.84	HCA	203.67	SMA	188.54	ECC	.22720	INC	.1586	V1	29.926
RP	231.20	LAP	-.06	LOP	231.30	VP	21.075	GAP	1.22	AZP	90.15	TAL	332.16	TAP	175.83	RCA	145.70	APO	231.38	V2	23.788
RC	223.281	GL	1.43	GP	9.53	ZAL	130.75	ZAP	134.43	ETS	169.15	ZAE	167.85	ETE	117.13	ZAC	98.42	ETC	255.83	CLP	135.22

PLANETOCENTRIC CONIC

C3	13.631	VHL	3.692	DLA	9.75	RAL	160.58	RAD	6567.5	VEL	11.620	PTH	2.04	VHP	3.778	DPA	7.22	RAP	190.49	ECC	1.2243

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 49 9	2433.90	-24.22	55.87	18.57	105.14	19 29 43	1833.9	-21.90	47.96
90.00	9 19 26	4463.58	8.44	186.79	15.16	62.87	10 33 50	3863.6	4.74	180.07
100.00	20 15 17	2156.07	-25.23	35.12	18.25	106.58	20 51 13	1556.1	-22.72	27.22
100.00	10 35 59	4216.65	9.37	168.14	14.66	61.49	11 46 15	3616.6	5.49	161.50
110.00	21 34 27	1908.35	-27.93	15.29	17.24	110.56	22 6 15	1308.4	-24.87	7.45
110.00	11 33 18	4037.13	11.83	153.05	13.19	57.69	12 40 35	3437.1	7.48	146.66

DIFFERENTIAL CORRECTIONS

TDE	.7782	TRA	-1.8905	TC3	2.2019	BAU	.4721
RDE	.4044	RRA	-.5738	RC3	1.3654	FAU	.34719
FDE	-3.8386	FRA	10.5258	FC	-22.0509	BSP	13649
BDE	.8770	BRA	1.9757	BC3	2.5909	FSP	6898

MID-COURSE EXECUTION ACCURACY

SGT	3600.5	SGR	1492.2	SG3	2072.3		
RRT	.9468	RRF	-.9815	RTF	-.9612		
SGB	3897.5	R23	-.1778	R13	-.9703		
SG1	3871.8	SG2	446.7	THA	21.73		

ORBIT DETERMINATION ACCURACY

ST	1502.9	SR	684.3	SS	2538.2		
CRT	.9739	CRS	.9588	CST	.9978		
LSA	3021.5	MSA	196.1	SSA	33.7		
EL1	1645.2	EL2	142.0	ALF	24.10		

LAUNCH DATE OCT 21 1964 FLIGHT TIME 276.00 ARRIVAL DATE JUL 24 1965

HELIOCENTRIC CONIC DISTANCE 644.239 EARTH TO MARS

RL	148.89	LAL	.00	LOL	27.63	VL	32.832	GAL	-5.01	AZL	89.77	HCA	204.68	SMA	188.33	ECC	.22612	INC	.2332	V1	29.926
RP	230.82	LAP	-.10	LOP	232.31	VP	21.101	GAP	.89	AZP	90.21	TAL	332.27	TAP	176.95	RCA	145.74	APO	230.91	V2	23.827
RC	225.247	GL	2.08	GP	9.36	ZAL	130.56	ZAP	133.12	ETS	169.75	ZAE	167.22	ETE	123.45	ZAC	98.17	ETC	255.85	CLP	133.85

PLANETOCENTRIC CONIC

C3	13.471	VHL	3.670	DLA	10.42	RAL	160.67	RAD	6567.5	VEL	11.613	PTH	2.03	VHP	3.703	DPA	7.20	RAP	190.10	ECC	1.2217

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 44 5	2453.25	-24.55	57.19	18.70	104.57	19 24 59	1853.2	-22.31	49.23
90.00	9 25 12	4439.08	7.68	185.40	15.10	62.66	10 39 11	3839.1	3.95	178.70
100.00	20 10 36	2174.20	-25.58	36.35	18.39	106.02	20 46 51	1574.2	-23.13	28.41
100.00	10 41 22	4193.36	8.62	166.83	14.60	61.27	11 51 15	3593.4	4.71	160.21
110.00	21 30 36	1923.88	-28.30	16.35	17.40	110.03	22 2 40	1323.9	-25.30	8.46
110.00	11 37 51	4016.45	11.07	151.93	13.12	57.45	12 44 48	3416.4	6.70	145.56

DIFFERENTIAL CORRECTIONS

TDE	.7407	TRA	-1.8114	TC3	2.1118	BAU	.4545
RDE	.4019	RRA	-.5677	RC3	1.3818	FAU	.36028
FDE	-3.8685	FRA	10.9084	FC	-23.1545	BSP	13242
BDE	.8427	BRA	1.8983	BC3	2.5238	FSP	7221

MID-COURSE EXECUTION ACCURACY

SGT	3465.0	SGR	1494.9	SG3	2160.2		
RRT	.9438	RRF	-.9801	RTF	-.9593		
SGB	3773.7	R23	-.1773	R13	-.9695		
SG1	3746.0	SG2	456.9	THA	22.51		

ORBIT DETERMINATION ACCURACY

ST	1443.3	SR	683.8	SS	2553.9		
CRT	.9727	CRS	.9543	CST	.9971		
LSA	3004.8	MSA	208.9	SSA	33.2		
EL1	1590.6	EL2	144.0	ALF	24.96		

LAUNCH DATE OCT 21 1964 FLIGHT TIME 278.00 ARRIVAL DATE JUL 26 1965

HELIOCENTRIC CONIC DISTANCE 648.059 EARTH TO MARS

RL	148.89	LAL	.00	LOL	27.63	VL	32.821	GAL	-4.97	AZL	89.70	HCA	205.70	SMA	188.12	ECC	.22511	INC	.3005	V1	29.926
RP	230.43	LAP	-.13	LOP	233.33	VP	21.128	GAP	.56	AZP	90.27	TAL	332.37	TAP	178.07	RCA	145.77	APO	230.47	V2	23.867
RC	227.193	GL	2.69	GP	9.20	ZAL	130.39	ZAP	131.77	ETS	170.32	ZAE	166.41	ETE	129.24	ZAC	97.93	ETC	255.88	CLP	132.44

PLANETOCENTRIC CONIC

C3	13.325	VHL	3.650	DLA	11.04	RAL	160.75	RAD	6567.5	VEL	11.606	PTH	2.03	VHP	3.631	DPA	7.22	RAP	189.68	ECC	1.2193

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 39 18	2471.59	-24.86	58.44	18.83	104.01	19 20 30	1871.6	-22.69	50.44
90.00	9 30 40	4416.00	6.95	184.09	15.07	62.48	10 44 16	3816.0	3.21	177.40
100.00	20 6 11	2191.38	-25.90	37.53	18.53	105.48	20 42 42	1591.4	-23.52	29.54
100.00	10 46 28	4171.44	7.90	165.60	14.56	61.08	11 56 0	3571.4	3.98	159.00
110.00	21 26 59	1938.55	-28.63	17.36	17.56	109.52	21 59 17	1338.6	-25.70	9.41
110.00	11 42 10	3997.03	10.36	150.87	13.07	57.24	12 48 47	3397.0	5.97	144.53

DIFFERENTIAL CORRECTIONS

TDE	.7048	TRA	-1.7275	TC3	2.0099	BAU	.4364
RDE	.4006	RRA	-.5624	RC3	1.4003	FAU	.37390
FDE	-3.9083	FRA	11.2904	FC	-24.2930	BSP	12770
BDE	.8107	BRA	1.8168	BC3	2.4496	FSP	7534

MID-COURSE EXECUTION ACCURACY

SGT	3318.1	SGR	1499.8	SG3	2250.0		
RRT	.9405	RRF	-.9787	RTF	-.9570		
SGB	3641.3	R23	-.1774	R13	-.9685		
SG1	3611.1	SG2	468.1	THA	23.45		

ORBIT DETERMINATION ACCURACY

ST	1383.1	SR	685.0	SS	2572.9		
CRT	.9719	CRS	.9498	CST	.9962		
LSA	2991.9	MSA	221.5	SSA	32.8		
EL1	1536.5	EL2	145.2	ALF	25.95		

LAUNCH DATE OCT 21 1964 FLIGHT TIME 280.00 ARRIVAL DATE JUL 28 1965

DISTANCE 651.890

HELIOCENTRIC CONIC — EARTH TO MARS

RL 148.89 LAL .00 LOL 27.63 VL 32.810 GAL -4.94 AZL 89.64 HCA 206.72 SMA 187.93 ECC .22415 INC .3634 V1 29.926
RP 230.05 LAP -.16 LOP 234.36 VP 21.157 GAP .23 AZP 90.32 TAL 332.46 TAP 179.19 RCA 145.81 APO 230.06 V2 23.907
RC 229.120 GL 3.27 GP 9.06 ZAL 130.22 ZAP 130.38 ETS 170.86 ZAE 165.44 ETE 134.44 ZAC 97.70 ETC 255.90 CLP 131.00

PLANETOCENTRIC CONIC

C3 13.191 VHL 3.632 DLA 11.63 RAL 160.84 RAD 6567.5 VEL 11.601 PTH 2.03 VHP 3.562 DPA 7.27 RAP 189.23 ECC 1.2171

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 34 46	2489.01	-25.14	59.64	18.97	103.47	19 16 15	1889.0	-23.04	51.60
90.00	9 35 53	4394.22	6.27	182.86	15.05	62.33	10 49 7	3794.2	2.51	176.19
100.00	20 2 0	2207.68	-26.19	38.66	18.67	104.96	20 38 48	1607.7	-23.88	30.62
100.00	10 51 20	4150.79	7.21	164.44	14.54	60.91	12 0 31	3550.8	3.28	157.86
110.00	21 23 34	1952.45	-28.95	18.32	17.72	109.03	21 56 6	1352.5	-26.08	10.32
110.00	11 46 16	3978.78	9.69	149.89	13.04	57.06	12 52 34	3378.8	5.28	143.57

DIFFERENTIAL CORRECTIONS
TDE .6687 TRA-1.6410 TC3 1.8905 BAU .4169
RDE .3999 RRA -.5583 RC3 1.4191 FAU .38764
FDE-3.9475 FRA11.6827 FC-25.4399 BSP 12270
BDE .7791 BRA 1.7334 BC3 2.3638 FSP 7858

MID-COURSE EXECUTION ACCURACY
SGT 3159.8 SGR 1506.4 SG3 2341.3
RRT .9365 RRF -.9774 RTF -.9539
SGB 3500.5 R23 -.1788 R13 -.9672
SG1 3467.2 SG2 481.3 THA 24.56

ORBIT DETERMINATION ACCURACY
ST 1320.3 SR 686.8 SS 2592.2
CRT .9712 CRS .9453 CST .9952
LSA 2979.7 MSA 234.2 SSA 32.4
EL1 1481.1 EL2 145.9 ALF 27.09

LAUNCH DATE OCT 21 1964 FLIGHT TIME 282.00 ARRIVAL DATE JUL 30 1965

DISTANCE 655.731

HELIOCENTRIC CONIC — EARTH TO MARS

RL 148.89 LAL .00 LOL 27.63 VL 32.800 GAL -4.91 AZL 89.58 HCA 207.75 SMA 187.75 ECC .22326 INC .4215 V1 29.926
RP 229.67 LAP -.20 LOP 235.38 VP 21.186 GAP -.09 AZP 90.37 TAL 332.55 TAP 180.30 RCA 145.83 APO 229.67 V2 23.948
RC 231.027 GL 3.81 GP 8.92 ZAL 130.06 ZAP 128.93 ETS 171.37 ZAE 164.33 ETE 139.07 ZAC 97.47 ETC 255.93 CLP 129.50

PLANETOCENTRIC CONIC

C3 13.071 VHL 3.615 DLA 12.18 RAL 160.93 RAD 6567.5 VEL 11.596 PTH 2.03 VHP 3.496 DPA 7.34 RAP 188.76 ECC 1.2151

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 30 29	2505.58	-25.40	60.79	19.11	102.95	19 12 15	1905.6	-23.37	52.71
90.00	9 40 52	4373.68	5.62	181.70	15.06	62.20	10 53 46	3773.7	1.85	175.04
100.00	19 58 3	2223.16	-26.45	39.73	18.82	104.45	20 35 6	1623.2	-24.21	31.65
100.00	10 55 59	4131.33	6.57	163.36	14.54	60.77	12 4 50	3531.3	2.62	156.79
110.00	21 20 21	1965.63	-29.24	19.24	17.89	108.56	21 53 7	1365.6	-26.42	11.19
110.00	11 50 10	3961.63	9.05	148.97	13.02	56.90	12 56 12	3361.6	4.63	142.67

DIFFERENTIAL CORRECTIONS
TDE .6325 TRA-1.5509 TC3 1.7558 BAU .3966
RDE .3997 RRA -.5551 RC3 1.4385 FAU .40158
FDE-3.9886 FRA12.0797 FC-26.5986 BSP 11753
BDE .7482 BRA 1.6473 BC3 2.2698 FSP 8187

MID-COURSE EXECUTION ACCURACY
SGT 2989.9 SGR 1514.3 SG3 2433.7
RRT .9317 RRF -.9761 RTF -.9499
SGB 3351.5 R23 -.1812 R13 -.9656
SG1 3314.6 SG2 496.1 THA 25.89

ORBIT DETERMINATION ACCURACY
ST 1255.1 SR 689.4 SS 2612.3
CRT .9707 CRS .9407 CST .9940
LSA 2968.6 MSA 246.7 SSA 32.1
EL1 1424.5 EL2 145.9 ALF 28.39

LAUNCH DATE OCT 21 1964 FLIGHT TIME 284.00 ARRIVAL DATE AUG 1 1965

DISTANCE 659.582

HELIOCENTRIC CONIC — EARTH TO MARS

RL 148.89 LAL .00 LOL 27.63 VL 32.790 GAL -4.88 AZL 89.52 HCA 208.78 SMA 187.58 ECC .22241 INC .4757 V1 29.926
RP 229.28 LAP -.23 LOP 236.41 VP 21.217 GAP -.40 AZP 90.42 TAL 332.62 TAP 181.40 RCA 145.86 APO 229.30 V2 23.988
RC 232.913 GL 4.33 GP 8.80 ZAL 129.92 ZAP 127.45 ETS 171.86 ZAE 163.09 ETE 143.14 ZAC 97.24 ETC 255.96 CLP 127.97

PLANETOCENTRIC CONIC

C3 12.962 VHL 3.600 DLA 12.70 RAL 161.02 RAD 6567.5 VEL 11.591 PTH 2.03 VHP 3.432 DPA 7.44 RAP 188.25 ECC 1.2133

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 26 26	2521.36	-25.64	61.88	19.25	102.45	19 8 28	1921.4	-23.67	53.77
90.00	9 45 38	4354.29	5.00	180.61	15.08	62.09	10 58 12	3754.3	1.23	173.96
100.00	19 54 20	2237.89	-26.70	40.75	18.98	103.97	20 31 38	1637.9	-24.52	32.63
100.00	11 0 25	4112.99	5.96	162.34	14.56	60.65	12 8 58	3513.0	2.00	155.79
110.00	21 17 20	1978.15	-29.50	20.12	18.06	108.10	21 50 19	1378.1	-26.75	12.02
110.00	11 53 54	3945.50	8.45	148.11	13.03	56.75	12 59 40	3345.5	4.02	141.82

DIFFERENTIAL CORRECTIONS
TDE .5974 TRA-1.4562 TC3 1.6086 BAU .3763
RDE .4003 RRA -.5524 RC3 1.4590 FAU .41588
FDE-4.0352 FRA12.4772 FC-27.7774 BSP 11180
BDE .7191 BRA 1.5575 BC3 2.1717 FSP 8512

MID-COURSE EXECUTION ACCURACY
SGT 2808.7 SGR 1523.7 SG3 2527.2
RRT .9261 RRF -.9748 RTF -.9449
SGB 3195.4 R23 -.1841 R13 -.9637
SG1 3154.1 SG2 511.9 THA 27.46

ORBIT DETERMINATION ACCURACY
ST 1188.7 SR 692.8 SS 2634.0
CRT .9708 CRS .9362 CST .9925
LSA 2960.2 MSA 259.2 SSA 31.7
EL1 1368.3 EL2 144.4 ALF 29.87

LAUNCH DATE OCT 21 1964 FLIGHT TIME 286.00 ARRIVAL DATE AUG 3 1965

DISTANCE 663.443

HELIOCENTRIC CONIC — EARTH TO MARS

RL 148.89 LAL .00 LOL 27.63 VL 32.780 GAL -4.86 AZL 89.47 HCA 209.81 SMA 187.42 ECC .22163 INC .5275 V1 29.926
RP 228.89 LAP -.26 LOP 237.44 VP 21.249 GAP -.71 AZP 90.46 TAL 332.68 TAP 182.49 RCA 145.88 APO 228.96 V2 24.029
RC 234.778 GL 4.81 GP 8.69 ZAL 129.79 ZAP 125.91 ETS 172.33 ZAE 161.73 ETE 146.72 ZAC 97.01 ETC 255.99 CLP 126.39

PLANETOCENTRIC CONIC

C3 12.864 VHL 3.587 DLA 13.19 RAL 161.11 RAD 6567.5 VEL 11.587 PTH 2.03 VHP 3.372 DPA 7.56 RAP 187.71 ECC 1.2117

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 22 37	2536.38	-25.85	62.93	19.41	101.97	19 4 54	1936.4	-23.94	54.78
90.00	9 50 12	4336.00	4.42	179.58	15.12	62.00	11 2 28	3736.0	.64	172.94
100.00	19 50 50	2251.91	-26.93	41.73	19.14	103.50	20 28 22	1651.9	-24.80	33.58
100.00	11 4 41	4095.71	5.38	161.38	14.59	60.55	12 12 56	3495.7	1.42	154.84
110.00	21 14 31	1990.03	-29.75	20.95	18.24	107.67	21 47 41	1390.0	-27.05	12.81
110.00	11 57 29	3930.35	7.88	147.30	13.05	56.63	13 2 59	3330.3	3.44	141.03

DIFFERENTIAL CORRECTIONS
TDE .5619 TRA-1.3578 TC3 1.4424 BAU .3552
RDE .4012 RRA -.5506 RC3 1.4785 FAU .42996
FDE-4.0791 FRA12.8810 FC-28.9366 BSP 10584
BDE .6905 BRA 1.4651 BC3 2.0656 FSP 8845

MID-COURSE EXECUTION ACCURACY
SGT 2615.2 SGR 1533.5 SG3 2620.6
RRT .9189 RRF -.9735 RTF -.9381
SGB 3031.6 R23 -.1883 R13 -.9615
SG1 2984.9 SG2 530.1 THA 29.33

ORBIT DETERMINATION ACCURACY
ST 1119.6 SR 696.6 SS 2655.3
CRT .9712 CRS .9317 CST .9905
LSA 2952.0 MSA 271.8 SSA 31.4
EL1 1311.0 EL2 141.7 ALF 31.55

LAUNCH DATE OCT 21 1964 FLIGHT TIME 288.00 ARRIVAL DATE AUG 5 1965

HELIOCENTRIC CONIC DISTANCE 667.313 EARTH TO MARS

RL	148.89	LAL	.00	LOL	27.63	VL	32.772	GAL	-4.84	AZL	89.42	HCA	210.85	SMA	187.27	ECC	.22089	INC	.5757
RP	228.51	LAP	-.30	LOP	238.48	VP	21.281	GAP	-1.01	AZP	90.49	TAL	332.73	TAP	183.58	RCA	145.90	APO	228.63
RC	236.623	GL	5.27	GP	8.58	ZAL	129.67	ZAP	124.33	ETS	172.78	ZAE	160.27	ETE	149.87	ZAC	96.78	ETC	256.03

V1	29.926	V2	24.070	CLP	124.78														

PLANETOCENTRIC CONIC

C3	12.776	VHL	3.574	DLA	13.64	RAL	161.21	RAD	6567.5	VEL	11.583	PTH	2.03	VHP	3.315	DPA	7.71	RAP	187.14
ECC	1.2103																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 19 2	2550.70	-26.05	63.93	19.57	101.51	19 1 32	1950.7	-24.20	55.75
90.00	9 54 35	4318.75	3.86	178.61	15.18	61.93	11 6 34	3718.8	.08	171.98
100.00	19 47 32	2265.25	-27.14	42.67	19.31	103.05	20 25 18	1665.2	-25.07	34.48
100.00	11 8 45	4079.44	4.83	160.48	14.65	60.47	12 16 45	3479.4	.87	153.94
110.00	21 11 53	2001.33	-29.98	21.75	18.43	107.24	21 45 14	1401.3	-27.33	13.56
110.00	12 0 54	3916.12	7.35	146.54	13.10	56.52	13 6 10	3316.1	2.90	140.29

DIFFERENTIAL CORRECTIONS

TDE	.5266	TRA	-1.2555	TC3	1.2614	BAU	.3345
RDE	.4025	RRA	-.5492	RC3	1.4984	FAU	.44420
FDE	-4.1249	FRA	13.2863	FC	-30.0993	BSP	9958
BDE	.6628	BRA	1.3704	BC3	1.9586	FSP	9176

MID-COURSE EXECUTION ACCURACY

SGT	2411.3	SGR	1544.1	SG3	2714.4		
RRT	.9095	RRF	-.9723	RTF	-.9289		
SGB	2863.4	R23	-.1934	R13	-.9589		
SG1	2809.9	SG2	550.7	THA	31.57		

ORBIT DETERMINATION ACCURACY

ST	1048.4	SR	700.8	SS	2677.2
CRT	.9722	CRS	.9272	CST	.9882
LSA	2945.5	MSA	284.1	SSA	31.1
EL1	1253.6	EL2	137.3	ALF	33.47

LAUNCH DATE OCT 21 1964 FLIGHT TIME 290.00 ARRIVAL DATE AUG 7 1965

HELIOCENTRIC CONIC DISTANCE 671.193 EARTH TO MARS

RL	148.89	LAL	.00	LOL	27.63	VL	32.763	GAL	-4.82	AZL	89.38	HCA	211.89	SMA	187.12	ECC	.22021	INC	.6215
RP	228.12	LAP	-.33	LOP	239.52	VP	21.315	GAP	-1.31	AZP	90.53	TAL	332.77	TAP	184.66	RCA	145.92	APO	228.33
RC	238.446	GL	5.71	GP	8.48	ZAL	129.57	ZAP	122.71	ETS	173.22	ZAE	158.72	ETE	152.63	ZAC	96.55	ETC	256.07

V1	29.926	V2	24.111	CLP	123.12		

PLANETOCENTRIC CONIC

C3	12.699	VHL	3.564	DLA	14.07	RAL	161.32	RAD	6567.5	VEL	11.580	PTH	2.03	VHP	3.261	DPA	7.87	RAP	186.53
ECC	1.2090																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 15 40	2564.35	-26.23	64.89	19.74	101.06	18 58 24	1964.4	-24.44	56.68
90.00	9 58 48	4302.51	3.34	177.70	15.26	61.86	11 10 30	3702.5	-.45	171.07
100.00	19 44 28	2277.95	-27.33	43.57	19.48	102.61	20 22 26	1678.0	-25.32	35.34
100.00	11 12 41	4064.14	4.32	159.64	14.72	60.39	12 20 25	3464.1	.35	153.11
110.00	21 9 26	2012.07	-30.20	22.51	18.62	106.84	21 42 58	1412.1	-27.60	14.29
110.00	12 4 12	3902.79	6.85	145.84	13.16	56.43	13 9 14	3302.8	2.39	139.59

DIFFERENTIAL CORRECTIONS

TDE	.4915	TRA	-1.1486	TC3	1.0635	BAU	.3146
RDE	.4042	RRA	-.5482	RC3	1.5176	FAU	.45833
FDE	-4.1736	FRA	13.6887	FC	-31.2456	BSP	9315
BDE	.6364	BRA	1.2727	BC3	1.8532	FSP	9508

MID-COURSE EXECUTION ACCURACY

SGT	2196.3	SGR	1555.0	SG3	2807.4		
RRT	.8970	RRF	-.9711	RTF	-.9162		
SGB	2691.1	R23	-.1992	R13	-.9559		
SG1	2629.1	SG2	574.2	THA	34.28		

ORBIT DETERMINATION ACCURACY

ST	975.4	SR	705.5	SS	2699.7
CRT	.9737	CRS	.9228	CST	.9851
LSA	2940.9	MSA	296.4	SSA	30.8
EL1	1196.6	EL2	130.9	ALF	35.65

LAUNCH DATE OCT 21 1964 FLIGHT TIME 292.00 ARRIVAL DATE AUG 9 1965

HELIOCENTRIC CONIC DISTANCE 675.082 EARTH TO MARS

RL	148.89	LAL	.00	LOL	27.63	VL	32.756	GAL	-4.80	AZL	89.33	HCA	212.93	SMA	186.99	ECC	.21958	INC	.6650
RP	227.73	LAP	-.36	LOP	240.56	VP	21.350	GAP	-1.61	AZP	90.56	TAL	332.81	TAP	185.74	RCA	145.93	APO	228.05
RC	240.248	GL	6.12	GP	8.38	ZAL	129.48	ZAP	121.04	ETS	173.64	ZAE	157.08	ETE	155.07	ZAC	96.31	ETC	256.11

V1	29.926	V2	24.152	CLP	121.42		

PLANETOCENTRIC CONIC

C3	12.632	VHL	3.554	DLA	14.47	RAL	161.43	RAD	6567.5	VEL	11.577	PTH	2.02	VHP	3.210	DPA	8.06	RAP	185.90
ECC	1.2079																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 12 31	2577.35	-26.40	65.80	19.92	100.63	18 55 28	1977.4	-24.67	57.56
90.00	10 2 51	4287.24	2.85	176.85	15.36	61.82	11 14 18	3687.2	-.94	170.22
100.00	19 41 36	2290.04	-27.50	44.42	19.67	102.19	20 19 46	1690.0	-25.55	36.17
100.00	11 16 26	4049.78	3.84	158.85	14.81	60.33	12 23 56	3449.8	-.14	152.32
110.00	21 7 10	2022.29	-30.40	23.24	18.83	106.45	21 40 53	1422.3	-27.84	14.98
110.00	12 7 21	3890.31	6.38	145.18	13.24	56.35	13 12 12	3290.3	1.91	138.94

DIFFERENTIAL CORRECTIONS

TDE	.4560	TRA	-1.0378	TC3	.8484	BAU	.2963
RDE	.4061	RRA	-.5476	RC3	1.5358	FAU	.47219
FDE	-4.2184	FRA	14.0920	FC	-32.3617	BSP	8659
BDE	.6106	BRA	1.1734	BC3	1.7545	FSP	9841

MID-COURSE EXECUTION ACCURACY

SGT	1972.1	SGR	1565.7	SG3	2899.1		
RRT	.8792	RRF	-.9699	RTF	-.8978		
SGB	2518.1	R23	-.2053	R13	-.9526		
SG1	2445.2	SG2	601.7	THA	37.58		

ORBIT DETERMINATION ACCURACY

ST	899.6	SR	710.2	SS	2721.3
CRT	.9759	CRS	.9184	CST	.9811
LSA	2936.5	MSA	308.5	SSA	30.5
EL1	1139.6	EL2	122.3	ALF	38.13

LAUNCH DATE OCT 21 1964 FLIGHT TIME 294.00 ARRIVAL DATE AUG 11 1965

HELIOCENTRIC CONIC DISTANCE 678.981 EARTH TO MARS

RL	148.89	LAL	.00	LOL	27.63	VL	32.748	GAL	-4.78	AZL	89.29	HCA	213.98	SMA	186.86	ECC	.21900	INC	.7062
RP	227.34	LAP	-.39	LOP	241.61	VP	21.385	GAP	-1.90	AZP	90.59	TAL	332.83	TAP	186.80	RCA	145.94	APO	227.79
RC	242.030	GL	6.51	GP	8.28	ZAL	129.41	ZAP	119.33	ETS	174.05	ZAE	155.37	ETE	157.23	ZAC	96.07	ETC	256.16

V1	29.926	V2	24.193	CLP	119.68		

PLANETOCENTRIC CONIC

C3	12.574	VHL	3.546	DLA	14.85	RAL	161.55	RAD	6567.5	VEL	11.574	PTH	2.02	VHP	3.163	DPA	8.26	RAP	185.23
ECC	1.2069																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 9 35	2589.73	-26.55	66.68	20.11	100.22	18 52 45	1989.7	-24.87	58.41
90.00	10 6 44	4272.91	2.39	176.05	15.47	61.78	11 17 57	3672.9	-1.40	169.42
100.00	19 38 56	2301.54	-27.67	45.24	19.87	101.79	20 17 18	1701.5	-25.76	36.95
100.00	11 20 4	4036.33	3.38	158.11	14.92	60.28	12 27 20	3436.3	-.60	151.58
110.00	21 5 5	2031.99	-30.58	23.94	19.04	106.08	21 38 57	1432.0	-28.07	15.64
110.00	12 10 24	3878.65	5.94	144.56	13.34	56.27	13 15 3	3278.6	1.47	138.33

DIFFERENTIAL CORRECTIONS

TDE	.4208	TRA	-.9219	TC3	.6189	BAU	.2811
RDE	.4083	RRA	-.5471	RC3	1.5533	FAU	.48594
FDE	-4.2664	FRA	14.4870	FC	-33.4563	BSP	7985
BDE	.5863	BRA	1.0720	BC3	1.6720	FSP	10160

MID-COURSE EXECUTION ACCURACY

SGT	1740.6	SGR	1576.4	SG3	2989.2		
RRT	.8533	RRF	-.9687	RTF	-.8705		
SGB	2348.4	R23	-.2100	R13	-.9494		
SG1	2261.5	SG2	632.7	THA	41.68		

ORBIT DETERMINATION ACCURACY

ST	822.3	SR	715.3	SS	2743.4
CRT	.9790	CRS	.9141	CST	.9757
LSA	2934.3	MSA	320.5	SSA	30.2
EL1	1084.2	EL2	110.6	ALF	40.94

LAUNCH DATE OCT 21 1964 FLIGHT TIME 296.00 ARRIVAL DATE AUG 13 1965

HELIOCENTRIC CONIC DISTANCE 682.889 EARTH TO MARS

RL 148.89 LAL .00 LOL 27.63 VL 32.742 GAL -4.77 AZL 89.25 HCA 215.03 SMA 186.75 ECC .21846 INC .7453 V1 29.926
RP 226.95 LAP -.43 LOP 242.66 VP 21.422 GAP -2.18 AZP 90.61 TAL 332.83 TAP 187.86 RCA 145.95 APO 227.54 V2 24.235
RC 243.792 GL 6.89 GP 8.19 ZAL 129.36 ZAP 117.59 ETS 174.45 ZAE 153.59 ETE 159.16 ZAC 95.82 ETC 256.21 CLP 117.89

PLANETOCENTRIC CONIC

C3 12.526 VHL 3.539 DLA 15.20 RAL 161.68 RAD 6567.5 VEL 11.572 PTH 2.02 VHP 3.118 DPA 8.49 RAP 184.53 ECC 1.2061

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 6 52	2601.51	-26.69	67.51	20.31	99.82	18 50 13	2001.5	-25.06	59.22
90.00	10 10 29	4259.49	1.96	175.30	15.61	61.75	11 21 28	3659.5	-1.83	168.67
100.00	19 36 29	2312.48	-27.82	46.01	20.08	101.41	20 15 2	1712.5	-25.96	37.71
100.00	11 23 33	4023.75	2.96	157.41	15.05	60.24	12 30 36	3423.7	-1.02	150.89
110.00	21 3 11	2041.21	-30.75	24.60	19.26	105.72	21 37 12	1441.2	-28.29	16.27
110.00	12 13 20	3867.78	5.53	143.99	13.46	56.21	13 17 48	3267.8	1.05	137.76

DIFFERENTIAL CORRECTIONS
TDE .3872 TRA -.7999 TC3 .3793 BAU .2707
RDE .4113 RRA -.5460 RC3 1.5711 FAU .49990
FDE-4.3274 FRA14.8601 FC-34.5506 BSP 7287
BDE .5649 BRA .9684 BC3 1.6162 FSP 10447

MID-COURSE EXECUTION ACCURACY
SGT 1505.2 SGR 1587.2 SG3 3077.4
RRT .8141 RRF -.9675 RTF -.8283
SGB 2187.4 R23 -.2104 R13 -.9469
SG1 2083.6 SG2 665.8 THA 46.86

ORBIT DETERMINATION ACCURACY
ST 745.0 SR 721.1 SS 2767.7
CRT .9833 CRS .9103 CST .9678
LSA 2936.6 MSA 332.5 SSA 29.8
EL1 1032.5 EL2 94.7 ALF 44.05

LAUNCH DATE OCT 21 1964 FLIGHT TIME 298.00 ARRIVAL DATE AUG 15 1965

HELIOCENTRIC CONIC DISTANCE 686.804 EARTH TO MARS

RL 148.89 LAL .00 LOL 27.63 VL 32.735 GAL -4.77 AZL 89.22 HCA 216.08 SMA 186.64 ECC .21798 INC .7823 V1 29.926
RP 226.56 LAP -.46 LOP 243.71 VP 21.459 GAP -2.46 AZP 90.63 TAL 332.83 TAP 188.91 RCA 145.95 APO 227.32 V2 24.277
RC 245.534 GL 7.24 GP 8.10 ZAL 129.32 ZAP 115.80 ETS 174.83 ZAE 151.75 ETE 160.87 ZAC 95.57 ETC 256.27 CLP 116.08

PLANETOCENTRIC CONIC

C3 12.487 VHL 3.534 DLA 15.53 RAL 161.82 RAD 6567.5 VEL 11.570 PTH 2.02 VHP 3.077 DPA 8.72 RAP 183.80 ECC 1.2055

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 4 22	2612.69	-26.82	68.30	20.53	99.44	18 47 55	2012.7	-25.24	59.99
90.00	10 14 5	4246.97	1.55	174.60	15.76	61.72	11 24 52	3647.0	-2.24	167.97
100.00	19 34 15	2322.86	-27.95	46.76	20.30	101.04	20 12 58	1722.9	-26.15	38.42
100.00	11 26 54	4012.03	2.56	156.77	15.20	60.21	12 33 46	3412.0	-1.42	150.25
110.00	21 1 28	2049.95	-30.91	25.23	19.50	105.38	21 35 38	1449.9	-28.49	16.87
110.00	12 16 10	3857.71	5.14	143.46	13.59	56.16	13 20 27	3257.7	.67	137.24

DIFFERENTIAL CORRECTIONS
TDE .3504 TRA -.6756 TC3 .1147 BAU .2653
RDE .4138 RRA -.5456 RC3 1.5850 FAU .51259
FDE-4.3694 FRA15.2406 FC-35.5386 BSP 6683
BDE .5423 BRA .8683 BC3 1.5891 FSP 10760

MID-COURSE EXECUTION ACCURACY
SGT 1273.6 SGR 1596.2 SG3 3161.4
RRT .7457 RRF -.9663 RTF -.7558
SGB 2042.0 R23 -.2036 R13 -.9461
SG1 1915.7 SG2 707.1 THA 53.49

ORBIT DETERMINATION ACCURACY
ST 662.7 SR 726.1 SS 2787.6
CRT .9877 CRS .9060 CST .9571
LSA 2935.7 MSA 343.7 SSA 29.6
EL1 980.0 EL2 76.7 ALF 47.64

LAUNCH DATE OCT 21 1964 FLIGHT TIME 300.00 ARRIVAL DATE AUG 17 1965

HELIOCENTRIC CONIC DISTANCE 690.730 EARTH TO MARS

RL 148.89 LAL .00 LOL 27.63 VL 32.729 GAL -4.76 AZL 89.18 HCA 217.14 SMA 186.53 ECC .21754 INC .8177 V1 29.926
RP 226.17 LAP -.49 LOP 244.77 VP 21.497 GAP -2.74 AZP 90.65 TAL 332.82 TAP 189.96 RCA 145.96 APO 227.11 V2 24.318
RC 247.256 GL 7.58 GP 8.02 ZAL 129.30 ZAP 113.97 ETS 175.21 ZAE 149.85 ETE 162.42 ZAC 95.31 ETC 256.33 CLP 114.22

PLANETOCENTRIC CONIC

C3 12.456 VHL 3.529 DLA 15.84 RAL 161.97 RAD 6567.5 VEL 11.569 PTH 2.02 VHP 3.039 DPA 8.98 RAP 183.04 ECC 1.2050

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 2 6	2623.30	-26.94	69.06	20.76	99.08	18 45 49	2023.3	-25.40	60.73
90.00	10 17 33	4235.32	1.18	173.95	15.93	61.71	11 28 8	3635.3	-2.61	167.32
100.00	19 32 12	2332.70	-28.08	47.46	20.53	100.69	20 11 5	1732.7	-26.32	39.10
100.00	11 30 7	4001.15	2.19	156.17	15.36	60.18	12 36 48	3401.2	-1.79	149.65
110.00	20 59 55	2058.24	-31.06	25.83	19.75	105.05	21 34 14	1458.2	-28.68	17.44
110.00	12 18 53	3848.38	4.79	142.97	13.75	56.11	13 23 2	3248.4	.31	136.75

DIFFERENTIAL CORRECTIONS
TDE .3157 TRA -.5451 TC3 -.1571 BAU .2676
RDE .4171 RRA -.5443 RC3 1.5992 FAU .52549
FDE-4.4272 FRA15.5911 FC-36.5216 BSP 6109
BDE .5231 BRA .7703 BC3 1.6069 FSP 11026

MID-COURSE EXECUTION ACCURACY
SGT 1058.8 SGR 1605.1 SG3 3242.5
RRT .6277 RRF -.9650 RTF -.6298
SGB 1922.9 R23 -.1796 R13 -.9487
SG1 1772.0 SG2 746.6 THA 62.15

ORBIT DETERMINATION ACCURACY
ST 582.1 SR 731.8 SS 2810.1
CRT .9929 CRS .9023 CST .9404
LSA 2940.1 MSA 355.1 SSA 29.2
EL1 933.5 EL2 54.3 ALF 51.54

LAUNCH DATE OCT 21 1964 FLIGHT TIME 302.00 ARRIVAL DATE AUG 19 1965

HELIOCENTRIC CONIC DISTANCE 694.663 EARTH TO MARS

RL 148.89 LAL .00 LOL 27.63 VL 32.724 GAL -4.76 AZL 89.15 HCA 218.20 SMA 186.44 ECC .21715 INC .8518 V1 29.926
RP 225.78 LAP -.53 LOP 245.83 VP 21.536 GAP -3.01 AZP 90.67 TAL 332.79 TAP 190.99 RCA 145.95 APO 226.92 V2 24.360
RC 248.959 GL 7.90 GP 7.93 ZAL 129.29 ZAP 112.11 ETS 175.58 ZAE 147.89 ETE 163.81 ZAC 95.05 ETC 256.39 CLP 112.34

PLANETOCENTRIC CONIC

C3 12.435 VHL 3.526 DLA 16.12 RAL 162.13 RAD 6567.5 VEL 11.568 PTH 2.02 VHP 3.004 DPA 9.24 RAP 182.25 ECC 1.2046

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 0 2	2633.34	-27.04	69.78	21.00	98.74	18 43 55	2033.3	-25.56	61.42
90.00	10 20 52	4224.54	.83	173.35	16.12	61.69	11 31 17	3624.5	-2.96	166.72
100.00	19 30 22	2342.01	-28.20	48.13	20.78	100.36	20 9 24	1742.0	-26.48	39.75
100.00	11 33 13	3991.11	1.85	155.62	15.55	60.16	12 39 44	3391.1	-2.13	149.10
110.00	20 58 34	2066.08	-31.20	26.40	20.01	104.74	21 33 0	1466.1	-28.86	17.98
110.00	12 21 31	3839.80	4.47	142.52	13.92	56.07	13 25 31	3239.8	-.02	136.30

DIFFERENTIAL CORRECTIONS
TDE .2791 TRA -.4110 TC3 -.4479 BAU .2777
RDE .4199 RRA -.5434 RC3 1.6094 FAU .53706
FDE-4.4690 FRA15.9387 FC-37.3908 BSP 5673
BDE .5042 BRA .6813 BC3 1.6705 FSP 11302

MID-COURSE EXECUTION ACCURACY
SGT 888.0 SGR 1612.0 SG3 3318.1
RRT .4119 RRF -.9637 RTF -.4017
SGB 1840.4 R23 -.1282 R13 -.9552
SG1 1665.4 SG2 783.2 THA 73.46

ORBIT DETERMINATION ACCURACY
ST 499.2 SR 736.7 SS 2828.7
CRT .9968 CRS .8982 CST .9139
LSA 2942.6 MSA 366.2 SSA 29.0
EL1 889.3 EL2 33.2 ALF 55.91

LAUNCH DATE OCT 21 1964 FLIGHT TIME 304.00 ARRIVAL DATE AUG 21 1965

HELIOCENTRIC CONIC DISTANCE 698.605 EARTH TO MARS

RL	148.89	LAL	.00	LOL	27.63	VL	32.719	GAL	-4.76	AZL	89.12	HCA	219.27	SMA	186.35	ECC	.21680	INC	.8842
RP	225.38	LAP	-.56	LOP	246.90	VP	21.576	GAP	-3.28	AZP	90.68	TAL	332.75	TAP	192.02	RCA	145.95	APO	226.75
RC	250.643	GL	8.21	GP	7.84	ZAL	129.31	ZAP	110.22	ETS	175.94	ZAE	145.89	ETE	165.08	ZAC	94.78	ETC	256.46

V1 29.926 V2 24.402 CLP 110.42

PLANETOCENTRIC CONIC

C3	12.422	VHL	3.524	DLA	16.39	RAL	162.29	RAD	6567.5	VEL	11.568	PTH	2.02	VHP	2.973	DPA	9.52	RAP	181.44

ECC 1.2044

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 58 12	2642.82	-27.14	70.45	21.25	98.41	18 42 15	2042.8	-25.69	62.08
90.00	10 24 4	4214.62	.51	172.80	16.32	61.69	11 34 19	3614.6	-3.28	166.16
100.00	19 28 45	2350.80	-28.30	48.76	21.04	100.04	20 7 56	1750.8	-26.62	40.36
100.00	11 36 12	3981.87	1.54	155.11	15.75	60.14	12 42 34	3381.9	-2.44	148.59
110.00	20 57 23	2073.49	-31.32	26.94	20.29	104.44	21 31 56	1473.5	-29.02	18.49
110.00	12 24 3	3831.95	4.17	142.11	14.11	56.04	13 27 55	3231.9	-.32	135.89

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2423	TRA	-.2725	TC3	-.7507	BAU	.2962	SGT	805.2	SGR	1617.7	SG3	3388.7	ST	417.8	SR	741.7	SS	2847.4
RDE	.4231	RRA	-.5418	RC3	1.6179	FAU	.54810	RRT	.0702	RRF	-.9624	RTF	-.0432	CRT	.9955	CRS	.8944	CST	.8687
FDE	-4.5148	FRA	16.2623	FC	-38.1996	BSP	5405	SGB	1807.0	R23	-.0464	R13	-.9616	LSA	2947.8	MSA	376.8	SSA	28.7
BDE	.4876	BRA	.6065	BC3	1.7836	FSP	11553	SG1	1619.0	SG2	802.6	THA	87.35	EL1	850.6	EL2	34.3	ALF	60.66

LAUNCH DATE OCT 21 1964 FLIGHT TIME 306.00 ARRIVAL DATE AUG 23 1965

HELIOCENTRIC CONIC DISTANCE 702.555 EARTH TO MARS

RL	148.89	LAL	.00	LOL	27.63	VL	32.714	GAL	-4.76	AZL	89.08	HCA	220.34	SMA	186.27	ECC	.21650	INC	.9151
RP	224.99	LAP	-.59	LOP	247.97	VP	21.616	GAP	-3.54	AZP	90.70	TAL	332.71	TAP	193.04	RCA	145.94	APO	226.60
RC	252.307	GL	8.50	GP	7.75	ZAL	129.34	ZAP	108.30	ETS	176.29	ZAE	143.85	ETE	166.23	ZAC	94.51	ETC	256.54

V1 29.926 V2 24.444 CLP 108.48

PLANETOCENTRIC CONIC

C3	12.417	VHL	3.524	DLA	16.63	RAL	162.48	RAD	6567.5	VEL	11.567	PTH	2.02	VHP	2.945	DPA	9.80	RAP	180.60

ECC 1.2044

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 56 34	2651.75	-27.23	71.09	21.52	98.10	18 40 46	2051.8	-25.82	62.71
90.00	10 27 8	4205.53	.22	172.29	16.55	61.68	11 37 13	3605.5	-3.57	165.66
100.00	19 27 20	2359.08	-28.40	49.36	21.32	99.74	20 6 39	1759.1	-26.76	40.94
100.00	11 39 4	3973.44	1.26	154.65	15.97	60.13	12 45 17	3373.4	-2.73	148.13
110.00	20 56 23	2080.47	-31.44	27.45	20.57	104.16	21 31 3	1480.5	-29.18	18.98
110.00	12 26 30	3824.81	3.90	141.73	14.32	56.01	13 30 15	3224.8	-.59	135.52

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2052	TRA	-.1294	TC3	-1.0656	BAU	.3225	SGT	850.6	SGR	1621.7	SG3	3453.2	ST	340.8	SR	746.7	SS	2865.0
RDE	.4265	RRA	-.5398	RC3	1.6242	FAU	.55836	RRT	-.3097	RRF	-.9610	RTF	.3518	CRT	.9772	CRS	.8907	CST	.7847
FDE	-4.5608	FRA	16.5604	FC	-38.9286	BSP	5354	SGB	1831.3	R23	.0418	R13	-.9617	LSA	2954.9	MSA	387.1	SSA	28.4
BDE	.4733	BRA	.5550	BC3	1.9425	FSP	11778	SG1	1649.7	SG2	795.1	THA	102.07	EL1	818.1	EL2	66.1	ALF	65.79

LAUNCH DATE OCT 21 1964 FLIGHT TIME 308.00 ARRIVAL DATE AUG 25 1965

HELIOCENTRIC CONIC DISTANCE 706.511 EARTH TO MARS

RL	148.89	LAL	.00	LOL	27.63	VL	32.709	GAL	-4.76	AZL	89.05	HCA	221.41	SMA	186.20	ECC	.21624	INC	.9451
RP	224.60	LAP	-.63	LOP	249.04	VP	21.656	GAP	-3.80	AZP	90.71	TAL	332.64	TAP	194.05	RCA	145.93	APO	226.46
RC	253.951	GL	8.78	GP	7.66	ZAL	129.39	ZAP	106.36	ETS	176.63	ZAE	141.77	ETE	167.28	ZAC	94.23	ETC	256.61

V1 29.926 V2 24.486 CLP 106.51

PLANETOCENTRIC CONIC

C3	12.422	VHL	3.524	DLA	16.85	RAL	162.67	RAD	6567.5	VEL	11.568	PTH	2.02	VHP	2.921	DPA	10.09	RAP	179.74

ECC 1.2044

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 55 11	2660.12	-27.30	71.69	21.81	97.81	18 39 31	2060.1	-25.94	63.29
90.00	10 30 4	4197.31	-.05	171.83	16.79	61.68	11 40 1	3597.3	-3.83	165.20
100.00	19 26 8	2366.84	-28.49	49.92	21.61	99.46	20 5 35	1766.8	-26.89	41.48
100.00	11 41 49	3965.82	1.00	154.23	16.21	60.12	12 47 54	3365.8	-2.99	147.71
110.00	20 55 34	2087.02	-31.55	27.93	20.88	103.90	21 30 21	1487.0	-29.32	19.44
110.00	12 28 52	3818.41	3.65	141.40	14.55	55.99	13 32 30	3218.4	-.84	135.19

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1639	TRA	.0156	TC3	-1.4036	BAU	.3560	SGT	1025.0	SGR	1620.9	SG3	3507.6	ST	268.3	SR	748.3	SS	2870.6
RDE	.4276	RRA	-.5396	RC3	1.6201	FAU	.56475	RRT	-.5832	RRF	-.9593	RTF	.6307	CRT	.9068	CRS	.8846	CST	.6143
FDE	-4.5419	FRA	16.8980	FC	-39.3602	BSP	5590	SGB	1917.8	R23	.1093	R13	-.9570	LSA	2952.0	MSA	396.9	SSA	28.5
BDE	.4580	BRA	.5398	BC3	2.1435	FSP	12110	SG1	1757.3	SG2	768.0	THA	115.43	EL1	787.7	EL2	107.4	ALF	71.64

LAUNCH DATE OCT 21 1964 FLIGHT TIME 310.00 ARRIVAL DATE AUG 27 1965

HELIOCENTRIC CONIC DISTANCE 710.479 EARTH TO MARS

RL	148.89	LAL	.00	LOL	27.63	VL	32.705	GAL	-4.77	AZL	89.03	HCA	222.49	SMA	186.13	ECC	.21602	INC	.9739
RP	224.21	LAP	-.66	LOP	250.11	VP	21.698	GAP	-4.06	AZP	90.72	TAL	332.57	TAP	195.06	RCA	145.92	APO	226.33
RC	255.576	GL	9.04	GP	7.57	ZAL	129.46	ZAP	104.39	ETS	176.96	ZAE	139.65	ETE	168.25	ZAC	93.95	ETC	256.70

V1 29.926 V2 24.527 CLP 104.52

PLANETOCENTRIC CONIC

C3	12.434	VHL	3.526	DLA	17.06	RAL	162.87	RAD	6567.5	VEL	11.568	PTH	2.02	VHP	2.900	DPA	10.39	RAP	178.87

ECC 1.2046

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 54 0	2667.98	-27.38	72.26	22.11	97.54	18 38 28	2068.0	-26.05	63.84
90.00	10 32 53	4189.87	-.29	171.42	17.05	61.68	11 42 43	3589.9	-4.07	164.78
100.00	19 25 7	2374.13	-28.57	50.44	21.91	99.20	20 4 42	1774.1	-27.00	41.99
100.00	11 44 27	3958.96	.76	153.85	16.46	60.12	12 50 26	3359.0	-3.22	147.33
110.00	20 54 55	2093.19	-31.65	28.39	21.19	103.64	21 29 48	1493.2	-29.45	19.87
110.00	12 31 9	3812.66	3.43	141.09	14.80	55.97	13 34 41	3212.7	-1.06	134.89

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1283	TRA	.1691	TC3	-1.7308	BAU	.3945	SGT	1271.2	SGR	1622.1	SG3	3558.7	ST	228.5	SR	753.9	SS	2889.0
RDE	.4320	RRA	-.5352	RC3	1.6236	FAU	.57403	RRT	-.7336	RRF	-.9577	RTF	.7869	CRT	.7054	CRS	.8819	CST	.2950
FDE	-4.6074	FRA	17.1134	FC	-39.9678	BSP	6019	SGB	2060.9	R23	.1307	R13	-.9568	LSA	2966.5	MSA	407.3	SSA	28.0
BDE	.4507	BRA	.5613	BC3	2.3731	FSP	12226	SG1	1928.5	SG2	726.6	THA	125.72	EL1	771.7	EL2	158.2	ALF	77.39

LAUNCH DATE OCT 21 1964 FLIGHT TIME 312.00 ARRIVAL DATE AUG 29 1965

HELIOCENTRIC CONIC DISTANCE 714.454 EARTH TO MARS

RL 148.89 LAL .00 LOL 27.63 VL 32.702 GAL -4.78 AZL 89.00 HCA 223.57 SMA 186.07 ECC .21584 INC 1.0016 V1 29.926
RP 223.82 LAP -.69 LOP 251.19 VP 21.740 GAP -4.31 AZP 90.73 TAL 332.49 TAP 196.05 RCA 145.90 APO 226.23 V2 24.569
RC 257.180 GL 9.29 GP 7.47 ZAL 129.54 ZAP 102.40 ETS 177.29 ZAE 137.51 ETE 169.14 ZAC 93.66 ETC 256.79 CLP 102.51

PLANETOCENTRIC CONIC

C3 12.455 VHL 3.529 DLA 17.24 RAL 163.09 RAD 6567.5 VEL 11.569 PTH 2.02 VHP 2.883 DPA 10.69 RAP 177.98 ECC 1.2050

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 53 3	2675.29	-27.44	72.78	22.43	97.28	18 37 38	2075.3	-26.15	64.35
90.00	10 35 34	4183.27	-.50	171.05	17.33	61.69	11 45 17	3583.3	-4.28	164.41
100.00	19 24 20	2380.92	-28.64	50.93	22.23	98.95	20 4 1	1780.9	-27.11	42.47
100.00	11 46 58	3952.87	.56	153.52	16.74	60.11	12 52 51	3352.9	-3.42	147.00
110.00	20 54 27	2098.95	-31.74	28.81	21.52	103.41	21 29 26	1498.9	-29.57	20.27
110.00	12 33 20	3807.61	3.24	140.83	15.06	55.95	13 36 48	3207.6	-1.25	134.62

DIFFERENTIAL CORRECTIONS
TDE .0904 TRA .3252 TC3-2.0699 BAU .4379
RDE .4360 RRA -.5307 RC3 1.6222 FAU .58147
FDE-4.6564 FRA17.3129 FC-40.4187 BSP 6678
BDE .4452 BRA .6224 BC3 2.6299 FSP 12344

MID-COURSE EXECUTION ACCURACY
SGT 1569.0 SGR 1620.5 SG3 3601.1
RRT -.8133 RRF -.9560 RTF .8692
SGB 2255.6 R23 .1309 R13 -.9600
SG1 2147.8 SG2 688.8 THA 133.86

ORBIT DETERMINATION ACCURACY
ST 225.8 SR 758.5 SS 2903.3
CRT .3359 CRS .8788 CST -.1489
LSA 2980.1 MSA 416.9 SSA 27.5
EL1 762.6 EL2 211.5 ALF 83.81

LAUNCH DATE OCT 21 1964 FLIGHT TIME 314.00 ARRIVAL DATE AUG 31 1965

HELIOCENTRIC CONIC DISTANCE 718.436 EARTH TO MARS

RL 148.89 LAL .00 LOL 27.63 VL 32.699 GAL -4.80 AZL 88.97 HCA 224.65 SMA 186.01 ECC .21571 INC 1.0281 V1 29.926
RP 223.44 LAP -.72 LOP 252.28 VP 21.782 GAP -4.55 AZP 90.73 TAL 332.39 TAP 197.04 RCA 145.89 APO 226.13 V2 24.611
RC 258.763 GL 9.53 GP 7.37 ZAL 129.65 ZAP 100.40 ETS 177.61 ZAE 135.34 ETE 169.96 ZAC 93.37 ETC 256.88 CLP 100.48

PLANETOCENTRIC CONIC

C3 12.484 VHL 3.533 DLA 17.41 RAL 163.32 RAD 6567.5 VEL 11.570 PTH 2.02 VHP 2.869 DPA 10.99 RAP 177.08 ECC 1.2055

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 52 19	2682.07	-27.50	73.27	22.76	97.04	18 37 1	2082.1	-26.24	64.83
90.00	10 38 8	4177.48	-.69	170.73	17.62	61.69	11 47 45	3577.5	-4.47	164.08
100.00	19 23 45	2387.22	-28.71	51.39	22.57	98.72	20 3 32	1787.2	-27.20	42.91
100.00	11 49 23	3947.57	.38	153.23	17.03	60.11	12 55 11	3347.6	-3.60	146.70
110.00	20 54 10	2104.32	-31.83	29.21	21.87	103.19	21 29 14	1504.3	-29.68	20.65
110.00	12 35 27	3803.24	3.07	140.60	15.34	55.94	13 38 50	3203.2	-1.42	134.40

DIFFERENTIAL CORRECTIONS
TDE .0514 TRA .4846 TC3-2.4175 BAU .4854
RDE .4398 RRA -.5257 RC3 1.6172 FAU .58745
FDE-4.6983 FRA17.4848 FC-40.7391 BSP 7506
BDE .4428 BRA .7150 BC3 2.9085 FSP 12445

MID-COURSE EXECUTION ACCURACY
SGT 1898.4 SGR 1616.4 SG3 3634.7
RRT -.8566 RRF -.9541 RTF .9143
SGB 2493.3 R23 .1206 R13 -.9649
SG1 2404.8 SG2 658.3 THA 140.34

ORBIT DETERMINATION ACCURACY
ST 265.8 SR 762.7 SS 2915.1
CRT -.0420 CRS .8757 CST -.5157
LSA 2994.6 MSA 426.0 SSA 27.1
EL1 762.7 EL2 265.5 ALF 90.96

LAUNCH DATE OCT 21 1964 FLIGHT TIME 316.00 ARRIVAL DATE SEP 2 1965

HELIOCENTRIC CONIC DISTANCE 722.426 EARTH TO MARS

RL 148.89 LAL .00 LOL 27.63 VL 32.696 GAL -4.81 AZL 88.95 HCA 225.74 SMA 185.96 ECC .21562 INC 1.0539 V1 29.926
RP 223.05 LAP -.75 LOP 253.37 VP 21.825 GAP -4.79 AZP 90.74 TAL 332.28 TAP 198.01 RCA 145.86 APO 226.05 V2 24.653
RC 260.326 GL 9.75 GP 7.27 ZAL 129.77 ZAP 98.38 ETS 177.92 ZAE 133.15 ETE 170.72 ZAC 93.08 ETC 256.97 CLP 98.45

PLANETOCENTRIC CONIC

C3 12.521 VHL 3.539 DLA 17.55 RAL 163.56 RAD 6567.5 VEL 11.572 PTH 2.02 VHP 2.859 DPA 11.29 RAP 176.17 ECC 1.2061

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 51 48	2688.32	-27.55	73.72	23.11	96.82	18 36 37	2088.3	-26.32	65.27
90.00	10 40 34	4172.51	-.85	170.45	17.94	61.69	11 50 7	3572.5	-4.63	163.80
100.00	19 23 22	2393.04	-28.77	51.81	22.92	98.50	20 3 15	1793.0	-27.29	43.32
100.00	11 51 41	3943.03	.22	152.98	17.34	60.11	12 57 24	3343.0	-3.75	146.45
110.00	20 54 4	2109.29	-31.90	29.57	22.23	102.98	21 29 13	1509.3	-29.79	21.00
110.00	12 37 29	3799.54	2.93	140.41	15.65	55.93	13 40 49	3199.5	-1.56	134.20

DIFFERENTIAL CORRECTIONS
TDE .0115 TRA .6476 TC3-2.7703 BAU .5362
RDE .4433 RRA -.5202 RC3 1.6076 FAU .59159
FDE-4.7261 FRA17.6295 FC-40.9029 BSP 8471
BDE .4434 BRA .8307 BC3 3.2029 FSP 12534

MID-COURSE EXECUTION ACCURACY
SGT 2248.0 SGR 1609.4 SG3 3658.4
RRT -.8814 RRF -.9520 RTF .9406
SGB 2764.7 R23 .1067 R13 -.9702
SG1 2690.8 SG2 635.1 THA 145.56

ORBIT DETERMINATION ACCURACY
ST 335.7 SR 765.9 SS 2922.9
CRT -.2960 CRS .8721 CST -.7232
LSA 3008.8 MSA 434.9 SSA 26.8
EL1 773.6 EL2 317.4 ALF 98.90

LAUNCH DATE OCT 21 1964 FLIGHT TIME 318.00 ARRIVAL DATE SEP 4 1965

HELIOCENTRIC CONIC DISTANCE 726.423 EARTH TO MARS

RL 148.89 LAL .00 LOL 27.63 VL 32.693 GAL -4.83 AZL 88.92 HCA 226.83 SMA 185.91 ECC .21557 INC 1.0788 V1 29.926
RP 222.66 LAP -.79 LOP 254.46 VP 21.868 GAP -5.03 AZP 90.74 TAL 332.15 TAP 198.98 RCA 145.84 APO 225.99 V2 24.695
RC 261.869 GL 9.96 GP 7.17 ZAL 129.91 ZAP 96.36 ETS 178.22 ZAE 130.95 ETE 171.43 ZAC 92.78 ETC 257.07 CLP 96.41

PLANETOCENTRIC CONIC

C3 12.567 VHL 3.545 DLA 17.68 RAL 163.82 RAD 6567.5 VEL 11.574 PTH 2.02 VHP 2.853 DPA 11.59 RAP 175.25 ECC 1.2068

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 51 31	2694.05	-27.59	74.13	23.47	96.62	18 36 25	2094.0	-26.39	65.67
90.00	10 42 53	4168.35	-.90	170.22	18.27	61.70	11 52 22	3568.4	-4.76	163.57
100.00	19 23 12	2398.38	-28.82	52.20	23.29	98.30	20 3 11	1798.4	-27.37	43.70
100.00	11 53 53	3939.25	.10	152.77	17.67	60.11	12 59 33	3339.3	-3.88	146.25
110.00	20 54 8	2113.89	-31.97	29.92	22.61	102.79	21 29 22	1513.9	-29.88	21.33
110.00	12 39 27	3796.51	2.82	140.25	15.97	55.92	13 42 44	3196.5	-1.68	134.05

DIFFERENTIAL CORRECTIONS
TDE -.0291 TRA .8136 TC3-3.1256 BAU .5896
RDE .4467 RRA -.5140 RC3 1.5947 FAU .59431
FDE-4.7483 FRA17.7418 FC-40.9403 BSP 9528
BDE .4476 BRA .9624 BC3 3.5089 FSP 12594

MID-COURSE EXECUTION ACCURACY
SGT 2611.2 SGR 1600.0 SG3 3673.0
RRT -.8959 RRF -.9498 RTF .9569
SGB 3062.4 R23 .0926 R13 -.9749
SG1 2999.2 SG2 618.8 THA 149.82

ORBIT DETERMINATION ACCURACY
ST 422.0 SR 768.6 SS 2928.4
CRT -.4455 CRS .8685 CST -.8291
LSA 3024.4 MSA 443.6 SSA 26.4
EL1 797.7 EL2 364.0 ALF 107.50

LAUNCH DATE OCT 21 1964 FLIGHT TIME 320.00 ARRIVAL DATE SEP 6 1965

HELIOCENTRIC CONIC DISTANCE 730.427 EARTH TO MARS

RL	148.89	LAL	.00	LOL	27.63	VL	32.691	GAL	-4.86	AZL	88.90	HCA	227.92	SMA	185.87	ECC	.21555	INC	1.1029
RP	222.28	LAP	-.82	LOP	255.55	VP	21.912	GAP	-5.27	AZP	90.74	TAL	332.02	TAP	199.94	RCA	145.81	APO	225.94
RC	263.392	GL	10.17	GP	7.06	ZAL	130.07	ZAP	94.34	ETS	178.51	ZAE	128.74	ETE	172.08	ZAC	92.48	ETC	257.18

V1	29.926	V2	24.737	CLP	94.38														

PLANETOCENTRIC CONIC

C3	12.622	VHL	3.553	DLA	17.79	RAL	164.09	RAD	6567.5	VEL	11.576	PTH	2.02	VHP	2.850	DPA	11.88	RAP	174.34

ECC	1.2077																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 51 28	2699.26	-27.63	74.51	23.86	96.44	18 36 27	2099.3	-26.46	66.04
90.00	10 45 5	4165.00	-1.09	170.03	18.62	61.70	11 54 30	3565.0	-4.87	163.38
100.00	19 23 15	2403.26	-28.87	52.56	23.68	98.12	20 3 18	1803.3	-27.44	44.04
100.00	11 55 59	3936.23	-.01	152.61	18.01	60.11	13 1 35	3336.2	-3.98	146.08
110.00	20 54 23	2118.12	-32.04	30.23	23.01	102.62	21 29 41	1518.1	-29.97	21.63
110.00	12 41 20	3794.14	2.73	140.13	16.31	55.91	13 44 34	3194.1	-1.77	133.92

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0706	TRA	.9824	TC3	-3.4824	BAU	.6452	SGT	2984.0	SGR	1588.4	SG3	3678.0	ST	517.4	SR	771.2	SS	2932.4
RDE	.4503	RRA	-.5069	RC3	1.5788	FAU	.59566	RRT	-.9045	RRF	-.9473	RTF	.9676	CRT	-.5358	CRS	.8652	CST	-.8859
FDE	-4.7704	FRA	17.8123	FC	-40.8558	BSP	10652	SGB	3380.4	R23	.0800	R13	-.9790	LSA	3042.5	MSA	451.7	SSA	26.0
BDE	.4558	BRA	1.1054	BC3	3.8235	FSP	12612	SG1	3325.3	SG2	607.8	THA	153.33	EL1	836.9	EL2	402.5	ALF	116.29

LAUNCH DATE OCT 21 1964 FLIGHT TIME 322.00 ARRIVAL DATE SEP 8 1965

HELIOCENTRIC CONIC DISTANCE 734.439 EARTH TO MARS

RL	148.89	LAL	.00	LOL	27.63	VL	32.688	GAL	-4.88	AZL	88.87	HCA	229.02	SMA	185.84	ECC	.21558	INC	1.1263
RP	221.89	LAP	-.85	LOP	256.65	VP	21.956	GAP	-5.50	AZP	90.74	TAL	331.87	TAP	200.89	RCA	145.77	APO	225.90
RC	264.895	GL	10.36	GP	6.95	ZAL	130.25	ZAP	92.32	ETS	178.79	ZAE	126.53	ETE	172.70	ZAC	92.19	ETC	257.28

V1	29.926	V2	24.779	CLP	92.34														

PLANETOCENTRIC CONIC

C3	12.685	VHL	3.562	DLA	17.89	RAL	164.37	RAD	6567.5	VEL	11.579	PTH	2.02	VHP	2.850	DPA	12.16	RAP	173.43

ECC	1.2088																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 51 38	2703.95	-27.67	74.85	24.26	96.27	18 36 42	2103.9	-26.51	66.37
90.00	10 47 10	4162.44	-1.17	169.89	18.98	61.71	11 56 32	3562.4	-4.95	163.24
100.00	19 23 30	2407.66	-28.91	52.88	24.08	97.96	20 3 38	1807.7	-27.51	44.35
100.00	11 57 58	3933.96	-.08	152.48	18.38	60.11	13 3 32	3334.0	-4.06	145.95
110.00	20 54 49	2121.97	-32.09	30.51	23.42	102.46	21 30 11	1522.0	-30.05	21.90
110.00	12 43 9	3792.42	2.66	140.04	16.66	55.91	13 46 21	3192.4	-1.83	133.83

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1127	TRA	1.1541	TC3	-3.8368	BAU	.7024	SGT	3362.8	SGR	1574.4	SG3	3673.2	ST	618.2	SR	773.3	SS	2933.4
RDE	.4537	RRA	-.4991	RC3	1.5596	FAU	.59548	RRT	-.9093	RRF	-.9447	RTF	.9748	CRT	-.5924	CRS	.8617	CST	-.9184
FDE	-4.7849	FRA	17.8472	FC	-40.6400	BSP	11834	SGB	3713.1	R23	.0694	R13	-.9824	LSA	3061.5	MSA	459.8	SSA	25.6
BDE	.4675	BRA	1.2574	BC3	4.1417	FSP	12605	SG1	3664.1	SG2	601.2	THA	156.26	EL1	890.5	EL2	432.5	ALF	124.57

LAUNCH DATE OCT 21 1964 FLIGHT TIME 324.00 ARRIVAL DATE SEP 10 1965

HELIOCENTRIC CONIC DISTANCE 738.458 EARTH TO MARS

RL	148.89	LAL	.00	LOL	27.63	VL	32.687	GAL	-4.91	AZL	88.85	HCA	230.13	SMA	185.81	ECC	.21565	INC	1.1489
RP	221.51	LAP	-.88	LOP	257.75	VP	22.000	GAP	-5.73	AZP	90.74	TAL	331.71	TAP	201.83	RCA	145.74	APO	225.88
RC	266.379	GL	10.54	GP	6.84	ZAL	130.45	ZAP	90.31	ETS	179.06	ZAE	124.31	ETE	173.27	ZAC	91.89	ETC	257.39

V1	29.926	V2	24.820	CLP	90.31														

PLANETOCENTRIC CONIC

C3	12.757	VHL	3.572	DLA	17.96	RAL	164.66	RAD	6567.5	VEL	11.582	PTH	2.03	VHP	2.854	DPA	12.44	RAP	172.53

ECC	1.2100																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 52 1	2708.13	-27.70	75.15	24.67	96.12	18 37 9	2108.1	-26.56	66.67
90.00	10 49 7	4160.68	-1.23	169.79	19.37	61.71	11 58 28	3560.7	-5.00	163.14
100.00	19 23 58	2411.61	-28.95	53.16	24.50	97.81	20 4 9	1811.6	-27.56	44.63
100.00	11 59 51	3932.44	-.14	152.40	18.76	60.11	13 5 24	3332.4	-4.11	145.87
110.00	20 55 25	2125.47	-32.14	30.77	23.84	102.31	21 30 51	1525.5	-30.12	22.15
110.00	12 44 53	3791.35	2.62	139.98	17.04	55.91	13 48 4	3191.3	-1.87	133.78

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1559	TRA	1.3281	TC3	-4.1882	BAU	.7609	SGT	3745.6	SGR	1558.2	SG3	3659.0	ST	722.5	SR	775.1	SS	2932.7
RDE	.4573	RRA	-.4904	RC3	1.5373	FAU	.59386	RRT	-.9117	RRF	-.9417	RTF	.9800	CRT	-.6306	CRS	.8584	CST	-.9388
FDE	-4.7971	FRA	17.8442	FC	-40.3001	BSP	13050	SGB	4056.8	R23	.0606	R13	-.9851	LSA	3082.9	MSA	467.2	SSA	25.1
BDE	.4831	BRA	1.4157	BC3	4.4615	FSP	12560	SG1	4012.6	SG2	597.5	THA	158.73	EL1	957.5	EL2	453.9	ALF	131.82

LAUNCH DATE OCT 21 1964 FLIGHT TIME 326.00 ARRIVAL DATE SEP 12 1965

HELIOCENTRIC CONIC DISTANCE 742.484 EARTH TO MARS

RL	148.89	LAL	.00	LOL	27.63	VL	32.685	GAL	-4.94	AZL	88.83	HCA	231.23	SMA	185.78	ECC	.21576	INC	1.1710
RP	221.13	LAP	-.91	LOP	258.86	VP	22.045	GAP	-5.95	AZP	90.73	TAL	331.53	TAP	202.76	RCA	145.70	APO	225.87
RC	267.844	GL	10.70	GP	6.73	ZAL	130.66	ZAP	88.31	ETS	179.32	ZAE	122.11	ETE	173.80	ZAC	91.60	ETC	257.49

V1	29.926	V2	24.862	CLP	88.30														

PLANETOCENTRIC CONIC

C3	12.838	VHL	3.583	DLA	18.02	RAL	164.97	RAD	6567.5	VEL	11.586	PTH	2.03	VHP	2.861	DPA	12.71	RAP	171.64

ECC	1.2113																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 52 37	2711.82	-27.73	75.42	25.11	95.99	18 37 49	2111.8	-26.61	66.93
90.00	10 50 58	4159.72	-1.26	169.73	19.77	61.71	12 0 17	3559.7	-5.03	163.09
100.00	19 24 38	2415.11	-28.98	53.42	24.94	97.68	20 4 53	1815.1	-27.61	44.88
100.00	12 1 38	3931.66	-.16	152.36	19.16	60.11	13 7 10	3331.7	-4.14	145.83
110.00	20 56 12	2128.61	-32.19	31.01	24.29	102.18	21 31 41	1528.6	-30.18	22.37
110.00	12 46 33	3790.92	2.60	139.96	17.43	55.90	13 49 44	3190.9	-1.89	133.75

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2000	TRA	1.5042	TC3	-4.5350	BAU	.8205	SGT	4130.6	SGR	1540.2	SG3	3635.8	ST	829.2	SR	776.5	SS	2929.8
RDE	.4608	RRA	-.4811	RC3	1.5124	FAU	.59085	RRT	-.9124	RRF	-.9386	RTF	.9837	CRT	-.6570	CRS	.8551	CST	-.9522
FDE	-4.8042	FRA	17.8066	FC	-39.8432	BSP	14283	SGB	4408.4	R23	.0536	R13	-.9873	LSA	3106.2	MSA	474.4	SSA	24.7
BDE	.5023	BRA	1.5792	BC3	4.7806	FSP	12484	SG1	4367.9	SG2	596.3	THA	160.84	EL1	1034.6	EL2	469.2	ALF	137.86

LAUNCH DATE OCT 21 1964 FLIGHT TIME 328.00 ARRIVAL DATE SEP 14 1965

HELIOCENTRIC CONIC DISTANCE 746.517 EARTH TO MARS

RL 148.89 LAL .00 LOL 27.63 VL 32.684 GAL -4.98 AZL 88.81 HCA 232.34 SMA 185.76 ECC .21591 INC 1.1925 V1 29.926
RP 220.75 LAP -.94 LOP 259.97 VP 22.090 GAP -6.17 AZP 90.73 TAL 331.34 TAP 203.69 RCA 145.66 APO 225.87 V2 24.903
RC 269.292 GL 10.86 GP 6.61 ZAL 130.89 ZAP 86.32 ETS 179.58 ZAE 119.91 ETE 174.30 ZAC 91.30 ETC 257.60 CLP 86.30

PLANETOCENTRIC CONIC

C3 12.928 VHL 3.596 DLA 18.07 RAL 165.29 RAD 6567.5 VEL 11.589 PTH 2.03 VHP 2.872 DPA 12.97 RAP 170.76 ECC 1.2128

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 53 27	2715.00	-27.75	75.65	25.56	95.88	18 38 42	2115.0	-26.65	67.15
90.00	10 52 41	4159.54	-1.27	169.72	20.19	61.71	12 2 0	3559.5	-5.04	163.08
100.00	19 25 30	2418.16	-29.01	53.64	25.39	97.57	20 5 48	1818.2	-27.65	45.10
100.00	12 3 19	3931.61	-.16	152.36	19.58	60.11	13 8 50	3331.6	-4.14	145.82
110.00	20 57 9	2131.40	-32.23	31.22	24.74	102.06	21 32 41	1531.4	-30.23	22.57
110.00	12 48 9	3791.14	2.61	139.97	17.84	55.90	13 51 20	3191.1	-1.88	133.77

DIFFERENTIAL CORRECTIONS
TDE -.2446 TRA 1.6827 TC3-4.8734 BAU .8805
RDE .4642 RRA -.4712 RC3 1.4842 FAU .58616
FDE-4.8037 FRA17.7344 FC-39.2514 BSP 15545
BDE .5247 BRA 1.7474 BC3 5.0944 FSP 12387

MID-COURSE EXECUTION ACCURACY
SGT 4515.4 SGR 1519.9 SG3 3602.9
RRT -.9116 RRF -.9351 RTF .9865
SGB 4764.3 R23 .0482 R13 -.9891
SG1 4726.8 SG2 596.8 THA 162.66

ORBIT DETERMINATION ACCURACY
ST 937.5 SR 777.4 SS 2923.9
CRT -.6753 CRS .8518 CST -.9612
LSA 3130.5 MSA 481.5 SSA 24.2
EL1 1119.2 EL2 480.3 ALF 142.79

LAUNCH DATE OCT 21 1964 FLIGHT TIME 330.00 ARRIVAL DATE SEP 16 1965

HELIOCENTRIC CONIC DISTANCE 750.557 EARTH TO MARS

RL 148.89 LAL .00 LOL 27.63 VL 32.683 GAL -5.01 AZL 88.79 HCA 233.46 SMA 185.75 ECC .21609 INC 1.2133 V1 29.926
RP 220.37 LAP -.97 LOP 261.08 VP 22.135 GAP -6.39 AZP 90.72 TAL 331.14 TAP 204.60 RCA 145.61 APO 225.89 V2 24.945
RC 270.721 GL 11.01 GP 6.49 ZAL 131.15 ZAP 84.36 ETS 179.82 ZAE 117.73 ETE 174.77 ZAC 91.02 ETC 257.71 CLP 84.32

PLANETOCENTRIC CONIC

C3 13.028 VHL 3.609 DLA 18.09 RAL 165.62 RAD 6567.5 VEL 11.594 PTH 2.03 VHP 2.886 DPA 13.21 RAP 169.91 ECC 1.2144

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 54 30	2717.71	-27.77	75.84	26.03	95.78	18 39 48	2117.7	-26.68	67.34
90.00	10 54 17	4160.13	-1.25	169.76	20.63	61.71	12 3 37	3560.1	-5.02	163.11
100.00	19 26 35	2420.78	-29.03	53.83	25.86	97.47	20 6 55	1820.8	-27.69	45.29
100.00	12 4 54	3932.29	-.14	152.39	20.01	60.11	13 10 26	3332.3	-4.12	145.86
110.00	20 58 17	2133.86	-32.26	31.40	25.22	101.96	21 33 51	1533.9	-30.28	22.75
110.00	12 49 40	3791.98	2.64	140.01	18.27	55.91	13 52 52	3192.0	-1.85	133.81

DIFFERENTIAL CORRECTIONS
TDE -.2904 TRA 1.8622 TC3-5.2046 BAU .9412
RDE .4677 RRA -.4605 RC3 1.4540 FAU .58028
FDE-4.8013 FRA17.6250 FC-38.5611 BSP 16803
BDE .5505 BRA 1.9183 BC3 5.4039 FSP 12247

MID-COURSE EXECUTION ACCURACY
SGT 4898.9 SGR 1498.1 SG3 3561.6
RRT -.9098 RRF -.9313 RTF .9885
SGB 5122.9 R23 .0439 R13 -.9905
SG1 5087.8 SG2 598.6 THA 164.23

ORBIT DETERMINATION ACCURACY
ST 1046.7 SR 778.1 SS 2916.3
CRT -.6889 CRS .8486 CST -.9677
LSA 3157.1 MSA 488.2 SSA 23.8
EL1 1209.4 EL2 488.2 ALF 146.80

LAUNCH DATE OCT 21 1964 FLIGHT TIME 332.00 ARRIVAL DATE SEP 18 1965

HELIOCENTRIC CONIC DISTANCE 754.603 EARTH TO MARS

RL 148.89 LAL .00 LOL 27.63 VL 32.682 GAL -5.05 AZL 88.77 HCA 234.58 SMA 185.74 ECC .21632 INC 1.2337 V1 29.926
RP 220.00 LAP -1.01 LOP 262.20 VP 22.181 GAP -6.60 AZP 90.72 TAL 330.93 TAP 205.50 RCA 145.56 APO 225.91 V2 24.986
RC 272.134 GL 11.15 GP 6.37 ZAL 131.41 ZAP 82.41 ETS 180.05 ZAE 115.56 ETE 175.21 ZAC 90.73 ETC 257.82 CLP 82.36

PLANETOCENTRIC CONIC

C3 13.137 VHL 3.624 DLA 18.11 RAL 165.96 RAD 6567.5 VEL 11.598 PTH 2.03 VHP 2.904 DPA 13.44 RAP 169.07 ECC 1.2162

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 55 46	2719.93	-27.78	76.00	26.52	95.70	18 41 6	2119.9	-26.70	67.50
90.00	10 55 46	4161.50	-1.20	169.83	21.09	61.71	12 5 8	3561.5	-4.98	163.19
100.00	19 27 51	2422.97	-29.05	53.99	26.35	97.39	20 8 14	1823.0	-27.72	45.44
100.00	12 6 22	3933.69	-.09	152.47	20.47	60.11	13 11 56	3333.7	-4.07	145.94
110.00	20 59 35	2135.98	-32.29	31.56	25.71	101.87	21 35 11	1536.0	-30.32	22.90
110.00	12 51 8	3793.45	2.70	140.09	18.72	55.91	13 54 21	3193.5	-1.79	133.89

DIFFERENTIAL CORRECTIONS
TDE -.3374 TRA 2.0433 TC3-5.5254 BAU 1.0020
RDE .4712 RRA -.4493 RC3 1.4218 FAU .57321
FDE-4.7954 FRA17.4817 FC-37.7759 BSP 18062
BDE .5796 BRA 2.0921 BC3 5.7054 FSP 12082

MID-COURSE EXECUTION ACCURACY
SGT 5279.7 SGR 1474.9 SG3 3512.4
RRT -.9072 RRF -.9272 RTF .9902
SGB 5481.9 R23 .0406 R13 -.9917
SG1 5448.8 SG2 601.3 THA 165.60

ORBIT DETERMINATION ACCURACY
ST 1156.8 SR 778.6 SS 2906.7
CRT -.6990 CRS .8457 CST -.9725
LSA 3185.7 MSA 494.4 SSA 23.3
EL1 1304.0 EL2 493.9 ALF 150.09

LAUNCH DATE OCT 21 1964 FLIGHT TIME 334.00 ARRIVAL DATE SEP 20 1965

HELIOCENTRIC CONIC DISTANCE 758.653 EARTH TO MARS

RL 148.89 LAL .00 LOL 27.63 VL 32.682 GAL -5.10 AZL 88.75 HCA 235.70 SMA 185.73 ECC .21659 INC 1.2536 V1 29.926
RP 219.62 LAP -1.04 LOP 263.32 VP 22.226 GAP -6.81 AZP 90.71 TAL 330.70 TAP 206.39 RCA 145.50 APO 225.95 V2 25.027
RC 273.529 GL 11.28 GP 6.25 ZAL 131.70 ZAP 80.49 ETS 180.28 ZAE 113.42 ETE 175.62 ZAC 90.46 ETC 257.92 CLP 80.44

PLANETOCENTRIC CONIC

C3 13.256 VHL 3.641 DLA 18.10 RAL 166.32 RAD 6567.5 VEL 11.604 PTH 2.03 VHP 2.925 DPA 13.66 RAP 168.27 ECC 1.2182

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 57 15	2721.67	-27.80	76.13	27.02	95.64	18 42 37	2121.7	-26.72	67.63
90.00	10 57 9	4163.67	-1.13	169.96	21.56	61.70	12 6 33	3563.7	-4.91	163.31
100.00	19 29 20	2424.73	-29.06	54.12	26.86	97.32	20 9 45	1824.7	-27.75	45.57
100.00	12 7 45	3935.85	-.02	152.59	20.94	60.11	13 13 21	3335.8	-4.00	146.06
110.00	21 1 3	2137.77	-32.32	31.69	26.22	101.79	21 36 41	1537.8	-30.36	23.02
110.00	12 52 31	3795.57	2.78	140.20	19.19	55.92	13 55 47	3195.6	-1.71	134.00

DIFFERENTIAL CORRECTIONS
TDE -.3802 TRA 2.2330 TC3-5.8199 BAU 1.0600
RDE .4722 RRA -.4401 RC3 1.3796 FAU .56109
FDE-4.7035 FRA17.3888 FC-36.6447 BSP 19478
BDE .6062 BRA 2.2760 BC3 5.9812 FSP 12061

MID-COURSE EXECUTION ACCURACY
SGT 5655.6 SGR 1446.5 SG3 3451.3
RRT -.9041 RRF -.9222 RTF .9913
SGB 5837.6 R23 .0368 R13 -.9925
SG1 5806.5 SG2 602.2 THA 166.84

ORBIT DETERMINATION ACCURACY
ST 1266.6 SR 775.2 SS 2881.4
CRT -.7037 CRS .8386 CST -.9769
LSA 3202.6 MSA 500.4 SSA 23.2
EL1 1398.7 EL2 498.7 ALF 152.99

LAUNCH DATE OCT 21 1964 FLIGHT TIME 336.00 ARRIVAL DATE SEP 22 1965

HELIOCENTRIC CONIC DISTANCE 762.713 EARTH TO MARS

RL 148.89 LAL .00 LOL 27.63 VL 32.682 GAL -5.14 AZL 88.73 HCA 236.82 SMA 185.72 ECC .21689 INC 1.2729 V1 29.926
RP 219.25 LAP -1.07 LOP 264.45 VP 22.272 GAP -7.02 AZP 90.70 TAL 330.45 TAP 207.28 RCA 145.44 APO 226.01 V2 25.067
RC 274.906 GL 11.40 GP 6.13 ZAL 132.01 ZAP 78.60 ETS 180.49 ZAE 111.30 ETE 176.01 ZAC 90.19 ETC 258.02 CLP 78.53

PLANETOCENTRIC CONIC

C3 13.384 VHL 3.658 DLA 18.08 RAL 166.69 RAD 6567.5 VEL 11.609 PTH 2.03 VHP 2.949 DPA 13.86 RAP 167.49 ECC 1.2203

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 58 56	2722.98	-27.80	76.22	27.54	95.59	18 44 19	2123.0	-26.74	67.72
90.00	10 58 25	4166.55	-1.04	170.12	22.05	61.70	12 7 51	3566.6	-4.82	163.47
100.00	19 31 0	2426.10	-29.07	54.22	27.38	97.27	20 11 26	1826.1	-27.76	45.66
100.00	12 9 2	3938.66	.08	152.74	21.43	60.11	13 14 41	3338.7	-3.90	146.21
110.00	21 2 40	2139.26	-32.34	31.80	26.75	101.73	21 38 20	1539.3	-30.39	23.13
110.00	12 53 51	3798.26	2.88	140.34	19.68	55.92	13 57 9	3198.3	-1.61	134.14

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.4319 TRA 2.4131 TC3-6.1216 BAU 1.1216 SGT 6027.0 SGR 1423.0 SG3 3389.7 ST 1377.6 SR 777.0 SS 2875.0
RDE .4771 RRA -.4268 RC3 1.3476 FAU .55339 RRT -.8998 RRF -.9176 RTF .9924 CRT -.7109 CRS .8379 CST -.9794
FDE-4.7298 FRA17.1513 FC-35.7947 BSP 20649 SGB 6192.7 R23 .0355 R13 -.9933 LSA 3242.1 MSA 505.8 SSA 22.5
BDE .6435 BRA 2.4506 BC3 6.2681 FSP 11766 SG1 6162.9 SG2 607.1 THA 167.89 EL1 1499.9 EL2 501.9 ALF 155.19

LAUNCH DATE OCT 21 1964 FLIGHT TIME 338.00 ARRIVAL DATE SEP 24 1965

HELIOCENTRIC CONIC DISTANCE 766.778 EARTH TO MARS

RL 148.89 LAL .00 LOL 27.63 VL 32.682 GAL -5.19 AZL 88.71 HCA 237.95 SMA 185.73 ECC .21723 INC 1.2919 V1 29.926
RP 218.89 LAP -1.10 LOP 265.58 VP 22.317 GAP -7.23 AZP 90.69 TAL 330.20 TAP 208.15 RCA 145.38 APO 226.07 V2 25.108
RC 276.266 GL 11.51 GP 6.00 ZAL 132.33 ZAP 76.74 ETS 180.69 ZAE 109.21 ETE 176.37 ZAC 89.92 ETC 258.12 CLP 76.66

PLANETOCENTRIC CONIC

C3 13.524 VHL 3.677 DLA 18.04 RAL 167.07 RAD 6567.5 VEL 11.615 PTH 2.04 VHP 2.976 DPA 14.04 RAP 166.75 ECC 1.2226

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 0 49	2723.84	-27.81	76.29	28.08	95.56	18 46 13	2123.8	-26.75	67.78
90.00	10 59 34	4170.19	-.92	170.32	22.56	61.70	12 9 4	3570.2	-4.70	163.67
100.00	19 32 51	2427.08	-29.08	54.29	27.92	97.23	20 13 18	1827.1	-27.78	45.73
100.00	12 10 14	3942.19	.20	152.94	21.94	60.11	13 15 56	3342.2	-3.78	146.41
110.00	21 4 28	2140.45	-32.36	31.89	27.29	101.68	21 40 8	1540.5	-30.41	23.22
110.00	12 55 6	3801.58	3.01	140.51	20.18	55.93	13 58 28	3201.6	-1.48	134.31

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.4838 TRA 2.5956 TC3-6.4076 BAU 1.1825 SGT 6392.8 SGR 1398.0 SG3 3321.4 ST 1488.7 SR 777.7 SS 2863.9
RDE .4814 RRA -.4138 RC3 1.3126 FAU .54394 RRT -.8950 RRF -.9125 RTF .9932 CRT -.7161 CRS .8363 CST -.9814
FDE-4.7333 FRA16.9070 FC-34.8212 BSP 21829 SGB 6543.9 R23 .0344 R13 -.9940 LSA 3280.4 MSA 510.9 SSA 21.9
BDE .6825 BRA 2.6284 BC3 6.5406 FSP 11490 SG1 6515.2 SG2 611.8 THA 168.83 EL1 1602.1 EL2 504.5 ALF 157.09

LAUNCH DATE OCT 21 1964 FLIGHT TIME 340.00 ARRIVAL DATE SEP 26 1965

HELIOCENTRIC CONIC DISTANCE 770.849 EARTH TO MARS

RL 148.89 LAL .00 LOL 27.63 VL 32.682 GAL -5.24 AZL 88.69 HCA 239.09 SMA 185.73 ECC .21762 INC 1.3105 V1 29.926
RP 218.52 LAP -1.12 LOP 266.71 VP 22.363 GAP -7.43 AZP 90.67 TAL 329.93 TAP 209.01 RCA 145.31 APO 226.15 V2 25.148
RC 277.609 GL 11.61 GP 5.88 ZAL 132.67 ZAP 74.91 ETS 180.88 ZAE 107.15 ETE 176.71 ZAC 89.67 ETC 258.22 CLP 74.83

PLANETOCENTRIC CONIC

C3 13.674 VHL 3.698 DLA 17.99 RAL 167.47 RAD 6567.5 VEL 11.622 PTH 2.04 VHP 3.006 DPA 14.21 RAP 166.04 ECC 1.2250

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 2 55	2724.28	-27.81	76.32	28.64	95.55	18 48 19	2124.3	-26.75	67.81
90.00	11 0 37	4174.57	-.78	170.56	23.08	61.69	12 10 12	3574.6	-4.56	163.92
100.00	19 34 54	2427.67	-29.09	54.34	28.48	97.21	20 15 21	1827.7	-27.79	45.78
100.00	12 11 20	3946.41	.34	153.17	22.46	60.11	13 17 6	3346.4	-3.64	146.64
110.00	21 6 24	2141.35	-32.37	31.96	27.85	101.64	21 42 6	1541.3	-30.43	23.28
110.00	12 56 18	3805.49	3.16	140.72	20.70	55.95	13 59 44	3205.5	-1.33	134.51

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.5366 TRA 2.7798 TC3-6.6774 BAU 1.2427 SGT 6751.8 SGR 1372.0 SG3 3247.2 ST 1599.7 SR 777.8 SS 2848.9
RDE .4854 RRA -.4009 RC3 1.2757 FAU .53315 RRT -.8897 RRF -.9070 RTF .9939 CRT -.7199 CRS .8344 CST -.9831
FDE-4.7214 FRA16.6500 FC-33.7566 BSP 23011 SGB 6889.8 R23 .0335 R13 -.9946 LSA 3318.7 MSA 515.6 SSA 21.4
BDE .7236 BRA 2.8085 BC3 6.7982 FSP 11217 SG1 6862.2 SG2 616.2 THA 169.67 EL1 1705.1 EL2 506.4 ALF 158.74

LAUNCH DATE OCT 21 1964 FLIGHT TIME 342.00 ARRIVAL DATE SEP 28 1965

HELIOCENTRIC CONIC DISTANCE 774.926 EARTH TO MARS

RL 148.89 LAL .00 LOL 27.63 VL 32.683 GAL -5.30 AZL 88.67 HCA 240.22 SMA 185.74 ECC .21804 INC 1.3287 V1 29.926
RP 218.16 LAP -1.15 LOP 267.85 VP 22.409 GAP -7.63 AZP 90.66 TAL 329.64 TAP 209.87 RCA 145.24 APO 226.24 V2 25.188
RC 278.933 GL 11.71 GP 5.76 ZAL 133.02 ZAP 73.12 ETS 181.07 ZAE 105.12 ETE 177.02 ZAC 89.42 ETC 258.31 CLP 73.03

PLANETOCENTRIC CONIC

C3 13.835 VHL 3.719 DLA 17.93 RAL 167.87 RAD 6567.5 VEL 11.628 PTH 2.04 VHP 3.040 DPA 14.36 RAP 165.37 ECC 1.2277

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 5 12	2724.29	-27.81	76.32	29.22	95.55	18 50 37	2124.3	-26.75	67.81
90.00	11 1 34	4179.67	-.62	170.85	23.63	61.69	12 11 14	3579.7	-4.40	164.21
100.00	19 37 7	2427.89	-29.09	54.35	29.06	97.20	20 17 35	1827.9	-27.79	45.79
100.00	12 12 20	3951.31	.51	153.44	23.00	60.11	13 18 11	3351.3	-3.48	146.91
110.00	21 8 31	2141.95	-32.38	32.00	28.42	101.62	21 44 13	1542.0	-30.44	23.32
110.00	12 57 26	3810.01	3.33	140.96	21.24	55.96	14 0 56	3210.0	-1.16	134.75

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.5905 TRA 2.9656 TC3-6.9284 BAU 1.3017 SGT 7102.5 SGR 1345.2 SG3 3167.5 ST 1710.6 SR 777.5 SS 2831.8
RDE .4893 RRA -.3879 RC3 1.2372 FAU .52113 RRT -.8838 RRF -.9011 RTF .9944 CRT -.7228 CRS .8324 CST -.9845
FDE-4.7018 FRA16.3768 FC-32.6113 BSP 24184 SGB 7228.7 R23 .0329 R13 -.9950 LSA 3358.4 MSA 520.0 SSA 20.9
BDE .7669 BRA 2.9909 BC3 7.0380 FSP 10941 SG1 7202.1 SG2 620.6 THA 170.42 EL1 1809.0 EL2 508.0 ALF 160.19

LAUNCH DATE OCT 21 1964 FLIGHT TIME 344.00 ARRIVAL DATE SEP 30 1965

DISTANCE 779.008

HELIOCENTRIC CONIC EARTH TO MARS

RL 148.89 LAL .00 LOL 27.63 VL 32.683 GAL -5.36 AZL 88.65 HCA 241.37 SMA 185.75 ECC .21851 INC 1.3465 V1 29.926
RP 217.80 LAP -1.18 LOP 268.99 VP 22.455 GAP -7.82 AZP 90.65 TAI 329.35 TAP 210.71 RCA 145.16 APO 226.34 V2 25.228
RC 280.240 GL 11.79 GP 5.64 ZAL 133.39 ZAP 71.37 ETS 181.24 ZAE 103.13 ETE 177.32 ZAC 89.18 ETC 258.40 CLP 71.27

PLANETOCENTRIC CONIC

C3 14.007 VHL 3.743 DLA 17.85 RAL 168.29 RAD 6567.6 VEL 11.636 PTH 2.04 VHP 3.076 DPA 14.49 RAP 164.74 ECC 1.2305

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 7 41	2723.91	-27.81	76.29	29.81	95.56	18 53 5	2123.9	-26.75	67.78
90.00	11 2 25	4185.50	-.43	171.17	24.19	61.69	12 12 10	3585.5	-4.21	164.53
100.00	19 39 32	2427.75	-29.09	54.34	29.65	97.21	20 20 0	1827.7	-27.79	45.78
100.00	12 13 15	3956.90	.69	153.74	23.56	60.11	13 19 12	3356.9	-3.29	147.22
110.00	21 10 46	2142.29	-32.38	32.03	29.01	101.60	21 46 28	1542.3	-30.44	23.35
110.00	12 58 30	3815.12	3.53	141.22	21.80	55.98	14 2 6	3215.1	-.96	135.02

DIFFERENTIAL CORRECTIONS
TDE -.6456 TRA 3.1525 TC3-7.1636 BAU 1.3601
RDE .4932 RRA -.3750 RC3 1.1983 FAU .50844
FDE-4.6763 FRA16.0895 FC-31.4249 BSP 25334
BDE .8125 BRA 3.1747 BC3 7.2631 FSP 10652

MID-COURSE EXECUTION ACCURACY
SGT 7445.5 SGR 1318.5 SG3 3084.1
RRT -.8774 RRF -.8947 RTF .9949
SGB 7561.4 R23 .0326 R13 -.9954
SG1 7535.5 SG2 624.9 THA 171.11

ORBIT DETERMINATION ACCURACY
ST 1821.1 SR 776.9 SS 2812.8
CRT -.7250 CRS .8305 CST -.9857
LSA 3399.5 MSA 524.1 SSA 20.4
EL1 1913.3 EL2 509.3 ALF 161.45

LAUNCH DATE OCT 21 1964 FLIGHT TIME 346.00 ARRIVAL DATE OCT 2 1965

DISTANCE 783.095

HELIOCENTRIC CONIC EARTH TO MARS

RL 148.89 LAL .00 LOL 27.63 VL 32.684 GAL -5.42 AZL 88.64 HCA 242.51 SMA 185.77 ECC .21901 INC 1.3641 V1 29.926
RP 217.44 LAP -1.21 LOP 270.14 VP 22.501 GAP -8.02 AZP 90.63 TAL 329.03 TAP 211.54 RCA 145.08 APO 226.45 V2 25.268
RC 281.529 GL 11.87 GP 5.51 ZAL 133.78 ZAP 69.65 ETS 181.40 ZAE 101.17 ETE 177.60 ZAC 88.96 ETC 258.48 CLP 69.56

PLANETOCENTRIC CONIC

C3 14.192 VHL 3.767 DLA 17.75 RAL 168.72 RAD 6567.6 VEL 11.644 PTH 2.04 VHP 3.115 DPA 14.61 RAP 164.14 ECC 1.2336

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 10 22	2723.14	-27.81	76.24	30.42	95.59	18 55 45	2123.1	-26.74	67.73
90.00	11 3 9	4192.04	-.22	171.54	24.77	61.68	12 13 1	3592.0	-4.00	164.90
100.00	19 42 7	2427.27	-29.08	54.31	30.26	97.23	20 22 34	1827.3	-27.78	45.75
100.00	12 14 5	3963.15	.91	154.08	24.14	60.12	13 20 9	3363.1	-3.08	147.56
110.00	21 13 10	2142.36	-32.38	32.03	29.62	101.60	21 48 53	1542.4	-30.45	23.35
110.00	12 59 31	3820.81	3.74	141.52	22.37	56.00	14 3 12	3220.8	-.75	135.31

DIFFERENTIAL CORRECTIONS
TDE -.7018 TRA 3.3411 TC3-7.3800 BAU 1.4174
RDE .4971 RRA -.3622 RC3 1.1587 FAU .49498
FDE-4.6437 FRA15.7925 FC-30.1952 BSP 26472
BDE .8600 BRA 3.3607 BC3 7.4704 FSP 10362

MID-COURSE EXECUTION ACCURACY
SGT 7779.8 SGR 1291.6 SG3 2997.3
RRT -.8705 RRF -.8880 RTF .9952
SGB 7886.3 R23 .0324 R13 -.9957
SG1 7861.2 SG2 629.1 THA 171.72

ORBIT DETERMINATION ACCURACY
ST 1931.1 SR 776.2 SS 2791.8
CRT -.7266 CRS .8286 CST -.9866
LSA 3441.9 MSA 527.8 SSA 20.0
EL1 2017.7 EL2 510.4 ALF 162.57

LAUNCH DATE OCT 21 1964 FLIGHT TIME 348.00 ARRIVAL DATE OCT 4 1965

DISTANCE 787.187

HELIOCENTRIC CONIC EARTH TO MARS

RL 148.89 LAL .00 LOL 27.63 VL 32.685 GAL -5.49 AZL 88.62 HCA 243.66 SMA 185.79 ECC .21956 INC 1.3813 V1 29.926
RP 217.09 LAP -1.24 LOP 271.28 VP 22.546 GAP -8.21 AZP 90.61 TAL 328.71 TAP 212.36 RCA 144.99 APO 226.58 V2 25.307
RC 282.801 GL 11.93 GP 5.39 ZAL 134.19 ZAP 67.98 ETS 181.55 ZAE -99.25 ETE 177.86 ZAC 88.74 ETC 258.56 CLP 67.88

PLANETOCENTRIC CONIC

C3 14.389 VHL 3.793 DLA 17.64 RAL 169.16 RAD 6567.6 VEL 11.652 PTH 2.05 VHP 3.157 DPA 14.70 RAP 163.59 ECC 1.2368

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 13 13	2722.01	-27.80	76.15	31.05	95.63	18 58 35	2122.0	-26.73	67.65
90.00	11 3 48	4199.27	.01	171.94	25.36	61.68	12 13 48	3599.3	-3.77	165.30
100.00	19 44 52	2426.46	-29.08	54.25	30.89	97.26	20 25 18	1826.5	-27.77	45.69
100.00	12 14 51	3970.05	1.14	154.46	24.74	60.13	13 21 1	3370.0	-2.84	147.94
110.00	21 15 43	2142.19	-32.38	32.02	30.25	101.61	21 51 26	1542.2	-30.44	23.34
110.00	13 0 28	3827.08	3.98	141.85	22.97	56.02	14 4 16	3227.1	-.51	135.64

DIFFERENTIAL CORRECTIONS
TDE -.7601 TRA 3.5299 TC3-7.5795 BAU 1.4739
RDE .5012 RRA -.3493 RC3 1.1193 FAU .48108
FDE-4.6116 FRA15.4796 FC-28.9452 BSP 27575
BDE .9105 BRA 3.5471 BC3 7.6617 FSP 10061

MID-COURSE EXECUTION ACCURACY
SGT 8104.7 SGR 1265.2 SG3 2907.9
RRT -.8631 RRF -.8808 RTF .9955
SGB 8202.9 R23 .0323 R13 -.9959
SG1 8178.4 SG2 633.3 THA 172.28

ORBIT DETERMINATION ACCURACY
ST 2040.9 SR 775.4 SS 2770.2
CRT -.7282 CRS .8270 CST -.9874
LSA 3486.9 MSA 531.0 SSA 19.6
EL1 2122.6 EL2 511.0 ALF 163.56

LAUNCH DATE OCT 21 1964 FLIGHT TIME 350.00 ARRIVAL DATE OCT 6 1965

DISTANCE 791.283

HELIOCENTRIC CONIC EARTH TO MARS

RL 148.89 LAL .00 LOL 27.63 VL 32.687 GAL -5.55 AZL 88.60 HCA 244.81 SMA 185.81 ECC .22015 INC 1.3982 V1 29.926
RP 216.74 LAP -1.27 LOP 272.44 VP 22.592 GAP -8.40 AZP 90.60 TAL 328.36 TAP 213.18 RCA 144.90 APO 226.71 V2 25.346
RC 284.057 GL 11.99 GP 5.27 ZAL 134.61 ZAP 66.35 ETS 181.70 ZAE 97.37 ETE 178.11 ZAC 88.53 ETC 258.63 CLP 66.24

PLANETOCENTRIC CONIC

C3 14.599 VHL 3.821 DLA 17.52 RAL 169.61 RAD 6567.6 VEL 11.661 PTH 2.05 VHP 3.202 DPA 14.78 RAP 163.09 ECC 1.2403

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 16 15	2720.51	-27.79	76.04	31.70	95.68	19 1 36	2120.5	-26.71	67.54
90.00	11 4 22	4207.19	.27	172.38	25.98	61.68	12 14 29	3607.2	-3.52	165.75
100.00	19 47 47	2425.33	-29.07	54.17	31.53	97.30	20 28 13	1825.3	-27.75	45.61
100.00	12 15 31	3977.61	1.40	154.88	25.35	60.14	13 21 48	3377.6	-2.59	148.36
110.00	21 18 25	2141.77	-32.37	31.99	30.89	101.63	21 54 7	1541.8	-30.43	23.31
110.00	13 1 22	3833.94	4.24	142.21	23.58	56.05	14 5 16	3233.9	-.24	136.00

DIFFERENTIAL CORRECTIONS
TDE -.8133 TRA 3.7280 TC3-7.7425 BAU 1.5257
RDE .5040 RRA -.3378 RC3 1.0763 FAU .46478
FDE-4.5351 FRA15.1940 FC-27.5621 BSP 28827
BDE .9568 BRA 3.7433 BC3 7.8170 FSP 9836

MID-COURSE EXECUTION ACCURACY
SGT 8417.8 SGR 1236.9 SG3 2813.9
RRT -.8550 RRF -.8727 RTF .9957
SGB 8508.2 R23 .0318 R13 -.9960
SG1 8484.4 SG2 636.5 THA 172.80

ORBIT DETERMINATION ACCURACY
ST 2147.5 SR 772.8 SS 2739.1
CRT -.7269 CRS .8231 CST -.9882
LSA 3525.0 MSA 534.4 SSA 19.3
EL1 2224.1 EL2 512.5 ALF 164.50

LAUNCH DATE OCT 21 1964 FLIGHT TIME 352.00 ARRIVAL DATE OCT 8 1965

HELIOCENTRIC CONIC DISTANCE 795.386 EARTH TO MARS

RL	148.89	LAL	.00	LOL	27.63	VL	32.688	GAL	-5.63	AZL	88.59	HCA	245.97	SMA	185.83	ECC	.22078	INC	1.4149
RP	216.39	LAP	-1.29	LOP	273.59	VP	22.637	GAP	-8.59	AZP	90.58	TAL	328.01	TAP	213.98	RCA	144.80	APO	226.86
RC	285.296	GL	12.04	GP	5.16	ZAL	135.04	ZAP	64.75	ETS	181.83	ZAE	95.52	ETE	178.34	ZAC	88.34	ETC	258.69

PLANETOCENTRIC CONIC

C3	14.822	VHL	3.850	DLA	~~17.38~~	RAL	170.07	RAD	6567.6	VEL	11.671	PTH	2.05	VHP	3.250	DPA	14.85	RAP	162.62

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 19 27	2718.71	-27.78	75.91	32.36	95.75	19 4 46	2118.7	-26.69	67.42
90.00	11 4 50	4215.76	.55	172.86	26.61	61.69	12 15 6	3615.8	-3.24	166.23
100.00	19 50 52	2423.92	-29.06	54.06	32.19	97.35	20 31 16	1823.9	-27.73	45.51
100.00	12 16 6	3985.78	1.67	155.33	25.98	60.15	13 22 32	3385.8	-2.31	148.81
110.00	21 21 15	2141.14	-32.37	31.94	31.55	101.65	21 56 56	1541.1	-30.42	23.27
110.00	13 2 13	3841.33	4.52	142.60	24.21	56.08	14 6 14	3241.3	.04	136.38

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.8817	TRA	3.9117	TC3	-7.9241	BAU	1.5837	SGT	8727.0	SGR	1213.7	SG3	2723.8	ST	2259.2	SR	773.7	SS	2723.4
RDE	.5095	RRA	-.3241	RC3	1.0412	FAU	.45220	RRT	-.8468	RRF	-.8653	RTF	.9959	CRT	-.7305	CRS	.8244	CST	-.9887
FDE	-4.5376	FRA	14.8276	FC	-26.4117	BSP	29695	SGB	8811.0	R23	.0328	R13	-.9962	LSA	3582.1	MSA	536.6	SSA	18.8
BDE	1.0183	BRA	3.9251	BC3	7.9922	FSP	9443	SG1	8787.7	SG2	641.1	THA	173.25	EL1	2332.5	EL2	511.8	ALF	165.23

LAUNCH DATE OCT 21 1964 FLIGHT TIME 354.00 ARRIVAL DATE OCT 10 1965

HELIOCENTRIC CONIC DISTANCE 799.492 EARTH TO MARS

RL	148.89	LAL	.00	LOL	27.63	VL	32.690	GAL	-5.70	AZL	88.57	HCA	247.13	SMA	185.86	ECC	.22145	INC	1.4313
RP	216.05	LAP	-1.32	LOP	274.75	VP	22.683	GAP	-8.77	AZP	90.56	TAL	327.64	TAP	214.77	RCA	144.70	APO	227.02
RC	286.520	GL	12.09	GP	5.04	ZAL	135.49	ZAP	63.20	ETS	181.96	ZAE	93.72	ETE	178.55	ZAC	88.15	ETC	258.75

PLANETOCENTRIC CONIC

C3	15.060	VHL	3.881	DLA	17.24	RAL	170.54	RAD	6567.6	VEL	11.681	PTH	2.05	VHP	3.300	DPA	14.90	RAP	162.20

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 22 49	2716.59	-27.76	75.76	33.04	95.82	19 8 5	2116.6	-26.66	67.27
90.00	11 5 13	4224.99	.85	173.37	27.26	61.69	12 15 38	3625.0	-2.94	166.74
100.00	19 54 5	2422.23	-29.04	53.94	32.87	97.41	20 34 28	1822.2	-27.71	45.39
100.00	12 16 38	3994.58	1.97	155.81	26.63	60.17	13 23 12	3394.6	-2.01	149.29
110.00	21 24 12	2140.29	-32.35	31.88	32.22	101.69	21 59 52	1540.3	-30.41	23.21
110.00	13 3 0	3849.28	4.83	143.02	24.86	56.12	14 7 10	3249.3	.34	136.80

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.9446	TRA	4.1050	TC3	-8.0680	BAU	1.6369	SGT	9023.5	SGR	1189.0	SG3	2630.4	ST	2367.4	SR	772.6	SS	2697.9
RDE	.5138	RRA	-.3119	RC3	1.0028	FAU	.43737	RRT	-.8380	RRF	-.8571	RTF	.9961	CRT	-.7314	CRS	.8233	CST	-.9892
FDE	-4.4945	FRA	14.4940	FC	-25.1426	BSP	30718	SGB	9101.5	R23	.0331	R13	-.9963	LSA	3631.7	MSA	538.9	SSA	18.4
BDE	1.0753	BRA	4.1168	BC3	8.1301	FSP	9131	SG1	9078.6	SG2	644.8	THA	173.67	EL1	2437.1	EL2	511.8	ALF	165.94

LAUNCH DATE OCT 21 1964 FLIGHT TIME 356.00 ARRIVAL DATE OCT 12 1965

HELIOCENTRIC CONIC DISTANCE 803.603 EARTH TO MARS

RL	148.89	LAL	.00	LOL	27.63	VL	32.692	GAL	-5.78	AZL	88.55	HCA	248.29	SMA	185.89	ECC	.22217	INC	1.4475
RP	215.71	LAP	-1.34	LOP	275.92	VP	22.728	GAP	-8.96	AZP	90.54	TAL	327.25	TAP	215.54	RCA	144.59	APO	227.19
RC	287.729	GL	12.12	GP	4.93	ZAL	135.96	ZAP	61.69	ETS	182.08	ZAE	91.96	ETE	178.75	ZAC	87.97	ETC	258.80

PLANETOCENTRIC CONIC

C3	15.312	VHL	3.913	DLA	17.07	RAL	171.02	RAD	6567.6	VEL	11.692	PTH	2.06	VHP	3.352	DPA	14.93	RAP	161.83

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 26 20	2714.17	-27.74	75.59	33.74	95.91	19 11 34	2114.2	-26.64	67.09
90.00	11 5 31	4234.87	1.16	173.93	27.93	61.70	12 16 6	3634.9	-2.63	167.30
100.00	19 57 28	2420.28	-29.02	53.80	33.57	97.49	20 37 48	1820.3	-27.68	45.25
100.00	12 17 4	4004.00	2.29	156.33	27.30	60.19	13 23 48	3404.0	-1.69	149.81
110.00	21 27 17	2139.25	-32.34	31.80	32.92	101.73	22 2 57	1539.2	-30.39	23.13
110.00	13 3 45	3857.79	5.15	143.46	25.53	56.16	14 8 2	3257.8	.67	137.24

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.0101	TRA	4.2995	TC3	-8.1950	BAU	1.6892	SGT	9310.8	SGR	1165.1	SG3	2536.7	ST	2475.4	SR	771.6	SS	2672.0
RDE	.5183	RRA	-.2999	RC3	.9652	FAU	.42247	RRT	-.8289	RRF	-.8485	RTF	.9962	CRT	-.7324	CRS	.8226	CST	-.9896
FDE	-4.4513	FRA	14.1551	FC	-23.8855	BSP	31717	SGB	9383.4	R23	.0336	R13	-.9964	LSA	3683.7	MSA	540.8	SSA	18.1
BDE	1.1353	BRA	4.3100	BC3	8.2516	FSP	8820	SG1	9361.0	SG2	648.3	THA	174.05	EL1	2542.0	EL2	511.6	ALF	166.59

LAUNCH DATE OCT 21 1964 FLIGHT TIME 358.00 ARRIVAL DATE OCT 14 1965

HELIOCENTRIC CONIC DISTANCE 807.717 EARTH TO MARS

RL	148.89	LAL	.00	LOL	27.63	VL	32.694	GAL	-5.86	AZL	88.54	HCA	249.46	SMA	185.93	ECC	.22293	INC	1.4635
RP	215.38	LAP	-1.37	LOP	277.08	VP	22.773	GAP	-9.14	AZP	90.51	TAL	326.85	TAP	216.31	RCA	144.48	APO	227.38
RC	288.924	GL	12.15	GP	4.82	ZAL	136.44	ZAP	60.23	ETS	182.19	ZAE	90.23	ETE	178.94	ZAC	87.81	ETC	258.85

PLANETOCENTRIC CONIC

C3	15.580	VHL	3.947	DLA	16.90	RAL	171.51	RAD	6567.6	VEL	11.703	PTH	2.06	VHP	3.408	DPA	14.94	RAP	161.49

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 30 0	2711.48	-27.72	75.39	34.45	96.00	19 15 12	2111.5	-26.60	66.90
90.00	11 5 45	4245.37	1.50	174.51	28.61	61.72	12 16 30	3645.4	-2.29	167.88
100.00	20 0 59	2418.08	-29.00	53.64	34.28	97.57	20 41 17	1818.1	-27.65	45.09
100.00	12 17 27	4014.01	2.63	156.88	27.99	60.21	13 24 21	3414.0	-1.35	150.36
110.00	21 30 30	2138.02	-32.32	31.71	33.62	101.78	22 6 8	1538.0	-30.36	23.04
110.00	13 4 26	3866.83	5.49	143.94	26.21	56.21	14 8 53	3266.8	1.01	137.71

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.0771	TRA	4.4969	TC3	-8.3034	BAU	1.7403	SGT	9589.2	SGR	1142.1	SG3	2443.2	ST	2583.0	SR	770.6	SS	2645.0
RDE	.5229	RRA	-.2883	RC3	.9283	FAU	.40747	RRT	-.8194	RRF	-.8397	RTF	.9962	CRT	-.7333	CRS	.8220	CST	-.9899
FDE	-4.4053	FRA	13.8154	FC	-22.6412	BSP	32684	SGB	9657.0	R23	.0341	R13	-.9965	LSA	3737.2	MSA	542.5	SSA	17.7
BDE	1.1973	BRA	4.5062	BC3	8.3551	FSP	8511	SG1	9635.0	SG2	651.6	THA	174.40	EL1	2646.5	EL2	511.4	ALF	167.17

LAUNCH DATE OCT 21 1964 FLIGHT TIME 360.00 ARRIVAL DATE OCT 16 1965

HELIOCENTRIC CONIC DISTANCE 811.835 EARTH TO MARS

RL 148.89 LAL .00 LOL 27.63 VL 32.696 GAL -5.95 AZL 88.52 HCA 250.63 SMA 185.96 ECC .22374 INC 1.4793 V1 29.926
RP 215.05 LAP -1.40 LOP 278.25 VP 22.817 GAP -9.32 AZP 90.49 TAL 326.44 TAP 217.07 RCA 144.36 APO 227.57 V2 25.535
RC 290.105 GL 12.17 GP 4.71 ZAL 136.93 ZAP 58.80 ETS 182.29 ZAE 88.54 ETE 179.12 ZAC 87.66 ETC 258.89 CLP 58.68

PLANETOCENTRIC CONIC

C3 15.864 VHL 3.983 DLA 16.71 RAL 172.00 RAD 6567.6 VEL 11.715 PTH 2.06 VHP 3.465 DPA 14.94 RAP 161.21 ECC 1.2611

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 33 49	2708.54	-27.70	75.18	35.19	96.11	19 18 58	2108.5	-26.57	66.70
90.00	11 5 54	4256.50	1.86	175.13	29.32	61.74	12 16 51	3656.5	-1.93	168.50
100.00	20 4 39	2415.66	-28.98	53.46	35.01	97.66	20 44 54	1815.7	-27.62	44.92
100.00	12 17 46	4024.61	2.99	157.46	28.69	60.24	13 24 50	3424.6	-.99	150.94
110.00	21 33 50	2136.62	-32.30	31.61	34.35	101.84	22 9 26	1536.6	-30.33	22.94
110.00	13 5 4	3876.41	5.85	144.44	26.92	56.26	14 9 41	3276.4	1.38	138.21

DIFFERENTIAL CORRECTIONS
TDE-1.1470 TRA 4.6947 TC3-8.3958 BAU 1.7907
RDE .5277 RRA -.2769 RC3 .8926 FAU .39260
FDE-4.3581 FRA13.4717 FC-21.4247 BSP 33610
BDE 1.2625 BRA 4.7029 BC3 8.4431 FSP 8199

MID-COURSE EXECUTION ACCURACY
SGT 9857.5 SGR 1120.2 SG3 2350.3
RRT -.8097 RRF -.8306 RTF .9963
SGB 9920.9 R23 .0347 R13 -.9965
SG1 9899.3 SG2 654.6 THA 174.72

ORBIT DETERMINATION ACCURACY
ST 2690.2 SR 769.6 SS 2617.1
CRT -.7345 CRS .8216 CST -.9903
LSA 3792.5 MSA 543.5 SSA 17.4
EL1 2751.1 EL2 510.7 ALF 167.70

LAUNCH DATE OCT 21 1964 FLIGHT TIME 362.00 ARRIVAL DATE OCT 18 1965

HELIOCENTRIC CONIC DISTANCE 815.956 EARTH TO MARS

RL 148.89 LAL .00 LOL 27.63 VL 32.698 GAL -6.04 AZL 88.51 HCA 251.80 SMA 186.00 ECC .22460 INC 1.4949 V1 29.926
RP 214.72 LAP -1.42 LOP 279.43 VP 22.862 GAP -9.50 AZP 90.47 TAL 326.01 TAP 217.81 RCA 144.23 APO 227.78 V2 25.572
RC 291.272 GL 12.18 GP 4.60 ZAL 137.44 ZAP ,57.41 ETS 182.39 ZAE 86.90 ETE 179.29 ZAC 87.51 ETC 258.92 CLP 57.30

PLANETOCENTRIC CONIC

C3 16.166 VHL 4.021 DLA 16.51 RAL 172.51 RAD 6567.6 VEL 11.728 PTH 2.07 VHP 3.525 DPA 14.93 RAP 160.96 ECC 1.2660

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 37 47	2705.38	-27.68	74.95	35.94	96.22	19 22 52	2105.4	-26.53	66.47
90.00	11 5 59	4268.21	2.24	175.79	30.04	61.76	12 17 7	3668.2	-1.55	169.16
100.00	20 8 26	2413.03	-28.96	53.27	35.76	97.76	20 48 39	1813.0	-27.58	44.74
100.00	12 18 1	4035.78	3.37	158.08	29.42	60.28	13 25 17	3435.8	-.62	151.55
110.00	21 37 16	2135.07	-32.28	31.49	35.09	101.91	22 12 51	1535.1	-30.30	22.83
110.00	13 5 40	3886.51	6.23	144.98	27.64	56.32	14 10 26	3286.5	1.77	138.74

DIFFERENTIAL CORRECTIONS
TDE-1.2188 TRA 4.8954 TC3-8.4707 BAU 1.8400
RDE .5326 RRA -.2660 RC3 .8579 FAU .37780
FDE-4.3102 FRA13.1296 FC-20.2330 BSP 34507
BDE 1.3301 BRA 4.9027 BC3 8.5140 FSP 7891

MID-COURSE EXECUTION ACCURACY
SGT10117.1 SGR 1099.2 SG3 2258.4
RRT -.7997 RRF -.8214 RTF .9963
SGB10176.7 R23 .0353 R13 -.9965
SG110155.4 SG2 657.5 THA 175.01

ORBIT DETERMINATION ACCURACY
ST 2797.0 SR 768.5 SS 2588.8
CRT -.7357 CRS .8216 CST -.9905
LSA 3849.6 MSA 544.4 SSA 17.2
EL1 2855.5 EL2 509.9 ALF 168.19

LAUNCH DATE OCT 21 1964 FLIGHT TIME 364.00 ARRIVAL DATE OCT 20 1965

HELIOCENTRIC CONIC DISTANCE 820.080 EARTH TO MARS

RL 148.89 LAL .00 LOL 27.63 VL 32.701 GAL -6.14 AZL 88.49 HCA 252.98 SMA 186.05 ECC .22550 INC 1.5103 V1 29.926
RP 214.40 LAP -1.44 LOP 280.61 VP 22.906 GAP -9.68 AZP 90.44 TAL 325.56 TAP 218.54 RCA 144.09 APO 228.00 V2 25.608
RC 292.426 GL 12.19 GP 4.50 ZAL 137.96 ZAP 56.07 ETS 182.48 ZAE 85.29 ETE 179.45 ZAC 87.38 ETC 258.95 CLP 55.95

PLANETOCENTRIC CONIC

C3 16.484 VHL 4.060 DLA 16.30 RAL 173.02 RAD 6567.7 VEL 11.742 PTH 2.07 VHP 3.588 DPA 14.89 RAP 160.76 ECC 1.2713

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 41 52	2702.00	-27.66	74.71	36.70	96.34	19 26 54	2102.0	-26.49	66.23
90.00	11 6 0	4280.51	2.64	176.47	30.78	61.80	12 17 20	3680.5	-1.16	169.84
100.00	20 12 21	2410.21	-28.93	53.06	36.52	97.86	20 52 31	1810.2	-27.54	44.54
100.00	12 18 12	4047.52	3.76	158.72	30.16	60.32	13 25 40	3447.5	-.22	152.19
110.00	21 40 49	2133.38	-32.26	31.36	35.85	101.98	22 16 23	1533.4	-30.27	22.71
110.00	13 6 13	3897.12	6.63	145.54	28.38	56.39	14 11 10	3297.1	2.17	139.29

DIFFERENTIAL CORRECTIONS
TDE-1.2916 TRA 5.0993 TC3-8.5269 BAU 1.8879
RDE .5377 RRA -.2555 RC3 .8240 FAU .36301
FDE-4.2576 FRA12.7904 FC-19.0648 BSP 35397
BDE 1.3991 BRA 5.1057 BC3 8.5666 FSP 7590

MID-COURSE EXECUTION ACCURACY
SGT10367.0 SGR 1079.1 SG3 2167.6
RRT -.7895 RRF -.8119 RTF .9963
SGB10423.0 R23 .0361 R13 -.9965
SG110402.1 SG2 660.1 THA 175.28

ORBIT DETERMINATION ACCURACY
ST 2902.5 SR 767.4 SS 2559.0
CRT -.7366 CRS .8215 CST -.9907
LSA 3906.9 MSA 545.2 SSA 16.9
EL1 2958.7 EL2 509.1 ALF 168.64

LAUNCH DATE OCT 21 1964 FLIGHT TIME 366.00 ARRIVAL DATE OCT 22 1965

HELIOCENTRIC CONIC DISTANCE 824.206 EARTH TO MARS

RL 148.89 LAL .00 LOL 27.63 VL 32.703 GAL -6.24 AZL 88.47 HCA 254.16 SMA 186.09 ECC .22645 INC 1.5256 V1 29.926
RP 214.08 LAP -1.47 LOP 281.79 VP 22.949 GAP -9.86 AZP 90.42 TAL 325.10 TAP 219.26 RCA 143.95 APO 228.23 V2 25.644
RC 293.566 GL 12.18 GP 4.40 ZAL 138.49 ZAP 54.76 ETS 182.57 ZAE 83.72 ETE 179.60 ZAC 87.26 ETC 258.96 CLP 54.64

PLANETOCENTRIC CONIC

C3 16.822 VHL 4.101 DLA 16.07 RAL 173.55 RAD 6567.7 VEL 11.756 PTH 2.08 VHP 3.653 DPA 14.85 RAP 160.60 ECC 1.2768

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 46 5	2698.43	-27.63	74.45	37.49	96.47	19 31 3	2098.4	-26.44	65.98
90.00	11 5 57	4293.38	3.05	177.19	31.54	61.83	12 17 30	3693.4	-.74	170.56
100.00	20 16 23	2407.23	-28.90	52.85	37.30	97.97	20 56 30	1807.2	-27.50	44.32
100.00	12 18 20	4059.81	4.17	159.40	30.92	60.37	13 26 0	3459.8	.20	152.87
110.00	21 44 29	2131.56	-32.23	31.23	36.62	102.06	22 20 0	1531.6	-30.24	22.58
110.00	13 6 43	3908.24	7.05	146.13	29.14	56.47	14 11 51	3308.2	2.60	139.87

DIFFERENTIAL CORRECTIONS
TDE-1.3676 TRA 5.3057 TC3-8.5691 BAU 1.9354
RDE .5429 RRA -.2454 RC3 .7914 FAU .34851
FDE-4.2049 FRA12.4528 FC-17.9359 BSP 36264
BDE 1.4715 BRA 5.3114 BC3 8.6056 FSP 7296

MID-COURSE EXECUTION ACCURACY
SGT10609.2 SGR 1060.2 SG3 2078.5
RRT -.7792 RRF -.8024 RTF .9963
SGB10662.1 R23 .0368 R13 -.9965
SG110641.5 SG2 662.5 THA 175.53

ORBIT DETERMINATION ACCURACY
ST 3008.2 SR 766.2 SS 2528.7
CRT -.7379 CRS .8218 CST -.9909
LSA 3966.4 MSA 545.5 SSA 16.7
EL1 3062.4 EL2 508.0 ALF 169.05

LAUNCH DATE OCT 21 1964 FLIGHT TIME 368.00 ARRIVAL DATE OCT 24 1965

HELIOCENTRIC CONIC DISTANCE 828.335 EARTH TO MARS

RL 148.89 LAL .00 LOL 27.63 VL 32.706 GAL -6.34 AZL 88.46 HCA 255.34 SMA 186.14 ECC .22746 INC 1.5408 V1 29.926
RP 213.77 LAP -1.49 LOP 282.97 VP 22.993 GAP -10.04 AZP 90.39 TAL 324.63 TAP 219.97 RCA 143.80 APO 228.48 V2 25.679
RC 294.693 GL 12.17 GP 4.30 ZAL 139.04 ZAP 53.50 ETS 182.64 ZAE 82.18 ETE 179.74 ZAC 87.15 ETC 258.98 CLP 53.38

PLANETOCENTRIC CONIC

C3 17.180 VHL 4.145 DLA 15.84 RAL 174.07 RAD 6567.7 VEL 11.771 PTH 2.08 VHP 3.720 DPA 14.79 RAP 160.48 ECC 1.2827

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 50 24	2694.69	-27.60	74.18	38.29	96.60	19 35 19	2094.7	-26.40	65.72
90.00	11 5 50	4306.80	3.48	177.94	32.32	61.88	12 17 37	3706.8	-.31	171.31
100.00	20 20 31	2404.09	-28.87	52.62	38.10	98.09	21 0 35	1804.1	-27.45	44.10
100.00	12 18 25	4072.63	4.61	160.11	31.70	60.43	13 26 17	3472.6	.63	153.57
110.00	21 48 14	2129.64	-32.20	31.08	37.41	102.14	22 23 44	1529.6	-30.20	22.44
110.00	13 7 11	3919.85	7.49	146.74	29.93	56.55	14 12 31	3319.8	3.04	140.48

DIFFERENTIAL CORRECTIONS
TDE-1.4456 TRA 5.5150 TC3-8.5937 BAU 1.9814
RDE .5484 RRA -.2358 RC3 .7598 FAU .33415
FDE-4.1506 FRA12.1175 FC-16.8389 BSP 37099
BDE 1.5461 BRA 5.5200 BC3 8.6272 FSP 7006

MID-COURSE EXECUTION ACCURACY
SGT10841.5 SGR 1042.2 SG3 1990.8
RRT -.7688 RRF -.7929 RTF .9963
SGB10891.5 R23 .0376 R13 -.9965
SG110871.2 SG2 664.7 THA 175.76

ORBIT DETERMINATION ACCURACY
ST 3113.0 SR 765.1 SS 2497.5
CRT -.7392 CRS .8222 CST -.9911
LSA 4026.8 MSA 545.6 SSA 16.5
EL1 3165.3 EL2 506.8 ALF 169.43

LAUNCH DATE OCT 21 1964 FLIGHT TIME 370.00 ARRIVAL DATE OCT 26 1965

HELIOCENTRIC CONIC DISTANCE 832.465 EARTH TO MARS

RL 148.89 LAL .00 LOL 27.63 VL 32.709 GAL -6.44 AZL 88.44 HCA 256.53 SMA 186.19 ECC .22851 INC 1.5558 V1 29.926
RP 213.46 LAP -1.51 LOP 284.16 VP 23.036 GAP -10.21 AZP 90.36 TAL 324.14 TAP 220.67 RCA 143.64 APO 228.74 V2 25.714
RC 295.805 GL 12.16 GP 4.20 ZAL 139.59 ZAP 52.27 ETS 182.72 ZAE 80.68 ETE 179.87 ZAC 87.05 ETC 258.98 CLP 52.15

PLANETOCENTRIC CONIC

C3 17.558 VHL 4.190 DLA 15.59 RAL 174.61 RAD 6567.7 VEL 11.787 PTH 2.08 VHP 3.790 DPA 14.72 RAP 160.41 ECC 1.2890

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 54 51	2690.80	-27.57	73.90	39.10	96.74	19 39 42	2090.8	-26.35	65.44
90.00	11 5 40	4320.77	3.93	178.73	33.12	61.93	12 17 41	3720.8	.14	172.09
100.00	20 24 46	2400.82	-28.84	52.38	38.91	98.21	21 4 47	1800.8	-27.41	43.87
100.00	12 18 26	4085.98	5.05	160.84	32.50	60.50	13 26 32	3486.0	1.09	154.30
110.00	21 52 5	2127.61	-32.17	30.93	38.22	102.22	22 27 33	1527.6	-30.16	22.30
110.00	13 7 36	3931.95	7.94	147.38	30.73	56.64	14 13 8	3332.0	3.50	141.11

DIFFERENTIAL CORRECTIONS
TDE-1.5258 TRA 5.7284 TC3-8.6021 BAU 2.0264
RDE .5540 RRA -.2267 RC3 .7293 FAU .32000
FDE-4.0938 FRA11.7877 FC-15.7788 BSP 37926
BDE 1.6232 BRA 5.7329 BC3 8.6329 FSP 6725

MID-COURSE EXECUTION ACCURACY
SGT11065.8 SGR 1025.1 SG3 1905.2
RRT -.7584 RRF -.7833 RTF .9962
SGB11113.2 R23 .0384 R13 -.9964
SG111093.2 SG2 666.6 THA 175.97

ORBIT DETERMINATION ACCURACY
ST 3217.3 SR 763.9 SS 2465.3
CRT -.7405 CRS .8228 CST -.9912
LSA 4088.4 MSA 545.4 SSA 16.3
EL1 3267.9 EL2 505.4 ALF 169.78

LAUNCH DATE OCT 21 1964 FLIGHT TIME 372.00 ARRIVAL DATE OCT 28 1965

HELIOCENTRIC CONIC DISTANCE 836.597 EARTH TO MARS

RL 148.89 LAL .00 LOL 27.63 VL 32.712 GAL -6.56 AZL 88.43 HCA 257.72 SMA 186.24 ECC .22962 INC 1.5708 V1 29.926
RP 213.16 LAP -1.53 LOP 285.35 VP 23.078 GAP -10.39 AZP 90.33 TAL 323.63 TAP 221.36 RCA 143.48 APO 229.01 V2 25.748
RC 296.904 GL 12.14 GP 4.11 ZAL 140.16 ZAP 51.08 ETS 182.78 ZAE 79.22 ETE 180.00 ZAC 86.95 ETC 258.98 CLP 50.96

PLANETOCENTRIC CONIC

C3 17.958 VHL 4.238 DLA 15.34 RAL 175.15 RAD 6567.7 VEL 11.804 PTH 2.09 VHP 3.861 DPA 14.63 RAP 160.37 ECC 1.2955

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 59 24	2686.78	-27.54	73.61	39.93	96.88	19 44 10	2086.8	-26.30	65.16
90.00	11 5 27	4335.26	4.39	179.54	33.94	62.00	12 17 42	3735.3	.61	172.90
100.00	20 29 7	2397.43	-28.81	52.13	39.74	98.34	21 9 4	1797.4	-27.36	43.63
100.00	12 18 25	4099.84	5.52	161.61	33.32	60.57	13 26 45	3499.8	1.56	155.06
110.00	21 56 1	2125.51	-32.14	30.78	39.04	102.31	22 31 27	1525.5	-30.12	22.15
110.00	13 8 0	3944.53	8.41	148.06	31.55	56.75	14 13 44	3344.5	3.98	141.77

DIFFERENTIAL CORRECTIONS
TDE-1.6081 TRA 5.9458 TC3-8.5966 BAU 2.0707
RDE .5598 RRA -.2181 RC3 .7000 FAU .30614
FDE-4.0353 FRA11.4625 FC-14.7588 BSP 38726
BDE 1.7028 BRA 5.9498 BC3 8.6251 FSP 6452

MID-COURSE EXECUTION ACCURACY
SGT11282.7 SGR 1009.1 SG3 1821.5
RRT -.7480 RRF -.7738 RTF .9962
SGB11327.7 R23 .0393 R13 -.9963
SG111308.0 SG2 668.2 THA 176.16

ORBIT DETERMINATION ACCURACY
ST 3321.0 SR 762.6 SS 2432.2
CRT -.7419 CRS .8235 CST -.9913
LSA 4150.8 MSA 545.0 SSA 16.1
EL1 3370.0 EL2 504.0 ALF 170.11

LAUNCH DATE OCT 21 1964 FLIGHT TIME 374.00 ARRIVAL DATE OCT 30 1965

HELIOCENTRIC CONIC DISTANCE 840.730 EARTH TO MARS

RL 148.89 LAL .00 LOL 27.63 VL 32.715 GAL -6.67 AZL 88.41 HCA 258.92 SMA 186.30 ECC .23078 INC 1.5856 V1 29.926
RP 212.87 LAP -1.56 LOP 286.55 VP 23.120 GAP -10.56 AZP 90.30 TAL 323.11 TAP 222.03 RCA 143.30 APO 229.29 V2 25.782
RC 297.989 GL 12.11 GP 4.02 ZAL 140.74 ZAP 49.92 ETS 182.85 ZAE 77.79 ETE 180.11 ZAC 86.87 ETC 258.97 CLP 49.80

PLANETOCENTRIC CONIC

C3 18.381 VHL 4.287 DLA 15.07 RAL 175.70 RAD 6567.7 VEL 11.822 PTH 2.09 VHP 3.935 DPA 14.54 RAP 160.37 ECC 1.3025

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 4 2	2682.66	-27.50	73.31	40.78	97.02	19 48 45	2082.7	-26.24	64.87
90.00	11 5 11	4350.27	4.87	180.38	34.78	62.07	12 17 41	3750.3	1.10	173.73
100.00	20 33 33	2393.95	-28.78	51.88	40.59	98.47	21 13 27	1794.0	-27.30	43.39
100.00	12 18 21	4114.21	6.00	162.41	34.16	60.66	13 26 55	3514.2	2.04	155.85
110.00	22 0 3	2123.34	-32.11	30.62	39.88	102.40	22 35 26	1523.3	-30.07	22.00
110.00	13 8 21	3957.58	8.90	148.75	32.39	56.86	14 14 18	3357.6	4.48	142.46

DIFFERENTIAL CORRECTIONS
TDE-1.6937 TRA 6.1661 TC3-8.5782 BAU 2.1144
RDE .5659 RRA -.2099 RC3 .6719 FAU .29263
FDE-3.9774 FRA11.1398 FC-13.7830 BSP 39499
BDE 1.7858 BRA 6.1697 BC3 8.6045 FSP 6183

MID-COURSE EXECUTION ACCURACY
SGT11491.5 SGR 994.1 SG3 1740.1
RRT -.7378 RRF -.7645 RTF .9961
SGB11534.4 R23 .0402 R13 -.9962
SG111514.9 SG2 669.7 THA 176.34

ORBIT DETERMINATION ACCURACY
ST 3424.4 SR 761.5 SS 2398.8
CRT -.7435 CRS .8245 CST -.9914
LSA 4214.8 MSA 544.2 SSA 15.9
EL1 3471.9 EL2 502.3 ALF 170.41

LAUNCH DATE OCT 21 1964 FLIGHT TIME 376.00 ARRIVAL DATE NOV 1 1965

HELIOCENTRIC CONIC DISTANCE 844.863 EARTH TO MARS

RL 148.89 LAL .00 LOL 27.63 VL 32.719 GAL -6.79 AZL 88.40 HCA 260.12 SMA 186.35 ECC .23200 INC 1.6004 V1 29.926
RP 212.57 LAP -1.58 LOP 287.75 VP 23.162 GAP -10.74 AZP 90.27 TAL 322.57 TAP 222.69 RCA 143.12 APO 229.59 V2 25.815
RC 299.061 GL 12.07 GP 3.94 ZAL 141.33 ZAP 48.80 ETS 182.90 ZAE 76.39 ETE 180.23 ZAC 86.80 ETC 258.96 CLP 48.68

PLANETOCENTRIC CONIC

C3 18.828 VHL 4.339 DLA 14.79 RAL 176.26 RAD 6567.8 VEL 11.841 PTH 2.10 VHP 4.012 DPA 14.42 RAP 160.41 ECC 1.3099

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 8 46	2678.44	-27.47	73.01	41.65	97.17	19 53 25	2078.4	-26.19	64.57
90.00	11 4 52	4365.78	5.36	181.25	35.64	62.15	12 17 38	3765.8	1.60	174.60
100.00	20 38 5	2390.39	-28.74	51.62	41.45	98.60	21 17 56	1790.4	-27.25	43.13
100.00	12 18 14	4129.06	6.49	163.23	35.02	60.76	13 27 3	3529.1	2.55	156.67
110.00	22 4 9	2121.12	-32.08	30.45	40.73	102.49	22 39 30	1521.1	-30.03	21.84
110.00	13 8 40	3971.10	9.40	149.48	33.25	56.98	14 14 51	3371.1	4.99	143.17

DIFFERENTIAL CORRECTIONS
TDE-1.7808 TRA 6.3912 TC3-8.5442 BAU 2.1568
RDE .5721 RRA -.2022 RC3 .6448 FAU .27937
FDE-3.9163 FRA10.8224 FC-12.8458 BSP 40267
BDE 1.8705 BRA 6.3944 BC3 8.5685 FSP 5923

MID-COURSE EXECUTION ACCURACY
SGT11691.7 SGR 979.9 SG3 1660.8
RRT -.7277 RRF -.7554 RTF .9960
SGB11732.7 R23 .0412 R13 -.9961
SG111713.5 SG2 670.9 THA 176.50

ORBIT DETERMINATION ACCURACY
ST 3526.4 SR 760.2 SS 2363.9
CRT -.7450 CRS .8255 CST -.9915
LSA 4278.6 MSA 543.3 SSA 15.8
EL1 3572.5 EL2 500.5 ALF 170.69

LAUNCH DATE OCT 21 1964 FLIGHT TIME 378.00 ARRIVAL DATE NOV 3 1965

HELIOCENTRIC CONIC DISTANCE 848.997 EARTH TO MARS

RL 148.89 LAL .00 LOL 27.63 VL 32.722 GAL -6.91 AZL 88.38 HCA 261.32 SMA 186.41 ECC .23327 INC 1.6151 V1 29.926
RP 212.29 LAP -1.60 LOP 288.95 VP 23.203 GAP -10.91 AZP 90.24 TAL 322.02 TAP 223.34 RCA 142.93 APO 229.90 V2 25.847
RC 300.120 GL 12.03 GP 3.85 ZAL 141.93 ZAP 47.71 ETS 182.96 ZAE 75.03 ETE 180.33 ZAC 86.74 ETC 258.94 CLP 47.59

PLANETOCENTRIC CONIC

C3 19.301 VHL 4.393 DLA 14.51 RAL 176.81 RAD 6567.8 VEL 11.861 PTH 2.10 VHP 4.090 DPA 14.30 RAP 160.49 ECC 1.3177

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 13 36	2674.16	-27.43	72.70	42.53	97.32	19 58 10	2074.2	-26.13	64.27
90.00	11 4 30	4381.77	5.87	182.15	36.52	62.25	12 17 32	3781.8	2.11	175.49
100.00	20 42 42	2386.77	-28.70	51.36	42.33	98.73	21 22 29	1786.8	-27.20	42.88
100.00	12 18 5	4144.39	7.00	164.09	35.90	60.87	13 27 9	3544.4	3.06	157.51
110.00	22 8 20	2118.86	-32.05	30.28	41.60	102.59	22 43 39	1518.9	-29.98	21.68
110.00	13 8 57	3985.06	9.92	150.23	34.13	57.12	14 15 22	3385.1	5.52	143.90

DIFFERENTIAL CORRECTIONS
TDE-1.8718 TRA 6.6204 TC3-8.4995 BAU 2.1990
RDE .5787 RRA -.1951 RC3 .6190 FAU .26650
FDE-3.8562 FRA10.5094 FC-11.9536 BSP 41002
BDE 1.9592 BRA 6.6233 BC3 8.5220 FSP 5670

MID-COURSE EXECUTION ACCURACY
SGT11885.7 SGR 966.6 SG3 1583.8
RRT -.7179 RRF -.7465 RTF .9958
SGB11925.0 R23 .0422 R13 -.9960
SG111906.0 SG2 671.8 THA 176.65

ORBIT DETERMINATION ACCURACY
ST 3628.7 SR 758.9 SS 2328.9
CRT -.7468 CRS .8268 CST -.9915
LSA 4344.4 MSA 542.1 SSA 15.6
EL1 3673.6 EL2 498.5 ALF 170.95

LAUNCH DATE OCT 21 1964 FLIGHT TIME 380.00 ARRIVAL DATE NOV 5 1965

HELIOCENTRIC CONIC DISTANCE 853.130 EARTH TO MARS

RL 148.89 LAL .00 LOL 27.63 VL 32.726 GAL -7.04 AZL 88.37 HCA 262.52 SMA 186.48 ECC .23461 INC 1.6297 V1 29.926
RP 212.01 LAP -1.62 LOP 290.15 VP 23.244 GAP -11.09 AZP 90.21 TAL 321.45 TAP 223.97 RCA 142.73 APO 230.22 V2 25.879
RC 301.167 GL 11.98 GP 3.77 ZAL 142.54 ZAP 46.66 ETS 183.01 ZAE 73.70 ETE 180.43 ZAC 86.69 ETC 258.92 CLP 46.54

PLANETOCENTRIC CONIC

C3 19.802 VHL 4.450 DLA 14.21 RAL 177.38 RAD 6567.8 VEL 11.882 PTH 2.11 VHP 4.171 DPA 14.17 RAP 160.60 ECC 1.3259

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 18 30	2669.82	-27.39	72.39	43.43	97.47	20 2 59	2069.8	-26.07	63.97
90.00	11 4 7	4398.24	6.39	183.08	37.41	62.36	12 17 25	3798.2	2.64	176.41
100.00	20 47 24	2383.11	-28.66	51.09	43.23	98.87	21 27 7	1783.1	-27.14	42.62
100.00	12 17 53	4160.18	7.52	164.97	36.80	60.98	13 27 14	3560.2	3.60	158.38
110.00	22 12 35	2116.59	-32.01	30.11	42.49	102.68	22 47 51	1516.6	-29.94	21.52
110.00	13 9 12	3999.47	10.45	151.01	35.03	57.27	14 15 52	3399.5	6.06	144.66

DIFFERENTIAL CORRECTIONS
TDE-1.9638 TRA 6.8558 TC3-8.4408 BAU 2.2401
RDE .5853 RRA -.1885 RC3 .5941 FAU .25391
FDE-3.7925 FRA10.2030 FC-11.1012 BSP 41749
BDE 2.0491 BRA 6.8584 BC3 8.4617 FSP 5427

MID-COURSE EXECUTION ACCURACY
SGT12072.5 SGR 954.1 SG3 1509.2
RRT -.7083 RRF -.7379 RTF .9957
SGB12110.1 R23 .0432 R13 -.9958
SG112091.4 SG2 672.5 THA 176.79

ORBIT DETERMINATION ACCURACY
ST 3729.2 SR 757.6 SS 2292.3
CRT -.7484 CRS .8281 CST -.9915
LSA 4409.4 MSA 540.8 SSA 15.5
EL1 3772.8 EL2 496.6 ALF 171.20

LAUNCH DATE OCT 21 1964 FLIGHT TIME 382.00 ARRIVAL DATE NOV 7 1965

HELIOCENTRIC CONIC DISTANCE 857.263 EARTH TO MARS

RL 148.89 LAL .00 LOL 27.63 VL 32.730 GAL -7.18 AZL 88.36 HCA 263.73 SMA 186.54 ECC .23601 INC 1.6443 V1 29.926
RP 211.73 LAP -1.63 LOP 291.36 VP 23.284 GAP -11.26 AZP 90.18 TAL 320.86 TAP 224.59 RCA 142.51 APO 230.56 V2 25.911
RC 302.203 GL 11.93 GP 3.69 ZAL 143.16 ZAP 45.64 ETS 183.05 ZAE 72.40 ETE 180.53 ZAC 86.64 ETC 258.89 CLP 45.52

PLANETOCENTRIC CONIC

C3 20.331 VHL 4.509 DLA 13.91 RAL 177.95 RAD 6567.8 VEL 11.904 PTH 2.12 VHP 4.254 DPA 14.02 RAP 160.75 ECC 1.3346

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 23 28	2665.45	-27.35	72.07	44.35	97.63	20 7 54	2065.5	-26.01	63.66
90.00	11 3 40	4415.17	6.93	184.04	38.33	62.48	12 17 16	3815.2	3.19	177.36
100.00	20 52 10	2379.42	-28.62	50.83	44.14	99.00	21 31 49	1779.4	-27.08	42.36
100.00	12 17 40	4176.43	8.06	165.88	37.72	61.12	13 27 16	3576.4	4.15	159.28
110.00	22 16 53	2114.30	-31.98	29.95	43.39	102.78	22 52 8	1514.3	-29.89	21.36
110.00	13 9 26	4014.31	11.00	151.81	35.95	57.43	14 16 20	3414.3	6.62	145.45

DIFFERENTIAL CORRECTIONS
TDE-2.0604 TRA 7.0948 TC3-8.3739 BAU 2.2813
RDE .5924 RRA -.1824 RC3 .5705 FAU .24178
FDE-3.7309 FRA 9.8993 FC-10.2956 BSP 42444
BDE 2.1439 BRA 7.0971 BC3 8.3933 FSP 5187

MID-COURSE EXECUTION ACCURACY
SGT12253.1 SGR 942.6 SG3 1437.0
RRT -.6991 RRF -.7298 RTF .9955
SGB12289.3 R23 .0443 R13 -.9957
SG112270.9 SG2 673.0 THA 176.91

ORBIT DETERMINATION ACCURACY
ST 3830.1 SR 756.3 SS 2255.8
CRT -.7505 CRS .8298 CST -.9915
LSA 4476.5 MSA 539.2 SSA 15.4
EL1 3872.6 EL2 494.4 ALF 171.43

LAUNCH DATE OCT 21 1964 FLIGHT TIME 384.00 ARRIVAL DATE NOV 9 1965

HELIOCENTRIC CONIC DISTANCE 861.393 EARTH TO MARS

RL 148.89 LAL .00 LOL 27.63 VL 32.733 GAL -7.32 AZL 88.34 HCA 264.94 SMA 186.61 ECC .23747 INC 1.6589 V1 29.926
RP 211.47 LAP -1.65 LOP 292.57 VP 23.323 GAP -11.44 AZP 90.15 TAL 320.26 TAP 225.20 RCA 142.29 APO 230.92 V2 25.941
RC 303.228 GL 11.87 GP 3.61 ZAL 143.78 ZAP 44.65 ETS 183.10 ZAE 71.13 ETE 180.62 ZAC 86.61 ETC 258.85 CLP 44.53

PLANETOCENTRIC CONIC

C3 20.890 VHL 4.571 DLA 13.59 RAL 178.52 RAD 6567.8 VEL 11.928 PTH 2.12 VHP 4.339 DPA 13.87 RAP 160.93 ECC 1.3438

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 28 31	2661.07	-27.31	71.76	45.28	97.78	20 12 52	2061.1	-25.95	63.36
90.00	11 3 12	4432.54	7.47	185.03	39.27	62.61	12 17 5	3832.5	3.74	178.33
100.00	20 57 0	2375.72	-28.59	50.56	45.06	99.14	21 36 35	1775.7	-27.03	42.10
100.00	12 17 25	4193.12	8.61	166.81	38.66	61.26	13 27 18	3593.1	4.71	160.20
110.00	22 21 16	2112.03	-31.94	29.78	44.31	102.87	22 56 28	1512.0	-29.84	21.20
110.00	13 9 37	4029.58	11.55	152.64	36.90	57.60	14 16 47	3429.6	7.20	146.26

DIFFERENTIAL CORRECTIONS
TDE-2.1593 TRA 7.3393 TC3-8.2947 BAU 2.3216
RDE .5997 RRA -.1769 RC3 .5479 FAU .22993
FDE-3.6670 FRA 9.6008 FC3-9.5290 BSP 43134
BDE 2.2411 BRA 7.3415 BC3 8.3128 FSP 4954

MID-COURSE EXECUTION ACCURACY
SGT12426.4 SGR 931.6 SG3 1367.0
RRT -.6903 RRF -.7220 RTF .9954
SGB12461.3 R23 .0455 R13 -.9955
SG112443.1 SG2 673.2 THA 177.03

ORBIT DETERMINATION ACCURACY
ST 3929.7 SR 755.0 SS 2218.1
CRT -.7525 CRS .8315 CST -.9915
LSA 4543.5 MSA 537.3 SSA 15.3
EL1 3971.2 EL2 492.0 ALF 171.64

LAUNCH DATE OCT 21 1964 FLIGHT TIME 386.00 ARRIVAL DATE NOV 11 1965

HELIOCENTRIC CONIC DISTANCE 865.522 EARTH TO MARS

RL 148.89 LAL .00 LOL 27.63 VL 32.737 GAL -7.46 AZL 88.33 HCA 266.16 SMA 186.67 ECC .23900 INC 1.6735 V1 29.926
RP 211.20 LAP -1.67 LOP 293.79 VP 23.362 GAP -11.62 AZP 90.11 TAL 319.64 TAP 225.80 RCA 142.06 APO 231.29 V2 25.971
RC 304.242 GL 11.80 GP 3.54 ZAL 144.42 ZAP 43.69 ETS 183.14 ZAE 69.89 ETE 180.71 ZAC 86.58 ETC 258.81 CLP 43.57

PLANETOCENTRIC CONIC

C3 21.482 VHL 4.635 DLA 13.27 RAL 179.10 RAD 6567.9 VEL 11.952 PTH 2.13 VHP 4.427 DPA 13.70 RAP 161.14 ECC 1.3535

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 33 37	2656.69	-27.27	71.45	46.23	97.93	20 17 54	2056.7	-25.89	63.05
90.00	11 2 42	4450.35	8.03	186.04	40.24	62.75	12 16 52	3850.4	4.31	179.33
100.00	21 1 53	2372.03	-28.54	50.29	46.01	99.27	21 41 25	1772.0	-26.97	41.84
100.00	12 17 7	4210.24	9.17	167.78	39.63	61.42	13 27 18	3610.2	5.28	161.14
110.00	22 25 42	2109.77	-31.91	29.61	45.24	102.96	23 0 52	1509.8	-29.80	21.04
110.00	13 9 48	4045.27	12.12	153.50	37.86	57.79	14 17 13	3445.3	7.79	147.09

DIFFERENTIAL CORRECTIONS
TDE-2.2614 TRA 7.5895 TC3-8.2064 BAU 2.3616
RDE .6072 RRA -.1719 RC3 .5262 FAU .21845
FDE-3.6027 FRA 9.3069 FC3-8.8040 BSP 43802
BDE 2.3415 BRA 7.5914 BC3 8.2233 FSP 4730

MID-COURSE EXECUTION ACCURACY
SGT12593.8 SGR 921.4 SG3 1299.4
RRT -.6819 RRF -.7147 RTF .9952
SGB12627.5 R23 .0467 R13 -.9953
SG112609.5 SG2 673.1 THA 177.14

ORBIT DETERMINATION ACCURACY
ST 4028.6 SR 753.6 SS 2179.6
CRT -.7546 CRS .8334 CST -.9915
LSA 4611.0 MSA 535.3 SSA 15.1
EL1 4069.2 EL2 489.6 ALF 171.85

LAUNCH DATE OCT 21 1964 FLIGHT TIME 388.00 ARRIVAL DATE NOV 13 1965

HELIOCENTRIC CONIC DISTANCE 869.648 EARTH TO MARS

RL 148.89 LAL .00 LOL 27.63 VL 32.741 GAL -7.61 AZL 88.31 HCA 267.37 SMA 186.74 ECC .24060 INC 1.6880 V1 29.926
RP 210.95 LAP -1.69 LOP 295.00 VP 23.401 GAP -11.80 AZP 90.08 TAL 319.01 TAP 226.38 RCA 141.81 APO 231.67 V2 26.001
RC 305.247 GL 11.73 GP 3.47 ZAL 145.06 ZAP 42.76 ETS 183.17 ZAE 68.67 ETE 180.79 ZAC 86.57 ETC 258.77 CLP 42.64

PLANETOCENTRIC CONIC

C3 22.107 VHL 4.702 DLA 12.94 RAL 179.68 RAD 6567.9 VEL 11.979 PTH 2.13 VHP 4.517 DPA 13.52 RAP 161.38 ECC 1.3638

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 38 47	2652.32	-27.23	71.13	47.19	98.08	20 22 59	2052.3	-25.83	62.74
90.00	11 2 10	4468.58	8.60	187.08	41.22	62.92	12 16 39	3868.6	4.90	180.35
100.00	21 6 50	2368.35	-28.50	50.02	46.97	99.41	21 46 18	1768.4	-26.91	41.59
100.00	12 16 48	4227.78	9.74	168.77	40.61	61.60	13 27 16	3627.8	5.87	162.12
110.00	22 30 11	2107.55	-31.88	29.45	46.19	103.06	23 5 19	1507.5	-29.75	20.88
110.00	13 9 57	4061.36	12.71	154.38	38.85	58.00	14 17 38	3461.4	8.39	147.95

DIFFERENTIAL CORRECTIONS
TDE-2.3669 TRA 7.8453 TC3-8.1106 BAU 2.4018
RDE .6151 RRA -.1674 RC3 .5057 FAU .20741
FDE-3.5380 FRA 9.0171 FC3-8.1224 BSP 44439
BDE 2.4455 BRA 7.8471 BC3 8.1264 FSP 4511

MID-COURSE EXECUTION ACCURACY
SGT12755.9 SGR 912.0 SG3 1234.2
RRT -.6741 RRF -.7080 RTF .9949
SGB12788.5 R23 .0480 R13 -.9951
SG112770.7 SG2 672.8 THA 177.23

ORBIT DETERMINATION ACCURACY
ST 4126.9 SR 752.3 SS 2140.5
CRT -.7569 CRS .8355 CST -.9915
LSA 4679.2 MSA 533.1 SSA 15.0
EL1 4166.6 EL2 487.0 ALF 172.03

LAUNCH DATE OCT 21 1964 FLIGHT TIME 390.00 ARRIVAL DATE NOV 15 1965

HELIOCENTRIC CONIC DISTANCE 873.770 EARTH TO MARS

RL 148.89 LAL .00 LOL 27.63 VL 32.746 GAL -7.76 AZL 88.30 HCA 268.59 SMA 186.81 ECC .24227 INC 1.7025 V1 29.926
RP 210.70 LAP -1.70 LOP 296.22 VP 23.438 GAP -11.98 AZP 90.04 TAL 318.35 TAP 226.95 RCA 141.55 APO 232.07 V2 26.029
RC 306.243 GL 11.66 GP 3.40 ZAL 145.71 ZAP 41.86 ETS 183.21 ZAE 67.49 ETE 180.87 ZAC 86.56 ETC 258.72 CLP 41.74

PLANETOCENTRIC CONIC

C3 22.769 VHL 4.772 DLA 12.61 RAL 180.26 RAD 6567.9 VEL 12.006 PTH 2.14 VHP 4.609 DPA 13.34 RAP 161.66 ECC 1.3747

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 44 0	2648.00	-27.19	70.82	48.17	98.23	20 28 8	2048.0	-25.77	62.44
90.00	11 1 37	4487.23	9.17	188.15	42.22	63.09	12 16 24	3887.2	5.49	181.40
100.00	21 11 50	2364.72	-28.46	49.76	47.94	99.54	21 51 15	1764.7	-26.85	41.33
100.00	12 16 28	4245.73	10.32	169.79	41.62	61.79	13 27 14	3645.7	6.47	163.11
110.00	22 34 43	2105.37	-31.84	29.28	47.16	103.14	23 9 49	1505.4	-29.71	20.73
110.00	13 10 4	4077.85	13.30	155.29	39.86	58.22	14 18 2	3477.8	9.00	148.83

DIFFERENTIAL CORRECTIONS
TDE-2.4761 TRA 8.1065 TC3-8.0063 BAU 2.4416
RDE .6232 RRA -.1634 RC3 .4860 FAU .19669
FDE-3.4729 FRA 8.7311 FC3-7.4786 BSP 45060
BDE 2.5533 BRA 8.1081 BC3 8.0210 FSP 4298

MID-COURSE EXECUTION ACCURACY
SGT12911.5 SGR 903.1 SG3 1171.1
RRT -.6668 RRF -.7018 RTF .9947
SGB12943.0 R23 .0494 R13 -.9948
SG112925.5 SG2 672.3 THA 177.32

ORBIT DETERMINATION ACCURACY
ST 4224.4 SR 750.9 SS 2100.6
CRT -.7593 CRS .8377 CST -.9914
LSA 4747.7 MSA 530.6 SSA 14.9
EL1 4263.3 EL2 484.2 ALF 172.21

LAUNCH DATE OCT 21 1964 FLIGHT TIME 392.00 ARRIVAL DATE NOV 17 1965

HELIOCENTRIC CONIC DISTANCE 877.889 EARTH TO MARS

RL 148.89 LAL .00 LOL 27.63 VL 32.750 GAL -7.92 AZL 88.28 HCA 269.81 SMA 186.89 ECC .24402 INC 1.7171 V1 29.926
RP 210.46 LAP -1.72 LOP 297.45 VP 23.475 GAP -12.16 AZP 90.01 TAL 317.68 TAP 227.50 RCA 141.28 APO 232.49 V2 26.057
RC 307.229 GL 11.57 GP 3.33 ZAL 146.37 ZAP 40.98 ETS 183.24 ZAE 66.33 ETE 180.94 ZAC 86.56 ETC 258.67 CLP 40.87

PLANETOCENTRIC CONIC

C3 23.469 VHL 4.845 DLA 12.26 RAL 180.85 RAD 6568.0 VEL 12.035 PTH 2.15 VHP 4.704 DPA 13.14 RAP 161.96 ECC 1.3862

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 49 16	2643.72	-27.15	70.52	49.17	98.38	20 33 20	2043.7	-25.71	62.14
90.00	11 1 2	4506.27	9.76	189.24	43.25	63.29	12 16 8	3906.3	6.09	182.47
100.00	21 16 53	2361.14	-28.42	49.50	48.94	99.67	21 56 14	1761.1	-26.79	41.08
100.00	12 16 6	4264.08	10.90	170.83	42.65	61.99	13 27 10	3664.1	7.07	164.13
110.00	22 39 18	2103.26	-31.81	29.13	48.14	103.23	23 14 21	1503.3	-29.66	20.58
110.00	13 10 11	4094.72	13.90	156.22	40.89	58.45	14 18 25	3494.7	9.63	149.73

DIFFERENTIAL CORRECTIONS
TDE-2.5890 TRA 8.3742 TC3-7.8950 BAU 2.4815
RDE .6317 RRA -.1601 RC3 .4672 FAU .18636
FDE-3.4079 FRA 8.4491 FC3-6.8744 BSP 45658
BDE 2.6650 BRA 8.3757 BC3 7.9088 FSP 4090

MID-COURSE EXECUTION ACCURACY
SGT13062.0 SGR 894.8 SG3 1110.4
RRT -.6600 RRF -.6963 RTF .9944
SGB13092.7 R23 .0509 R13 -.9945
SG113075.4 SG2 671.6 THA 177.40

ORBIT DETERMINATION ACCURACY
ST 4321.3 SR 749.5 SS 2060.3
CRT -.7618 CRS .8402 CST -.9913
LSA 4816.8 MSA 528.0 SSA 14.8
EL1 4359.4 EL2 481.3 ALF 172.38

LAUNCH DATE OCT 21 1964 FLIGHT TIME 394.00 ARRIVAL DATE NOV 19 1965

HELIOCENTRIC CONIC DISTANCE 882.002 EARTH TO MARS

RL 148.89 LAL .00 LOL 27.63 VL 32.754 GAL -8.09 AZL 88.27 HCA 271.04 SMA 186.96 ECC .24584 INC 1.7317 V1 29.926
RP 210.22 LAP -1.73 LOP 298.67 VP 23.512 GAP -12.34 AZP 89.97 TAL 317.00 TAP 228.04 RCA 141.00 APO 232.93 V2 26.085
RC 308.206 GL 11.49 GP 3.27 ZAL 147.03 ZAP 40.13 ETS 183.27 ZAE 65.19 ETE 181.02 ZAC 86.56 ETC 258.61 CLP 40.02

PLANETOCENTRIC CONIC

C3 24.210 VHL 4.920 DLA 11.91 RAL 181.44 RAD 6568.0 VEL 12.066 PTH 2.16 VHP 4.801 DPA 12.93 RAP 162.29 ECC 1.3984

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 54 35	2639.50	-27.10	70.22	50.18	98.53	20 38 34	2039.5	-25.65	61.85
90.00	11 0 26	4525.70	10.35	190.36	44.30	63.49	12 15 52	3925.7	6.71	183.57
100.00	21 21 59	2357.62	-28.38	49.25	49.95	99.80	22 1 17	1757.6	-26.74	40.83
100.00	12 15 43	4282.82	11.50	171.90	43.70	62.22	13 27 6	3682.8	7.69	165.18
110.00	22 43 55	2101.21	-31.78	28.98	49.14	103.32	23 18 57	1501.2	-29.62	20.43
110.00	13 10 16	4111.98	14.52	157.19	41.95	58.71	14 18 48	3512.0	10.27	150.66

DIFFERENTIAL CORRECTIONS
TDE-2.7062 TRA 8.6482 TC3-7.7781 BAU 2.5217
RDE .6406 RRA -.1572 RC3 .4494 FAU .17641
FDE-3.3420 FRA 8.1708 FC3-6.3082 BSP 46221
BDE 2.7810 BRA 8.6496 BC3 7.7910 FSP 3889

MID-COURSE EXECUTION ACCURACY
SGT13207.7 SGR 887.1 SG3 1051.9
RRT -.6539 RRF -.6914 RTF .9941
SGB13237.5 R23 .0525 R13 -.9942
SG113220.5 SG2 670.5 THA 177.48

ORBIT DETERMINATION ACCURACY
ST 4417.7 SR 748.1 SS 2019.1
CRT -.7646 CRS .8428 CST -.9912
LSA 4886.4 MSA 525.1 SSA 14.7
EL1 4455.1 EL2 478.2 ALF 172.54

LAUNCH DATE OCT 21 1964 FLIGHT TIME 396.00 ARRIVAL DATE NOV 21 1965

HELIOCENTRIC CONIC DISTANCE 886.110 EARTH TO MARS

RL 148.89 LAL .00 LOL 27.63 VL 32.759 GAL -8.26 AZL 88.25 HCA 272.27 SMA 187.04 ECC .24774 INC 1.7464 V1 29.926
RP 209.99 LAP -1.75 LOP 299.90 VP 23.547 GAP -12.53 AZP 89.93 TAL 316.30 TAP 228.56 RCA 140.70 APO 233.38 V2 26.111
RC 309.174 GL 11.40 GP 3.21 ZAL 147.70 ZAP 39.31 ETS 183.29 ZAE 64.08 ETE 181.09 ZAC 86.58 ETC 258.55 CLP 39.20

PLANETOCENTRIC CONIC

C3 24.994 VHL 4.999 DLA 11.56 RAL 182.03 RAD 6568.0 VEL 12.098 PTH 2.17 VHP 4.901 DPA 12.72 RAP 162.65 ECC 1.4113

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 59 56	2635.37	-27.06	69.92	51.21	98.67	20 43 51	2035.4	-25.59	61.56
90.00	10 59 49	4545.50	10.95	191.51	45.37	63.72	12 15 34	3945.5	7.33	184.69
100.00	21 27 7	2354.18	-28.34	49.00	50.97	99.92	22 6 21	1754.2	-26.68	40.59
100.00	12 15 19	4301.92	12.10	173.00	44.78	62.46	13 27 1	3701.9	8.32	166.25
110.00	22 48 35	2099.25	-31.75	28.83	50.16	103.40	23 23 34	1499.3	-29.58	20.30
110.00	13 10 20	4129.61	15.14	158.18	43.03	58.98	14 19 10	3529.6	10.91	151.62

DIFFERENTIAL CORRECTIONS
TDE-2.8274 TRA 8.9283 TC3-7.6560 BAU 2.5623
RDE .6498 RRA -.1549 RC3 .4324 FAU .16682
FDE-3.2764 FRA 7.8954 FC3-5.7782 BSP 46750
BDE 2.9010 BRA 8.9297 BC3 7.6682 FSP 3692

MID-COURSE EXECUTION ACCURACY
SGT13348.3 SGR 879.9 SG3 995.6
RRT -.6484 RRF -.6872 RTF .9938
SGB13377.3 R23 .0542 R13 -.9939
SG113360.5 SG2 669.3 THA 177.55

ORBIT DETERMINATION ACCURACY
ST 4513.2 SR 746.7 SS 1977.4
CRT -.7674 CRS .8457 CST -.9911
LSA 4956.2 MSA 522.1 SSA 14.6
EL1 4549.9 EL2 475.0 ALF 172.68

LAUNCH DATE OCT 21 1964 FLIGHT TIME 398.00 ARRIVAL DATE NOV 23 1965

HELIOCENTRIC CONIC DISTANCE 890.211 EARTH TO MARS

RL 148.89 LAL .00 LOL 27.63 VL 32.763 GAL -8.44 AZL 88.24 HCA 273.50 SMA 187.12 ECC .24973 INC 1.7611 V1 29.926
RP 209.77 LAP -1.76 LOP 301.13 VP 23.582 GAP -12.71 AZP 89.89 TAL 315.58 TAP 229.08 RCA 140.39 APO 233.85 V2 26.137
RC 310.132 GL 11.30 GP 3.15 ZAL 148.37 ZAP 38.51 ETS 183.32 ZAE 62.99 ETE 181.16 ZAC 86.60 ETC 258.49 CLP 38.40

PLANETOCENTRIC CONIC

C3 25.824 VHL 5.082 DLA 11.19 RAL 182.63 RAD 6568.0 VEL 12.133 PTH 2.17 VHP 5.003 DPA 12.49 RAP 163.03 ECC 1.4250

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 5 19	2631.32	-27.02	69.63	52.25	98.81	20 49 10	2031.3	-25.53	61.28
90.00	10 59 10	4565.67	11.55	192.68	46.47	63.97	12 15 16	3965.7	7.96	185.84
100.00	21 32 17	2350.83	-28.30	48.76	52.01	100.04	22 11 28	1750.8	-26.62	40.36
100.00	12 14 53	4321.40	12.72	174.12	45.87	62.72	13 26 55	3721.4	8.96	167.35
110.00	22 53 16	2097.39	-31.72	28.70	51.19	103.47	23 28 14	1497.4	-29.54	20.16
110.00	13 10 23	4147.60	15.77	159.19	44.13	59.27	14 19 31	3547.6	11.57	152.59

DIFFERENTIAL CORRECTIONS
TDE-2.9522 TRA 9.2161 TC3-7.5287 BAU 2.6032
RDE .6593 RRA -.1533 RC3 .4162 FAU .15757
FDE-3.2096 FRA 7.6239 FC3-5.2825 BSP 47266
BDE 3.0250 BRA 9.2174 BC3 7.5402 FSP 3501

MID-COURSE EXECUTION ACCURACY
SGT13484.4 SGR 873.2 SG3 941.3
RRT -.6435 RRF -.6837 RTF .9934
SGB13512.6 R23 .0560 R13 -.9935
SG113496.1 SG2 667.8 THA 177.61

ORBIT DETERMINATION ACCURACY
ST 4607.6 SR 745.3 SS 1934.7
CRT -.7702 CRS .8486 CST -.9910
LSA 5025.8 MSA 519.0 SSA 14.5
EL1 4643.6 EL2 471.6 ALF 172.82

LAUNCH DATE OCT 22 1964 FLIGHT TIME 240.00 ARRIVAL DATE JUN 19 1965

HELIOCENTRIC CONIC DISTANCE 576.758 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 33.173 GAL -5.98 AZL 94.11 HCA 186.39 SMA 194.39 ECC .25521 INC 4.1098 V1 29.934
RP 237.15 LAP .46 LOP 215.00 VP 20.893 GAP 7.62 AZP 85.91 TAL 329.92 TAP 156.30 RCA 144.78 APO 244.00 V2 23.174
RC 188.300 GL -29.31 GP 21.66 ZAL 128.08 ZAP 145.28 ETS 143.54 ZAE 154.56 ETE 59.57 ZAC 110.37 ETC 254.99 CLP 152.18

PLANETOCENTRIC CONIC

C3 23.331 VHL 4.830 DLA -20.58 RAL 153.34 RAD 6567.9 VEL 12.030 PTH 2.15 VHP 5.746 DPA 17.91 RAP 196.39 ECC 1.3840

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	22 26 41	1549.17	.18	2.65	17.17	118.32	22 52 30	949.2	3.97	356.01
90.00	4 36 16	5597.92	28.19	262.03	25.13	92.82	6 9 34	4997.9	28.28	253.36
100.00	23 34 30	1330.33	-1.29	345.75	16.35	119.87	23 56 40	730.3	2.70	339.22
100.00	6 11 8	5291.99	29.87	239.59	25.20	91.31	7 39 20	4692.0	29.73	230.79
110.00	0 17 53	1206.69	-4.88	334.14	14.12	123.88	0 37 59	606.7	-.40	327.92
110.00	7 48 10	4988.40	34.10	216.48	25.14	87.40	9 11 19	4388.4	33.36	207.31

DIFFERENTIAL CORRECTIONS
TDE 1.8825 TRA-2.7645 TC3 1.7510 BAU .7089
RDE 1.1763 RRA-1.2149 RC3 1.4489 FAU .16303
FDE-4.3761 FRA 4.5954 FC3-6.0496 BSP 17573
BDE 2.2198 BRA 3.0197 BC3 2.2727 FSP 2670

MID-COURSE EXECUTION ACCURACY
SGT 4485.2 SGR 2505.1 SG3 842.1
RRT .9679 RRF -.9987 RTF -.9578
SGB 5137.4 R23 -.2278 R13 -.9730
SG1 5107.6 SG2 552.8 THA 28.76

ORBIT DETERMINATION ACCURACY
ST 2468.5 SR 1470.4 SS 2720.3
CRT .9928 CRS 1.0000 CST .9933
LSA 3950.2 MSA 225.3 SSA 5.0
EL1 2869.2 EL2 152.0 ALF 30.69

LAUNCH DATE OCT 22 1964 FLIGHT TIME 242.00 ARRIVAL DATE JUN 21 1965

HELIOCENTRIC CONIC DISTANCE 580.340 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 33.146 GAL -5.89 AZL 93.34 HCA 187.35 SMA 193.89 ECC .25282 INC 3.3371 V1 29.934
RP 236.81 LAP .43 LOP 215.96 VP 20.890 GAP 7.19 AZP 86.69 TAL 330.15 TAP 157.50 RCA 144.87 APO 242.91 V2 23.209
RC 190.540 GL -24.67 GP 19.49 ZAL 129.49 ZAP 146.00 ETS 146.87 ZAE 156.68 ETE 58.48 ZAC 108.35 ETC 255.17 CLP 151.58

PLANETOCENTRIC CONIC

C3 21.149 VHL 4.599 DLA -16.11 RAL 154.79 RAD 6567.9 VEL 11.939 PTH 2.12 VHP 5.532 DPA 15.81 RAP 195.73 ECC 1.3481

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 45 33	1701.91	-4.73	11.18	16.03	117.95	22 13 55	1101.9	-.96	4.54
90.00	5 28 56	5397.61	27.99	247.40	22.87	85.51	6 58 54	4797.6	27.07	238.85
100.00	22 57 55	1468.44	-5.94	353.36	15.37	119.35	23 22 23	868.4	-1.98	346.80
100.00	6 59 16	5106.32	29.36	225.83	22.73	84.10	8 24 22	4506.3	28.23	217.21
110.00	23 46 14	1317.05	-9.03	339.99	13.48	123.11	24 8 11	717.0	-4.61	333.69
110.00	8 27 26	4830.47	32.94	204.31	22.15	80.29	9 47 56	4230.5	31.25	195.49

DIFFERENTIAL CORRECTIONS
TDE 1.7071 TRA-2.7362 TC3 1.9210 BAU .6786
RDE .9658 RRA-1.1023 RC3 1.4387 FAU .17373
FDE-4.1809 FRA 5.0334 FC3-7.1116 BSP 17336
BDE 1.9614 BRA 2.9499 BC3 2.4001 FSP 2928

MID-COURSE EXECUTION ACCURACY
SGT 4498.5 SGR 2289.6 SG3 916.5
RRT .9679 RRF -.9986 RTF -.9597
SGB 5047.6 R23 -.2278 R13 -.9727
SG1 5021.3 SG2 515.2 THA 26.53

ORBIT DETERMINATION ACCURACY
ST 2379.0 SR 1278.0 SS 2661.5
CRT .9926 CRS .9998 CST .9945
LSA 3786.3 MSA 201.5 SSA 7.0
EL1 2697.0 EL2 137.1 ALF 28.15

LAUNCH DATE OCT 22 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUN 23 1965

HELIOCENTRIC CONIC DISTANCE 583.940 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 33.121 GAL -5.81 AZL 92.74 HCA 188.31 SMA 193.41 ECC .25053 INC 2.7410 V1 29.934
RP 236.46 LAP .40 LOP 216.93 VP 20.888 GAP 6.77 AZP 87.29 TAL 330.38 TAP 158.69 RCA 144.96 APO 241.87 V2 23.244
RC 192.768 GL -20.83 GP 17.78 ZAL 130.41 ZAP 146.29 ETS 149.81 ZAE 158.46 ETE 58.00 ZAC 106.74 ETC 255.30 CLP 150.88

PLANETOCENTRIC CONIC

C3 19.634 VHL 4.431 DLA -12.40 RAL 155.91 RAD 6567.8 VEL 11.875 PTH 2.11 VHP 5.352 DPA 14.16 RAP 195.20 ECC 1.3231

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 16 47	1814.66	-8.29	17.56	15.67	117.17	21 47 2	1214.7	-4.58	10.84
90.00	6 6 38	5249.35	26.74	236.74	21.04	80.31	7 34 8	4649.4	25.12	228.44
100.00	22 31 46	1572.75	-9.38	359.19	15.09	118.51	22 57 59	972.7	-5.50	352.55
100.00	7 34 21	4966.50	27.95	215.68	20.79	78.94	8 57 7	4366.5	26.14	207.35
110.00	23 25 39	1403.97	-12.22	344.69	13.39	122.17	23 49 3	804.0	-7.89	338.28
110.00	8 56 57	4708.04	31.16	195.21	19.94	75.18	10 15 25	4108.0	28.81	186.79

DIFFERENTIAL CORRECTIONS
TDE 1.5706 TRA-2.7033 TC3 2.0530 BAU .6549
RDE .8205 RRA-1.0108 RC3 1.4180 FAU .18365
FDE-4.0236 FRA 5.4241 FC3-8.0981 BSP 17205
BDE 1.7720 BRA 2.8861 BC3 2.4951 FSP 3175

MID-COURSE EXECUTION ACCURACY
SGT 4499.3 SGR 2120.3 SG3 985.6
RRT .9676 RRF -.9984 RTF -.9610
SGB 4973.9 R23 -.2275 R13 -.9723
SG1 4950.0 SG2 486.9 THA 24.77

ORBIT DETERMINATION ACCURACY
ST 2297.9 SR 1135.0 SS 2605.9
CRT .9922 CRS .9995 CST .9955
LSA 3650.5 MSA 180.5 SSA 9.4
EL1 2559.7 EL2 126.9 ALF 26.18

LAUNCH DATE OCT 22 1964 FLIGHT TIME 246.00 ARRIVAL DATE JUN 25 1965

HELIOCENTRIC CONIC DISTANCE 587.560 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 33.097 GAL -5.72 AZL 92.27 HCA 189.28 SMA 192.96 ECC .24834 INC 2.2664 V1 29.934
RP 236.12 LAP .37 LOP 217.90 VP 20.889 GAP 6.36 AZP 87.76 TAL 330.60 TAP 159.88 RCA 145.04 APO 240.88 V2 23.279
RC 194.983 GL -17.62 GP 16.40 ZAL 130.98 ZAP 146.27 ETS 152.39 ZAE 160.00 ETE 58.08 ZAC 105.44 ETC 255.39 CLP 150.10

PLANETOCENTRIC CONIC

C3 18.517 VHL 4.303 DLA -9.28 RAL 156.78 RAD 6567.7 VEL 11.828 PTH 2.09 VHP 5.194 DPA 12.83 RAP 194.77 ECC 1.3047

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 54 38	1904.36	-11.04	22.72	15.65	116.24	21 26 22	1304.4	-7.42	15.91
90.00	6 35 49	5132.02	25.13	228.52	19.65	76.50	8 1 21	4532.0	23.02	220.49
100.00	22 11 26	1656.59	-12.06	3.97	15.12	117.56	22 39 2	1056.6	-8.28	357.22
100.00	8 1 42	4855.02	26.25	207.84	19.33	75.15	9 22 37	4255.0	23.95	199.79
110.00	23 9 20	1475.27	-14.77	348.64	13.55	121.18	23 33 55	875.3	-10.54	342.10
110.00	9 20 17	4609.11	29.22	188.16	18.32	71.42	10 37 6	4009.1	26.41	180.10

DIFFERENTIAL CORRECTIONS
TDE 1.4811 TRA-2.6444 TC3 2.2058 BAU .6474
RDE .7208 RRA -.9303 RC3 1.4050 FAU .19445
FDE-3.9234 FRA 5.7555 FC3-9.0911 BSP 16603
BDE 1.6472 BRA 2.8033 BC3 2.6153 FSP 3362

MID-COURSE EXECUTION ACCURACY
SGT 4496.8 SGR 1989.6 SG3 1053.9
RRT .9686 RRF -.9980 RTF -.9636
SGB 4917.3 R23 -.2209 R13 -.9733
SG1 4896.3 SG2 454.2 THA 23.41

ORBIT DETERMINATION ACCURACY
ST 2244.5 SR 1031.6 SS 2568.8
CRT .9924 CRS .9989 CST .9969
LSA 3560.4 MSA 154.6 SSA 12.5
EL1 2467.5 EL2 115.8 ALF 24.58

LAUNCH DATE OCT 22 1964 FLIGHT TIME 248.00 ARRIVAL DATE JUN 27 1965

HELIOCENTRIC CONIC DISTANCE 591.193 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 33.073 GAL -5.64 AZL 91.88 HCA 190.25 SMA 192.53 ECC .24624 INC 1.8802 V1 29.934
RP 235.77 LAP .33 LOP 218.88 VP 20.892 GAP 5.95 AZP 88.15 TAL 330.82 TAP 161.07 RCA 145.12 APO 239.94 V2 23.315
RC 197.185 GL -14.89 GP 15.27 ZAL 131.32 ZAP 146.02 ETS 154.65 ZAE 161.36 ETE 58.70 ZAC 104.36 ETC 255.46 CLP 149.27

PLANETOCENTRIC CONIC

C3 17.656 VHL 4.202 DLA -6.61 RAL 157.49 RAD 6567.7 VEL 11.791 PTH 2.08 VHP 5.050 DPA 11.75 RAP 194.40 ECC 1.2906

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 36 37	1978.63	-13.23	27.07	15.79	115.26	21 9 36	1378.6	-9.72	20.15
90.00	6 59 26	5035.52	23.43	221.96	18.61	73.63	8 23 22	4435.5	20.96	214.16
100.00	21 54 49	1726.38	-14.23	8.02	15.30	116.57	22 23 35	1126.4	-10.55	1.17
100.00	8 23 56	4763.00	24.49	201.57	18.25	72.30	9 43 19	4163.0	21.84	193.77
110.00	22 55 51	1535.28	-16.86	352.04	13.82	120.19	23 21 26	935.3	-12.72	345.38
110.00	9 39 23	4526.86	27.31	182.52	17.14	68.59	10 54 50	3926.9	24.15	174.78

DIFFERENTIAL CORRECTIONS
TDE 1.3842 TRA-2.6079 TC3 2.2820 BAU .6296
RDE .6431 RRA -.8682 RC3 1.3813 FAU .20388
FDE-3.8239 FRA 6.0951 FC3-9.9972 BSP 16636
BDE 1.5263 BRA 2.7487 BC3 2.6675 FSP 3604

MID-COURSE EXECUTION ACCURACY
SGT 4478.4 SGR 1880.7 SG3 1119.1
RRT .9674 RRF -.9974 RTF -.9638
SGB 4857.3 R23 -.2207 R13 -.9727
SG1 4837.2 SG2 440.9 THA 22.31

ORBIT DETERMINATION ACCURACY
ST 2172.4 SR 947.7 SS 2527.6
CRT .9915 CRS .9981 CST .9975
LSA 3462.0 MSA 141.8 SSA 15.9
EL1 2367.4 EL2 113.2 ALF 23.45

LAUNCH DATE OCT 22 1964 FLIGHT TIME 250.00 ARRIVAL DATE JUN 29 1965

HELIOCENTRIC CONIC DISTANCE 594.842 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 33.051 GAL -5.57 AZL 91.56 HCA 191.23 SMA 192.12 ECC .24423 INC 1.5591 V1 29.934
RP 235.42 LAP .30 LOP 219.85 VP 20.897 GAP 5.54 AZP 88.47 TAL 331.03 TAP 162.26 RCA 145.20 APO 239.04 V2 23.351
RC 199.372 GL -12.55 GP 14.32 ZAL 131.48 ZAP 145.61 ETS 156.65 ZAE 162.59 ETE 59.86 ZAC 103.47 ETC 255.52 CLP 148.39

PLANETOCENTRIC CONIC

C3 16.965 VHL 4.119 DLA -4.32 RAL 158.06 RAD 6567.7 VEL 11.762 PTH 2.08 VHP 4.918 DPA 10.85 RAP 194.08 ECC 1.2792

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 21 26	2041.74	-15.03	30.83	16.01	114.28	20 55 28	1441.7	-11.63	23.80
90.00	7 19 9	4953.95	21.76	216.57	17.81	71.42	8 41 43	4353.9	19.02	208.96
100.00	21 40 45	1785.87	-16.01	11.54	15.54	115.59	22 10 31	1185.9	-12.43	4.57
100.00	8 42 32	4685.05	22.78	196.41	17.43	70.10	10 0 37	4085.0	19.86	188.83
110.00	22 44 21	1586.76	-18.60	355.02	14.13	119.21	23 10 48	986.8	-14.56	348.23
110.00	9 55 25	4456.93	25.48	177.91	16.25	66.41	11 9 42	3856.9	22.07	170.41

DIFFERENTIAL CORRECTIONS
TDE 1.3035 TRA-2.5652 TC3 2.3485 BAU .6158
RDE .5847 RRA -.8154 RC3 1.3620 FAU .21353
FDE-3.7492 FRA 6.4177 FC-10.8968 BSP 16572
BDE 1.4287 BRA 2.6917 BC3 2.7149 FSP 3836

MID-COURSE EXECUTION ACCURACY
SGT 4453.8 SGR 1792.8 SG3 1184.4
RRT .9663 RRF -.9967 RTF -.9640
SGB 4801.1 R23 -.2190 R13 -.9724
SG1 4781.9 SG2 429.8 THA 21.44

ORBIT DETERMINATION ACCURACY
ST 2108.1 SR 882.7 SS 2495.6
CRT .9905 CRS .9969 CST .9981
LSA 3381.4 MSA 131.0 SSA 19.7
EL1 2282.7 EL2 111.9 ALF 22.58

LAUNCH DATE OCT 22 1964 FLIGHT TIME 252.00 ARRIVAL DATE JUL 1 1965

HELIOCENTRIC CONIC DISTANCE 598.507 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 33.030 GAL -5.49 AZL 91.29 HCA 192.21 SMA 191.73 ECC .24231 INC 1.2880 V1 29.934
RP 235.06 LAP .27 LOP 220.83 VP 20.904 GAP 5.14 AZP 88.74 TAL 331.23 TAP 163.44 RCA 145.27 APO 238.18 V2 23.387
RC 201.544 GL -10.52 GP 13.53 ZAL 131.53 ZAP 145.06 ETS 158.41 ZAE 163.71 ETE 61.58 ZAC 102.71 ETC 255.56 CLP 147.47

PLANETOCENTRIC CONIC

C3 16.393 VHL 4.049 DLA -2.31 RAL 158.52 RAD 6567.7 VEL 11.738 PTH 2.07 VHP 4.795 DPA 10.11 RAP 193.79 ECC 1.2698

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 8 17	2096.41	-16.54	34.14	16.25	113.32	20 43 13	1496.4	-13.24	27.01
90.00	7 36 0	4883.56	20.17	212.02	17.20	69.69	8 57 24	4283.6	17.22	204.59
100.00	21 28 33	1837.48	-17.50	14.65	15.80	114.63	21 59 10	1237.5	-14.03	7.57
100.00	8 58 25	4617.72	21.15	192.07	16.79	68.37	10 15 23	4017.7	18.03	184.67
110.00	22 34 19	1631.57	-20.06	357.67	14.45	118.27	23 1 31	1031.6	-16.13	350.76
110.00	10 9 8	4396.39	23.78	174.03	15.56	64.69	11 22 25	3796.4	20.17	166.75

DIFFERENTIAL CORRECTIONS
TDE 1.2356 TRA-2.5168 TC3 2.4071 BAU .6046
RDE .5403 RRA -.7701 RC3 1.3473 FAU .22346
FDE-3.6960 FRA 6.7301 FC-11.8009 BSP 16451
BDE 1.3486 BRA 2.6320 BC3 2.7585 FSP 4065

MID-COURSE EXECUTION ACCURACY
SGT 4422.9 SGR 1721.8 SG3 1250.6
RRT .9653 RRF -.9959 RTF -.9645
SGB 4746.2 R23 -.2159 R13 -.9723
SG1 4727.5 SG2 420.5 THA 20.77

ORBIT DETERMINATION ACCURACY
ST 2050.4 SR 832.2 SS 2472.4
CRT .9895 CRS .9954 CST .9986
LSA 3315.7 MSA 122.0 SSA 23.7
EL1 2210.1 EL2 111.4 ALF 21.94

LAUNCH DATE OCT 22 1964 FLIGHT TIME 254.00 ARRIVAL DATE JUL 3 1965

HELIOCENTRIC CONIC DISTANCE 602.186 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 33.009 GAL -5.42 AZL 91.06 HCA 193.19 SMA 191.35 ECC .24047 INC 1.0550 V1 29.934
RP 234.71 LAP .24 LOP 221.81 VP 20.913 GAP 4.75 AZP 88.97 TAL 331.43 TAP 164.62 RCA 145.34 APO 237.37 V2 23.424
RC 203.699 GL -8.73 GP 12.85 ZAL 131.49 ZAP 144.40 ETS 159.98 ZAE 164.72 ETE 63.88 ZAC 102.05 ETC 255.60 CLP 146.51

PLANETOCENTRIC CONIC

C3 15.909 VHL 3.989 DLA -.54 RAL 158.90 RAD 6567.6 VEL 11.717 PTH 2.06 VHP 4.679 DPA 9.49 RAP 193.52 ECC 1.2618

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 56 40	2144.49	-17.81	37.09	16.49	112.39	20 32 24	1544.5	-14.62	29.87
90.00	7 50 40	4821.82	18.66	208.12	16.71	68.31	9 11 2	4221.8	15.55	200.82
100.00	21 17 45	1882.91	-18.76	17.43	16.07	113.70	21 49 8	1282.9	-15.40	10.25
100.00	9 12 15	4558.63	19.62	188.35	16.29	66.99	10 28 14	3958.6	16.34	181.09
110.00	22 25 25	1671.08	-21.32	.05	14.77	117.38	22 53 17	1071.1	-17.48	353.02
110.00	10 21 4	4343.23	22.19	170.72	15.02	63.31	11 33 28	3743.2	18.43	163.61

DIFFERENTIAL CORRECTIONS
TDE 1.1767 TRA-2.4643 TC3 2.4567 BAU .5950
RDE .5062 RRA -.7308 RC3 1.3381 FAU .23389
FDE-3.6639 FRA 7.0318 FC-12.7276 BSP 16261
BDE 1.2809 BRA 2.5704 BC3 2.7975 FSP 4283

MID-COURSE EXECUTION ACCURACY
SGT 4385.2 SGR 1664.4 SG3 1318.3
RRT .9642 RRF -.9950 RTF -.9648
SGB 4690.4 R23 -.2126 R13 -.9722
SG1 4672.1 SG2 414.3 THA 20.27

ORBIT DETERMINATION ACCURACY
ST 1997.1 SR 793.1 SS 2458.1
CRT .9884 CRS .9935 CST .9990
LSA 3262.7 MSA 116.7 SSA 27.6
EL1 2145.9 EL2 112.2 ALF 21.49

LAUNCH DATE OCT 22 1964 FLIGHT TIME 256.00 ARRIVAL DATE JUL 5 1965

HELIOCENTRIC CONIC DISTANCE 605.880 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.990 GAL -5.36 AZL 90.85 HCA 194.17 SMA 191.00 ECC .23872 INC .8546 V1 29.934
RP 234.35 LAP .21 LOP 222.80 VP 20.924 GAP 4.36 AZP 89.17 TAL 331.62 TAP 165.79 RCA 145.40 APO 236.60 V2 23.461
RC 205.837 GL -7.15 GP 12.27 ZAL 131.38 ZAP 143.65 ETS 161.37 ZAE 165.64 ETE 66.81 ZAC 101.48 ETC 255.63 CLP 145.52

PLANETOCENTRIC CONIC

C3 15.491 VHL 3.936 DLA 1.04 RAL 159.22 RAD 6567.6 VEL 11.699 PTH 2.06 VHP 4.568 DPA 8.96 RAP 193.26 ECC 1.2549

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 46 14	2187.30	-18.90	39.76	16.73	111.49	20 22 42	1587.3	-15.81	32.44
90.00	8 3 36	4766.95	17.24	204.71	16.32	67.19	9 23 3	4166.9	14.01	197.53
100.00	21 8 4	1923.36	-19.85	19.94	16.32	112.82	21 40 7	1323.4	-16.59	12.66
100.00	9 24 28	4506.12	18.19	185.10	15.89	65.86	10 39 34	3906.1	14.78	177.97
110.00	22 17 25	1706.29	-22.41	2.20	15.06	116.52	22 45 51	1106.3	-18.66	355.07
110.00	10 31 36	4295.96	20.72	167.85	14.58	62.18	11 43 12	3696.0	16.83	160.87

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.1212 TRA-2.4111 TC3 2.4894 BAU .5845 SGT 4339.1 SGR 1616.7 SG3 1386.7 ST 1943.3 SR 760.7 SS 2444.5
RDE .4782 RRA -.6982 RC3 1.3297 FAU .24408 RRT .9631 RRF -.9940 RTF -.9651 CRT .9872 CRS .9912 CST .9994
FDE-3.6329 FRA 7.3439 FC-13.6409 BSP 16101 SGB 4630.5 R23 -.2085 R13 -.9723 LSA 3212.0 MSA 114.1 SSA 31.1
BDE 1.2189 BRA 2.5101 BC3 2.8223 FSP 4529 SG1 4612.3 SG2 409.4 THA 19.90 EL1 2083.8 EL2 113.3 ALF 21.19

LAUNCH DATE OCT 22 1964 FLIGHT TIME 258.00 ARRIVAL DATE JUL 7 1965

HELIOCENTRIC CONIC DISTANCE 609.587 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.971 GAL -5.29 AZL 90.68 HCA 195.16 SMA 190.66 ECC .23704 INC .6781 V1 29.934
RP 233.98 LAP .18 LOP 223.79 VP 20.936 GAP 3.98 AZP 89.34 TAL 331.80 TAP 166.96 RCA 145.47 APO 235.86 V2 23.498
RC 207.958 GL -5.74 GP 11.76 ZAL 131.24 ZAP 142.83 ETS 162.63 ZAE 166.47 ETE 70.41 ZAC 100.98 ETC 255.66 CLP 144.48

PLANETOCENTRIC CONIC

C3 15.123 VHL 3.889 DLA 2.45 RAL 159.48 RAD 6567.6 VEL 11.684 PTH 2.05 VHP 4.462 DPA 8.52 RAP 193.01 ECC 1.2489

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 36 47	2225.82	-19.84	42.19	16.95	110.63	20 13 53	1625.8	-16.86	34.79
90.00	8 15 9	4717.64	15.92	201.70	16.00	66.27	9 33 47	4117.6	12.57	194.62
100.00	20 59 16	1959.76	-20.80	22.23	16.56	111.97	21 31 56	1359.8	-17.63	14.86
100.00	9 35 21	4458.93	16.85	182.24	15.56	64.94	10 49 40	3858.9	13.34	175.21
110.00	22 10 8	1737.95	-23.35	4.17	15.34	115.70	22 39 6	1137.9	-19.70	356.94
110.00	10 40 59	4253.57	19.35	165.31	14.23	61.25	11 51 52	3653.6	15.36	158.46

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.0728 TRA-2.3532 TC3 2.5172 BAU .5753 SGT 4286.4 SGR 1578.7 SG3 1457.4 ST 1893.5 SR 735.9 SS 2439.3
RDE .4568 RRA -.6693 RC3 1.3269 FAU .25494 RRT .9619 RRF -.9928 RTF -.9653 CRT .9859 CRS .9886 CST .9996
FDE-3.6213 FRA 7.6488 FC-14.5942 BSP 15860 SGB 4567.9 R23 -.2041 R13 -.9723 LSA 3172.1 MSA 115.1 SSA 33.6
BDE 1.1660 BRA 2.4465 BC3 2.8456 FSP 4761 SG1 4549.8 SG2 406.4 THA 19.67 EL1 2028.2 EL2 115.0 ALF 21.04

LAUNCH DATE OCT 22 1964 FLIGHT TIME 260.00 ARRIVAL DATE JUL 9 1965

HELIOCENTRIC CONIC DISTANCE 613.308 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.954 GAL -5.23 AZL 90.52 HCA 196.15 SMA 190.34 ECC .23544 INC .5228 V1 29.934
RP 233.62 LAP .15 LOP 224.78 VP 20.950 GAP 3.60 AZP 89.50 TAL 331.98 TAP 168.13 RCA 145.53 APO 235.16 V2 23.536
RC 210.060 GL -4.47 GP 11.32 ZAL 131.06 ZAP 141.93 ETS 163.76 ZAE 167.19 ETE 74.72 ZAC 100.53 ETC 255.68 CLP 143.41

PLANETOCENTRIC CONIC

C3 14.797 VHL 3.847 DLA 3.74 RAL 159.70 RAD 6567.6 VEL 11.670 PTH 2.05 VHP 4.361 DPA 8.16 RAP 192.75 ECC 1.2435

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 28 7	2260.80	-20.66	44.43	17.16	109.80	20 5 47	1660.8	-17.78	36.94
90.00	8 25 36	4672.92	14.67	199.01	15.74	65.51	9 43 29	4072.9	11.25	192.01
100.00	20 51 12	1992.79	-21.62	24.34	16.78	111.16	21 24 25	1392.8	-18.56	16.88
100.00	9 45 11	4416.16	15.60	179.68	15.28	64.17	10 58 48	3816.2	12.00	172.74
110.00	22 3 27	1766.65	-24.19	5.98	15.59	114.92	22 32 54	1166.6	-20.63	358.65
110.00	10 49 25	4215.06	18.07	163.06	13.93	60.48	11 59 41	3615.1	14.00	156.31

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.0264 TRA-2.2945 TC3 2.5307 BAU .5652 SGT 4225.8 SGR 1548.0 SG3 1529.8 ST 1842.9 SR 715.9 SS 2436.5
RDE .4393 RRA -.6448 RC3 1.3265 FAU .26596 RRT .9606 RRF -.9916 RTF -.9654 CRT .9845 CRS .9856 CST .9997
FDE-3.6143 FRA 7.9619 FC-15.5599 BSP 15631 SGB 4500.4 R23 -.1998 R13 -.9724 LSA 3135.2 MSA 119.6 SSA 35.2
BDE 1.1165 BRA 2.3834 BC3 2.8572 FSP 5010 SG1 4482.1 SG2 405.5 THA 19.55 EL1 1973.6 EL2 117.3 ALF 21.01

LAUNCH DATE OCT 22 1964 FLIGHT TIME 262.00 ARRIVAL DATE JUL 11 1965

HELIOCENTRIC CONIC DISTANCE 617.040 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.937 GAL -5.17 AZL 90.39 HCA 197.15 SMA 190.04 ECC .23392 INC .3863 V1 29.934
RP 233.25 LAP .11 LOP 225.77 VP 20.966 GAP 3.23 AZP 89.63 TAL 332.15 TAP 169.29 RCA 145.58 APO 234.49 V2 23.574
RC 212.144 GL -3.32 GP 10.94 ZAL 130.87 ZAP 140.98 ETS 164.78 ZAE 167.78 ETE 79.74 ZAC 100.13 ETC 255.70 CLP 142.30

PLANETOCENTRIC CONIC

C3 14.506 VHL 3.809 DLA 4.90 RAL 159.89 RAD 6567.6 VEL 11.657 PTH 2.05 VHP 4.263 DPA 7.85 RAP 192.48 ECC 1.2387

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 20 6	2292.79	-21.39	46.50	17.35	109.01	19 58 19	1692.8	-18.60	38.93
90.00	8 35 6	4632.06	13.51	196.58	15.52	64.87	9 52 18	4032.1	10.01	189.64
100.00	20 43 45	2022.99	-22.35	26.28	16.98	110.38	21 17 28	1423.0	-19.38	18.75
100.00	9 54 8	4377.10	14.43	177.37	15.06	63.53	11 7 5	3777.1	10.76	170.50
110.00	21 57 17	1792.86	-24.93	7.66	15.83	114.18	22 27 10	1192.9	-21.45	.24
110.00	10 57 6	4179.99	16.88	161.04	13.68	59.83	12 6 46	3580.0	12.75	154.37

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .9773 TRA-2.2382 TC3 2.5170 BAU .5517 SGT 4154.2 SGR 1522.3 SG3 1603.2 ST 1786.8 SR 698.8 SS 2432.3
RDE .4242 RRA -.6248 RC3 1.3258 FAU .27665 RRT .9587 RRF -.9903 RTF -.9651 CRT .9827 CRS .9822 CST .9997
FDE-3.6010 FRA 8.2928 FC-16.5115 BSP 15498 SGB 4424.3 R23 -.1969 R13 -.9721 LSA 3095.0 MSA 127.3 SSA 35.9
BDE 1.0654 BRA 2.3237 BC3 2.8449 FSP 5293 SG1 4405.5 SG2 408.2 THA 19.53 EL1 1914.8 EL2 120.9 ALF 21.11

LAUNCH DATE OCT 22 1964 FLIGHT TIME 264.00 ARRIVAL DATE JUL 13 1965

HELIOCENTRIC CONIC DISTANCE 620.785 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.920 GAL -5.12 AZL 90.26 HCA 198.14 SMA 189.75 ECC .23247 INC .2614 V1 29.934
RP 232.88 LAP .08 LOP 226.77 VP 20.984 GAP 2.86 AZP 89.75 TAL 332.31 TAP 170.45 RCA 145.64 APO 233.86 V2 23.612
RC 214.210 GL -2.27 GP 10.60 ZAL 130.67 ZAP 139.96 ETS 165.72 ZAE 168.24 ETE 85.46 ZAC 99.77 ETC 255.72 CLP 141.16

PLANETOCENTRIC CONIC

C3 14.242 VHL 3.774 DLA 5.97 RAL 160.05 RAD 6567.6 VEL 11.646 PTH 2.04 VHP 4.170 DPA 7.60 RAP 192.21 ECC 1.2344

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 12 40	2322.26	-22.03	-48.42	17.54	108.26	19 51 22	1722.3	-19.33	40.79
90.00	8 43 50	4594.49	12.41	194.36	15.33	64.34	10 0 25	3994.5	8.86	187.49
100.00	20 36 50	2050.78	-23.00	28.09	17.17	109.64	21 11 1	1450.8	-20.11	20.49
100.00	10 2 21	4341.21	13.33	175.27	14.87	63.00	11 14 42	3741.2	9.60	168.46
110.00	21 51 33	1816.94	-25.59	9.22	16.05	113.47	22 21 50	1216.9	-22.20	1.71
110.00	11 4 7	4147.81	15.77	159.20	13.48	59.27	12 13 15	3547.8	11.58	152.61

DIFFERENTIAL CORRECTIONS
TDE .9304 TRA-2.1799 TC3 2.4930 BAU .5380
RDE .4124 RRA -.6073 RC3 1.3296 FAU .28800
FDE-3.5990 FRA 8.6254 FC-17.5066 BSP 15329
BDE 1.0177 BRA 2.2629 BC3 2.8254 FSP 5571

MID-COURSE EXECUTION ACCURACY
SGT 4075.4 SGR 1502.8 SG3 1679.4
RRT .9564 RRF -.9889 RTF -.9644
SGB 4343.6 R23 -.1949 R13 -.9716
SG1 4323.9 SG2 413.7 THA 19.61

ORBIT DETERMINATION ACCURACY
ST 1730.6 SR 685.7 SS 2433.2
CRT .9806 CRS .9784 CST .9996
LSA 3060.4 MSA 136.7 SSA 36.2
EL1 1857.3 EL2 125.3 ALF 21.34

LAUNCH DATE OCT 22 1964 FLIGHT TIME 266.00 ARRIVAL DATE JUL 15 1965

HELIOCENTRIC CONIC DISTANCE 624.544 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.905 GAL -5.07 AZL 90.15 HCA 199.14 SMA 189.47 ECC .23109 INC .1490 V1 29.934
RP 232.51 LAP .05 LOP 227.77 VP 21.003 GAP 2.50 AZP 89.86 TAL 332.46 TAP 171.61 RCA 145.69 APO 233.26 V2 23.650
RC 216.258 GL -1.31 GP 10.29 ZAL 130.45 ZAP 138.89 ETS 166.58 ZAE 168.53 ETE 91.79 ZAC 99.43 ETC 255.75 CLP 139.98

PLANETOCENTRIC CONIC

C3 14.003 VHL 3.742 DLA 6.95 RAL 160.19 RAD 6567.6 VEL 11.636 PTH 2.04 VHP 4.080 DPA 7.40 RAP 191.92 ECC 1.2305

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 5 42	2349.57	-22.60	50.22	17.70	107.53	19 44 51	1749.6	-19.99	42.52
90.00	8 51 54	4559.72	11.38	192.33	15.18	63.89	10 7 54	3959.7	7.77	185.50
100.00	20 30 22	2076.51	-23.58	29.79	17.35	108.93	21 4 58	1476.5	-20.78	22.11
100.00	10 9 56	4308.01	12.30	173.35	14.71	62.54	11 21 44	3708.0	8.52	166.59
110.00	21 46 11	1839.19	-26.19	10.67	16.26	112.80	22 16 51	1239.2	-22.87	3.08
110.00	11 10 35	4118.09	14.73	157.53	13.30	58.80	12 19 13	3518.1	10.49	150.99

DIFFERENTIAL CORRECTIONS
TDE .8965 TRA-2.1085 TC3 2.4867 BAU .5288
RDE .4044 RRA -.5907 RC3 1.3398 FAU .30053
FDE-3.6224 FRA 8.9434 FC-18.5798 BSP 14881
BDE .9834 BRA 2.1897 BC3 2.8246 FSP 5815

MID-COURSE EXECUTION ACCURACY
SGT 3990.6 SGR 1489.6 SG3 1758.9
RRT .9554 RRF -.9875 RTF -.9645
SGB 4259.5 R23 -.1895 R13 -.9718
SG1 4239.3 SG2 414.2 THA 19.82

ORBIT DETERMINATION ACCURACY
ST 1685.0 SR 677.4 SS 2443.6
CRT .9796 CRS .9747 CST .9994
LSA 3040.8 MSA 146.8 SSA 35.7
EL1 1811.6 EL2 126.6 ALF 21.61

LAUNCH DATE OCT 22 1964 FLIGHT TIME 268.00 ARRIVAL DATE JUL 17 1965

HELIOCENTRIC CONIC DISTANCE 628.314 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.890 GAL -5.02 AZL 90.05 HCA 200.15 SMA 189.21 ECC .22978 INC .0453 V1 29.934
RP 232.14 LAP .02 LOP 228.77 VP 21.024 GAP 2.15 AZP 89.95 TAL 332.61 TAP 172.76 RCA 145.73 APO 232.69 V2 23.689
RC 218.287 GL -.43 GP 10.02 ZAL 130.24 ZAP 137.77 ETS 167.37 ZAE 168.64 ETE 98.57 ZAC 99.12 ETC 255.77 CLP 138.76

PLANETOCENTRIC CONIC

C3 13.786 VHL 3.713 DLA 7.85 RAL 160.31 RAD 6567.5 VEL 11.626 PTH 2.04 VHP 3.993 DPA 7.25 RAP 191.61 ECC 1.2269

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 59 10	2375.00	-23.11	51.91	17.86	106.83	19 38 45	1775.0	-20.59	44.14
90.00	8 59 25	4527.43	10.40	190.46	15.06	63.51	10 14 52	3927.4	6.76	183.67
100.00	20 24 18	2100.44	-24.10	31.37	17.52	108.24	20 59 18	1500.4	-21.38	23.63
100.00	10 16 58	4277.22	11.32	171.58	14.57	62.15	11 28 16	3677.2	7.51	164.87
110.00	21 41 11	1859.85	-26.73	12.04	16.45	112.15	22 12 11	1259.9	-23.48	4.37
110.00	11 16 35	4090.57	13.76	155.99	13.15	58.39	12 24 46	3490.6	9.47	149.51

DIFFERENTIAL CORRECTIONS
TDE .8572 TRA-2.0405 TC3 2.4498 BAU .5155
RDE .3972 RRA -.5772 RC3 1.3497 FAU .31290
FDE-3.6383 FRA 9.2802 FC-19.6495 BSP 14553
BDE .9447 BRA 2.1205 BC3 2.7970 FSP 6094

MID-COURSE EXECUTION ACCURACY
SGT 3893.8 SGR 1479.5 SG3 1839.8
RRT .9534 RRF -.9861 RTF -.9639
SGB 4165.4 R23 -.1866 R13 -.9715
SG1 4144.2 SG2 419.6 THA 20.13

ORBIT DETERMINATION ACCURACY
ST 1631.5 SR 670.4 SS 2452.0
CRT .9780 CRS .9705 CST .9991
LSA 3016.2 MSA 158.3 SSA 35.2
EL1 1759.1 EL2 129.7 ALF 22.02

LAUNCH DATE OCT 22 1964 FLIGHT TIME 270.00 ARRIVAL DATE JUL 19 1965

HELIOCENTRIC CONIC DISTANCE 632.095 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.876 GAL -4.97 AZL 89.96 HCA 201.15 SMA 188.96 ECC .22854 INC .0357 V1 29.934
RP 231.76 LAP -.02 LOP 229.78 VP 21.046 GAP 1.80 AZP 90.04 TAL 332.75 TAP 173.90 RCA 145.78 APO 232.15 V2 23.728
RC 220.299 GL .39 GP 9.78 ZAL 130.03 ZAP 136.60 ETS 168.10 ZAE 168.56 ETE 105.57 ZAC 98.83 ETC 255.79 CLP 137.50

PLANETOCENTRIC CONIC

C3 13.588 VHL 3.686 DLA 8.69 RAL 160.42 RAD 6567.5 VEL 11.618 PTH 2.04 VHP 3.909 DPA 7.13 RAP 191.28 ECC 1.2236

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 53 2	2398.77	-23.57	53.50	18.01	106.16	19 33 1	1798.8	-21.13	45.68
90.00	9 6 26	4497.32	9.48	188.72	14.95	63.19	10 21 23	3897.3	5.81	181.97
100.00	20 18 36	2122.80	-24.57	32.87	17.68	107.59	20 53 59	1522.8	-21.93	25.07
100.00	10 23 33	4248.52	10.41	169.94	14.47	61.82	11 34 21	3648.5	6.56	163.27
110.00	21 36 28	1879.11	-27.21	13.32	16.64	111.53	22 7 48	1279.1	-24.04	5.59
110.00	11 22 10	4064.98	12.84	154.58	13.03	58.04	12 29 55	3465.0	8.52	148.14

DIFFERENTIAL CORRECTIONS
TDE .8185 TRA-1.9709 TC3 2.3966 BAU .5007
RDE .3916 RRA -.5659 RC3 1.3612 FAU .32549
FDE-3.6570 FRA 9.6272 FC-20.7384 BSP 14216
BDE .9073 BRA 2.0505 BC3 2.7562 FSP 6383

MID-COURSE EXECUTION ACCURACY
SGT 3787.4 SGR 1472.8 SG3 1922.7
RRT .9510 RRF -.9846 RTF -.9629
SGB 4063.7 R23 -.1846 R13 -.9710
SG1 4041.2 SG2 426.8 THA 20.53

ORBIT DETERMINATION ACCURACY
ST 1576.6 SR 665.3 SS 2462.2
CRT .9763 CRS .9661 CST .9986
LSA 2993.4 MSA 170.3 SSA 34.8
EL1 1706.1 EL2 132.9 ALF 22.54

LAUNCH DATE OCT 22 1964 FLIGHT TIME 272.00 ARRIVAL DATE JUL 21 1965

HELIOCENTRIC CONIC DISTANCE 635.887 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.863 GAL -4.93 AZL 89.87 HCA 202.16 SMA 188.73 ECC .22736 INC .1267 V1 29.934
RP 231.38 LAP -.05 LOP 230.79 VP 21.070 GAP 1.46 AZP 90.12 TAL 332.88 TAP 175.04 RCA 145.82 APO 231.64 V2 23.768
RC 222.292 GL 1.15 GP 9.56 ZAL 129.82 ZAP 135.37 ETS 168.78 ZAE 168.27 ETE 112.54 ZAC 98.55 ETC 255.81 CLP 136.20

PLANETOCENTRIC CONIC

C3 13.407 VHL 3.662 DLA 9.47 RAL 160.52 RAD 6567.5 VEL 11.610 PTH 2.03 VHP 3.829 DPA 7.05 RAP 190.93 ECC 1.2206

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 47 15	2421.10	-23.99	55.00	18.16	105.52	19 27 36	1821.1	-21.62	47.13
90.00	9 13 1	4469.16	8.61	187.11	14.88	62.92	10 27 30	3869.2	4.91	180.38
100.00	20 13 14	2143.77	-24.99	34.28	17.84	106.96	20 48 58	1543.8	-22.43	26.42
100.00	10 29 43	4221.72	9.54	168.42	14.38	61.54	11 40 5	3621.7	5.66	161.78
110.00	21 32 3	1897.13	-27.66	14.53	16.82	110.94	22 3 40	1297.1	-24.56	6.74
110.00	11 27 24	4041.12	11.97	153.27	12.93	57.74	12 34 45	3441.1	7.63	146.87

DIFFERENTIAL CORRECTIONS
TDE .7809 TRA-1.8981 TC3 2.3301 BAU .4848
RDE .3871 RRA -.5563 RC3 1.3741 FAU .33834
FDE-3.6775 FRA 9.9830 FC-21.8485 BSP 13845
BDE .8716 BRA 1.9780 BC3 2.7051 FSP 6684

MID-COURSE EXECUTION ACCURACY
SGT 3670.4 SGR 1469.1 SG3 2007.6
RRT .9485 RRF -.9832 RTF -.9617
SGB 3953.5 R23 -.1829 R13 -.9704
SG1 3929.5 SG2 434.7 THA 21.06

ORBIT DETERMINATION ACCURACY
ST 1520.5 SR 661.8 SS 2473.6
CRT .9749 CRS .9615 CST .9981
LSA 2972.2 MSA 183.0 SSA 34.3
EL1 1652.7 EL2 135.7 ALF 23.16

LAUNCH DATE OCT 22 1964 FLIGHT TIME 274.00 ARRIVAL DATE JUL 23 1965

HELIOCENTRIC CONIC DISTANCE 639.691 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.850 GAL -4.89 AZL 89.79 HCA 203.18 SMA 188.51 ECC .22625 INC .2063 V1 29.934
RP 231.01 LAP -.08 LOP 231.81 VP 21.095 GAP 1.12 AZP 90.19 TAL 332.99 TAP 176.17 RCA 145.86 APO 231.16 V2 23.807
RC 224.266 GL 1.86 GP 9.37 ZAL 129.62 ZAP 134.10 ETS 169.42 ZAE 167.78 ETE 119.24 ZAC 98.29 ETC 255.83 CLP 134.86

PLANETOCENTRIC CONIC

C3 13.241 VHL 3.639 DLA 10.19 RAL 160.62 RAD 6567.5 VEL 11.603 PTH 2.03 VHP 3.751 DPA 7.01 RAP 190.55 ECC 1.2179

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 41 47	2442.12	-24.36	56.43	18.30	104.90	19 22 29	1842.1	-22.08	48.50
90.00	9 19 14	4442.75	7.79	185.61	14.82	62.69	10 33 17	3842.7	4.07	178.90
100.00	20 8 11	2163.49	-25.37	35.62	17.99	106.36	20 44 14	1563.5	-22.89	27.71
100.00	10 35 32	4196.61	8.72	167.01	14.32	61.30	11 45 28	3596.6	4.82	160.39
110.00	21 27 53	1914.05	-28.06	15.68	16.99	110.37	21 59 47	1314.0	-25.03	7.82
110.00	11 32 18	4018.82	11.16	152.05	12.85	57.48	12 39 17	3418.8	6.79	145.69

DIFFERENTIAL CORRECTIONS
TDE .7442 TRA-1.8228 TC3 2.2495 BAU .4679
RDE .3838 RRA -.5484 RC3 1.3883 FAU .35143
FDE-3.7007 FRA10.3485 FC-22.9771 BSP 13435
BDE .8373 BRA 1.9035 BC3 2.6434 FSP 6993

MID-COURSE EXECUTION ACCURACY
SGT 3543.5 SGR 1468.2 SG3 2094.5
RRT .9458 RRF -.9817 RTF -.9602
SGB 3835.7 R23 -.1819 R13 -.9696
SG1 3809.9 SG2 443.6 THA 21.71

ORBIT DETERMINATION ACCURACY
ST 1463.2 SR 659.8 SS 2486.8
CRT .9735 CRS .9567 CST .9974
LSA 2953.1 MSA 196.0 SSA 33.8
EL1 1599.1 EL2 138.0 ALF 23.89

LAUNCH DATE OCT 22 1964 FLIGHT TIME 276.00 ARRIVAL DATE JUL 25 1965

HELIOCENTRIC CONIC DISTANCE 643.505 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.838 GAL -4.85 AZL 89.72 HCA 204.20 SMA 188.30 ECC .22519 INC .2776 V1 29.934
RP 230.62 LAP -.11 LOP 232.82 VP 21.121 GAP .78 AZP 90.25 TAL 333.10 TAP 177.30 RCA 145.89 APO 230.70 V2 23.847
RC 226.222 GL 2.52 GP 9.19 ZAL 129.42 ZAP 132.79 ETS 170.02 ZAE 167.10 ETE 125.48 ZAC 98.04 ETC 255.85 CLP 133.48

PLANETOCENTRIC CONIC

C3 13.090 VHL 3.618 DLA 10.87 RAL 160.71 RAD 6567.5 VEL 11.596 PTH 2.03 VHP 3.677 DPA 7.00 RAP 190.15 ECC 1.2154

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 36 37	2461.97	-24.70	57.78	18.45	104.30	19 17 39	1862.0	-22.49	49.81
90.00	9 25 7	4417.94	7.01	184.20	14.78	62.50	10 38 45	3817.9	3.28	177.51
100.00	20 3 24	2182.09	-25.73	36.89	18.14	105.77	20 39 46	1582.1	-23.31	28.93
100.00	10 41 1	4173.05	7.95	165.69	14.28	61.09	11 50 34	3573.0	4.03	159.09
110.00	21 23 58	1929.97	-28.44	16.77	17.17	109.82	21 56 8	1330.0	-25.47	8.85
110.00	11 36 56	3997.94	10.39	150.92	12.80	57.25	12 43 34	3397.9	6.00	144.58

DIFFERENTIAL CORRECTIONS
TDE .7075 TRA-1.7443 TC3 2.1538 BAU .4500
RDE .3814 RRA -.5416 RC3 1.4042 FAU .36494
FDE-3.7275 FRA10.7184 FC-24.1350 BSP 13001
BDE .8038 BRA 1.8265 BC3 2.5712 FSP 7306

MID-COURSE EXECUTION ACCURACY
SGT 3405.3 SGR 1469.7 SG3 2183.3
RRT .9425 RRF -.9802 RTF -.9581
SGB 3708.9 R23 -.1818 R13 -.9687
SG1 3681.0 SG2 454.5 THA 22.50

ORBIT DETERMINATION ACCURACY
ST 1403.4 SR 659.1 SS 2501.4
CRT .9722 CRS .9518 CST .9966
LSA 2935.3 MSA 208.9 SSA 33.4
EL1 1544.1 EL2 140.3 ALF 24.76

LAUNCH DATE OCT 22 1964 FLIGHT TIME 278.00 ARRIVAL DATE JUL 27 1965

HELIOCENTRIC CONIC DISTANCE 647.330 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.827 GAL -4.81 AZL 89.66 HCA 205.22 SMA 188.10 ECC .22420 INC .3441 V1 29.934
RP 230.24 LAP -.15 LOP 233.84 VP 21.149 GAP .46 AZP 90.31 TAL 333.20 TAP 178.42 RCA 145.93 APO 230.27 V2 23.887
RC 228.159 GL 3.13 GP 9.02 ZAL 129.24 ZAP 131.42 ETS 170.58 ZAE 166.24 ETE 131.16 ZAC 97.79 ETC 255.88 CLP 132.06

PLANETOCENTRIC CONIC

C3 12.953 VHL 3.599 DLA 11.50 RAL 160.80 RAD 6567.5 VEL 11.590 PTH 2.03 VHP 3.605 DPA 7.01 RAP 189.72 ECC 1.2132

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 31 44	2480.76	-25.01	59.07	18.59	103.73	19 13 5	1880.8	-22.88	51.05
90.00	9 30 42	4394.59	6.28	182.88	14.76	62.33	10 43 57	3794.6	2.52	176.21
100.00	19 58 53	2199.68	-26.05	38.10	18.29	105.21	20 35 33	1599.7	-23.70	30.09
100.00	10 46 14	4150.91	7.22	164.45	14.25	60.91	11 55 25	3550.9	3.28	157.87
110.00	21 20 17	1944.99	-28.78	17.81	17.34	109.30	21 52 42	1345.0	-25.88	9.83
110.00	11 41 20	3978.37	9.67	149.87	12.76	57.05	12 47 38	3378.4	5.26	143.55

DIFFERENTIAL CORRECTIONS
TDE .6723 TRA-1.6622 TC3 2.0431 BAU .4310
RDE .3800 RRA -.5360 RC3 1.4212 FAU .37868
FDE-3.7589 FRA11.0944 FC-25.3100 BSP 12526
BDE .7723 BRA 1.7464 BC3 2.4888 FSP 7624

MID-COURSE EXECUTION ACCURACY
SGT 3255.8 SGR 1473.3 SG3 2273.8
RRT .9388 RRF -.9788 RTF -.9555
SGB 3573.7 R23 -.1826 R13 -.9675
SG1 3543.1 SG2 466.3 THA 23.45

ORBIT DETERMINATION ACCURACY
ST 1343.1 SR 659.7 SS 2518.1
CRT .9712 CRS .9469 CST .9956
LSA 2920.5 MSA 221.9 SSA 32.9
EL1 1489.6 EL2 141.6 ALF 25.75

LAUNCH DATE OCT 22 1964 FLIGHT TIME 280.00 ARRIVAL DATE JUL 29 1965

HELIOCENTRIC CONIC DISTANCE 651.165 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.816 GAL -4.78 AZL 89.59 HCA 206.24 SMA 187.91 ECC .22326 INC .4069 V1 29.934
RP 229.86 LAP -.18 LOP 234.87 VP 21.177 GAP .13 AZP 90.36 TAL 333.30 TAP 179.54 RCA 145.95 APO 229.86 V2 23.927
RC 230.076 GL 3.72 GP 8.87 ZAL 129.07 ZAP 130.01 ETS 171.11 ZAE 165.23 ETE 136.24 ZAC 97.55 ETC 255.90 CLP 130.59

PLANETOCENTRIC CONIC

C3 12.828 VHL 3.582 DLA 12.09 RAL 160.88 RAD 6567.5 VEL 11.585 PTH 2.03 VHP 3.537 DPA 7.06 RAP 189.26 ECC 1.2111

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 27 7	2498.58	-25.29	60.30	18.74	103.17	19 8 46	1898.6	-23.23	52.24
90.00	9 36 1	4372.61	5.58	181.64	14.76	62.19	10 48 54	3772.6	1.82	174.98
100.00	19 54 38	2216.34	-26.34	39.25	18.45	104.67	20 31 34	1616.3	-24.06	31.19
100.00	10 51 11	4130.08	6.53	163.29	14.25	60.76	12 0 1	3530.1	2.58	156.73
110.00	21 16 48	1959.18	-29.09	18.79	17.51	108.79	21 49 27	1359.2	-26.25	10.76
110.00	11 45 30	3960.01	8.99	148.88	12.74	56.88	12 51 30	3360.0	4.57	142.59

DIFFERENTIAL CORRECTIONS
TDE .6367 TRA-1.5773 TC3 1.9159 BAU .4109
RDE .3790 RRA -.5316 RC3 1.4383 FAU .39246
FDE-3.7868 FRA11.4807 FC-26.4864 BSP 12037
BDE .7409 BRA 1.6645 BC3 2.3957 FSP 7958

MID-COURSE EXECUTION ACCURACY
SGT 3095.1 SGR 1478.3 SG3 2365.3
RRT .9345 RRF -.9774 RTF -.9521
SGB 3430.0 R23 -.1843 R13 -.9660
SG1 3396.3 SG2 479.7 THA 24.58

ORBIT DETERMINATION ACCURACY
ST 1280.0 SR 660.7 SS 2534.2
CRT .9704 CRS .9418 CST .9944
LSA 2905.3 MSA 235.2 SSA 32.5
EL1 1433.4 EL2 142.4 ALF 26.89

LAUNCH DATE OCT 22 1964 FLIGHT TIME 282.00 ARRIVAL DATE JUL 31 1965

HELIOCENTRIC CONIC DISTANCE 655.010 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.806 GAL -4.75 AZL 89.54 HCA 207.27 SMA 187.73 ECC .22238 INC .4646 V1 29.934
RP 229.47 LAP -.21 LOP 235.90 VP 21.207 GAP -.18 AZP 90.41 TAL 333.38 TAP 180.64 RCA 145.98 APO 229.48 V2 23.968
RC 231.973 GL 4.26 GP 8.74 ZAL 128.91 ZAP 128.55 ETS 171.62 ZAE 164.07 ETE 140.73 ZAC 97.31 ETC 255.93 CLP 129.09

PLANETOCENTRIC CONIC

C3 12.715 VHL 3.566 DLA 12.65 RAL 160.97 RAD 6567.5 VEL 11.580 PTH 2.03 VHP 3.472 DPA 7.13 RAP 188.77 ECC 1.2093

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 22 46	2515.50	-25.55	61.47	18.89	102.64	19 4 41	1915.5	-23.56	53.37
90.00	9 41 5'	4351.89	4.92	180.47	14.78	62.08	10 53 37	3751.9	1.15	173.82
100.00	19 50 37	2232.13	-26.61	40.35	18.61	104.16	20 27 49	1632.1	-24.40	32.25
100.00	10 55 54	4110.49	5.87	162.20	14.26	60.64	12 4 25	3510.5	1.92	155.65
110.00	21 13 34	1972.61	-29.39	19.73	17.69	108.31	21 46 26	1372.6	-26.60	11.65
110.00	11 49 27	3942.78	8.35	147.96	12.74	56.73	12 55 10	3342.8	3.91	141.68

DIFFERENTIAL CORRECTIONS
TDE .6026 TRA-1.4882 TC3 1.7752 BAU .3903
RDE .3789 RRA -.5279 RC3 1.4567 FAU .40661
FDE-3.8226 FRA11.8689 FC-27.6853 BSP 11480
BDE .7118 BRA 1.5790 BC3 2.2963 FSP 8283

MID-COURSE EXECUTION ACCURACY
SGT 2923.4 SGR 1485.1 SG3 2458.3
RRT .9294 RRF -.9760 RTF -.9479
SGB 3279.0 R23 -.1868 R13 -.9643
SG1 3241.5 SG2 494.2 THA 25.92

ORBIT DETERMINATION ACCURACY
ST 1216.4 SR 663.0 SS 2553.2
CRT .9701 CRS .9368 CST .9929
LSA 2894.0 MSA 248.3 SSA 32.1
EL1 1378.1 EL2 141.9 ALF 28.20

LAUNCH DATE OCT 22 1964 FLIGHT TIME 284.00 ARRIVAL DATE AUG 2 1965

HELIOCENTRIC CONIC DISTANCE 658.866 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.796 GAL -4.73 AZL 89.48 HCA 208.30 SMA 187.56 ECC .22156 INC .5185 V1 29.934
RP 229.09 LAP -.25 LOP 236.93 VP 21.238 GAP -.50 AZP 90.46 TAL 333.45 TAP 181.75 RCA 146.01 APO 229.12 V2 24.009
RC 233.848 GL 4.78 GP 8.61 ZAL 128.76 ZAP 127.05 ETS 172.11 ZAE 162.79 ETE 144.66 ZAC 97.07 ETC 255.96 CLP 127.54

PLANETOCENTRIC CONIC

C3 12.613 VHL 3.551 DLA 13.17 RAL 161.06 RAD 6567.5 VEL 11.576 PTH 2.02 VHP 3.409 DPA 7.23 RAP 188.25 ECC 1.2076

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 18 39	2531.57	-25.79	62.59	19.04	102.13	19 0 50	1931.6	-23.86	54.45
90.00	9 45 56	4332.37	4.30	179.38	14.82	61.98	10 58 8	3732.4	.52	172.74
100.00	19 46 51	2247.13	-26.85	41.40	18.77	103.66	20 24 18	1647.1	-24.71	33.26
100.00	11 0 25	4092.05	5.26	161.18	14.29	60.53	12 8 37	3492.0	1.29	154.64
110.00	21 10 31	1985.33	-29.65	20.62	17.87	107.84	21 43 36	1385.3	-26.93	12.49
110.00	11 53 14	3926.61	7.74	147.10	12.76	56.60	12 58 41	3326.6	3.30	140.84

DIFFERENTIAL CORRECTIONS
TDE .5685 TRA-1.3946 TC3 1.6188 BAU .3694
RDE .3793 RRA -.5248 RC3 1.4757 FAU .42096
FDE-3.8595 FRA12.2565 FC-28.8942 BSP 10895
BDE .6834 BRA 1.4901 BC3 2.1904 FSP 8610

MID-COURSE EXECUTION ACCURACY
SGT 2739.1 SGR 1493.0 SG3 2551.9
RRT .9232 RRF -.9746 RTF -.9423
SGB 3119.6 R23 -.1902 R13 -.9623
SG1 3077.5 SG2 510.6 THA 27.53

ORBIT DETERMINATION ACCURACY
ST 1150.2 SR 665.9 SS 2572.3
CRT .9702 CRS .9317 CST .9911
LSA 2883.3 MSA 261.3 SSA 31.8
EL1 1321.6 EL2 140.4 ALF 29.69

LAUNCH DATE OCT 22 1964 FLIGHT TIME 286.00 ARRIVAL DATE AUG 4 1965

HELIOCENTRIC CONIC DISTANCE 662.731 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.787 GAL -4.70 AZL 89.43 HCA 209.33 SMA 187.40 ECC .22079 INC .5690 V1 29.934
RP 228.70 LAP -.28 LOP 237.96 VP 21.270 GAP -.80 AZP 90.50 TAL 333.51 TAP 182.84 RCA 146.03 APO 228.78 V2 24.049
RC 235.703 GL 5.26 GP 8.49 ZAL 128.63 ZAP 125.50 ETS 172.57 ZAE 161.39 ETE 148.11 ZAC 96.84 ETC 255.99 CLP 125.95

PLANETOCENTRIC CONIC

C3 12.522 VHL 3.539 DLA 13.66 RAL 161.16 RAD 6567.5 VEL 11.572 PTH 2.02 VHP 3.350 DPA 7.36 RAP 187.69 ECC 1.2061

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 14 47	2546.86	-26.00	63.66	19.20	101.63	18 57 13	1946.9	-24.13	55.49
90.00	9 50 34	4313.98	3.71	178.35	14.87	61.91	11 2 28	3714.0	-.08	171.71
100.00	19 43 18	2261.37	-27.08	42.40	18.94	103.18	20 20 59	1661.4	-24.99	34.22
100.00	11 4 44	4074.70	4.68	160.22	14.34	60.44	12 12 39	3474.7	.70	153.68
110.00	21 7 40	1997.40	-29.90	21.47	18.06	107.39	21 40 57	1397.4	-27.23	13.30
110.00	11 56 51	3911.44	7.17	146.30	12.80	56.49	13 2 3	3311.4	2.72	140.04

DIFFERENTIAL CORRECTIONS
TDE .5342 TRA-1.2982 TC3 1.4426 BAU .3477
RDE .3801 RRA -.5225 RC3 1.4942 FAU .43520
FDE-3.8968 FRA12.6514 FC-30.0897 BSP 10295
BDE .6556 BRA 1.3994 BC3 2.0769 FSP 8944

MID-COURSE EXECUTION ACCURACY
SGT 2543.6 SGR 1501.7 SG3 2645.7
RRT .9151 RRF -.9733 RTF -.9347
SGB 2953.8 R23 -.1953 R13 -.9597
SG1 2905.9 SG2 530.1 THA 29.46

ORBIT DETERMINATION ACCURACY
ST 1081.8 SR 669.3 SS 2592.1
CRT .9706 CRS .9267 CST .9889
LSA 2874.2 MSA 274.1 SSA 31.5
EL1 1264.6 EL2 137.7 ALF 31.40

LAUNCH DATE OCT 22 1964 FLIGHT TIME 288.00 ARRIVAL DATE AUG 6 1965

HELIOCENTRIC CONIC DISTANCE 666.606 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.778 GAL -4.68 AZL 89.38 HCA 210.37 SMA 187.25 ECC .22007 INC .6169 V1 29.934
RP 228.31 LAP -.31 LOP 239.00 VP 21.303 GAP -1.11 AZP 90.53 TAL 333.56 TAP 183.93 RCA 146.04 APO 228.46 V2 24.090
RC 237.537 GL 5.72 GP 8.38 ZAL 128.51 ZAP 123.90 ETS 173.02 ZAE 159.90 ETE 151.14 ZAC 96.60 ETC 256.03 CLP 124.32

PLANETOCENTRIC CONIC

C3 12.440 VHL 3.527 DLA 14.11 RAL 161.26 RAD 6567.5 VEL 11.568 PTH 2.02 VHP 3.294 DPA 7.50 RAP 187.11 ECC 1.2047

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 11 8	2561.40	-26.20	64.68	19.37	101.16	18 53 50	1961.4	-24.39	56.48
90.00	9 55 1	4296.67	3.15	177.38	14.95	61.84	11 6 37	3696.7	-.63	170.75
100.00	19 39 58	2274.91	-27.28	43.35	19.11	102.72	20 17 53	1674.9	-25.26	35.13
100.00	11 8 52	4058.40	4.13	159.32	14.41	60.37	12 16 30	3458.4	.15	152.79
110.00	21 5 0	2008.84	-30.13	22.28	18.25	106.96	21 38 29	1408.8	-27.52	14.07
110.00	12 0 19	3897.23	6.64	145.54	12.86	56.39	13 5 16	3297.2	2.18	139.30

DIFFERENTIAL CORRECTIONS
TDE .5003 TRA-1.1973 TC3 1.2517 BAU .3265
RDE .3813 RRA -.5207 RC3 1.5126 FAU .44946
FDE-3.9339 FRA13.0461 FC-31.2784 BSP 9657
BDE .6290 BRA 1.3056 BC3 1.9633 FSP 9277

MID-COURSE EXECUTION ACCURACY
SGT 2337.1 SGR 1510.9 SG3 2739.3
RRT .9047 RRF -.9720 RTF -.9245
SGB 2783.0 R23 -.2010 R13 -.9568
SG1 2727.8 SG2 551.5 THA 31.77

ORBIT DETERMINATION ACCURACY
ST 1011.5 SR 673.1 SS 2612.0
CRT .9717 CRS .9217 CST .9861
LSA 2866.3 MSA 286.9 SSA 31.2
EL1 1207.7 EL2 133.1 ALF 33.35

LAUNCH DATE OCT 22 1964 FLIGHT TIME 290.00 ARRIVAL DATE AUG 8 1965

HELIOCENTRIC CONIC DISTANCE 670.490 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.770 GAL -4.66 AZL 89.34 HCA 211.41 SMA 187.11 ECC .21941 INC .6619 V1 29.934
RP 227.92 LAP -.35 LOP 240.04 VP 21.337 GAP -1.40 AZP 90.57 TAL 333.60 TAP 185.01 RCA 146.06 APO 228.17 V2 24.132
RC 239.350 GL 6.16 GP 8.27 ZAL 128.41 ZAP 122.26 ETS 173.44 ZAE 158.31 ETE 153.79 ZAC 96.36 ETC 256.07 CLP 122.65

PLANETOCENTRIC CONIC

C3 12.369 VHL 3.517 DLA 14.54 RAL 161.37 RAD 6567.5 VEL 11.565 PTH 2.02 VHP 3.240 DPA 7.67 RAP 186.49 ECC 1.2036

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 7 44	2575.23	-26.37	65.65	19.55	100.70	18 50 39	1975.2	-24.63	57.42
90.00	9 59 17	4280.40	2.63	176.47	15.04	61.80	11 10 37	3680.4	-1.16	169.84
100.00	19 36 52	2287.77	-27.47	44.26	19.30	102.27	20 15 0	1687.8	-25.50	36.01
100.00	11 12 49	4043.09	3.61	158.48	14.50	60.31	12 20 13	3443.1	-.37	151.95
110.00	21 2 33	2019.69	-30.35	23.06	18.46	106.55	21 36 13	1419.7	-27.78	14.80
110.00	12 3 38	3883.93	6.14	144.84	12.93	56.31	13 8 22	3283.9	1.67	138.61

DIFFERENTIAL CORRECTIONS
TDE .4662 TRA-1.0930 TC3 1.0409 BAU .3060
RDE .3827 RRA -.5194 RC3 1.5300 FAU .46348
FDE-3.9711 FRA13.4430 FC-32.4397 BSP 9015
BDE .6032 BRA 1.2101 BC3 1.8506 FSP 9615

MID-COURSE EXECUTION ACCURACY
SGT 2120.6 SGR 1520.3 SG3 2832.0
RRT .8901 RRF -.9707 RTF -.9098
SGB 2609.2 R23 -.2080 R13 -.9534
SG1 2544.5 SG2 577.3 THA 34.58

ORBIT DETERMINATION ACCURACY
ST 939.1 SR 677.2 SS 2632.2
CRT .9734 CRS .9166 CST .9825
LSA 2859.8 MSA 299.4 SSA 31.0
EL1 1150.8 EL2 126.7 ALF 35.56

LAUNCH DATE OCT 22 1964 FLIGHT TIME 292.00 ARRIVAL DATE AUG 10 1965

HELIOCENTRIC CONIC DISTANCE 674.383 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.763 GAL -4.65 AZL 89.30 HCA 212.46 SMA 186.98 ECC .21879 INC .7044 V1 29.934
RP 227.53 LAP -.38 LOP 241.08 VP 21.372 GAP -1.70 AZP 90.59 TAL 333.63 TAP 186.08 RCA 146.07 APO 227.89 V2 24.173
RC 241.142 GL 6.57 GP 8.17 ZAL 128.33 ZAP 120.58 ETS 173.86 ZAE 156.65 ETE 156.13 ZAC 96.12 ETC 256.12 CLP 120.93

PLANETOCENTRIC CONIC

C3 12.307 VHL 3.508 DLA 14.94 RAL 161.48 RAD 6567.5 VEL 11.563 PTH 2.02 VHP 3.190 DPA 7.86 RAP 185.84 ECC 1.2025

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 4 34	2588.38	-26.54	66.58	19.74	100.26	18 47 42	1988.4	-24.85	58.32
90.00	10 3 22	4265.12	2.14	175.61	15.15	61.76	11 14 27	3665.1	-1.65	168.99
100.00	19 33 59	2299.98	-27.65	45.13	19.49	101.85	20 12 19	1700.0	-25.73	36.85
100.00	11 16 38	4028.75	3.13	157.69	14.60	60.26	12 23 46	3428.7	-.85	151.16
110.00	21 0 17	2029.99	-30.54	23.80	18.67	106.15	21 34 7	1430.0	-28.03	15.50
110.00	12 6 50	3871.50	5.67	144.18	13.02	56.23	13 11 21	3271.5	1.19	137.96

DIFFERENTIAL CORRECTIONS
TDE .4325 TRA -.9835 TC3 .8166 BAU .2878
RDE .3846 RRA -.5182 RC3 1.5472 FAU .47746
FDE-4.0112 FRA13.8321 FC-33.5861 BSP 8341
BDE .5788 BRA 1.1117 BC3 1.7494 FSP 9941

MID-COURSE EXECUTION ACCURACY
SGT 1895.0 SGR 1529.9 SG3 2923.5
RRT .8699 RRF -.9694 RTF -.8889
SGB 2435.5 R23 -.2145 R13 -.9498
SG1 2358.9 SG2 606.1 THA 38.04

ORBIT DETERMINATION ACCURACY
ST 864.9 SR 681.7 SS 2652.0
CRT .9758 CRS .9117 CST .9777
LSA 2855.2 MSA 311.8 SSA 30.7
EL1 1095.0 EL2 117.6 ALF 38.09

LAUNCH DATE OCT 22 1964 FLIGHT TIME 294.00 ARRIVAL DATE AUG 12 1965

HELIOCENTRIC CONIC DISTANCE 678.286 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.756 GAL -4.63 AZL 89.25 HCA 213.51 SMA 186.86 ECC .21823 INC .7449 V1 29.934
RP 227.14 LAP -.41 LOP 242.13 VP 21.408 GAP -1.99 AZP 90.62 TAL 333.64 TAP 187.15 RCA 146.08 APO 227.64 V2 24.214
RC 242.914 GL 6.97 GP 8.07 ZAL 128.26 ZAP 118.86 ETS 174.26 ZAE 154.91 ETE 158.20 ZAC 95.87 ETC 256.16 CLP 119.18

PLANETOCENTRIC CONIC

C3 12.255 VHL 3.501 DLA 15.32 RAL 161.61 RAD 6567.5 VEL 11.560 PTH 2.02 VHP 3.144 DPA 8.06 RAP 185.16 ECC 1.2017

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 1 37	2600.88	-26.69	67.47	19.94	99.84	18 44 58	2000.9	-25.05	59.18
90.00	10 7 18	4250.79	1.68	174.81	15.27	61.73	11 18 9	3650.8	-2.11	168.19
100.00	19 31 19	2311.58	-27.80	45.95	19.70	101.44	20 9 51	1711.6	-25.94	37.64
100.00	11 20 17	4015.33	2.67	156.95	14.72	60.22	12 27 12	3415.3	-1.31	150.43
110.00	20 58 12	2039.75	-30.73	24.50	18.89	105.77	21 32 12	1439.8	-28.26	16.17
110.00	12 9 54	3859.92	5.23	143.57	13.13	56.17	13 14 13	3259.9	.75	137.35

DIFFERENTIAL CORRECTIONS
TDE .3989 TRA -.8698 TC3 .5759 BAU .2729
RDE .3868 RRA -.5173 RC3 1.5633 FAU .49117
FDE-4.0506 FRA14.2178 FC-34.6986 BSP 7667
BDE .5556 BRA 1.0120 BC3 1.6660 FSP 10260

MID-COURSE EXECUTION ACCURACY
SGT 1663.6 SGR 1539.3 SG3 3013.2
RRT .8398 RRF -.9681 RTF -.8573
SGB 2266.5 R23 -.2195 R13 -.9464
SG1 2174.4 SG2 639.4 THA 42.35

ORBIT DETERMINATION ACCURACY
ST 789.0 SR 686.4 SS 2673.4
CRT .9792 CRS .9069 CST .9713
LSA 2852.2 MSA 324.1 SSA 30.4
EL1 1040.5 EL2 105.6 ALF 40.94

LAUNCH DATE OCT 22 1964 FLIGHT TIME 296.00 ARRIVAL DATE AUG 14 1965

HELIOCENTRIC CONIC DISTANCE 682.198 EARTH TO MARS

RL	148.85	LAL	.00	LOL	28.63	VL	32.749	GAL	-4.62	AZL	89.22	HCA	214.56	SMA	186.74	ECC	.21771	INC	.7833	V1	29.934
RP	226.75	LAP	-.44	LOP	243.19	VP	21.445	GAP	-2.27	AZP	90.65	TAL	333.65	TAP	188.21	RCA	146.09	APO	227.40	V2	24.256
RC	244.666	GL	7.34	GP	7.98	ZAL	128.21	ZAP	117.10	ETS	174.65	ZAE	153.10	ETE	160.04	ZAC	95.62	ETC	256.22	CLP	117.38

PLANETOCENTRIC CONIC

C3	12.211	VHL	3.494	DLA	15.67	RAL	161.74	RAD	6567.5	VEL	11.558	PTH	2.02	VHP	3.100	DPA	8.29	RAP	184.45	ECC	1.2010

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 58 54	2612.74	-26.82	68.31	20.15	99.44	18 42 26	2012.7	-25.24	60.00
90.00	10 11 5	4237.42	1.25	174.07	15.42	61.71	11 21 42	3637.4	-2.54	167.44
100.00	19 28 52	2322.58	-27.95	46.74	19.91	101.05	20 7 35	1722.6	-26.14	38.40
100.00	11 23 47	4002.81	2.25	156.26	14.86	60.18	12 30 30	3402.8	-1.73	149.74
110.00	20 56 18	2049.00	-30.90	25.16	19.12	105.41	21 30 27	1449.0	-28.47	16.80
110.00	12 12 50	3849.15	4.82	143.01	13.26	56.12	13 17 0	3249.2	.34	136.79

DIFFERENTIAL CORRECTIONS

TDE	.3676	TRA	-.7494	TC3	.3269	BAU	.2634
RDE	.3898	RRA	-.5156	RC3	1.5800	FAU	.50516
FDE	-4.1058	FRA	14.5761	FC	-35.8150	BSP	6962
BDE	.5358	BRA	.9096	BC3	1.6135	FSP	10539

MID-COURSE EXECUTION ACCURACY

SGT	1429.7	SGR	1548.8	SG3	3100.7		
RRT	.7939	RRF	-.9668	RTF	-.8079		
SGB	2107.8	R23	-.2188	R13	-.9440		
SG1	1997.1	SG2	674.1	THA	47.88		

ORBIT DETERMINATION ACCURACY

ST	714.1	SR	692.0	SS	2696.4
CRT	.9840	CRS	.9027	CST	.9618
LSA	2854.0	MSA	336.6	SSA	29.9
EL1	990.5	EL2	88.8	ALF	44.09

LAUNCH DATE OCT 22 1964 FLIGHT TIME 298.00 ARRIVAL DATE AUG 16 1965

HELIOCENTRIC CONIC DISTANCE 686.118 EARTH TO MARS

RL	148.85	LAL	.00	LOL	28.63	VL	32.743	GAL	-4.62	AZL	89.18	HCA	215.62	SMA	186.64	ECC	.21724	INC	.8197	V1	29.934
RP	226.36	LAP	-.48	LOP	244.24	VP	21.483	GAP	-2.55	AZP	90.67	TAL	333.64	TAP	189.26	RCA	146.09	APO	227.18	V2	24.297
RC	246.398	GL	7.69	GP	7.89	ZAL	128.17	ZAP	115.30	ETS	175.03	ZAE	151.23	ETE	161.69	ZAC	95.36	ETC	256.27	CLP	115.55

PLANETOCENTRIC CONIC

C3	12.176	VHL	3.489	DLA	15.99	RAL	161.88	RAD	6567.5	VEL	11.557	PTH	2.02	VHP	3.060	DPA	8.52	RAP	183.71	ECC	1.2004

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 56 24	2623.98	-26.94	69.11	20.37	99.06	18 40 8	2024.0	-25.41	60.77
90.00	10 14 42	4224.97	.84	173.37	15.58	61.69	11 25 7	3625.0	-2.95	166.74
100.00	19 26 38	2332.99	-28.08	47.48	20.14	100.68	20 5 31	1733.0	-26.32	39.12
100.00	11 27 9	3991.19	1.86	155.62	15.02	60.16	12 33 41	3391.2	-2.13	149.10
110.00	20 54 36	2057.75	-31.05	25.80	19.36	105.07	21 28 54	1457.8	-28.67	17.41
110.00	12 15 41	3830.19	4.44	142.49	13.41	56.07	13 19 40	3239.2	-.04	136.27

DIFFERENTIAL CORRECTIONS

TDE	.3329	TRA	-.6277	TC3	.0514	BAU	.2594
RDE	.3922	RRA	-.5149	RC3	1.5924	FAU	.51776
FDE	-4.1401	FRA	14.9482	FC	-36.8137	BSP	6363
BDE	.5144	BRA	.8119	BC3	1.5933	FSP	10850

MID-COURSE EXECUTION ACCURACY

SGT	1204.0	SGR	1556.7	SG3	3184.2		
RRT	.7122	RRF	-.9654	RTF	-.7215		
SGB	1968.0	R23	-.2087	R13	-.9438		
SG1	1832.3	SG2	718.0	THA	55.02		

ORBIT DETERMINATION ACCURACY

ST	634.2	SR	696.7	SS	2715.3
CRT	.9887	CRS	.8978	CST	.9488
LSA	2852.8	MSA	348.2	SSA	29.8
EL1	939.5	EL2	70.4	ALF	47.72

LAUNCH DATE OCT 22 1964 FLIGHT TIME 300.00 ARRIVAL DATE AUG 18 1965

HELIOCENTRIC CONIC DISTANCE 690.048 EARTH TO MARS

RL	148.85	LAL	.00	LOL	28.63	VL	32.737	GAL	-4.61	AZL	89.15	HCA	216.68	SMA	186.54	ECC	.21681	INC	.8544	V1	29.934
RP	225.97	LAP	-.51	LOP	245.30	VP	21.521	GAP	-2.82	AZP	90.69	TAL	333.63	TAP	190.30	RCA	146.09	APO	226.98	V2	24.339
RC	248.110	GL	8.02	GP	7.79	ZAL	128.16	ZAP	113.46	ETS	175.40	ZAE	149.31	ETE	163.17	ZAC	95.10	ETC	256.33	CLP	113.69

PLANETOCENTRIC CONIC

C3	12.149	VHL	3.486	DLA	16.29	RAL	162.03	RAD	6567.5	VEL	11.556	PTH	2.02	VHP	3.023	DPA	8.78	RAP	182.94	ECC	1.1999

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 54 8	2634.61	-27.05	69.87	20.60	98.69	18 38 3	2034.6	-25.57	61.51
90.00	10 18 11	4213.42	.47	172.73	15.76	61.69	11 28 25	3613.4	-3.32	166.10
100.00	19 24 37	2342.84	-28.21	48.19	20.38	100.33	20 3 39	1742.8	-26.49	39.80
100.00	11 30 24	3980.42	1.49	155.03	15.19	60.14	12 36 44	3380.4	-2.49	148.51
110.00	20 53 5	2066.03	-31.20	26.40	19.62	104.74	21 27 31	1466.0	-28.86	17.98
110.00	12 18 25	3830.00	4.09	142.00	13.57	56.03	13 22 15	3230.0	-.39	135.79

DIFFERENTIAL CORRECTIONS

TDE	.2996	TRA	-.4998	TC3	-.2329	BAU	.2634
RDE	.3952	RRA	-.5133	RC3	1.6050	FAU	.53046
FDE	-4.1877	FRA	15.2869	FC	-37.7994	BSP	5818
BDE	.4959	BRA	.7164	BC3	1.6218	FSP	11116

MID-COURSE EXECUTION ACCURACY

SGT	1000.8	SGR	1564.2	SG3	3264.0		
RRT	.5690	RRF	-.9641	RTF	-.5693		
SGB	1856.9	R23	-.1768	R13	-.9481		
SG1	1694.4	SG2	759.7	THA	64.52		

ORBIT DETERMINATION ACCURACY

ST	555.4	SR	702.0	SS	2735.5
CRT	.9939	CRS	.8936	CST	.9288
LSA	2855.6	MSA	359.6	SSA	29.4
EL1	893.8	EL2	48.2	ALF	51.69

LAUNCH DATE OCT 22 1964 FLIGHT TIME 302.00 ARRIVAL DATE AUG 20 1965

HELIOCENTRIC CONIC DISTANCE 693.985 EARTH TO MARS

RL	148.85	LAL	.00	LOL	28.63	VL	32.731	GAL	-4.61	AZL	89.11	HCA	217.74	SMA	186.44	ECC	.21643	INC	.8875	V1	29.934
RP	225.58	LAP	-.54	LOP	246.36	VP	21.560	GAP	-3.09	AZP	90.70	TAL	333.60	TAP	191.34	RCA	146.09	APO	226.80	V2	24.381
RC	249.803	GL	8.34	GP	7.70	ZAL	128.16	ZAP	111.59	ETS	175.76	ZAE	147.34	ETE	164.51	ZAC	94.83	ETC	256.40	CLP	111.79

PLANETOCENTRIC CONIC

C3	12.131	VHL	3.483	DLA	16.57	RAL	162.20	RAD	6567.5	VEL	11.555	PTH	2.02	VHP	2.989	DPA	9.04	RAP	182.14	ECC	1.1997

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 52 6	2644.64	-27.16	70.58	20.85	98.35	18 36 11	2044.6	-25.72	62.21
90.00	10 21 32	4202.75	.13	172.13	15.96	61.68	11 31 34	3602.8	-3.66	165.50
100.00	19 22 48	2352.13	-28.32	48.85	20.64	100.00	20 2 0	1752.1	-26.65	40.45
100.00	11 33 30	3970.50	1.16	154.49	15.39	60.13	12 39 41	3370.5	-2.83	147.97
110.00	20 51 45	2073.83	-31.33	26.97	19.89	104.43	21 26 19	1473.8	-29.03	18.52
110.00	12 21 3	3821.57	3.77	141.56	13.76	56.00	13 24 44	3221.6	-.72	135.35

DIFFERENTIAL CORRECTIONS

TDE	.2651	TRA	-.3683	TC3	-.5345	BAU	.2758
RDE	.3981	RRA	-.5119	RC3	1.6141	FAU	.54200
FDE	-4.2248	FRA	15.6214	FC	-38.6790	BSP	5422
BDE	.4783	BRA	.6306	BC3	1.7003	FSP	11385

MID-COURSE EXECUTION ACCURACY

SGT	853.4	SGR	1570.0	SG3	3338.6		
RRT	.3151	RRF	-.9627	RTF	-.3016		
SGB	1786.9	R23	-.1111	R13	-.9562		
SG1	1600.7	SG2	794.4	THA	77.04		

ORBIT DETERMINATION ACCURACY

ST	475.6	SR	706.8	SS	2753.5
CRT	.9971	CRS	.8891	CST	.8967
LSA	2858.2	MSA	370.8	SSA	29.2
EL1	851.4	EL2	30.1	ALF	56.09

LAUNCH DATE OCT 22 1964 FLIGHT TIME 304.00 ARRIVAL DATE AUG 22 1965

HELIOCENTRIC CONIC DISTANCE 697.931 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.726 GAL -4.61 AZL 89.08 HCA 218.81 SMA 186.36 ECC .21610 INC .9193 V1 29.934
RP 225.19 LAP -.58 LOP 247.43 VP 21.600 GAP -3.36 AZP 90.72 TAL 333.56 TAP 192.36 RCA 146.09 APO 226.63 V2 24.423
RC 251.477 GL 8.65 GP 7.61 ZAL 128.18 ZAP 109.68 ETS 176.11 ZAE 145.32 ETE 165.72 ZAC 94.56 ETC 256.47 CLP 109.87

PLANETOCENTRIC CONIC

C3 12.122 VHL 3.482 DLA 16.83 RAL 162.37 RAD 6567.5 VEL 11.555 PTH 2.02 VHP 2.959 DPA 9.32 RAP 181.32 ECC 1.1995

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 50 17	2654.09	-27.25	71.26	21.11	98.02	18 34 31	2054.1	-25.86	62.87
90.00	10 24 44	4192.97	-.19	171.59	16.18	61.68	11 34 37	3593.0	-3.97	164.95
100.00	19 21 13	2360.87	-28.42	49.48	20.91	99.68	20 0 34	1760.9	-26.79	41.06
100.00	11 36 29	3961.42	.85	153.99	15.60	60.12	12 42 31	3361.4	-3.13	147.47
110.00	20 50 36	2081.17	-31.45	27.51	20.17	104.13	21 25 18	1481.2	-29.19	19.03
110.00	12 23 35	3813.88	3.48	141.16	13.96	55.97	13 27 9	3213.9	-1.01	134.95

DIFFERENTIAL CORRECTIONS

TDE .2305 TRA -.2321 TC3 -.8492 BAU .2966
RDE .4012 RRA -.5099 RC3 1.6211 FAU .55278
FDE-4.2623 FRA15.9323 FC-39.4804 BSP 5216
BDE .4627 BRA .5603 BC3 1.8300 FSP 11632

MID-COURSE EXECUTION ACCURACY

SGT 807.9 SGR 1574.4 SG3 3407.4
RRT -.0528 RRF -.9612 RTF .0837
SGB 1769.6 R23 -.0148 R13 -.9616
SG1 1575.2 SG2 806.4 THA 92.10

ORBIT DETERMINATION ACCURACY

ST 398.2 SR 711.5 SS 2770.5
CRT .9931 CRS .8847 CST .8413
LSA 2862.5 MSA 381.8 SSA 28.9
EL1 814.3 EL2 40.9 ALF 60.86

LAUNCH DATE OCT 22 1964 FLIGHT TIME 306.00 ARRIVAL DATE AUG 24 1965

HELIOCENTRIC CONIC DISTANCE 701.886 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.722 GAL -4.61 AZL 89.05 HCA 219.88 SMA 186.28 ECC .21581 INC .9495 V1 29.934
RP 224.80 LAP -.61 LOP 248.50 VP 21.640 GAP -3.62 AZP 90.73 TAL 333.50 TAP 193.38 RCA 146.08 APO 226.48 V2 24.465
RC 253.132 GL 8.93 GP 7.52 ZAL 128.22 ZAP 107.75 ETS 176.45 ZAE 143.26 ETE 166.82 ZAC 94.28 ETC 256.54 CLP 107.91

PLANETOCENTRIC CONIC

C3 12.120 VHL 3.481 DLA 17.07 RAL 162.56 RAD 6567.5 VEL 11.555 PTH 2.02 VHP 2.933 DPA 9.60 RAP 180.48 ECC 1.1995

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 48 42	2662.96	-27.33	71.90	21.39	97.71	18 33 5	2063.0	-25.98	63.49
90.00	10 27 48	4184.04	-.48	171.09	16.41	61.69	11 37 32	3584.0	-4.26	164.45
100.00	19 19 50	2369.08	-28.51	50.08	21.19	99.38	19 59 19	1769.1	-26.92	41.64
100.00	11 39 21	3953.16	.57	153.54	15.83	60.11	12 45 14	3353.2	-3.41	147.01
110.00	20 49 39	2088.08	-31.57	28.01	20.46	103.85	21 24 27	1488.1	-29.34	19.51
110.00	12 26 2	3806.92	3.21	140.79	14.18	55.95	13 29 29	3206.9	-1.28	134.59

DIFFERENTIAL CORRECTIONS

TDE .1958 TRA -.0917 TC3-1.1750 BAU .3250
RDE .4045 RRA -.5075 RC3 1.6257 FAU .56274
FDE-4.3028 FRA16.2192 FC-40.1970 BSP 5247
BDE .4494 BRA .5157 BC3 2.0059 FSP 11852

MID-COURSE EXECUTION ACCURACY

SGT 893.3 SGR 1577.3 SG3 3470.2
RRT -.4071 RRF -.9596 RTF .4518
SGB 1812.7 R23 .0748 R13 -.9590
SG1 1632.3 SG2 788.5 THA 107.09

ORBIT DETERMINATION ACCURACY

ST 326.6 SR 716.3 SS 2787.4
CRT .9664 CRS .8805 CST .7397
LSA 2869.6 MSA 392.3 SSA 28.6
EL1 783.5 EL2 76.7 ALF 65.98

LAUNCH DATE OCT 22 1964 FLIGHT TIME 308.00 ARRIVAL DATE AUG 26 1965

HELIOCENTRIC CONIC DISTANCE 705.846 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.718 GAL -4.62 AZL 89.02 HCA 220.95 SMA 186.21 ECC .21556 INC .9786 V1 29.934
RP 224.41 LAP -.64 LOP 249.58 VP 21.681 GAP -3.87 AZP 90.74 TAL 333.44 TAP 194.39 RCA 146.07 APO 226.34 V2 24.506
RC 254.766 GL 9.21 GP 7.43 ZAL 128.27 ZAP 105.80 ETS 176.78 ZAE 141.16 ETE 167.83 ZAC 94.00 ETC 256.62 CLP 105.94

PLANETOCENTRIC CONIC

C3 12.127 VHL 3.482 DLA 17.28 RAL 162.76 RAD 6567.5 VEL 11.555 PTH 2.02 VHP 2.909 DPA 9.89 RAP 179.62 ECC 1.1996

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 47 22	2671.23	-27.40	72.49	21.68	97.42	18 31 53	2071.2	-26.09	64.07
90.00	10 30 44	4176.01	-.74	170.64	16.66	61.69	11 40 20	3576.0	-4.51	164.00
100.00	19 18 41	2376.74	-28.60	50.63	21.48	99.10	19 58 18	1776.7	-27.04	42.17
100.00	11 42 5	3945.73	.32	153.13	16.08	60.11	12 47 51	3345.7	-3.66	146.60
110.00	20 48 53	2094.53	-31.67	28.49	20.77	103.59	21 23 48	1494.5	-29.48	19.96
110.00	12 28 23	3800.71	2.98	140.47	14.42	55.93	13 31 44	3200.7	-1.51	134.26

DIFFERENTIAL CORRECTIONS

TDE .1568 TRA .0503 TC3-1.5250 BAU .3607
RDE .4058 RRA -.5069 RC3 1.6203 FAU .56889
FDE-4.2796 FRA16.5426 FC-40.6136 BSP 5563
BDE .4350 BRA .5094 BC3 2.2251 FSP 12173

MID-COURSE EXECUTION ACCURACY

SGT 1096.4 SGR 1575.4 SG3 3522.5
RRT -.6380 RRF -.9578 RTF .6867
SGB 1919.4 R23 .1331 R13 -.9535
SG1 1765.4 SG2 753.5 THA 119.93

ORBIT DETERMINATION ACCURACY

ST 261.3 SR 718.0 SS 2792.7
CRT .8761 CRS .8738 CST .5399
LSA 2867.1 MSA 402.1 SSA 28.8
EL1 754.6 EL2 119.9 ALF 71.84

LAUNCH DATE OCT 22 1964 FLIGHT TIME 310.00 ARRIVAL DATE AUG 28 1965

HELIOCENTRIC CONIC DISTANCE 709.818 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.714 GAL -4.63 AZL 88.99 HCA 222.03 SMA 186.14 ECC .21535 INC 1.0067 V1 29.934
RP 224.02 LAP -.67 LOP 250.65 VP 21.723 GAP -4.13 AZP 90.75 TAL 333.36 TAP 195.39 RCA 146.05 APO 226.22 V2 24.548
RC 256.380 GL 9.46 GP 7.33 ZAL 128.35 ZAP 103.82 ETS 177.10 ZAE 139.03 ETE 168.76 ZAC 93.71 ETC 256.71 CLP 103.94

PLANETOCENTRIC CONIC

C3 12.141 VHL 3.484 DLA 17.48 RAL 162.97 RAD 6567.5 VEL 11.555 PTH 2.02 VHP 2.890 DPA 10.19 RAP 178.73 ECC 1.1998

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 46 14	2678.96	-27.47	73.05	21.99	97.15	18 30 53	2079.0	-26.20	64.61
90.00	10 33 32	4168.78	-.97	170.24	16.93	61.70	11 43 1	3568.8	-4.75	163.59
100.00	19 17 44	2383.90	-28.67	51.15	21.80	98.84	19 57 28	1783.9	-27.15	42.68
100.00	11 44 43	3939.07	.09	152.76	16.34	60.11	12 50 22	3339.1	-3.89	146.24
110.00	20 48 18	2100.58	-31.77	28.93	21.09	103.34	21 23 18	1500.6	-29.61	20.39
110.00	12 30 39	3795.16	2.77	140.18	14.67	55.92	13 33 54	3195.2	-1.73	133.98

DIFFERENTIAL CORRECTIONS

TDE .1235 TRA .2006 TC3-1.8624 BAU .4009
RDE .4102 RRA -.5021 RC3 1.6227 FAU .57801
FDE-4.3433 FRA16.7432 FC-41.2149 BSP 6079
BDE .4284 BRA .5407 BC3 2.4702 FSP 12278

MID-COURSE EXECUTION ACCURACY

SGT 1358.4 SGR 1575.8 SG3 3571.9
RRT -.7615 RRF -.9561 RTF .8157
SGB 2080.5 R23 .1440 R13 -.9548
SG1 1955.8 SG2 709.4 THA 129.46

ORBIT DETERMINATION ACCURACY

ST 231.3 SR 723.6 SS 2810.6
CRT .6494 CRS .8710 CST .1990
LSA 2882.0 MSA 412.5 SSA 28.2
EL1 740.0 EL2 172.0 ALF 77.59

LAUNCH DATE OCT 22 1964 FLIGHT TIME 312.00 ARRIVAL DATE AUG 30 1965

HELIOCENTRIC CONIC DISTANCE 713.798 EARTH TO MARS

RL	148.85	LAL	.00	LOL	28.63	VL	32.710	GAL	-4.64	AZL	88.97	HCA	223.11	SMA	186.08	ECC	.21519	INC	1.0336	V1	29.934
RP	223.63	LAP	-.71	LOP	251.74	VP	21.765	GAP	-4.37	AZP	90.75	TAL	333.27	TAP	196.39	RCA	146.04	APO	226.12	V2	24.590
RC	257.974	GL	9.71	GP	7.23	ZAL	128.44	ZAP	101.83	ETS	177.42	ZAE	136.87	ETE	169.61	ZAC	93.42	ETC	256.79	CLP	101.92

PLANETOCENTRIC CONIC

C3	12.164	VHL	3.488	DLA	17.66	RAL	163.19	RAD	6567.5	VEL	11.556	PTH	2.02	VHP	2.873	DPA	10.49	RAP	177.84	ECC	1.2002

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 45 21	2686.13	-27.53	73.56	22.31	96.90	18 30 7	2086.1	-26.29	65.11
90.00	10 36 12	4162.40	-1.18	169.88	17.22	61.71	11 45 34	3562.4	-4.95	163.24
100.00	19 17 1	2390.54	-28.74	51.63	22.12	98.59	19 56 51	1790.5	-27.25	43.14
100.00	11 47 13	3933.22	-.11	152.44	16.63	60.11	12 52 47	3333.2	-4.08	145.91
110.00	20 47 54	2106.20	-31.85	29.35	21.43	103.11	21 23 0	1506.2	-29.72	20.78
110.00	12 32 50	3790.33	2.58	139.93	14.95	55.90	13 36 0	3190.3	-1.91	133.72

DIFFERENTIAL CORRECTIONS

TDE	.0879	TRA	.3536	TC3	-2.2133	BAU	.4460
RDE	.4142	RRA	-.4974	RC3	1.6200	FAU	.58516
FDE	-4.3896	FRA	16.9302	FC	-41.6472	BSP	6808
BDE	.4235	BRA	.6103	BC3	2.7429	FSP	12389

MID-COURSE EXECUTION ACCURACY

SGT	1666.1	SGR	1573.3	SG3	3612.2		
RRT	-.8274	RRF	-.9542	RTF	.8843		
SGB	2291.6	R23	.1375	R13	-.9592		
SG1	2190.9	SG2	671.9	THA	136.98		

ORBIT DETERMINATION ACCURACY

ST	237.6	SR	728.3	SS	2824.5		
CRT	.2870	CRS	.8677	CST	-.2221		
LSA	2895.8	MSA	422.2	SSA	27.8		
EL1	731.8	EL2	226.5	ALF	84.08		

LAUNCH DATE OCT 22 1964 FLIGHT TIME 314.00 ARRIVAL DATE SEP 1 1965

HELIOCENTRIC CONIC DISTANCE 717.784 EARTH TO MARS

RL	148.85	LAL	.00	LOL	28.63	VL	32.707	GAL	-4.66	AZL	88.94	HCA	224.20	SMA	186.02	ECC	.21507	INC	1.0596	V1	29.934
RP	223.24	LAP	-.74	LOP	252.82	VP	21.807	GAP	-4.62	AZP	90.76	TAL	333.17	TAP	197.37	RCA	146.02	APO	226.03	V2	24.632
RC	259.547	GL	9.94	GP	7.13	ZAL	128.56	ZAP	99.82	ETS	177.73	ZAE	134.69	ETE	170.40	ZAC	93.13	ETC	256.89	CLP	99.90

PLANETOCENTRIC CONIC

C3	12.195	VHL	3.492	DLA	17.81	RAL	163.43	RAD	6567.5	VEL	11.558	PTH	2.02	VHP	2.861	DPA	10.79	RAP	176.93	ECC	1.2007

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 44 41	2692.73	-27.58	74.04	22.65	96.67	18 29 34	2092.7	-26.37	65.58
90.00	10 38 44	4156.87	-1.35	169.58	17.52	61.71	11 48 1	3556.9	-5.13	162.93
100.00	19 16 30	2396.67	-28.80	52.08	22.47	98.37	19 56 27	1796.7	-27.35	43.58
100.00	11 49 37	3928.16	-.28	152.17	16.93	60.11	12 55 5	3328.2	-4.26	145.63
110.00	20 47 41	2111.41	-31.93	29.73	21.78	102.90	21 22 52	1511.4	-29.83	21.15
110.00	12 34 56	3786.19	2.42	139.71	15.24	55.89	13 38 2	3186.2	-2.07	133.51

DIFFERENTIAL CORRECTIONS

TDE	.0513	TRA	.5098	TC3	-2.5712	BAU	.4948
RDE	.4178	RRA	-.4924	RC3	1.6129	FAU	.59052
FDE	-4.4204	FRA	17.0962	FC	-41.9226	BSP	7699
BDE	.4210	BRA	.7088	BC3	3.0352	FSP	12488

MID-COURSE EXECUTION ACCURACY

SGT	2000.9	SGR	1568.1	SG3	3643.1		
RRT	-.8639	RRF	-.9521	RTF	.9227		
SGB	2542.2	R23	.1234	R13	-.9648		
SG1	2459.7	SG2	642.5	THA	142.95		

ORBIT DETERMINATION ACCURACY

ST	281.9	SR	732.1	SS	2834.4		
CRT	-.0542	CRS	.8639	CST	-.5464		
LSA	2909.0	MSA	431.6	SSA	27.4		
EL1	732.3	EL2	281.4	ALF	91.40		

LAUNCH DATE OCT 22 1964 FLIGHT TIME 316.00 ARRIVAL DATE SEP 3 1965

HELIOCENTRIC CONIC DISTANCE 721.778 EARTH TO MARS

RL	148.85	LAL	.00	LOL	28.63	VL	32.704	GAL	-4.67	AZL	88.92	HCA	225.29	SMA	185.98	ECC	.21498	INC	1.0847	V1	29.934
RP	222.85	LAP	-.77	LOP	253.91	VP	21.850	GAP	-4.86	AZP	90.76	TAL	333.06	TAP	198.35	RCA	145.99	APO	225.96	V2	24.674
RC	261.100	GL	10.16	GP	7.03	ZAL	128.69	ZAP	97.80	ETS	178.03	ZAE	132.50	ETE	171.13	ZAC	92.83	ETC	256.98	CLP	97.86

PLANETOCENTRIC CONIC

C3	12.234	VHL	3.498	DLA	17.95	RAL	163.68	RAD	6567.5	VEL	11.559	PTH	2.02	VHP	2.852	DPA	11.09	RAP	176.02	ECC	1.2013

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 44 16	2698.78	-27.63	74.47	23.00	96.45	18 29 15	2098.8	-26.45	66.01
90.00	10 41 9	4152.17	-1.51	169.31	17.85	61.72	11 50 21	3552.2	-5.27	162.66
100.00	19 16 12	2402.29	-28.86	52.49	22.82	98.16	19 56 15	1802.3	-27.43	43.97
100.00	11 51 54	3923.89	-.43	151.93	17.25	60.11	12 57 18	3323.9	-4.40	145.40
110.00	20 47 39	2116.21	-32.01	30.09	22.15	102.70	21 22 55	1516.2	-29.93	21.49
110.00	12 36 57	3782.74	2.29	139.53	15.55	55.88	13 40 0	3182.7	-2.20	133.33

DIFFERENTIAL CORRECTIONS

TDE	.0140	TRA	.6693	TC3	-2.9333	BAU	.5466
RDE	.4214	RRA	-.4868	RC3	1.6022	FAU	.59435
FDE	-4.4471	FRA	17.2314	FC	-42.0600	BSP	8709
BDE	.4217	BRA	.8276	BC3	3.3424	FSP	12568

MID-COURSE EXECUTION ACCURACY

SGT	2353.5	SGR	1560.6	SG3	3664.8		
RRT	-.8849	RRF	-.9499	RTF	.9456		
SGB	2823.9	R23	.1073	R13	-.9704		
SG1	2754.8	SG2	621.1	THA	147.76		

ORBIT DETERMINATION ACCURACY

ST	351.9	SR	735.5	SS	2842.3		
CRT	-.2827	CRS	.8600	CST	-.7303		
LSA	2923.8	MSA	440.7	SSA	27.0		
EL1	743.9	EL2	333.7	ALF	99.67		

LAUNCH DATE OCT 22 1964 FLIGHT TIME 318.00 ARRIVAL DATE SEP 5 1965

HELIOCENTRIC CONIC DISTANCE 725.780 EARTH TO MARS

RL	148.85	LAL	.00	LOL	28.63	VL	32.702	GAL	-4.69	AZL	88.89	HCA	226.38	SMA	185.93	ECC	.21494	INC	1.1089	V1	29.934
RP	222.47	LAP	-.80	LOP	255.00	VP	21.894	GAP	-5.10	AZP	90.76	TAL	332.93	TAP	199.31	RCA	145.97	APO	225.90	V2	24.716
RC	262.633	GL	10.37	GP	6.93	ZAL	128.84	ZAP	95.78	ETS	178.32	ZAE	130.29	ETE	171.81	ZAC	92.54	ETC	257.08	CLP	95.83

PLANETOCENTRIC CONIC

C3	12.281	VHL	3.504	DLA	18.07	RAL	163.94	RAD	6567.5	VEL	11.561	PTH	2.02	VHP	2.846	DPA	11.38	RAP	175.11	ECC	1.2021

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 44 5	2704.28	-27.67	74.87	23.38	96.26	18 29 9	2104.3	-26.52	66.39
90.00	10 43 26	4148.30	-1.63	169.10	18.19	61.73	11 52 35	3548.3	-5.40	162.44
100.00	19 16 8	2407.42	-28.91	52.86	23.20	97.97	19 56 15	1807.4	-27.50	44.34
100.00	11 54 4	3920.40	-.54	151.74	17.58	60.11	12 59 24	3320.4	-4.52	145.21
110.00	20 47 48	2120.62	-32.07	30.41	22.54	102.51	21 23 9	1520.6	-30.02	21.80
110.00	12 38 53	3779.96	2.19	139.39	15.88	55.88	13 41 53	3180.0	-2.31	133.18

DIFFERENTIAL CORRECTIONS

TDE	-.0243	TRA	.8315	TC3	-3.2979	BAU	.6010
RDE	.4250	RRA	-.4804	RC3	1.5884	FAU	.59680
FDE	-4.4700	FRA	17.3297	FC	-42.0714	BSP	9796
BDE	.4257	BRA	.9603	BC3	3.6605	FSP	12613

MID-COURSE EXECUTION ACCURACY

SGT	2718.3	SGR	1550.8	SG3	3677.0		
RRT	-.8973	RRF	-.9475	RTF	.9601		
SGB	3129.6	R23	.0922	R13	-.9753		
SG1	3070.3	SG2	606.2	THA	151.69		

ORBIT DETERMINATION ACCURACY

ST	436.4	SR	738.6	SS	2847.9		
CRT	-.4228	CRS	.8563	CST	-.8286		
LSA	2940.1	MSA	449.1	SSA	26.6		
EL1	769.3	EL2	379.7	ALF	108.76		

LAUNCH DATE OCT 22 1964 FLIGHT TIME 320.00 ARRIVAL DATE SEP 7 1965

HELIOCENTRIC CONIC DISTANCE 729.789 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.699 GAL -4.72 AZL 88.87 HCA 227.48 SMA 185.89 ECC .21494 INC 1.1323 V1 29.934
RP 222.08 LAP -.83 LOP 256.10 VP 21.937 GAP -5.33 AZP 90.77 TAL 332.79 TAP 200.27 RCA 145.94 APO 225.85 V2 24.758
RC 264.145 GL 10.57 GP 6.82 ZAL 129.01 ZAP 93.76 ETS 178.60 ZAE 128.08 ETE 172.44 ZAC 92.24 ETC 257.18 CLP 93.79

PLANETOCENTRIC CONIC

C3 12.336 VHL 3.512 DLA 18.18 RAL 164.21 RAD 6567.5 VEL 11.564 PTH 2.02 VHP 2.844 DPA 11.67 RAP 174.20 ECC 1.2030

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 44 7	2709.23	-27.71	75.23	23.76	96.08	18 29 16	2109.2	-26.58	66.74
90.00	10 45 36	4145.26	-1.73	168.93	18.55	61.73	11 54 41	3545.3	-5.49	162.27
100.00	19 16 16	2412.05	-28.95	53.20	23.59	97.79	19 56 28	1812.1	-27.57	44.67
100.00	11 56 7	3917.67	-.64	151.59	17.94	60.11	13 1 25	3317.7	-4.61	145.06
110.00	20 48 8	2124.63	-32.13	30.71	22.94	102.35	21 23 33	1524.6	-30.10	22.09
110.00	12 40 45	3777.86	2.10	139.28	16.23	55.87	13 43 43	3177.9	-2.39	133.07

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.0632 TRA .9970 TC3-3.6628 BAU .6573 SGT 3092.1 SGR 1538.6 SG3 3679.5 ST 529.4 SR 741.3 SS 2851.5
RDE .4286 RRA -.4734 RC3 1.5710 FAU .59763 RRT -.9044 RRF -.9448 RTF .9696 CRT -.5092 CRS .8525 CST -.8828
FDE-4.4883 FRA17.3952 FC-41.9403 BSP 10953 SGB 3453.8 R23 .0792 R13 -.9794 LSA 2958.2 MSA 457.5 SSA 26.2
BDE .4333 BRA 1.1037 BC3 3.9855 FSP 12621 SG1 3401.8 SG2 596.7 THA 154.95 EL1 809.8 EL2 417.1 ALF 118.02

LAUNCH DATE OCT 22 1964 FLIGHT TIME 322.00 ARRIVAL DATE SEP 9 1965

HELIOCENTRIC CONIC DISTANCE 733.806 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.697 GAL -4.74 AZL 88.84 HCA 228.58 SMA 185.86 ECC .21497 INC 1.1549 V1 29.934
RP 221.70 LAP -.87 LOP 257.20 VP 21.982 GAP -5.56 AZP 90.76 TAL 332.64 TAP 201.22 RCA 145.91 APO 225.82 V2 24.799
RC 265.639 GL 10.75 GP 6.71 ZAL 129.20 ZAP 91.74 ETS 178.87 ZAE 125.86 ETE 173.03 ZAC 91.94 ETC 257.29 CLP 91.76

PLANETOCENTRIC CONIC

C3 12.400 VHL 3.521 DLA 18.26 RAL 164.50 RAD 6567.5 VEL 11.567 PTH 2.02 VHP 2.845 DPA 11.96 RAP 173.29 ECC 1.2041

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 44 23	2713.65	-27.74	75.55	24.17	95.93	18 29 37	2113.6	-26.63	67.06
90.00	10 47 38	4143.04	-1.80	168.80	18.92	61.74	11 56 41	3543.0	-5.56	162.15
100.00	19 16 38	2416.20	-28.99	53.50	24.00	97.64	19 56 54	1816.2	-27.63	44.96
100.00	11 58 4	3915.72	-.70	151.48	18.31	60.12	13 3 20	3315.7	-4.67	144.95
110.00	20 48 40	2128.27	-32.18	30.98	23.35	102.19	21 24 8	1528.3	-30.17	22.35
110.00	12 42 32	3776.42	2.05	139.20	16.59	55.87	13 45 28	3176.4	-2.44	133.00

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.1028 TRA 1.1647 TC3-4.0262 BAU .7153 SGT 3471.4 SGR 1524.6 SG3 3672.6 ST 627.4 SR 743.8 SS 2853.5
RDE .4324 RRA -.4655 RC3 1.5511 FAU .59719 RRT -.9083 RRF -.9419 RTF .9762 CRT -.5652 CRS .8490 CST -.9149
FDE-4.5068 FRA17.4201 FC-41.6940 BSP 12145 SGB 3791.4 R23 .0686 R13 -.9827 LSA 2978.6 MSA 465.4 SSA 25.8
BDE .4444 BRA 1.2543 BC3 4.3146 FSP 12600 SG1 3745.0 SG2 591.3 THA 157.67 EL1 865.4 EL2 444.8 ALF 126.58

LAUNCH DATE OCT 22 1964 FLIGHT TIME 324.00 ARRIVAL DATE SEP 11 1965

HELIOCENTRIC CONIC DISTANCE 737.829 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.696 GAL -4.77 AZL 88.82 HCA 229.69 SMA 185.83 ECC .21505 INC 1.1769 V1 29.934
RP 221.32 LAP -.90 LOP 258.31 VP 22.026 GAP -5.78 AZP 90.76 TAL 332.47 TAP 202.15 RCA 145.87 APO 225.80 V2 24.841
RC 267.114 GL 10.92 GP 6.60 ZAL 129.40 ZAP 89.73 ETS 179.13 ZAE 123.65 ETE 173.58 ZAC 91.65 ETC 257.39 CLP 89.73

PLANETOCENTRIC CONIC

C3 12.472 VHL 3.532 DLA 18.33 RAL 164.81 RAD 6567.5 VEL 11.570 PTH 2.02 VHP 2.850 DPA 12.23 RAP 172.39 ECC 1.2053

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 44 54	2717.53	-27.77	75.83	24.59	95.79	18 30 11	2117.5	-26.68	67.33
90.00	10 49 32	4141.63	-1.85	168.73	19.32	61.74	11 58 34	3541.6	-5.61	162.07
100.00	19 17 12	2419.87	-29.02	53.77	24.43	97.50	19 57 32	1819.9	-27.68	45.22
100.00	11 59 55	3914.53	-.74	151.42	18.70	60.12	13 5 9	3314.5	-4.71	144.88
110.00	20 49 22	2131.52	-32.23	31.23	23.78	102.06	21 24 53	1531.5	-30.23	22.58
110.00	12 44 14	3775.64	2.02	139.16	16.98	55.87	13 47 10	3175.6	-2.47	132.96

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.1437 TRA 1.3349 TC3-4.3856 BAU .7744 SGT 3854.1 SGR 1508.3 SG3 3656.1 ST 729.0 SR 745.8 SS 2852.5
RDE .4360 RRA -.4571 RC3 1.5278 FAU .59509 RRT -.9100 RRF -.9387 RTF .9809 CRT -.6038 CRS .8454 CST -.9356
FDE-4.5166 FRA17.4135 FC-41.3066 BSP 13372 SGB 4138.8 R23 .0598 R13 -.9854 LSA 3000.1 MSA 472.8 SSA 25.4
BDE .4590 BRA 1.4110 BC3 4.6441 FSP 12549 SG1 4096.7 SG2 588.5 THA 159.97 EL1 934.0 EL2 464.0 ALF 133.92

LAUNCH DATE OCT 22 1964 FLIGHT TIME 326.00 ARRIVAL DATE SEP 13 1965

HELIOCENTRIC CONIC DISTANCE 741.860 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.694 GAL -4.80 AZL 88.80 HCA 230.79 SMA 185.81 ECC .21516 INC 1.1984 V1 29.934
RP 220.94 LAP -.93 LOP 259.41 VP 22.071 GAP -6.00 AZP 90.76 TAL 332.29 TAP 203.08 RCA 145.83 APO 225.79 V2 24.883
RC 268.570 GL 11.09 GP 6.48 ZAL 129.63 ZAP 87.74 ETS 179.38 ZAE 121.44 ETE 174.09 ZAC 91.35 ETC 257.50 CLP 87.72

PLANETOCENTRIC CONIC

C3 12.553 VHL 3.543 DLA 18.38 RAL 165.12 RAD 6567.5 VEL 11.573 PTH 2.02 VHP 2.859 DPA 12.50 RAP 171.51 ECC 1.2066

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 45 38	2720.89	-27.79	76.07	25.03	95.67	18 30 58	2120.9	-26.71	67.57
90.00	10 51 19	4141.04	-1.86	168.69	19.73	61.74	12 0 20	3541.0	-5.63	162.03
100.00	19 17 59	2423.07	-29.05	54.00	24.87	97.38	19 58 22	1823.1	-27.72	45.45
100.00	12 1 39	3914.09	-.76	151.39	19.11	60.12	13 6 53	3314.1	-4.73	144.86
110.00	20 50 15	2134.41	-32.27	31.44	24.23	101.94	21 25 49	1534.4	-30.29	22.79
110.00	12 45 52	3775.51	2.02	139.15	17.38	55.87	13 48 48	3175.5	-2.48	132.95

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.1850 TRA 1.5075 TC3-4.7384 BAU .8342 SGT 4238.2 SGR 1490.0 SG3 3630.2 ST 832.8 SR 747.4 SS 2849.2
RDE .4395 RRA -.4480 RC3 1.5016 FAU .59152 RRT -.9100 RRF -.9353 RTF .9844 CRT -.6302 CRS .8418 CST -.9491
FDE-4.5216 FRA17.3715 FC-40.7932 BSP 14624 SGB 4492.5 R23 .0529 R13 -.9876 LSA 3023.1 MSA 480.2 SSA 24.9
BDE .4769 BRA 1.5727 BC3 4.9706 FSP 12469 SG1 4453.9 SG2 588.0 THA 161.93 EL1 1012.0 EL2 477.5 ALF 139.88

LAUNCH DATE OCT 22 1964 FLIGHT TIME 328.00 ARRIVAL DATE SEP 15 1965

HELIOCENTRIC CONIC DISTANCE 745.897 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.693 GAL -4.84 AZL 88.78 HCA 231.91 SMA 185.79 ECC .21532 INC 1.2192 V1 29.934
RP 220.56 LAP -.96 LOP 260.53 VP 22.116 GAP -6.22 AZP 90.75 TAL 332.10 TAP 204.00 RCA 145.79 APO 225.79 V2 24.924
RC 270.009 GL 11.24 GP 6.37 ZAL 129.88 ZAP 85.75 ETS 179.63 ZAE 119.25 ETE 174.57 ZAC 91.06 ETC 257.61 CLP 85.73

PLANETOCENTRIC CONIC

C3 12.643 VHL 3.556 DLA 18.41 RAL 165.45 RAD 6567.5 VEL 11.577 PTH 2.02 VHP 2.870 DPA 12.75 RAP 170.64 ECC 1.2081

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 46 35	2723.73	-27.81	76.28	25.49	95.57	18 31 59	2123.7	-26.75	67.77
90.00	10 52 59	4141.24	-1.86	168.70	20.16	61.74	12 2 0	3541.2	-5.62	162.05
100.00	19 18 59	2425.80	-29.07	54.20	25.33	97.28	19 59 24	1825.8	-27.76	45.64
100.00	12 3 16	3914.41	-.75	151.41	19.54	60.12	13 8 31	3314.4	-4.72	144.88
110.00	20 51 18	2136.94	-32.31	31.63	24.70	101.83	21 26 55	1536.9	-30.34	22.97
110.00	12 47 26	3776.03	2.03	139.18	17.80	55.87	13 50 22	3176.0	-2.46	132.98

DIFFERENTIAL CORRECTIONS
TDE -.2274 TRA 1.6815 TC3-5.0840 BAU .8947
RDE .4432 RRA -.4382 RC3 1.4730 FAU .58657
FDE-4.5259 FRA17.2930 FC-40.1647 BSP 15883
BDE .4982 BRA 1.7377 BC3 5.2931 FSP 12356

MID-COURSE EXECUTION ACCURACY
SGT 4621.8 SGR 1470.1 SG3 3595.3
RRT -.9087 RRF -.9315 RTF .9869
SGB 4850.0 R23 .0476 R13 -.9893
SG1 4814.1 SG2 589.2 THA 163.63

ORBIT DETERMINATION ACCURACY
ST 938.1 SR 748.9 SS 2844.4
CRT -.6496 CRS .8385 CST -.9586
LSA 3048.6 MSA 487.1 SSA 24.5
EL1 1097.3 EL2 486.8 ALF 144.64

LAUNCH DATE OCT 22 1964 FLIGHT TIME 330.00 ARRIVAL DATE SEP 17 1965

HELIOCENTRIC CONIC DISTANCE 749.941 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.692 GAL -4.88 AZL 88.76 HCA 233.02 SMA 185.78 ECC .21551 INC 1.2394 V1 29.934
RP 220.18 LAP -.99 LOP 261.64 VP 22.161 GAP -6.44 AZP 90.75 TAL 331.89 TAP 204.91 RCA 145.74 APO 225.81 V2 24.965
RC 271.430 GL 11.38 GP 6.25 ZAL 130.14 ZAP 83.79 ETS 179.86 ZAE 117.07 ETE 175.01 ZAC 90.78 ETC 257.71 CLP 83.75

PLANETOCENTRIC CONIC

C3 12.742 VHL 3.570 DLA 18.43 RAL 165.79 RAD 6567.5 VEL 11.581 PTH 2.03 VHP 2.886 DPA 12.99 RAP 169.80 ECC 1.2097

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 47 46	2726.07	-27.82	76.45	25.97	95.48	18 33 12	2126.1	-26.77	67.94
90.00	10 54 31	4142.24	-1.83	168.76	20.60	61.74	12 3 33	3542.2	-5.59	162.10
100.00	19 20 11	2428.08	-29.09	54.37	25.81	97.19	20 0 39	1828.1	-27.79	45.81
100.00	12 4 48	3915.46	-.71	151.47	19.98	60.12	13 10 3	3315.5	-4.68	144.93
110.00	20 52 32	2139.12	-32.34	31.79	25.18	101.74	21 28 11	1539.1	-30.38	23.12
110.00	12 48 55	3777.19	2.08	139.24	18.24	55.87	13 51 53	3177.2	-2.41	133.04

DIFFERENTIAL CORRECTIONS
TDE -.2709 TRA 1.8572 TC3-5.4208 BAU .9556
RDE .4469 RRA -.4279 RC3 1.4422 FAU .58030
FDE-4.5244 FRA17.1839 FC-39.4268 BSP 17145
BDE .5226 BRA 1.9058 BC3 5.6094 FSP 12211

MID-COURSE EXECUTION ACCURACY
SGT 5003.9 SGR 1448.7 SG3 3552.1
RRT -.9065 RRF -.9274 RTF .9889
SGB 5209.4 R23 .0434 R13 -.9907
SG1 5175.7 SG2 591.3 THA 165.10

ORBIT DETERMINATION ACCURACY
ST 1044.5 SR 750.1 SS 2837.3
CRT -.6639 CRS .8352 CST -.9655
LSA 3075.7 MSA 493.5 SSA 24.0
EL1 1187.6 EL2 493.3 ALF 148.46

LAUNCH DATE OCT 22 1964 FLIGHT TIME 332.00 ARRIVAL DATE SEP 19 1965

HELIOCENTRIC CONIC DISTANCE 753.992 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.692 GAL -4.92 AZL 88.74 HCA 234.14 SMA 185.77 ECC .21574 INC 1.2591 V1 29.934
RP 219.81 LAP -1.02 LOP 262.76 VP 22.206 GAP -6.65 AZP 90.74 TAL 331.67 TAP 205.81 RCA 145.69 APO 225.84 V2 25.006
RC 272.833 GL 11.52 GP 6.13 ZAL 130.42 ZAP 81.85 ETS 180.08 ZAE 114.91 ETE 175.43 ZAC 90.50 ETC 257.82 CLP 81.81

PLANETOCENTRIC CONIC

C3 12.851 VHL 3.585 DLA 18.43 RAL 166.15 RAD 6567.5 VEL 11.586 PTH 2.03 VHP 2.904 DPA 13.22 RAP 168.98 ECC 1.2115

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 49 11	2727.91	-27.84	76.58	26.46	95.42	18 34 39	2127.9	-26.79	68.07
90.00	10 55 56	4144.03	-1.77	168.86	21.07	61.73	12 5 0	3544.0	-5.53	162.20
100.00	19 21 35	2429.92	-29.11	54.50	26.30	97.13	20 2 5	1829.9	-27.82	45.94
100.00	12 6 13	3917.26	-.65	151.57	20.44	60.11	13 11 30	3317.3	-4.62	145.03
110.00	20 53 57	2140.95	-32.36	31.93	25.68	101.66	21 29 38	1541.0	-30.42	23.25
110.00	12 50 21	3778.99	2.15	139.33	18.69	55.88	13 53 20	3179.0	-2.34	133.13

DIFFERENTIAL CORRECTIONS
TDE -.3153 TRA 2.0344 TC3-5.7455 BAU 1.0163
RDE .4506 RRA -.4171 RC3 1.4091 FAU .57268
FDE-4.5193 FRA17.0422 FC-38.5808 BSP 18412
BDE .5499 BRA 2.0768 BC3 5.9158 FSP 12044

MID-COURSE EXECUTION ACCURACY
SGT 5382.4 SGR 1425.8 SG3 3500.7
RRT -.9034 RRF -.9230 RTF .9904
SGB 5568.0 R23 .0401 R13 -.9918
SG1 5536.2 SG2 594.4 THA 166.38

ORBIT DETERMINATION ACCURACY
ST 1151.7 SR 751.0 SS 2828.1
CRT -.6745 CRS .8320 CST -.9705
LSA 3104.6 MSA 499.7 SSA 23.6
EL1 1281.5 EL2 498.3 ALF 151.58

LAUNCH DATE OCT 22 1964 FLIGHT TIME 334.00 ARRIVAL DATE SEP 21 1965

HELIOCENTRIC CONIC DISTANCE 758.046 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.691 GAL -4.96 AZL 88.72 HCA 235.27 SMA 185.76 ECC .21601 INC 1.2784 V1 29.934
RP 219.44 LAP -1.05 LOP 263.89 VP 22.252 GAP -6.86 AZP 90.73 TAL 331.44 TAP 206.70 RCA 145.63 APO 225.89 V2 25.047
RC 274.220 GL 11.64 GP 6.01 ZAL 130.72 ZAP 79.94 ETS 180.30 ZAE 112.78 ETE 175.83 ZAC 90.22 ETC 257.92 CLP 79.89

PLANETOCENTRIC CONIC

C3 12.969 VHL 3.601 DLA 18.41 RAL 166.51 RAD 6567.5 VEL 11.591 PTH 2.03 VHP 2.926 DPA 13.43 RAP 168.18 ECC 1.2134

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 50 49	2729.24	-27.84	76.68	26.98	95.37	18 36 18	2129.2	-26.81	68.16
90.00	10 57 14	4146.64	-1.68	169.00	21.55	61.73	12 6 21	3546.6	-5.45	162.35
100.00	19 23 13	2431.31	-29.12	54.60	26.82	97.07	20 3 44	1831.3	-27.83	46.04
100.00	12 7 32	3919.81	-.56	151.71	20.92	60.11	13 12 52	3319.8	-4.54	145.17
110.00	20 55 32	2142.44	-32.38	32.04	26.19	101.60	21 31 15	1542.4	-30.45	23.36
110.00	12 51 42	3781.44	2.24	139.46	19.17	55.88	13 54 43	3181.4	-2.25	133.26

DIFFERENTIAL CORRECTIONS
TDE -.3553 TRA 2.2210 TC3-6.0429 BAU 1.0742
RDE .4519 RRA -.4084 RC3 1.3665 FAU .56016
FDE-4.4326 FRA16.9529 FC-37.3941 BSP 19835
BDE .5748 BRA 2.2582 BC3 6.1954 FSP 12016

MID-COURSE EXECUTION ACCURACY
SGT 5758.1 SGR 1398.1 SG3 3437.9
RRT -.8998 RRF -.9176 RTF .9915
SGB 5923.4 R23 .0364 R13 -.9925
SG1 5893.4 SG2 595.9 THA 167.54

ORBIT DETERMINATION ACCURACY
ST 1259.0 SR 748.3 SS 2804.8
CRT -.6792 CRS .8246 CST -.9751
LSA 3123.3 MSA 505.9 SSA 23.4
EL1 1375.6 EL2 502.6 ALF 154.35

LAUNCH DATE OCT 22 1964 FLIGHT TIME 336.00 ARRIVAL DATE SEP 23 1965

HELIOCENTRIC CONIC DISTANCE 762.110 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.691 GAL -5.01 AZL 88.70 HCA 236.39 SMA 185.76 ECC .21632 INC 1.2971 V1 29.934
RP 219.07 LAP -1.08 LOP 265.01 VP 22.297 GAP -7.06 AZP 90.72 TAL 331.19 TAP 207.58 RCA 145.58 APO 225.94 V2 25.088
RC 275.589 GL 11.75 GP 5.89 ZAL 131.04 ZAP 78.06 ETS 180.50 ZAE 110.66 ETE 176.20 ZAC 89.96 ETC 258.02 CLP 78.00

PLANETOCENTRIC CONIC

C3 13.096 VHL 3.619 DLA 18.38 RAL 166.89 RAD 6567.5 VEL 11.597 PTH 2.03 VHP 2.951 DPA 13.63 RAP 167.42 ECC 1.2155

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 52 39	2730.14	-27.85	76.74	27.51	95.34	18 38 9	2130.1	-26.82	68.23
90.00	10 58 26	4149.96	-1.58	169.19	22.05	61.72	12 7 36	3550.0	-5.34	162.54
100.00	19 25 1	2432.30	-29.13	54.68	27.35	97.04	20 5 33	1832.3	-27.85	46.11
100.00	12 8 45	3923.03	-.45	151.88	21.42	60.11	13 14 8	3323.0	-4.43	145.35
110.00	20 57 17	2143.62	-32.40	32.13	26.72	101.55	21 33 1	1543.6	-30.47	23.44
110.00	12 52 58	3784.48	2.36	139.62	19.66	55.89	13 56 3	3184.5	-2.13	133.42

DIFFERENTIAL CORRECTIONS
TDE -.4051 TRA 2.3971 TC3-6.3496 BAU 1.1360
RDE .4569 RRA -.3956 RC3 1.3346 FAU .55234
FDE-4.4621 FRA16.7161 FC-36.5130 BSP 20992
BDE .4107 BRA 2.4295 BC3 6.4884 FSP 11713

MID-COURSE EXECUTION ACCURACY
SGT 6125.8 SGR 1375.5 SG3 3375.2
RRT -.8952 RRF -.9127 RTF .9925
SGB 6278.4 R23 .0350 R13 -.9934
SG1 6249.5 SG2 601.0 THA 168.53

ORBIT DETERMINATION ACCURACY
ST 1367.4 SR 750.6 SS 2798.8
CRT -.6875 CRS .8240 CST -.9777
LSA 3163.1 MSA 510.9 SSA 22.8
EL1 1475.9 EL2 505.0 ALF 156.40

LAUNCH DATE OCT 22 1964 FLIGHT TIME 338.00 ARRIVAL DATE SEP 25 1965

HELIOCENTRIC CONIC DISTANCE 766.181 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.692 GAL -5.06 AZL 88.68 HCA 237.53 SMA 185.76 ECC .21667 INC 1.3155 V1 29.934
RP 218.70 LAP -1.11 LOP 266.15 VP 22.343 GAP -7.27 AZP 90.71 TAL 330.93 TAP 208.45 RCA 145.51 APO 226.01 V2 25.128
RC 276.940 GL 11.86 GP 5.77 ZAL 131.37 ZAP 76.21 ETS 180.69 ZAE 108.58 ETE 176.54 ZAC 89.70 ETC 258.12 CLP 76.14

PLANETOCENTRIC CONIC

C3 13.234 VHL 3.638 DLA 18.34 RAL 167.29 RAD 6567.5 VEL 11.603 PTH 2.03 VHP 2.979 DPA 13.81 RAP 166.69 ECC 1.2178

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 54 42	2730.57	-27.85	76.77	28.05	95.32	18 40 13	2130.6	-26.82	68.26
90.00	10 59 30	4154.05	-1.44	169.42	22.56	61.72	12 8 45	3554.1	-5.21	162.77
100.00	19 27 1	2432.88	-29.13	54.72	27.89	97.01	20 7 34	1832.9	-27.86	46.15
100.00	12 9 53	3926.98	-.32	152.10	21.94	60.11	13 15 20	3327.0	-4.30	145.57
110.00	20 59 12	2144.49	-32.41	32.19	27.27	101.51	21 34 56	1544.5	-30.49	23.51
110.00	12 54 11	3788.13	2.50	139.81	20.18	55.90	13 57 20	3188.1	-2.00	133.61

DIFFERENTIAL CORRECTIONS
TDE -.4547 TRA 2.5762 TC3-6.6381 BAU 1.1967
RDE .4614 RRA -.3832 RC3 1.2993 FAU .54253
FDE-4.4690 FRA16.4766 FC-35.4907 BSP 22174
BDE .6478 BRA 2.6046 BC3 6.7640 FSP 11433

MID-COURSE EXECUTION ACCURACY
SGT 6489.2 SGR 1351.3 SG3 3305.5
RRT -.8899 RRF -.9073 RTF .9933
SGB 6628.5 R23 .0341 R13 -.9941
SG1 6600.7 SG2 605.9 THA 169.41

ORBIT DETERMINATION ACCURACY
ST 1475.9 SR 751.9 SS 2788.5
CRT -.6931 CRS .8226 CST -.9799
LSA 3201.9 MSA 516.1 SSA 22.2
EL1 1576.8 EL2 507.3 ALF 158.18

LAUNCH DATE OCT 22 1964 FLIGHT TIME 340.00 ARRIVAL DATE SEP 27 1965

HELIOCENTRIC CONIC DISTANCE 770.256 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.692 GAL -5.11 AZL 88.67 HCA 238.66 SMA 185.77 ECC .21706 INC 1.3335 V1 29.934
RP 218.34 LAP -1.14 LOP 267.28 VP 22.389 GAP -7.47 AZP 90.69 TAL 330.65 TAP 209.31 RCA 145.45 APO 226.09 V2 25.168
RC 278.273 GL 11.95 GP 5.65 ZAL 131.73 ZAP 74.39 ETS 180.87 ZAE 106.53 ETE 176.86 ZAC 89.45 ETC 258.21 CLP 74.32

PLANETOCENTRIC CONIC

C3 13.382 VHL 3.658 DLA 18.27 RAL 167.69 RAD 6567.5 VEL 11.609 PTH 2.03 VHP 3.010 DPA 13.97 RAP 165.99 ECC 1.2202

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 56 58	2730.56	-27.85	76.77	28.62	95.32	18 42 28	2130.6	-26.82	68.26
90.00	11 0 29	4158.90	-1.29	169.69	23.09	61.71	12 9 47	3558.9	-5.06	163.04
100.00	19 29 13	2433.07	-29.13	54.73	28.46	97.01	20 9 46	1833.1	-27.86	46.16
100.00	12 10 54	3931.63	-.16	152.36	22.47	60.11	13 16 26	3331.6	-4.14	145.83
110.00	21 1 16	2145.06	-32.42	32.24	27.84	101.49	21 37 1	1545.1	-30.50	23.55
110.00	12 55 20	3792.40	2.66	140.04	20.70	55.91	13 58 33	3192.4	-1.83	133.83

DIFFERENTIAL CORRECTIONS
TDE -.5057 TRA 2.7568 TC3-6.9095 BAU 1.2566
RDE .4657 RRA -.3708 RC3 1.2622 FAU .53139
FDE-4.4637 FRA16.2228 FC-34.3771 BSP 23349
BDE .6875 BRA 2.7816 BC3 7.0239 FSP 11154

MID-COURSE EXECUTION ACCURACY
SGT 6845.4 SGR 1326.3 SG3 3229.9
RRT -.8842 RRF -.9014 RTF .9940
SGB 6972.7 R23 .0332 R13 -.9946
SG1 6945.9 SG2 610.5 THA 170.20

ORBIT DETERMINATION ACCURACY
ST 1584.7 SR 752.6 SS 2775.0
CRT -.6978 CRS .8209 CST -.9817
LSA 3241.4 MSA 520.6 SSA 21.6
EL1 1678.9 EL2 508.9 ALF 159.72

LAUNCH DATE OCT 22 1964 FLIGHT TIME 342.00 ARRIVAL DATE SEP 29 1965

HELIOCENTRIC CONIC DISTANCE 774.338 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.692 GAL -5.17 AZL 88.65 HCA 239.80 SMA 185.78 ECC .21748 INC 1.3511 V1 29.934
RP 217.98 LAP -1.17 LOP 268.42 VP 22.435 GAP -7.66 AZP 90.68 TAL 330.36 TAP 210.16 RCA 145.37 APO 226.18 V2 25.208
RC 279.589 GL 12.04 GP 5.53 ZAL 132.09 ZAP 72.61 ETS 181.05 ZAE 104.51 ETE 177.17 ZAC 89.21 ETC 258.30 CLP 72.53

PLANETOCENTRIC CONIC

C3 13.542 VHL 3.680 DLA 18.20 RAL 168.11 RAD 6567.5 VEL 11.616 PTH 2.04 VHP 3.044 DPA 14.12 RAP 165.34 ECC 1.2229

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 59 25	2730.12	-27.85	76.74	29.20	95.34	18 44 55	2130.1	-26.82	68.23
90.00	11 1 20	4164.49	-1.11	170.00	23.65	61.70	12 10 45	3564.5	-4.88	163.35
100.00	19 31 36	2432.87	-29.13	54.72	29.04	97.01	20 12 9	1832.9	-27.86	46.15
100.00	12 11 51	3936.97	.02	152.65	23.02	60.11	13 17 28	3337.0	-3.96	146.12
110.00	21 3 30	2145.33	-32.42	32.26	28.42	101.48	21 39 16	1545.3	-30.50	23.57
110.00	12 56 26	3797.28	2.85	140.29	21.25	55.92	13 59 43	3197.3	-1.65	134.09

DIFFERENTIAL CORRECTIONS
TDE -.5574 TRA 2.9387 TC3-7.1631 BAU 1.3156
RDE .4699 RRA -.3585 RC3 1.2239 FAU .51917
FDE-4.4490 FRA15.9574 FC-33.1917 BSP 24521
BDE .7290 BRA 2.9605 BC3 7.2669 FSP 10878

MID-COURSE EXECUTION ACCURACY
SGT 7193.3 SGR 1300.7 SG3 3149.4
RRT -.8779 RRF -.8951 RTF .9945
SGB 7310.0 R23 .0327 R13 -.9950
SG1 7284.0 SG2 615.1 THA 170.92

ORBIT DETERMINATION ACCURACY
ST 1692.9 SR 753.0 SS 2759.1
CRT -.7012 CRS .8190 CST -.9832
LSA 3281.7 MSA 524.9 SSA 21.2
EL1 1781.2 EL2 510.2 ALF 161.07

LAUNCH DATE OCT 22 1964 FLIGHT TIME 344.00 ARRIVAL DATE OCT 1 1965

HELIOCENTRIC CONIC DISTANCE 778.424 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.693 GAL -5.23 AZL 88.63 HCA 240.94 SMA 185.79 ECC .21795 INC 1.3682 V1 29.934
RP 217.62 LAP -1.20 LOP 269.56 VP 22.480 GAP -7.86 AZP 90.66 TAL 330.06 TAP 211.00 RCA 145.30 APO 226.28 V2 25.248
RC 280.687 GL 12.12 GP 5.41 ZAL 132.48 ZAP 70.87 ETS 181.21 ZAE 102.52 ETE 177.45 ZAC 88.98 ETC 258.39 CLP 70.78

PLANETOCENTRIC CONIC

C3 13.712 VHL 3.703 DLA 18.11 RAL 168.53 RAD 6567.5 VEL 11.623 PTH 2.04 VHP 3.081 DPA 14.25 RAP 164.72 ECC 1.2257

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 2 5	2729.27	-27.84	76.68	29.80	95.37	18 47 34	2129.3	-26.81	68.17
90.00	11 2 6	4170.80	-.90	170.35	24.21	61.70	12 11 37	3570.8	-4.68	163.71
100.00	19 34 10	2432.31	-29.13	54.68	29.64	97.04	20 14 42	1832.3	-27.85	46.11
100.00	12 12 42	3943.00	.22	152.98	23.59	60.11	13 18 25	3343.0	-3.76	146.45
110.00	21 5 54	2145.32	-32.42	32.26	29.02	101.48	21 41 39	1545.3	-30.50	23.57
110.00	12 57 27	3802.75	3.05	140.58	21.82	55.94	14 0 50	3202.8	-1.44	134.37

DIFFERENTIAL CORRECTIONS
TDE -.6107 TRA 3.1223 TC3-7.3989 BAU 1.3736
RDE .4740 RRA -.3463 RC3 1.1849 FAU .50620
FDE-4.4295 FRA15.6792 FC-31.9598 BSP 25667
BDE .7731 BRA 3.1414 BC3 7.4932 FSP 10592

MID-COURSE EXECUTION ACCURACY
SGT 7533.5 SGR 1275.1 SG3 3065.3
RRT -.8710 RRF -.8883 RTF .9949
SGB 7640.6 R23 .0323 R13 -.9954
SG1 7615.4 SG2 619.6 THA 171.56

ORBIT DETERMINATION ACCURACY
ST 1801.4 SR 753.2 SS 2741.8
CRT -.7041 CRS .8173 CST -.9845
LSA 3324.1 MSA 528.7 SSA 20.7
EL1 1884.4 EL2 511.3 ALF 162.25

LAUNCH DATE OCT 22 1964 FLIGHT TIME 346.00 ARRIVAL DATE OCT 3 1965

HELIOCENTRIC CONIC DISTANCE 782.516 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.694 GAL -5.29 AZL 88.61 HCA 242.09 SMA 185.81 ECC .21846 INC 1.3852 V1 29.934
RP 217.27 LAP -1.22 LOP 270.71 VP 22.526 GAP -8.05 AZP 90.65 TAL 329.74 TAP 211.83 RCA 145.22 APO 226.40 V2 25.287
RC 282.167 GL 12.19 GP 5.29 ZAL 132.88 ZAP 69.17 ETS 181.36 ZAE 100.58 ETE 177.72 ZAC 88.75 ETC 258.47 CLP 69.08

PLANETOCENTRIC CONIC

C3 13.894 VHL 3.728 DLA 18.00 RAL 168.97 RAD 6567.5 VEL 11.631 PTH 2.04 VHP 3.120 DPA 14.36 RAP 164.14 ECC 1.2287

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 4 55	2728.03	-27.84	76.59	30.42	95.41	18 50 23	2128.0	-26.80	68.08
90.00	11 2 45	4177.83	-.68	170.74	24.80	61.69	12 12 23	3577.8	-4.46	164.10
100.00	19 36 54	2431.40	-29.12	54.61	30.26	97.07	20 17 26	1831.4	-27.84	46.04
100.00	12 13 27	3949.69	.45	153.35	24.17	60.11	13 19 17	3349.7	-3.53	146.82
110.00	21 8 26	2145.04	-32.42	32.23	29.63	101.49	21 44 11	1545.0	-30.50	23.55
110.00	12 58 25	3808.82	3.29	140.89	22.40	55.96	14 1 54	3208.8	-1.20	134.69

DIFFERENTIAL CORRECTIONS
TDE -.6655 TRA 3.3068 TC3-7.6175 BAU 1.4309
RDE .4782 RRA -.3340 RC3 1.1460 FAU .49273
FDE-4.4060 FRA15.3857 FC-30.7013 BSP 26786
BDE .8195 BRA 3.3236 BC3 7.7032 FSP 10292

MID-COURSE EXECUTION ACCURACY
SGT 7865.0 SGR 1249.7 SG3 2978.1
RRT -.8637 RRF -.8812 RTF .9952
SGB 7963.7 R23 .0321 R13 -.9956
SG1 7939.2 SG2 624.0 THA 172.14

ORBIT DETERMINATION ACCURACY
ST 1909.4 SR 753.2 SS 2722.8
CRT -.7064 CRS .8157 CST -.9856
LSA 3368.0 MSA 532.2 SSA 20.3
EL1 1987.7 EL2 512.1 ALF 163.29

LAUNCH DATE OCT 22 1964 FLIGHT TIME 348.00 ARRIVAL DATE OCT 5 1965

HELIOCENTRIC CONIC DISTANCE 786.613 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.695 GAL -5.36 AZL 88.60 HCA 243.24 SMA 185.83 ECC .21900 INC 1.4018 V1 29.934
RP 216.91 LAP -1.25 LOP 271.86 VP 22.572 GAP -8.24 AZP 90.63 TAL 329.41 TAP 212.65 RCA 145.13 APO 226.52 V2 25.327
RC 283.431 GL 12.25 GP 5.17 ZAL 133.30 ZAP 67.51 ETS 181.51 ZAE 98.67 ETE 177.97 ZAC 88.54 ETC 258.54 CLP 67.41

PLANETOCENTRIC CONIC

C3 14.089 VHL 3.754 DLA 17.88 RAL 169.42 RAD 6567.6 VEL 11.639 PTH 2.04 VHP 3.163 DPA 14.45 RAP 163.61 ECC 1.2319

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 7 57	2726.41	-27.83	76.47	31.05	95.47	18 53 24	2126.4	-26.78	67.96
90.00	11 3 19	4185.56	-.43	171.18	25.40	61.69	12 13 5	3585.6	-4.21	164.54
100.00	19 39 49	2430.15	-29.11	54.52	30.89	97.12	20 20 20	1830.1	-27.82	45.95
100.00	12 14 8	3957.05	.70	153.75	24.78	60.11	13 20 5	3357.1	-3.28	147.23
110.00	21 11 7	2144.51	-32.41	32.19	30.26	101.51	21 46 52	1544.5	-30.49	23.51
110.00	12 59 19	3815.46	3.54	141.24	23.01	55.98	14 2 55	3215.5	-.95	135.03

DIFFERENTIAL CORRECTIONS
TDE -.7217 TRA 3.4930 TC3-7.8165 BAU 1.4870
RDE .4825 RRA -.3220 RC3 1.1067 FAU .47863
FDE-4.3780 FRA15.0842 FC-29.4110 BSP 27885
BDE .8681 BRA 3.5078 BC3 7.8944 FSP 9990

MID-COURSE EXECUTION ACCURACY
SGT 8187.3 SGR 1224.5 SG3 2888.2
RRT -.8558 RRF -.8736 RTF .9955
SGB 8278.4 R23 .0321 R13 -.9959
SG1 8254.5 SG2 628.3 THA 172.66

ORBIT DETERMINATION ACCURACY
ST 2017.3 SR 753.0 SS 2702.4
CRT -.7084 CRS .8142 CST -.9865
LSA 3413.6 MSA 535.4 SSA 19.8
EL1 2091.3 EL2 512.7 ALF 164.21

LAUNCH DATE OCT 22 1964 FLIGHT TIME 350.00 ARRIVAL DATE OCT 7 1965

HELIOCENTRIC CONIC DISTANCE 790.713 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.697 GAL -5.43 AZL 88.58 HCA 244.39 SMA 185.85 ECC .21959 INC 1.4181 V1 29.934
RP 216.57 LAP -1.28 LOP 273.01 VP 22.617 GAP -8.43 AZP 90.61 TAL 329.06 TAP 213.46 RCA 145.04 APO 226.66 V2 25.365
RC 284.679 GL 12.30 GP 5.05 ZAL 133.74 ZAP 65.89 ETS 181.65 ZAE 96.80 ETE 178.20 ZAC 88.34 ETC 258.61 CLP 65.79

PLANETOCENTRIC CONIC

C3 14.296 VHL 3.781 DLA 17.74 RAL 169.89 RAD 6567.6 VEL 11.648 PTH 2.04 VHP 3.208 DPA 14.53 RAP 163.12 ECC 1.2353

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 11 10	2724.42	-27.81	76.33	31.71	95.54	18 56 35	2124.4	-26.75	67.82
90.00	11 3 47	4194.00	-.16	171.65	26.03	61.68	12 13 41	3594.0	-3.94	165.01
100.00	19 42 55	2428.57	-29.10	54.40	31.55	97.18	20 23 23	1828.6	-27.80	45.84
100.00	12 14 44	3965.08	.97	154.19	25.40	60.12	13 20 49	3365.1	-3.01	147.67
110.00	21 13 57	2143.72	-32.40	32.14	30.91	101.54	21 49 41	1543.7	-30.47	23.45
110.00	13 0 10	3822.69	3.81	141.62	23.63	56.00	14 3 53	3222.7	-.67	135.41

DIFFERENTIAL CORRECTIONS
TDE -.7720 TRA 3.6897 TC3-7.9747 BAU 1.5377
RDE .4854 RRA -.3114 RC3 1.0635 FAU .46185
FDE-4.3000 FRA14.8178 FC-27.9685 BSP 29164
BDE .9119 BRA 3.7028 BC3 8.0453 FSP 9780

MID-COURSE EXECUTION ACCURACY
SGT 8496.9 SGR 1197.2 SG3 2793.8
RRT -.8472 RRF -.8649 RTF .9957
SGB 8580.8 R23 .0313 R13 -.9960
SG1 8557.6 SG2 631.4 THA 173.16

ORBIT DETERMINATION ACCURACY
ST 2122.0 SR 750.8 SS 2671.6
CRT -.7071 CRS .8097 CST -.9874
LSA 3451.6 MSA 538.5 SSA 19.6
EL1 2191.4 EL2 514.1 ALF 165.11

LAUNCH DATE OCT 22 1964 FLIGHT TIME 352.00 ARRIVAL DATE OCT 9 1965

HELIOCENTRIC CONIC DISTANCE 794.822 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.698 GAL -5.50 AZL 88.57 HCA 245.55 SMA 185.88 ECC .22022 INC 1.4342 V1 29.934
RP 216.22 LAP -1.31 LOP 274.17 VP 22.663 GAP -8.62 AZP 90.59 TAL 328.70 TAP 214.25 RCA 144.94 APO 226.81 V2 25.404
RC 285.910 GL 12.35 GP 4.94 ZAL 134.19 ZAP 64.31 ETS 181.77 ZAE 94.96 ETE 178.42 ZAC 88.15 ETC 258.67 CLP 64.21

PLANETOCENTRIC CONIC

C3 14.517 VHL 3.810 DLA 17.60 RAL 170.36 RAD 6567.6 VEL 11.658 PTH 2.05 VHP 3.256 DPA 14.59 RAP 162.67 ECC 1.2389

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 14 32	2722.13	-27.80	76.16	32.38	95.62	18 59 55	2122.1	-26.73	67.66
90.00	11 4 10	4203.06	.14	172.15	26.67	61.68	12 14 13	3603.1	-3.65	165.52
100.00	19 46 9	2426.72	-29.08	54.27	32.21	97.25	20 26 36	1826.7	-27.77	45.71
100.00	12 15 15	3973.70	1.26	154.66	26.04	60.13	13 21 28	3373.7	-2.72	148.14
110.00	21 16 56	2142.73	-32.39	32.06	31.58	101.59	21 52 39	1542.7	-30.45	23.38
110.00	13 0 58	3830.46	4.11	142.03	24.27	56.03	14 4 48	3230.5	-.38	135.82

DIFFERENTIAL CORRECTIONS
TDE -.8401 TRA 3.8685 TC3-8.1599 BAU 1.5962
RDE .4914 RRA -.2982 RC3 1.0296 FAU .44961
FDE-4.3171 FRA14.4529 FC-26.8140 BSP 29990
BDE .9733 BRA 3.8800 BC3 8.2246 FSP 9371

MID-COURSE EXECUTION ACCURACY
SGT 8803.7 SGR 1175.9 SG3 2704.1
RRT -.8387 RRF -.8573 RTF .9959
SGB 8881.9 R23 .0325 R13 -.9962
SG1 8859.1 SG2 636.4 THA 173.57

ORBIT DETERMINATION ACCURACY
ST 2232.3 SR 752.7 SS 2659.0
CRT -.7120 CRS .8122 CST -.9879
LSA 3511.0 MSA 540.5 SSA 19.0
EL1 2299.2 EL2 513.1 ALF 165.78

LAUNCH DATE OCT 22 1964 FLIGHT TIME 354.00 ARRIVAL DATE OCT 11 1965

HELIOCENTRIC CONIC DISTANCE 798.933 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.700 GAL -5.58 AZL 88.55 HCA 246.71 SMA 185.91 ECC .22090 INC 1.4500 V1 29.934
RP 215.88 LAP -1.33 LOP 275.33 VP 22.708 GAP -8.80 AZP 90.57 TAL 328.33 TAP 215.04 RCA 144.84 APO 226.97 V2 25.442
RC 287.127 GL 12.38 GP 4.83 ZAL 134.66 ZAP 62.77 ETS 181.89 ZAE 93.17 ETE 178.62 ZAC 87.97 ETC 258.73 CLP 62.67

PLANETOCENTRIC CONIC

C3 14.751 VHL 3.841 DLA 17.43 RAL 170.84 RAD 6567.6 VEL 11.668 PTH 2.05 VHP 3.307 DPA 14.64 RAP 162.27 ECC 1.2428

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 18 5	2719.51	-27.78	75.97	33.07	95.72	19 3 25	2119.5	-26.70	67.47
90.00	11 4 28	4212.80	.45	172.69	27.32	61.69	12 14 40	3612.8	-3.34	166.06
100.00	19 49 33	2424.58	-29.06	54.11	32.90	97.33	20 29 57	1824.6	-27.74	45.56
100.00	12 15 41	3982.97	1.58	155.17	26.70	60.15	13 22 4	3383.0	-2.41	148.65
110.00	21 20 1	2141.51	-32.37	31.97	32.26	101.64	21 55 42	1541.5	-30.43	23.29
110.00	13 1 42	3838.80	4.43	142.46	24.92	56.07	14 5 41	3238.8	-.06	136.25

DIFFERENTIAL CORRECTIONS
TDE -.9021 TRA 4.0588 TC3-8.3038 BAU 1.6492
RDE .4960 RRA -.2866 RC3 .9918 FAU .43477
FDE-4.2835 FRA14.1281 FC-25.5169 BSP 30996
BDE 1.0295 BRA 4.0689 BC3 8.3628 FSP 9056

MID-COURSE EXECUTION ACCURACY
SGT 9098.0 SGR 1152.7 SG3 2610.7
RRT -.8295 RRF -.8487 RTF .9960
SGB 9170.7 R23 .0329 R13 -.9963
SG1 9148.4 SG2 640.3 THA 173.97

ORBIT DETERMINATION ACCURACY
ST 2339.4 SR 752.4 SS 2635.9
CRT -.7136 CRS .8115 CST -.9884
LSA 3562.6 MSA 542.6 SSA 18.7
EL1 2403.3 EL2 513.1 ALF 166.44

LAUNCH DATE OCT 22 1964 FLIGHT TIME 356.00 ARRIVAL DATE OCT 13 1965

HELIOCENTRIC CONIC DISTANCE 803.048 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.702 GAL -5.66 AZL 88.53 HCA 247.88 SMA 185.94 ECC .22162 INC 1.4656 V1 29.934
RP 215.54 LAP -1.36 LOP 276.50 VP 22.753 GAP -8.98 AZP 90.55 TAL 327.94 TAP 215.81 RCA 144.73 APO 227.15 V2 25.480
RC 288.329 GL 12.41 GP 4.72 ZAL 135.14 ZAP 61.28 ETS 182.01 ZAE 91.42 ETE 178.82 ZAC 87.80 ETC 258.78 CLP 61.17

PLANETOCENTRIC CONIC

C3 15.000 VHL 3.873 DLA 17.26 RAL 171.33 RAD 6567.6 VEL 11.678 PTH 2.05 VHP 3.360 DPA 14.67 RAP 161.91 ECC 1.2469

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 21 47	2716.60	-27.76	75.76	33.77	95.82	19 7 4	2116.6	-26.66	67.27
90.00	11 4 40	4223.19	.79	173.27	28.00	61.69	12 15 4	3623.2	-3.00	166.64
100.00	19 53 5	2422.17	-29.04	53.93	33.60	97.42	20 33 28	1822.2	-27.71	45.38
100.00	12 16 3	3992.85	1.91	155.71	27.37	60.16	13 22 36	3392.8	-2.07	149.19
110.00	21 23 15	2140.10	-32.35	31.87	32.95	101.70	21 58 55	1540.1	-30.40	23.19
110.00	13 2 24	3847.69	4.76	142.93	25.60	56.11	14 6 31	3247.7	.28	136.71

DIFFERENTIAL CORRECTIONS
TDE -.9657 TRA 4.2509 TC3-8.4280 BAU 1.7009
RDE .5007 RRA -.2754 RC3 .9545 FAU .41971
FDE-4.2450 FRA13.8019 FC-24.2242 BSP 31992
BDE 1.0878 BRA 4.2598 BC3 8.4819 FSP 8749

MID-COURSE EXECUTION ACCURACY
SGT 9382.1 SGR 1130.2 SG3 2517.0
RRT -.8199 RRF -.8397 RTF .9961
SGB 9450.0 R23 .0333 R13 -.9964
SG1 9428.0 SG2 643.9 THA 174.33

ORBIT DETERMINATION ACCURACY
ST 2445.8 SR 752.0 SS 2611.3
CRT -.7151 CRS .8109 CST -.9889
LSA 3615.2 MSA 544.3 SSA 18.3
EL1 2506.9 EL2 512.9 ALF 167.05

LAUNCH DATE OCT 22 1964 FLIGHT TIME 358.00 ARRIVAL DATE OCT 15 1965

HELIOCENTRIC CONIC DISTANCE 807.167 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.704 GAL -5.74 AZL 88.52 HCA 249.05 SMA 185.98 ECC .22238 INC 1.4810 V1 29.934
RP 215.21 LAP -1.38 LOP 277.67 VP 22.798 GAP -9.16 AZP 90.53 TAL 327.53 TAP 216.58 RCA 144.62 APO 227.33 V2 25.517
RC 289.516 GL 12.43 GP 4.61 ZAL 135.63 ZAP 59.82 ETS 182.11 ZAE 89.70 ETE 179.00 ZAC 87.64 ETC 258.82 CLP 59.71

PLANETOCENTRIC CONIC

C3 15.264 VHL 3.907 DLA 17.07 RAL 171.83 RAD 6567.6 VEL 11.690 PTH 2.06 VHP 3.416 DPA 14.68 RAP 161.59 ECC 1.2512

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 25 39	2713.41	-27.74	75.53	34.49	95.93	19 10 52	2113.4	-26.63	67.04
90.00	11 4 49	4234.20	1.14	173.89	28.69	61.70	12 15 23	3634.2	-2.65	167.26
100.00	19 56 47	2419.52	-29.02	53.74	34.32	97.52	20 37 6	1819.5	-27.67	45.20
100.00	12 16 22	4003.33	2.27	156.29	28.07	60.19	13 23 5	3403.3	-1.72	149.77
110.00	21 26 36	2138.50	-32.33	31.75	33.67	101.76	22 2 14	1538.5	-30.37	23.08
110.00	13 3 2	3857.11	5.12	143.43	26.29	56.16	14 7 19	3257.1	.64	137.21

DIFFERENTIAL CORRECTIONS
TDE-1.0326 TRA 4.4444 TC3-8.5367 BAU 1.7521
RDE .5057 RRA -.2643 RC3 .9186 FAU .40490
FDE-4.2099 FRA13.4703 FC-22.9650 BSP 32936
BDE 1.1497 BRA 4.4523 BC3 8.5860 FSP 8433

MID-COURSE EXECUTION ACCURACY
SGT 9657.9 SGR 1108.9 SG3 2424.1
RRT -.8101 RRF -.8305 RTF .9962
SGB 9721.4 R23 .0338 R13 -.9965
SG1 9699.8 SG2 647.3 THA 174.66

ORBIT DETERMINATION ACCURACY
ST 2552.8 SR 751.8 SS 2587.0
CRT -.7170 CRS .8109 CST -.9893
LSA 3671.1 MSA 545.7 SSA 18.0
EL1 2611.5 EL2 512.3 ALF 167.59

LAUNCH DATE OCT 22 1964 FLIGHT TIME 360.00 ARRIVAL DATE OCT 17 1965

HELIOCENTRIC CONIC DISTANCE 811.290 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.706 GAL -5.83 AZL 88.50 HCA 250.22 SMA 186.01 ECC .22318 INC 1.4961 V1 29.934
RP 214.88 LAP -1.41 LOP 278.84 VP 22.842 GAP -9.34 AZP 90.51 TAL 327.11 TAP 217.33 RCA 144.50 APO 227.53 V2 25.554
RC 290.691 GL 12.44 GP 4.51 ZAL 136.14 ZAP 58.41 ETS 182.21 ZAE 88.03 ETE 179.17 ZAC 87.49 ETC 258.86 CLP 58.30

PLANETOCENTRIC CONIC

C3 15.544 VHL 3.943 DLA 16.87 RAL 172.34 RAD 6567.6 VEL 11.702 PTH 2.06 VHP 3.474 DPA 14.68 RAP 161.32 ECC 1.2558

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 29 38	2709.98	-27.71	75.28	35.23	96.06	19 14 48	2110.0	-26.59	66.80
90.00	11 4 52	4245.83	1.52	174.54	29.41	61.72	12 15 38	3645.8	-2.27	167.91
100.00	20 0 36	2416.64	-28.99	53.53	35.06	97.62	20 40 53	1816.6	-27.63	44.99
100.00	12 16 36	4014.39	2.64	156.90	28.78	60.21	13 23 30	3414.4	-1.34	150.38
110.00	21 30 4	2136.73	-32.30	31.61	34.40	101.84	22 5 41	1536.7	-30.34	22.95
110.00	13 3 37	3867.07	5.50	143.95	27.01	56.21	14 8 4	3267.1	1.02	137.73

DIFFERENTIAL CORRECTIONS
TDE-1.1003 TRA 4.6404 TC3-8.6255 BAU 1.8018
RDE .5107 RRA -.2537 RC3 .8833 FAU .38996
FDE-4.1680 FRA13.1394 FC-21.7189 BSP 33857
BDE 1.2131 BRA 4.6473 BC3 8.6706 FSP 8124

MID-COURSE EXECUTION ACCURACY
SGT 9923.4 SGR 1088.3 SG3 2331.4
RRT -.7999 RRF -.8211 RTF .9963
SGB 9982.9 R23 .0344 R13 -.9965
SG1 9961.7 SG2 650.5 THA 174.96

ORBIT DETERMINATION ACCURACY
ST 2658.6 SR 751.4 SS 2560.7
CRT -.7185 CRS .8109 CST -.9896
LSA 3727.0 MSA 546.8 SSA 17.7
EL1 2714.9 EL2 511.7 ALF 168.09

LAUNCH DATE OCT 22 1964 FLIGHT TIME 362.00 ARRIVAL DATE OCT 19 1965

HELIOCENTRIC CONIC DISTANCE 815.415 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.709 GAL -5.92 AZL 88.49 HCA 251.40 SMA 186.06 ECC .22404 INC 1.5112 V1 29.934
RP 214.56 LAP -1.43 LOP 280.02 VP 22.886 GAP -9.52 AZP 90.48 TAL 326.67 TAP 218.07 RCA 144.37 APO 227.74 V2 25.590
RC 291.851 GL 12.45 GP 4.40 ZAL 136.67 ZAP 57.03 ETS 182.30 ZAE 86.39 ETE 179.33 ZAC 87.36 ETC 258.89 CLP 56.92

PLANETOCENTRIC CONIC

C3 15.841 VHL 3.980 DLA 16.66 RAL 172.85 RAD 6567.6 VEL 11.714 PTH 2.06 VHP 3.534 DPA 14.66 RAP 161.09 ECC 1.2607

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 33 46	2706.31	-27.69	75.02	35.99	96.19	19 18 53	2106.3	-26.54	66.54
90.00	11 4 52	4258.05	1.91	175.22	30.14	61.74	12 15 50	3658.1	-1.88	168.59
100.00	20 4 33	2413.56	-28.96	53.31	35.81	97.74	20 44 47	1813.6	-27.59	44.77
100.00	12 16 46	4026.03	3.04	157.54	29.51	60.25	13 23 52	3426.0	-.95	151.02
110.00	21 33 39	2134.80	-32.28	31.47	35.15	101.92	22 9 14	1534.8	-30.30	22.81
110.00	13 4 10	3877.56	5.90	144.50	27.74	56.27	14 8 47	3277.6	1.42	138.27

DIFFERENTIAL CORRECTIONS
TDE-1.1709 TRA 4.8392 TC3-8.6970 BAU 1.8506
RDE .5159 RRA -.2435 RC3 .8490 FAU .37512
FDE-4.1267 FRA12.8105 FC-20.5008 BSP 34764
BDE 1.2795 BRA 4.8454 BC3 8.7383 FSP 7821

MID-COURSE EXECUTION ACCURACY
SGT10180.6 SGR 1068.7 SG3 2240.0
RRT -.7896 RRF -.8115 RTF .9963
SGB10236.5 R23 .0351 R13 -.9965
SG110215.6 SG2 653.5 THA 175.24

ORBIT DETERMINATION ACCURACY
ST 2764.6 SR 751.0 SS 2534.4
CRT -.7203 CRS .8111 CST -.9899
LSA 3785.5 MSA 547.6 SSA 17.4
EL1 2818.9 EL2 510.9 ALF 168.55

LAUNCH DATE OCT 22 1964 FLIGHT TIME 364.00 ARRIVAL DATE OCT 21 1965

HELIOCENTRIC CONIC DISTANCE 819.544 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.711 GAL -6.01 AZL 88.47 HCA 252.57 SMA 186.10 ECC .22494 INC 1.5260 V1 29.934
RP 214.24 LAP -1.46 LOP 281.20 VP 22.930 GAP -9.70 AZP 90.46 TAL 326.22 TAP 218.80 RCA 144.24 APO 227.96 V2 25.626
RC 292.998 GL 12.45 GP 4.30 ZAL 137.20 ZAP 55.70 ETS 182.38 ZAE 84.79 ETE 179.48 ZAC 87.23 ETC 258.91 CLP 55.59

PLANETOCENTRIC CONIC

C3 16.155 VHL 4.019 DLA 16.43 RAL 173.38 RAD 6567.6 VEL 11.728 PTH 2.07 VHP 3.597 DPA 14.63 RAP 160.90 ECC 1.2659

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 38 2	2702.44	-27.66	74.74	36.76	96.32	19 23 5	2102.4	-26.49	66.26
90.00	11 4 47	4270.86	2.32	175.93	30.89	61.77	12 15 58	3670.9	-1.47	169.31
100.00	20 8 38	2410.30	-28.93	53.07	36.58	97.86	20 48 48	1810.3	-27.54	44.54
100.00	12 16 53	4038.23	3.45	158.21	30.27	60.29	13 24 11	3438.2	-.53	151.68
110.00	21 37 20	2132.74	-32.25	31.32	35.91	102.01	22 12 53	1532.7	-30.26	22.67
110.00	13 4 40	3888.55	6.31	145.08	28.49	56.33	14 9 28	3288.6	1.84	138.85

DIFFERENTIAL CORRECTIONS
TDE-1.2436 TRA 5.0407 TC3-8.7527 BAU 1.8986
RDE .5212 RRA -.2336 RC3 .8159 FAU .36046
FDE-4.0822 FRA12.4827 FC-19.3162 BSP 35641
BDE 1.3484 BRA 5.0461 BC3 8.7907 FSP 7522

MID-COURSE EXECUTION ACCURACY
SGT10429.3 SGR 1050.2 SG3 2149.9
RRT -.7791 RRF -.8017 RTF .9963
SGB10482.1 R23 .0357 R13 -.9965
SG110461.5 SG2 656.3 THA 175.50

ORBIT DETERMINATION ACCURACY
ST 2870.2 SR 750.5 SS 2506.8
CRT -.7221 CRS .8115 CST -.9902
LSA 3845.1 MSA 547.9 SSA 17.2
EL1 2922.6 EL2 510.0 ALF 168.97

LAUNCH DATE OCT 22 1964 FLIGHT TIME 366.00 ARRIVAL DATE OCT 23 1965

HELIOCENTRIC CONIC DISTANCE 823.676 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.714 GAL -6.11 AZL 88.46 HCA 253.76 SMA 186.15 ECC .22589 INC 1.5407 V1 29.934
RP 213.93 LAP -1.48 LOP 282.38 VP 22.974 GAP -9.87 AZP 90.43 TAL 325.76 TAP 219.52 RCA 144.10 APO 228.19 V2 25.662
RC 294.131 GL 12.44 GP 4.21 ZAL 137.75 ZAP 54.41 ETS 182.46 ZAE 83.23 ETE 179.62 ZAC 87.11 ETC 258.92 CLP 54.30

PLANETOCENTRIC CONIC

C3 16.488 VHL 4.061 DLA 16.20 RAL 173.91 RAD 6567.7 VEL 11.742 PTH 2.07 VHP 3.662 DPA 14.58 RAP 160.76 ECC 1.2714

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 42 26	2698.38	-27.63	74.44	37.55	96.47	19 27 24	2098.4	-26.44	65.98
90.00	11 4 39	4284.23	2.75	176.68	31.66	61.81	12 16 3	3684.2	-1.04	170.05
100.00	20 12 49	2406.86	-28.90	52.82	37.37	97.99	20 52 56	1806.9	-27.49	44.30
100.00	12 16 56	4050.98	3.88	158.91	31.04	60.34	13 24 27	3451.0	-.10	152.38
110.00	21 41 8	2130.55	-32.22	31.15	36.69	102.10	22 16 39	1530.5	-30.22	22.51
110.00	13 5 7	3900.05	6.75	145.69	29.26	56.41	14 10 7	3300.1	2.28	139.45

DIFFERENTIAL CORRECTIONS
TDE-1.3182 TRA 5.2450 TC3-8.7897 BAU 1.9452
RDE .5267 RRA -.2242 RC3 .7838 FAU .34593
FDE-4.0358 FRA12.1566 FC-18.1636 BSP 36487
BDE 1.4196 BRA 5.2498 BC3 8.8246 FSP 7227

MID-COURSE EXECUTION ACCURACY
SGT10668.1 SGR 1032.5 SG3 2061.1
RRT -.7685 RRF -.7919 RTF .9963
SGB10717.9 R23 .0365 R13 -.9965
SG110697.7 SG2 658.8 THA 175.73

ORBIT DETERMINATION ACCURACY
ST 2975.1 SR 750.0 SS 2478.2
CRT -.7238 CRS .8121 CST -.9904
LSA 3905.7 MSA 548.2 SSA 16.9
EL1 3025.7 EL2 508.9 ALF 169.35

LAUNCH DATE OCT 22 1964 FLIGHT TIME 368.00 ARRIVAL DATE OCT 25 1965

HELIOCENTRIC CONIC DISTANCE 827.809 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.717 GAL -6.22 AZL 88.44 HCA 254.94 SMA 186.20 ECC .22688 INC 1.5554 V1 29.934
RP 213.62 LAP -1.50 LOP 283.57 VP 23.017 GAP -10.05 AZP 90.40 TAL 325.28 TAP 220.22 RCA 143.95 APO 228.44 V2 25.697
RC 295.251 GL 12.42 GP 4.11 ZAL 138.31 ZAP 53.15 ETS 182.53 ZAE 81.71 ETE 179.76 ZAC 87.01 ETC 258.93 CLP 53.04

PLANETOCENTRIC CONIC

C3 16.841 VHL 4.104 DLA 15.95 RAL 174.45 RAD 6567.7 VEL 11.757 PTH 2.08 VHP 3.730 DPA 14.52 RAP 160.66 ECC 1.2772

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 46 56	2694.16	-27.60	74.14	38.36	96.62	19 31 50	2094.2	-26.39	65.68
90.00	11 4 27	4298.15	3.20	177.46	32.44	61.85	12 16 6	3698.1	-.59	170.83
100.00	20 17 8	2403.28	-28.87	52.56	38.17	98.12	20 57 11	1803.3	-27.44	44.04
100.00	12 16 57	4064.26	4.32	159.64	31.82	60.39	13 24 41	3464.3	.35	153.11
110.00	21 45 2	2128.25	-32.18	30.98	37.48	102.19	22 20 30	1528.3	-30.17	22.35
110.00	13 5 32	3912.05	7.20	146.33	30.05	56.49	14 10 44	3312.1	2.74	140.07

DIFFERENTIAL CORRECTIONS
TDE-1.3952 TRA 5.4530 TC3-8.8104 BAU 1.9908
RDE .5324 RRA -.2153 RC3 .7527 FAU .33158
FDE-3.9870 FRA11.8344 FC-17.0459 BSP 37331
BDE 1.4933 BRA 5.4573 BC3 8.8425 FSP 6944

MID-COURSE EXECUTION ACCURACY
SGT10898.7 SGR 1015.8 SG3 1974.1
RRT -.7579 RRF -.7821 RTF .9963
SGB10945.9 R23 .0373 R13 -.9964
SG110925.9 SG2 661.1 THA 175.94

ORBIT DETERMINATION ACCURACY
ST 3079.7 SR 749.4 SS 2448.7
CRT -.7256 CRS .8128 CST -.9906
LSA 3967.6 MSA 548.1 SSA 16.7
EL1 3128.6 EL2 507.6 ALF 169.71

LAUNCH DATE OCT 22 1964 FLIGHT TIME 370.00 ARRIVAL DATE OCT 27 1965

HELIOCENTRIC CONIC DISTANCE 831.945 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.720 GAL -6.32 AZL 88.43 HCA 256.13 SMA 186.25 ECC .22793 INC 1.5698 V1 29.934
RP 213.31 LAP -1.52 LOP 284.76 VP 23.060 GAP -10.22 AZP 90.38 TAL 324.78 TAP 220.91 RCA 143.79 APO 228.70 V2 25.731
RC 296.356 GL 12.40 GP 4.02 ZAL 138.88 ZAP 51.94 ETS 182.60 ZAE 80.22 ETE 179.88 ZAC 86.91 ETC 258.94 CLP 51.83

PLANETOCENTRIC CONIC

C3 17.213 VHL 4.149 DLA 15.69 RAL 175.00 RAD 6567.7 VEL 11.773 PTH 2.08 VHP 3.799 DPA 14.44 RAP 160.59 ECC 1.2833

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 51 33	2689.79	-27.56	73.83	39.18	96.77	19 36 22	2089.8	-26.34	65.37
90.00	11 4 12	4312.61	3.67	178.27	33.25	61.90	12 16 5	3712.6	-.12	171.63
100.00	20 21 32	2399.57	-28.83	52.29	38.99	98.26	21 1 32	1799.6	-27.39	43.78
100.00	12 16 54	4078.06	4.79	160.41	32.63	60.46	13 24 52	3478.1	.82	153.87
110.00	21 49 1	2125.86	-32.15	30.80	38.29	102.29	22 24 27	1525.9	-30.12	22.18
110.00	13 5 55	3924.54	7.67	146.99	30.86	56.59	14 11 19	3324.5	3.22	140.73

DIFFERENTIAL CORRECTIONS
TDE-1.4748 TRA 5.6639 TC3-8.8171 BAU 2.0359
RDE .5383 RRA -.2067 RC3 .7229 FAU .31758
FDE-3.9381 FRA11.5147 FC-15.9725 BSP 38138
BDE 1.5700 BRA 5.6677 BC3 8.8466 FSP 6663

MID-COURSE EXECUTION ACCURACY
SGT11121.3 SGR 1000.2 SG3 1889.1
RRT -.7473 RRF -.7724 RTF .9962
SGB11166.2 R23 .0381 R13 -.9964
SG111146.5 SG2 663.2 THA 176.14

ORBIT DETERMINATION ACCURACY
ST 3183.9 SR 748.9 SS 2418.7
CRT -.7276 CRS .8139 CST -.9907
LSA 4030.9 MSA 547.7 SSA 16.5
EL1 3231.4 EL2 506.2 ALF 170.04

LAUNCH DATE OCT 22 1964 FLIGHT TIME 372.00 ARRIVAL DATE OCT 29 1965

HELIOCENTRIC CONIC DISTANCE 836.082 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.723 GAL -6.43 AZL 88.42 HCA 257.33 SMA 186.30 ECC .22904 INC 1.5841 V1 29.934
RP 213.01 LAP -1.55 LOP 285.95 VP 23.102 GAP -10.40 AZP 90.35 TAL 324.27 TAP 221.60 RCA 143.63 APO 228.97 V2 25.765
RC 297.448 GL 12.37 GP 3.93 ZAL 139.47 ZAP 50.76 ETS 182.66 ZAE 78.77 ETE 180.00 ZAC 86.83 ETC 258.93 CLP 50.64

PLANETOCENTRIC CONIC

C3 17.608 VHL 4.196 DLA 15.42 RAL 175.55 RAD 6567.7 VEL 11.789 PTH 2.08 VHP 3.871 DPA 14.36 RAP 160.57 ECC 1.2898

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 56 15	2685.30	-27.52	73.50	40.02	96.93	19 41 1	2085.3	-26.28	65.06
90.00	11 3 54	4327.59	4.15	179.11	34.08	61.96	12 16 2	3727.6	.36	172.47
100.00	20 26 3	2395.75	-28.79	52.01	39.83	98.40	21 5 58	1795.7	-27.33	43.51
100.00	12 16 48	4092.38	5.27	161.20	33.46	60.53	13 25 1	3492.4	1.30	154.65
110.00	21 53 5	2123.39	-32.11	30.62	39.12	102.40	22 28 29	1523.4	-30.07	22.00
110.00	13 6 15	3937.50	8.15	147.68	31.69	56.69	14 11 52	3337.5	3.71	141.41

DIFFERENTIAL CORRECTIONS
TDE-1.5565 TRA 5.8790 TC3-8.8079 BAU 2.0798
RDE .5443 RRA -.1987 RC3 .6942 FAU .30381
FDE-3.8868 FRA11.1996 FC-14.9375 BSP 38935
BDE 1.6489 BRA 5.8824 BC3 8.8352 FSP 6391

MID-COURSE EXECUTION ACCURACY
SGT11335.8 SGR 985.4 SG3 1806.1
RRT -.7367 RRF -.7628 RTF .9961
SGB11378.5 R23 .0390 R13 -.9963
SG111359.1 SG2 665.0 THA 176.32

ORBIT DETERMINATION ACCURACY
ST 3287.3 SR 748.2 SS 2387.7
CRT -.7295 CRS .8150 CST -.9908
LSA 4094.9 MSA 547.2 SSA 16.3
EL1 3333.4 EL2 504.7 ALF 170.35

LAUNCH DATE OCT 22 1964 FLIGHT TIME 374.00 ARRIVAL DATE OCT 31 1965

HELIOCENTRIC CONIC DISTANCE 840.220 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.726 GAL -6.55 AZL 88.40 HCA 258.52 SMA 186.36 ECC .23019 INC 1.5984 V1 29.934
RP 212.72 LAP -1.57 LOP 287.15 VP 23.144 GAP -10.57 AZP 90.32 TAL 323.74 TAP 222.26 RCA 143.46 APO 229.25 V2 25.798
RC 298.526 GL 12.33 GP 3.84 ZAL 140.06 ZAP 49.61 ETS 182.72 ZAE 77.35 ETE 180.11 ZAC 86.75 ETC 258.93 CLP 49.50

PLANETOCENTRIC CONIC

C3 18.025 VHL 4.246 DLA 15.14 RAL 176.11 RAD 6567.7 VEL 11.807 PTH 2.09 VHP 3.946 DPA 14.26 RAP 160.58 ECC 1.2966

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 1 4	2680.72	-27.49	73.17	40.88	97.09	19 45 45	2080.7	-26.22	64.73
90.00	11 3 34	4343.08	4.64	179.98	34.92	62.03	12 15 57	3743.1	.86	173.33
100.00	20 30 39	2391.84	-28.75	51.73	40.68	98.55	21 10 30	1791.8	-27.27	43.24
100.00	12 16 40	4107.19	5.76	162.02	34.31	60.62	13 25 7	3507.2	1.81	155.47
110.00	21 57 15	2120.86	-32.08	30.43	39.97	102.50	22 32 36	1520.9	-30.02	21.82
110.00	13 6 33	3950.92	8.65	148.40	32.54	56.80	14 12 24	3350.9	4.22	142.11

DIFFERENTIAL CORRECTIONS
TDE-1.6406 TRA 6.0987 TC3-8.7833 BAU 2.1227
RDE .5506 RRA -.1911 RC3 .6665 FAU .29030
FDE-3.8333 FRA10.8900 FC-13.9428 BSP 39717
BDE 1.7306 BRA 6.1017 BC3 8.8086 FSP 6126

MID-COURSE EXECUTION ACCURACY
SGT11542.4 SGR 971.5 SG3 1725.3
RRT -.7263 RRF -.7533 RTF .9960
SGB11583.2 R23 .0399 R13 -.9962
SG111564.0 SG2 666.5 THA 176.49

ORBIT DETERMINATION ACCURACY
ST 3390.5 SR 747.5 SS 2355.6
CRT -.7315 CRS .8162 CST -.9910
LSA 4159.9 MSA 546.4 SSA 16.1
EL1 3435.3 EL2 503.1 ALF 170.64

LAUNCH DATE OCT 22 1964 FLIGHT TIME 376.00 ARRIVAL DATE NOV 2 1965

HELIOCENTRIC CONIC DISTANCE 844.359 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.730 GAL -6.67 AZL 88.39 HCA 259.72 SMA 186.42 ECC .23140 INC 1.6126 V1 29.934
RP 212.43 LAP -1.59 LOP 288.35 VP 23.185 GAP -10.74 AZP 90.29 TAL 323.20 TAP 222.92 RCA 143.28 APO 229.55 V2 25.831
RC 299.592 GL 12.29 GP 3.76 ZAL 140.67 ZAP 48.50 ETS 182.78 ZAE 75.96 ETE 180.22 ZAC 86.69 ETC 258.91 CLP 48.39

PLANETOCENTRIC CONIC

C3 18.466 VHL 4.297 DLA 14.85 RAL 176.68 RAD 6567.7 VEL 11.826 PTH 2.09 VHP 4.022 DPA 14.14 RAP 160.64 ECC 1.3039

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 5 58	2676.05	-27.45	72.84	41.75	97.26	19 50 34	2076.0	-26.16	64.41
90.00	11 3 10	4359.06	5.15	180.87	35.79	62.12	12 15 49	3759.1	1.38	174.22
100.00	20 35 20	2387.85	-28.71	51.44	41.55	98.69	21 15 8	1787.9	-27.21	42.96
100.00	12 16 29	4122.48	6.27	162.87	35.18	60.71	13 25 12	3522.5	2.32	156.31
110.00	22 1 29	2118.29	-32.04	30.24	40.82	102.61	22 36 47	1518.3	-29.97	21.64
110.00	13 6 49	3964.81	9.17	149.14	33.41	56.92	14 12 54	3364.8	4.75	142.84

DIFFERENTIAL CORRECTIONS
TDE-1.7281 TRA 6.3215 TC3-8.7476 BAU 2.1654
RDE .5571 RRA -.1840 RC3 .6401 FAU .27719
FDE-3.7802 FRA10.5823 FC-12.9953 BSP 40458
BDE 1.8157 BRA 6.3242 BC3 8.7710 FSP 5867

MID-COURSE EXECUTION ACCURACY
SGT11741.7 SGR 958.6 SG3 1646.7
RRT -.7162 RRF -.7441 RTF .9959
SGB11780.8 R23 .0408 R13 -.9961
SG111761.9 SG2 667.9 THA 176.64

ORBIT DETERMINATION ACCURACY
ST 3493.3 SR 746.9 SS 2323.1
CRT -.7337 CRS .8177 CST -.9910
LSA 4226.1 MSA 545.3 SSA 16.0
EL1 3536.9 EL2 501.2 ALF 170.90

LAUNCH DATE OCT 22 1964 FLIGHT TIME 378.00 ARRIVAL DATE NOV 4 1965

HELIOCENTRIC CONIC DISTANCE 848.497 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.733 GAL -6.80 AZL 88.37 HCA 260.93 SMA 186.48 ECC .23268 INC 1.6267 V1 29.934
RP 212.15 LAP -1.61 LOP 289.55 VP 23.226 GAP -10.92 AZP 90.26 TAL 322.64 TAP 223.56 RCA 143.09 APO 229.86 V2 25.863
RC 300.645 GL 12.24 GP 3.68 ZAL 141.28 ZAP 47.42 ETS 182.83 ZAE 74.61 ETE 180.32 ZAC 86.63 ETC 258.89 CLP 47.32

PLANETOCENTRIC CONIC

C3 18.933 VHL 4.351 DLA 14.55 RAL 177.25 RAD 6567.8 VEL 11.845 PTH 2.10 VHP 4.101 DPA 14.02 RAP 160.73 ECC 1.3116

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 10 57	2671.31	-27.41	72.50	42.64	97.42	19 55 28	2071.3	-26.09	64.07
90.00	11 2 44	4375.52	5.67	181.80	36.68	62.21	12 15 39	3775.5	1.91	175.14
100.00	20 40 6	2383.82	-28.67	51.14	42.43	98.84	21 19 50	1783.8	-27.15	42.67
100.00	12 16 16	4138.25	6.80	163.74	36.06	60.82	13 25 15	3538.2	2.86	157.17
110.00	22 5 47	2115.68	-32.00	30.05	41.70	102.72	22 41 3	1515.7	-29.92	21.45
110.00	13 7 4	3979.15	9.70	149.91	34.30	57.06	14 13 23	3379.1	5.29	143.59

DIFFERENTIAL CORRECTIONS
TDE-1.8175 TRA 6.5505 TC3-8.6966 BAU 2.2067
RDE .5638 RRA -.1775 RC3 .6146 FAU .26434
FDE-3.7240 FRA10.2816 FC-12.0874 BSP 41206
BDE 1.9029 BRA 6.5529 BC3 8.7183 FSP 5618

MID-COURSE EXECUTION ACCURACY
SGT11933.9 SGR 946.3 SG3 1570.3
RRT -.7063 RRF -.7351 RTF .9958
SGB11971.4 R23 .0418 R13 -.9959
SG111952.7 SG2 668.9 THA 176.78

ORBIT DETERMINATION ACCURACY
ST 3595.3 SR 746.1 SS 2289.4
CRT -.7359 CRS .8192 CST -.9911
LSA 4292.8 MSA 543.9 SSA 15.8
EL1 3637.8 EL2 499.3 ALF 171.15

LAUNCH DATE OCT 22 1964 FLIGHT TIME 380.00 ARRIVAL DATE NOV 6 1965

HELIOCENTRIC CONIC DISTANCE 852.636 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.737 GAL -6.92 AZL 88.36 HCA 262.13 SMA 186.54 ECC .23400 INC 1.6407 V1 29.934
RP 211.87 LAP -1.63 LOP 290.76 VP 23.266 GAP -11.09 AZP 90.22 TAL 322.06 TAP 224.19 RCA 142.89 APO 230.19 V2 25.895
RC 301.687 GL 12.19 GP 3.60 ZAL 141.91 ZAP 46.38 ETS 182.87 ZAE 73.29 ETE 180.42 ZAC 86.58 ETC 258.87 CLP 46.27

PLANETOCENTRIC CONIC

C3 19.426 VHL 4.408 DLA 14.25 RAL 177.82 RAD 6567.8 VEL 11.866 PTH 2.11 VHP 4.181 DPA 13.89 RAP 160.85 ECC 1.3197

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 16 0	2666.54	-27.36	72.15	43.54	97.59	20 0 27	2066.5	-26.03	63.74
90.00	11 2 16	4392.45	6.21	182.76	37.59	62.32	12 15 28	3792.4	2.46	176.09
100.00	20 44 56	2379.75	-28.63	50.85	43.34	98.99	21 24 36	1779.7	-27.09	42.38
100.00	12 16 1	4154.47	7.34	164.65	36.97	60.94	13 25 16	3554.5	3.40	158.07
110.00	22 10 10	2113.06	-31.96	29.85	42.59	102.83	22 45 23	1513.1	-29.86	21.27
110.00	13 7 16	3993.92	10.25	150.71	35.21	57.21	14 13 50	3393.9	5.85	144.37

DIFFERENTIAL CORRECTIONS
TDE-1.9098 TRA 6.7836 TC3-8.6347 BAU 2.2478
RDE .5708 RRA -.1714 RC3 .5903 FAU .25186
FDE-3.6672 FRA 9.9842 FC-11.2241 BSP 41938
BDE 1.9933 BRA 6.7857 BC3 8.6548 FSP 5376

MID-COURSE EXECUTION ACCURACY
SGT12119.1 SGR 934.9 SG3 1496.3
RRT -.6967 RRF -.7265 RTF .9957
SGB12155.1 R23 .0428 R13 -.9958
SG112136.7 SG2 669.7 THA 176.91

ORBIT DETERMINATION ACCURACY
ST 3696.7 SR 745.3 SS 2254.0
CRT -.7382 CRS .8209 CST -.9912
LSA 4360.1 MSA 542.4 SSA 15.7
EL1 3738.1 EL2 497.2 ALF 171.38

LAUNCH DATE OCT 22 1964 FLIGHT TIME 382.00 ARRIVAL DATE NOV 8 1965

HELIOCENTRIC CONIC DISTANCE 856.773 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.741 GAL -7.06 AZL 88.35 HCA 263.34 SMA 186.60 ECC .23540 INC 1.6548 V1 29.934
RP 211.60 LAP -1.64 LOP 291.97 VP 23.306 GAP -11.26 AZP 90.19 TAL 321.47 TAP 224.81 RCA 142.68 APO 230.53 V2 25.926
RC 302.717 GL 12.13 GP 3.53 ZAL 142.54 ZAP 45.37 ETS 182.91 ZAE 71.99 ETE 180.51 ZAC 86.55 ETC 258.83 CLP 45.26

PLANETOCENTRIC CONIC

C3 19.948 VHL 4.466 DLA 13.93 RAL 178.40 RAD 6567.8 VEL 11.888 PTH 2.11 VHP 4.265 DPA 13.74 RAP 161.01 ECC 1.3283

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 21 8	2661.74	-27.32	71.81	44.47	97.76	20 5 30	2061.7	-25.96	63.40
90.00	11 1 45	4409.83	6.76	183.74	38.51	62.44	12 15 15	3809.8	3.01	177.06
100.00	20 49 51	2375.66	-28.58	50.55	44.25	99.14	21 29 26	1775.7	-27.03	42.10
100.00	12 15 44	4171.14	7.89	165.58	37.90	61.07	13 25 15	3571.1	3.97	158.99
110.00	22 14 37	2110.43	-31.92	29.66	43.50	102.94	22 49 47	1510.4	-29.81	21.08
110.00	13 7 27	4009.13	10.81	151.53	36.14	57.37	14 14 17	3409.1	6.43	145.17

DIFFERENTIAL CORRECTIONS
TDE-2.0052 TRA 7.0221 TC3-8.5616 BAU 2.2883
RDE .5780 RRA -.1658 RC3 .5671 FAU .23977
FDE-3.6104 FRA 9.6912 FC-10.4056 BSP 42627
BDE 2.0869 BRA 7.0240 BC3 8.5803 FSP 5138

MID-COURSE EXECUTION ACCURACY
SGT12298.1 SGR 924.3 SG3 1424.7
RRT -.6875 RRF -.7184 RTF .9955
SGB12332.8 R23 .0440 R13 -.9956
SG112314.6 SG2 670.3 THA 177.03

ORBIT DETERMINATION ACCURACY
ST 3797.6 SR 744.5 SS 2219.8
CRT -.7405 CRS .8229 CST -.9912
LSA 4428.4 MSA 540.8 SSA 15.6
EL1 3838.1 EL2 495.1 ALF 171.60

LAUNCH DATE OCT 22 1964 FLIGHT TIME 384.00 ARRIVAL DATE NOV 10 1965

HELIOCENTRIC CONIC DISTANCE 860.910 EARTH TO MARS

```
RL  148.85 LAL    .00 LOL  28.63 VL  32.745 GAL  -7.20 AZL  88.33 HCA 264.55 SMA 186.67 ECC .23685 INC 1.6687 V1  29.934
RP  211.33 LAP  -1.66 LOP 293.18 VP  23.345 GAP -11.44 AZP  90.16 TAL 320.86 TAP 225.42 RCA 142.46 APO 230.88 V2  25.956
RC 303.736 GL   12.06 GP    3.45 ZAL 143.19 ZAP  44.39 ETS 182.95 ZAE  70.73 ETE 180.60 ZAC  86.52 ETC 258.80 CLP  44.28
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PLANETOCENTRIC CONIC

```
C3  20.500 VHL  4.528 DLA  13.60 RAL 178.98 RAD 6567.8 VEL 11.911 PTH   2.12 VHP  4.350 DPA  13.58 RAP 161.20 ECC 1.3374
```

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 26 20	2656.94	-27.27	71.46	45.40	97.92	20 10 37	2056.9	-25.90	63.07
90.00	11 1 13	4427.65	7.32	184.75	39.46	62.57	12 15 1	3827.6	3.59	178.06
100.00	20 54 49	2371.56	-28.54	50.26	45.19	99.29	21 34 21	1771.6	-26.96	41.81
100.00	12 15 25	4188.25	8.45	166.54	38.85	61.22	13 25 13	3588.3	4.54	159.93
110.00	22 19 6	2107.82	-31.88	29.47	44.42	103.04	22 54 14	1507.8	-29.76	20.90
110.00	13 7 37	4024.76	11.38	152.38	37.09	57.55	14 14 42	3424.8	7.02	146.00

DIFFERENTIAL CORRECTIONS

```
TDE-2.1039 TRA 7.2650 TC3-8.4789 BAU 2.3286
RDE  .5855 RRA -.1607 RC3  .5449 FAU .22804
FDE-3.5525 FRA 9.4019 FC3-9.6302 BSP  43311
BDE 2.1838 BRA 7.2667 BC3 8.4964 FSP   4908
```

MID-COURSE EXECUTION ACCURACY

```
SGT12470.3 SGR  914.4 SG3 1355.4
RRT -.6787 RRF -.7107 RTF  .9953
SGB12503.8 R23  .0451 R13 -.9954
SG112485.8 SG2  670.7 THA 177.14
```

ORBIT DETERMINATION ACCURACY

```
ST  3897.9 SR   743.7 SS  2183.8
CRT -.7431 CRS  .8250 CST -.9912
LSA 4497.2 MSA  538.9 SSA   15.4
EL1 3937.5 EL2  492.7 ALF 171.80
```

LAUNCH DATE OCT 22 1964 FLIGHT TIME 386.00 ARRIVAL DATE NOV 12 1965

HELIOCENTRIC CONIC DISTANCE 865.044 EARTH TO MARS

```
RL  148.85 LAL    .00 LOL  28.63 VL  32.749 GAL  -7.34 AZL  88.32 HCA 265.77 SMA 186.74 ECC .23837 INC 1.6827 V1  29.934
RP  211.08 LAP  -1.68 LOP 294.39 VP  23.384 GAP -11.61 AZP  90.12 TAL 320.24 TAP 226.01 RCA 142.23 APO 231.25 V2  25.986
RC 304.746 GL   11.99 GP    3.38 ZAL 143.84 ZAP  43.44 ETS 182.99 ZAE  69.50 ETE 180.68 ZAC  86.50 ETC 258.76 CLP  43.33
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PLANETOCENTRIC CONIC

```
C3  21.084 VHL  4.592 DLA  13.27 RAL 179.57 RAD 6567.9 VEL 11.936 PTH   2.12 VHP  4.437 DPA  13.41 RAP 161.42 ECC 1.3470
```

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 31 35	2652.15	-27.23	71.12	46.36	98.09	20 15 47	2052.1	-25.83	62.73
90.00	11 0 39	4445.89	7.89	185.79	40.43	62.72	12 14 45	3845.9	4.17	179.08
100.00	20 59 51	2367.49	-28.49	49.96	46.14	99.44	21 39 19	1767.5	-26.90	41.52
100.00	12 15 4	4205.79	9.02	167.53	39.83	61.38	13 25 10	3605.8	5.13	160.90
110.00	22 23 40	2105.24	-31.84	29.27	45.36	103.15	22 58 45	1505.2	-29.70	20.72
110.00	13 7 45	4040.80	11.96	153.25	38.07	57.74	14 15 6	3440.8	7.62	146.85

DIFFERENTIAL CORRECTIONS

```
TDE-2.2055 TRA 7.5142 TC3-8.3862 BAU 2.3684
RDE  .5932 RRA -.1561 RC3  .5237 FAU .21668
FDE-3.4933 FRA 9.1176 FC3-8.8971 BSP  43976
BDE 2.2839 BRA 7.5158 BC3 8.4025 FSP   4686
```

MID-COURSE EXECUTION ACCURACY

```
SGT12636.8 SGR  905.1 SG3 1288.5
RRT -.6705 RRF -.7035 RTF  .9951
SGB12669.2 R23  .0464 R13 -.9952
SG112651.4 SG2  670.8 THA 177.24
```

ORBIT DETERMINATION ACCURACY

```
ST  3997.5 SR   742.8 SS  2147.0
CRT -.7456 CRS  .8272 CST -.9912
LSA 4566.5 MSA  536.7 SSA   15.3
EL1 4036.2 EL2  490.2 ALF 171.99
```

LAUNCH DATE OCT 22 1964 FLIGHT TIME 388.00 ARRIVAL DATE NOV 14 1965

HELIOCENTRIC CONIC DISTANCE 869.175 EARTH TO MARS

```
RL  148.85 LAL    .00 LOL  28.63 VL  32.753 GAL  -7.49 AZL  88.30 HCA 266.99 SMA 186.81 ECC .23996 INC 1.6966 V1  29.934
RP  210.82 LAP  -1.69 LOP 295.61 VP  23.422 GAP -11.79 AZP  90.09 TAL 319.60 TAP 226.58 RCA 141.98 APO 231.64 V2  26.015
RC 305.746 GL   11.91 GP    3.31 ZAL 144.49 ZAP  42.52 ETS 183.02 ZAE  68.29 ETE 180.76 ZAC  86.48 ETC 258.71 CLP  42.41
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PLANETOCENTRIC CONIC

```
C3  21.701 VHL  4.658 DLA  12.93 RAL 180.16 RAD 6567.9 VEL 11.962 PTH   2.13 VHP  4.527 DPA  13.23 RAP 161.68 ECC 1.3571
```

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 36 54	2647.39	-27.18	70.78	47.33	98.25	20 21 1	2047.4	-25.76	62.40
90.00	11 0 3	4464.56	8.47	186.85	41.43	62.88	12 14 28	3864.6	4.77	180.13
100.00	21 4 56	2363.44	-28.45	49.67	47.10	99.59	21 44 20	1763.4	-26.83	41.24
100.00	12 14 42	4223.73	9.60	168.54	40.82	61.56	13 25 6	3623.7	5.73	161.89
110.00	22 28 16	2102.70	-31.80	29.09	46.32	103.25	23 3 19	1502.7	-29.65	20.54
110.00	13 7 51	4057.24	12.56	154.15	39.07	57.94	14 15 28	3457.2	8.23	147.73

DIFFERENTIAL CORRECTIONS

```
TDE-2.3112 TRA 7.7680 TC3-8.2857 BAU 2.4083
RDE  .6013 RRA -.1520 RC3  .5035 FAU .20571
FDE-3.4339 FRA 8.8364 FC3-8.2063 BSP  44595
BDE 2.3881 BRA 7.7695 BC3 8.3010 FSP   4468
```

MID-COURSE EXECUTION ACCURACY

```
SGT12797.1 SGR  896.5 SG3 1223.8
RRT -.6828 RRF -.6968 RTF  .9949
SGB12828.5 R23  .0476 R13 -.9950
SG112810.9 SG2  670.6 THA 177.33
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ORBIT DETERMINATION ACCURACY

```
ST  4096.6 SR   741.9 SS  2109.4
CRT -.7484 CRS  .8296 CST -.9912
LSA 4636.5 MSA  534.3 SSA   15.2
EL1 4134.6 EL2  487.5 ALF 172.17
```

LAUNCH DATE OCT 22 1964 FLIGHT TIME 390.00 ARRIVAL DATE NOV 16 1965

HELIOCENTRIC CONIC DISTANCE 873.303 EARTH TO MARS

```
RL  148.85 LAL    .00 LOL  28.63 VL  32.757 GAL  -7.65 AZL  88.29 HCA 268.21 SMA 186.88 ECC .24162 INC 1.7105 V1  29.934
RP  210.58 LAP  -1.71 LOP 296.84 VP  23.459 GAP -11.97 AZP  90.05 TAL 318.94 TAP 227.15 RCA 141.73 APO 232.04 V2  26.043
RC 306.737 GL   11.83 GP    3.25 ZAL 145.16 ZAP  41.62 ETS 183.05 ZAE  67.11 ETE 180.84 ZAC  86.48 ETC 258.66 CLP  41.52
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PLANETOCENTRIC CONIC

```
C3  22.354 VHL  4.728 DLA  12.58 RAL 180.76 RAD 6567.9 VEL 11.989 PTH   2.14 VHP  4.620 DPA  13.05 RAP 161.96 ECC 1.3679
```

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 42 15	2642.67	-27.14	70.44	48.31	98.42	20 26 18	2042.7	-25.69	62.07
90.00	10 59 26	4483.62	9.06	187.94	42.44	63.06	12 14 10	3883.6	5.38	181.20
100.00	21 10 4	2359.45	-28.40	49.38	48.09	99.73	21 49 24	1759.4	-26.77	40.96
100.00	12 14 18	4242.07	10.20	169.58	41.84	61.75	13 25 0	3642.1	6.34	162.91
110.00	22 32 55	2100.21	-31.76	28.90	47.29	103.36	23 7 55	1500.2	-29.60	20.36
110.00	13 7 57	4074.08	13.16	155.08	40.09	58.17	14 15 51	3474.1	8.86	148.63

DIFFERENTIAL CORRECTIONS

```
TDE-2.4192 TRA 8.0291 TC3-8.1756 BAU 2.4476
RDE  .6096 RRA -.1485 RC3  .4841 FAU .19506
FDE-3.3730 FRA 8.5600 FC3-7.5542 BSP  45228
BDE 2.4948 BRA 8.0305 BC3 8.1900 FSP   4259
```

MID-COURSE EXECUTION ACCURACY

```
SGT12951.8 SGR  888.4 SG3 1161.4
RRT -.6555 RRF -.6908 RTF  .9946
SGB12982.2 R23  .0490 R13 -.9947
SG112964.9 SG2  670.2 THA 177.42
```

ORBIT DETERMINATION ACCURACY

```
ST  4194.4 SR   740.9 SS  2070.9
CRT -.7511 CRS  .8321 CST -.9911
LSA 4706.1 MSA  531.8 SSA   15.1
EL1 4231.7 EL2  484.8 ALF 172.34
```

LAUNCH DATE OCT 22 1964 FLIGHT TIME 392.00 ARRIVAL DATE NOV 18 1965

HELIOCENTRIC CONIC DISTANCE 877.427 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.761 GAL -7.81 AZL 88.28 HCA 269.43 SMA 186.96 ECC .24336 INC 1.7245 V1 29.934
RP 210.34 LAP -1.72 LOP 298.06 VP 23.496 GAP -12.15 AZP 90.02 TAL 318.26 TAP 227.70 RCA 141.46 APO 232.46 V2 26.071
RC 307.719 GL 11.74 GP 3.18 ZAL 145.83 ZAP 40.76 ETS 183.08 ZAE 65.96 ETE 180.91 ZAC 86.48 ETC 258.61 CLP 40.65

PLANETOCENTRIC CONIC

C3 23.045 VHL 4.801 DLA 12.23 RAL 181.35 RAD 6567.9 VEL 12.018 PTH 2.14 VHP 4.714 DPA 12.85 RAP 162.27 ECC 1.3793

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 47 39	2638.02	-27.09	70.11	49.32	98.58	20 31 37	2038.0	-25.62	61.75
90.00	10 58 48	4503.08	9.66	189.06	43.48	63.25	12 13 51	3903.1	5.99	182.29
100.00	21 15 15	2355.51	-28.36	49.10	49.08	99.87	21 54 30	1755.5	-26.70	40.69
100.00	12 13 53	4260.82	10.80	170.64	42.88	61.96	13 24 54	3660.8	6.97	163.95
110.00	22 37 37	2097.79	-31.72	28.73	48.28	103.46	23 12 35	1497.8	-29.55	20.19
110.00	13 8 1	4091.30	13.78	156.03	41.13	58.40	14 16 12	3491.3	9.50	149.55

DIFFERENTIAL CORRECTIONS
TDE-2.5322 TRA 8.2962 TC3-8.0597 BAU 2.4873
RDE .6183 RRA -.1455 RC3 .4656 FAU .18480
FDE-3.3127 FRA 8.2867 FC3-6.9423 BSP 45808
BDE 2.6066 BRA 8.2974 BC3 8.0732 FSP 4053

MID-COURSE EXECUTION ACCURACY
SGT13101.9 SGR 880.9 SG3 1101.3
RRT -.6490 RRF -.6854 RTF .9943
SGB13131.5 R23 .0505 R13 -.9944
SG113114.4 SG2 669.6 THA 177.49

ORBIT DETERMINATION ACCURACY
ST 4292.6 SR 740.0 SS 2032.0
CRT -.7541 CRS .8349 CST -.9910
LSA 4777.3 MSA 529.1 SSA 15.0
EL1 4329.2 EL2 481.9 ALF 172.50

LAUNCH DATE OCT 22 1964 FLIGHT TIME 394.00 ARRIVAL DATE NOV 20 1965

HELIOCENTRIC CONIC DISTANCE 881.546 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.766 GAL -7.97 AZL 88.26 HCA 270.66 SMA 187.03 ECC .24517 INC 1.7384 V1 29.934
RP 210.10 LAP -1.74 LOP 299.29 VP 23.532 GAP -12.33 AZP 89.98 TAL 317.57 TAP 228.23 RCA 141.18 APO 232.89 V2 26.098
RC 308.691 GL 11.65 GP 3.12 ZAL 146.51 ZAP 39.91 ETS 183.11 ZAE 64.83 ETE 180.98 ZAC 86.50 ETC 258.55 CLP 39.81

PLANETOCENTRIC CONIC

C3 23.777 VHL 4.876 DLA 11.86 RAL 181.95 RAD 6568.0 VEL 12.048 PTH 2.15 VHP 4.811 DPA 12.64 RAP 162.61 ECC 1.3913

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 53 6	2633.44	-27.04	69.78	50.33	98.73	20 36 59	2033.4	-25.56	61.43
90.00	10 58 8	4522.91	10.26	190.20	44.54	63.46	12 13 31	3922.9	6.62	183.41
100.00	21 20 28	2351.65	-28.31	48.82	50.10	100.01	21 59 40	1751.6	-26.64	40.42
100.00	12 13 27	4279.93	11.41	171.74	43.94	62.18	13 24 47	3679.9	7.60	165.02
110.00	22 42 21	2095.45	-31.69	28.55	49.29	103.55	23 17 16	1495.4	-29.50	20.03
110.00	13 8 4	4108.90	14.41	157.01	42.19	58.66	14 16 32	3508.9	10.15	150.50

DIFFERENTIAL CORRECTIONS
TDE-2.6480 TRA 8.5691 TC3-7.9377 BAU 2.5272
RDE .6273 RRA -.1431 RC3 .4481 FAU .17493
FDE-3.2509 FRA 8.0165 FC3-6.3695 BSP 46370
BDE 2.7212 BRA 8.5703 BC3 7.9504 FSP 3853

MID-COURSE EXECUTION ACCURACY
SGT13246.2 SGR 873.9 SG3 1043.3
RRT -.6430 RRF -.6807 RTF .9940
SGB13275.0 R23 .0521 R13 -.9941
SG113258.2 SG2 668.7 THA 177.56

ORBIT DETERMINATION ACCURACY
ST 4388.9 SR 739.0 SS 1992.0
CRT -.7571 CRS .8378 CST -.9909
LSA 4847.6 MSA 526.3 SSA 14.9
EL1 4424.8 EL2 478.9 ALF 172.65

LAUNCH DATE OCT 22 1964 FLIGHT TIME 396.00 ARRIVAL DATE NOV 22 1965

HELIOCENTRIC CONIC DISTANCE 885.660 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.770 GAL -8.14 AZL 88.25 HCA 271.89 SMA 187.11 ECC .24706 INC 1.7525 V1 29.934
RP 209.88 LAP -1.75 LOP 300.52 VP 23.567 GAP -12.51 AZP 89.94 TAL 316.87 TAP 228.75 RCA 140.88 APO 233.34 V2 26.124
RC 309.654 GL 11.55 GP 3.06 ZAL 147.19 ZAP 39.10 ETS 183.13 ZAE 63.73 ETE 181.05 ZAC 86.52 ETC 258.49 CLP 39.00

PLANETOCENTRIC CONIC

C3 24.551 VHL 4.955 DLA 11.50 RAL 182.55 RAD 6568.0 VEL 12.080 PTH 2.16 VHP 4.911 DPA 12.42 RAP 162.98 ECC 1.4040

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 58 35	2628.95	-27.00	69.46	51.37	98.89	20 42 23	2028.9	-25.49	61.12
90.00	10 57 27	4543.11	10.88	191.37	45.62	63.69	12 13 11	3943.1	7.25	184.56
100.00	21 25 44	2347.87	-28.27	48.55	51.13	100.15	22 4 51	1747.9	-26.58	40.16
100.00	12 12 59	4299.42	12.03	172.85	45.02	62.43	13 24 39	3699.4	8.24	166.11
110.00	22 47 7	2093.20	-31.65	28.39	50.31	103.64	23 22 0	1493.2	-29.45	19.87
110.00	13 8 6	4126.86	15.04	158.02	43.28	58.94	14 16 52	3526.9	10.81	151.47

DIFFERENTIAL CORRECTIONS
TDE-2.7684 TRA 8.8490 TC3-7.8103 BAU 2.5674
RDE .6366 RRA -.1412 RC3 .4314 FAU .16543
FDE-3.1891 FRA 7.7495 FC3-5.8335 BSP 46912
BDE 2.8407 BRA 8.8502 BC3 7.8222 FSP 3660

MID-COURSE EXECUTION ACCURACY
SGT13386.2 SGR 867.4 SG3 987.5
RRT -.6377 RRF -.6767 RTF .9937
SGB13414.2 R23 .0538 R13 -.9938
SG113397.6 SG2 667.6 THA 177.63

ORBIT DETERMINATION ACCURACY
ST 4485.0 SR 738.0 SS 1951.4
CRT -.7602 CRS .8408 CST -.9908
LSA 4918.8 MSA 523.3 SSA 14.8
EL1 4520.4 EL2 475.7 ALF 172.79

LAUNCH DATE OCT 22 1964 FLIGHT TIME 398.00 ARRIVAL DATE NOV 24 1965

HELIOCENTRIC CONIC DISTANCE 889.766 EARTH TO MARS

RL 148.85 LAL .00 LOL 28.63 VL 32.775 GAL -8.32 AZL 88.23 HCA 273.12 SMA 187.19 ECC .24904 INC 1.7665 V1 29.934
RP 209.66 LAP -1.76 LOP 301.75 VP 23.602 GAP -12.70 AZP 89.90 TAL 316.14 TAP 229.26 RCA 140.57 APO 233.81 V2 26.149
RC 310.607 GL 11.45 GP 3.01 ZAL 147.88 ZAP 38.31 ETS 183.15 ZAE 62.65 ETE 181.11 ZAC 86.54 ETC 258.43 CLP 38.21

PLANETOCENTRIC CONIC

C3 25.370 VHL 5.037 DLA 11.12 RAL 183.16 RAD 6568.0 VEL 12.114 PTH 2.17 VHP 5.013 DPA 12.20 RAP 163.37 ECC 1.4175

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 4 5	2624.56	-26.95	69.15	52.42	99.04	20 47 50	2024.6	-25.42	60.81
90.00	10 56 46	4563.67	11.49	192.56	46.73	63.94	12 12 50	3963.7	7.90	185.73
100.00	21 31 1	2344.20	-28.22	48.28	52.17	100.28	22 10 5	1744.2	-26.51	39.90
100.00	12 12 31	4319.26	12.65	174.00	46.13	62.69	13 24 31	3719.3	8.89	167.23
110.00	22 51 55	2091.05	-31.62	28.23	51.34	103.73	23 26 46	1491.0	-29.41	19.72
110.00	13 8 7	4145.18	15.68	159.05	44.40	59.23	14 17 12	3545.2	11.48	152.46

DIFFERENTIAL CORRECTIONS
TDE-2.8928 TRA 9.1364 TC3-7.6765 BAU 2.6075
RDE .6463 RRA -.1398 RC3 .4153 FAU .15618
FDE-3.1262 FRA 7.4861 FC3-5.3296 BSP 47430
BDE 2.9642 BRA 9.1375 BC3 7.6877 FSP 3472

MID-COURSE EXECUTION ACCURACY
SGT13520.9 SGR 861.3 SG3 933.7
RRT -.6330 RRF -.6734 RTF .9933
SGB13548.4 R23 .0556 R13 -.9934
SG113532.0 SG2 666.2 THA 177.69

ORBIT DETERMINATION ACCURACY
ST 4580.3 SR 736.9 SS 1910.0
CRT -.7634 CRS .8440 CST -.9907
LSA 4990.0 MSA 520.1 SSA 14.7
EL1 4615.1 EL2 472.4 ALF 172.92

LAUNCH DATE OCT 23 1964 FLIGHT TIME 240.00 ARRIVAL DATE JUN 20 1965

HELIOCENTRIC CONIC DISTANCE 575.934 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 33.175 GAL -5.80 AZL 94.32 HCA 185.87 SMA 194.28 ECC .25383 INC 4.3205 V1 29.942
RP 236.98 LAP .44 LOP 215.48 VP 20.904 GAP 7.48 AZP 85.70 TAL 330.74 TAP 156.62 RCA 144.97 APO 243.60 V2 23.191
RC 189.421 GL -31.01 GP 22.51 ZAL 126.58 ZAP 144.58 ETS 142.84 ZAE 153.90 ETE 60.93 ZAC 111.25 ETC 254.89 CLP 151.91

PLANETOCENTRIC CONIC

C3 23.294 VHL 4.826 DLA -22.13 RAL 152.63 RAD 6567.9 VEL 12.028 PTH 2.15 VHP 5.746 DPA 18.59 RAP 196.97 ECC 1.3834

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	22 39 15	1478.63	2.46	358.71	17.08	118.22	23 3 53	878.6	6.21	352.04
90.00	4 10 8	5667.70	27.85	267.10	24.93	95.35	5 44 36	5067.7	28.30	258.47
100.00	23 44 43	1267.30	.85	342.29	16.18	119.88	24 5 51	667.3	4.82	335.75
100.00	5 47 21	5354.26	29.68	244.21	25.10	93.74	7 16 35	4754.3	29.88	235.41
110.00	0 24 0	1156.51	-2.97	331.51	13.80	124.07	0 43 16	556.5	1.52	325.30
110.00	7 28 30	5037.82	34.18	220.33	25.26	89.88	8 52 27	4437.8	33.76	211.11

DIFFERENTIAL CORRECTIONS
TDE 1.9128 TRA-2.6748 TC3 1.7562 BAU .7215
RDE 1.2477 RRA-1.2210 RC3 1.5112 FAU .16184
FDE-4.4717 FRA 4.3931 FC3-6.0147 BSP 17823
BDE 2.2838 BRA 2.9403 BC3 2.3169 FSP 2697

MID-COURSE EXECUTION ACCURACY
SGT 4447.6 SGR 2602.1 SG3 835.8
RRT .9678 RRF -.9988 RTF -.9575
SGB 5152.9 R23 -.2251 R13 -.9738
SG1 5121.4 SG2 568.6 THA 29.93

ORBIT DETERMINATION ACCURACY
ST 2493.3 SR 1554.5 SS 2767.0
CRT .9930 CRS 1.0000 CST .9931
LSA 4029.4 MSA 230.9 SSA 4.3
EL1 2934.1 EL2 156.2 ALF 31.86

LAUNCH DATE OCT 23 1964 FLIGHT TIME 242.00 ARRIVAL DATE JUN 22 196!

HELIOCENTRIC CONIC DISTANCE 579.521 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 33.148 GAL -5.71 AZL 93.46 HCA 186.84 SMA 193.79 ECC .25147 INC 3.4576 V1 29.942
RP 236.64 LAP .41 LOP 216.45 VP 20.901 GAP 7.06 AZP 86.57 TAL 330.98 TAP 157.81 RCA 145.06 APO 242.52 V2 23.226
RC 191.655 GL -25.84 GP 20.07 ZAL 128.20 ZAP 145.50 ETS 146.40 ZAE 156.27 ETE 59.65 ZAC 108.96 ETC 255.11 CLP 151.34

PLANETOCENTRIC CONIC

C3 20.842 VHL 4.565 DLA -17.17 RAL 154.29 RAD 6567.8 VEL 11.926 PTH 2.12 VHP 5.517 DPA 16.24 RAP 196.20 ECC 1.3430

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 49 55	1658.85	-3.35	8.77	15.52	118.13	22 17 34	1058.8	.43	2.14
90.00	5 12 43	5433.65	28.15	250.02	22.56	86.81	6 43 16	4833.6	27.41	241.43
100.00	23 1 23	1428.25	-4.59	351.13	14.84	119.57	23 25 12	828.3	-.62	344.60
100.00	6 43 56	5139.47	29.56	228.27	22.45	85.37	8 9 36	4539.5	28.61	219.60
110.00	23 47 53	1282.60	-7.74	338.15	12.90	123.40	24 9 15	682.6	-3.30	331.88
110.00	8 13 56	4857.89	33.23	206.39	21.95	81.49	9 34 54	4257.9	31.70	197.50

DIFFERENTIAL CORRECTIONS
TDE 1.7181 TRA-2.6460 TC3 1.9618 BAU .6902
RDE 1.0036 RRA-1.0969 RC3 1.5123 FAU .17422
FDE-4.2566 FRA 4.8453 FC3-7.2370 BSP 17332
BDE 1.9898 BRA 2.8643 BC3 2.4770 FSP 2933

MID-COURSE EXECUTION ACCURACY
SGT 4465.3 SGR 2359.9 SG3 917.3
RRT .9677 RRF -.9988 RTF -.9593
SGB 5050.6 R23 -.2267 R13 -.9731
SG1 5022.8 SG2 528.9 THA 27.42

ORBIT DETERMINATION ACCURACY
ST 2395.8 SR 1332.4 SS 2705.9
CRT .9928 CRS .9999 CST .9942
LSA 3846.3 MSA 207.1 SSA 6.1
EL1 2737.8 EL2 139.7 ALF 28.99

LAUNCH DATE OCT 23 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUN 24 1965

HELIOCENTRIC CONIC DISTANCE 583.127 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 33.123 GAL -5.63 AZL 92.81 HCA 187.80 SMA 193.32 ECC .24921 INC 2.8062 V1 29.942
RP 236.29 LAP .38 LOP 217.42 VP 20.900 GAP 6.64 AZP 87.22 TAL 331.21 TAP 159.01 RCA 145.14 APO 241.50 V2 23.261
RC 193.877 GL -21.61 GP 18.17 ZAL 129.24 ZAP 145.91 ETS 149.52 ZAE 158.22 ETE 59.03 ZAC 107.17 ETC 255.26 CLP 150.65

PLANETOCENTRIC CONIC

C3 19.203 VHL 4.382 DLA -13.10 RAL 155.55 RAD 6567.8 VEL 11.857 PTH 2.10 VHP 5.329 DPA 14.41 RAP 195.60 ECC 1.3160

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 17 25	1785.62	-7.38	15.91	15.04	117.42	21 47 10	1185.6	-3.65	9.22
90.00	5 55 19	5267.88	26.94	238.05	20.58	80.94	7 23 7	4667.9	25.41	229.72
100.00	22 31 57	1545.14	-8.48	357.64	14.45	118.77	22 57 42	945.1	-4.57	351.03
100.00	7 23 28	4983.59	28.17	216.91	20.34	79.55	8 46 31	4383.6	26.44	208.53
110.00	23 24 52	1379.39	-11.33	343.35	12.74	122.47	23 47 52	779.4	-6.97	336.97
110.00	8 47 2	4722.11	31.40	196.23	19.52	75.74	10 5 44	4122.1	29.13	187.77

DIFFERENTIAL CORRECTIONS
TDE 1.5641 TRA-2.6177 TC3 2.1090 BAU .6627
RDE .8363 RRA-1.0010 RC3 1.4886 FAU .18466
FDE-4.0652 FRA 5.2590 FC3-8.3251 BSP 17200
BDE 1.7736 BRA 2.8026 BC3 2.5814 FSP 3199

MID-COURSE EXECUTION ACCURACY
SGT 4466.2 SGR 2168.7 SG3 990.1
RRT .9673 RRF -.9986 RTF -.9606
SGB 4964.9 R23 -.2274 R13 -.9726
SG1 4940.0 SG2 497.1 THA 25.44

ORBIT DETERMINATION ACCURACY
ST 2301.4 SR 1166.1 SS 2636.1
CRT .9924 CRS .9997 CST .9952
LSA 3683.9 MSA 185.1 SSA 8.4
EL1 2576.8 EL2 127.9 ALF 26.77

LAUNCH DATE OCT 23 1964 FLIGHT TIME 246.00 ARRIVAL DATE JUN 26 1965

HELIOCENTRIC CONIC DISTANCE 586.752 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 33.099 GAL -5.54 AZL 92.30 HCA 188.77 SMA 192.87 ECC .24704 INC 2.2952 V1 29.942
RP 235.94 LAP .35 LOP 218.39 VP 20.901 GAP 6.22 AZP 87.73 TAL 331.43 TAP 160.21 RCA 145.22 APO 240.52 V2 23.297
RC 196.086 GL -18.11 GP 16.65 ZAL 129.87 ZAP 145.96 ETS 152.25 ZAE 159.88 ETE 59.02 ZAC 105.74 ETC 255.36 CLP 149.87

PLANETOCENTRIC CONIC

C3 18.031 VHL 4.246 DLA -9.70 RAL 156.53 RAD 6567.7 VEL 11.807 PTH 2.09 VHP 5.165 DPA 12.96 RAP 195.11 ECC 1.2967

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 53 5	1884.31	-10.43	21.56	15.00	116.48	21 24 29	1284.3	-6.79	14.77
90.00	6 27 28	5139.63	25.25	229.05	19.10	76.73	7 53 8	4539.6	23.17	220.99
100.00	22 9 39	1637.30	-11.45	2.86	14.47	117.80	22 36 56	1037.3	-7.64	356.14
100.00	7 53 35	4861.88	26.36	208.31	18.79	75.38	9 14 37	4261.9	24.10	200.25
110.00	23 7 2	1457.60	-14.15	347.65	12.90	121.45	23 31 19	857.6	-9.88	341.15
110.00	9 12 41	4614.35	29.34	188.52	17.79	71.61	10 29 36	4014.3	26.54	180.45

DIFFERENTIAL CORRECTIONS
TDE 1.4661 TRA-2.5603 TC3 2.2774 BAU .6539
RDE .7249 RRA -.9159 RC3 1.4735 FAU .19614
FDE-3.9450 FRA 5.5980 FC3-9.4173 BSP 16533
BDE 1.6355 BRA 2.7192 BC3 2.7125 FSP 3384

MID-COURSE EXECUTION ACCURACY
SGT 4465.1 SGR 2023.5 SG3 1061.8
RRT .9684 RRF -.9982 RTF -.9632
SGB 4902.2 R23 -.2216 R13 -.9734
SG1 4880.4 SG2 462.0 THA 23.92

ORBIT DETERMINATION ACCURACY
ST 2241.1 SR 1048.6 SS 2589.9
CRT .9926 CRS .9992 CST .9966
LSA 3578.4 MSA 158.0 SSA 11.5
EL1 2471.6 EL2 115.5 ALF 24.97

LAUNCH DATE OCT 23 1964 FLIGHT TIME 248.00 ARRIVAL DATE JUN 28 1965

HELIOCENTRIC CONIC DISTANCE 590.390 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 33.076 GAL -5.47 AZL 91.89 HCA 189.75 SMA 192.44 ECC .24498 INC 1.8846 V1 29.942
RP 235.59 LAP .32 LOP 219.36 VP 20.905 GAP 5.81 AZP 88.14 TAL 331.65 TAP 161.40 RCA 145.30 APO 239.59 V2 23.333
RC 198.280 GL -15.16 GP 15.42 ZAL 130.24 ZAP 145.76 ETS 154.63 ZAE 161.33 ETE 59.59 ZAC 104.57 ETC 255.44 CLP 149.04

PLANETOCENTRIC CONIC

C3 17.149 VHL 4.141 DLA -6.83 RAL 157.31 RAD 6567.7 VEL 11.770 PTH 2.08 VHP 5.020 DPA 11.78 RAP 194.70 ECC 1.2822

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 33 39	1964.93	-12.83	26.26	15.17	115.46	21 6 24	1364.9	-9.30	19.36
90.00	6 53 5	5035.74	23.44	221.98	18.02	73.64	8 17 1	4435.7	20.97	214.17
100.00	21 51 44	1713.04	-13.82	7.24	14.67	116.77	22 20 17	1113.0	-10.12	.41
100.00	8 17 42	4762.86	24.48	201.56	17.66	72.29	9 37 4	4162.9	21.83	193.76
110.00	22 52 31	1522.72	-16.43	351.33	13.20	120.41	23 17 54	922.7	-12.27	344.69
110.00	9 33 24	4525.94	27.28	182.46	16.56	68.56	10 48 50	3925.9	24.13	174.72

DIFFERENTIAL CORRECTIONS
TDE 1.3647 TRA-2.5234 TC3 2.3664 BAU .6358
RDE .6399 RRA -.8505 RC3 1.4462 FAU .20617
FDE-3.8292 FRA 5.9402 FC-10.4079 BSP 16482
BDE 1.5072 BRA 2.6629 BC3 2.7733 FSP 3622

MID-COURSE EXECUTION ACCURACY
SGT 4446.4 SGR 1903.4 SG3 1129.5
RRT .9673 RRF -.9977 RTF -.9635
SGB 4836.7 R23 -.2216 R13 -.9728
SG1 4816.1 SG2 445.9 THA 22.70

ORBIT DETERMINATION ACCURACY
ST 2163.6 SR 954.7 SS 2540.1
CRT .9918 CRS .9984 CST .9973
LSA 3467.6 MSA 143.3 SSA 14.9
EL1 2362.3 EL2 111.6 ALF 23.69

LAUNCH DATE OCT 23 1964 FLIGHT TIME 250.00 ARRIVAL DATE JUN 30 1965

HELIOCENTRIC CONIC DISTANCE 594.044 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 33.054 GAL -5.39 AZL 91.55 HCA 190.72 SMA 192.04 ECC .24300 INC 1.5469 V1 29.942
RP 235.24 LAP .29 LOP 220.34 VP 20.910 GAP 5.41 AZP 88.48 TAL 331.86 TAP 162.58 RCA 145.37 APO 238.70 V2 23.369
RC 200.460 GL -12.66 GP 14.41 ZAL 130.42 ZAP 145.36 ETS 156.71 ZAE 162.62 ETE 60.73 ZAC 103.60 ETC 255.50 CLP 148.16

PLANETOCENTRIC CONIC

C3 16.455 VHL 4.056 DLA -4.38 RAL 157.93 RAD 6567.7 VEL 11.740 PTH 2.07 VHP 4.886 DPA 10.82 RAP 194.34 ECC 1.2708

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 17 27	2032.77	-14.78	30.29	15.42	114.43	20 51 20	1432.8	-11.36	23.28
90.00	7 14 14	4948.91	21.65	216.24	17.21	71.29	8 36 43	4348.9	18.90	208.65
100.00	21 36 44	1777.00	-15.75	11.01	14.95	115.74	22 6 21	1177.0	-12.15	4.06
100.00	8 37 38	4679.91	22.66	196.07	16.83	69.96	9 55 38	4079.9	19.72	188.51
110.00	22 40 16	1578.10	-18.31	354.52	13.56	119.38	23 6 35	978.1	-14.25	347.75
110.00	9 50 35	4451.57	25.34	177.56	15.65	66.25	11 4 47	3851.6	21.91	170.09

DIFFERENTIAL CORRECTIONS
TDE 1.2799 TRA-2.4813 TC3 2.4388 BAU .6211
RDE .5766 RRA -.7954 RC3 1.4222 FAU .21621
FDE-3.7396 FRA 6.2643 FC-11.3756 BSP 16405
BDE 1.4038 BRA 2.6056 BC3 2.8232 FSP 3858

MID-COURSE EXECUTION ACCURACY
SGT 4420.2 SGR 1806.7 SG3 1196.6
RRT .9662 RRF -.9971 RTF -.9638
SGB 4775.2 R23 -.2204 R13 -.9724
SG1 4755.5 SG2 433.1 THA 21.74

ORBIT DETERMINATION ACCURACY
ST 2093.7 SR 882.5 SS 2499.9
CRT .9909 CRS .9973 CST .9980
LSA 3375.6 MSA 131.1 SSA 18.8
EL1 2269.5 EL2 109.6 ALF 22.72

LAUNCH DATE OCT 23 1964 FLIGHT TIME 252.00 ARRIVAL DATE JUL 2 1965

HELIOCENTRIC CONIC DISTANCE 597.714 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 33.033 GAL -5.32 AZL 91.27 HCA 191.70 SMA 191.65 ECC .24110 INC 1.2644 V1 29.942
RP 234.89 LAP .26 LOP 221.32 VP 20.918 GAP 5.01 AZP 88.76 TAL 332.07 TAP 163.77 RCA 145.44 APO 237.86 V2 23.405
RC 202.623 GL -10.50 GP 13.56 ZAL 130.46 ZAP 144.83 ETS 158.54 ZAE 163.79 ETE 62.47 ZAC 102.79 ETC 255.55 CLP 147.23

PLANETOCENTRIC CONIC

C3 15.889 VHL 3.986 DLA -2.25 RAL 158.43 RAD 6567.6 VEL 11.716 PTH 2.06 VHP 4.762 DPA 10.03 RAP 194.03 ECC 1.2615

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 3 33	2091.09	-16.39	33.81	15.70	113.42	20 38 24	1491.1	-13.09	26.69
90.00	7 32 9	4874.65	19.95	211.45	16.61	69.48	8 53 23	4274.6	16.98	204.04
100.00	21 23 51	1832.07	-17.34	14.32	15.26	114.73	21 54 23	1232.1	-13.87	7.26
100.00	8 54 32	4608.89	20.93	191.51	16.21	68.15	10 11 21	4008.9	17.78	184.13
110.00	22 29 41	1625.97	-19.88	357.34	13.92	118.40	22 56 47	1026.0	-15.93	350.44
110.00	10 5 11	4387.76	23.52	173.49	14.98	64.45	11 18 19	3787.8	19.89	166.23

DIFFERENTIAL CORRECTIONS
TDE 1.2080 TRA-2.4352 TC3 2.4978 BAU .6084
RDE .5284 RRA -.7490 RC3 1.4020 FAU .22633
FDE-3.6696 FRA 6.5800 FC-12.3321 BSP 16286
BDE 1.3186 BRA 2.5478 BC3 2.8643 FSP 4095

MID-COURSE EXECUTION ACCURACY
SGT 4387.7 SGR 1728.3 SG3 1264.1
RRT .9651 RRF -.9963 RTF -.9641
SGB 4715.8 R23 -.2179 R13 -.9722
SG1 4696.8 SG2 422.6 THA 20.99

ORBIT DETERMINATION ACCURACY
ST 2030.6 SR 826.1 SS 2467.8
CRT .9899 CRS .9958 CST .9985
LSA 3298.6 MSA 120.9 SSA 23.1
EL1 2189.5 EL2 108.6 ALF 21.99

LAUNCH DATE OCT 23 1964 FLIGHT TIME 254.00 ARRIVAL DATE JUL 4 1965

HELIOCENTRIC CONIC DISTANCE 601.398 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 33.013 GAL -5.25 AZL 91.03 HCA 192.68 SMA 191.28 ECC .23929 INC 1.0247 V1 29.942
RP 234.53 LAP .22 LOP 222.31 VP 20.927 GAP 4.62 AZP 89.00 TAL 332.27 TAP 164.95 RCA 145.51 APO 237.06 V2 23.442
RC 204.770 GL -8.62 GP 12.84 ZAL 130.41 ZAP 144.17 ETS 160.15 ZAE 164.84 ETE 64.83 ZAC 102.09 ETC 255.59 CLP 146.26

PLANETOCENTRIC CONIC

C3 15.415 VHL 3.926 DLA -.39 RAL 158.84 RAD 6567.6 VEL 11.696 PTH 2.06 VHP 4.646 DPA 9.37 RAP 193.73 ECC 1.2537

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 51 21	2142.05	-17.74	36.94	15.99	112.44	20 27 3	1542.1	-14.55	29.72
90.00	7 47 36	4809.98	18.36	207.38	16.14	68.06	9 7 46	4210.0	15.22	200.11
100.00	21 12 31	1880.25	-18.69	17.27	15.56	113.76	21 43 51	1280.2	-15.32	10.09
100.00	9 9 8	4547.02	19.31	187.62	15.72	66.73	10 24 55	3947.0	16.00	180.40
110.00	22 20 21	1667.91	-21.22	359.86	14.28	117.45	22 48 9	1067.9	-17.37	352.84
110.00	10 17 47	4332.12	21.85	170.04	14.45	63.03	11 29 59	3732.1	18.06	162.96

DIFFERENTIAL CORRECTIONS
TDE 1.1443 TRA-2.3862 TC3 2.5414 BAU .5965
RDE .4908 RRA -.7098 RC3 1.3851 FAU .23647
FDE-3.6132 FRA 6.8934 FC-13.2809 BSP 16149
BDE 1.2451 BRA 2.4896 BC3 2.8943 FSP 4341

MID-COURSE EXECUTION ACCURACY
SGT 4347.2 SGR 1664.0 SG3 1332.2
RRT .9641 RRF -.9954 RTF -.9645
SGB 4654.8 R23 -.2146 R13 -.9721
SG1 4636.3 SG2 414.5 THA 20.43

ORBIT DETERMINATION ACCURACY
ST 1970.6 SR 781.4 SS 2441.8
CRT .9888 CRS .9939 CST .9990
LSA 3231.5 MSA 113.9 SSA 27.4
EL1 2117.1 EL2 108.7 ALF 21.47

LAUNCH DATE OCT 23 1964 FLIGHT TIME 256.00 ARRIVAL DATE JUL 6 1965

HELIOCENTRIC CONIC DISTANCE 605.097 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 32.994 GAL -5.18 AZL 90.82 HCA 193.67 SMA 190.93 ECC .23757 INC .8179 V1 29.942
RP 234.17 LAP .19 LOP 223.29 VP 20.939 GAP 4.23 AZP 89.20 TAL 332.46 TAP 166.13 RCA 145.57 APO 236.29 V2 23.479
RC 206.900 GL -6.96 GP 12.22 ZAL 130.30 ZAP 143.42 ETS 161.59 ZAE 165.78 ETE 67.85 ZAC 101.48 ETC 255.62 CLP 145.25

PLANETOCENTRIC CONIC

C3 15.009 VHL 3.874 DLA 1.26 RAL 159.18 RAD 6567.6 VEL 11.679 PTH 2.05 VHP 4.535 DPA 8.82 RAP 193.45 ECC 1.2470

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 40 28	2187.20	-18.89	39.75	16.26	111.49	20 16 56	1587.2	-15.81	32.44
90.00	8 1 11	4752.85	16.87	203.85	15.77	66.92	9 20 24	4152.9	13.60	196.70
100.00	21 2 24	1922.92	-19.84	19.91	15.86	112.83	21 34 27	1322.9	-16.58	12.64
100.00	9 21 56	4492.36	17.81	184.26	15.34	65.59	10 36 48	3892.4	14.36	177.16
110.00	22 12 0	1705.09	-22.37	2.13	14.61	116.55	22 40 25	1105.1	-18.62	355.00
110.00	10 28 50	4282.96	20.30	167.06	14.04	61.89	11 40 13	3683.0	16.38	160.13

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.0871 TRA-2.3340 TC3 2.5745 BAU .5855 SGT 4299.5 SGR 1612.0 SG3 1402.0 ST 1913.5 SR 746.4 SS 2423.6
RDE .4616 RRA -.6760 RC3 1.3735 FAU .24705 RRT .9628 RRF -.9944 RTF -.9647 CRT .9874 CRS .9915 CST .9993
FDE-3.5740 FRA 7.2009 FC-14.2505 BSP 15976 SGB 4591.8 R23 -.2111 R13 -.9721 LSA 3174.8 MSA 111.1 SSA 31.2
BDE 1.1811 BRA 2.4299 BC3 2.9180 FSP 4584 SG1 4573.5 SG2 409.4 THA 20.02 EL1 2051.0 EL2 110.0 ALF 21.13

LAUNCH DATE OCT 23 1964 FLIGHT TIME 258.00 ARRIVAL DATE JUL 8 1965

HELIOCENTRIC CONIC DISTANCE 608.809 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 32.975 GAL -5.12 AZL 90.64 HCA 194.66 SMA 190.60 ECC .23592 INC .6388 V1 29.942
RP 233.80 LAP .16 LOP 224.28 VP 20.952 GAP 3.85 AZP 89.38 TAL 332.64 TAP 167.30 RCA 145.64 APO 235.57 V2 23.517
RC 209.011 GL -5.49 GP 11.69 ZAL 130.15 ZAP 142.59 ETS 162.87 ZAE 166.62 ETE 71.57 ZAC 100.95 ETC 255.65 CLP 144.21

PLANETOCENTRIC CONIC

C3 14.655 VHL 3.828 DLA 2.74 RAL 159.46 RAD 6567.6 VEL 11.664 PTH 2.05 VHP 4.429 DPA 8.36 RAP 193.18 ECC 1.2412

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 30 38	2227.64	-19.88	42.31	16.52	110.59	20 7 46	1627.6	-16.90	34.90
90.00	8 13 15	4701.77	15.48	200.74	15.48	65.99	9 31 37	4101.8	12.11	193.69
100.00	20 53 15	1961.15	-20.83	22.32	16.13	111.94	21 25 56	1361.1	-17.67	14.95
100.00	9 33 19	4443.49	16.41	181.31	15.04	64.66	10 47 22	3843.5	12.86	174.31
110.00	22 4 26	1738.37	-23.37	4.20	14.92	115.69	22 33 24	1138.4	-19.72	356.96
110.00	10 38 38	4239.02	18.87	164.46	13.71	60.95	11 49 17	3639.0	14.85	157.65

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.0369 TRA-2.2781 TC3 2.5983 BAU .5751 SGT 4244.7 SGR 1569.7 SG3 1473.4 ST 1860.2 SR 718.6 SS 2410.7
RDE .4386 RRA -.6469 RC3 1.3658 FAU .25786 RRT .9617 RRF -.9932 RTF -.9649 CRT .9862 CRS .9888 CST .9996
FDE-3.5455 FRA 7.5096 FC-15.2332 BSP 15758 SGB 4525.7 R23 -.2068 R13 -.9721 LSA 3126.4 MSA 111.4 SSA 34.1
BDE 1.1258 BRA 2.3681 BC3 2.9354 FSP 4835 SG1 4507.5 SG2 405.2 THA 19.74 EL1 1991.1 EL2 111.3 ALF 20.92

LAUNCH DATE OCT 23 1964 FLIGHT TIME 260.00 ARRIVAL DATE JUL 10 1965

HELIOCENTRIC CONIC DISTANCE 612.535 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 32.958 GAL -5.06 AZL 90.48 HCA 195.65 SMA 190.28 ECC .23435 INC .4796 V1 29.942
RP 233.44 LAP .13 LOP 225.27 VP 20.967 GAP 3.48 AZP 89.54 TAL 332.82 TAP 168.47 RCA 145.69 APO 234.88 V2 23.555
RC 211.104 GL -4.17 GP 11.23 ZAL 129.96 ZAP 141.69 ETS 164.02 ZAE 167.35 ETE 76.03 ZAC 100.48 ETC 255.68 CLP 143.13

PLANETOCENTRIC CONIC

C3 14.342 VHL 3.787 DLA 4.07 RAL 159.69 RAD 6567.6 VEL 11.650 PTH 2.05 VHP 4.329 DPA 7.98 RAP 192.90 ECC 1.2360

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 21 39	2264.21	-20.74	44.65	16.76	109.72	19 59 23	1664.2	-17.87	37.16
90.00	8 24 6	4655.63	14.18	197.98	15.24	65.23	9 41 42	4055.6	10.73	191.00
100.00	20 44 53	1995.70	-21.69	24.52	16.38	111.08	21 18 9	1395.7	-18.64	17.06
100.00	9 43 32	4399.38	15.10	178.68	14.79	63.89	10 56 52	3799.4	11.47	171.77
110.00	21 57 30	1768.43	-24.24	6.10	15.21	114.87	22 26 59	1168.4	-20.68	358.76
110.00	10 47 25	4199.41	17.54	162.15	13.44	60.18	11 57 24	3599.4	13.45	155.44

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .9930 TRA-2.2166 TC3 2.6197 BAU .5663 SGT 4182.9 SGR 1536.4 SG3 1547.3 ST 1810.5 SR 697.5 SS 2406.1
RDE .4210 RRA -.6210 RC3 1.3643 FAU .26949 RRT .9606 RRF -.9920 RTF -.9652 CRT .9849 CRS .9858 CST .9997
FDE-3.5366 FRA 7.8093 FC-16.2670 BSP 15415 SGB 4456.2 R23 -.2019 R13 -.9722 LSA 3088.5 MSA 115.5 SSA 35.7
BDE 1.0786 BRA 2.3019 BC3 2.9536 FSP 5065 SG1 4438.0 SG2 402.3 THA 19.60 EL1 1936.9 EL2 112.8 ALF 20.85

LAUNCH DATE OCT 23 1964 FLIGHT TIME 262.00 ARRIVAL DATE JUL 12 1965

HELIOCENTRIC CONIC DISTANCE 616.270 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 32.941 GAL -5.01 AZL 90.34 HCA 196.65 SMA 189.98 ECC .23285 INC .3396 V1 29.942
RP 233.07 LAP .10 LOP 226.27 VP 20.983 GAP 3.11 AZP 89.67 TAL 332.99 TAP 169.64 RCA 145.75 APO 234.22 V2 23.593
RC 213.179 GL -2.98 GP 10.82 ZAL 129.76 ZAP 140.72 ETS 165.05 ZAE 167.94 ETE 81.24 ZAC 100.06 ETC 255.70 CLP 142.01

PLANETOCENTRIC CONIC

C3 14.064 VHL 3.750 DLA 5.27 RAL 159.89 RAD 6567.6 VEL 11.638 PTH 2.04 VHP 4.232 DPA 7.66 RAP 192.62 ECC 1.2315

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 13 23	2297.54	-21.49	46.81	16.98	108.89	19 51 40	1697.5	-18.72	39.23
90.00	8 33 57	4613.66	12.97	195.49	15.05	64.61	9 50 51	4013.7	9.45	188.58
100.00	20 37 12	2027.16	-22.45	26.55	16.61	110.27	21 10 59	1427.2	-19.49	19.01
100.00	9 52 49	4359.27	13.89	176.32	14.59	63.26	11 5 28	3759.3	10.19	169.49
110.00	21 51 9	1795.76	-25.01	7.84	15.47	114.10	22 21 4	1195.8	-21.54	.41
110.00	10 55 22	4163.44	16.31	160.09	13.22	59.54	12 4 45	3563.4	12.15	153.46

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .9309 TRA-2.1748 TC3 2.5655 BAU .5456 SGT 4106.1 SGR 1506.5 SG3 1620.5 ST 1740.2 SR 677.1 SS 2391.3
RDE .4038 RRA -.6024 RC3 1.3561 FAU .27950 RRT .9568 RRF -.9907 RTF -.9635 CRT .9818 CRS .9818 CST .9997
FDE-3.4954 FRA 8.1596 FC-17.2050 BSP 15584 SGB 4373.7 R23 -.2041 R13 -.9709 LSA 3031.2 MSA 125.1 SSA 36.7
BDE 1.0147 BRA 2.2567 BC3 2.9019 FSP 5394 SG1 4354.2 SG2 412.8 THA 19.53 EL1 1863.4 EL2 120.1 ALF 21.00

LAUNCH DATE OCT 23 1964 FLIGHT TIME 264.00 ARRIVAL DATE JUL 14 1965

HELIOCENTRIC CONIC DISTANCE 620.020 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 32.925 GAL -4.95 AZL 90.22 HCA 197.65 SMA 189.70 ECC .23143 INC .2138 V1 29.942
RP 232.70 LAP .07 LOP 227.27 VP 21.001 GAP 2.75 AZP 89.79 TAL 333.15 TAP 170.80 RCA 145.80 APO 233.60 V2 23.631
RC 215.236 GL -1.90 GP 10.47 ZAL 129.54 ZAP 139.70 ETS 166.00 ZAE 168.38 ETE 87.16 ZAC 99.68 ETC 255.72 CLP 140.85

PLANETOCENTRIC CONIC

C3 13.814 VHL 3.717 DLA 6.36 RAL 160.06 RAD 6567.5 VEL 11.628 PTH 2.04 VHP 4.139 DPA 7.40 RAP 192.33 ECC 1.2273

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 5 42	2328.16	-22.15	48.81	17.19	108.10	19 44 30	1728.2	-19.47	41.16
90.00	8 42 59	4575.14	11.84	193.23	14.89	64.09	9 59 14	3975.1	8.26	186.38
100.00	20 30 4	2056.04	-23.12	28.44	16.83	109.49	21 4 20	1456.0	-20.25	20.82
100.00	10 1 18	4322.50	12.75	174.18	14.42	62.73	11 13 20	3722.5	8.99	167.41
110.00	21 45 14	1820.79	-25.70	9.47	15.72	113.36	22 15 35	1220.8	-22.31	1.95
110.00	11 2 37	4130.51	15.17	158.23	13.03	58.99	12 11 27	3530.5	10.95	151.66

DIFFERENTIAL CORRECTIONS
TDE .8904 TRA-2.1109 TC3 2.5560 BAU .5347
RDE .3924 RRA -.5835 RC3 1.3596 FAU .29149
FDE-3.4934 FRA 8.4767 FC-18.2682 BSP 15257
BDE .9730 BRA 2.1900 BC3 2.8951 FSP 5657

MID-COURSE EXECUTION ACCURACY
SGT 4026.8 SGR 1485.4 SG3 1698.1
RRT .9553 RRF -.9893 RTF -.9634
SGB 4292.0 R23 -.1999 R13 -.9709
SG1 4272.0 SG2 414.1 THA 19.60

ORBIT DETERMINATION ACCURACY
ST 1688.8 SR 663.7 SS 2391.6
CRT .9802 CRS .9779 CST .9996
LSA 2998.8 MSA 133.9 SSA 36.8
EL1 1810.4 EL2 122.7 ALF 21.17

LAUNCH DATE OCT 23 1964 FLIGHT TIME 266.00 ARRIVAL DATE JUL 16 1965

HELIOCENTRIC CONIC DISTANCE 623.785 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 32.910 GAL -4.90 AZL 90.10 HCA 198.65 SMA 189.43 ECC .23007 INC .1018 V1 29.942
RP 232.32 LAP .03 LOP 228.27 VP 21.021 GAP 2.39 AZP 89.90 TAL 333.31 TAP 171.96 RCA 145.85 APO 233.01 V2 23.670
RC 217.275 GL -.92 GP 10.15 ZAL 129.32 ZAP 138.61 ETS 166.86 ZAE 168.64 ETE 93.69 ZAC 99.33 ETC 255.74 CLP 139.66

PLANETOCENTRIC CONIC

C3 13.587 VHL 3.686 DLA 7.37 RAL 160.20 RAD 6567.5 VEL 11.618 PTH 2.04 VHP 4.049 DPA 7.20 RAP 192.02 ECC 1.2236

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 58 32	2356.46	-22.74	50.67	17.38	107.34	19 37 48	1756.5	-20.15	42.96
90.00	8 51 18	4539.60	10.77	191.16	14.76	63.65	10 6 57	3939.6	7.14	184.36
100.00	20 23 24	2082.70	-23.71	30.20	17.03	108.75	20 58 7	1482.7	-20.93	22.50
100.00	10 9 6	4288.59	11.68	172.23	14.29	62.29	11 20 35	3688.6	7.88	165.50
110.00	21 39 43	1843.86	-26.31	10.98	15.95	112.65	22 10 27	1243.9	-23.01	3.37
110.00	11 9 16	4100.19	14.10	156.53	12.88	58.53	12 17 36	3500.2	9.83	150.03

DIFFERENTIAL CORRECTIONS
TDE .8596 TRA-2.0370 TC3 2.5560 BAU .5266
RDE .3844 RRA -.5660 RC3 1.3687 FAU .30446
FDE-3.5128 FRA 8.7838 FC-19.4001 BSP 14712
BDE .9416 BRA 2.1142 BC3 2.8994 FSP 5894

MID-COURSE EXECUTION ACCURACY
SGT 3940.8 SGR 1470.4 SG3 1778.9
RRT .9547 RRF -.9879 RTF -.9638
SGB 4206.2 R23 -.1932 R13 -.9713
SG1 4185.9 SG2 411.9 THA 19.81

ORBIT DETERMINATION ACCURACY
ST 1645.0 SR 654.8 SS 2399.9
CRT .9795 CRS .9739 CST .9993
LSA 2978.6 MSA 144.5 SSA 36.1
EL1 1766.2 EL2 123.0 ALF 21.41

LAUNCH DATE OCT 23 1964 FLIGHT TIME 268.00 ARRIVAL DATE JUL 18 1965

HELIOCENTRIC CONIC DISTANCE 627.559 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 32.895 GAL -4.85 AZL 90.00 HCA 199.66 SMA 189.17 ECC .22878 INC .0000 V1 29.942
RP 231.95 LAP .00 LOP 229.28 VP 21.042 GAP 2.03 AZP 90.00 TAL 333.45 TAP 173.11 RCA 145.89 APO 232.45 V2 23.709
RC 219.295 GL -.01 GP 9.87 ZAL 129.09 ZAP 137.48 ETS 167.65 ZAE 168.72 ETE 100.63 ZAC 99.01 ETC 255.76 CLP 138.42

PLANETOCENTRIC CONIC

C3 13.381 VHL 3.658 DLA 8.29 RAL 160.33 RAD 6567.5 VEL 11.609 PTH 2.03 VHP 3.963 DPA 7.04 RAP 191.70 ECC 1.2202

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 51 49	2382.74	-23.26	52.42	17.55	106.62	19 31 32	1782.7	-20.76	44.64
90.00	8 59 1	4506.67	9.77	189.26	14.66	63.29	10 14 7	3906.7	6.11	182.50
100.00	20 17 11	2107.44	-24.25	31.84	17.22	108.04	20 52 18	1507.4	-21.55	24.08
100.00	10 16 20	4257.22	10.68	170.44	14.18	61.92	11 27 17	3657.2	6.85	163.75
110.00	21 34 35	1865.21	-26.86	12.39	16.16	111.98	22 5 40	1265.2	-23.64	4.71
110.00	11 15 26	4072.20	13.10	154.98	12.75	58.14	12 23 18	3472.2	8.79	148.52

DIFFERENTIAL CORRECTIONS
TDE .8211 TRA-1.9702 TC3 2.5137 BAU .5126
RDE .3770 RRA -.5523 RC3 1.3761 FAU .31692
FDE-3.5195 FRA 9.1176 FC-20.5050 BSP 14375
BDE .9035 BRA 2.0462 BC3 2.8657 FSP 6178

MID-COURSE EXECUTION ACCURACY
SGT 3842.1 SGR 1458.3 SG3 1860.5
RRT .9526 RRF -.9864 RTF -.9631
SGB 4109.5 R23 -.1905 R13 -.9709
SG1 4088.3 SG2 416.9 THA 20.10

ORBIT DETERMINATION ACCURACY
ST 1591.3 SR 646.8 SS 2405.1
CRT .9778 CRS .9694 CST .9989
LSA 2951.1 MSA 156.7 SSA 35.5
EL1 1713.1 EL2 125.9 ALF 21.80

LAUNCH DATE OCT 23 1964 FLIGHT TIME 270.00 ARRIVAL DATE JUL 20 1965

HELIOCENTRIC CONIC DISTANCE 631.345 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 32.881 GAL -4.81 AZL 89.91 HCA 200.66 SMA 188.92 ECC .22756 INC .0901 V1 29.942
RP 231.57 LAP -.03 LOP 230.29 VP 21.065 GAP 1.69 AZP 90.09 TAL 333.59 TAP 174.25 RCA 145.93 APO 231.92 V2 23.748
RC 221.297 GL .82 GP 9.62 ZAL 128.87 ZAP 136.29 ETS 168.39 ZAE 168.59 ETE 107.74 ZAC 98.70 ETC 255.79 CLP 137.15

PLANETOCENTRIC CONIC

C3 13.194 VHL 3.632 DLA 9.15 RAL 160.44 RAD 6567.5 VEL 11.601 PTH 2.03 VHP 3.880 DPA 6.92 RAP 191.35 ECC 1.2171

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 45 32	2407.26	-23.73	54.07	17.72	105.92	19 25 39	1807.3	-21.32	46.23
90.00	9 6 13	4476.04	8.83	187.51	14.58	62.98	10 20 49	3876.0	5.13	180.77
100.00	20 11 20	2130.49	-24.72	33.39	17.40	107.36	20 46 51	1530.5	-22.11	25.56
100.00	10 23 5	4228.05	9.74	168.78	14.09	61.60	11 33 33	3628.0	5.88	162.13
110.00	21 29 46	1885.07	-27.36	13.72	16.37	111.34	22 1 11	1285.1	-24.22	5.97
110.00	11 21 9	4046.23	12.16	153.55	12.65	57.80	12 28 35	3446.2	7.82	147.14

DIFFERENTIAL CORRECTIONS
TDE .7830 TRA-1.9013 TC3 2.4557 BAU .4973
RDE .3711 RRA -.5406 RC3 1.3854 FAU .32966
FDE-3.5288 FRA 9.4587 FC-21.6315 BSP 14016
BDE .8665 BRA 1.9767 BC3 2.8196 FSP 6470

MID-COURSE EXECUTION ACCURACY
SGT 3733.1 SGR 1449.7 SG3 1944.1
RRT .9502 RRF -.9849 RTF -.9621
SGB 4004.7 R23 -.1884 R13 -.9704
SG1 3982.2 SG2 423.6 THA 20.50

ORBIT DETERMINATION ACCURACY
ST 1535.8 SR 640.9 SS 2411.9
CRT .9761 CRS .9646 CST .9984
LSA 2925.2 MSA 169.5 SSA 34.9
EL1 1659.2 EL2 128.9 ALF 22.30

LAUNCH DATE OCT 23 1964 FLIGHT TIME 272.00 ARRIVAL DATE JUL 22 1965

HELIOCENTRIC CONIC DISTANCE 635.142 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 32.868 GAL -4.76 AZL 89.82 HCA 201.68 SMA 188.69 ECC .22641 INC .1754 V1 29.942
RP 231.20 LAP -.06 LOP 231.30 VP 21.089 GAP 1.35 AZP 90.16 TAL 333.72 TAP 175.39 RCA 145.97 APO 231.41 V2 23.788
RC 223.281 GL 1.59 GP 9.39 ZAL 128.66 ZAP 135.05 ETS 169.07 ZAE 168.25 ETE 114.75 ZAC 98.42 ETC 255.81 CLP 135.84

PLANETOCENTRIC CONIC

C3 13.023 VHL 3.609 DLA 9.94 RAL 160.54 RAD 6567.5 VEL 11.594 PTH 2.03 VHP 3.800 DPA 6.84 RAP 190.99 ECC 1.2143

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 39 36	2430.23	-24.15	55.62	17.88	105.25	19 20 6	1830.2	-21.82	47.72
90.00	9 12 58	4447.45	7.94	185.87	14.52	62.73	10 27 5	3847.4	4.22	179.17
100.00	20 5 51	2152.06	-25.15	34.85	17.57	106.71	20 41 43	1552.1	-22.62	26.96
100.00	10 29 24	4200.85	8.86	167.25	14.02	61.33	11 39 25	3600.9	4.97	160.63
110.00	21 25 15	1903.60	-27.82	14.97	16.56	110.72	21 56 58	1303.6	-24.74	7.15
110.00	11 26 29	4022.07	11.28	152.23	12.57	57.52	12 33 31	3422.1	6.91	145.86

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .7460 TRA-1.8296 TC3 2.3837 BAU .4810 SGT 3613.9 SGR 1444.5 SG3 2029.9 ST 1479.3 SR 636.8 SS 2421.0
RDE .3666 RRA -.5307 RC3 1.3968 FAU .34274 RRT .9475 RRF -.9834 RTF -.9608 CRT .9745 CRS .9595 CST .9978
FDE-3.5422 FRA 9.8073 FC-22.7849 BSP 13627 SGB 3891.9 R23 -.1870 R13 -.9697 LSA 2901.8 MSA 182.7 SSA 34.4
BDE .8312 BRA 1.9050 BC3 2.7628 FSP 6772 SG1 3867.9 SG2 431.6 THA 21.02 EL1 1605.1 EL2 131.8 ALF 22.92

LAUNCH DATE OCT 23 1964 FLIGHT TIME 274.00 ARRIVAL DATE JUL 24 1965

HELIOCENTRIC CONIC DISTANCE 638.950 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 32.856 GAL -4.72 AZL 89.75 HCA 202.69 SMA 188.47 ECC .22531 INC .2534 V1 29.942
RP 230.82 LAP -.10 LOP 232.31 VP 21.114 GAP 1.01 AZP 90.23 TAL 333.83 TAP 176.53 RCA 146.01 APO 230.94 V2 23.827
RC 225.247 GL 2.31 GP 9.19 ZAL 128.45 ZAP 133.77 ETS 169.70 ZAE 167.71 ETE 121.42 ZAC 98.15 ETC 255.83 CLP 134.49

PLANETOCENTRIC CONIC

C3 12.867 VHL 3.587 DLA 10.67 RAL 160.64 RAD 6567.5 VEL 11.587 PTH 2.03 VHP 3.724 DPA 6.79 RAP 190.60 ECC 1.2118

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 34 1	2451.82	-24.53	57.09	18.04	104.61	19 14 52	1851.8	-22.28	49.14
90.00	9 19 19	4420.68	7.10	184.35	14.48	62.52	10 33 0	3820.7	3.36	177.67
100.00	20 0 41	2172.31	-25.54	36.22	17.74	106.08	20 36 53	1572.3	-23.09	28.28
100.00	10 35 20	4175.43	8.03	165.82	13.98	61.11	11 44 55	3575.4	4.11	159.22
110.00	21 21 0	1920.96	-28.23	16.15	16.75	110.13	21 53 1	1321.0	-25.22	8.27
110.00	11 31 30	3999.54	10.45	151.01	12.51	57.27	12 38 10	3399.5	6.07	144.67

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .7094 TRA-1.7560 TC3 2.2952 BAU .4633 SGT 3484.5 SGR 1442.0 SG3 2117.5 ST 1421.1 SR 634.1 SS 2431.0
RDE .3630 RRA -.5224 RC3 1.4092 FAU .35600 RRT .9444 RRF -.9818 RTF -.9590 CRT .9729 CRS .9542 CST .9970
FDE-3.5555 FRA10.1669 FC-23.9524 BSP 13226 SGB 3771.1 R23 -.1865 R13 -.9688 LSA 2879.5 MSA 196.2 SSA 33.9
BDE .7969 BRA 1.8320 BC3 2.6933 FSP 7087 SG1 3745.2 SG2 441.0 THA 21.66 EL1 1550.3 EL2 134.4 ALF 23.65

LAUNCH DATE OCT 23 1964 FLIGHT TIME 276.00 ARRIVAL DATE JUL 26 1965

HELIOCENTRIC CONIC DISTANCE 642.768 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 32.844 GAL -4.69 AZL 89.68 HCA 203.71 SMA 188.27 ECC .22428 INC .3244 V1 29.942
RP 230.43 LAP -.13 LOP 233.33 VP 21.141 GAP .68 AZP 90.30 TAL 333.94 TAP 177.65 RCA 146.04 APO 230.49 V2 23.867
RC 227.193 GL 2.98 GP 9.00 ZAL 128.25 ZAP 132.43 ETS 170.29 ZAE 166.97 ETE 127.57 ZAC 97.88 ETC 255.85 CLP 133.09

PLANETOCENTRIC CONIC

C3 12.726 VHL 3.567 DLA 11.36 RAL 160.73 RAD 6567.5 VEL 11.581 PTH 2.03 VHP 3.650 DPA 6.78 RAP 190.18 ECC 1.2094

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 28 44	2472.18	-24.87	58.48	18.20	103.99	19 9 56	1872.2	-22.70	50.48
90.00	9 25 19	4395.57	6.31	182.93	14.46	62.34	10 38 35	3795.6	2.56	176.26
100.00	19 55 48	2191.37	-25.90	37.53	17.90	105.48	20 32 20	1591.4	-23.52	29.54
100.00	10 40 56	4151.61	7.24	164.49	13.95	60.92	11 50 8	3551.6	3.31	157.91
110.00	21 17 1	1937.26	-28.60	17.27	16.94	109.57	21 49 18	1337.3	-25.67	9.32
110.00	11 36 13	3978.49	9.68	149.87	12.47	57.05	12 42 32	3378.5	5.27	143.56

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .6746 TRA-1.6781 TC3 2.1936 BAU .4449 SGT 3343.8 SGR 1442.2 SG3 2206.9 ST 1362.5 SR 633.1 SS 2444.8
RDE .3608 RRA -.5152 RC3 1.4238 FAU .36972 RRT .9410 RRF -.9803 RTF -.9568 CRT .9716 CRS .9488 CST .9960
FDE-3.5769 FRA10.5270 FC-25.1526 BSP 12764 SGB 3641.5 R23 -.1867 R13 -.9677 LSA 2861.0 MSA 209.7 SSA 33.4
BDE .7650 BRA 1.7554 BC3 2.6151 FSP 7398 SG1 3613.4 SG2 451.7 THA 22.46 EL1 1496.1 EL2 136.4 ALF 24.51

LAUNCH DATE OCT 23 1964 FLIGHT TIME 278.00 ARRIVAL DATE JUL 28 1965

HELIOCENTRIC CONIC DISTANCE 646.598 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 32.833 GAL -4.65 AZL 89.61 HCA 204.73 SMA 188.07 ECC .22331 INC .3901 V1 29.942
RP 230.05 LAP -.16 LOP 234.36 VP 21.169 GAP .35 AZP 90.35 TAL 334.04 TAP 178.78 RCA 146.07 APO 230.07 V2 23.907
RC 229.120 GL 3.60 GP 8.83 ZAL 128.06 ZAP 131.05 ETS 170.85 ZAE 166.06 ETE 133.13 ZAC 97.63 ETC 255.88 CLP 131.66

PLANETOCENTRIC CONIC

C3 12.597 VHL 3.549 DLA 12.00 RAL 160.82 RAD 6567.5 VEL 11.575 PTH 2.02 VHP 3.579 DPA 6.80 RAP 189.74 ECC 1.2073

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 23 45	2491.40	-25.18	59.81	18.35	103.40	19 5 17	1891.4	-23.09	51.76
90.00	9 31 1	4371.99	5.56	181.60	14.46	62.19	10 43 53	3772.0	1.80	174.95
100.00	19 51 12	2209.36	-26.22	38.77	18.06	104.90	20 28 2	1609.4	-23.91	30.73
100.00	10 46 15	4129.27	6.50	163.24	13.94	60.76	11 55 4	3529.3	2.55	156.68
110.00	21 13 16	1952.60	-28.95	18.33	17.12	109.03	21 45 48	1352.6	-26.08	10.33
110.00	11 40 41	3958.78	8.94	148.82	12.45	56.87	12 46 40	3358.8	4.52	142.52

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .6409 TRA-1.5969 TC3 2.0771 BAU .4256 SGT 3192.2 SGR 1444.5 SG3 2298.1 ST 1302.9 SR 633.3 SS 2459.0
RDE .3593 RRA -.5091 RC3 1.4395 FAU .38371 RRT .9371 RRF -.9788 RTF -.9540 CRT .9707 CRS .9434 CST .9948
FDE-3.6021 FRA10.8938 FC-26.3715 BSP 12259 SGB 3503.8 R23 -.1876 R13 -.9664 LSA 2845.1 MSA 223.3 SSA 32.9
BDE .7348 BRA 1.6761 BC3 2.5272 FSP 7713 SG1 3473.1 SG2 463.4 THA 23.42 EL1 1442.1 EL2 137.6 ALF 25.51

LAUNCH DATE OCT 23 1964 FLIGHT TIME 280.00 ARRIVAL DATE JUL 30 1965

HELIOCENTRIC CONIC DISTANCE 650.438 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 32.822 GAL -4.62 AZL 89.55 HCA 205.76 SMA 187.88 ECC .22239 INC .4520 V1 29.942
RP 229.67 LAP -.20 LOP 235.38 VP 21.198 GAP .03 AZP 90.41 TAL 334.13 TAP 179.89 RCA 146.10 APO 229.67 V2 23.948
RC 231.027 GL 4.19 GP 8.68 ZAL 127.89 ZAP 129.63 ETS 171.38 ZAE 165.00 ETE 138.06 ZAC 97.38 ETC 255.90 CLP 130.18

PLANETOCENTRIC CONIC

C3 12.480 VHL 3.533 DLA 12.59 RAL 160.91 RAD 6567.5 VEL 11.570 PTH 2.02 VHP 3.512 DPA 6.84 RAP 189.26 ECC 1.2054

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 19 3	2509.60	-25.46	61.06	18.51	102.83	19 0 53	1909.6	-23.44	52.98
90.00	9 36 25	4349.81	4.86	180.35	14.47	62.07	10 48 55	3749.8	1.08	173.71
100.00	19 46 53	2226.35	-26.51	39.95	18.23	104.35	20 23 59	1626.4	-24.28	31.86
100.00	10 51 17	4108.29	5.80	162.08	13.95	60.62	11 59 45	3508.3	1.84	155.53
110.00	21 9 44	1967.07	-29.27	19.34	17.31	108.51	21 42 32	1367.1	-26.46	11.28
110.00	11 44 54	3940.34	8.26	147.83	12.45	56.71	12 50 35	3340.3	3.82	141.55

DIFFERENTIAL CORRECTIONS
TDE .6059 TRA-1.5139 TC3 1.9390 BAU .4044
RDE .3582 RRA -.5045 RC3 1.4548 FAU .39752
FDE-3.6203 FRA11.2750 FC-27.5768 BSP 11759
BDE .7039 BRA 1.5958 BC3 2.4241 FSP 8051

MID-COURSE EXECUTION ACCURACY
SGT 3028.6 SGR 1448.1 SG3 2390.0
RRT .9322 RRF -.9773 RTF -.9502
SGB 3357.0 R23 -.1900 R13 -.9647
SG1 3322.9 SG2 477.6 THA 24.56

ORBIT DETERMINATION ACCURACY
ST 1239.8 SR 633.8 SS 2472.8
CRT .9697 CRS .9376 CST .9934
LSA 2827.8 MSA 237.0 SSA 32.6
EL1 1385.5 EL2 138.5 ALF 26.66

LAUNCH DATE OCT 23 1964 FLIGHT TIME 282.00 ARRIVAL DATE AUG 1 1965

HELIOCENTRIC CONIC DISTANCE 654.287 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 32.812 GAL -4.59 AZL 89.49 HCA 206.79 SMA 187.71 ECC .22153 INC .5085 V1 29.942
RP 229.28 LAP -.23 LOP 236.41 VP 21.228 GAP -.28 AZP 90.45 TAL 334.21 TAP 181.00 RCA 146.12 APO 229.29 V2 23.988
RC 232.913 GL 4.74 GP 8.54 ZAL 127.73 ZAP 128.15 ETS 171.88 ZAE 163.79 ETE 142.40 ZAC 97.13 ETC 255.93 CLP 128.66

PLANETOCENTRIC CONIC

C3 12.374 VHL 3.518 DLA 13.15 RAL 161.00 RAD 6567.5 VEL 11.566 PTH 2.02 VHP 3.447 DPA 6.92 RAP 188.76 ECC 1.2036

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 14 37	2526.85	-25.72	62.26	18.67	102.28	18 56 44	1926.8	-23.77	54.14
90.00	9 41 35	4328.94	4.19	179.18	14.51	61.97	10 53 44	3728.9	.41	172.54
100.00	19 42 48	2242.45	-26.77	41.07	18.40	103.81	20 20 11	1642.4	-24.61	32.94
100.00	10 56 5	4088.58	5.14	160.99	13.98	60.51	12 4 13	3488.6	1.18	154.45
110.00	21 6 27	1980.73	-29.56	20.30	17.50	108.01	21 39 27	1380.7	-26.81	12.19
110.00	11 48 56	3923.05	7.61	146.91	12.46	56.57	12 54 19	3323.1	3.16	140.65

DIFFERENTIAL CORRECTIONS
TDE .5721 TRA-1.4263 TC3 1.7886 BAU .3832
RDE .3580 RRA -.5003 RC3 1.4719 FAU .41184
FDE-3.6473 FRA11.6517 FC-28.8141 BSP 11202
BDE .6749 BRA 1.5115 BC3 2.3163 FSP 8379

MID-COURSE EXECUTION ACCURACY
SGT 2853.6 SGR 1453.5 SG3 2483.3
RRT .9265 RRF -.9758 RTF -.9454
SGB 3202.5 R23 -.1933 R13 -.9628
SG1 3164.2 SG2 493.3 THA 25.94

ORBIT DETERMINATION ACCURACY
ST 1175.6 SR 635.6 SS 2489.2
CRT .9692 CRS .9320 CST .9917
LSA 2814.0 MSA 250.3 SSA 32.3
EL1 1329.3 EL2 138.4 ALF 27.98

LAUNCH DATE OCT 23 1964 FLIGHT TIME 284.00 ARRIVAL DATE AUG 3 1965

HELIOCENTRIC CONIC DISTANCE 658.147 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 32.803 GAL -4.57 AZL 89.44 HCA 207.82 SMA 187.54 ECC .22073 INC .5619 V1 29.942
RP 228.89 LAP -.26 LOP 237.44 VP 21.260 GAP -.60 AZP 90.50 TAL 334.28 TAP 182.10 RCA 146.15 APO 228.94 V2 24.029
RC 234.778 GL 5.25 GP 8.41 ZAL 127.58 ZAP 126.63 ETS 172.36 ZAE 162.47 ETE 146.19 ZAC 96.89 ETC 255.96 CLP 127.10

PLANETOCENTRIC CONIC

C3 12.279 VHL 3.504 DLA 13.67 RAL 161.09 RAD 6567.5 VEL 11.561 PTH 2.02 VHP 3.386 DPA 7.02 RAP 188.23 ECC 1.2021

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 10 27	2543.21	-25.95	63.41	18.83	101.75	18 52 50	1943.2	-24.07	55.24
90.00	9 46 30	4309.30	3.56	178.08	14.56	61.89	10 58 19	3709.3	-.23	171.45
100.00	19 38 59	2257.69	-27.02	42.14	18.57	103.30	20 16 36	1657.7	-24.92	33.97
100.00	11 0 39	4070.05	4.52	159.96	14.03	60.42	12 8 29	3470.1	.55	153.43
110.00	21 3 22	1993.65	-29.83	21.21	17.69	107.53	21 36 35	1393.7	-27.14	13.05
110.00	11 52 45	3906.86	7.00	146.05	12.50	56.46	12 57 52	3306.9	2.54	139.80

DIFFERENTIAL CORRECTIONS
TDE .5398 TRA-1.3344 TC3 1.6234 BAU .3617
RDE .3584 RRA -.4969 RC3 1.4894 FAU .42628
FDE-3.6777 FRA12.0320 FC-30.0554 BSP 10602
BDE .6480 BRA 1.4239 BC3 2.2031 FSP 8706

MID-COURSE EXECUTION ACCURACY
SGT 2667.5 SGR 1460.1 SG3 2577.2
RRT .9197 RRF -.9744 RTF -.9393
SGB 3041.0 R23 -.1973 R13 -.9605
SG1 2997.9 SG2 510.0 THA 27.59

ORBIT DETERMINATION ACCURACY
ST 1110.9 SR 638.2 SS 2507.2
CRT .9694 CRS .9264 CST .9895
LSA 2803.0 MSA 263.8 SSA 31.9
EL1 1273.9 EL2 136.6 ALF 29.49

LAUNCH DATE OCT 23 1964 FLIGHT TIME 286.00 ARRIVAL DATE AUG 5 1965

HELIOCENTRIC CONIC DISTANCE 662.016 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 32.794 GAL -4.55 AZL 89.39 HCA 208.86 SMA 187.39 ECC .21998 INC .6121 V1 29.942
RP 228.51 LAP -.30 LOP 238.48 VP 21.292 GAP -.90 AZP 90.54 TAL 334.34 TAP 183.20 RCA 146.17 APO 228.61 V2 24.070
RC 236.623 GL 5.74 GP 8.28 ZAL 127.45 ZAP 125.07 ETS 172.82 ZAE 161.03 ETE 149.51 ZAC 96.65 ETC 256.00 CLP 125.49

PLANETOCENTRIC CONIC

C3 12.194 VHL 3.492 DLA 14.16 RAL 161.19 RAD 6567.5 VEL 11.558 PTH 2.02 VHP 3.327 DPA 7.14 RAP 187.66 ECC 1.2007

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 6 31	2558.74	-26.16	64.49	19.00	101.24	18 49 10	1958.7	-24.35	56.29
90.00	9 51 12	4290.84	2.97	177.05	14.63	61.83	11 2 43	3690.8	-.82	170.42
100.00	19 35 23	2272.15	-27.24	43.16	18.74	102.81	20 13 15	1672.1	-25.20	34.95
100.00	11 5 1	4052.66	3.93	159.00	14.09	60.34	12 12 34	3452.7	-.04	152.48
110.00	21 0 29	2005.87	-30.07	22.07	17.88	107.07	21 33 55	1405.9	-27.44	13.87
110.00	11 56 24	3891.71	6.43	145.25	12.55	56.35	13 1 16	3291.7	1.96	139.01

DIFFERENTIAL CORRECTIONS
TDE .5067 TRA-1.2397 TC3 1.4362 BAU .3392
RDE .3589 RRA -.4943 RC3 1.5059 FAU .44042
FDE-3.7021 FRA12.4201 FC-31.2685 BSP 10000
BDE .6210 BRA 1.3346 BC3 2.0809 FSP 9049

MID-COURSE EXECUTION ACCURACY
SGT 2469.4 SGR 1467.2 SG3 2670.7
RRT .9106 RRF -.9729 RTF -.9307
SGB 2872.4 R23 -.2031 R13 -.9576
SG1 2823.0 SG2 530.3 THA 29.56

ORBIT DETERMINATION ACCURACY
ST 1043.2 SR 640.9 SS 2524.0
CRT .9699 CRS .9206 CST .9868
LSA 2791.3 MSA 277.3 SSA 31.6
EL1 1217.0 EL2 133.7 ALF 31.21

LAUNCH DATE OCT 23 1964 FLIGHT TIME 288.00 ARRIVAL DATE AUG 7 1965

HELIOCENTRIC CONIC DISTANCE 665.895 EARTH TO MARS

RL	148.81	LAL	.00	LOL	29.62	VL	32.785	GAL	-4.53	AZL	89.34	HCA	209.90	SMA	187.24	ECC	.21928	INC	.6590	V1	29.942
RP	228.12	LAP	-.33	LOP	239.52	VP	21.325	GAP	-1.20	AZP	90.57	TAL	334.39	TAP	184.28	RCA	146.18	APO	228.30	V2	24.111
RC	238.446	GL	6.20	GP	8.17	ZAL	127.33	ZAP	123.46	ETS	173.25	ZAE	159.50	ETE	152.41	ZAC	96.40	ETC	256.03	CLP	123.85

PLANETOCENTRIC CONIC

C3	12.119	VHL	3.481	DLA	14.61	RAL	161.29	RAD	6567.5	VEL	11.554	PTH	2.02	VHP	3.272	DPA	7.29	RAP	187.06	ECC	1.1994

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 2 51	2573.49	-26.35	65.53	19.18	100.76	18 45 44	1973.5	-24.60	57.30
90.00	9 55 42	4273.48	2.41	176.08	14.71	61.78	11 6 56	3673.5	-1.38	169.45
100.00	19 32 2	2285.86	-27.44	44.12	18.93	102.34	20 10 8	1685.9	-25.47	35.88
100.00	11 9 12	4036.34	3.[illegible]	158.11	14.17	60.28	12 16 28	3436.3	-.60	151.58
110.00	20 57 49	2017.44	-30.30	22.90	18.09	106.63	21 31 27	1417.4	-27.73	14.65
110.00	11 59 54	3877.53	5.90	144.50	12.61	56.27	13 4 32	3277.5	1.42	138.27

DIFFERENTIAL CORRECTIONS

TDE	.4742	TRA	-1.1408	TC3	1.2350	BAU	.3177
RDE	.3601	RRA	-.4921	RC3	1.5231	FAU	.45480
FDE	-3.7321	FRA	12.8048	FC	-32.4892	BSP	9357
BDE	.5954	BRA	1.2424	BC3	1.9609	FSP	9381

MID-COURSE EXECUTION ACCURACY

SGT	2261.3	SGR	1475.2	SG3	2764.5
RRT	.8988	RRF	-.9715	RTF	-.9192
SGB	2699.9	R23	-.2098	R13	-.9544
SG1	2642.6	SG2	553.3	THA	31.95

ORBIT DETERMINATION ACCURACY

ST	973.9	SR	644.4	SS	2542.5
CRT	.9711	CRS	.9149	CST	.9835
LSA	2782.6	MSA	290.3	SSA	31.3
EL1	1160.7	EL2	129.1	ALF	33.19

LAUNCH DATE OCT 23 1964 FLIGHT TIME 290.00 ARRIVAL DATE AUG 9 1965

HELIOCENTRIC CONIC DISTANCE 669.783 EARTH TO MARS

RL	148.81	LAL	.00	LOL	29.62	VL	32.777	GAL	-4.51	AZL	89.30	HCA	210.94	SMA	187.10	ECC	.21863	INC	.7033	V1	29.942
RP	227.73	LAP	-.36	LOP	240.56	VP	21.360	GAP	-1.50	AZP	90.60	TAL	334.42	TAP	185.36	RCA	146.20	APO	228.01	V2	24.152
RC	240.248	GL	6.64	GP	8.06	ZAL	127.23	ZAP	121.80	ETS	173.68	ZAE	157.89	ETE	154.95	ZAC	96.16	ETC	256.08	CLP	122.16

PLANETOCENTRIC CONIC

C3	12.053	VHL	3.472	DLA	15.04	RAL	161.40	RAD	6567.5	VEL	11.552	PTH	2.02	VHP	3.220	DPA	7.46	RAP	186.43	ECC	1.1984

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 59 24	2587.49	-26.53	66.52	19.36	100.29	18 42 32	1987.5	-24.83	58.26
90.00	10 0 1	4257.18	1.88	175.17	14.82	61.74	11 10 58	3657.2	-1.91	168.54
100.00	19 28 54	2298.86	-27.63	45.05	19.12	101.89	20 7 13	1698.9	-25.71	36.77
100.00	11 13 12	4021.05	2.87	157.26	14.27	60.23	12 20 13	3421.0	-1.12	150.74
110.00	20 55 21	2028.39	-30.51	23.68	18.30	106.22	21 29 9	1428.4	-27.99	15.39
110.00	12 3 15	3864.28	5.39	143.80	12.70	56.19	13 7 39	3264.3	.92	137.58

DIFFERENTIAL CORRECTIONS

TDE	.4419	TRA	-1.0375	TC3	1.0155	BAU	.2972
RDE	.3615	RRA	-.4903	RC3	1.5393	FAU	.46891
FDE	-3.7619	FRA	13.1888	FC	-33.6797	BSP	8691
BDE	.5709	BRA	1.1475	BC3	1.8441	FSP	9715

MID-COURSE EXECUTION ACCURACY

SGT	2042.6	SGR	1483.4	SG3	2856.9
RRT	.8826	RRF	-.9701	RTF	-.9028
SGB	2524.4	R23	-.2172	R13	-.9506
SG1	2456.9	SG2	579.8	THA	34.88

ORBIT DETERMINATION ACCURACY

ST	902.9	SR	648.2	SS	2561.1
CRT	.9730	CRS	.9093	CST	.9792
LSA	2775.2	MSA	303.4	SSA	31.0
EL1	1104.7	EL2	122.2	ALF	35.44

LAUNCH DATE OCT 23 1964 FLIGHT TIME 292.00 ARRIVAL DATE AUG 11 1965

HELIOCENTRIC CONIC DISTANCE 673.681 EARTH TO MARS

RL	148.81	LAL	.00	LOL	29.62	VL	32.770	GAL	-4.49	AZL	89.25	HCA	211.99	SMA	186.97	ECC	.21803	INC	.7450	V1	29.942
RP	227.34	LAP	-.39	LOP	241.61	VP	21.395	GAP	-1.79	AZP	90.63	TAL	334.45	TAP	186.44	RCA	146.21	APO	227.74	V2	24.193
RC	242.030	GL	7.05	GP	7.95	ZAL	127.15	ZAP	120.11	ETS	174.08	ZAE	156.19	ETE	157.19	ZAC	95.91	ETC	256.12	CLP	120.43

PLANETOCENTRIC CONIC

C3	11.997	VHL	3.464	DLA	15.44	RAL	161.52	RAD	6567.5	VEL	11.549	PTH	2.02	VHP	3.171	DPA	7.65	RAP	185.77	ECC	1.1974

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 56 13	2600.78	-26.68	67.46	19.56	99.85	18 39 33	2000.8	-25.05	59.17
90.00	10 4 9	4241.91	1.39	174.32	14.94	61.71	11 14 51	3641.9	-2.40	167.69
100.00	19 26 1	2311.18	-27.80	45.92	19.32	101.46	20 4 32	1711.2	-25.94	37.62
100.00	11 17 2	4006.74	2.38	156.48	14.39	60.19	12 23 49	3406.7	-1.60	149.96
110.00	20 53 5	2038.75	-30.71	24.42	18.51	105.81	21 27 4	1438.7	-28.23	16.10
110.00	12 6 28	3851.94	4.93	143.15	12.80	56.13	13 10 40	3251.9	.44	136.94

DIFFERENTIAL CORRECTIONS

TDE	.4102	TRA	-.9299	TC3	.7813	BAU	.2791
RDE	.3634	RRA	-.4886	RC3	1.5553	FAU	.48297
FDE	-3.7956	FRA	13.5662	FC	-34.8530	BSP	7998
BDE	.5481	BRA	1.0505	BC3	1.7405	FSP	10034

MID-COURSE EXECUTION ACCURACY

SGT	1816.6	SGR	1491.8	SG3	2948.2
RRT	.8595	RRF	-.9687	RTF	-.8789
SGB	2350.7	R23	-.2242	R13	-.9467
SG1	2270.1	SG2	610.1	THA	38.50

ORBIT DETERMINATION ACCURACY

ST	830.6	SR	652.5	SS	2580.6
CRT	.9759	CRS	.9038	CST	.9734
LSA	2770.3	MSA	316.1	SSA	30.8
EL1	1050.3	EL2	112.6	ALF	37.99

LAUNCH DATE OCT 23 1964 FLIGHT TIME 294.00 ARRIVAL DATE AUG 13 1965

HELIOCENTRIC CONIC DISTANCE 677.588 EARTH TO MARS

RL	148.81	LAL	.00	LOL	29.62	VL	32.763	GAL	-4.48	AZL	89.22	HCA	213.04	SMA	186.85	ECC	.21748	INC	.7847	V1	29.942
RP	226.95	LAP	-.43	LOP	242.66	VP	21.431	GAP	-2.07	AZP	90.66	TAL	334.46	TAP	187.50	RCA	146.22	APO	227.49	V2	24.235
RC	243.792	GL	7.44	GP	7.85	ZAL	127.08	ZAP	118.37	ETS	174.48	ZAE	154.42	ETE	159.17	ZAC	95.65	ETC	256.17	CLP	118.66

PLANETOCENTRIC CONIC

C3	11.949	VHL	3.457	DLA	15.81	RAL	161.65	RAD	6567.5	VEL	11.547	PTH	2.02	VHP	3.125	DPA	7.85	RAP	185.08	ECC	1.1966

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 53 15	2613.37	-26.83	68.35	19.76	99.42	18 36 48	2013.4	-25.25	60.04
90.00	10 8 7	4227.63	.93	173.52	15.08	61.70	11 18 35	3627.6	-2.86	166.89
100.00	19 23 20	2322.85	-27.95	46.75	19.53	101.04	20 2 3	1722.8	-26.15	38.42
100.00	11 20 43	3993.39	1.93	155.74	14.52	60.16	12 27 17	3393.4	-2.05	149.22
110.00	20 51 0	2048.54	-30.89	25.13	18.74	105.43	21 25 9	1448.5	-28.46	16.77
110.00	12 9 32	3840.46	4.49	142.55	12.93	56.08	13 13 33	3240.5	.01	136.34

DIFFERENTIAL CORRECTIONS

TDE	.3781	TRA	-.8188	TC3	.5276	BAU	.2645
RDE	.3653	RRA	-.4874	RC3	1.5694	FAU	.49645
FDE	-3.8229	FRA	13.9445	FC	-35.9693	BSP	7339
BDE	.5258	BRA	.9529	BC3	1.6557	FSP	10366

MID-COURSE EXECUTION ACCURACY

SGT	1585.9	SGR	1499.7	SG3	3037.0
RRT	.8239	RRF	-.9673	RTF	-.8417
SGB	2182.7	R23	-.2297	R13	-.9429
SG1	2084.8	SG2	646.5	THA	43.06

ORBIT DETERMINATION ACCURACY

ST	756.2	SR	656.7	SS	2598.8
CRT	.9795	CRS	.8982	CST	.9656
LSA	2765.5	MSA	328.8	SSA	30.5
EL1	996.5	EL2	100.3	ALF	40.89

LAUNCH DATE OCT 23 1964 FLIGHT TIME 296.00 ARRIVAL DATE AUG 15 1965

HELIOCENTRIC CONIC DISTANCE 681.505 EARTH TO MARS

RL	148.81	LAL	.00	LOL	29.62	VL	32.756	GAL	-4.47	AZL	89.18	HCA	214.09	SMA	186.74	ECC	.21698	INC	.8219
RP	226.56	LAP	-.46	LOP	243.71	VP	21.468	GAP	-2.35	AZP	90.68	TAL	334.47	TAP	188.56	RCA	146.22	APO	227.26
RC	245.534	GL	7.80	GP	7.75	ZAL	127.03	ZAP	116.59	ETS	174.86	ZAE	152.59	ETE	160.93	ZAC	95.39	ETC	256.22

V1	29.942	V2	24.277	CLP	116.86														

PLANETOCENTRIC CONIC

C3	11.909	VHL	3.451	DLA	16.15	RAL	161.78	RAD	6567.5	VEL	11.545	PTH	2.02	VHP	3.082	DPA	8.08	RAP	184.36
ECC	1.1960																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 50 31	2625.30	-26.96	69.20	19.98	99.01	18 34 17	2025.3	-25.43	60.87
90.00	10 11 56	4214.31	.50	172.78	15.23	61.69	11 22 10	3614.3	-3.29	166.15
100.00	19 20 53	2333.89	-28.10	47.55	19.76	100.65	19 59 47	1733.9	-26.34	39.18
100.00	11 24 15	3980.95	1.51	155.06	14.67	60.14	12 30 36	3381.0	-2.47	148.54
110.00	20 49 8	2057.81	-31.05	25.80	18.98	105.07	21 23 25	1457.8	-28.67	17.41
110.00	12 12 30	3829.80	4.09	141.99	13.06	56.03	13 16 20	3229.8	-.40	135.78

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3488	TRA	-.7004	TC3	.2687	BAU	.2561	SGT	1354.8	SGR	1508.5	SG3	3124.6	ST	683.6	SR	662.4	SS	2621.7
RDE	.3686	RRA	-.4851	RC3	1.5859	FAU	.51081	RRT	.7694	RRF	-.9659	RTF	-.7832	CRT	.9847	CRS	.8938	CST	.9545
FDE	-3.8776	FRA	14.2838	FC	-37.1327	BSP	6623	SGB	2027.6	R23	-.2276	R13	-.9408	LSA	2768.0	MSA	341.2	SSA	30.1
BDE	.5074	BRA	.8520	BC3	1.6085	FSP	10622	SG1	1908.8	SG2	683.9	THA	48.98	EL1	948.2	EL2	83.2	ALF	44.08

LAUNCH DATE OCT 23 1964 FLIGHT TIME 298.00 ARRIVAL DATE AUG 17 1965

HELIOCENTRIC CONIC DISTANCE 685.429 EARTH TO MARS

RL	148.81	LAL	.00	LOL	29.62	VL	32.750	GAL	-4.47	AZL	89.14	HCA	215.15	SMA	186.63	ECC	.21652	INC	.8577
RP	226.17	LAP	-.49	LOP	244.77	VP	21.506	GAP	-2.63	AZP	90.70	TAL	334.46	TAP	189.61	RCA	146.22	APO	227.04
RC	247.256	GL	8.15	GP	7.66	ZAL	127.00	ZAP	114.78	ETS	173.23	ZAE	150.70	ETE	162.51	ZAC	95.13	ETC	256.28

V1	29.942	V2	24.318	CLP	115.02														

PLANETOCENTRIC CONIC

C3	11.878	VHL	3.447	DLA	16.47	RAL	161.93	RAD	6567.5	VEL	11.544	PTH	2.01	VHP	3.043	DPA	8.32	RAP	183.60
ECC	1.1955																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 48 2	2636.57	-27.08	70.01	20.21	98.63	18 31 59	2036.6	-25.60	61.65
90.00	10 15 35	4201.95	.10	172.09	15.41	61.68	11 25 37	3602.0	-3.68	165.46
100.00	19 18 40	2344.32	-28.22	48.29	19.99	100.28	19 57 44	1744.3	-26.52	39.91
100.00	11 27 38	3969.44	1.12	154.43	14.84	60.13	12 33 48	3369.4	-2.86	147.91
110.00	20 47 27	2066.54	-31.21	26.44	19.23	104.72	21 21 53	1466.5	-28.87	18.01
110.00	12 15 21	3819.98	3.71	141.48	13.22	55.99	13 19 1	3220.0	-.78	135.27

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3157	TRA	-.5809	TC3	-.0198	BAU	.2535	SGT	1135.7	SGR	1514.8	SG3	3206.5	ST	605.6	SR	666.6	SS	2638.5
RDE	.3707	RRA	-.4841	RC3	1.5962	FAU	.52308	RRT	.6705	RRF	-.9644	RTF	-.6789	CRT	.9897	CRS	.8881	CST	.9387
FDE	-3.9006	FRA	14.6465	FC	-38.1234	BSP	6048	SGB	1893.3	R23	-.2130	R13	-.9416	LSA	2765.3	MSA	353.1	SSA	29.9
BDE	.4870	BRA	.7561	BC3	1.5964	FSP	10939	SG1	1746.5	SG2	730.8	THA	56.77	EL1	898.3	EL2	64.3	ALF	47.77

LAUNCH DATE OCT 23 1964 FLIGHT TIME 300.00 ARRIVAL DATE AUG 19 1965

HELIOCENTRIC CONIC DISTANCE 689.363 EARTH TO MARS

RL	148.81	LAL	.00	LOL	29.62	VL	32.744	GAL	-4.46	AZL	89.11	HCA	216.21	SMA	186.54	ECC	.21611	INC	.8916
RP	225.78	LAP	-.53	LOP	245.83	VP	21.545	GAP	-2.90	AZP	90.72	TAL	334.44	TAP	190.65	RCA	146.22	APO	226.85
RC	248.959	GL	8.49	GP	7.56	ZAL	126.99	ZAP	112.93	ETS	175.59	ZAE	148.76	ETE	163.93	ZAC	94.87	ETC	256.34

V1	29.942	V2	24.360	CLP	113.14														

PLANETOCENTRIC CONIC

C3	11.856	VHL	3.443	DLA	16.77	RAL	162.09	RAD	6567.5	VEL	11.543	PTH	2.01	VHP	3.007	DPA	8.57	RAP	182.82
ECC	1.1951																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 45 47	2647.20	-27.18	70.77	20.45	98.26	18 29 55	2047.2	-25.76	62.39
90.00	10 19 5	4190.51	-.27	171.45	15.60	61.68	11 28 55	3590.5	-4.05	164.81
100.00	19 16 40	2354.15	-28.34	49.00	20.24	99.92	19 55 54	1754.1	-26.68	40.59
100.00	11 30 53	3958.80	.76	153.85	15.02	60.12	12 36 52	3358.8	-3.22	147.32
110.00	20 45 57	2074.78	-31.35	27.04	19.49	104.39	21 20 32	1474.8	-29.05	18.58
110.00	12 18 5	3810.93	3.37	141.00	13.40	55.96	13 21 36	3210.9	-1.12	134.80

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2847	TRA	-.4554	TC3	-.3160	BAU	.2596	SGT	947.8	SGR	1521.0	SG3	3285.0	ST	530.0	SR	671.7	SS	2657.9
RDE	.3738	RRA	-.4821	RC3	1.6070	FAU	.53552	RRT	.4974	RRF	-.9629	RTF	-.4953	CRT	.9949	CRS	.8833	CST	.9142
FDE	-3.9417	FRA	14.9751	FC	-39.1056	BSP	5527	SGB	1792.2	R23	-.1705	R13	-.9479	LSA	2768.1	MSA	365.0	SSA	29.6
BDE	.4699	BRA	.6632	BC3	1.6378	FSP	11202	SG1	1616.6	SG2	773.6	THA	67.31	EL1	854.6	EL2	42.2	ALF	51.76

LAUNCH DATE OCT 23 1964 FLIGHT TIME 302.00 ARRIVAL DATE AUG 21 1965

HELIOCENTRIC CONIC DISTANCE 693.305 EARTH TO MARS

RL	148.81	LAL	.00	LOL	29.62	VL	32.739	GAL	-4.46	AZL	89.08	HCA	217.28	SMA	186.45	ECC	.21574	INC	.9240
RP	225.38	LAP	-.56	LOP	246.90	VP	21.584	GAP	-3.17	AZP	90.74	TAL	334.41	TAP	191.69	RCA	146.22	APO	226.67
RC	250.643	GL	8.80	GP	7.47	ZAL	127.00	ZAP	111.04	ETS	175.93	ZAE	146.76	ETE	165.20	ZAC	94.59	ETC	256.40

V1	29.942	V2	24.402	CLP	111.23														

PLANETOCENTRIC CONIC

C3	11.841	VHL	3.441	DLA	17.04	RAL	162.25	RAD	6567.5	VEL	11.542	PTH	2.01	VHP	2.975	DPA	8.84	RAP	182.02
ECC	1.1949																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 43 47	2657.21	-27.28	71.48	20.70	97.91	18 28 4	2057.2	-25.90	63.09
90.00	10 22 26	4179.98	-.61	170.86	15.81	61.69	11 32 5	3580.0	-4.39	164.22
100.00	19 14 53	2363.39	-28.45	49.67	20.50	99.59	19 54 17	1763.4	-26.83	41.24
100.00	11 34 0	3949.03	.43	153.31	15.23	60.11	12 39 49	3349.0	-3.55	146.78
110.00	20 44 40	2082.52	-31.48	27.60	19.77	104.08	21 19 22	1482.5	-29.22	19.12
110.00	12 20 43	3802.67	3.05	140.57	13.59	55.94	13 24 6	3202.7	-1.44	134.37

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2527	TRA	-.3263	TC3	-.6296	BAU	.2744	SGT	829.3	SGR	1525.8	SG3	3358.1	ST	454.2	SR	676.4	SS	2675.2
RDE	.3767	RRA	-.4802	RC3	1.6148	FAU	.54693	RRT	.2036	RRF	-.9614	RTF	-.1860	CRT	.9970	CRS	.8783	CST	.8749
FDE	-3.9745	FRA	15.2945	FC	-39.9882	BSP	5178	SGB	1736.6	R23	-.0869	R13	-.9575	LSA	2770.9	MSA	376.5	SSA	29.4
BDE	.4537	BRA	.5806	BC3	1.7332	FSP	11463	SG1	1538.6	SG2	805.1	THA	81.28	EL1	814.2	EL2	29.4	ALF	56.15

LAUNCH DATE OCT 23 1964 FLIGHT TIME 304.00 ARRIVAL DATE AUG 23 1965

HELIOCENTRIC CONIC DISTANCE 697.256 EARTH TO MARS

RL	148.81	LAL	.00	LOL	29.62	VL	32.734	GAL	-4.46	AZL	89.04	HCA	218.35	SMA	186.36	ECC	.21542	INC	.9550
RP	224.99	LAP	-.59	LOP	247.97	VP	21.624	GAP	-3.43	AZP	90.75	TAL	334.36	TAP	192.71	RCA	146.22	APO	226.51
RC	252.307	GL	9.10	GP	7.37	ZAL	127.02	ZAP	109.13	ETS	176.28	ZAE	144.73	ETE	166.36	ZAC	94.32	ETC	256.47

V1 29.942 V2 24.444 CLP 109.30

PLANETOCENTRIC CONIC

C3	11.834	VHL	3.440	DLA	17.30	RAL	162.43	RAD	6567.5	VEL	11.542	PTH	2.01	VHP	2.946	DPA	9.12	RAP	181.19

ECC 1.1948

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 42 0	2666.60	-27.36	72.16	20.97	97.59	18 26 27	2066.6	-26.03	63.74
90.00	10 25 38	4170.35	-.92	170.33	16.03	61.70	11 35 8	3570.4	-4.70	163.68
100.00	19 13 20	2372.06	-28.55	50.29	20.77	99.27	19 52 52	1772.1	-26.97	41.85
100.00	11 36 59	3940.12	.13	152.82	15.45	60.11	12 42 39	3340.1	-3.85	146.29
110.00	20 43 33	2089.78	-31.60	28.14	20.05	103.78	21 18 23	1489.8	-29.38	19.63
110.00	12 23 15	3795.17	2.77	140.18	13.80	55.92	13 26 30	3195.2	-1.73	133.98

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2204	TRA	-.1929	TC3	-.9557	BAU	.2976	SGT	824.8	SGR	1529.1	SG3	3425.5	ST	381.1	SR	681.0	SS	2691.4
RDE	.3798	RRA	-.4780	RC3	1.6202	FAU	.55748	RRT	-.1746	RRF	-.9597	RTF	.2094	CRT	.9891	CRS	.8734	CST	.8078
FDE	-4.0057	FRA	15.5949	FC	-40.7831	BSP	5042	SGB	1737.3	R23	.0232	R13	-.9604	LSA	2775.2	MSA	387.7	SSA	29.1
BDE	.4391	BRA	.5155	BC3	1.8811	FSP	11703	SG1	1538.4	SG2	807.2	THA	97.44	EL1	778.9	EL2	49.1	ALF	60.91

LAUNCH DATE OCT 23 1964 FLIGHT TIME 306.00 ARRIVAL DATE AUG 25 1965

HELIOCENTRIC CONIC DISTANCE 701.215 EARTH TO MARS

RL	148.81	LAL	.00	LOL	29.62	VL	32.730	GAL	-4.47	AZL	89.02	HCA	219.42	SMA	186.28	ECC	.21514	INC	.9845
RP	224.60	LAP	-.63	LOP	249.04	VP	21.664	GAP	-3.69	AZP	90.76	TAL	334.31	TAP	193.73	RCA	146.21	APO	226.36
RC	253.951	GL	9.38	GP	7.28	ZAL	127.07	ZAP	107.19	ETS	176.61	ZAE	142.65	ETE	167.42	ZAC	94.04	ETC	256.55

V1 29.942 V2 24.486 CLP 107.33

PLANETOCENTRIC CONIC

C3	11.835	VHL	3.440	DLA	17.53	RAL	162.62	RAD	6567.5	VEL	11.542	PTH	2.01	VHP	2.920	DPA	9.40	RAP	180.34

ECC 1.1948

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 40 28	2675.38	-27.44	72.79	21.25	97.28	18 25 3	2075.4	-26.15	64.36
90.00	10 28 42	4161.61	-1.20	169.84	16.28	61.71	11 38 3	3561.6	-4.97	163.19
100.00	19 12 0	2380.17	-28.63	50.88	21.06	98.97	19 51 41	1780.2	-27.10	42.41
100.00	11 39 50	3932.05	-.15	152.38	15.69	60.11	12 45 22	3332.0	-4.12	145.85
110.00	20 42 39	2096.58	-31.70	28.64	20.35	103.51	21 17 35	1496.6	-29.52	20.11
110.00	12 25 41	3788.41	2.51	139.83	14.03	55.90	13 28 50	3188.4	-1.98	133.62

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1877	TRA	-.0554	TC3	-1.2931	BAU	.3284	SGT	948.0	SGR	1530.8	SG3	3486.4	ST	315.1	SR	685.6	SS	2706.6
RDE	.3830	RRA	-.4753	RC3	1.6232	FAU	.56715	RRT	-.4920	RRF	-.9580	RTF	.5388	CRT	.9524	CRS	.8686	CST	.6866
FDE	-4.0376	FRA	15.8694	FC	-41.4865	BSP	5164	SGB	1800.6	R23	.1089	R13	-.9550	LSA	2781.3	MSA	398.4	SSA	28.8
BDE	.4265	BRA	.4785	BC3	2.0753	FSP	11921	SG1	1623.8	SG2	778.1	THA	112.33	EL1	749.4	EL2	87.9	ALF	66.01

LAUNCH DATE OCT 23 1964 FLIGHT TIME 308.00 ARRIVAL DATE AUG 27 1965

HELIOCENTRIC CONIC DISTANCE 705.180 EARTH TO MARS

RL	148.81	LAL	.00	LOL	29.62	VL	32.726	GAL	-4.47	AZL	88.99	HCA	220.50	SMA	186.21	ECC	.21490	INC	1.0130
RP	224.21	LAP	-.66	LOP	250.11	VP	21.705	GAP	-3.95	AZP	90.77	TAL	334.24	TAP	194.73	RCA	146.20	APO	226.23
RC	255.576	GL	9.65	GP	7.18	ZAL	127.13	ZAP	105.23	ETS	176.93	ZAE	140.54	ETE	168.38	ZAC	93.75	ETC	256.63

V1 29.942 V2 24.527 CLP 105.35

PLANETOCENTRIC CONIC

C3	11.844	VHL	3.442	DLA	17.73	RAL	162.83	RAD	6567.5	VEL	11.543	PTH	2.01	VHP	2.898	DPA	9.69	RAP	179.47

ECC 1.1949

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 39 11	2683.53	-27.51	73.37	21.55	96.99	18 23 54	2083.5	-26.26	64.93
90.00	10 31 37	4153.79	-1.45	169.40	16.54	61.72	11 40 51	3553.8	-5.22	162.75
100.00	19 10 55	2387.71	-28.71	51.43	21.36	98.70	19 50 43	1787.7	-27.21	42.94
100.00	11 42 34	3924.84	-.39	151.98	15.95	60.11	12 47 59	3324.8	-4.37	145.45
110.00	20 41 57	2102.91	-31.80	29.10	20.67	103.25	21 16 59	1502.9	-29.66	20.55
110.00	12 28 2	3782.40	2.28	139.51	14.28	55.88	13 31 4	3182.4	-2.21	133.31

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1514	TRA	.0838	TC3	-1.6542	BAU	.3662	SGT	1175.3	SGR	1527.9	SG3	3536.6	ST	258.1	SR	687.2	SS	2711.3
RDE	.3843	RRA	-.4744	RC3	1.6163	FAU	.57292	RRT	-.6833	RRF	-.9560	RTF	.7334	CRT	.8409	CRS	.8610	CST	.4575
FDE	-4.0071	FRA	16.1836	FC	-41.8758	BSP	5566	SGB	1927.6	R23	.1544	R13	-.9498	LSA	2779.0	MSA	408.3	SSA	29.0
BDE	.4130	BRA	.4817	BC3	2.3127	FSP	12233	SG1	1781.6	SG2	735.9	THA	124.39	EL1	721.9	EL2	132.9	ALF	71.83

LAUNCH DATE OCT 23 1964 FLIGHT TIME 310.00 ARRIVAL DATE AUG 29 1965

HELIOCENTRIC CONIC DISTANCE 709.156 EARTH TO MARS

RL	148.81	LAL	.00	LOL	29.62	VL	32.722	GAL	-4.48	AZL	88.96	HCA	221.58	SMA	186.15	ECC	.21471	INC	1.0402
RP	223.82	LAP	-.69	LOP	251.19	VP	21.747	GAP	-4.20	AZP	90.78	TAL	334.16	TAP	195.73	RCA	146.18	APO	226.12
RC	257.180	GL	9.90	GP	7.08	ZAL	127.22	ZAP	103.24	ETS	177.24	ZAE	138.39	ETE	169.27	ZAC	93.46	ETC	256.71

V1 29.942 V2 24.569 CLP 103.35

PLANETOCENTRIC CONIC

C3	11.861	VHL	3.444	DLA	17.92	RAL	163.05	RAD	6567.5	VEL	11.543	PTH	2.01	VHP	2.879	DPA	9.99	RAP	178.58

ECC 1.1952

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 38 7	2691.12	-27.57	73.92	21.86	96.72	18 22 58	2091.1	-26.35	65.47
90.00	10 34 24	4146.79	-1.68	169.01	16.82	61.73	11 43 31	3546.8	-5.45	162.36
100.00	19 10 2	2394.72	-28.78	51.94	21.68	98.44	19 49 57	1794.7	-27.32	43.44
100.00	41 45 10	3918.42	-.61	151.63	16.22	60.11	12 50 29	3318.4	-4.58	145.10
110.00	20 41 25	2108.81	-31.90	29.54	21.00	103.00	21 16 34	1508.8	-29.78	20.97
110.00	12 30 17	3777.09	2.08	139.24	14.54	55.87	13 33 14	3177.1	-2.42	133.03

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1201	TRA	.2308	TC3	-2.0032	BAU	.4082	SGT	1451.4	SGR	1527.4	SG3	3584.2	ST	237.3	SR	692.7	SS	2728.3
RDE	.3887	RRA	-.4696	RC3	1.6172	FAU	.58171	RRT	-.7845	RRF	-.9542	RTF	.8397	CRT	.5962	CRS	.8578	CST	.1056
FDE	-4.0645	FRA	16.3760	FC	-42.4586	BSP	6173	SGB	2107.0	R23	.1552	R13	-.9529	LSA	2793.5	MSA	418.8	SSA	28.5
BDE	.4068	BRA	.5232	BC3	2.5745	FSP	12336	SG1	1990.6	SG2	690.7	THA	133.14	EL1	708.1	EL2	186.4	ALF	77.58

LAUNCH DATE OCT 23 1964 FLIGHT TIME 312.00 ARRIVAL DATE AUG 31 1965

HELIOCENTRIC CONIC DISTANCE 713.139 EARTH TO MARS
RL 148.81 LAL .00 LOL 29.62 VL 32.718 GAL -4.50 AZL 88.93 HCA 222.66 SMA 186.09 ECC .21455 INC 1.0664 V1 29.942
RP 223.44 LAP -.72 LOP 252.28 VP 21.789 GAP -4.44 AZP 90.78 TAL 334.06 TAP 196.73 RCA 146.16 APO 226.02 V2 24.611
RC 258.763 GL 10.14 GP 6.99 ZAL 127.32 ZAP 101.24 ETS 177.55 ZAE 136.23 ETE 170.09 ZAC 93.17 ETC 256.80 CLP 101.33
PLANETOCENTRIC CONIC
C3 11.885 VHL 3.448 DLA 18.09 RAL 163.27 RAD 6567.5 VEL 11.544 PTH 2.01 VHP 2.864 DPA 10.29 RAP 177.69 ECC 1.1956

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 37 18	2698.11	-27.63	74.43	22.19	96.48	18 22 16	2098.1	-26.44	65.96
90.00	10 37 3	4140.66	-1.88	168.67	17.11	61.74	11 46 4	3540.7	-5.64	162.01
100.00	19 9 23	2401.19	-28.85	52.41	22.01	98.20	19 49 24	1801.2	-27.41	43.90
100.00	11 47 40	3912.81	-.80	151.32	16.52	60.12	12 52 52	3312.8	-4.77	144.79
110.00	20 41 5	2114.27	-31.98	29.94	21.34	102.78	21 16 19	1514.3	-29.89	21.35
110.00	12 32 27	3772.49	1.90	139.00	14.83	55.86	13 35 19	3172.5	-2.59	132.79

DIFFERENTIAL CORRECTIONS
TDE .0871 TRA .3807 TC3-2.3637 BAU .4547
RDE .3927 RRA -.4646 RC3 1.6132 FAU .58855
FDE-4.1086 FRA16.5485 FC-42.8699 BSP 6972
BDE .4023 BRA .6006 BC3 2.8617 FSP 12433

MID-COURSE EXECUTION ACCURACY
SGT 1766.4 SGR 1524.1 SG3 3622.1
RRT -.8390 RRF -.9521 RTF .8972
SGB 2333.0 R23 .1422 R13 -.9586
SG1 2239.5 SG2 654.0 THA 140.00

ORBIT DETERMINATION ACCURACY
ST 251.4 SR 697.5 SS 2741.7
CRT .2522 CRS .8542 CST -.2828
LSA 2807.5 MSA 428.6 SSA 28.0
EL1 700.8 EL2 242.2 ALF 84.10

LAUNCH DATE OCT 23 1964 FLIGHT TIME 314.00 ARRIVAL DATE SEP 2 1965

HELIOCENTRIC CONIC DISTANCE 717.130 EARTH TO MARS
RL 148.81 LAL .00 LOL 29.62 VL 32.715 GAL -4.51 AZL 88.91 HCA 223.75 SMA 186.04 ECC .21444 INC 1.0916 V1 29.942
RP 223.05 LAP -.75 LOP 253.37 VP 21.832 GAP -4.69 AZP 90.79 TAL 333.96 TAP 197.71 RCA 146.14 APO 225.93 V2 24.653
RC 260.326 GL 10.37 GP 6.88 ZAL 127.44 ZAP 99.23 ETS 177.85 ZAE 134.04 ETE 170.84 ZAC 92.87 ETC 256.89 CLP 99.30
PLANETOCENTRIC CONIC
C3 11.918 VHL 3.452 DLA 18.24 RAL 163.52 RAD 6567.5 VEL 11.546 PTH 2.02 VHP 2.852 DPA 10.59 RAP 176.78 ECC 1.1961

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 36 44	2704.51	-27.67	74.89	22.54	96.25	18 21 48	2104.5	-26.52	66.41
90.00	10 39 34	4135.40	-2.05	168.38	17.43	61.75	11 48 29	3535.4	-5.81	161.72
100.00	19 8 57	2407.12	-28.90	52.84	22.36	97.98	19 49 4	1807.1	-27.50	44.32
100.00	11 50 2	3908.02	-.96	151.06	16.83	60.12	12 55 10	3308.0	-4.93	144.52
110.00	20 40 56	2119.30	-32.05	30.32	21.70	102.57	21 16 16	1519.3	-29.99	21.71
110.00	12 34 31	3768.61	1.75	138.79	15.13	55.86	13 37 20	3168.6	-2.74	132.59

DIFFERENTIAL CORRECTIONS
TDE .0530 TRA .5334 TC3-2.7326 BAU .5049
RDE .3965 RRA -.4593 RC3 1.6048 FAU .59357
FDE-4.1383 FRA16.7020 FC-43.1181 BSP 7914
BDE .4000 BRA .7039 BC3 3.1690 FSP 12525

MID-COURSE EXECUTION ACCURACY
SGT 2106.2 SGR 1518.3 SG3 3650.7
RRT -.8696 RRF -.9499 RTF .9300
SGB 2596.4 R23 .1249 R13 -.9649
SG1 2519.7 SG2 626.6 THA 145.48

ORBIT DETERMINATION ACCURACY
ST 298.5 SR 701.5 SS 2751.4
CRT -.0542 CRS .8501 CST -.5685
LSA 2821.2 MSA 438.0 SSA 27.7
EL1 701.7 EL2 298.0 ALF 91.61

LAUNCH DATE OCT 23 1964 FLIGHT TIME 316.00 ARRIVAL DATE SEP 4 1965

HELIOCENTRIC CONIC DISTANCE 721.129 EARTH TO MARS
RL 148.81 LAL .00 LOL 29.62 VL 32.713 GAL -4.53 AZL 88.88 HCA 224.84 SMA 185.99 ECC .21437 INC 1.1159 V1 29.942
RP 222.66 LAP -.79 LOP 254.46 VP 21.875 GAP -4.92 AZP 90.79 TAL 333.84 TAP 198.68 RCA 146.12 APO 225.86 V2 24.695
RC 261.869 GL 10.58 GP 6.78 ZAL 127.58 ZAP 97.21 ETS 178.13 ZAE 131.83 ETE 171.54 ZAC 92.58 ETC 256.99 CLP 97.26
PLANETOCENTRIC CONIC
C3 11.958 VHL 3.458 DLA 18.37 RAL 163.77 RAD 6567.5 VEL 11.548 PTH 2.02 VHP 2.844 DPA 10.88 RAP 175.87 ECC 1.1968

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 36 24	2710.32	-27.72	75.31	22.90	96.04	18 21 34	2110.3	-26.59	66.82
90.00	10 41 56	4131.00	-2.19	168.13	17.76	61.76	11 50 47	3531.0	-5.95	161.47
100.00	19 8 45	2412.52	-28.95	53.23	22.73	97.78	19 48 57	1812.5	-27.58	44.70
100.00	11 52 16	3904.04	-1.10	150.84	17.15	60.13	12 57 21	3304.0	-5.07	144.30
110.00	20 40 59	2123.91	-32.12	30.66	22.07	102.38	21 16 23	1523.9	-30.08	22.04
110.00	12 36 31	3765.41	1.63	138.63	15.45	55.85	13 39 16	3165.4	-2.86	132.42

DIFFERENTIAL CORRECTIONS
TDE .0180 TRA .6893 TC3-3.1045 BAU .5579
RDE .4002 RRA -.4536 RC3 1.5933 FAU .59717
FDE-4.1648 FRA16.8255 FC-43.2337 BSP 8962
BDE .4006 BRA .8252 BC3 3.4895 FSP 12587

MID-COURSE EXECUTION ACCURACY
SGT 2461.6 SGR 1510.3 SG3 3670.3
RRT -.8874 RRF -.9474 RTF .9501
SGB 2888.0 R23 .1071 R13 -.9708
SG1 2823.5 SG2 607.0 THA 149.90

ORBIT DETERMINATION ACCURACY
ST 368.0 SR 705.2 SS 2759.5
CRT -.2624 CRS .8461 CST -.7342
LSA 2836.7 MSA 447.0 SSA 27.3
EL1 713.9 EL2 350.7 ALF 100.31

LAUNCH DATE OCT 23 1964 FLIGHT TIME 318.00 ARRIVAL DATE SEP 6 1965

HELIOCENTRIC CONIC DISTANCE 725.135 EARTH TO MARS
RL 148.81 LAL .00 LOL 29.62 VL 32.710 GAL -4.55 AZL 88.86 HCA 225.93 SMA 185.95 ECC .21433 INC 1.1394 V1 29.942
RP 222.28 LAP -.82 LOP 255.55 VP 21.919 GAP -5.16 AZP 90.79 TAL 333.71 TAP 199.64 RCA 146.09 APO 225.81 V2 24.737
RC 263.392 GL 10.79 GP 6.68 ZAL 127.74 ZAP 95.19 ETS 178.41 ZAE 129.62 ETE 172.19 ZAC 92.28 ETC 257.09 CLP 95.23
PLANETOCENTRIC CONIC
C3 12.006 VHL 3.465 DLA 18.48 RAL 164.04 RAD 6567.5 VEL 11.550 PTH 2.02 VHP 2.840 DPA 11.18 RAP 174.96 ECC 1.1976

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 36 18	2715.56	-27.75	75.69	23.27	95.86	18 21 34	2115.6	-26.65	67.19
90.00	10 44 11	4127.45	-2.30	167.93	18.11	61.77	11 52 58	3527.5	-6.06	161.27
100.00	19 8 46	2417.40	-29.00	53.59	23.11	97.60	19 49 3	1817.4	-27.64	45.05
100.00	11 54 24	3900.85	-1.21	150.67	17.50	60.13	12 59 25	3300.9	-5.17	144.13
110.00	20 41 14	2128.10	-32.18	30.97	22.46	102.20	21 16 42	1528.1	-30.17	22.34
110.00	12 38 26	3762.92	1.53	138.50	15.79	55.85	13 41 9	3162.9	-2.96	132.29

DIFFERENTIAL CORRECTIONS
TDE -.0176 TRA .8483 TC3-3.4787 BAU .6131
RDE .4039 RRA -.4473 RC3 1.5779 FAU .59905
FDE-4.1844 FRA16.9172 FC-43.1960 BSP 10086
BDE .4042 BRA .9589 BC3 3.8199 FSP 12623

MID-COURSE EXECUTION ACCURACY
SGT 2828.4 SGR 1499.9 SG3 3679.8
RRT -.8978 RRF -.9448 RTF .9629
SGB 3201.5 R23 .0914 R13 -.9757
SG1 3145.9 SG2 593.9 THA 153.52

ORBIT DETERMINATION ACCURACY
ST 450.5 SR 708.4 SS 2764.8
CRT -.3935 CRS .8419 CST -.8258
LSA 2853.2 MSA 455.7 SSA 26.9
EL1 739.9 EL2 396.5 ALF 110.02

LAUNCH DATE OCT 23 1964 FLIGHT TIME 320.00 ARRIVAL DATE SEP 8 1965

HELIOCENTRIC CONIC DISTANCE 729.149 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 32.708 GAL -4.58 AZL 88.84 HCA 227.03 SMA 185.91 ECC .21434 INC 1.1621 V1 29.942
RP 221.89 LAP -.85 LOP 256.65 VP 21.963 GAP -5.39 AZP 90.79 TAL 333.56 TAP 200.60 RCA 146.07 APO 225.76 V2 24.779
RC 264.895 GL 10.98 GP 6.57 ZAL 127.92 ZAP 93.17 ETS 178.68 ZAE 127.40 ETE 172.79 ZAC 91.98 ETC 257.19 CLP 93.19

PLANETOCENTRIC CONIC

C3 12.062 VHL 3.473 DLA 18.58 RAL 164.33 RAD 6567.5 VEL 11.552 PTH 2.02 VHP 2.839 DPA 11.47 RAP 174.05 ECC 1.1985

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 36 27	2720.23	-27.79	76.02	23.67	95.69	18 21 47	2120.2	-26.71	67.52
90.00	10 46 18	4124.75	-2.39	167.78	18.48	61.78	11 55 2	3524.8	-6.14	161.12
100.00	19 9 1	2421.76	-29.04	53.91	23.51	97.43	19 49 22	1821.8	-27.70	45.36
100.00	11 56 25	3898.46	-1.29	150.54	17.86	60.13	13 1 24	3298.5	-5.25	143.99
110.00	20 41 40	2131.88	-32.24	31.25	22.87	102.04	21 17 12	1531.9	-30.24	22.60
110.00	12 40 16	3761.10	1.46	138.40	16.14	55.84	13 42 57	3161.1	-3.03	132.20

DIFFERENTIAL CORRECTIONS
TDE -.0539 TRA 1.0098 TC3-3.8525 BAU .6702
RDE .4075 RRA -.4402 RC3 1.5596 FAU .59950
FDE-4.2010 FRA16.9741 FC-43.0278 BSP 11258
BDE .4111 BRA 1.1016 BC3 4.1562 FSP 12629

MID-COURSE EXECUTION ACCURACY
SGT 3202.7 SGR 1487.5 SG3 3679.9
RRT -.9037 RRF -.9419 RTF .9714
SGB 3531.3 R23 .0783 R13 -.9798
SG1 3482.4 SG2 585.7 THA 156.53

ORBIT DETERMINATION ACCURACY
ST 540.7 SR 711.3 SS 2768.2
CRT -.4774 CRS .8378 CST -.8785
LSA 2871.4 MSA 463.9 SSA 26.5
EL1 782.0 EL2 432.1 ALF 119.91

LAUNCH DATE OCT 23 1964 FLIGHT TIME 322.00 ARRIVAL DATE SEP 10 1965

HELIOCENTRIC CONIC DISTANCE 733.170 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 32.706 GAL -4.60 AZL 88.82 HCA 228.14 SMA 185.88 ECC .21438 INC 1.1841 V1 29.942
RP 221.51 LAP -.88 LOP 257.75 VP 22.007 GAP -5.62 AZP 90.79 TAL 333.41 TAP 201.54 RCA 146.03 APO 225.73 V2 24.820
RC 266.379 GL 11.16 GP 6.46 ZAL 128.12 ZAP 91.15 ETS 178.95 ZAE 125.19 ETE 173.35 ZAC 91.69 ETC 257.29 CLP 91.16

PLANETOCENTRIC CONIC

C3 12.127 VHL 3.482 DLA 18.65 RAL 164.62 RAD 6567.5 VEL 11.555 PTH 2.02 VHP 2.841 DPA 11.75 RAP 173.14 ECC 1.1996

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 36 51	2724.34	-27.81	76.32	24.08	95.54	18 22 15	2124.3	-26.75	67.82
90.00	10 48 16	4122.89	-2.45	167.68	18.86	61.78	11 56 59	3522.9	-6.20	161.01
100.00	19 9 29	2425.62	-29.07	54.19	23.92	97.29	19 49 54	1825.6	-27.76	45.63
100.00	11 58 19	3896.84	-1.34	150.45	18.25	60.13	13 3 16	3296.8	-5.31	143.90
110.00	20 42 17	2135.27	-32.28	31.50	23.29	101.90	21 17 52	1535.3	-30.31	22.85
110.00	12 42 1	3759.96	1.42	138.34	16.52	55.84	13 44 41	3160.0	-3.07	132.14

DIFFERENTIAL CORRECTIONS
TDE -.0912 TRA 1.1739 TC3-4.2240 BAU .7288
RDE .4113 RRA -.4326 RC3 1.5385 FAU .59852
FDE-4.2172 FRA16.9962 FC-42.7294 BSP 12473
BDE .4213 BRA 1.2511 BC3 4.4954 FSP 12598

MID-COURSE EXECUTION ACCURACY
SGT 3582.3 SGR 1473.2 SG3 3670.6
RRT -.9067 RRF -.9387 RTF .9774
SGB 3873.4 R23 .0675 R13 -.9830
SG1 3829.5 SG2 581.3 THA 159.05

ORBIT DETERMINATION ACCURACY
ST 635.9 SR 714.0 SS 2770.1
CRT -.5334 CRS .8340 CST -.9107
LSA 2892.2 MSA 471.8 SSA 26.1
EL1 839.6 EL2 457.4 ALF 128.85

LAUNCH DATE OCT 23 1964 FLIGHT TIME 324.00 ARRIVAL DATE SEP 12 1965

HELIOCENTRIC CONIC DISTANCE 737.198 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 32.705 GAL -4.63 AZL 88.79 HCA 229.24 SMA 185.86 ECC .21447 INC 1.2054 V1 29.942
RP 221.13 LAP -.91 LOP 258.86 VP 22.051 GAP -5.84 AZP 90.79 TAL 333.24 TAP 202.48 RCA 146.00 APO 225.72 V2 24.862
RC 267.844 GL 11.32 GP 6.35 ZAL 128.34 ZAP 89.14 ETS 179.20 ZAE 122.97 ETE 173.88 ZAC 91.39 ETC 257.40 CLP 89.14

PLANETOCENTRIC CONIC

C3 12.199 VHL 3.493 DLA 18.71 RAL 164.93 RAD 6567.5 VEL 11.558 PTH 2.02 VHP 2.847 DPA 12.02 RAP 172.25 ECC 1.2008

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 37 28	2727.89	-27.84	76.58	24.51	95.42	18 22 56	2127.9	-26.79	68.07
90.00	10 50 7	4121.87	-2.48	167.62	19.26	61.78	11 58 49	3521.9	-6.24	160.95
100.00	19 10 10	2428.98	-29.10	54.43	24.35	97.16	19 50 39	1829.0	-27.80	45.87
100.00	12 0 7	3896.01	-1.37	150.40	18.65	60.14	13 5 3	3296.0	-5.33	143.86
110.00	20 43 5	2138.27	-32.33	31.73	23.73	101.77	21 18 43	1538.3	-30.37	23.06
110.00	12 43 41	3759.48	1.40	138.32	16.91	55.84	13 46 21	3159.5	-3.09	132.11

DIFFERENTIAL CORRECTIONS
TDE -.1292 TRA 1.3406 TC3-4.5894 BAU .7882
RDE .4151 RRA -.4242 RC3 1.5142 FAU .59595
FDE-4.2282 FRA16.9817 FC-42.2928 BSP 13714
BDE .4347 BRA 1.4061 BC3 4.8327 FSP 12538

MID-COURSE EXECUTION ACCURACY
SGT 3964.0 SGR 1456.8 SG3 3651.3
RRT -.9076 RRF -.9353 RTF .9818
SGB 4223.2 R23 .0589 R13 -.9857
SG1 4183.3 SG2 579.6 THA 161.18

ORBIT DETERMINATION ACCURACY
ST 734.4 SR 716.4 SS 2769.4
CRT -.5719 CRS .8302 CST -.9315
LSA 2914.1 MSA 479.4 SSA 25.7
EL1 909.7 EL2 474.4 ALF 136.24

LAUNCH DATE OCT 23 1964 FLIGHT TIME 326.00 ARRIVAL DATE SEP 14 1965

HELIOCENTRIC CONIC DISTANCE 741.233 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 32.703 GAL -4.67 AZL 88.77 HCA 230.35 SMA 185.83 ECC .21459 INC 1.2261 V1 29.942
RP 220.75 LAP -.94 LOP 259.97 VP 22.096 GAP -6.06 AZP 90.78 TAL 333.05 TAP 203.41 RCA 145.96 APO 225.71 V2 24.903
RC 269.292 GL 11.48 GP 6.23 ZAL 128.58 ZAP 87.15 ETS 179.44 ZAE 120.77 ETE 174.37 ZAC 91.10 ETC 257.50 CLP 87.13

PLANETOCENTRIC CONIC

C3 12.280 VHL 3.504 DLA 18.75 RAL 165.26 RAD 6567.5 VEL 11.561 PTH 2.02 VHP 2.856 DPA 12.28 RAP 171.38 ECC 1.2021

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 38 20	2730.89	-27.86	76.80	24.96	95.31	18 23 51	2130.9	-26.83	68.28
90.00	10 51 51	4121.67	-2.49	167.61	19.68	61.78	12 0 32	3521.7	-6.24	160.94
100.00	19 11 5	2431.85	-29.12	54.64	24.80	97.05	19 51 36	1831.8	-27.84	46.07
100.00	12 1 48	3895.94	-1.37	150.40	19.06	60.14	13 6 43	3295.9	-5.34	143.85
110.00	20 44 4	2140.88	-32.36	31.92	24.18	101.66	21 19 45	1540.9	-30.42	23.25
110.00	12 45 17	3759.67	1.41	138.33	17.32	55.84	13 47 57	3159.7	-3.08	132.12

DIFFERENTIAL CORRECTIONS
TDE -.1681 TRA 1.5091 TC3-4.9496 BAU .8485
RDE .4188 RRA -.4154 RC3 1.4874 FAU .59198
FDE-4.2347 FRA16.9354 FC-41.7345 BSP 14975
BDE .4513 BRA 1.5652 BC3 5.1683 FSP 12450

MID-COURSE EXECUTION ACCURACY
SGT 4347.3 SGR 1438.8 SG3 3623.2
RRT -.9070 RRF -.9316 RTF .9850
SGB 4579.2 R23 .0522 R13 -.9878
SG1 4542.4 SG2 579.8 THA 163.01

ORBIT DETERMINATION ACCURACY
ST 835.1 SR 718.5 SS 2766.6
CRT -.5993 CRS .8264 CST -.9455
LSA 2937.7 MSA 486.6 SSA 25.2
EL1 988.8 EL2 485.8 ALF 142.07

LAUNCH DATE OCT 23 1964 FLIGHT TIME 328.00 ARRIVAL DATE SEP 16 1965

HELIOCENTRIC CONIC DISTANCE 745.274 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 32.702 GAL -4.70 AZL 88.75 HCA 231.47 SMA 185.82 ECC .21475 INC 1.2462 V1 29.942
RP 220.37 LAP -.97 LOP 261.08 VP 22.141 GAP -6.28 AZP 90.78 TAL 332.85 TAP 204.32 RCA 145.91 APO 225.72 V2 24.945
RC 270.721 GL 11.63 GP 6.12 ZAL 128.84 ZAP 85.17 ETS 179.67 ZAE 118.58 ETE 174.83 ZAC 90.81 ETC 257.61 CLP 85.15

PLANETOCENTRIC CONIC

C3 12.370 VHL 3.517 DLA 18.77 RAL 165.60 RAD 6567.5 VEL 11.565 PTH 2.02 VHP 2.869 DPA 12.53 RAP 170.52 ECC 1.2036

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 39 26	2733.35	-27.87	76.98	25.42	95.22	18 25 0	2133.4	-26.85	68.46
90.00	10 53 26	4122.29	-2.47	167.65	20.12	61.78	12 2 8	3522.3	-6.22	160.98
100.00	19 12 12	2434.23	-29.14	54.82	25.27	96.96	19 52 46	1834.2	-27.87	46.24
100.00	12 3 22	3896.64	-1.35	150.44	19.50	60.14	13 8 18	3296.6	-5.31	143.89
110.00	20 45 15	2143.12	-32.39	32.09	24.65	101.57	21 20 58	1543.1	-30.46	23.41
110.00	12 46 48	3760.52	1.44	138.37	17.75	55.84	13 49 29	3160.5	-3.05	132.17

DIFFERENTIAL CORRECTIONS
TDE -.2082 TRA 1.6793 TC3-5.3013 BAU .9092
RDE .4228 RRA -.4059 RC3 1.4584 FAU .58675
FDE-4.2430 FRA16.8542 FC-41.0657 BSP 16235
BDE .4713 BRA 1.7277 BC3 5.4982 FSP 12326

MID-COURSE EXECUTION ACCURACY
SGT 4729.6 SGR 1419.3 SG3 3586.5
RRT -.9053 RRF -.9275 RTF .9874
SGB 4938.0 R23 .0469 R13 -.9894
SG1 4903.6 SG2 581.6 THA 164.58

ORBIT DETERMINATION ACCURACY
ST 937.5 SR 720.6 SS 2762.9
CRT -.6198 CRS .8231 CST -.9554
LSA 2964.4 MSA 493.4 SSA 24.8
EL1 1074.6 EL2 493.3 ALF 146.63

LAUNCH DATE OCT 23 1964 FLIGHT TIME 330.00 ARRIVAL DATE SEP 18 1965

HELIOCENTRIC CONIC DISTANCE 749.323 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 32.702 GAL -4.74 AZL 88.73 HCA 232.59 SMA 185.80 ECC .21495 INC 1.2658 V1 29.942
RP 220.00 LAP -1.01 LOP 262.20 VP 22.187 GAP -6.49 AZP 90.77 TAL 332.64 TAP 205.23 RCA 145.87 APO 225.74 V2 24.986
RC 272.134 GL 11.76 GP 6.00 ZAL 129.11 ZAP 83.22 ETS 179.89 ZAE 116.40 ETE 175.25 ZAC 90.53 ETC 257.71 CLP 83.18

PLANETOCENTRIC CONIC

C3 12.468 VHL 3.531 DLA 18.78 RAL 165.95 RAD 6567.5 VEL 11.570 PTH 2.02 VHP 2.885 DPA 12.77 RAP 169.68 ECC 1.2052

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 40 46	2735.29	-27.88	77.12	25.91	95.15	18 26 22	2135.3	-26.88	68.59
90.00	10 54 54	4123.72	-2.42	167.73	20.57	61.78	12 3 38	3523.7	-6.18	161.06
100.00	19 13 32	2436.15	-29.16	54.96	25.75	96.89	19 54 9	1836.2	-27.90	46.38
100.00	12 4 49	3898.10	-1.30	150.52	19.95	60.13	13 9 47	3298.1	-5.26	143.97
110.00	20 46 36	2145.00	-32.42	32.23	25.14	101.49	21 22 21	1545.0	-30.50	23.54
110.00	12 48 15	3762.01	1.50	138.45	18.20	55.85	13 50 57	3162.0	-2.99	132.24

DIFFERENTIAL CORRECTIONS
TDE -.2492 TRA 1.8512 TC3-5.6428 BAU .9702
RDE .4267 RRA -.3959 RC3 1.4271 FAU .58011
FDE-4.2457 FRA16.7421 FC-40.2811 BSP 17503
BDE .4941 BRA 1.8931 BC3 5.8205 FSP 12171

MID-COURSE EXECUTION ACCURACY
SGT 5109.8 SGR 1398.4 SG3 3541.4
RRT -.9025 RRF -.9231 RTF .9892
SGB 5297.7 R23 .0428 R13 -.9908
SG1 5265.3 SG2 584.4 THA 165.95

ORBIT DETERMINATION ACCURACY
ST 1041.1 SR 722.3 SS 2756.7
CRT -.6349 CRS .8198 CST -.9626
LSA 2992.4 MSA 499.9 SSA 24.3
EL1 1164.8 EL2 498.8 ALF 150.24

LAUNCH DATE OCT 23 1964 FLIGHT TIME 332.00 ARRIVAL DATE SEP 20 1965

HELIOCENTRIC CONIC DISTANCE 753.378 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 32.701 GAL -4.78 AZL 88.72 HCA 233.71 SMA 185.80 ECC .21518 INC 1.2848 V1 29.942
RP 219.62 LAP -1.04 LOP 263.32 VP 22.232 GAP -6.70 AZP 90.76 TAL 332.42 TAP 206.13 RCA 145.82 APO 225.78 V2 25.027
RC 273.529 GL 11.89 GP 5.88 ZAL 129.41 ZAP 81.29 ETS 180.11 ZAE 114.25 ETE 175.65 ZAC 90.26 ETC 257.82 CLP 81.24

PLANETOCENTRIC CONIC

C3 12.575 VHL 3.546 DLA 18.77 RAL 166.31 RAD 6567.5 VEL 11.574 PTH 2.02 VHP 2.905 DPA 12.99 RAP 168.87 ECC 1.2070

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 42 20	2736.71	-27.89	77.22	26.41	95.10	18 27 57	2136.7	-26.89	68.69
90.00	10 56 15	4125.96	-2.35	167.85	21.04	61.77	12 5 1	3526.0	-6.11	161.18
100.00	19 15 6	2437.61	-29.17	55.06	26.26	96.84	19 55 43	1837.6	-27.92	46.48
100.00	12 6 11	3900.30	-1.23	150.64	20.42	60.13	13 11 11	3300.3	-5.19	144.10
110.00	20 48 8	2146.52	-32.44	32.35	25.64	101.42	21 23 54	1546.5	-30.52	23.65
110.00	12 49 38	3764.15	1.58	138.56	18.66	55.85	13 52 22	3164.2	-2.91	132.36

DIFFERENTIAL CORRECTIONS
TDE -.2915 TRA 2.0246 TC3-5.9740 BAU 1.0313
RDE .4306 RRA -.3856 RC3 1.3938 FAU .57216
FDE-4.2436 FRA16.6017 FC-39.3895 BSP 18762
BDE .5200 BRA 2.0610 BC3 6.1345 FSP 11998

MID-COURSE EXECUTION ACCURACY
SGT 5487.3 SGR 1376.2 SG3 3488.3
RRT -.8990 RRF -.9183 RTF .9907
SGB 5657.3 R23 .0396 R13 -.9919
SG1 5626.6 SG2 587.7 THA 167.15

ORBIT DETERMINATION ACCURACY
ST 1145.6 SR 723.7 SS 2748.4
CRT -.6466 CRS .8166 CST -.9680
LSA 3022.1 MSA 505.8 SSA 23.8
EL1 1258.4 EL2 502.6 ALF 153.17

LAUNCH DATE OCT 23 1964 FLIGHT TIME 334.00 ARRIVAL DATE SEP 22 1965

HELIOCENTRIC CONIC DISTANCE 757.437 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 32.701 GAL -4.83 AZL 88.70 HCA 234.83 SMA 185.79 ECC .21546 INC 1.3034 V1 29.942
RP 219.25 LAP -1.07 LOP 264.45 VP 22.278 GAP -6.90 AZP 90.75 TAL 332.18 TAP 207.01 RCA 145.76 APO 225.82 V2 25.067
RC 274.906 GL 12.01 GP 5.76 ZAL 129.72 ZAP 79.39 ETS 180.31 ZAE 112.12 ETE 176.03 ZAC 89.99 ETC 257.92 CLP 79.33

PLANETOCENTRIC CONIC

C3 12.693 VHL 3.563 DLA 18.74 RAL 166.69 RAD 6567.5 VEL 11.579 PTH 2.03 VHP 2.927 DPA 13.20 RAP 168.09 ECC 1.2089

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 44 8	2737.61	-27.90	77.28	26.93	95.07	18 29 46	2137.6	-26.90	68.76
90.00	10 57 28	4129.03	-2.25	168.02	21.53	61.77	12 6 17	3529.0	-6.01	161.36
100.00	19 16 52	2438.59	-29.18	55.14	26.78	96.80	19 57 30	1838.6	-27.93	46.56
100.00	12 7 26	3903.28	-1.12	150.80	20.91	60.13	13 12 29	3303.3	-5.09	144.26
110.00	20 49 51	2147.68	-32.45	32.43	26.17	101.38	21 25 39	1547.7	-30.55	23.73
110.00	12 50 56	3766.96	1.69	138.71	19.15	55.85	13 53 43	3167.0	-2.80	132.50

DIFFERENTIAL CORRECTIONS
TDE -.3291 TRA 2.2074 TC3-6.2737 BAU 1.0890
RDE .4322 RRA -.3772 RC3 1.3510 FAU .55924
FDE-4.1612 FRA16.5121 FC-38.1450 BSP 20188
BDE .5432 BRA 2.2394 BC3 6.4175 FSP 11962

MID-COURSE EXECUTION ACCURACY
SGT 5858.0 SGR 1349.1 SG3 3423.3
RRT -.8949 RRF -.9125 RTF .9916
SGB 6011.3 R23 .0359 R13 -.9926
SG1 5982.3 SG2 589.6 THA 168.24

ORBIT DETERMINATION ACCURACY
ST 1250.1 SR 721.7 SS 2726.4
CRT -.6515 CRS .8087 CST -.9729
LSA 3042.1 MSA 511.8 SSA 23.7
EL1 1351.8 EL2 506.3 ALF 155.77

LAUNCH DATE OCT 23 1964 FLIGHT TIME 336.00 ARRIVAL DATE SEP 24 1965

HELIOCENTRIC CONIC DISTANCE 761.506 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 32.701 GAL -4.88 AZL 88.68 HCA 235.96 SMA 185.79 ECC .21577 INC 1.3215 V1 29.942
RP 218.89 LAP -1.10 LOP 265.58 VP 22.323 GAP -7.11 AZP 90.74 TAL 331.92 TAP 207.89 RCA 145.70 APO 225.88 V2 25.108
RC 276.266 GL 12.12 GP 5.65 ZAL 130.05 ZAP 77.51 ETS 180.50 ZAE 110.01 ETE 176.38 ZAC 89.72 ETC 258.02 CLP 77.45

PLANETOCENTRIC CONIC

C3 12.819 VHL 3.580 DLA 18.70 RAL 167.08 RAD 6567.5 VEL 11.585 PTH 2.03 VHP 2.953 DPA 13.40 RAP 167.34 ECC 1.2110

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 46 8	2738.06	-27.90	77.32	27.46	95.05	18 31 46	2138.1	-26.91	68.79
90.00	10 58 35	4132.83	-2.13	168.23	22.04	61.76	12 7 27	3532.8	-5.89	161.57
100.00	19 18 49	2439.18	-29.18	55.18	27.31	96.78	19 59 28	1839.2	-27.94	46.60
100.00	12 8 35	3906.94	-1.00	151.00	21.41	60.12	13 13 42	3306.9	-4.97	144.46
110.00	20 51 43	2148.53	-32.47	32.50	26.70	101.34	21 27 32	1548.5	-30.56	23.80
110.00	12 52 10	3770.35	1.82	138.88	19.65	55.86	13 55 0	3170.3	-2.67	132.68

DIFFERENTIAL CORRECTIONS
TDE -.3763 TRA 2.3801 TC3-6.5830 BAU 1.1506
RDE .4373 RRA -.3651 RC3 1.3184 FAU .55088
FDE-4.1911 FRA16.2818 FC-37.2041 BSP 21350
BDE .5769 BRA 2.4079 BC3 6.7137 FSP 11660

MID-COURSE EXECUTION ACCURACY
SGT 6225.1 SGR 1327.2 SG3 3358.9
RRT -.8898 RRF -.9072 RTF .9926
SGB 6365.0 R23 .0346 R13 -.9934
SG1 6337.1 SG2 594.9 THA 169.16

ORBIT DETERMINATION ACCURACY
ST 1355.7 SR 724.4 SS 2720.6
CRT -.6605 CRS .8082 CST -.9758
LSA 3081.7 MSA 516.8 SSA 23.1
EL1 1450.6 EL2 508.3 ALF 157.67

LAUNCH DATE OCT 23 1964 FLIGHT TIME 338.00 ARRIVAL DATE SEP 26 1965

HELIOCENTRIC CONIC DISTANCE 765.581 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 32.701 GAL -4.93 AZL 88.66 HCA 237.10 SMA 185.80 ECC .21612 INC 1.3393 V1 29.942
RP 218.52 LAP -1.12 LOP 266.71 VP 22.369 GAP -7.31 AZP 90.73 TAL 331.66 TAP 208.76 RCA 145.64 APO 225.95 V2 25.148
RC 277.609 GL 12.21 GP 5.53 ZAL 130.40 ZAP 75.67 ETS 180.69 ZAE 107.94 ETE 176.71 ZAC 89.47 ETC 258.11 CLP 75.61

PLANETOCENTRIC CONIC

C3 12.955 VHL 3.599 DLA 18.64 RAL 167.48 RAD 6567.5 VEL 11.591 PTH 2.03 VHP 2.982 DPA 13.57 RAP 166.62 ECC 1.2132

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 48 21	2738.02	-27.90	77.31	28.02	95.05	18 33 59	2138.0	-26.91	68.79
90.00	10 59 34	4137.41	-1.98	168.49	22.56	61.75	12 8 31	3537.4	-5.74	161.83
100.00	19 20 59	2439.34	-29.18	55.19	27.87	96.77	20 1 38	1839.3	-27.94	46.61
100.00	12 9 38	3911.32	-.85	151.24	21.93	60.12	13 14 49	3311.3	-4.82	144.70
110.00	20 53 46	2149.06	-32.47	32.54	27.26	101.32	21 29 35	1549.1	-30.57	23.83
110.00	12 53 20	3774.37	1.97	139.09	20.17	55.87	13 56 15	3174.4	-2.52	132.89

DIFFERENTIAL CORRECTIONS
TDE -.4242 TRA 2.5553 TC3-6.8748 BAU 1.2113
RDE .4420 RRA -.3532 RC3 1.2833 FAU .54083
FDE-4.2039 FRA16.0459 FC-36.1411 BSP 22526
BDE .6126 BRA 2.5796 BC3 6.9936 FSP 11375

MID-COURSE EXECUTION ACCURACY
SGT 6586.1 SGR 1304.1 SG3 3288.1
RRT -.8842 RRF -.9015 RTF .9934
SGB 6713.9 R23 .0337 R13 -.9941
SG1 6687.1 SG2 600.0 THA 169.99

ORBIT DETERMINATION ACCURACY
ST 1461.7 SR 726.4 SS 2711.5
CRT -.6673 CRS .8070 CST -.9782
LSA 3121.5 MSA 521.7 SSA 22.5
EL1 1550.5 EL2 510.0 ALF 159.31

LAUNCH DATE OCT 23 1964 FLIGHT TIME 340.00 ARRIVAL DATE SEP 28 1965

HELIOCENTRIC CONIC DISTANCE 769.661 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 32.702 GAL -4.98 AZL 88.64 HCA 238.24 SMA 185.80 ECC .21651 INC 1.3565 V1 29.942
RP 218.16 LAP -1.15 LOP 267.85 VP 22.415 GAP -7.51 AZP 90.71 TAL 331.38 TAP 209.61 RCA 145.58 APO 226.03 V2 25.188
RC 278.933 GL 12.30 GP 5.41 ZAL 130.77 ZAP 73.87 ETS 180.86 ZAE 105.89 ETE 177.02 ZAC 89.22 ETC 258.21 CLP 73.79

PLANETOCENTRIC CONIC

C3 13.102 VHL 3.620 DLA 18.57 RAL 167.90 RAD 6567.5 VEL 11.597 PTH 2.03 VHP 3.013 DPA 13.73 RAP 165.94 ECC 1.2156

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 50 47	2737.53	-27.90	77.28	28.59	95.07	18 36 25	2137.5	-26.90	68.75
90.00	11 0 27	4142.75	-1.81	168.79	23.10	61.74	12 9 30	3542.7	-5.57	162.13
100.00	19 23 20	2439.09	-29.18	55.17	28.44	96.78	20 3 59	1839.1	-27.94	46.59
100.00	12 10 35	3916.42	-.68	151.52	22.48	60.11	13 15 51	3316.4	-4.65	144.99
110.00	20 55 58	2149.27	-32.48	32.55	27.83	101.31	21 31 48	1549.3	-30.58	23.85
110.00	12 54 26	3779.01	2.15	139.34	20.71	55.88	13 57 25	3179.0	-2.34	133.13

DIFFERENTIAL CORRECTIONS
TDE -.4733 TRA 2.7315 TC3-7.1502 BAU 1.2713
RDE .4467 RRA -.3414 RC3 1.2466 FAU .52960
FDE-4.2075 FRA15.7958 FC-34.9952 BSP 23682
BDE .6508 BRA 2.7527 BC3 7.2581 FSP 11086

MID-COURSE EXECUTION ACCURACY
SGT 6939.6 SGR 1280.3 SG3 3211.8
RRT -.8780 RRF -.8952 RTF .9940
SGB 7056.7 R23 .0329 R13 -.9946
SG1 7030.7 SG2 604.9 THA 170.73

ORBIT DETERMINATION ACCURACY
ST 1567.8 SR 727.9 SS 2700.1
CRT -.6729 CRS .8058 CST -.9801
LSA 3162.4 MSA 526.0 SSA 22.0
EL1 1651.2 EL2 511.2 ALF 160.73

LAUNCH DATE OCT 23 1964 FLIGHT TIME 342.00 ARRIVAL DATE SEP 30 1965

HELIOCENTRIC CONIC DISTANCE 773.747 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 32.702 GAL -5.04 AZL 88.63 HCA 239.38 SMA 185.82 ECC .21694 INC 1.3735 V1 29.942
RP 217.80 LAP -1.18 LOP 268.99 VP 22.460 GAP -7.70 AZP 90.70 TAL 331.08 TAP 210.46 RCA 145.50 APO 226.13 V2 25.228
RC 280.240 GL 12.38 GP 5.29 ZAL 131.15 ZAP 72.10 ETS 181.02 ZAE 103.89 ETE 177.30 ZAC 88.99 ETC 258.29 CLP 72.02

PLANETOCENTRIC CONIC

C3 13.259 VHL 3.641 DLA 18.48 RAL 168.33 RAD 6567.5 VEL 11.604 PTH 2.03 VHP 3.048 DPA 13.88 RAP 165.30 ECC 1.2182

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 53 26	2736.60	-27.89	77.21	29.18	95.11	18 39 2	2136.6	-26.89	68.69
90.00	11 1 13	4148.84	-1.61	169.13	23.66	61.73	12 10 22	3548.8	-5.38	162.47
100.00	19 25 53	2438.45	-29.18	55.13	29.03	96.80	20 6 32	1838.5	-27.93	46.55
100.00	12 11 27	3922.23	-.48	151.84	23.03	60.11	13 16 49	3322.2	-4.45	145.31
110.00	20 58 21	2149.18	-32.47	32.54	28.42	101.31	21 34 10	1549.2	-30.57	23.84
110.00	12 55 28	3784.26	2.35	139.61	21.26	55.89	13 58 33	3184.3	-2.14	133.41

DIFFERENTIAL CORRECTIONS
TDE -.5231 TRA 2.9102 TC3-7.4051 BAU 1.3300
RDE .4511 RRA -.3297 RC3 1.2086 FAU .51721
FDE-4.1983 FRA15.5370 FC-33.7708 BSP 24842
BDE .6907 BRA 2.9288 BC3 7.5031 FSP 10803

MID-COURSE EXECUTION ACCURACY
SGT 7285.0 SGR 1256.0 SG3 3130.7
RRT -.8712 RRF -.8885 RTF .9945
SGB 7392.5 R23 .0324 R13 -.9950
SG1 7367.3 SG2 609.7 THA 171.40

ORBIT DETERMINATION ACCURACY
ST 1673.9 SR 728.9 SS 2685.5
CRT -.6771 CRS .8041 CST -.9818
LSA 3203.7 MSA 530.1 SSA 21.5
EL1 1752.3 EL2 512.4 ALF 161.98

LAUNCH DATE OCT 23 1964 FLIGHT TIME 344.00 ARRIVAL DATE OCT 2 1965

HELIOCENTRIC CONIC DISTANCE 777.839 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 32.703 GAL -5.10 AZL 88.61 HCA 240.52 SMA 185.83 ECC .21741 INC 1.3901 V1 29.942
RP 217.44 LAP -1.21 LOP 270.14 VP 22.506 GAP -7.90 AZP 90.68 TAL 330.77 TAP 211.30 RCA 145.43 APO 226.23 V2 25.268
RC 281.529 GL 12.45 GP 5.17 ZAL 131.55 ZAP 70.37 ETS 181.18 ZAE 101.91 ETE 177.57 ZAC 88.76 ETC 258.38 CLP 70.29

PLANETOCENTRIC CONIC

C3 13.427 VHL 3.664 DLA 18.38 RAL 168.76 RAD 6567.5 VEL 11.611 PTH 2.03 VHP 3.086 DPA 14.00 RAP 164.70 ECC 1.2210

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 56 16	2735.25	-27.88	77.11	29.79	95.15	18 41 51	2135.3	-26.88	68.59
90.00	11 1 53	4155.67	-1.39	169.51	24.24	61.71	12 11 9	3555.7	-5.16	162.86
100.00	19 28 37	2437.44	-29.17	55.05	29.63	96.84	20 9 15	1837.4	-27.92	46.47
100.00	12 12 13	3928.72	-.26	152.20	23.61	60.11	13 17 41	3328.7	-4.24	145.67
110.00	21 0 52	2148.80	-32.47	32.52	29.02	101.33	21 36 41	1548.8	-30.57	23.82
110.00	12 56 27	3790.11	2.57	139.92	21.84	55.90	13 59 37	3190.1	-1.92	133.71

DIFFERENTIAL CORRECTIONS
TDE -.5744 TRA 3.0904 TC3-7.6416 BAU 1.3877
RDE .4554 RRA -.3181 RC3 1.1699 FAU .50405
FDE-4.1835 FRA15.2660 FC-32.4990 BSP 25987
BDE .7330 BRA 3.1067 BC3 7.7307 FSP 10513

MID-COURSE EXECUTION ACCURACY
SGT 7622.1 SGR 1231.7 SG3 3045.8
RRT -.8639 RRF -.8813 RTF .9949
SGB 7720.9 R23 .0320 R13 -.9953
SG1 7696.4 SG2 614.4 THA 172.00

ORBIT DETERMINATION ACCURACY
ST 1779.9 SR 729.7 SS 2669.3
CRT -.6806 CRS .8025 CST -.9832
LSA 3246.6 MSA 533.8 SSA 21.0
EL1 1854.0 EL2 513.3 ALF 163.07

LAUNCH DATE OCT 23 1964 FLIGHT TIME 346.00 ARRIVAL DATE OCT 4 1965

HELIOCENTRIC CONIC DISTANCE 781.935 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 32.704 GAL -5.16 AZL 88.59 HCA 241.67 SMA 185.85 ECC .21792 INC 1.4064 V1 29.942
RP 217.09 LAP -1.24 LOP 271.29 VP 22.552 GAP -8.09 AZP 90.67 TAL 330.45 TAP 212.12 RCA 145.35 APO 226.35 V2 25.307
RC 282.801 GL 12.52 GP 5.06 ZAL 131.97 ZAP 68.68 ETS 181.32 ZAE 99.98 ETE 177.83 ZAC 88.55 ETC 258.45 CLP 68.60

PLANETOCENTRIC CONIC

C3 13.607 VHL 3.689 DLA 18.26 RAL 169.21 RAD 6567.5 VEL 11.619 PTH 2.04 VHP 3.126 DPA 14.11 RAP 164.14 ECC 1.2239

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 59 18	2733.50	-27.87	76.99	30.41	95.22	18 44 51	2133.5	-26.86	68.47
90.00	11 2 27	4163.22	-1.15	169.93	24.83	61.70	12 11 50	3563.2	-4.92	163.28
100.00	19 31 32	2436.06	-29.16	54.95	30.26	96.89	20 12 8	1836.1	-27.90	46.37
100.00	12 12 54	3935.89	-.02	152.59	24.20	60.11	13 18 30	3335.9	-4.00	146.06
110.00	21 3 33	2148.16	-32.46	32.47	29.64	101.36	21 39 21	1548.2	-30.56	23.77
110.00	12 57 22	3796.56	2.82	140.25	22.43	55.92	14 0 38	3196.6	-1.67	134.05

DIFFERENTIAL CORRECTIONS
TDE -.6276 TRA 3.2718 TC3-7.8602 BAU 1.4446
RDE .4600 RRA -.3066 RC3 1.1312 FAU .49031
FDE-4.1680 FRA14.9829 FC-31.1953 BSP 27096
BDE .7781 BRA 3.2862 BC3 7.9412 FSP 10216

MID-COURSE EXECUTION ACCURACY
SGT 7950.8 SGR 1207.6 SG3 2958.0
RRT -.8561 RRF -.8737 RTF .9952
SGB 8042.0 R23 .0319 R13 -.9956
SG1 8018.1 SG2 618.9 THA 172.55

ORBIT DETERMINATION ACCURACY
ST 1886.2 SR 730.5 SS 2652.5
CRT -.6838 CRS .8013 CST -.9844
LSA 3292.2 MSA 537.1 SSA 20.5
EL1 1956.4 EL2 513.9 ALF 164.04

LAUNCH DATE OCT 23 1964 FLIGHT TIME 348.00 ARRIVAL DATE OCT 6 1965

HELIOCENTRIC CONIC DISTANCE 786.037 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 32.705 GAL -5.23 AZL 88.58 HCA 242.82 SMA 185.87 ECC .21847 INC 1.4223 V1 29.942
RP 216.74 LAP -1.27 LOP 272.44 VP 22.597 GAP -8.28 AZP 90.65 TAL 330.11 TAP 212.94 RCA 145.26 APO 226.48 V2 25.346
RC 284.057 GL 12.57 GP 4.94 ZAL 132.41 ZAP 67.03 ETS 181.46 ZAE 98.08 ETE 178.07 ZAC 88.34 ETC 258.52 CLP 66.94

PLANETOCENTRIC CONIC

C3 13.799 VHL 3.715 DLA 18.12 RAL 169.68 RAD 6567.5 VEL 11.627 PTH 2.04 VHP 3.170 DPA 14.20 RAP 163.62 ECC 1.2271

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 2 31	2731.37	-27.86	76.83	31.06	95.29	18 48 2	2131.4	-26.83	68.31
90.00	11 2 55	4171.47	-.88	170.39	25.44	61.70	12 12 26	3571.5	-4.66	163.75
100.00	19 34 37	2434.35	-29.14	54.83	30.90	96.96	20 15 11	1834.4	-27.88	46.25
100.00	12 13 29	3943.72	.25	153.02	24.82	60.11	13 19 13	3343.7	-3.73	146.49
110.00	21 6 23	2147.25	-32.45	32.40	30.28	101.39	21 42 10	1547.2	-30.54	23.70
110.00	12 58 13	3803.59	3.09	140.62	23.04	55.94	14 1 36	3203.6	-1.40	134.42

DIFFERENTIAL CORRECTIONS
TDE -.6824 TRA 3.4543 TC3-8.0604 BAU 1.5006
RDE .4645 RRA -.2951 RC3 1.0926 FAU .47620
FDE-4.1482 FRA14.6874 FC-29.8763 BSP 28181
BDE .8255 BRA 3.4669 BC3 8.1342 FSP 9908

MID-COURSE EXECUTION ACCURACY
SGT 8270.3 SGR 1183.9 SG3 2867.9
RRT -.8477 RRF -.8656 RTF .9955
SGB 8354.6 R23 .0319 R13 -.9958
SG1 8331.3 SG2 623.4 THA 173.04

ORBIT DETERMINATION ACCURACY
ST 1992.1 SR 731.1 SS 2634.0
CRT -.6867 CRS .8003 CST -.9853
LSA 3339.0 MSA 540.0 SSA 20.1
EL1 2058.8 EL2 514.3 ALF 164.89

LAUNCH DATE OCT 23 1964 FLIGHT TIME 350.00 ARRIVAL DATE OCT 8 1965

HELIOCENTRIC CONIC DISTANCE 790.141 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 32.707 GAL -5.30 AZL 88.56 HCA 243.98 SMA 185.89 ECC .21906 INC 1.4380 V1 29.942
RP 216.39 LAP -1.29 LOP 273.59 VP 22.643 GAP -8.46 AZP 90.63 TAL 329.76 TAP 213.74 RCA 145.17 APO 226.62 V2 25.385
RC 285.296 GL 12.62 GP 4.83 ZAL 132.86 ZAP 65.43 ETS 181.59 ZAE 96.22 ETE 178.29 ZAC 88.14 ETC 258.59 CLP 65.33

PLANETOCENTRIC CONIC

C3 14.004 VHL 3.742 DLA 17.98 RAL 170.15 RAD 6567.6 VEL 11.636 PTH 2.04 VHP 3.215 DPA 14.28 RAP 163.14 ECC 1.2305

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 5 55	2728.86	-27.84	76.65	31.72	95.38	18 51 24	2128.9	-26.80	68.14
90.00	11 3 17	4180.44	-.59	170.89	26.07	61.69	12 12 57	3580.4	-4.37	164.25
100.00	19 37 53	2432.30	-29.13	54.68	31.56	97.04	20 18 25	1832.3	-27.85	46.11
100.00	12 14 0	3952.23	.54	153.49	25.45	60.11	13 19 52	3352.2	-3.44	146.96
110.00	21 9 22	2146.08	-32.43	32.31	30.93	101.44	21 45 8	1546.1	-30.52	23.62
110.00	12 59 1	3811.22	3.38	141.02	23.67	55.96	14 2 32	3211.2	-1.11	134.81

DIFFERENTIAL CORRECTIONS
TDE -.7281 TRA 3.6509 TC3-8.2105 BAU 1.5498
RDE .4673 RRA -.2856 RC3 1.0488 FAU .45864
FDE-4.0614 FRA14.4445 FC-28.3542 BSP 29529
BDE .8651 BRA 3.6620 BC3 8.2772 FSP 9727

MID-COURSE EXECUTION ACCURACY
SGT 8575.5 SGR 1157.3 SG3 2772.4
RRT -.8386 RRF -.8562 RTF .9957
SGB 8653.2 R23 .0308 R13 -.9960
SG1 8630.5 SG2 626.5 THA 173.51

ORBIT DETERMINATION ACCURACY
ST 2094.0 SR 729.0 SS 2602.1
CRT -.6846 CRS .7946 CST -.9864
LSA 3375.2 MSA 543.2 SSA 20.0
EL1 2156.4 EL2 516.1 ALF 165.76

LAUNCH DATE OCT 23 1964 FLIGHT TIME 352.00 ARRIVAL DATE OCT 10 1965

HELIOCENTRIC CONIC DISTANCE 794.255 EARTH TO MARS

RL	148.81	LAL	.00	LOL	29.62	VL	32.709	GAL	-5.37	AZL	88.55	HCA	245.14	SMA	185.92	ECC	.21969	INC	1.4535
RP	216.05	LAP	-1.32	LOP	274.75	VP	22.688	GAP	-8.65	AZP	90.61	TAL	329.40	TAP	214.53	RCA	145.08	APO	226.77
RC	286.520	GL	12.65	GP	4.72	ZAL	133.32	ZAP	63.86	ETS	181.71	ZAE	94.40	ETE	178.50	ZAC	87.96	ETC	258.65

V1	29.942	V2	25.423	CLP	63.76														

PLANETOCENTRIC CONIC

C3	14.221	VHL	3.771	DLA	17.82	RAL	170.63	RAD	6567.6	VEL	11.645	PTH	2.04	VHP	3.264	DPA	14.34	RAP	162.71
ECC	1.2340																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 9 29	2726.05	-27.82	76.45	32.39	95.48	18 54 55	2126.0	-26.77	67.94
90.00	11 3 34	4190.03	-.28	171.42	26.72	61.68	12 13 24	3590.0	-4.07	164.79
100.00	19 41 17	2429.98	-29.11	54.51	32.23	97.12	20 21 47	1830.0	-27.82	45.94
100.00	12 14 26	3961.33	.85	153.99	26.09	60.12	13 20 28	3361.3	-3.14	147.46
110.00	21 12 28	2144.70	-32.41	32.21	31.60	101.50	21 48 13	1544.7	-30.49	23.52
110.00	12 59 45	3819.37	3.69	141.45	24.32	55.99	14 3 24	3219.4	-.80	135.24

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.7977	TRA	3.8241	TC3	-8.4015	BAU	1.6089	SGT	8880.6	SGR	1138.2	SG3	2683.3	ST	2203.9	SR	732.1	SS	2594.1
RDE	.4739	RRA	-.2728	RC3	1.0163	FAU	.44685	RRT	-.8297	RRF	-.8485	RTF	.9959	CRT	-.6917	CRS	.7988	CST	-.9869
FDE	-4.1002	FRA	14.0785	FC	-27.2033	BSP	30276	SGB	8953.3	R23	.0322	R13	-.9962	LSA	3438.8	MSA	544.7	SSA	19.3
BDE	.9278	BRA	3.8338	BC3	8.4627	FSP	9292	SG1	8930.9	SG2	631.8	THA	173.90	EL1	2264.6	EL2	514.6	ALF	166.34

LAUNCH DATE OCT 23 1964 FLIGHT TIME 354.00 ARRIVAL DATE OCT 12 1965

HELIOCENTRIC CONIC DISTANCE 798.371 EARTH TO MARS

RL	148.81	LAL	.00	LOL	29.62	VL	32.710	GAL	-5.45	AZL	88.53	HCA	246.30	SMA	185.95	ECC	.22036	INC	1.4687
RP	215.71	LAP	-1.34	LOP	275.92	VP	22.733	GAP	-8.83	AZP	90.59	TAL	329.01	TAP	215.31	RCA	144.98	APO	226.93
RC	287.729	GL	12.68	GP	4.61	ZAL	133.81	ZAP	62.34	ETS	181.82	ZAE	92.62	ETE	178.69	ZAC	87.79	ETC	258.70

V1	29.942	V2	25.461	CLP	62.24														

PLANETOCENTRIC CONIC

C3	14.452	VHL	3.802	DLA	17.64	RAL	171.12	RAD	6567.6	VEL	11.655	PTH	2.05	VHP	3.315	DPA	14.38	RAP	162.32
ECC	1.2378																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 13 13	2722.90	-27.80	76.22	33.09	95.60	18 58 36	2122.9	-26.74	67.71
90.00	11 3 46	4200.30	.05	172.00	27.39	61.68	12 13 46	3600.3	-3.74	165.36
100.00	19 44 52	2427.36	-29.09	54.31	32.93	97.22	20 25 19	1827.4	-27.78	45.75
100.00	12 14 48	3971.08	1.18	154.52	26.76	60.13	13 20 59	3371.1	-2.81	148.00
110.00	21 15 43	2143.10	-32.39	32.09	32.29	101.57	21 51 26	1543.1	-30.46	23.41
110.00	13 0 26	3828.10	4.02	141.90	24.99	56.03	14 4 14	3228.1	-.47	135.69

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.8580	TRA	4.0117	TC3	-8.5432	BAU	1.6614	SGT	9171.7	SGR	1116.4	SG3	2590.1	ST	2309.4	SR	732.5	SS	2572.5
RDE	.4788	RRA	-.2619	RC3	.9791	FAU	.43196	RRT	-.8200	RRF	-.8394	RTF	.9960	CRT	-.6940	CRS	.7984	CST	-.9875
FDE	-4.0720	FRA	13.7654	FC	-25.8764	BSP	31281	SGB	9239.4	R23	.0326	R13	-.9963	LSA	3491.2	MSA	546.6	SSA	18.9
BDE	.9826	BRA	4.0203	BC3	8.5992	FSP	8981	SG1	9217.5	SG2	635.8	THA	174.27	EL1	2367.5	EL2	514.5	ALF	166.96

LAUNCH DATE OCT 23 1964 FLIGHT TIME 356.00 ARRIVAL DATE OCT 14 1965

HELIOCENTRIC CONIC DISTANCE 802.491 EARTH TO MARS

RL	148.81	LAL	.00	LOL	29.62	VL	32.712	GAL	-5.53	AZL	88.52	HCA	247.47	SMA	185.99	ECC	.22108	INC	1.4837
RP	215.38	LAP	-1.37	LOP	277.08	VP	22.778	GAP	-9.01	AZP	90.57	TAL	328.62	TAP	216.09	RCA	144.87	APO	227.11
RC	288.924	GL	12.70	GP	4.51	ZAL	134.30	ZAP	60.85	ETS	181.93	ZAE	90.88	ETE	178.88	ZAC	87.62	ETC	258.75

V1	29.942	V2	25.498	CLP	60.75														

PLANETOCENTRIC CONIC

C3	14.697	VHL	3.834	DLA	17.45	RAL	171.63	RAD	6567.6	VEL	11.665	PTH	2.05	VHP	3.369	DPA	14.41	RAP	161.98
ECC	1.2419																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 17 6	2719.47	-27.78	75.97	33.80	95.72	19 2 26	2119.5	-26.70	67.47
90.00	11 3 53	4211.22	.40	172.61	28.07	61.69	12 14 4	3611.2	-3.39	165.97
100.00	19 48 35	2424.48	-29.06	54.10	33.64	97.33	20 28 59	1824.5	-27.74	45.55
100.00	12 15 5	3981.45	1.53	155.09	27.44	60.14	13 21 27	3381.4	-2.46	148.57
110.00	21 19 5	2141.30	-32.37	31.95	32.99	101.65	21 54 47	1541.3	-30.42	23.28
110.00	13 1 4	3837.39	4.37	142.39	25.67	56.06	14 5 2	3237.4	-.11	136.18

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.9204	TRA	4.2015	TC3	-8.6673	BAU	1.7131	SGT	9454.3	SGR	1095.6	SG3	2497.0	ST	2414.8	SR	732.8	SS	2550.0
RDE	.4837	RRA	-.2514	RC3	.9428	FAU	.41701	RRT	-.8101	RRF	-.8300	RTF	.9961	CRT	-.6962	CRS	.7983	CST	-.9880
FDE	-4.0413	FRA	13.4503	FC	-24.5638	BSP	32265	SGB	9517.5	R23	.0330	R13	-.9964	LSA	3545.4	MSA	548.2	SSA	18.6
BDE	1.0398	BRA	4.2090	BC3	8.7184	FSP	8671	SG1	9496.0	SG2	639.5	THA	174.61	EL1	2470.6	EL2	514.2	ALF	167.52

LAUNCH DATE OCT 23 1964 FLIGHT TIME 358.00 ARRIVAL DATE OCT 16 1965

HELIOCENTRIC CONIC DISTANCE 806.615 EARTH TO MARS

RL	148.81	LAL	.00	LOL	29.62	VL	32.715	GAL	-5.62	AZL	88.50	HCA	248.64	SMA	186.03	ECC	.22184	INC	1.4985
RP	215.05	LAP	-1.40	LOP	278.25	VP	22.822	GAP	-9.19	AZP	90.55	TAL	328.21	TAP	216.85	RCA	144.76	APO	227.29
RC	290.105	GL	12.72	GP	4.40	ZAL	134.81	ZAP	59.41	ETS	182.02	ZAE	89.17	ETE	179.05	ZAC	87.47	ETC	258.79

V1	29.942	V2	25.535	CLP	59.31														

PLANETOCENTRIC CONIC

C3	14.957	VHL	3.867	DLA	17.25	RAL	172.14	RAD	6567.6	VEL	11.677	PTH	2.05	VHP	3.425	DPA	14.42	RAP	161.68
ECC	1.2462																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 21 9	2715.76	-27.76	75.70	34.53	95.85	19 6 24	2115.8	-26.65	67.21
90.00	11 3 55	4222.76	.77	173.25	28.77	61.69	12 14 18	3622.8	-3.02	166.62
100.00	19 52 26	2421.35	-29.03	53.87	34.36	97.45	20 32 48	1821.3	-27.70	45.33
100.00	12 15 19	3992.41	1.90	155.69	28.15	60.16	13 21 51	3392.4	-2.09	149.17
110.00	21 22 35	2139.31	-32.34	31.81	33.71	101.73	21 58 14	1539.3	-30.39	23.13
110.00	13 1 39	3847.21	4.75	142.91	26.37	56.11	14 5 47	3247.2	.26	136.69

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.9860	TRA	4.3921	TC3	-8.7741	BAU	1.7639	SGT	9727.1	SGR	1075.7	SG3	2404.2	ST	2520.6	SR	733.3	SS	2527.7
RDE	.4889	RRA	-.2410	RC3	.9074	FAU	.40213	RRT	-.7999	RRF	-.8204	RTF	.9962	CRT	-.6988	CRS	.7987	CST	-.9885
FDE	-4.0131	FRA	13.1301	FC	-23.2752	BSP	33196	SGB	9786.4	R23	.0335	R13	-.9964	LSA	3602.5	MSA	549.3	SSA	18.3
BDE	1.1006	BRA	4.3988	BC3	8.8209	FSP	8356	SG1	9765.3	SG2	643.1	THA	174.92	EL1	2574.3	EL2	513.6	ALF	168.02

LAUNCH DATE OCT 23 1964 FLIGHT TIME 360.00 ARRIVAL DATE OCT 18 1965

HELIOCENTRIC CONIC DISTANCE 810.742 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 32.717 GAL -5.70 AZL 88.49 HCA 249.81 SMA 186.07 ECC .22264 INC 1.5131 V1 29.942
RP 214.72 LAP -1.42 LOP 279.43 VP 22.867 GAP -9.36 AZP 90.52 TAL 327.78 TAP 217.59 RCA 144.64 APO 227.49 V2 25.572
RC 291.272 GL 12.72 GP 4.30 ZAL 135.34 ZAP 58.01 ETS 182.12 ZAE 87.51 ETE 179.21 ZAC 87.33 ETC 258.82 CLP 57.91

PLANETOCENTRIC CONIC

C3 15.234 VHL 3.903 DLA 17.04 RAL 172.66 RAD 6567.6 VEL 11.688 PTH 2.06 VHP 3.483 DPA 14.41 RAP 161.43 ECC 1.2507

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 25 20	2711.80	-27.73	75.41	35.28	95.99	19 10 32	2111.8	-26.61	66.93
90.00	11 3 53	4234.92	1.17	173.93	29.49	61.71	12 14 28	3634.9	-2.63	167.30
100.00	19 56 26	2418.00	-29.00	53.63	35.11	97.57	20 36 44	1818.0	-27.65	45.09
100.00	12 15 28	4003.95	2.29	156.32	28.87	60.19	13 22 12	3404.0	-1.69	149.80
110.00	21 26 12	2137.15	-32.31	31.64	34.45	101.82	22 1 49	1537.1	-30.34	22.98
110.00	13 2 12	3857.57	5.14	143.45	27.10	56.16	14 6 29	3257.6	.66	137.23

DIFFERENTIAL CORRECTIONS
TDE-1.0532 TRA 4.5855 TC3-8.8612 BAU 1.8134
RDE .4942 RRA -.2311 RC3 .8729 FAU .38724
FDE-3.9800 FRA12.8102 FC-22.0074 BSP 34106
BDE 1.1634 BRA 4.5913 BC3 8.9041 FSP 8048

MID-COURSE EXECUTION ACCURACY
SGT 9990.2 SGR 1056.6 SG3 2312.1
RRT -.7894 RRF -.8107 RTF .9963
SGB10046.0 R23 .0341 R13 -.9964
SG110025.1 SG2 646.5 THA 175.21

ORBIT DETERMINATION ACCURACY
ST 2625.8 SR 733.6 SS 2503.7
CRT -.7013 CRS .7992 CST -.9889
LSA 3660.4 MSA 550.1 SSA 18.0
EL1 2677.6 EL2 512.8 ALF 168.49

LAUNCH DATE OCT 23 1964 FLIGHT TIME 362.00 ARRIVAL DATE OCT 20 1965

HELIOCENTRIC CONIC DISTANCE 814.873 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 32.719 GAL -5.80 AZL 88.47 HCA 250.99 SMA 186.11 ECC .22349 INC 1.5275 V1 29.942
RP 214.40 LAP -1.44 LOP 280.61 VP 22.911 GAP -9.54 AZP 90.50 TAL 327.34 TAP 218.33 RCA 144.51 APO 227.70 V2 25.608
RC 292.426 GL 12.72 GP 4.20 ZAL 135.88 ZAP 56.65 ETS 182.20 ZAE 85.89 ETE 179.36 ZAC 87.20 ETC 258.85 CLP 56.55

PLANETOCENTRIC CONIC

C3 15.526 VHL 3.940 DLA 16.81 RAL 173.19 RAD 6567.6 VEL 11.701 PTH 2.06 VHP 3.544 DPA 14.39 RAP 161.21 ECC 1.2555

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 29 39	2707.62	-27.70	75.11	36.04	96.14	19 14 47	2107.6	-26.56	66.63
90.00	11 3 47	4247.66	1.58	174.64	30.23	61.72	12 14 35	3647.7	-2.22	168.01
100.00	20 0 34	2414.44	-28.97	53.37	35.87	97.71	20 40 48	1814.4	-27.60	44.84
100.00	12 15 34	4016.07	2.70	156.99	29.61	60.22	13 22 30	3416.1	-1.28	150.47
110.00	21 29 56	2134.83	-32.28	31.47	35.20	101.92	22 5 31	1534.8	-30.30	22.82
110.00	13 2 41	3868.45	5.55	144.02	27.84	56.22	14 7 9	3268.4	1.08	137.80

DIFFERENTIAL CORRECTIONS
TDE-1.1224 TRA 4.7821 TC3-8.9300 BAU 1.8618
RDE .4996 RRA -.2215 RC3 .8393 FAU .37242
FDE-3.9445 FRA12.4929 FC-20.7664 BSP 35002
BDE 1.2286 BRA 4.7873 BC3 8.9694 FSP 7747

MID-COURSE EXECUTION ACCURACY
SGT10244.9 SGR 1038.5 SG3 2221.1
RRT -.7787 RRF -.8007 RTF .9963
SGB10297.4 R23 .0348 R13 -.9965
SG110276.9 SG2 649.6 THA 175.47

ORBIT DETERMINATION ACCURACY
ST 2730.8 SR 733.8 SS 2479.0
CRT -.7036 CRS .7998 CST -.9892
LSA 3719.9 MSA 550.8 SSA 17.7
EL1 2780.9 EL2 512.0 ALF 168.91

LAUNCH DATE OCT 23 1964 FLIGHT TIME 364.00 ARRIVAL DATE OCT 22 1965

HELIOCENTRIC CONIC DISTANCE 819.007 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 32.722 GAL -5.89 AZL 88.46 HCA 252.17 SMA 186.15 ECC .22439 INC 1.5418 V1 29.942
RP 214.08 LAP -1.47 LOP 281.79 VP 22.954 GAP -9.72 AZP 90.47 TAL 326.88 TAP 219.06 RCA 144.38 APO 227.92 V2 25.644
RC 293.566 GL 12.71 GP 4.11 ZAL 136.43 ZAP 55.33 ETS 182.28 ZAE 84.30 ETE 179.51 ZAC 87.08 ETC 258.87 CLP 55.23

PLANETOCENTRIC CONIC

C3 15.836 VHL 3.979 DLA 16.58 RAL 173.72 RAD 6567.6 VEL 11.714 PTH 2.06 VHP 3.607 DPA 14.35 RAP 161.04 ECC 1.2606

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 34 6	2703.23	-27.66	74.79	36.82	96.30	19 19 9	2103.2	-26.50	66.32
90.00	11 3 37	4260.99	2.01	175.38	30.99	61.75	12 14 38	3661.0	-1.79	168.76
100.00	20 4 49	2410.70	-28.94	53.10	36.64	97.85	20 44 59	1810.7	-27.55	44.57
100.00	12 15 36	4028.75	3.13	157.69	30.37	60.26	13 22 44	3428.8	-.85	151.16
110.00	21 33 46	2132.38	-32.24	31.29	35.97	102.02	22 9 18	1532.4	-30.25	22.64
110.00	13 3 8	3879.84	5.98	144.62	28.60	56.28	14 7 48	3279.8	1.51	138.39

DIFFERENTIAL CORRECTIONS
TDE-1.1936 TRA 4.9816 TC3-8.9812 BAU 1.9091
RDE .5052 RRA -.2123 RC3 .8067 FAU .35774
FDE-3.9066 FRA12.1769 FC-19.5575 BSP 35871
BDE 1.2962 BRA 4.9861 BC3 9.0173 FSP 7449

MID-COURSE EXECUTION ACCURACY
SGT10490.5 SGR 1021.3 SG3 2131.4
RRT -.7678 RRF -.7907 RTF .9963
SGB10540.1 R23 .0355 R13 -.9964
SG110519.9 SG2 652.5 THA 175.71

ORBIT DETERMINATION ACCURACY
ST 2835.5 SR 733.9 SS 2453.3
CRT -.7060 CRS .8006 CST -.9895
LSA 3780.6 MSA 551.1 SSA 17.4
EL1 2884.0 EL2 511.1 ALF 169.31

LAUNCH DATE OCT 23 1964 FLIGHT TIME 366.00 ARRIVAL DATE OCT 24 1965

HELIOCENTRIC CONIC DISTANCE 823.143 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 32.725 GAL -5.99 AZL 88.44 HCA 253.36 SMA 186.20 ECC .22534 INC 1.5559 V1 29.942
RP 213.77 LAP -1.49 LOP 282.97 VP 22.998 GAP -9.89 AZP 90.45 TAL 326.41 TAP 219.77 RCA 144.24 APO 228.16 V2 25.679
RC 294.693 GL 12.70 GP 4.01 ZAL 137.00 ZAP 54.05 ETS 182.35 ZAE 82.75 ETE 179.64 ZAC 86.97 ETC 258.89 CLP 53.95

PLANETOCENTRIC CONIC

C3 16.164 VHL 4.020 DLA 16.33 RAL 174.27 RAD 6567.6 VEL 11.728 PTH 2.07 VHP 3.672 DPA 14.31 RAP 160.91 ECC 1.2660

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 38 40	2698.66	-27.63	74.47	37.62	96.46	19 23 39	2098.7	-26.45	66.00
90.00	11 3 24	4274.88	2.45	176.16	31.77	61.78	12 14 39	3674.9	-1.34	169.53
100.00	20 9 10	2406.80	-28.90	52.81	37.44	97.99	20 49 17	1806.8	-27.49	44.29
100.00	12 15 35	4041.97	3.57	158.42	31.14	60.30	13 22 56	3442.0	-.41	151.89
110.00	21 37 42	2129.80	-32.21	31.10	36.75	102.13	22 13 12	1529.8	-30.20	22.46
110.00	13 3 32	3891.74	6.43	145.25	29.38	56.35	14 8 24	3291.7	1.97	139.01

DIFFERENTIAL CORRECTIONS
TDE-1.2681 TRA 5.1837 TC3-9.0164 BAU 1.9556
RDE .5110 RRA -.2035 RC3 .7754 FAU .34332
FDE-3.8687 FRA11.8621 FC-18.3881 BSP 36718
BDE 1.3671 BRA 5.1877 BC3 9.0497 FSP 7159

MID-COURSE EXECUTION ACCURACY
SGT10727.7 SGR 1005.2 SG3 2043.3
RRT -.7570 RRF -.7806 RTF .9963
SGB10774.7 R23 .0362 R13 -.9964
SG110754.8 SG2 655.2 THA 175.93

ORBIT DETERMINATION ACCURACY
ST 2940.4 SR 734.1 SS 2427.2
CRT -.7086 CRS .8018 CST -.9898
LSA 3843.5 MSA 551.1 SSA 17.2
EL1 2987.5 EL2 509.8 ALF 169.66

LAUNCH DATE OCT 23 1964 FLIGHT TIME 368.00 ARRIVAL DATE OCT 26 1965

HELIOCENTRIC CONIC DISTANCE 827.282 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 32.728 GAL -6.10 AZL 88.43 HCA 254.54 SMA 186.25 ECC .22633 INC 1.5698 V1 29.942
RP 213.46 LAP -1.51 LOP 284.16 VP 23.041 GAP -10.06 AZP 90.42 TAL 325.93 TAP 220.47 RCA 144.10 APO 228.41 V2 25.714
RC 295.805 GL 12.67 GP 3.92 ZAL 137.58 ZAP 52.81 ETS 182.42 ZAE 81.24 ETE 179.77 ZAC 86.87 ETC 258.89 CLP 52.71

PLANETOCENTRIC CONIC

C3 16.511 VHL 4.063 DLA 16.07 RAL 174.82 RAD 6567.7 VEL 11.743 PTH 2.07 VHP 3.740 DPA 14.24 RAP 160.82 ECC 1.2717

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 43 21	2693.94	-27.59	74.12	38.43	96.63	19 28 15	2093.9	-26.39	65.66
90.00	11 3 7	4289.31	2.92	176.96	32.56	61.82	12 14 36	3689.3	-.87	170.34
100.00	20 13 39	2402.75	-28.86	52.52	38.24	98.14	20 53 42	1802.8	-27.43	44.01
100.00	12 15 30	4055.73	4.04	159.17	31.94	60.36	13 23 6	3455.7	.06	152.64
110.00	21 41 45	2127.12	-32.17	30.90	37.56	102.24	22 17 12	1527.1	-30.15	22.27
110.00	13 3 54	3904.13	6.90	145.91	30.17	56.44	14 8 58	3304.1	2.44	139.66

DIFFERENTIAL CORRECTIONS
TDE-1.3442 TRA 5.3894 TC3-9.0344 BAU 2.0010
RDE .5169 RRA -.1952 RC3 .7450 FAU .32905
FDE-3.8271 FRA11.5508 FC-17.2528 BSP 37536
BDE 1.4401 BRA 5.3929 BC3 9.0651 FSP 6873

MID-COURSE EXECUTION ACCURACY
SGT10956.2 SGR 989.8 SG3 1956.9
RRT -.7461 RRF -.7706 RTF .9962
SGB11000.8 R23 .0370 R13 -.9964
SG110981.1 SG2 657.6 THA 176.13

ORBIT DETERMINATION ACCURACY
ST 3044.5 SR 734.1 SS 2399.6
CRT -.7110 CRS .8030 CST -.9900
LSA 3906.8 MSA 550.9 SSA 16.9
EL1 3090.2 EL2 508.6 ALF 170.00

LAUNCH DATE OCT 23 1964 FLIGHT TIME 370.00 ARRIVAL DATE OCT 28 1965

HELIOCENTRIC CONIC DISTANCE 831.423 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 32.731 GAL -6.20 AZL 88.42 HCA 255.74 SMA 186.30 ECC .22738 INC 1.5837 V1 29.942
RP 213.16 LAP -1.53 LOP 285.35 VP 23.083 GAP -10.23 AZP 90.39 TAL 325.42 TAP 221.16 RCA 143.94 APO 228.66 V2 25.748
RC 296.904 GL 12.64 GP 3.83 ZAL 138.16 ZAP 51.60 ETS 182.48 ZAE 79.76 ETE 179.89 ZAC 86.78 ETC 258.89 CLP 51.50

PLANETOCENTRIC CONIC

C3 16.879 VHL 4.108 DLA 15.80 RAL 175.38 RAD 6567.7 VEL 11.758 PTH 2.08 VHP 3.810 DPA 14.17 RAP 160.78 ECC 1.2778

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 48 9	2689.07	-27.55	73.77	39.26	96.80	19 32 58	2089.1	-26.33	65.32
90.00	11 2 46	4304.28	3.40	177.80	33.38	61.87	12 14 31	3704.3	-.39	171.17
100.00	20 18 13	2398.58	-28.82	52.22	39.07	98.30	20 58 12	1798.6	-27.37	43.71
100.00	12 15 23	4070.00	4.52	159.96	32.76	60.42	13 23 13	3470.0	.55	153.43
110.00	21 45 52	2124.35	-32.13	30.69	38.37	102.36	22 21 17	1524.3	-30.09	22.07
110.00	13 4 13	3917.00	7.38	146.59	30.99	56.53	14 9 30	3317.0	2.93	140.33

DIFFERENTIAL CORRECTIONS
TDE-1.4227 TRA 5.5992 TC3-9.0357 BAU 2.0453
RDE .5230 RRA -.1873 RC3 .7157 FAU .31506
FDE-3.7831 FRA11.2441 FC-16.1597 BSP 38354
BDE 1.5158 BRA 5.6023 BC3 9.0640 FSP 6598

MID-COURSE EXECUTION ACCURACY
SGT11176.5 SGR 975.4 SG3 1872.5
RRT -.7353 RRF -.7606 RTF .9962
SGB11219.0 R23 .0378 R13 -.9963
SG111199.6 SG2 659.7 THA 176.32

ORBIT DETERMINATION ACCURACY
ST 3148.6 SR 734.1 SS 2371.3
CRT -.7136 CRS .8042 CST -.9902
LSA 3971.5 MSA 550.3 SSA 16.7
EL1 3193.0 EL2 507.1 ALF 170.31

LAUNCH DATE OCT 23 1964 FLIGHT TIME 372.00 ARRIVAL DATE OCT 30 1965

HELIOCENTRIC CONIC DISTANCE 835.565 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 32.734 GAL -6.32 AZL 88.40 HCA 256.93 SMA 186.36 ECC .22847 INC 1.5975 V1 29.942
RP 212.87 LAP -1.56 LOP 286.55 VP 23.125 GAP -10.41 AZP 90.36 TAL 324.91 TAP 221.84 RCA 143.78 APO 228.94 V2 25.782
RC 297.989 GL 12.61 GP 3.75 ZAL 138.77 ZAP 50.43 ETS 182.54 ZAE 78.31 ETE 180.00 ZAC 86.70 ETC 258.89 CLP 50.33

PLANETOCENTRIC CONIC

C3 17.268 VHL 4.155 DLA 15.51 RAL 175.94 RAD 6567.7 VEL 11.775 PTH 2.08 VHP 3.882 DPA 14.08 RAP 160.77 ECC 1.2842

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 53 2	2684.10	-27.51	73.42	40.11	96.97	19 37 46	2084.1	-26.26	64.97
90.00	11 2 23	4319.76	3.90	178.67	34.21	61.93	12 14 23	3719.8	.11	172.03
100.00	20 22 54	2394.31	-28.78	51.91	39.91	98.45	21 2 48	1794.3	-27.31	43.41
100.00	12 15 13	4084.77	5.01	160.78	33.60	60.49	13 23 18	3484.8	1.05	154.24
110.00	21 50 5	2121.50	-32.09	30.48	39.21	102.48	22 25 27	1521.5	-30.04	21.87
110.00	13 4 31	3930.35	7.88	147.30	31.83	56.63	14 10 1	3330.4	3.44	141.03

DIFFERENTIAL CORRECTIONS
TDE-1.5044 TRA 5.8125 TC3-9.0223 BAU 2.0889
RDE .5293 RRA -.1798 RC3 .6876 FAU .30136
FDE-3.7391 FRA10.9399 FC-15.1090 BSP 39132
BDE 1.5948 BRA 5.8153 BC3 9.0485 FSP 6326

MID-COURSE EXECUTION ACCURACY
SGT11388.9 SGR 962.0 SG3 1790.2
RRT -.7246 RRF -.7509 RTF .9961
SGB11429.5 R23 .0386 R13 -.9962
SG111410.3 SG2 661.7 THA 176.49

ORBIT DETERMINATION ACCURACY
ST 3252.6 SR 734.1 SS 2342.5
CRT -.7163 CRS .8059 CST -.9904
LSA 4037.7 MSA 549.5 SSA 16.5
EL1 3295.9 EL2 505.5 ALF 170.59

LAUNCH DATE OCT 23 1964 FLIGHT TIME 374.00 ARRIVAL DATE NOV 1 1965

HELIOCENTRIC CONIC DISTANCE 839.708 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 32.737 GAL -6.43 AZL 88.39 HCA 258.13 SMA 186.42 ECC .22963 INC 1.6111 V1 29.942
RP 212.57 LAP -1.58 LOP 287.75 VP 23.167 GAP -10.58 AZP 90.33 TAL 324.37 TAP 222.50 RCA 143.61 APO 229.22 V2 25.815
RC 299.061 GL 12.56 GP 3.67 ZAL 139.38 ZAP 49.30 ETS 182.60 ZAE 76.90 ETE 180.11 ZAC 86.63 ETC 258.88 CLP 49.20

PLANETOCENTRIC CONIC

C3 17.679 VHL 4.205 DLA 15.22 RAL 176.51 RAD 6567.7 VEL 11.792 PTH 2.09 VHP 3.956 DPA 13.98 RAP 160.80 ECC 1.2910

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 58 1	2679.03	-27.47	73.05	40.97	97.15	19 42 40	2079.0	-26.20	64.61
90.00	11 1 58	4335.74	4.41	179.56	35.07	62.00	12 14 13	3735.7	.63	172.92
100.00	20 27 39	2389.96	-28.73	51.59	40.77	98.61	21 7 29	1790.0	-27.25	43.10
100.00	12 15 1	4100.04	5.52	161.62	34.45	60.58	13 23 21	3500.0	1.56	155.08
110.00	21 54 23	2118.60	-32.04	30.26	40.05	102.60	22 29 41	1518.6	-29.98	21.66
110.00	13 4 46	3944.16	8.40	148.04	32.69	56.74	14 10 30	3344.2	3.97	141.75

DIFFERENTIAL CORRECTIONS
TDE-1.5873 TRA 6.0306 TC3-8.9946 BAU 2.1316
RDE .5357 RRA -.1728 RC3 .6605 FAU .28793
FDE-3.6912 FRA10.6411 FC-14.1000 BSP 39915
BDE 1.6753 BRA 6.0331 BC3 9.0188 FSP 6066

MID-COURSE EXECUTION ACCURACY
SGT11594.0 SGR 949.2 SG3 1710.0
RRT -.7141 RRF -.7412 RTF .9960
SGB11632.8 R23 .0395 R13 -.9961
SG111613.9 SG2 663.4 THA 176.64

ORBIT DETERMINATION ACCURACY
ST 3355.3 SR 733.9 SS 2312.1
CRT -.7188 CRS .8074 CST -.9905
LSA 4103.8 MSA 548.6 SSA 16.4
EL1 3397.4 EL2 503.9 ALF 170.86

LAUNCH DATE OCT 23 1964 FLIGHT TIME 376.00 ARRIVAL DATE NOV 3 1965

HELIOCENTRIC CONIC DISTANCE 843.852 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 32.741 GAL -6.55 AZL 88.38 HCA 259.33 SMA 186.48 ECC .23083 INC 1.6247 V1 29.942
RP 212.29 LAP -1.60 LOP 288.95 VP 23.208 GAP -10.75 AZP 90.30 TAL 323.82 TAP 223.15 RCA 143.43 APO 229.52 V2 25.847
RC 300.120 GL 12.51 GP 3.59 ZAL 140.00 ZAP 48.20 ETS 182.64 ZAE 75.53 ETE 180.21 ZAC 86.57 ETC 258.86 CLP 48.10

PLANETOCENTRIC CONIC

C3 18.114 VHL 4.256 DLA 14.92 RAL 177.09 RAD 6567.7 VEL 11.811 PTH 2.09 VHP 4.033 DPA 13.86 RAP 160.86 ECC 1.2981

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 3 5	2673.88	-27.43	72.68	41.85	97.33	19 47 39	2073.9	-26.13	64.25
90.00	11 1 29	4352.21	4.93	180.49	35.94	62.08	12 14 1	3752.2	1.16	173.84
100.00	20 32 30	2385.54	-28.69	51.27	41.65	98.78	21 12 15	1785.5	-27.18	42.79
100.00	12 14 46	4115.79	6.05	162.50	35.33	60.67	13 23 21	3515.8	2.10	155.94
110.00	21 58 45	2115.65	-32.00	30.05	40.92	102.72	22 34 1	1515.7	-29.92	21.45
110.00	13 5 0	3958.43	8.93	148.80	33.57	56.87	14 10 58	3358.4	4.51	142.50

DIFFERENTIAL CORRECTIONS
TDE-1.6738 TRA 6.2526 TC3-8.9537 BAU 2.1737
RDE .5424 RRA -.1662 RC3 .6347 FAU .27489
FDE-3.6431 FRA10.3453 FC-13.1380 BSP 40659
BDE 1.7595 BRA 6.2548 BC3 8.9762 FSP 5810

MID-COURSE EXECUTION ACCURACY
SGT11791.7 SGR 937.4 SG3 1632.1
RRT -.7039 RRF -.7319 RTF .9959
SGB11828.9 R23 .0404 R13 -.9960
SG111810.2 SG2 664.8 THA 176.79

ORBIT DETERMINATION ACCURACY
ST 3458.1 SR 733.7 SS 2281.2
CRT -.7215 CRS .8093 CST -.9906
LSA 4171.4 MSA 547.4 SSA 16.2
EL1 3499.3 EL2 502.0 ALF 171.11

LAUNCH DATE OCT 23 1964 FLIGHT TIME 378.00 ARRIVAL DATE NOV 5 1965

HELIOCENTRIC CONIC DISTANCE 847.996 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 32.744 GAL -6.68 AZL 88.36 HCA 260.53 SMA 186.54 ECC .23210 INC 1.6382 V1 29.942
RP 212.01 LAP -1.62 LOP 290.15 VP 23.249 GAP -10.92 AZP 90.27 TAL 323.26 TAP 223.79 RCA 143.24 APO 229.83 V2 25.879
RC 301.167 GL 12.46 GP 3.51 ZAL 140.63 ZAP 47.13 ETS 182.69 ZAE 74.18 ETE 180.31 ZAC 86.52 ETC 258.84 CLP 47.03

PLANETOCENTRIC CONIC

C3 18.574 VHL 4.310 DLA 14.61 RAL 177.67 RAD 6567.8 VEL 11.830 PTH 2.10 VHP 4.111 DPA 13.74 RAP 160.96 ECC 1.3057

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 8 14	2668.69	-27.38	72.31	42.75	97.51	19 52 43	2068.7	-26.06	63.89
90.00	11 0 58	4369.15	5.47	181.44	36.84	62.17	12 13 48	3769.1	1.71	174.79
100.00	20 37 25	2381.07	-28.64	50.94	42.54	98.94	21 17 6	1781.1	-27.11	42.48
100.00	12 14 29	4132.00	6.59	163.40	36.23	60.78	13 23 21	3532.0	2.65	156.83
110.00	22 3 12	2112.68	-31.95	29.83	41.80	102.84	22 38 24	1512.7	-29.86	21.24
110.00	13 5 11	3973.15	9.48	149.59	34.47	57.00	14 11 24	3373.2	5.07	143.28

DIFFERENTIAL CORRECTIONS
TDE-1.7630 TRA 6.4795 TC3-8.8987 BAU 2.2149
RDE .5494 RRA -.1602 RC3 .6098 FAU .26214
FDE-3.5939 FRA10.0538 FC-12.2181 BSP 41389
BDE 1.8466 BRA 6.4814 BC3 8.9196 FSP 5562

MID-COURSE EXECUTION ACCURACY
SGT11982.0 SGR 926.3 SG3 1556.4
RRT -.6939 RRF -.7230 RTF .9958
SGB12017.8 R23 .0414 R13 -.9959
SG111999.3 SG2 666.0 THA 176.92

ORBIT DETERMINATION ACCURACY
ST 3560.6 SR 733.5 SS 2249.4
CRT -.7243 CRS .8113 CST -.9907
LSA 4240.0 MSA 545.9 SSA 16.0
EL1 3600.8 EL2 500.1 ALF 171.35

LAUNCH DATE OCT 23 1964 FLIGHT TIME 380.00 ARRIVAL DATE NOV 7 1965

HELIOCENTRIC CONIC DISTANCE 852.139 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 32.748 GAL -6.81 AZL 88.35 HCA 261.74 SMA 186.60 ECC .23342 INC 1.6516 V1 29.942
RP 211.73 LAP -1.63 LOP 291.36 VP 23.289 GAP -11.09 AZP 90.24 TAL 322.68 TAP 224.42 RCA 143.04 APO 230.16 V2 25.911
RC 302.203 GL 12.40 GP 3.43 ZAL 141.27 ZAP 46.10 ETS 182.73 ZAE 72.87 ETE 180.40 ZAC 86.48 ETC 258.81 CLP 46.00

PLANETOCENTRIC CONIC

C3 19.061 VHL 4.366 DLA 14.29 RAL 178.26 RAD 6567.8 VEL 11.851 PTH 2.10 VHP 4.192 DPA 13.60 RAP 161.10 ECC 1.3137

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 13 27	2663.46	-27.33	71.93	43.66	97.70	19 57 51	2063.5	-25.99	63.52
90.00	11 0 26	4386.55	6.02	182.42	37.75	62.28	12 13 32	3786.5	2.27	175.76
100.00	20 42 25	2376.58	-28.59	50.62	43.45	99.11	21 22 1	1776.6	-27.04	42.16
100.00	12 14 9	4148.66	7.14	164.32	37.14	60.90	13 23 18	3548.7	3.21	157.75
110.00	22 7 42	2109.70	-31.91	29.60	42.70	102.97	22 42 52	1509.7	-29.80	21.03
110.00	13 5 21	3988.30	10.04	150.40	35.39	57.15	14 11 49	3388.3	5.64	144.07

DIFFERENTIAL CORRECTIONS
TDE-1.8548 TRA 6.7115 TC3-8.8321 BAU 2.2556
RDE .5565 RRA -.1546 RC3 .5860 FAU .24976
FDE-3.5428 FRA 9.7671 FC-11.3438 BSP 42111
BDE 1.9365 BRA 6.7132 BC3 8.8516 FSP 5322

MID-COURSE EXECUTION ACCURACY
SGT12165.9 SGR 916.0 SG3 1483.2
RRT -.6844 RRF -.7144 RTF .9956
SGB12200.3 R23 .0424 R13 -.9957
SG112182.1 SG2 667.0 THA 177.04

ORBIT DETERMINATION ACCURACY
ST 3662.5 SR 733.2 SS 2216.7
CRT -.7271 CRS .8133 CST -.9908
LSA 4309.1 MSA 544.3 SSA 15.9
EL1 3701.8 EL2 498.0 ALF 171.56

LAUNCH DATE OCT 23 1964 FLIGHT TIME 382.00 ARRIVAL DATE NOV 9 1965

HELIOCENTRIC CONIC DISTANCE 856.282 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 32.752 GAL -6.94 AZL 88.33 HCA 262.95 SMA 186.67 ECC .23480 INC 1.6650 V1 29.942
RP 211.47 LAP -1.65 LOP 292.57 VP 23.328 GAP -11.26 AZP 90.20 TAL 322.08 TAP 225.03 RCA 142.84 APO 230.50 V2 25.941
RC 303.228 GL 12.33 GP 3.36 ZAL 141.92 ZAP 45.10 ETS 182.77 ZAE 71.59 ETE 180.49 ZAC 86.45 ETC 258.78 CLP 45.00

PLANETOCENTRIC CONIC

C3 19.576 VHL 4.424 DLA 13.96 RAL 178.85 RAD 6567.8 VEL 11.873 PTH 2.11 VHP 4.275 DPA 13.45 RAP 161.27 ECC 1.3222

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 18 45	2658.22	-27.29	71.56	44.58	97.88	20 3 3	2058.2	-25.91	63.16
90.00	10 59 51	4404.39	6.59	183.43	38.69	62.40	12 13 15	3804.4	2.84	176.76
100.00	20 47 28	2372.07	-28.55	50.29	44.37	99.27	21 27 0	1772.1	-26.97	41.85
100.00	12 13 48	4165.77	7.71	165.28	38.08	61.03	13 23 14	3565.8	3.79	158.69
110.00	22 12 16	2106.73	-31.86	29.38	43.61	103.09	22 47 23	1506.7	-29.73	20.82
110.00	13 5 29	4003.88	10.61	151.24	36.33	57.31	14 12 13	3403.9	6.23	144.90

DIFFERENTIAL CORRECTIONS
TDE-1.9501 TRA 6.9479 TC3-8.7550 BAU 2.2960
RDE .5639 RRA -.1494 RC3 .5633 FAU .23777
FDE-3.4918 FRA 9.4831 FC-10.5155 BSP 42801
BDE 2.0300 BRA 6.9495 BC3 8.7731 FSP 5088

MID-COURSE EXECUTION ACCURACY
SGT12343.0 SGR 906.4 SG3 1412.2
RRT -.6753 RRF -.7063 RTF .9954
SGB12376.3 R23 .0436 R13 -.9956
SG112358.3 SG2 667.7 THA 177.15

ORBIT DETERMINATION ACCURACY
ST 3764.0 SR 732.9 SS 2183.4
CRT -.7301 CRS .8157 CST -.9908
LSA 4379.2 MSA 542.4 SSA 15.8
EL1 3802.5 EL2 495.7 ALF 171.77

LAUNCH DATE OCT 23 1964 FLIGHT TIME 384.00 ARRIVAL DATE NOV 11 1965

HELIOCENTRIC CONIC DISTANCE 860.423 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 32.756 GAL -7.08 AZL 88.32 HCA 264.17 SMA 186.73 ECC .23625 INC 1.6784 V1 29.942
RP 211.20 LAP -1.67 LOP 293.79 VP 23.367 GAP -11.44 AZP 90.17 TAL 321.46 TAP 225.63 RCA 142.62 APO 230.85 V2 25.971
RC 304.242 GL 12.25 GP 3.29 ZAL 142.58 ZAP 44.13 ETS 182.81 ZAE 70.34 ETE 180.57 ZAC 86.42 ETC 258.74 CLP 44.03

PLANETOCENTRIC CONIC

C3 20.120 VHL 4.486 DLA 13.62 RAL 179.44 RAD 6567.8 VEL 11.895 PTH 2.11 VHP 4.361 DPA 13.29 RAP 161.47 ECC 1.3311

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 24 6	2652.99	-27.24	71.18	45.53	98.06	20 8 19	2053.0	-25.84	62.79
90.00	10 59 14	4422.66	7.16	184.47	39.65	62.53	12 12 57	3822.7	3.43	177.78
100.00	20 52 35	2367.58	-28.50	49.97	45.31	99.44	21 32 3	1767.6	-26.90	41.53
100.00	12 13 26	4183.30	8.29	166.26	39.04	61.18	13 23 9	3583.3	4.38	159.66
110.00	22 16 54	2103.77	-31.82	29.17	44.54	103.21	22 51 58	1503.8	-29.67	20.61
110.00	13 5 36	4019.88	11.20	152.11	37.29	57.49	14 12 36	3419.9	6.83	145.74

DIFFERENTIAL CORRECTIONS
TDE-2.0480 TRA 7.1900 TC3-8.6673 BAU 2.3359
RDE .5716 RRA -.1448 RC3 .5415 FAU .22613
FDE-3.4386 FRA 9.2038 FC3-9.7301 BSP 43470
BDE 2.1263 BRA 7.1915 BC3 8.6842 FSP 4859

MID-COURSE EXECUTION ACCURACY
SGT12514.0 SGR 897.4 SG3 1343.6
RRT -.6666 RRF -.6987 RTF .9952
SGB12546.2 R23 .0447 R13 -.9954
SG112528.4 SG2 668.2 THA 177.26

ORBIT DETERMINATION ACCURACY
ST 3864.6 SR 732.5 SS 2148.9
CRT -.7331 CRS .8181 CST -.9908
LSA 4449.4 MSA 540.4 SSA 15.6
EL1 3902.3 EL2 493.4 ALF 171.96

LAUNCH DATE OCT 23 1964 FLIGHT TIME 386.00 ARRIVAL DATE NOV 13 1965

HELIOCENTRIC CONIC DISTANCE 864.563 EARTH TO MARS

RL 148.81 L/L .00 LOL 29.62 VL 32.760 GAL -7.23 AZL 88.31 HCA 265.38 SMA 186.80 ECC .23776 INC 1.6917 V1 29.942
RP 210.95 LAP -1.69 LOP 295.00 VP 23.406 GAP -11.61 AZP 90.14 TAL 320.83 TAP 226.22 RCA 142.39 APO 231.22 V2 26.001
RC 305.247 GL 12.18 GP 3.22 ZAL 143.25 ZAP 43.19 ETS 182.84 ZAE 69.11 ETE 180.65 ZAC 86.41 ETC 258.70 CLP 43.09

PLANETOCENTRIC CONIC

C3 20.696 VHL 4.549 DLA 13.27 RAL 180.04 RAD 6567.8 VEL 11.920 PTH 2.12 VHP 4.448 DPA 13.12 RAP 161.70 ECC 1.3406

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 29 30	2647.77	-27.19	70.81	46.49	98.24	20 13 38	2047.8	-25.77	62.43
90.00	10 58 36	4441.36	7.75	185.53	40.63	62.68	12 12 38	3841.4	4.03	178.82
100.00	20 57 46	2363.11	-28.45	49.65	46.27	99.60	21 37 9	1763.1	-26.83	41.22
100.00	12 13 1	4201.25	8.87	167.27	40.02	61.34	13 23 2	3601.3	4.98	160.65
110.00	22 21 35	2100.85	-31.77	28.95	45.49	103.33	22 56 36	1500.8	-29.61	20.41
110.00	13 5 42	4036.28	11.80	153.01	38.27	57.68	14 12 58	3436.3	7.45	146.61

DIFFERENTIAL CORRECTIONS
TDE-2.1493 TRA 7.4381 TC3-8.5701 BAU 2.3756
RDE .5795 RRA -.1407 RC3 .5208 FAU .21486
FDE-3.3842 FRA 8.9289 FC3-8.9880 BSP 44125
BDE 2.2261 BRA 7.4394 BC3 8.5859 FSP 4639

MID-COURSE EXECUTION ACCURACY
SGT12679.5 SGR 889.0 SG3 1277.3
RRT -.6585 RRF -.6916 RTF .9950
SGB12710.6 R23 .0459 R13 -.9952
SG112693.0 SG2 668.4 THA 177.35

ORBIT DETERMINATION ACCURACY
ST 3964.8 SR 732.1 SS 2113.5
CRT -.7362 CRS .8206 CST -.9908
LSA 4520.3 MSA 538.1 SSA 15.5
EL1 4001.9 EL2 490.9 ALF 172.14

LAUNCH DATE OCT 23 1964 FLIGHT TIME 388.00 ARRIVAL DATE NOV 15 1965

HELIOCENTRIC CONIC DISTANCE 868.700 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 32.764 GAL -7.38 AZL 88.29 HCA 266.60 SMA 186.88 ECC .23935 INC 1.7050 V1 29.942
RP 210.70 LAP -1.70 LOP 296.22 VP 23.443 GAP -11.79 AZP 90.10 TAL 320.19 TAP 226.79 RCA 142.15 APO 231.60 V2 26.029
RC 306.243 GL 12.09 GP 3.16 ZAL 143.92 ZAP 42.27 ETS 182.87 ZAE 67.91 ETE 180.73 ZAC 86.40 ETC 258.66 CLP 42.18

PLANETOCENTRIC CONIC

C3 21.305 VHL 4.616 DLA 12.92 RAL 180.64 RAD 6567.9 VEL 11.945 PTH 2.13 VHP 4.538 DPA 12.94 RAP 161.97 ECC 1.3506

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 34 57	2642.60	-27.14	70.44	47.47	98.42	20 19 0	2042.6	-25.69	62.07
90.00	10 57 57	4460.46	8.34	186.62	41.63	62.84	12 12 17	3860.5	4.64	179.90
100.00	21 2 59	2358.68	-28.39	49.33	47.24	99.76	21 42 18	1758.7	-26.75	40.91
100.00	12 12 35	4219.61	9.47	168.31	41.03	61.52	13 22 55	3619.6	5.59	161.66
110.00	22 26 18	2097.98	-31.73	28.74	46.45	103.45	23 1 16	1498.0	-29.55	20.21
110.00	13 5 46	4053.08	12.41	153.92	39.28	57.89	14 13 19	3453.1	8.08	147.50

DIFFERENTIAL CORRECTIONS
TDE-2.2538 TRA 7.6919 TC3-8.4631 BAU 2.4147
RDE .5878 RRA -.1370 RC3 .5009 FAU .20393
FDE-3.3297 FRA 8.6574 FC3-8.2869 BSP 44774
BDE 2.3291 BRA 7.6931 BC3 8.4779 FSP 4426

MID-COURSE EXECUTION ACCURACY
SGT12838.5 SGR 881.2 SG3 1213.2
RRT -.6508 RRF -.6851 RTF .9948
SGB12868.7 R23 .0472 R13 -.9949
SG112851.3 SG2 668.4 THA 177.44

ORBIT DETERMINATION ACCURACY
ST 4064.3 SR 731.6 SS 2077.6
CRT -.7393 CRS .8234 CST -.9908
LSA 4591.6 MSA 535.8 SSA 15.4
EL1 4100.6 EL2 488.3 ALF 172.31

LAUNCH DATE OCT 23 1964 FLIGHT TIME 390.00 ARRIVAL DATE NOV 17 1965

HELIOCENTRIC CONIC DISTANCE 872.833 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 32.768 GAL -7.53 AZL 88.28 HCA 267.83 SMA 186.95 ECC .24100 INC 1.7184 V1 29.942
RP 210.46 LAP -1.72 LOP 297.45 VP 23.480 GAP -11.96 AZP 90.07 TAL 319.52 TAP 227.35 RCA 141.90 APO 232.00 V2 26.057
RC 307.229 GL 12.00 GP 3.09 ZAL 144.60 ZAP 41.39 ETS 182.90 ZAE 66.74 ETE 180.80 ZAC 86.40 ETC 258.61 CLP 41.29

PLANETOCENTRIC CONIC

C3 21.949 VHL 4.685 DLA 12.56 RAL 181.24 RAD 6567.9 VEL 11.972 PTH 2.13 VHP 4.630 DPA 12.75 RAP 162.26 ECC 1.3612

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 40 27	2637.49	-27.08	70.07	48.46	98.60	20 24 25	2037.5	-25.62	61.71
90.00	10 57 16	4479.95	8.95	187.73	42.66	63.02	12 11 56	3880.0	5.26	180.99
100.00	21 8 16	2354.31	-28.34	49.01	48.23	99.92	21 47 30	1754.3	-26.68	40.60
100.00	12 12 8	4238.36	10.08	169.37	42.06	61.71	13 22 47	3638.4	6.22	162.70
110.00	22 31 5	2095.17	-31.68	28.53	47.42	103.56	23 6 0	1495.2	-29.49	20.01
110.00	13 5 49	4070.27	13.03	154.87	40.31	58.11	14 13 39	3470.3	8.72	148.42

DIFFERENTIAL CORRECTIONS
TDE-2.3622 TRA 7.9515 TC3-8.3489 BAU 2.4540
RDE .5963 RRA -.1339 RC3 .4819 FAU .19340
FDE-3.2741 FRA 8.3893 FC3-7.6280 BSP 45381
BDE 2.4363 BRA 7.9527 BC3 8.3628 FSP 4218

MID-COURSE EXECUTION ACCURACY
SGT12992.3 SGR 874.0 SG3 1151.4
RRT -.6438 RRF -.6792 RTF .9945
SGB13021.7 R23 .0486 R13 -.9947
SG113004.5 SG2 668.1 THA 177.51

ORBIT DETERMINATION ACCURACY
ST 4163.4 SR 731.1 SS 2040.7
CRT -.7426 CRS .8263 CST -.9908
LSA 4663.5 MSA 533.2 SSA 15.3
EL1 4199.1 EL2 485.5 ALF 172.47

LAUNCH DATE OCT 23 1964 FLIGHT TIME 392.00 ARRIVAL DATE NOV 19 1965

HELIOCENTRIC CONIC DISTANCE 876.963 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 32.773 GAL -7.69 AZL 88.27 HCA 269.05 SMA 187.03 ECC .24272 INC 1.7317 V1 29.942
RP 210.22 LAP -1.73 LOP 298.67 VP 23.517 GAP -12.14 AZP 90.03 TAL 318.84 TAP 227.90 RCA 141.63 APO 232.42 V2 26.085
RC 308.206 GL 11.91 GP 3.03 ZAL 145.29 ZAP 40.53 ETS 182.92 ZAE 65.60 ETE 180.87 ZAC 86.41 ETC 258.55 CLP 40.43

PLANETOCENTRIC CONIC

C3 22.631 VHL 4.757 DLA 12.19 RAL 181.85 RAD 6567.9 VEL 12.000 PTH 2.14 VHP 4.725 DPA 12.56 RAP 162.58 ECC 1.3725

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 46 0	2632.45	-27.03	69.71	49.47	98.77	20 29 52	2032.4	-25.54	61.36
90.00	10 56 33	4499.83	9.56	188.87	43.70	63.22	12 11 33	3899.8	5.89	182.11
100.00	21 13 35	2350.01	-28.29	48.70	49.23	100.07	21 52 45	1750.0	-26.61	40.30
100.00	12 11 40	4257.50	10.69	170.45	43.10	61.92	13 22 38	3657.5	6.86	163.77
110.00	22 35 53	2092.43	-31.64	28.33	48.42	103.67	23 10 46	1492.4	-29.43	19.82
110.00	13 5 50	4087.84	13.66	155.84	41.36	58.36	14 13 58	3487.8	9.37	149.36

DIFFERENTIAL CORRECTIONS
TDE-2.4738 TRA 8.2181 TC3-8.2263 BAU 2.4929
RDE .6051 RRA -.1313 RC3 .4638 FAU .18319
FDE-3.2176 FRA 8.1250 FC3-7.0078 BSP 45976
BDE 2.5467 BRA 8.2192 BC3 8.2394 FSP 4015

MID-COURSE EXECUTION ACCURACY
SGT13140.7 SGR 867.2 SG3 1091.9
RRT -.6374 RRF -.6740 RTF .9943
SGB13169.3 R23 .0501 R13 -.9944
SG113152.3 SG2 667.6 THA 177.59

ORBIT DETERMINATION ACCURACY
ST 4261.5 SR 730.5 SS 2003.0
CRT -.7459 CRS .8293 CST -.9907
LSA 4735.5 MSA 530.5 SSA 15.2
EL1 4296.7 EL2 482.6 ALF 172.62

LAUNCH DATE OCT 23 1964 FLIGHT TIME 394.00 ARRIVAL DATE NOV 21 1965

HELIOCENTRIC CONIC DISTANCE 881.087 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 32.777 GAL -7.86 AZL 88.25 HCA 270.28 SMA 187.10 ECC .24452 INC 1.7450 V1 29.942
RP 209.99 LAP -1.75 LOP 299.90 VP 23.552 GAP -12.32 AZP 89.99 TAL 318.15 TAP 228.43 RCA 141.35 APO 232.85 V2 26.111
RC 309.174 GL 11.81 GP 2.97 ZAL 145.98 ZAP 39.70 ETS 182.95 ZAE 64.47 ETE 180.94 ZAC 86.43 ETC 258.49 CLP 39.60

PLANETOCENTRIC CONIC

C3 23.353 VHL 4.833 DLA 11.82 RAL 182.46 RAD 6567.9 VEL 12.030 PTH 2.15 VHP 4.821 DPA 12.35 RAP 162.93 ECC 1.3843

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 51 35	2627.49	-26.98	69.36	50.49	98.94	20 35 22	2027.5	-25.47	61.02
90.00	10 55 50	4520.07	10.18	190.03	44.77	63.43	12 11 10	3920.1	6.53	183.25
100.00	21 18 55	2345.79	-28.24	48.40	50.25	100.22	21 58 1	1745.8	-26.54	40.01
100.00	12 11 11	4277.00	11.32	171.57	44.18	62.15	13 22 28	3677.0	7.50	164.86
110.00	22 40 44	2089.79	-31.60	28.14	49.43	103.78	23 15 34	1489.8	-29.38	19.63
110.00	13 5 51	4105.77	14.30	156.84	42.44	58.61	14 14 17	3505.8	10.04	150.33

DIFFERENTIAL CORRECTIONS
TDE-2.5905 TRA 8.4905 TC3-8.1002 BAU 2.5328
RDE .6143 RRA -.1292 RC3 .4465 FAU .17341
FDE-3.1610 FRA 7.8629 FC3-6.4287 BSP 46525
BDE 2.6623 BRA 8.4915 BC3 8.1125 FSP 3818

MID-COURSE EXECUTION ACCURACY
SGT13285.2 SGR 860.9 SG3 1034.5
RRT -.6317 RRF -.6695 RTF .9940
SGB13313.1 R23 .0517 R13 -.9941
SG113296.4 SG2 666.8 THA 177.65

ORBIT DETERMINATION ACCURACY
ST 4359.8 SR 730.0 SS 1964.7
CRT -.7494 CRS .8325 CST -.9906
LSA 4808.6 MSA 527.4 SSA 15.0
EL1 4394.4 EL2 479.5 ALF 172.76

LAUNCH DATE OCT 23 1964 FLIGHT TIME 396.00 ARRIVAL DATE NOV 23 1965

HELIOCENTRIC CONIC DISTANCE 885.206 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 32.782 GAL -8.03 AZL 88.24 HCA 271.51 SMA 187.18 ECC .24640 INC 1.7584 V1 29.942
RP 209.77 LAP -1.76 LOP 301.13 VP 23.587 GAP -12.50 AZP 89.95 TAL 317.43 TAP 228.94 RCA 141.06 APO 233.31 V2 26.137
RC 310.132 GL 11.70 GP 2.92 ZAL 146.68 ZAP 38.89 ETS 182.97 ZAE 63.38 ETE 181.00 ZAC 86.45 ETC 258.43 CLP 38.80

PLANETOCENTRIC CONIC

C3 24.117 VHL 4.911 DLA 11.44 RAL 183.07 RAD 6568.0 VEL 12.062 PTH 2.16 VHP 4.921 DPA 12.13 RAP 163.31 ECC 1.3969

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 57 11	2622.64	-26.93	69.01	51.53	99.10	20 40 54	2022.6	-25.39	60.68
90.00	10 55 6	4540.68	10.80	191.23	45.87	63.67	12 10 47	3940.7	7.18	184.42
100.00	21 24 18	2341.68	-28.19	48.10	51.29	100.37	22 3 20	1741.7	-26.47	39.72
100.00	12 10 40	4296.87	11.95	172.71	45.27	62.39	13 22 17	3696.9	8.16	165.97
110.00	22 45 37	2087.24	-31.55	27.95	50.45	103.89	23 20 24	1487.2	-29.32	19.45
110.00	13 5 51	4124.07	14.94	157.86	43.54	58.89	14 14 35	3524.1	10.71	151.32

DIFFERENTIAL CORRECTIONS
TDE-2.7094 TRA 8.7700 TC3-7.9663 BAU 2.5723
RDE .6237 RRA -.1277 RC3 .4300 FAU .16392
FDE-3.1021 FRA 7.6042 FC3-5.8842 BSP 47073
BDE 2.7803 BRA 8.7709 BC3 7.9779 FSP 3627

MID-COURSE EXECUTION ACCURACY
SGT13423.6 SGR 855.0 SG3 979.2
RRT -.6266 RRF -.6657 RTF .9936
SGB13450.8 R23 .0533 R13 -.9937
SG113434.3 SG2 665.8 THA 177.71

ORBIT DETERMINATION ACCURACY
ST 4456.0 SR 729.3 SS 1925.0
CRT -.7528 CRS .8358 CST -.9905
LSA 4880.4 MSA 524.4 SSA 14.9
EL1 4490.0 EL2 476.4 ALF 172.90

LAUNCH DATE OCT 23 1964 FLIGHT TIME 398.00 ARRIVAL DATE NOV 25 1965

HELIOCENTRIC CONIC DISTANCE 889.319 EARTH TO MARS

RL 148.81 LAL .00 LOL 29.62 VL 32.787 GAL -8.21 AZL 88.23 HCA 272.74 SMA 187.26 ECC .24837 INC 1.7718 V1 29.942
RP 209.55 LAP -1.77 LOP 302.37 VP 23.621 GAP -12.68 AZP 89.92 TAL 316.70 TAP 229.45 RCA 140.75 APO 233.77 V2 26.162
RC 311.080 GL 11.59 GP 2.86 ZAL 147.39 ZAP 38.10 ETS 182.99 ZAE 62.30 ETE 181.06 ZAC 86.48 ETC 258.37 CLP 38.01

PLANETOCENTRIC CONIC

C3 24.926 VHL 4.993 DLA 11.05 RAL 183.68 RAD 6568.0 VEL 12.096 PTH 2.16 VHP 5.022 DPA 11.90 RAP 163.71 ECC 1.4102

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 2 49	2617.90	-26.88	68.68	52.59	99.27	20 46 27	2017.9	-25.32	60.35
90.00	10 54 21	4561.63	11.43	192.44	46.98	63.92	12 10 23	3961.6	7.83	185.61
100.00	21 29 43	2337.67	-28.14	47.82	52.34	100.52	22 8 40	1737.7	-26.40	39.45
100.00	12 10 9	4317.09	12.58	173.87	46.39	62.66	13 22 6	3717.1	8.82	167.10
110.00	22 50 31	2084.80	-31.51	27.77	51.49	103.98	23 25 16	1484.8	-29.27	19.28
110.00	13 5 50	4142.72	15.60	158.91	44.66	59.19	14 14 53	3542.7	11.39	152.33

DIFFERENTIAL CORRECTIONS
TDE-2.8336 TRA 9.0557 TC3-7.8285 BAU 2.6124
RDE .6336 RRA -.1266 RC3 .4143 FAU .15481
FDE-3.0434 FRA 7.3480 FC3-5.3768 BSP 47583
BDE 2.9035 BRA 9.0566 BC3 7.8394 FSP 3441

MID-COURSE EXECUTION ACCURACY
SGT13557.4 SGR 849.5 SG3 925.9
RRT -.6222 RRF -.6626 RTF .9932
SGB13584.0 R23 .0552 R13 -.9933
SG113567.7 SG2 664.6 THA 177.76

ORBIT DETERMINATION ACCURACY
ST 4552.0 SR 728.6 SS 1884.9
CRT -.7564 CRS .8393 CST -.9904
LSA 4953.0 MSA 521.1 SSA 14.8
EL1 4585.6 EL2 473.1 ALF 173.02

LAUNCH DATE OCT 24 1964 FLIGHT TIME 240.00 ARRIVAL DATE JUN 21 1965

HELIOCENTRIC CONIC DISTANCE 575.106 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 33.176 GAL -5.62 AZL 94.57 HCA 185.36 SMA 194.18 ECC .25246 INC 4.5683 V1 29.950
RP 236.81 LAP .43 LOP 215.96 VP 20.914 GAP 7.34 AZP 85.45 TAL 331.57 TAP 156.93 RCA 145.16 APO 243.20 V2 23.209
RC 190.540 GL -32.93 GP 23.49 ZAL 124.98 ZAP 143.78 ETS 142.07 ZAE 153.13 ETE 62.40 ZAC 112.24 ETC 254.78 CLP 151.61

PLANETOCENTRIC CONIC

C3 23.412 VHL 4.839 DLA -23.90 RAL 151.78 RAD 6568.0 VEL 12.033 PTH 2.15 VHP 5.754 DPA 19.40 RAP 197.59 ECC 1.3853

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	22 57 3	1390.92	5.27	353.80	17.24	117.86	23 20 14	790.9	8.95	347.06
90.00	3 37 43	5757.86	27.11	273.59	24.66	98.52	5 13 41	5157.9	28.01	265.04
100.00	0 2 48	1191.34	3.42	338.12	16.23	119.71	0 22 40	591.3	7.35	331.53
100.00	5 18 35	5432.68	29.19	249.99	24.98	96.74	6 49 7	4832.7	29.82	241.24
110.00	0 32 21	1098.68	-.76	328.49	13.62	124.18	0 50 40	498.7	3.73	322.28
110.00	7 5 31	5098.10	34.11	225.04	25.44	92.46	8 30 29	4498.1	34.07	215.79

DIFFERENTIAL CORRECTIONS
TDE 1.9762 TRA-2.5637 TC3 1.7846 BAU .7498
RDE 1.3529 RRA-1.2132 RC3 1.5982 FAU .16270
FDE-4.6387 FRA 4.1176 FC3-6.0165 BSP 17499
BDE 2.3949 BRA 2.8362 BC3 2.3956 FSP 2602

MID-COURSE EXECUTION ACCURACY
SGT 4414.0 SGR 2725.4 SG3 831.0
RRT .9674 RRF -.9989 RTF -.9567
SGB 5187.5 R23 -.2225 R13 -.9745
SG1 5153.7 SG2 591.3 THA 31.31

ORBIT DETERMINATION ACCURACY
ST 2543.8 SR 1670.6 SS 2845.8
CRT .9932 CRS 1.0000 CST .9929
LSA 4159.7 MSA 238.9 SSA 3.7
EL1 3039.0 EL2 162.5 ALF 33.22

LAUNCH DATE OCT 24 1964 FLIGHT TIME 242.00 ARRIVAL DATE JUN 23 1965

HELIOCENTRIC CONIC DISTANCE 578.699 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 33.150 GAL -5.53 AZL 93.60 HCA 186.33 SMA 193.69 ECC .25013 INC 3.5960 V1 29.950
RP 236.46 LAP .40 LOP 216.93 VP 20.912 GAP 6.92 AZP 86.42 TAL 331.81 TAP 158.14 RCA 145.24 APO 242.14 V2 23.244
RC 192.768 GL -27.14 GP 20.72 ZAL 126.84 ZAP 144.95 ETS 145.87 ZAE 155.80 ETE 60.89 ZAC 109.64 ETC 255.04 CLP 151.08

PLANETOCENTRIC CONIC

C3 20.602 VHL 4.539 DLA -18.35 RAL 153.70 RAD 6567.8 VEL 11.916 PTH 2.12 VHP 5.505 DPA 16.73 RAP 196.69 ECC 1.3391

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 55 38	1610.64	-1.80	6.08	15.04	118.26	22 22 29	1010.6	1.99	359.45
90.00	4 54 28	5476.33	28.27	253.14	22.26	88.37	6 25 44	4876.3	27.75	244.51
100.00	23 6 0	1383.59	-3.09	348.67	14.33	119.75	23 29 3	783.6	.89	342.15
100.00	6 26 48	5178.59	29.74	231.17	22.19	86.88	7 53 6	4578.6	29.00	222.44
110.00	23 50 17	1244.84	-6.32	336.15	12.33	123.66	24 11 2	644.8	-1.86	329.91
110.00	7 59 0	4890.11	33.53	208.86	21.80	82.92	9 20 30	4290.1	32.19	199.89

DIFFERENTIAL CORRECTIONS
TDE 1.7433 TRA-2.5474 TC3 2.0120 BAU .7078
RDE 1.0553 RRA-1.0866 RC3 1.5989 FAU .17557
FDE-4.3673 FRA 4.6230 FC3-7.3781 BSP 17127
BDE 2.0378 BRA 2.7695 BC3 2.5700 FSP 2887

MID-COURSE EXECUTION ACCURACY
SGT 4433.6 SGR 2443.3 SG3 918.7
RRT .9673 RRF -.9989 RTF -.9587
SGB 5062.3 R23 -.2254 R13 -.9736
SG1 5032.8 SG2 545.8 THA 28.43

ORBIT DETERMINATION ACCURACY
ST 2424.6 SR 1401.5 SS 2766.8
CRT .9930 CRS 1.0000 CST .9939
LSA 3930.9 MSA 214.1 SSA 5.3
EL1 2796.8 EL2 143.4 ALF 29.94

LAUNCH DATE OCT 24 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUN 25 1965

HELIOCENTRIC CONIC DISTANCE 582.310 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 33.126 GAL -5.45 AZL 92.88 HCA 187.29 SMA 193.22 ECC .24790 INC 2.8791 V1 29.950
RP 236.12 LAP .37 LOP 217.90 VP 20.912 GAP 6.50 AZP 87.14 TAL 332.05 TAP 159.34 RCA 145.32 APO 241.12 V2 23.279
RC 194.983 GL -22.46 GP 18.59 ZAL 128.01 ZAP 145.50 ETS 149.21 ZAE 157.95 ETE 60.11 ZAC 107.63 ETC 255.21 CLP 150.40

PLANETOCENTRIC CONIC

C3 18.806 VHL 4.337 DLA -13.85 RAL 155.14 RAD 6567.8 VEL 11.840 PTH 2.10 VHP 5.306 DPA 14.69 RAP 196.00 ECC 1.3095

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 18 26	1754.59	-6.41	14.15	14.39	117.64	21 47 40	1154.6	-2.65	7.48
90.00	5 43 8	5289.09	27.16	239.57	20.11	81.67	7 11 17	4689.1	25.73	231.19
100.00	22 32 28	1515.73	-7.51	355.99	13.79	119.02	22 57 43	915.7	-3.58	349.40
100.00	7 11 47	5003.17	28.40	218.31	19.89	80.26	8 35 10	4403.2	26.76	209.89
110.00	23 24 18	1353.36	-10.37	341.94	12.06	122.75	23 46 51	753.4	-5.98	335.60
110.00	8 36 26	4738.31	31.67	197.42	19.11	76.40	9 55 24	4138.3	29.47	188.90

DIFFERENTIAL CORRECTIONS
TDE 1.5677 TRA-2.5256 TC3 2.1779 BAU .6751
RDE .8594 RRA -.9875 RC3 1.5707 FAU .18644
FDE-4.1325 FRA 5.0686 FC3-8.5828 BSP 17029
BDE 1.7878 BRA 2.7118 BC3 2.6852 FSP 3184

MID-COURSE EXECUTION ACCURACY
SGT 4435.0 SGR 2225.0 SG3 995.7
RRT .9671 RRF -.9987 RTF -.9602
SGB 4961.9 R23 -.2267 R13 -.9729
SG1 4935.7 SG2 508.7 THA 26.18

ORBIT DETERMINATION ACCURACY
ST 2314.3 SR 1205.6 SS 2678.8
CRT .9927 CRS .9998 CST .9950
LSA 3734.9 MSA 190.2 SSA 7.5
EL1 2606.3 EL2 129.3 ALF 27.42

LAUNCH DATE OCT 24 1964 FLIGHT TIME 246.00 ARRIVAL DATE JUN 27 1965

HELIOCENTRIC CONIC DISTANCE 585.940 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 33.102 GAL -5.37 AZL 92.33 HCA 188.26 SMA 192.78 ECC .24577 INC 2.3284 V1 29.950
RP 235.77 LAP .33 LOP 218.88 VP 20.914 GAP 6.08 AZP 87.70 TAL 332.27 TAP 160.54 RCA 145.40 APO 240.16 V2 23.315
RC 197.185 GL -18.63 GP 16.92 ZAL 128.73 ZAP 145.64 ETS 152.11 ZAE 159.75 ETE 60.00 ZAC 106.05 ETC 255.33 CLP 149.64

PLANETOCENTRIC CONIC

C3 17.567 VHL 4.191 DLA -10.15 RAL 156.23 RAD 6567.7 VEL 11.788 PTH 2.08 VHP 5.138 DPA 13.10 RAP 195.45 ECC 1.2891

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 51 33	1863.69	-9.80	20.37	14.33	116.70	21 22 37	1263.7	-6.14	13.60
90.00	6 18 46	5148.12	25.38	229.64	18.53	77.00	7 44 34	4548.1	23.34	221.56
100.00	22 7 52	1617.48	-10.82	1.73	13.79	118.04	22 34 50	1017.5	-6.99	355.04
100.00	7 45 8	4869.57	26.49	208.85	18.22	75.63	9 6 18	4269.6	24.26	200.76
110.00	23 4 42	1439.50	-13.50	346.65	12.22	121.71	23 28 42	839.5	-9.21	340.18
110.00	9 4 47	4620.31	29.46	188.94	17.24	71.83	10 21 48	4020.3	26.70	180.84

DIFFERENTIAL CORRECTIONS
TDE 1.4482 TRA-2.4799 TC3 2.3396 BAU .6579
RDE .7283 RRA -.9033 RC3 1.5408 FAU .19725
FDE-3.9571 FRA 5.4493 FC3-9.7206 BSP 16580
BDE 1.6210 BRA 2.6393 BC3 2.8014 FSP 3434

MID-COURSE EXECUTION ACCURACY
SGT 4430.2 SGR 2057.4 SG3 1068.5
RRT .9681 RRF -.9984 RTF -.9629
SGB 4884.6 R23 -.2219 R13 -.9736
SG1 4862.0 SG2 469.5 THA 24.45

ORBIT DETERMINATION ACCURACY
ST 2233.9 SR 1065.0 SS 2606.3
CRT .9928 CRS .9993 CST .9964
LSA 3590.5 MSA 160.9 SSA 10.5
EL1 2472.1 EL2 115.2 ALF 25.39

LAUNCH DATE OCT 24 1964 FLIGHT TIME 248.00 ARRIVAL DATE JUN 29 1965

HELIOCENTRIC CONIC DISTANCE 589.584 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 33.079 GAL -5.29 AZL 91.89 HCA 189.24 SMA 192.36 ECC .24373 INC 1.8904 V1 29.950
RP 235.42 LAP .30 LOP 219.85 VP 20.918 GAP 5.68 AZP 88.13 TAL 332.49 TAP 161.73 RCA 145.48 APO 239.24 V2 23.351
RC 199.372 GL -15.44 GP 15.58 ZAL 129.13 ZAP 145.48 ETS 154.62 ZAE 161.30 ETE 60.51 ZAC 104.78 ETC 255.42 CLP 148.80

PLANETOCENTRIC CONIC

C3 16.659 VHL 4.082 DLA -7.05 RAL 157.09 RAD 6567.7 VEL 11.749 PTH 2.07 VHP 4.989 DPA 11.82 RAP 194.99 ECC 1.2742

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 30 31	1951.46	-12.44	25.47	14.52	115.64	21 3 2	1351.5	-8.89	18.59
90.00	6 46 39	5035.87	23.44	221.99	17.40	73.64	8 10 35	4435.9	20.97	214.18
100.00	21 48 29	1699.92	-13.41	6.48	14.03	116.97	22 16 49	1099.9	-9.69	359.66
100.00	8 11 22	4762.64	24.48	201.54	17.05	72.29	9 30 45	4162.6	21.83	193.75
110.00	22 49 2	1510.37	-16.00	350.62	12.56	120.62	23 14 12	910.4	-11.82	344.01
110.00	9 27 19	4524.96	27.26	182.40	15.95	68.53	10 42 44	3925.0	24.10	174.66

DIFFERENTIAL CORRECTIONS
TDE 1.3402 TRA-2.4439 TC3 2.4403 BAU .6391
RDE .6350 RRA -.8341 RC3 1.5096 FAU .20790
FDE-3.8222 FRA 5.7955 FC-10.8039 BSP 16470
BDE 1.4830 BRA 2.5823 BC3 2.8695 FSP 3671

MID-COURSE EXECUTION ACCURACY
SGT 4411.0 SGR 1924.8 SG3 1138.9
RRT .9670 RRF -.9980 RTF -.9631
SGB 4812.6 R23 -.2228 R13 -.9728
SG1 4791.4 SG2 451.7 THA 23.10

ORBIT DETERMINATION ACCURACY
ST 2149.0 SR 959.8 SS 2546.6
CRT .9920 CRS .9986 CST .9971
LSA 3464.6 MSA 145.3 SSA 13.9
EL1 2351.0 EL2 110.4 ALF 23.95

LAUNCH DATE OCT 24 1964 FLIGHT TIME 250.00 ARRIVAL DATE JUL 1 1965

HELIOCENTRIC CONIC DISTANCE 593.243 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 33.057 GAL -5.21 AZL 91.54 HCA 190.22 SMA 191.96 ECC .24178 INC 1.5344 V1 29.950
RP 235.06 LAP .27 LOP 220.83 VP 20.924 GAP 5.28 AZP 88.49 TAL 332.71 TAP 162.92 RCA 145.55 APO 238.37 V2 23.387
RC 201.544 GL -12.75 GP 14.48 ZAL 129.32 ZAP 145.12 ETS 156.79 ZAE 162.66 ETE 61.63 ZAC 103.73 ETC 255.49 CLP 147.91

PLANETOCENTRIC CONIC

C3 15.960 VHL 3.995 DLA -4.42 RAL 157.77 RAD 6567.6 VEL 11.719 PTH 2.06 VHP 4.854 DPA 10.79 RAP 194.60 ECC 1.2627

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 13 13	2024.52	-14.55	29.79	14.82	114.56	20 46 57	1424.5	-11.11	22.80
90.00	7 9 23	4943.23	21.53	215.87	16.59	71.15	8 31 46	4343.2	18.76	208.29
100.00	21 32 29	1768.81	-15.50	10.53	14.35	115.88	22 1 58	1168.8	-11.90	3.59
100.00	8 32 48	4674.17	22.52	195.70	16.21	69.81	9 50 42	4074.2	19.57	188.15
110.00	22 35 58	1570.05	-18.04	354.05	12.96	119.54	23 2 8	970.1	-13.97	347.30
110.00	9 45 48	4445.69	25.18	177.18	15.03	66.07	10 59 53	3845.7	21.73	169.73

DIFFERENTIAL CORRECTIONS
TDE 1.2528 TRA-2.4014 TC3 2.5217 BAU .6240
RDE .5668 RRA -.7763 RC3 1.4810 FAU .21847
FDE-3.7177 FRA 6.1205 FC-11.8511 BSP 16327
BDE 1.3751 BRA 2.5238 BC3 2.9245 FSP 3904

MID-COURSE EXECUTION ACCURACY
SGT 4384.2 SGR 1818.8 SG3 1208.4
RRT .9659 RRF -.9974 RTF -.9634
SGB 4746.5 R23 -.2219 R13 -.9724
SG1 4726.4 SG2 436.7 THA 22.03

ORBIT DETERMINATION ACCURACY
ST 2075.1 SR 880.0 SS 2498.2
CRT .9912 CRS .9976 CST .9978
LSA 3362.2 MSA 131.1 SSA 17.9
EL1 2251.5 EL2 107.3 ALF 22.85

LAUNCH DATE OCT 24 1964 FLIGHT TIME 252.00 ARRIVAL DATE JUL 3 1965

HELIOCENTRIC CONIC DISTANCE 596.918 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 33.036 GAL -5.14 AZL 91.24 HCA 191.20 SMA 191.58 ECC .23992 INC 1.2393 V1 29.950
RP 234.71 LAP .24 LOP 221.81 VP 20.932 GAP 4.88 AZP 88.78 TAL 332.91 TAP 164.11 RCA 145.61 APO 237.54 V2 23.424
RC 203.699 GL -10.46 GP 13.57 ZAL 129.36 ZAP 144.59 ETS 158.69 ZAE 163.88 ETE 63.39 ZAC 102.86 ETC 255.54 CLP 146.98

PLANETOCENTRIC CONIC

C3 15.399 VHL 3.924 DLA -2.16 RAL 158.32 RAD 6567.6 VEL 11.695 PTH 2.06 VHP 4.729 DPA 9.95 RAP 194.25 ECC 1.2534

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 58 30	2086.80	-16.28	33.55	15.15	113.49	20 33 17	1486.8	-12.96	26.44
90.00	7 28 26	4864.78	19.72	210.83	16.00	69.26	8 49 31	4264.8	16.72	203.43
100.00	21 18 51	1827.65	-17.22	14.05	14.70	114.82	21 49 18	1227.7	-13.73	7.00
100.00	8 50 47	4599.16	20.68	190.89	15.59	67.92	10 7 26	3999.2	17.50	183.54
110.00	22 24 47	1621.25	-19.73	357.06	13.38	118.50	22 51 48	1021.2	-15.77	350.17
110.00	10 1 20	4378.33	23.25	172.90	14.37	64.20	11 14 18	3778.3	19.58	165.67

DIFFERENTIAL CORRECTIONS
TDE 1.1770 TRA-2.3570 TC3 2.5824 BAU .6102
RDE .5150 RRA -.7283 RC3 1.4552 FAU .22890
FDE-3.6314 FRA 6.4382 FC-12.8686 BSP 16195
BDE 1.2848 BRA 2.4670 BC3 2.9642 FSP 4146

MID-COURSE EXECUTION ACCURACY
SGT 4349.9 SGR 1732.7 SG3 1277.5
RRT .9648 RRF -.9966 RTF -.9637
SGB 4682.3 R23 -.2201 R13 -.9721
SG1 4663.0 SG2 425.0 THA 21.21

ORBIT DETERMINATION ACCURACY
ST 2006.1 SR 817.7 SS 2457.3
CRT .9902 CRS .9961 CST .9984
LSA 3273.6 MSA 119.9 SSA 22.4
EL1 2163.8 EL2 106.0 ALF 22.03

LAUNCH DATE OCT 24 1964 FLIGHT TIME 254.00 ARRIVAL DATE JUL 5 1965

HELIOCENTRIC CONIC DISTANCE 600.607 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 33.016 GAL -5.08 AZL 90.99 HCA 192.18 SMA 191.21 ECC .23813 INC .9910 V1 29.950
RP 234.35 LAP .21 LOP 222.80 VP 20.942 GAP 4.49 AZP 89.03 TAL 333.11 TAP 165.29 RCA 145.68 APO 236.75 V2 23.461
RC 205.837 GL -8.47 GP 12.81 ZAL 129.31 ZAP 143.94 ETS 160.36 ZAE 164.97 ETE 65.81 ZAC 102.11 ETC 255.58 CLP 146.00

PLANETOCENTRIC CONIC

C3 14.935 VHL 3.865 DLA -.20 RAL 158.76 RAD 6567.6 VEL 11.676 PTH 2.05 VHP 4.612 DPA 9.25 RAP 193.93 ECC 1.2458

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 45 42	2140.86	-17.71	36.87	15.48	112.46	20 21 22	1540.9	-14.52	29.65
90.00	7 44 46	4796.99	18.03	206.57	15.55	67.79	9 4 43	4197.0	14.86	199.33
100.00	21 6 57	1878.77	-18.65	17.17	15.06	113.79	21 38 15	1278.8	-15.28	10.00
100.00	9 6 12	4534.32	18.97	186.84	15.13	66.45	10 21 46	3934.3	15.62	179.64
110.00	22 14 59	1665.80	-21.15	359.73	13.78	117.50	22 42 45	1065.8	-17.30	352.72
110.00	10 14 39	4320.05	21.47	169.30	13.87	62.74	11 26 39	3720.0	17.65	162.26

DIFFERENTIAL CORRECTIONS
TDE 1.1109 TRA-2.3092 TC3 2.6285 BAU .5978
RDE .4751 RRA -.6878 RC3 1.4335 FAU .23936
FDE-3.5612 FRA 6.7507 FC-13.8750 BSP 16041
BDE 1.2082 BRA 2.4094 BC3 2.9940 FSP 4395

MID-COURSE EXECUTION ACCURACY
SGT 4308.2 SGR 1662.5 SG3 1347.0
RRT .9637 RRF -.9957 RTF -.9640
SGB 4617.8 R23 -.2171 R13 -.9719
SG1 4599.1 SG2 415.7 THA 20.58

ORBIT DETERMINATION ACCURACY
ST 1941.9 SR 768.7 SS 2423.8
CRT .9890 CRS .9942 CST .9989
LSA 3197.4 MSA 111.8 SSA 27.1
EL1 2085.8 EL2 105.7 ALF 21.44

LAUNCH DATE OCT 24 1964 FLIGHT TIME 256.00 ARRIVAL DATE JUL 7 1965

HELIOCENTRIC CONIC DISTANCE 604.311 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 32.997 GAL -5.01 AZL 90.78 HCA 193.17 SMA 190.87 ECC .23643 INC .7784 V1 29.950
RP 233.98 LAP .18 LOP 223.79 VP 20.954 GAP 4.11 AZP 89.24 TAL 333.31 TAP 166.47 RCA 145.74 APO 235.99 V2 23.498
RC 207.958 GL -6.73 GP 12.16 ZAL 129.19 ZAP 143.19 ETS 161.82 ZAE 165.94 ETE 68.93 ZAC 101.47 ETC 255.62 CLP 144.98

PLANETOCENTRIC CONIC

C3 14.542 VHL 3.813 DLA 1.53 RAL 159.12 RAD 6567.6 VEL 11.659 PTH 2.05 VHP 4.502 DPA 8.67 RAP 193.62 ECC 1.2393

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 34 19	2188.48	-18.93	39.84	15.79	111.46	20 10 48	1588.5	-15.84	32.52
90.00	7 59 0	4737.48	16.46	202.91	15.21	-66.63	9 17 58	4137.5	13.16	195.79
100.00	20 56 23	1923.80	-19.86	19.97	15.39	112.81	21 28 26	1323.8	-16.60	12.69
100.00	9 19 38	4477.39	17.38	183.35	14.78	65.29	10 34 16	3877.4	13.90	176.29
110.00	22 6 15	1705.07	-22.37	2.13	14.15	116.55	22 34 40	1105.1	-18.62	355.00
110.00	10 26 15	4268.89	19.85	166.23	13.48	61.58	11 37 24	3668.9	15.90	159.33

DIFFERENTIAL CORRECTIONS
TDE 1.0543 TRA-2.2562 TC3 2.6652 BAU .5869
RDE .4446 RRA -.6528 RC3 1.4179 FAU .25026
FDE-3.5119 FRA 7.0543 FC-14.8993 BSP 15806
BDE 1.1442 BRA 2.3487 BC3 3.0189 FSP 4636

MID-COURSE EXECUTION ACCURACY
SGT 4259.2 SGR 1605.8 SG3 1418.1
RRT .9626 RRF -.9947 RTF -.9643
SGB 4551.8 R23 -.2135 R13 -.9719
SG1 4533.5 SG2 408.5 THA 20.12

ORBIT DETERMINATION ACCURACY
ST 1883.6 SR 730.8 SS 2400.0
CRT .9878 CRS .9918 CST .9993
LSA 3135.2 MSA 107.3 SSA 31.4
EL1 2017.6 EL2 106.1 ALF 21.03

LAUNCH DATE OCT 24 1964 FLIGHT TIME 258.00 ARRIVAL DATE JUL 9 1965

HELIOCENTRIC CONIC DISTANCE 608.028 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 32.979 GAL -4.95 AZL 90.60 HCA 194.16 SMA 190.54 ECC .23481 INC .5930 V1 29.950
RP 233.62 LAP .15 LOP 224.78 VP 20.967 GAP 3.73 AZP 89.42 TAL 333.49 TAP 167.65 RCA 145.80 APO 235.28 V2 23.536
RC 210.060 GL -5.20 GP 11.60 ZAL 129.02 ZAP 142.35 ETS 163.13 ZAE 166.79 ETE 72.79 ZAC 100.91 ETC 255.65 CLP 143.93

PLANETOCENTRIC CONIC

C3 14.202 VHL 3.768 DLA 3.07 RAL 159.42 RAD 6567.6 VEL 11.644 PTH 2.04 VHP 4.396 DPA 8.19 RAP 193.33 ECC 1.2337

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 24 5	2230.93	-19.96	42.52	16.09	110.51	20 1 16	1630.9	-16.99	35.10
90.00	8 11 37	4684.55	15.00	199.71	14.95	65.70	9 29 41	4084.6	11.59	192.68
100.00	20 46 51	1963.94	-20.90	22.50	15.70	111.87	21 19 35	1363.9	-17.75	15.12
100.00	9 31 31	4426.78	15.92	180.31	14.51	64.36	10 45 18	3826.8	12.34	173.35
110.00	21 58 23	1740.05	-23.42	4.30	14.50	115.65	22 27 23	1140.1	-19.77	357.06
110.00	10 36 29	4223.43	18.35	163.55	13.18	60.64	11 46 52	3623.4	14.30	156.77

DIFFERENTIAL CORRECTIONS
TDE 1.0043 TRA-2.1999 TC3 2.6922 BAU .5768
RDE .4213 RRA -.6223 RC3 1.4083 FAU .26173
FDE-3.4813 FRA 7.3512 FC-15.9550 BSP 15519
BDE 1.0891 BRA 2.2862 BC3 3.0383 FSP 4868

MID-COURSE EXECUTION ACCURACY
SGT 4203.3 SGR 1560.3 SG3 1491.2
RRT .9614 RRF -.9936 RTF -.9645
SGB 4483.5 R23 -.2096 R13 -.9718
SG1 4465.3 SG2 404.2 THA 19.81

ORBIT DETERMINATION ACCURACY
ST 1828.9 SR 701.4 SS 2384.9
CRT .9865 CRS .9891 CST .9996
LSA 3084.2 MSA 107.6 SSA 34.5
EL1 1955.9 EL2 107.5 ALF 20.79

LAUNCH DATE OCT 24 1964 FLIGHT TIME 260.00 ARRIVAL DATE JUL 11 1965

HELIOCENTRIC CONIC DISTANCE 611.758 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 32.962 GAL -4.89 AZL 90.43 HCA 195.15 SMA 190.23 ECC .23327 INC .4343 V1 29.950
RP 233.25 LAP .11 LOP 225.77 VP 20.983 GAP 3.36 AZP 89.58 TAL 333.67 TAP 168.82 RCA 145.85 APO 234.60 V2 23.574
RC 212.144 GL -3.83 GP 11.11 ZAL 128.82 ZAP 141.44 ETS 164.30 ZAE 167.52 ETE 77.42 ZAC 100.42 ETC 255.67 CLP 142.83

PLANETOCENTRIC CONIC

C3 13.903 VHL 3.729 DLA 4.44 RAL 159.66 RAD 6567.5 VEL 11.631 PTH 2.04 VHP 4.296 DPA 7.79 RAP 193.04 ECC 1.2288

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 14 46	2269.15	-20.85	44.97	16.36	109.60	19 52 35	1669.2	-17.99	37.46
90.00	8 22 54	4636.97	13.65	196.87	14.74	64.95	9 40 11	4037.0	10.16	189.93
100.00	20 38 12	2000.06	-21.80	24.80	15.98	110.97	21 11 32	1400.1	-18.75	17.33
100.00	9 42 9	4381.30	14.56	177.62	14.29	63.60	10 55 10	3781.3	10.89	170.74
110.00	21 51 13	1771.49	-24.33	6.29	14.83	114.79	22 20 45	1171.5	-20.78	358.94
110.00	10 45 37	4182.63	16.97	161.19	12.94	59.87	11 55 19	3582.6	12.84	154.51

DIFFERENTIAL CORRECTIONS
TDE .9538 TRA-2.1461 TC3 2.6940 BAU .5642
RDE .4013 RRA -.5977 RC3 1.3983 FAU .27268
FDE-3.4427 FRA 7.6698 FC-16.9796 BSP 15341
BDE 1.0348 BRA 2.2278 BC3 3.0353 FSP 5148

MID-COURSE EXECUTION ACCURACY
SGT 4138.3 SGR 1522.0 SG3 1564.9
RRT .9599 RRF -.9924 RTF -.9645
SGB 4409.3 R23 -.2058 R13 -.9717
SG1 4390.9 SG2 401.9 THA 19.62

ORBIT DETERMINATION ACCURACY
ST 1771.0 SR 676.5 SS 2368.2
CRT .9849 CRS .9857 CST .9997
LSA 3031.2 MSA 112.3 SSA 36.3
EL1 1892.6 EL2 109.7 ALF 20.69

LAUNCH DATE OCT 24 1964 FLIGHT TIME 262.00 ARRIVAL DATE JUL 13 1965

HELIOCENTRIC CONIC DISTANCE 615.500 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 32.945 GAL -4.84 AZL 90.29 HCA 196.15 SMA 189.93 ECC .23180 INC .2926 V1 29.950
RP 232.88 LAP .08 LOP 226.77 VP 21.000 GAP 2.99 AZP 89.72 TAL 333.84 TAP 169.99 RCA 145.90 APO 233.95 V2 23.612
RC 214.210 GL -2.60 GP 10.69 ZAL 128.60 ZAP 140.46 ETS 165.35 ZAE 168.10 ETE 82.84 ZAC 99.98 ETC 255.70 CLP 141.70

PLANETOCENTRIC CONIC

C3 13.638 VHL 3.693 DLA 5.68 RAL 159.87 RAD 6567.5 VEL 11.620 PTH 2.04 VHP 4.200 DPA 7.46 RAP 192.74 ECC 1.2244

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 6 13	2303.88	-21.63	47.22	16.61	108.73	19 44 36	1703.9	-18.87	39.63
90.00	8 33 6	4593.83	12.39	194.32	14.57	64.33	9 49 40	3993.8	8.84	187.45
100.00	20 30 15	2032.84	-22.58	26.92	16.25	110.12	21 4 7	1432.8	-19.64	19.36
100.00	9 51 45	4340.10	13.30	175.21	14.11	62.98	11 4 6	3740.1	9.57	168.40
110.00	21 44 39	1799.99	-25.13	8.12	15.12	113.97	22 14 39	1200.0	-21.67	.67
110.00	10 53 51	4145.71	15.70	159.08	12.74	59.24	12 2 56	3545.7	11.50	152.49

DIFFERENTIAL CORRECTIONS
TDE .9020 TRA-2.0940 TC3 2.6679 BAU .5486
RDE .3851 RRA -.5768 RC3 1.3916 FAU .28381
FDE-3.4095 FRA 7.9943 FC-18.0165 BSP 15233
BDE .9808 BRA 2.1720 BC3 3.0090 FSP 5439

MID-COURSE EXECUTION ACCURACY
SGT 4062.1 SGR 1490.7 SG3 1640.3
RRT .9574 RRF -.9910 RTF -.9637
SGB 4327.0 R23 -.2045 R13 -.9711
SG1 4307.9 SG2 405.7 THA 19.54

ORBIT DETERMINATION ACCURACY
ST 1709.2 SR 656.3 SS 2355.1
CRT .9826 CRS .9817 CST .9996
LSA 2980.3 MSA 120.9 SSA 37.0
EL1 1827.3 EL2 114.0 ALF 20.76

LAUNCH DATE OCT 24 1964 FLIGHT TIME 264.00 ARRIVAL DATE JUL 15 1965

HELIOCENTRIC CONIC DISTANCE 619.254 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 32.929 GAL -4.78 AZL 90.17 HCA 197.15 SMA 189.65 ECC .23040 INC .1654 V1 29.950
RP 232.51 LAP .05 LOP 227.77 VP 21.018 GAP 2.63 AZP 89.84 TAL 334.00 TAP 171.15 RCA 145.95 APO 233.34 V2 23.650
RC 216.258 GL -1.49 GP 10.32 ZAL 128.38 ZAP 139.42 ETS 166.30 ZAE 168.52 ETE 88.97 ZAC 99.58 ETC 255.72 CLP 140.53

PLANETOCENTRIC CONIC

C3 13.400 VHL 3.661 DLA 6.81 RAL 160.04 RAD 6567.5 VEL 11.610 PTH 2.03 VHP 4.107 DPA 7.20 RAP 192.43 ECC 1.2205

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 58 18	2335.66	-22.31	49.30	16.84	107.90	19 37 13	1735.7	-19.65	41.63
90.00	8 42 25	4554.39	11.22	192.02	14.44	63.83	9 58 20	3954.4	7.61	185.20
100.00	20 22 53	2062.82	-23.27	28.88	16.49	109.31	20 57 16	1462.8	-20.43	21.24
100.00	10 0 31	4302.46	12.12	173.03	13.97	62.47	11 12 13	3702.5	8.34	166.28
110.00	21 38 34	1825.99	-25.84	9.81	15.39	113.20	22 9 0	1226.0	-22.47	2.27
110.00	11 1 20	4112.06	14.52	157.19	12.59	58.71	12 9 52	3512.1	10.27	150.67

DIFFERENTIAL CORRECTIONS
TDE .8556 TRA-2.0367 TC3 2.6354 BAU .5337
RDE .3726 RRA -.5583 RC3 1.3895 FAU .29548
FDE-3.3891 FRA 8.3174 FC-19.0896 BSP 15036
BDE .9332 BRA 2.1119 BC3 2.9792 FSP 5726

MID-COURSE EXECUTION ACCURACY
SGT 3977.9 SGR 1466.1 SG3 1717.9
RRT .9549 RRF -.9896 RTF -.9629
SGB 4239.5 R23 -.2028 R13 -.9705
SG1 4219.6 SG2 410.2 THA 19.58

ORBIT DETERMINATION ACCURACY
ST 1650.6 SR 640.9 SS 2348.2
CRT .9803 CRS .9774 CST .9995
LSA 2937.8 MSA 131.0 SSA 37.2
EL1 1766.7 EL2 118.1 ALF 20.94

LAUNCH DATE OCT 24 1964 FLIGHT TIME 266.00 ARRIVAL DATE JUL 17 1965

HELIOCENTRIC CONIC DISTANCE 623.022 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 32.914 GAL -4.73 AZL 90.05 HCA 198.16 SMA 189.38 ECC .22907 INC .0499 V1 29.950
RP 232.14 LAP .02 LOP 228.77 VP 21.039 GAP 2.27 AZP 89.95 TAL 334.16 TAP 172.31 RCA 146.00 APO 232.76 V2 23.689
RC 218.287 GL -.48 GP 9.99 ZAL 128.14 ZAP 138.32 ETS 167.17 ZAE 168.76 ETE 95.70 ZAC 99.21 ETC 255.74 CLP 139.33

PLANETOCENTRIC CONIC

C3 13.186 VHL 3.631 DLA 7.84 RAL 160.19 RAD 6567.5 VEL 11.601 PTH 2.03 VHP 4.018 DPA 6.98 RAP 192.11 ECC 1.2170

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 50 55	2364.96	-22.91	51.24	17.05	107.11	19 30 20	1765.0	-20.35	43.50
90.00	8 50 59	4518.09	10.12	189.92	14.34	63.41	10 6 17	3918.1	6.47	183.14
100.00	20 16 2	2090.42	-23.88	30.71	16.71	108.53	20 50 53	1490.4	-21.13	22.99
100.00	10 8 33	4267.86	11.02	171.05	13.86	62.04	11 19 41	3667.9	7.20	164.35
110.00	21 32 54	1849.87	-26.47	11.37	15.64	112.47	22 3 44	1249.9	-23.19	3.75
110.00	11 8 10	4081.17	13.42	155.47	12.46	58.26	12 16 12	3481.2	9.13	149.01

DIFFERENTIAL CORRECTIONS
TDE .8241 TRA-1.9653 TC3 2.6277 BAU .5245
RDE .3643 RRA -.5407 RC3 1.3958 FAU .30862
FDE-3.3993 FRA 8.6204 FC-20.2629 BSP 14505
BDE .9010 BRA 2.0383 BC3 2.9754 FSP 5966

MID-COURSE EXECUTION ACCURACY
SGT 3889.8 SGR 1448.9 SG3 1799.6
RRT .9541 RRF -.9882 RTF -.9632
SGB 4150.9 R23 -.1968 R13 -.9708
SG1 4130.7 SG2 408.7 THA 19.77

ORBIT DETERMINATION ACCURACY
ST 1604.9 SR 630.9 SS 2353.0
CRT .9794 CRS .9730 CST .9991
LSA 2913.6 MSA 142.6 SSA 36.3
EL1 1720.4 EL2 118.8 ALF 21.16

LAUNCH DATE OCT 24 1964 FLIGHT TIME 268.00 ARRIVAL DATE JUL 19 1965

HELIOCENTRIC CONIC DISTANCE 626.801 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 32.900 GAL -4.69 AZL 89.95 HCA 199.16 SMA 189.12 ECC .22780 INC .0313 V1 29.950
RP 231.76 LAP -.02 LOP 229.78 VP 21.060 GAP 1.92 AZP 90.05 TAL 334.30 TAP 173.46 RCA 146.04 APO 232.21 V2 23.728
RC 220.299 GL .44 GP 9.70 ZAL 127.91 ZAP 137.17 ETS 167.96 ZAE 168.79 ETE 102.81 ZAC 98.88 ETC 255.76 CLP 138.08

PLANETOCENTRIC CONIC

C3 12.992 VHL 3.604 DLA 8.78 RAL 160.32 RAD 6567.5 VEL 11.592 PTH 2.03 VHP 3.933 DPA 6.82 RAP 191.77 ECC 1.2138

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 44 2	2392.09	-23.44	53.05	17.25	106.35	19 23 54	1792.1	-20.98	45.24
90.00	8 58 55	4484.55	9.09	187.99	14.26	63.07	10 13 39	3884.6	5.40	181.25
100.00	20 9 39	2115.96	-24.42	32.41	16.92	107.79	20 44 55	1516.0	-21.76	24.63
100.00	10 15 59	4235.92	10.00	169.23	13.77	61.68	11 26 35	3635.9	6.14	162.57
110.00	21 27 38	1871.91	-27.03	12.84	15.88	111.76	21 58 50	1271.9	-23.84	5.13
110.00	11 14 29	4052.73	12.39	153.91	12.35	57.89	12 22 2	3452.7	8.07	147.49

DIFFERENTIAL CORRECTIONS
TDE .7868 TRA-1.8987 TC3 2.5837 BAU .5106
RDE .3571 RRA -.5262 RC3 1.4020 FAU .32156
FDE-3.4028 FRA 8.9421 FC-21.4278 BSP 14129
BDE .8640 BRA 1.9703 BC3 2.9395 FSP 6241

MID-COURSE EXECUTION ACCURACY
SGT 3789.4 SGR 1435.3 SG3 1882.5
RRT .9519 RRF -.9867 RTF -.9624
SGB 4052.1 R23 -.1942 R13 -.9703
SG1 4031.0 SG2 413.5 THA 20.05

ORBIT DETERMINATION ACCURACY
ST 1551.3 SR 622.6 SS 2356.6
CRT .9777 CRS .9682 CST .9987
LSA 2884.8 MSA 155.2 SSA 35.7
EL1 1667.2 EL2 121.8 ALF 21.54

LAUNCH DATE OCT 24 1964 FLIGHT TIME 270.00 ARRIVAL DATE JUL 21 1965

HELIOCENTRIC CONIC DISTANCE 630.592 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 32.886 GAL -4.64 AZL 89.86 HCA 200.17 SMA 188.88 ECC .22661 INC .1365 V1 29.950
RP 231.38 LAP -.05 LOP 230.79 VP 21.083 GAP 1.57 AZP 90.13 TAL 334.44 TAP 174.61 RCA 146.08 APO 231.68 V2 23.768
RC 222.292 GL 1.29 GP 9.44 ZAL 127.68 ZAP 135.97 ETS 168.69 ZAE 168.61 ETE 110.01 ZAC 98.56 ETC 255.79 CLP 136.79

PLANETOCENTRIC CONIC

C3 12.815 VHL 3.580 DLA 9.65 RAL 160.44 RAD 6567.5 VEL 11.585 PTH 2.03 VHP 3.851 DPA 6.69 RAP 191.41 ECC 1.2109

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 37 35	2417.35	-23.92	54.75	17.44	105.63	19 17 52	1817.4	-21.54	46.88
90.00	9 6 18	4453.41	8.12	186.21	14.20	62.78	10 20 31	3853.4	4.41	179.50
100.00	20 3 40	2139.70	-24.91	34.01	17.12	107.08	20 39 20	1539.7	-22.33	26.16
100.00	10 22 54	4206.30	9.04	167.56	13.71	61.39	11 33 0	3606.3	5.15	160.93
110.00	21 22 42	1892.36	-27.54	14.21	16.10	111.10	21 54 15	1292.4	-24.42	6.43
110.00	11 20 21	4026.41	11.44	152.47	12.27	57.57	12 27 27	3426.4	7.08	146.09

DIFFERENTIAL CORRECTIONS
TDE .7481 TRA-1.8319 TC3 2.5167 BAU .4941
RDE .3509 RRA -.5144 RC3 1.4087 FAU .33439
FDE-3.4003 FRA 9.2802 FC-22.5893 BSP 13788
BDE .8263 BRA 1.9028 BC3 2.8841 FSP 6544

MID-COURSE EXECUTION ACCURACY
SGT 3677.7 SGR 1424.8 SG3 1966.8
RRT .9491 RRF -.9851 RTF -.9612
SGB 3944.0 R23 -.1927 R13 -.9696
SG1 3921.5 SG2 420.7 THA 20.43

ORBIT DETERMINATION ACCURACY
ST 1494.2 SR 615.7 SS 2359.3
CRT .9757 CRS .9628 CST .9981
LSA 2854.5 MSA 168.7 SSA 35.2
EL1 1611.2 EL2 125.1 ALF 22.04

LAUNCH DATE OCT 24 1964 FLIGHT TIME 272.00 ARRIVAL DATE JUL 23 1965

HELIOCENTRIC CONIC DISTANCE 634.393 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 32.874 GAL -4.60 AZL 89.78 HCA 201.19 SMA 188.65 ECC .22547 INC .2232 V1 29.950
RP 231.01 LAP -.08 LOP 231.81 VP 21.108 GAP 1.23 AZP 90.21 TAL 334.56 TAP 175.75 RCA 146.12 APO 231.19 V2 23.807
RC 224.266 GL 2.07 GP 9.21 ZAL 127.46 ZAP 134.72 ETS 169.37 ZAE 168.22 ETE 117.05 ZAC 98.27 ETC 255.81 CLP 135.47

PLANETOCENTRIC CONIC

C3 12.655 VHL 3.557 DLA 10.45 RAL 160.55 RAD 6567.5 VEL 11.578 PTH 2.02 VHP 3.772 DPA 6.61 RAP 191.03 ECC 1.2083

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 31 30	2440.97	-24.34	56.35	17.62	104.93	19 12 11	1841.0	-22.05	48.43
90.00	9 13 12	4424.40	7.22	184.56	14.16	62.54	10 26 57	3824.4	3.48	177.87
100.00	19 58 3	2161.86	-25.34	35.51	17.31	106.41	20 34 5	1561.9	-22.85	27.60
100.00	10 29 21	4178.74	8.14	166.01	13.66	61.14	11 39 0	3578.7	4.22	159.40
110.00	21 18 5	1911.39	-28.00	15.50	16.31	110.46	21 49 57	1311.4	-24.96	7.65
110.00	11 25 48	4001.98	10.54	151.14	12.21	57.29	12 32 30	3402.0	6.16	144.79

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .7117 TRA-1.7615 TC3 2.4380 BAU .4771 SGT 3556.1 SGR 1417.8 SG3 2053.1 ST 1437.3 SR 610.9 SS 2365.0
RDE .3462 RRA -.5043 RC3 1.4175 FAU .34755 RRT .9463 RRF -.9835 RTF -.9597 CRT .9740 CRS .9571 CST .9973
FDE-3.4032 FRA 9.6246 FC-23.7761 BSP 13389 SGB 3828.3 R23 -.1914 R13 -.9689 LSA 2828.0 MSA 182.8 SSA 34.5
BDE .7915 BRA 1.8322 BC3 2.8201 FSP 6852 SG1 3804.2 SG2 428.3 THA 20.95 EL1 1556.5 EL2 127.9 ALF 22.65

LAUNCH DATE OCT 24 1964 FLIGHT TIME 274.00 ARRIVAL DATE JUL 25 1965

HELIOCENTRIC CONIC DISTANCE 638.206 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 32.861 GAL -4.56 AZL 89.70 HCA 202.21 SMA 188.44 ECC .22440 INC .3012 V1 29.950
RP 230.62 LAP -.11 LOP 232.82 VP 21.134 GAP .90 AZP 90.28 TAL 334.68 TAP 176.89 RCA 146.15 APO 230.72 V2 23.847
RC 226.222 GL 2.80 GP 8.99 ZAL 127.24 ZAP 133.42 ETS 170.00 ZAE 167.62 ETE 123.66 ZAC 97.98 ETC 255.83 CLP 134.10

PLANETOCENTRIC CONIC

C3 12.509 VHL 3.537 DLA 11.20 RAL 160.64 RAD 6567.5 VEL 11.571 PTH 2.02 VHP 3.696 DPA 6.56 RAP 190.63 ECC 1.2059

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 25 48	2463.12	-24.72	57.86	17.79	104.27	19 6 51	1863.1	-22.52	49.88
90.00	9 19 42	4397.29	6.36	183.03	14.14	62.35	10 32 59	3797.3	2.61	176.36
100.00	19 52 46	2182.62	-25.73	36.93	17.49	105.76	20 29 9	1582.6	-23.32	28.96
100.00	10 35 25	4153.02	7.29	164.57	13.64	60.93	11 44 38	3553.0	3.36	157.99
110.00	21 13 46	1929.17	-28.42	16.72	16.52	109.85	21 45 55	1329.2	-25.45	8.80
110.00	11 30 54	3979.24	9.70	149.91	12.17	57.06	12 37 14	3379.2	5.30	143.60

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .6765 TRA-1.6882 TC3 2.3424 BAU .4588 SGT 3423.3 SGR 1413.7 SG3 2141.3 ST 1379.5 SR 607.7 SS 2372.9
RDE .3427 RRA -.4956 RC3 1.4283 FAU .36105 RRT .9430 RRF -.9819 RTF -.9578 CRT .9724 CRS .9513 CST .9964
FDE-3.4103 FRA 9.9737 FC-24.9877 BSP 12957 SGB 3703.7 R23 -.1912 R13 -.9679 LSA 2804.1 MSA 196.9 SSA 33.9
BDE .7583 BRA 1.7594 BC3 2.7435 FSP 7165 SG1 3677.8 SG2 437.8 THA 21.60 EL1 1501.7 EL2 130.4 ALF 23.38

LAUNCH DATE OCT 24 1964 FLIGHT TIME 276.00 ARRIVAL DATE JUL 27 1965

HELIOCENTRIC CONIC DISTANCE 642.029 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 32.850 GAL -4.53 AZL 89.63 HCA 203.23 SMA 188.23 ECC .22339 INC .3714 V1 29.950
RP 230.24 LAP -.15 LOP 233.84 VP 21.161 GAP .57 AZP 90.34 TAL 334.79 TAP 178.01 RCA 146.18 APO 230.28 V2 23.887
RC 228.159 GL 3.47 GP 8.80 ZAL 127.04 ZAP 132.07 ETS 170.58 ZAE 166.83 ETE 129.72 ZAC 97.71 ETC 255.85 CLP 132.69

PLANETOCENTRIC CONIC

C3 12.376 VHL 3.518 DLA 11.89 RAL 160.74 RAD 6567.5 VEL 11.566 PTH 2.02 VHP 3.623 DPA 6.55 RAP 190.20 ECC 1.2037

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 20 25	2483.96	-25.06	59.29	17.96	103.63	19 1 48	1884.0	-22.94	51.26
90.00	9 25 50	4371.91	5.56	181.60	14.14	62.19	10 38 41	3771.9	1.79	174.94
100.00	19 47 48	2202.12	-26.09	38.27	17.66	105.13	20 24 30	1602.1	-23.76	30.25
100.00	10 41 7	4128.98	6.49	163.23	13.63	60.76	11 49 56	3529.0	2.54	156.66
110.00	21 9 42	1945.83	-28.80	17.86	16.72	109.27	21 42 8	1345.8	-25.90	9.88
110.00	11 35 42	3958.04	8.92	148.78	12.15	56.86	12 41 40	3358.0	4.49	142.48

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .6423 TRA-1.6120 TC3 2.2336 BAU .4398 SGT 3280.7 SGR 1412.5 SG3 2231.6 ST 1320.8 SR 606.2 SS 2383.8
RDE .3403 RRA -.4881 RC3 1.4412 FAU .37496 RRT .9393 RRF -.9803 RTF -.9554 CRT .9709 CRS .9453 CST .9952
FDE-3.4235 FRA10.3277 FC-26.2293 BSP 12492 SGB 3571.8 R23 -.1916 R13 -.9667 LSA 2783.7 MSA 210.9 SSA 33.5
BDE .7269 BRA 1.6843 BC3 2.6582 FSP 7478 SG1 3543.5 SG2 448.6 THA 22.40 EL1 1447.2 EL2 132.5 ALF 24.24

LAUNCH DATE OCT 24 1964 FLIGHT TIME 278.00 ARRIVAL DATE JUL 29 1965

HELIOCENTRIC CONIC DISTANCE 645.863 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 32.838 GAL -4.49 AZL 89.56 HCA 204.25 SMA 188.04 ECC .22244 INC .4376 V1 29.950
RP 229.86 LAP -.18 LOP 234.87 VP 21.189 GAP .25 AZP 90.40 TAL 334.89 TAP 179.14 RCA 146.21 APO 229.87 V2 23.927
RC 230.076 GL 4.10 GP 8.63 ZAL 126.85 ZAP 130.67 ETS 171.14 ZAE 165.86 ETE 135.13 ZAC 97.45 ETC 255.88 CLP 131.24

PLANETOCENTRIC CONIC

C3 12.256 VHL 3.501 DLA 12.53 RAL 160.83 RAD 6567.5 VEL 11.560 PTH 2.02 VHP 3.553 DPA 6.57 RAP 189.74 ECC 1.2017

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 15 20	2503.61	-25.37	60.65	18.12	103.02	18 57 3	1903.6	-23.33	52.58
90.00	9 31 37	4348.10	4.80	180.26	14.15	62.06	10 44 6	3748.1	1.03	173.61
100.00	19 43 7	2220.49	-26.41	39.54	17.84	104.54	20 20 8	1620.5	-24.15	31.47
100.00	10 46 31	4106.45	5.74	161.98	13.64	60.61	11 54 58	3506.5	1.78	155.43
110.00	21 5 54	1961.48	-29.14	18.95	16.92	108.71	21 38 35	1361.5	-26.31	10.91
110.00	11 40 14	3938.23	8.18	147.72	12.14	56.69	12 45 52	3338.2	3.74	141.44

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .6082 TRA-1.5335 TC3 2.1054 BAU .4192 SGT 3126.3 SGR 1412.9 SG3 2322.7 ST 1260.0 SR 605.4 SS 2394.0
RDE .3384 RRA -.4821 RC3 1.4540 FAU .38877 RRT .9349 RRF -.9787 RTF -.9522 CRT .9697 CRS .9389 CST .9938
FDE-3.4314 FRA10.6939 FC-27.4628 BSP 11999 SGB 3430.8 R23 -.1932 R13 -.9652 LSA 2762.9 MSA 225.3 SSA 33.0
BDE .6960 BRA 1.6075 BC3 2.5586 FSP 7809 SG1 3399.7 SG2 461.0 THA 23.36 EL1 1391.4 EL2 134.0 ALF 25.23

LAUNCH DATE OCT 24 1964 FLIGHT TIME 280.00 ARRIVAL DATE JUL 31 1965

HELIOCENTRIC CONIC DISTANCE 649.706 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 32.828 GAL -4.46 AZL 89.50 HCA 205.28 SMA 187.86 ECC .22154 INC .4982 V1 29.950
RP 229.47 LAP -.21 LOP 235.90 VP 21.218 GAP -.07 AZP 90.45 TAL 334.97 TAP 180.25 RCA 146.24 APO 229.47 V2 23.968
RC 231.973 GL 4.69 GP 8.47 ZAL 126.67 ZAP 129.23 ETS 171.66 ZAE 164.75 ETE 139.91 ZAC 97.19 ETC 255.91 CLP 129.75

PLANETOCENTRIC CONIC

C3 12.146 VHL 3.485 DLA 13.13 RAL 160.92 RAD 6567.5 VEL 11.556 PTH 2.02 VHP 3.487 DPA 6.62 RAP 189.25 ECC 1.1999

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 10 33	2522.18	-25.65	61.94	18.29	102.43	18 52 35	1922.2	-23.68	53.82
90.00	9 37 8	4325.75	4.09	179.00	14.19	61.96	10 49 14	3725.8	.30	172.37
100.00	19 38 43	2237.82	-26.70	40.75	18.01	103.97	20 16 1	1637.8	-24.51	32.63
100.00	10 51 39	4085.34	5.03	160.81	13.66	60.50	11 59 44	3485.3	1.07	154.27
110.00	21 2 20	1976.20	-29.46	19.98	17.11	108.17	21 35 16	1376.2	-26.70	11.89
110.00	11 44 31	3919.72	7.48	146.73	12.15	56.55	12 49 51	3319.7	3.03	140.47

DIFFERENTIAL CORRECTIONS
TDE .5752 TRA-1.4512 TC3 1.9608 BAU .3978
RDE .3375 RRA -.4769 RC3 1.4685 FAU .40296
FDE-3.4466 FRA11.0619 FC-28.7208 BSP 11474
BDE .6669 BRA 1.5275 BC3 2.4497 FSP 8140

MID-COURSE EXECUTION ACCURACY
SGT 2960.3 SGR 1415.5 SG3 2415.5
RRT .9297 RRF -.9771 RTF -.9481
SGB 3281.3 R23 -.1960 R13 -.9633
SG1 3246.7 SG2 475.3 THA 24.53

ORBIT DETERMINATION ACCURACY
ST 1198.3 SR 605.9 SS 2407.2
CRT .9688 CRS .9326 CST .9921
LSA 2745.8 MSA 239.4 SSA 32.6
EL1 1336.0 EL2 134.7 ALF 26.39

LAUNCH DATE OCT 24 1964 FLIGHT TIME 282.00 ARRIVAL DATE AUG 2 1965

HELIOCENTRIC CONIC DISTANCE 653.561 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 32.818 GAL -4.44 AZL 89.45 HCA 206.31 SMA 187.68 ECC .22070 INC .5543 V1 29.950
RP 229.09 LAP -.25 LOP 236.93 VP 21.249 GAP -.39 AZP 90.50 TAL 335.05 TAP 181.36 RCA 146.26 APO 229.11 V2 24.009
RC 233.848 GL 5.24 GP 8.32 ZAL 126.51 ZAP 127.74 ETS 172.15 ZAE 163.50 ETE 144.09 ZAC 96.94 ETC 255.94 CLP 128.21

PLANETOCENTRIC CONIC

C3 12.048 VHL 3.471 DLA 13.69 RAL 161.01 RAD 6567.5 VEL 11.551 PTH 2.02 VHP 3.423 DPA 6.69 RAP 188.73 ECC 1.1983

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 6 2	2539.74	-25.90	63.16	18.46	101.86	18 48 22	1939.7	-24.01	55.01
90.00	9 42 22	4304.75	3.41	177.83	14.23	61.87	10 54 7	3704.8	-.37	171.20
100.00	19 34 35	2254.19	-26.96	41.89	18.19	103.42	20 12 9	1654.2	-24.85	33.73
100.00	10 56 31	4065.53	4.37	159.71	13.71	60.40	12 4 16	3465.5	.39	153.18
110.00	20 58 59	1990.07	-29.75	20.96	17.31	107.66	21 32 10	1390.1	-27.05	12.81
110.00	11 48 35	3902.41	6.83	145.82	12.18	56.43	12 53 38	3302.4	2.37	139.57

DIFFERENTIAL CORRECTIONS
TDE .5431 TRA-1.3648 TC3 1.8012 BAU .3759
RDE .3373 RRA -.4724 RC3 1.4839 FAU .41737
FDE-3.4653 FRA11.4306 FC-29.9910 BSP 10906
BDE .6393 BRA 1.4443 BC3 2.3337 FSP 8470

MID-COURSE EXECUTION ACCURACY
SGT 2782.7 SGR 1419.6 SG3 2509.0
RRT .9235 RRF -.9756 RTF -.9428
SGB 3123.9 R23 -.1998 R13 -.9611
SG1 3085.0 SG2 491.2 THA 25.93

ORBIT DETERMINATION ACCURACY
ST 1135.3 SR 607.3 SS 2421.7
CRT .9684 CRS .9263 CST .9900
LSA 2730.8 MSA 253.4 SSA 32.3
EL1 1280.5 EL2 134.3 ALF 27.72

LAUNCH DATE OCT 24 1964 FLIGHT TIME 284.00 ARRIVAL DATE AUG 4 1965

HELIOCENTRIC CONIC DISTANCE 657.425 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 32.809 GAL -4.41 AZL 89.39 HCA 207.34 SMA 187.52 ECC .21991 INC .6070 V1 29.950
RP 228.70 LAP -.28 LOP 237.96 VP 21.281 GAP -.69 AZP 90.54 TAL 335.12 TAP 182.46 RCA 146.28 APO 228.76 V2 24.049
RC 235.703 GL 5.75 GP 8.19 ZAL 126.36 ZAP 126.20 ETS 172.62 ZAE 162.13 ETE 147.74 ZAC 96.69 ETC 255.97 CLP 126.64

PLANETOCENTRIC CONIC

C3 11.960 VHL 3.458 DLA 14.21 RAL 161.10 RAD 6567.5 VEL 11.548 PTH 2.02 VHP 3.362 DPA 6.79 RAP 188.19 ECC 1.1968

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 1 48	2556.37	-26.13	64.33	18.63	101.32	18 44 25	1956.4	-24.30	56.13
90.00	9 47 22	4285.02	2.78	176.72	14.30	61.81	10 58 47	3685.0	-1.01	170.10
100.00	19 30 42	2269.67	-27.20	42.98	18.37	102.90	20 8 32	1669.7	-25.16	34.78
100.00	11 1 9	4046.96	3.74	158.69	13.77	60.32	12 8 36	3447.0	-.24	152.16
110.00	20 55 53	2003.16	-30.02	21.88	17.51	107.18	21 29 16	1403.2	-27.38	13.69
110.00	11 52 28	3886.23	6.22	144.96	12.23	56.32	12 57 14	3286.2	1.76	138.73

DIFFERENTIAL CORRECTIONS
TDE .5113 TRA-1.2752 TC3 1.6230 BAU .3533
RDE .3374 RRA -.4688 RC3 1.4992 FAU .43171
FDE-3.4825 FRA11.8056 FC-31.2502 BSP 10313
BDE .6126 BRA 1.3586 BC3 2.2094 FSP 8809

MID-COURSE EXECUTION ACCURACY
SGT 2593.7 SGR 1424.6 SG3 2602.9
RRT .9157 RRF -.9740 RTF -.9358
SGB 2959.2 R23 -.2049 R13 -.9585
SG1 2915.1 SG2 509.4 THA 27.62

ORBIT DETERMINATION ACCURACY
ST 1070.7 SR 609.3 SS 2436.7
CRT .9685 CRS .9198 CST .9874
LSA 2717.0 MSA 267.5 SSA 31.9
EL1 1224.7 EL2 132.7 ALF 29.24

LAUNCH DATE OCT 24 1964 FLIGHT TIME 286.00 ARRIVAL DATE AUG 6 1965

HELIOCENTRIC CONIC DISTANCE 661.299 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 32.800 GAL -4.39 AZL 89.34 HCA 208.38 SMA 187.37 ECC .21918 INC .6562 V1 29.950
RP 228.31 LAP -.31 LOP 239.00 VP 21.314 GAP -1.00 AZP 90.58 TAL 335.18 TAP 183.56 RCA 146.30 APO 228.43 V2 24.090
RC 237.537 GL 6.24 GP 8.06 ZAL 126.23 ZAP 124.62 ETS 173.07 ZAE 160.66 ETE 150.91 ZAC 96.44 ETC 256.00 CLP 125.02

PLANETOCENTRIC CONIC

C3 11.881 VHL 3.447 DLA 14.69 RAL 161.20 RAD 6567.5 VEL 11.544 PTH 2.01 VHP 3.305 DPA 6.92 RAP 187.61 ECC 1.1955

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 57 50	2572.13	-26.33	65.44	18.81	100.80	18 40 42	1972.1	-24.58	57.21
90.00	9 52 8	4266.49	2.18	175.09	14.38	61.76	11 3 14	3666.5	-1.61	169.06
100.00	19 27 5	2284.32	-27.42	44.01	18.56	102.39	20 5 9	1684.3	-25.44	35.78
100.00	11 5 34	4029.54	3.15	157.73	13.84	60.26	12 12 44	3429.5	-.83	151.21
110.00	20 52 59	2015.52	-30.26	22.76	17.71	106.71	21 26 35	1415.5	-27.68	14.52
110.00	11 56 9	3871.10	5.65	144.16	12.29	56.23	13 0 40	3271.1	1.18	137.94

DIFFERENTIAL CORRECTIONS
TDE .4795 TRA-1.1824 TC3 1.4258 BAU .3304
RDE .3380 RRA -.4659 RC3 1.5142 FAU .44596
FDE-3.4993 FRA12.1839 FC-32.4945 BSP 9687
BDE .5866 BRA 1.2709 BC3 2.0799 FSP 9148

MID-COURSE EXECUTION ACCURACY
SGT 2393.8 SGR 1430.4 SG3 2696.5
RRT .9055 RRF -.9725 RTF -.9262
SGB 2788.6 R23 -.2117 R13 -.9552
SG1 2737.6 SG2 530.9 THA 29.64

ORBIT DETERMINATION ACCURACY
ST 1003.8 SR 611.8 SS 2452.0
CRT .9690 CRS .9132 CST .9843
LSA 2704.5 MSA 281.1 SSA 31.7
EL1 1168.3 EL2 129.9 ALF 30.99

LAUNCH DATE OCT 24 1964 FLIGHT TIME 288.00 ARRIVAL DATE AUG 8 1965

HELIOCENTRIC CONIC DISTANCE 665.182 EARTH TO MARS

RL	148.77	LAL	.00	LOL	30.62	VL	32.792	GAL	-4.37	AZL	89.30	HCA	209.42	SMA	187.22	ECC	.21850	INC	.7024	V1	29.950
RP	227.92	LAP	-.35	LOP	240.04	VP	21.347	GAP	-1.30	AZP	90.61	TAL	335.22	TAP	184.64	RCA	146.32	APO	228.13	V2	24.132
RC	239.350	GL	6.70	GP	7.94	ZAL	126.11	ZAP	123.00	ETS	173.50	ZAE	159.09	ETE	153.68	ZAC	96.19	ETC	256.04	CLP	123.36

PLANETOCENTRIC CONIC

C3	11.812	VHL	3.437	DLA	15.15	RAL	161.31	RAD	6567.5	VEL	11.541	PTH	2.01	VHP	3.251	DPA	7.07	RAP	187.00	ECC	1.1944

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 54 7	2587.07	-26.52	66.49	18.99	100.31	18 37 14	1987.1	-24.83	58.23
90.00	9 56 41	4249.10	1.62	174.72	14.48	61.73	11 7 30	3649.1	-2.17	168.09
100.00	19 23 41	2298.18	-27.62	45.00	18.75	101.91	20 2 0	1698.2	-25.70	36.72
100.00	11 9 47	4013.22	2.60	156.83	13.94	60.21	12 16 41	3413.2	-1.38	150.31
110.00	20 50 18	2027.18	-30.49	23.59	17.92	106.26	21 24 5	1427.2	-27.96	15.31
110.00	11 59 40	3856.98	5.12	143.42	12.37	56.16	13 3 57	3257.0	.64	137.20

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4487	TRA	-1.0852	TC3	1.2136	BAU	.3084	SGT	2183.7	SGR	1437.1	SG3	2790.0	ST	936.1	SR	614.9	SS	2468.9
RDE	.3391	RRA	-.4633	RC3	1.5297	FAU	.46032	RRT	.8921	RRF	-.9709	RTF	-.9132	CRT	.9704	CRS	.9068	CST	.9803
FDE	-3.5209	FRA	12.5588	FC	-33.7378	BSP	9030	SGB	2614.1	R23	-.2193	R13	-.9515	LSA	2694.9	MSA	294.7	SSA	31.4
BDE	.5624	BRA	1.1800	BC3	1.9527	FSP	9481	SG1	2554.5	SG2	555.0	THA	32.12	EL1	1113.0	EL2	125.0	ALF	32.98

LAUNCH DATE OCT 24 1964 FLIGHT TIME 290.00 ARRIVAL DATE AUG 10 1965

HELIOCENTRIC CONIC DISTANCE 669.075 EARTH TO MARS

RL	148.77	LAL	.00	LOL	30.62	VL	32.784	GAL	-4.35	AZL	89.25	HCA	210.47	SMA	187.09	ECC	.21787	INC	.7456	V1	29.950
RP	227.53	LAP	-.38	LOP	241.08	VP	21.382	GAP	-1.59	AZP	90.64	TAL	335.26	TAP	185.72	RCA	146.33	APO	227.85	V2	24.173
RC	241.142	GL	7.13	GP	7.83	ZAL	126.01	ZAP	121.33	ETS	173.91	ZAE	157.44	ETE	156.11	ZAC	95.94	ETC	256.08	CLP	121.66

PLANETOCENTRIC CONIC

C3	11.752	VHL	3.428	DLA	15.57	RAL	161.42	RAD	6567.4	VEL	11.539	PTH	2.01	VHP	3.199	DPA	7.24	RAP	186.35	ECC	1.1934

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 50 39	2601.22	-26.69	67.49	19.18	99.83	18 34 0	2001.2	-25.06	59.20
90.00	10 1 3	4232.81	1.10	173.81	14.60	61.70	11 11 36	3632.8	-2.69	167.18
100.00	19 20 33	2311.30	-27.80	45.93	18.95	101.45	19 59 4	1711.3	-25.94	37.62
100.00	11 13 50	3997.96	2.09	156.00	14.05	60.17	12 20 28	3398.0	-1.90	149.47
110.00	20 47 50	2038.20	-30.70	24.39	18.14	105.84	21 21 48	1438.2	-28.22	16.06
110.00	12 3 2	3843.82	4.62	142.73	12.47	56.09	13 7 6	3243.8	.13	136.51

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4183	TRA	-.9837	TC3	.9842	BAU	.2878	SGT	1964.0	SGR	1444.2	SG3	2882.4	ST	866.8	SR	618.6	SS	2486.6
RDE	.3406	RRA	-.4610	RC3	1.5449	FAU	.47459	RRT	.8736	RRF	-.9694	RTF	-.8945	CRT	.9726	CRS	.9005	CST	.9751
FDE	-3.5452	FRA	12.9296	FC	-34.9620	BSP	8354	SGB	2437.8	R23	-.2276	R13	-.9474	LSA	2687.3	MSA	307.9	SSA	31.2
BDE	.5394	BRA	1.0864	BC3	1.8318	FSP	9810	SG1	2367.1	SG2	583.2	THA	35.16	EL1	1058.4	EL2	117.9	ALF	35.27

LAUNCH DATE OCT 24 1964 FLIGHT TIME 292.00 ARRIVAL DATE AUG 12 1965

HELIOCENTRIC CONIC DISTANCE 672.977 EARTH TO MARS

RL	148.77	LAL	.00	LOL	30.62	VL	32.777	GAL	-4.34	AZL	89.21	HCA	211.52	SMA	186.96	ECC	.21729	INC	.7867	V1	29.950
RP	227.14	LAP	-.41	LOP	242.13	VP	21.418	GAP	-1.88	AZP	90.67	TAL	335.28	TAP	186.80	RCA	146.34	APO	227.59	V2	24.214
RC	242.914	GL	7.54	GP	7.72	ZAL	125.93	ZAP	119.62	ETS	174.31	ZAE	155.72	ETE	158.25	ZAC	95.68	ETC	256.13	CLP	119.91

PLANETOCENTRIC CONIC

C3	11.700	VHL	3.421	DLA	15.96	RAL	161.54	RAD	6567.4	VEL	11.536	PTH	2.01	VHP	3.151	DPA	7.43	RAP	185.68	ECC	1.1926

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 47 26	2614.62	-26.84	68.44	19.38	99.38	18 31 0	2014.6	-25.27	60.13
90.00	10 5 14	4217.56	.61	172.96	14.73	61.69	11 15 31	3617.6	-3.18	166.33
100.00	19 17 38	2323.70	-27.97	46.82	19.16	101.01	19 56 22	1723.7	-26.16	38.48
100.00	11 17 42	3983.71	1.60	155.21	14.18	60.15	12 24 6	3383.7	-2.38	148.69
110.00	20 45 34	2048.60	-30.89	25.14	18.37	105.43	21 19 42	1448.6	-28.46	16.78
110.00	12 6 16	3831.58	4.15	142.09	12.59	56.04	13 10 8	3231.6	-.33	135.87

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3884	TRA	-.8783	TC3	.7362	BAU	.2696	SGT	1737.3	SGR	1451.1	SG3	2972.8	ST	796.3	SR	622.4	SS	2503.9
RDE	.3423	RRA	-.4592	RC3	1.5586	FAU	.48839	RRT	.8465	RRF	-.9679	RTF	-.8665	CRT	.9758	CRS	.8941	CST	.9680
FDE	-3.5666	FRA	13.3009	FC	-36.1370	BSP	7667	SGB	2263.6	R23	-.2359	R13	-.9429	LSA	2680.8	MSA	321.4	SSA	30.9
BDE	.5177	BRA	.9910	BC3	1.7237	FSP	10139	SG1	2178.1	SG2	616.1	THA	38.97	EL1	1004.9	EL2	107.8	ALF	37.85

LAUNCH DATE OCT 24 1964 FLIGHT TIME 294.00 ARRIVAL DATE AUG 14 1965

HELIOCENTRIC CONIC DISTANCE 676.888 EARTH TO MARS

RL	148.77	LAL	.00	LOL	30.62	VL	32.770	GAL	-4.33	AZL	89.17	HCA	212.57	SMA	186.84	ECC	.21675	INC	.8253	V1	29.950
RP	226.75	LAP	-.44	LOP	243.19	VP	21.454	GAP	-2.16	AZP	90.70	TAL	335.29	TAP	187.86	RCA	146.34	APO	227.34	V2	24.256
RC	244.666	GL	7.93	GP	7.61	ZAL	125.87	ZAP	117.86	ETS	174.69	ZAE	153.92	ETE	160.14	ZAC	95.42	ETC	256.17	CLP	118.13

PLANETOCENTRIC CONIC

C3	11.657	VHL	3.414	DLA	16.33	RAL	161.67	RAD	6567.4	VEL	11.534	PTH	2.01	VHP	3.107	DPA	7.64	RAP	184.98	ECC	1.1918

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 44 28	2627.29	-26.98	69.34	19.59	98.95	18 28 15	2027.3	-25.46	61.00
90.00	10 9 14	4203.34	.15	172.17	14.88	61.68	11 19 17	3603.3	-3.64	165.53
100.00	19 14 58	2335.42	-28.11	47.65	19.37	100.60	19 53 53	1735.4	-26.36	39.29
100.00	11 21 24	3970.44	1.15	154.49	14.32	60.13	12 27 35	3370.4	-2.83	147.96
110.00	20 43 30	2058.41	-31.06	25.85	18.60	105.04	21 17 48	1458.4	-28.69	17.45
110.00	12 9 22	3820.22	3.72	141.49	12.72	56.00	13 13 2	3220.2	-.77	135.28

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3585	TRA	-.7683	TC3	.4738	BAU	.2559	SGT	1507.2	SGR	1458.0	SG3	3061.1	ST	724.2	SR	626.7	SS	2521.7
RDE	.3445	RRA	-.4572	RC3	1.5721	FAU	.50212	RRT	.8051	RRF	-.9663	RTF	-.8231	CRT	.9800	CRS	.8880	CST	.9586
FDE	-3.5924	FRA	13.6584	FC	-37.2914	BSP	6983	SGB	2097.0	R23	-.2408	R13	-.9389	LSA	2676.5	MSA	334.2	SSA	30.7
BDE	.4972	BRA	.8941	BC3	1.6420	FSP	10451	SG1	1992.3	SG2	654.2	THA	43.82	EL1	953.0	EL2	94.9	ALF	40.79

LAUNCH DATE OCT 24 1964 FLIGHT TIME 296.00 ARRIVAL DATE AUG 16 1965

HELIOCENTRIC CONIC DISTANCE 680.809 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 32.763 GAL -4.32 AZL 89.14 HCA 213.63 SMA 186.73 ECC .21626 INC .8620 V1 29.950
RP 226.36 LAP -.48 LOP 244.24 VP 21.491 GAP -2.44 AZP 90.72 TAL 335.29 TAP 188.92 RCA 146.35 APO 227.12 V2 24.297
RC 246.398 GL 8.29 GP 7.51 ZAL 125.83 ZAP 116.07 ETS 175.07 ZAE 152.07 ETE 161.83 ZAC 95.16 ETC 256.23 CLP 116.32

PLANETOCENTRIC CONIC

C3 11.622 VHL 3.409 DLA 16.67 RAL 161.81 RAD 6567.4 VEL 11.533 PTH 2.01 VHP 3.065 DPA 7.87 RAP 184.24 ECC 1.1913

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 41 44	2639.27	-27.10	70.20	19.82	98.53	18 25 43	2039.3	-25.64	61.84
90.00	10 13 3	4190.10	-.28	171.43	15.05	61.68	11 22 54	3590.1	-4.06	164.79
100.00	19 12 31	2346.49	-28.25	48.45	19.60	100.20	19 51 38	1746.5	-26.55	40.06
100.00	11 24 57	3958.11	.74	153.81	14.48	60.12	12 30 55	3358.1	-3.25	147.28
110.00	20 41 38	2067.66	-31.22	26.52	18.85	104.67	21 16 6	1467.7	-28.89	18.09
110.00	12 12 20	3809.71	3.32	140.94	12.87	55.96	13 15 49	3209.7	-1.17	134.73

DIFFERENTIAL CORRECTIONS
TDE .3309 TRA -.6525 TC3 .2015 BAU .2484
RDE .3473 RRA -.4548 RC3 1.5860 FAU .51605
FDE-3.6327 FRA13.9947 FC-38.4416 BSP 6286
BDE .4797 BRA .7953 BC3 1.5988 FSP 10721

MID-COURSE EXECUTION ACCURACY
SGT 1280.0 SGR 1465.2 SG3 3147.5
RRT .7393 RRF -.9648 RTF -.7528
SGB 1945.6 R23 -.2371 R13 -.9371
SG1 1817.3 SG2 694.9 THA 50.19

ORBIT DETERMINATION ACCURACY
ST 653.6 SR 631.8 SS 2542.1
CRT .9856 CRS .8826 CST .9448
LSA 2677.1 MSA 347.3 SSA 30.2
EL1 905.8 EL2 77.1 ALF 44.01

LAUNCH DATE OCT 24 1964 FLIGHT TIME 298.00 ARRIVAL DATE AUG 18 1965

HELIOCENTRIC CONIC DISTANCE 684.738 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 32.757 GAL -4.32 AZL 89.10 HCA 214.69 SMA 186.63 ECC .21582 INC .8969 V1 29.950
RP 225.97 LAP -.51 LOP 245.30 VP 21.529 GAP -2.72 AZP 90.74 TAL 335.28 TAP 189.97 RCA 146.35 APO 226.91 V2 24.339
RC 248.110 GL 8.64 GP 7.41 ZAL 125.80 ZAP 114.25 ETS 175.43 ZAE 150.15 ETE 163.33 ZAC 94.89 ETC 256.28 CLP 114.46

PLANETOCENTRIC CONIC

C3 11.595 VHL 3.405 DLA 16.98 RAL 161.96 RAD 6567.4 VEL 11.532 PTH 2.01 VHP 3.027 DPA 8.11 RAP 183.48 ECC 1.1908

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 39 16	2650.55	-27.21	71.01	20.05	98.14	18 23 26	2050.5	-25.81	62.62
90.00	10 16 43	4177.85	-.68	170.75	15.23	61.69	11 26 21	3577.8	-4.46	164.10
100.00	19 10 19	2356.90	-28.37	49.20	19.84	99.82	19 49 36	1756.9	-26.73	40.78
100.00	11 28 21	3946.73	.35	153.18	14.66	60.11	12 34 8	3346.7	-3.63	146.66
110.00	20 39 59	2076.36	-31.37	27.15	19.10	104.33	21 14 35	1476.4	-29.09	18.69
110.00	12 15 10	3800.04	2.95	140.43	13.04	55.93	13 18 31	3200.0	-1.54	134.23

DIFFERENTIAL CORRECTIONS
TDE .3001 TRA -.5352 TC3 -.0981 BAU .2477
RDE .3496 RRA -.4533 RC3 1.5952 FAU .52832
FDE-3.6503 FRA14.3426 FC-39.4475 BSP 5728
BDE .4608 BRA .7014 BC3 1.5983 FSP 11033

MID-COURSE EXECUTION ACCURACY
SGT 1070.6 SGR 1470.5 SG3 3228.4
RRT .6196 RRF -.9632 RTF -.6266
SGB 1818.9 R23 -.2163 R13 -.9394
SG1 1659.6 SG2 744.6 THA 58.76

ORBIT DETERMINATION ACCURACY
ST 578.7 SR 635.9 SS 2558.1
CRT .9909 CRS .8763 CST .9255
LSA 2674.5 MSA 359.5 SSA 30.1
EL1 857.8 EL2 57.8 ALF 47.72

LAUNCH DATE OCT 24 1964 FLIGHT TIME 300.00 ARRIVAL DATE AUG 20 1965

HELIOCENTRIC CONIC DISTANCE 688.676 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 32.752 GAL -4.31 AZL 89.07 HCA 215.75 SMA 186.53 ECC .21543 INC .9299 V1 29.950
RP 225.58 LAP -.54 LOP 246.36 VP 21.568 GAP -2.99 AZP 90.75 TAL 335.26 TAP 191.01 RCA 146.35 APO 226.72 V2 24.381
RC 249.803 GL 8.96 GP 7.32 ZAL 125.79 ZAP 112.38 ETS 175.77 ZAE 148.19 ETE 164.68 ZAC 94.62 ETC 256.35 CLP 112.58

PLANETOCENTRIC CONIC

C3 11.575 VHL 3.402 DLA 17.28 RAL 162.12 RAD 6567.4 VEL 11.531 PTH 2.01 VHP 2.992 DPA 8.36 RAP 182.69 ECC 1.1905

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 37 2	2661.16	-27.31	71.77	20.30	97.78	18 21 23	2061.2	-25.96	63.36
90.00	10 20 14	4166.54	-1.04	170.11	15.44	61.70	11 29 41	3566.5	-4.82	163.47
100.00	19 8 21	2366.69	-28.49	49.90	20.09	99.47	19 47 47	1766.7	-26.88	41.47
100.00	11 31 36	3936.24	-.01	152.61	14.86	60.11	12 37 12	3336.2	-3.98	146.08
110.00	20 38 32	2084.53	-31.51	27.75	19.37	104.00	21 13 16	1484.5	-29.27	19.26
110.00	12 17 55	3791.17	2.61	139.97	13.22	55.90	13 21 6	3191.2	-1.88	133.77

DIFFERENTIAL CORRECTIONS
TDE .2713 TRA -.4124 TC3 -.4061 BAU .2562
RDE .3527 RRA -.4511 RC3 1.6047 FAU .54069
FDE-3.6850 FRA14.6608 FC-40.4384 BSP 5237
BDE .4449 BRA .6112 BC3 1.6553 FSP 11285

MID-COURSE EXECUTION ACCURACY
SGT 902.3 SGR 1475.8 SG3 3306.1
RRT .4117 RRF -.9616 RTF -.4066
SGB 1729.7 R23 -.1590 R13 -.9484
SG1 1539.8 SG2 788.1 THA 70.60

ORBIT DETERMINATION ACCURACY
ST 506.4 SR 640.9 SS 2576.8
CRT .9957 CRS .8709 CST .8957
LSA 2677.3 MSA 371.6 SSA 29.8
EL1 816.0 EL2 36.8 ALF 51.72

LAUNCH DATE OCT 24 1964 FLIGHT TIME 302.00 ARRIVAL DATE AUG 22 1965

HELIOCENTRIC CONIC DISTANCE 692.623 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 32.747 GAL -4.31 AZL 89.04 HCA 216.82 SMA 186.45 ECC .21507 INC .9615 V1 29.950
RP 225.19 LAP -.58 LOP 247.43 VP 21.608 GAP -3.25 AZP 90.77 TAL 335.22 TAP 192.04 RCA 146.35 APO 226.55 V2 24.423
RC 251.477 GL 9.27 GP 7.22 ZAL 125.81 ZAP 110.49 ETS 176.11 ZAE 146.17 ETE 165.90 ZAC 94.34 ETC 256.41 CLP 110.66

PLANETOCENTRIC CONIC

C3 11.564 VHL 3.401 DLA 17.54 RAL 162.29 RAD 6567.4 VEL 11.530 PTH 2.01 VHP 2.960 DPA 8.63 RAP 181.88 ECC 1.1903

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 35 3	2671.12	-27.40	72.48	20.56	97.43	18 19 34	2071.1	-26.09	64.06
90.00	10 23 35	4156.17	-1.38	169.54	15.65	61.71	11 32 51	3556.2	-5.15	162.89
100.00	19 6 36	2375.87	-28.59	50.57	20.36	99.13	19 46 12	1775.9	-27.03	42.11
100.00	11 34 43	3926.65	-.33	152.08	15.07	60.11	12 40 10	3326.7	-4.31	145.55
110.00	20 37 16	2092.19	-31.63	28.31	19.65	103.69	21 12 9	1492.2	-29.43	19.80
110.00	12 20 32	3783.10	2.30	139.55	13.43	55.89	13 23 35	3183.1	-2.19	133.35

DIFFERENTIAL CORRECTIONS
TDE .2414 TRA -.2858 TC3 -.7313 BAU .2735
RDE .3556 RRA -.4489 RC3 1.6108 FAU .55185
FDE-3.7104 FRA14.9690 FC-41.3147 BSP 4949
BDE .4298 BRA .5322 BC3 1.7691 FSP 11545

MID-COURSE EXECUTION ACCURACY
SGT 817.3 SGR 1479.3 SG3 3377.7
RRT .0822 RRF -.9599 RTF -.0603
SGB 1690.0 R23 -.0529 R13 -.9586
SG1 1481.5 SG2 813.3 THA 86.28

ORBIT DETERMINATION ACCURACY
ST 434.3 SR 645.5 SS 2592.9
CRT .9961 CRS .8652 CST .8478
LSA 2679.7 MSA 383.3 SSA 29.5
EL1 777.3 EL2 31.7 ALF 56.10

LAUNCH DATE OCT 24 1964 FLIGHT TIME 304.00 ARRIVAL DATE AUG 24 1965

HELIOCENTRIC CONIC DISTANCE 696.578 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 32.742 GAL -4.32 AZL 89.01 HCA 217.89 SMA 186.36 ECC .21476 INC .9915 V1 29.950
RP 224.80 LAP -.61 LOP 248.50 VP 21.648 GAP -3.51 AZP 90.78 TAL 335.17 TAP 193.06 RCA 146.34 APO 226.39 V2 24.465
RC 253.132 GL 9.57 GP 7.12 ZAL 125.84 ZAP 108.56 ETS 176.44 ZAE 144.12 ETE 167.01 ZAC 94.06 ETC 256.48 CLP 108.71

PLANETOCENTRIC CONIC

C3 11.560 VHL 3.400 DLA 17.79 RAL 162.47 RAD 6567.4 VEL 11.530 PTH 2.01 VHP 2.932 DPA 8.91 RAP 181.04 ECC 1.1902

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 33 19	2680.42	-27.48	73.15	20.83	97.10	18 17 59	2080.4	-26.21	64.71
90.00	10 26 48	4146.72	-1.68	169.01	15.89	61.73	11 35 54	3546.7	-5.45	162.35
100.00	19 5 6	2384.44	-28.68	51.19	20.64	98.82	19 44 50	1784.4	-27.16	42.72
100.00	11 37 42	3917.93	-.63	151.61	15.31	60.11	12 43 0	3317.9	-4.60	145.07
110.00	20 36 13	2099.34	-31.75	28.84	19.94	103.39	21 11 12	1499.3	-29.58	20.30
110.00	12 23 4	3775.80	2.03	139.17	13.65	55.87	13 25 59	3175.8	-2.47	132.96

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2113 TRA -.1550 TC3-1.0685 BAU .2993 SGT 854.4 SGR 1481.7 SG3 3443.6 ST 366.1 SR 650.1 SS 2608.4
RDE .3587 RRA -.4462 RC3 1.6154 FAU .56240 RRT -.2893 RRF -.9581 RTF .3278 CRT .9833 CRS .8598 CST .7669
FDE-3.7379 FRA15.2516 FC-42.1190 BSP 4892 SGB 1710.4 R23 .0667 R13 -.9572 LSA 2684.0 MSA 394.4 SSA 29.3
BDE .4163 BRA .4724 BC3 1.9368 FSP 11772 SG1 1510.6 SG2 802.2 THA 103.28 EL1 743.8 EL2 58.3 ALF 60.83

LAUNCH DATE OCT 24 1964 FLIGHT TIME 306.00 ARRIVAL DATE AUG 26 1965

HELIOCENTRIC CONIC DISTANCE 700.541 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 32.737 GAL -4.32 AZL 88.98 HCA 218.96 SMA 186.29 ECC .21450 INC 1.0202 V1 29.950
RP 224.41 LAP -.64 LOP 249.58 VP 21.688 GAP -3.77 AZP 90.79 TAL 335.11 TAP 194.08 RCA 146.33 APO 226.25 V2 24.506
RC 254.766 GL 9.84 GP 7.03 ZAL 125.89 ZAP 106.61 ETS 176.77 ZAE 142.02 ETE 168.01 ZAC 93.78 ETC 256.56 CLP 106.74

PLANETOCENTRIC CONIC

C3 11.564 VHL 3.401 DLA 18.01 RAL 162.67 RAD 6567.4 VEL 11.530 PTH 2.01 VHP 2.908 DPA 9.19 RAP 180.18 ECC 1.1903

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 31 50	2689.08	-27.55	73.77	21.12	96.80	18 16 39	2089.1	-26.33	65.32
90.00	10 29 51	4138.19	-1.96	168.53	16.15	61.75	11 38 49	3538.2	-5.72	161.87
100.00	19 3 49	2392.43	-28.76	51.77	20.93	98.52	19 43 42	1792.4	-27.28	43.28
100.00	11 40 32	3910.08	-.89	151.17	15.55	60.12	12 45 42	3310.1	-4.86	144.64
110.00	20 35 22	2106.01	-31.85	29.33	20.25	103.12	21 10 28	1506.0	-29.72	20.77
110.00	12 25 29	3769.26	1.78	138.83	13.89	55.86	13 28 18	3169.3	-2.72	132.62

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1810 TRA -.0207 TC3-1.4193 BAU .3325 SGT 1013.0 SGR 1482.3 SG3 3502.2 ST 306.6 SR 654.6 SS 2623.2
RDE .3619 RRA -.4433 RC3 1.6164 FAU .57157 RRT -.5636 RRF -.9562 RTF .6125 CRT .9350 CRS .8545 CST .6248
FDE-3.7640 FRA15.5179 FC-42.7922 BSP 5109 SGB 1795.4 R23 .1421 R13 -.9498 LSA 2690.4 MSA 405.3 SSA 29.1
BDE .4047 BRA .4438 BC3 2.1511 FSP 11985 SG1 1625.1 SG2 763.3 THA 117.66 EL1 716.0 EL2 99.4 ALF 65.85

LAUNCH DATE OCT 24 1964 FLIGHT TIME 308.00 ARRIVAL DATE AUG 28 1965

HELIOCENTRIC CONIC DISTANCE 704.510 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 32.733 GAL -4.33 AZL 88.95 HCA 220.04 SMA 186.22 ECC .21427 INC 1.0477 V1 29.950
RP 224.02 LAP -.67 LOP 250.65 VP 21.730 GAP -4.02 AZP 90.80 TAL 335.04 TAP 195.08 RCA 146.32 APO 226.12 V2 24.548
RC 256.380 GL 10.10 GP 6.93 ZAL 125.97 ZAP 104.64 ETS 177.08 ZAE 139.90 ETE 168.93 ZAC 93.49 ETC 256.64 CLP 104.75

PLANETOCENTRIC CONIC

C3 11.575 VHL 3.402 DLA 18.21 RAL 162.88 RAD 6567.4 VEL 11.531 PTH 2.01 VHP 2.887 DPA 9.49 RAP 179.31 ECC 1.1905

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 30 36	2697.09	-27.62	74.35	21.42	96.51	18 15 33	2097.1	-26.43	65.89
90.00	10 32 45	4130.59	-2.20	168.11	16.42	61.76	11 41 36	3530.6	-5.96	161.45
100.00	19 2 48	2399.81	-28.83	52.31	21.24	98.25	19 42 47	1799.8	-27.39	43.80
100.00	11 43 15	3903.11	-1.13	150.79	15.82	60.13	12 48 18	3303.1	-5.10	144.25
110.00	20 34 43	2112.19	-31.95	29.79	20.57	102.86	21 9 55	1512.2	-29.85	21.21
110.00	12 27 49	3763.49	1.56	138.53	14.14	55.85	13 30 32	3163.5	-2.94	132.32

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1475 TRA .1159 TC3-1.7899 BAU .3724 SGT 1259.9 SGR 1478.8 SG3 3550.8 ST 258.5 SR 656.5 SS 2628.4
RDE .3635 RRA -.4418 RC3 1.6091 FAU .57740 RRT -.7205 RRF -.9540 RTF .7723 CRT .8034 CRS .8462 CST .3711
FDE-3.7338 FRA15.8130 FC-43.1860 BSP 5599 SGB 1942.7 R23 .1718 R13 -.9464 LSA 2689.4 MSA 415.3 SSA 29.2
BDE .3923 BRA .4568 BC3 2.4068 FSP 12282 SG1 1806.3 SG2 715.3 THA 128.70 EL1 690.2 EL2 146.4 ALF 71.58

LAUNCH DATE OCT 24 1964 FLIGHT TIME 310.00 ARRIVAL DATE AUG 30 1965

HELIOCENTRIC CONIC DISTANCE 708.491 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 32.730 GAL -4.34 AZL 88.93 HCA 221.12 SMA 186.16 ECC .21409 INC 1.0742 V1 29.950
RP 223.63 LAP -.71 LOP 251.74 VP 21.772 GAP -4.27 AZP 90.81 TAL 334.96 TAP 196.08 RCA 146.31 APO 226.01 V2 24.590
RC 257.974 GL 10.35 GP 6.83 ZAL 126.06 ZAP 102.65 ETS 177.38 ZAE 137.74 ETE 169.78 ZAC 93.20 ETC 256.72 CLP 102.74

PLANETOCENTRIC CONIC

C3 11.593 VHL 3.405 DLA 18.39 RAL 163.10 RAD 6567.4 VEL 11.532 PTH 2.01 VHP 2.869 DPA 9.78 RAP 178.42 ECC 1.1908

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 29 37	2704.50	-27.67	74.89	21.74	96.25	18 14 41	2104.5	-26.52	66.41
90.00	10 35 31	4123.85	-2.42	167.73	16.71	61.78	11 44 15	3523.8	-6.17	161.06
100.00	19 1 59	2406.64	-28.90	52.80	21.56	98.00	19 42 6	1806.6	-27.49	44.28
100.00	11 45 50	3896.94	-1.34	150.45	16.11	60.13	12 50 47	3296.9	-5.30	143.91
110.00	20 34 16	2117.03	-32.03	30.21	20.90	102.63	21 9 34	1517.9	-29.96	21.61
110.00	12 30 3	3758.42	1.36	138.26	14.42	55.84	13 32 41	3158.4	-3.13	132.06

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1186 TRA .2597 TC3-2.1509 BAU .4162 SGT 1548.4 SGR 1477.2 SG3 3595.6 ST 246.7 SR 661.9 SS 2644.1
RDE .3678 RRA -.4370 RC3 1.6077 FAU .58552 RRT -.8031 RRF -.9520 RTF .8599 CRT .5510 CRS .8425 CST .0212
FDE-3.7836 FRA15.9978 FC-43.7239 BSP 6293 SGB 2140.0 R23 .1634 R13 -.9514 LSA 2703.3 MSA 426.0 SSA 28.7
BDE .3864 BRA .5084 BC3 2.6854 FSP 12382 SG1 2032.2 SG2 670.6 THA 136.68 EL1 677.1 EL2 201.3 ALF 77.25

LAUNCH DATE OCT 24 1964 FLIGHT TIME 312.00 ARRIVAL DATE SEP 1 1965

HELIOCENTRIC CONIC DISTANCE 712.479 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 32.726 GAL -4.35 AZL 88.90 HCA 222.21 SMA 186.10 ECC .21394 INC 1.0996 V1 29.950
RP 223.24 LAP -.74 LOP 252.82 VP 21.814 GAP -4.51 AZP 90.81 TAL 334.86 TAP 197.07 RCA 146.29 APO 225.92 V2 24.632
RC 259.547 GL 10.59 GP 6.73 ZAL 126.17 ZAP 100.65 ETS 177.68 ZAE 135.56 ETE 170.56 ZAC 92.90 ETC 256.81 CLP 100.72

PLANETOCENTRIC CONIC

C3 11.619 VHL 3.409 DLA 18.55 RAL 163.34 RAD 6567.4 VEL 11.533 PTH 2.01 VHP 2.855 DPA 10.08 RAP 177.52 ECC 1.1912

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 28 53	2711.29	-27.72	75.38	22.07	96.01	18 14 4	2111.3	-26.60	66.89
90.00	10 38 8	4118.00	-2.61	167.41	17.01	61.79	11 46 46	3518.0	-6.36	160.73
100.00	19 1 24	2412.91	-28.96	53.26	21.90	97.76	19 41 37	1812.9	-27.58	44.73
100.00	11 48 18	3891.61	-1.52	150.16	16.41	60.14	12 53 9	3291.6	-5.48	143.61
110.00	20 34 0	2123.20	-32.11	30.61	21.25	102.41	21 9 23	1523.2	-30.07	21.99
110.00	12 32 11	3754.08	1.20	138.03	14.71	55.84	13 34 45	3154.1	-3.29	131.83

DIFFERENTIAL CORRECTIONS
TDE .0880 TRA .4061 TC3-2.5228 BAU .4643
RDE .3719 RRA -.4319 RC3 1.6026 FAU .59211
FDE-3.8250 FRA16.1599 FC-44.1161 BSP 7159
BDE .3822 BRA .5929 BC3 2.9888 FSP 12469

MID-COURSE EXECUTION ACCURACY
SGT 1870.4 SGR 1473.4 SG3 3631.6
RRT -.8484 RRF -.9497 RTF .9083
SGB 2381.0 R23 .1452 R13 -.9584
SG1 2294.6 SG2 635.8 THA 142.93

ORBIT DETERMINATION ACCURACY
ST 266.8 SR 666.8 SS 2657.2
CRT .2312 CRS .8386 CST -.3314
LSA 2717.7 MSA 435.9 SSA 28.3
EL1 670.2 EL2 258.3 ALF 83.79

LAUNCH DATE OCT 24 1964 FLIGHT TIME 314.00 ARRIVAL DATE SEP 3 1965

HELIOCENTRIC CONIC DISTANCE 716.474 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 32.724 GAL -4.37 AZL 88.88 HCA 223.30 SMA 186.05 ECC .21384 INC 1.1240 V1 29.950
RP 222.85 LAP -.77 LOP 253.91 VP 21.857 GAP -4.75 AZP 90.82 TAL 334.75 TAP 198.05 RCA 146.27 APO 225.84 V2 24.674
RC 261.100 GL 10.81 GP 6.63 ZAL 126.30 ZAP 98.63 ETS 177.96 ZAE 133.37 ETE 171.28 ZAC 92.61 ETC 256.90 CLP 98.69

PLANETOCENTRIC CONIC

C3 11.653 VHL 3.414 DLA 18.69 RAL 163.59 RAD 6567.4 VEL 11.534 PTH 2.01 VHP 2.845 DPA 10.38 RAP 176.61 ECC 1.1918

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 28 24	2717.45	-27.77	75.82	22.42	95.79	18 13 41	2117.5	-26.67	67.33
90.00	10 40 37	4113.05	-2.77	167.13	17.33	61.81	11 49 10	3513.0	-6.51	160.45
100.00	19 1 4	2418.61	-29.01	53.67	22.26	97.55	19 41 23	1818.6	-27.66	45.13
100.00	11 50 38	3887.12	-1.67	149.91	16.73	60.15	12 55 25	3287.1	-5.63	143.37
110.00	20 33 57	2128.02	-32.18	30.96	21.62	102.20	21 9 25	1528.0	-30.17	22.33
110.00	12 34 14	3750.47	1.06	137.85	15.02	55.83	13 36 45	3150.5	-3.43	131.64

DIFFERENTIAL CORRECTIONS
TDE .0563 TRA .5555 TC3-2.9022 BAU .5157
RDE .3756 RRA -.4266 RC3 1.5926 FAU .59657
FDE-3.8499 FRA16.3040 FC-44.3207 BSP 8152
BDE .3798 BRA .7004 BC3 3.3105 FSP 12553

MID-COURSE EXECUTION ACCURACY
SGT 2214.4 SGR 1466.7 SG3 3657.4
RRT -.8741 RRF -.9473 RTF .9364
SGB 2656.1 R23 .1252 R13 -.9651
SG1 2585.0 SG2 610.4 THA 147.93

ORBIT DETERMINATION ACCURACY
ST 315.7 SR 670.8 SS 2666.2
CRT -.0439 CRS .8340 CST -.5846
LSA 2731.2 MSA 445.3 SSA 27.9
EL1 671.0 EL2 315.3 ALF 91.52

LAUNCH DATE OCT 24 1964 FLIGHT TIME 316.00 ARRIVAL DATE SEP 5 1965

HELIOCENTRIC CONIC DISTANCE 720.478 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 32.721 GAL -4.39 AZL 88.85 HCA 224.39 SMA 186.01 ECC .21377 INC 1.1476 V1 29.950
RP 222.47 LAP -.80 LOP 255.00 VP 21.900 GAP -4.99 AZP 90.82 TAL 334.63 TAP 199.02 RCA 146.24 APO 225.77 V2 24.716
RC 262.633 GL 11.02 GP 6.52 ZAL 126.45 ZAP 96.61 ETS 178.24 ZAE 131.16 ETE 171.95 ZAC 92.31 ETC 257.00 CLP 96.65

PLANETOCENTRIC CONIC

C3 11.694 VHL 3.420 DLA 18.81 RAL 163.85 RAD 6567.4 VEL 11.536 PTH 2.01 VHP 2.838 DPA 10.68 RAP 175.70 ECC 1.1925

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 28 10	2723.00	-27.80	76.23	22.79	95.59	18 13 33	2123.0	-26.74	67.72
90.00	10 42 57	4108.97	-2.90	166.90	17.68	61.82	11 51 26	3509.0	-6.64	160.22
100.00	19 0 58	2423.76	-29.05	54.05	22.63	97.36	19 41 21	1823.8	-27.73	45.50
100.00	11 52 50	3883.45	-1.80	149.71	17.06	60.16	12 57 34	3283.4	-5.75	143.16
110.00	20 34 5	2132.41	-32.24	31.29	22.00	102.02	21 9 37	1532.4	-30.25	22.64
110.00	12 36 12	3747.56	.95	137.69	15.35	55.83	13 38 40	3147.6	-3.54	131.49

DIFFERENTIAL CORRECTIONS
TDE .0241 TRA .7079 TC3-3.2836 BAU .5697
RDE .3795 RRA -.4208 RC3 1.5798 FAU .59973
FDE-3.8759 FRA16.4175 FC-44.3982 BSP 9235
BDE .3803 BRA .8236 BC3 3.6439 FSP 12606

MID-COURSE EXECUTION ACCURACY
SGT 2572.0 SGR 1458.3 SG3 3674.5
RRT -.8889 RRF -.9446 RTF .9539
SGB 2956.7 R23 .1064 R13 -.9712
SG1 2896.6 SG2 593.1 THA 151.97

ORBIT DETERMINATION ACCURACY
ST 384.0 SR 674.8 SS 2674.4
CRT -.2335 CRS .8296 CST -.7343
LSA 2747.4 MSA 454.4 SSA 27.5
EL1 683.2 EL2 368.8 ALF 100.73

LAUNCH DATE OCT 24 1964 FLIGHT TIME 318.00 ARRIVAL DATE SEP 7 1965

HELIOCENTRIC CONIC DISTANCE 724.488 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 32.719 GAL -4.41 AZL 88.83 HCA 225.49 SMA 185.97 ECC .21375 INC 1.1703 V1 29.950
RP 222.08 LAP -.83 LOP 256.10 VP 21.944 GAP -5.22 AZP 90.82 TAL 334.49 TAP 199.98 RCA 146.22 APO 225.72 V2 24.758
RC 264.145 GL 11.21 GP 6.42 ZAL 126.62 ZAP 94.58 ETS 178.51 ZAE 128.94 ETE 172.57 ZAC 92.01 ETC 257.10 CLP 94.61

PLANETOCENTRIC CONIC

C3 11.743 VHL 3.427 DLA 18.91 RAL 164.13 RAD 6567.4 VEL 11.538 PTH 2.01 VHP 2.834 DPA 10.97 RAP 174.79 ECC 1.1933

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 28 11	2727.95	-27.84	76.58	23.17	95.42	18 13 39	2128.0	-26.79	68.07
90.00	10 45 9	4105.77	-3.00	166.72	18.03	61.83	11 53 34	3505.8	-6.74	160.04
100.00	19 1 5	2428.36	-29.09	54.39	23.02	97.18	19 41 34	1828.4	-27.79	45.83
100.00	11 54 55	3880.59	-1.89	149.56	17.42	60.16	12 59 36	3280.6	-5.85	143.00
110.00	20 34 25	2136.36	-32.30	31.59	22.39	101.85	21 10 1	1536.4	-30.33	22.92
110.00	12 38 5	3745.36	.86	137.58	15.70	55.83	13 40 30	3145.4	-3.63	131.37

DIFFERENTIAL CORRECTIONS
TDE -.0090 TRA .8633 TC3-3.6671 BAU .6259
RDE .3832 RRA -.4145 RC3 1.5636 FAU .60126
FDE-3.8919 FRA16.5021 FC-44.3254 BSP 10385
BDE .3833 BRA .9576 BC3 3.9865 FSP 12637

MID-COURSE EXECUTION ACCURACY
SGT 2940.2 SGR 1447.7 SG3 3681.8
RRT -.8977 RRF -.9417 RTF .9653
SGB 3277.3 R23 .0901 R13 -.9761
SG1 3225.3 SG2 581.5 THA 155.30

ORBIT DETERMINATION ACCURACY
ST 464.1 SR 678.1 SS 2679.3
CRT -.3581 CRS .8250 CST -.8215
LSA 2763.8 MSA 463.0 SSA 27.2
EL1 709.9 EL2 414.0 ALF 111.34

LAUNCH DATE OCT 24 1964 FLIGHT TIME 320.00 ARRIVAL DATE SEP 9 1965

HELIOCENTRIC CONIC DISTANCE 728.506 EARTH TO MARS

RL	148.77	LAL	.00	LOL	30.62	VL	32.717	GAL	-4.44	AZL	88.81	HCA	226.59	SMA	185.93	ECC	.21376	INC	1.1923
RP	221.70	LAP	-.87	LOP	257.20	VP	21.988	GAP	-5.45	AZP	90.82	TAL	334.34	TAP	200.93	RCA	146.19	APO	225.68
RC	265.639	GL	11.40	GP	6.31	ZAL	126.82	ZAP	92.56	ETS	178.77	ZAE	126.72	ETE	173.14	ZAC	91.72	ETC	257.20

V1 29.950 V2 24.799 CLP 92.58

PLANETOCENTRIC CONIC

C3	11.800	VHL	3.435	DLA	18.99	RAL	164.42	RAD	6567.5	VEL	11.541	PTH	2.01	VHP	2.834	DPA	11.25	RAP	173.88

ECC 1.1942

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 28 27	2732.30	-27.86	76.90	23.58	95.26	18 13 59	2132.3	-26.84	68.38
90.00	10 47 12	4103.44	-3.07	166.59	18.41	61.84	11 55 35	3503.4	-6.82	159.91
100.00	19 1 27	2432.42	-29.13	54.68	23.42	97.03	19 41 59	1832.4	-27.85	46.11
100.00	11 56 53	3878.55	-1.96	149.44	17.79	60.17	13 1 32	3278.5	-5.92	142.89
110.00	20 34 57	2139.89	-32.35	31.85	22.80	101.71	21 10 37	1539.9	-30.40	23.18
110.00	12 39 53	3743.85	.80	137.50	16.06	55.83	13 42 16	3143.8	-3.68	131.29

DIFFERENTIAL CORRECTIONS

TDE	-.0427	TRA	1.0214	TC3	-4.0494	BAU	.6837
RDE	.3871	RRA	-.4076	RC3	1.5443	FAU	.60126
FDE	-3.9090	FRA	16.5504	FC	-44.1127	BSP	11583
BDE	.3894	BRA	1.0997	BC3	4.3339	FSP	12629

MID-COURSE EXECUTION ACCURACY

SGT	3315.3	SGR	1435.0	SG3	3679.2		
RRT	-.9024	RRF	-.9385	RTF	.9731		
SGB	3612.5	R23	.0769	R13	-.9802		
SG1	3566.5	SG2	574.9	THA	158.07		

ORBIT DETERMINATION ACCURACY

ST	551.5	SR	681.4	SS	2682.9
CRT	-.4397	CRS	.8207	CST	-.8729
LSA	2782.7	MSA	471.4	SSA	26.8
EL1	753.6	EL2	447.9	ALF	122.08

LAUNCH DATE OCT 24 1964 FLIGHT TIME 322.00 ARRIVAL DATE SEP 11 1965

HELIOCENTRIC CONIC DISTANCE 732.531 EARTH TO MARS

RL	148.77	LAL	.00	LOL	30.62	VL	32.715	GAL	-4.47	AZL	88.79	HCA	227.69	SMA	185.90	ECC	.21381	INC	1.2135
RP	221.32	LAP	-.90	LOP	258.31	VP	22.032	GAP	-5.68	AZP	90.82	TAL	334.18	TAP	201.87	RCA	146.15	APO	225.65
RC	267.114	GL	11.57	GP	6.20	ZAL	127.03	ZAP	90.55	ETS	179.02	ZAE	124.50	ETE	173.68	ZAC	91.42	ETC	257.30

V1 29.950 V2 24.841 CLP 90.55

PLANETOCENTRIC CONIC

C3	11.865	VHL	3.444	DLA	19.06	RAL	164.73	RAD	6567.5	VEL	11.543	PTH	2.01	VHP	2.838	DPA	11.53	RAP	172.99

ECC 1.1953

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 28 58	2736.06	-27.89	77.17	23.99	95.12	18 14 34	2136.1	-26.88	68.65
90.00	10 49 7	4101.96	-3.12	166.51	18.80	61.84	11 57 29	3502.0	-6.86	159.83
100.00	19 2 2	2435.96	-29.16	54.94	23.84	96.90	19 42 38	1836.0	-27.90	46.37
100.00	11 58 44	3877.30	-2.00	149.38	18.18	60.17	13 3 22	3277.3	-5.96	142.82
110.00	20 35 40	2143.00	-32.39	32.08	23.23	101.57	21 11 23	1543.0	-30.46	23.40
110.00	12 41 35	3743.02	.77	137.46	16.45	55.82	13 43 59	3143.0	-3.72	131.25

DIFFERENTIAL CORRECTIONS

TDE	-.0775	TRA	1.1815	TC3	-4.4288	BAU	.7428
RDE	.3911	RRA	-.3999	RC3	1.5223	FAU	.59985
FDE	-3.9282	FRA	16.5618	FC	-43.7702	BSP	12805
BDE	.3987	BRA	1.2473	BC3	4.6831	FSP	12586

MID-COURSE EXECUTION ACCURACY

SGT	3694.4	SGR	1420.7	SG3	3667.1		
RRT	-.9044	RRF	-.9351	RTF	.9786		
SGB	3958.1	R23	.0664	R13	-.9834		
SG1	3916.6	SG2	571.7	THA	160.39		

ORBIT DETERMINATION ACCURACY

ST	643.5	SR	684.6	SS	2685.3
CRT	-.4959	CRS	.8168	CST	-.9051
LSA	2804.2	MSA	479.2	SSA	26.4
EL1	813.4	EL2	470.4	ALF	131.44

LAUNCH DATE OCT 24 1964 FLIGHT TIME 324.00 ARRIVAL DATE SEP 13 1965

HELIOCENTRIC CONIC DISTANCE 736.564 EARTH TO MARS

RL	148.77	LAL	.00	LOL	30.62	VL	32.713	GAL	-4.50	AZL	88.77	HCA	228.80	SMA	185.88	ECC	.21390	INC	1.2341
RP	220.94	LAP	-.93	LOP	259.42	VP	22.077	GAP	-5.90	AZP	90.81	TAL	334.00	TAP	202.81	RCA	146.12	APO	225.64
RC	268.570	GL	11.73	GP	6.09	ZAL	127.26	ZAP	88.54	ETS	179.26	ZAE	122.28	ETE	174.18	ZAC	91.13	ETC	257.41

V1 29.950 V2 24.883 CLP 88.54

PLANETOCENTRIC CONIC

C3	11.937	VHL	3.455	DLA	19.11	RAL	165.05	RAD	6567.5	VEL	11.547	PTH	2.02	VHP	2.844	DPA	11.80	RAP	172.10

ECC 1.1965

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 29 44	2739.24	-27.91	77.40	24.43	95.01	18 15 24	2139.2	-26.92	68.87
90.00	10 50 54	4101.35	-3.14	166.47	19.21	61.84	11 59 15	3501.3	-6.88	159.79
100.00	19 2 51	2438.98	-29.18	55.16	24.28	96.78	19 43 30	1839.0	-27.94	46.58
100.00	12 0 28	3876.85	-2.02	149.35	18.59	60.17	13 5 5	3276.8	-5.97	142.80
110.00	20 36 35	2145.71	-32.43	32.29	23.67	101.46	21 12 21	1545.7	-30.51	23.59
110.00	12 43 14	3742.88	.77	137.45	16.85	55.82	13 45 36	3142.9	-3.72	131.24

DIFFERENTIAL CORRECTIONS

TDE	-.1129	TRA	1.3444	TC3	-4.8018	BAU	.8027
RDE	.3949	RRA	-.3919	RC3	1.4973	FAU	.59685
FDE	-3.9363	FRA	16.5463	FC	-43.2860	BSP	14061
BDE	.4107	BRA	1.4004	BC3	5.0298	FSP	12519

MID-COURSE EXECUTION ACCURACY

SGT	4075.7	SGR	1404.4	SG3	3645.8		
RRT	-.9047	RRF	-.9314	RTF	.9826		
SGB	4310.9	R23	.0579	R13	-.9859		
SG1	4272.9	SG2	570.8	THA	162.36		

ORBIT DETERMINATION ACCURACY

ST	738.9	SR	687.3	SS	2684.4
CRT	-.5351	CRS	.8126	CST	-.9265
LSA	2826.1	MSA	486.7	SSA	26.0
EL1	885.1	EL2	484.7	ALF	138.86

LAUNCH DATE OCT 24 1964 FLIGHT TIME 326.00 ARRIVAL DATE SEP 15 1965

HELIOCENTRIC CONIC DISTANCE 740.603 EARTH TO MARS

RL	148.77	LAL	.00	LOL	30.62	VL	32.712	GAL	-4.53	AZL	88.75	HCA	229.92	SMA	185.86	ECC	.21403	INC	1.2541
RP	220.56	LAP	-.96	LOP	260.53	VP	22.122	GAP	-6.11	AZP	90.81	TAL	333.81	TAP	203.73	RCA	146.08	APO	225.64
RC	270.009	GL	11.88	GP	5.97	ZAL	127.51	ZAP	86.56	ETS	179.49	ZAE	120.08	ETE	174.64	ZAC	90.84	ETC	257.51

V1 29.950 V2 24.924 CLP 86.54

PLANETOCENTRIC CONIC

C3	12.018	VHL	3.467	DLA	19.14	RAL	165.38	RAD	6567.5	VEL	11.550	PTH	2.02	VHP	2.855	DPA	12.06	RAP	171.23

ECC 1.1978

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 30 45	2741.85	-27.92	77.59	24.88	94.92	18 16 27	2141.9	-26.95	69.06
90.00	10 52 33	4101.58	-3.13	166.49	19.64	61.84	12 0 55	3501.6	-6.88	159.81
100.00	19 3 54	2441.48	-29.20	55.35	24.74	96.69	19 44 35	1841.5	-27.97	46.76
100.00	12 2 5	3877.18	-2.01	149.37	19.01	60.17	13 6 42	3277.2	-5.96	142.81
110.00	20 37 42	2148.03	-32.46	32.46	24.13	101.36	21 13 30	1548.0	-30.55	23.76
110.00	12 44 47	3743.40	.79	137.48	17.27	55.82	13 47 10	3143.4	-3.70	131.27

DIFFERENTIAL CORRECTIONS

TDE	-.1496	TRA	1.5090	TC3	-5.1690	BAU	.8634
RDE	.3988	RRA	-.3833	RC3	1.4700	FAU	.59250
FDE	-3.9457	FRA	16.4954	FC	-42.6818	BSP	15325
BDE	.4260	BRA	1.5569	BC3	5.3740	FSP	12420

MID-COURSE EXECUTION ACCURACY

SGT	4458.0	SGR	1386.7	SG3	3615.4		
RRT	-.9036	RRF	-.9273	RTF	.9855		
SGB	4668.7	R23	.0512	R13	-.9880		
SG1	4633.6	SG2	571.6	THA	164.05		

ORBIT DETERMINATION ACCURACY

ST	836.6	SR	689.9	SS	2682.3
CRT	-.5641	CRS	.8087	CST	-.9413
LSA	2850.6	MSA	493.6	SSA	25.5
EL1	965.5	EL2	493.6	ALF	144.49

LAUNCH DATE OCT 24 1964 FLIGHT TIME 328.00 ARRIVAL DATE SEP 17 1965

HELIOCENTRIC CONIC DISTANCE 744.650 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 32.711 GAL -4.57 AZL 88.73 HCA 231.03 SMA 185.84 ECC .21420 INC 1.2735 V1 29.950
RP 220.18 LAP -.99 LOP 261.64 VP 22.167 GAP -6.33 AZP 90.80 TAL 333.61 TAP 204.64 RCA 146.04 APO 225.65 V2 24.965
RC 271.430 GL 12.02 GP 5.86 ZAL 127.78 ZAP 84.58 ETS 179.71 ZAE 117.89 ETE 175.08 ZAC 90.56 ETC 257.62 CLP 84.56

PLANETOCENTRIC CONIC

C3 12.107 VHL 3.480 DLA 19.15 RAL 165.73 RAD 6567.5 VEL 11.554 PTH 2.02 VHP 2.868 DPA 12.31 RAP 170.38 ECC 1.1993

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 32 0	2743.90	-27.93	77.74	25.36	94.84	18 17 44	2143.9	-26.97	69.21
90.00	10 54 4	4102.65	-3.10	166.55	20.08	61.84	12 2 27	3502.6	-6.84	159.87
100.00	19 5 10	2443.49	-29.22	55.50	25.21	96.61	19 45 53	1843.5	-27.99	46.91
100.00	12 3 35	3878.29	-1.97	149.43	19.46	60.17	13 8 14	3278.3	-5.93	142.88
110.00	20 38 59	2149.96	-32.48	32.60	24.61	101.28	21 14 49	1550.0	-30.59	23.90
110.00	12 46 16	3744.59	.83	137.54	17.70	55.83	13 48 40	3144.6	-3.66	131.33

DIFFERENTIAL CORRECTIONS
TDE -.1872 TRA 1.6754 TC3-5.5272 BAU .9245
RDE .4029 RRA -.3741 RC3 1.4403 FAU .58675
FDE-3.9551 FRA16.4133 FC-41.9566 BSP 16590
BDE .4443 BRA 1.7167 BC3 5.7118 FSP 12287

MID-COURSE EXECUTION ACCURACY
SGT 4839.3 SGR 1367.6 SG3 3576.4
RRT -.9013 RRF -.9229 RTF .9878
SGB 5028.8 R23 .0461 R13 -.9896
SG1 4995.9 SG2 573.9 THA 165.52

ORBIT DETERMINATION ACCURACY
ST 935.9 SR 692.4 SS 2679.0
CRT -.5855 CRS .8052 CST -.9517
LSA 2877.7 MSA 500.3 SSA 25.1
EL1 1051.6 EL2 499.5 ALF 148.80

LAUNCH DATE OCT 24 1964 FLIGHT TIME 330.00 ARRIVAL DATE SEP 19 1965

HELIOCENTRIC CONIC DISTANCE 748.703 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 32.711 GAL -4.61 AZL 88.71 HCA 232.15 SMA 185.83 ECC .21440 INC 1.2924 V1 29.950
RP 219.81 LAP -1.02 LOP 262.76 VP 22.212 GAP -6.54 AZP 90.79 TAL 333.39 TAP 205.55 RCA 145.99 APO 225.68 V2 25.006
RC 272.833 GL 12.15 GP 5.75 ZAL 128.07 ZAP 82.64 ETS 179.92 ZAE 115.72 ETE 175.49 ZAC 90.28 ETC 257.72 CLP 82.60

PLANETOCENTRIC CONIC

C3 12.205 VHL 3.494 DLA 19.14 RAL 166.09 RAD 6567.5 VEL 11.558 PTH 2.02 VHP 2.885 DPA 12.55 RAP 169.56 ECC 1.2009

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 33 30	2745.41	-27.94	77.85	25.84	94.79	18 19 15	2145.4	-26.98	69.31
90.00	10 55 27	4104.54	-3.04	166.65	20.54	61.83	12 3 52	3504.5	-6.78	159.97
100.00	19 6 39	2445.01	-29.23	55.61	25.70	96.56	19 47 24	1845.0	-28.01	47.01
100.00	12 4 59	3880.17	-1.91	149.53	19.92	60.16	13 9 39	3280.2	-5.86	142.98
110.00	20 40 28	2151.51	-32.51	32.72	25.10	101.21	21 16 19	1551.5	-30.62	24.01
110.00	12 47 40	3746.44	.90	137.64	18.16	55.83	13 50 6	3146.4	-3.59	131.43

DIFFERENTIAL CORRECTIONS
TDE -.2259 TRA 1.8436 TC3-5.8733 BAU .9855
RDE .4071 RRA -.3645 RC3 1.4087 FAU .57972
FDE-3.9638 FRA16.2995 FC-41.1221 BSP 17859
BDE .4656 BRA 1.8793 BC3 6.0399 FSP 12129

MID-COURSE EXECUTION ACCURACY
SGT 5217.5 SGR 1347.3 SG3 3529.2
RRT -.8980 RRF -.9182 RTF .9895
SGB 5388.6 R23 .0422 R13 -.9909
SG1 5357.6 SG2 577.3 THA 166.79

ORBIT DETERMINATION ACCURACY
ST 1036.5 SR 694.7 SS 2674.2
CRT -.6017 CRS .8021 CST -.9593
LSA 2907.1 MSA 506.7 SSA 24.6
EL1 1141.6 EL2 503.8 ALF 152.16

LAUNCH DATE OCT 24 1964 FLIGHT TIME 332.00 ARRIVAL DATE SEP 21 1965

HELIOCENTRIC CONIC DISTANCE 752.763 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 32.710 GAL -4.65 AZL 88.69 HCA 233.28 SMA 185.83 ECC .21464 INC 1.3107 V1 29.950
RP 219.44 LAP -1.05 LOP 263.89 VP 22.258 GAP -6.75 AZP 90.78 TAL 333.16 TAP 206.44 RCA 145.94 APO 225.71 V2 25.047
RC 274.220 GL 12.27 GP 5.63 ZAL 128.37 ZAP 80.71 ETS 180.13 ZAE 113.57 ETE 175.87 ZAC 90.01 ETC 257.82 CLP 80.67

PLANETOCENTRIC CONIC

C3 12.311 VHL 3.509 DLA 19.12 RAL 166.46 RAD 6567.5 VEL 11.563 PTH 2.02 VHP 2.906 DPA 12.77 RAP 168.76 ECC 1.2026

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 35 13	2746.37	-27.95	77.92	26.35	94.75	18 21 0	2146.4	-27.00	69.38
90.00	10 56 43	4107.26	-2.95	166.81	21.02	61.82	12 5 10	3507.3	-6.70	160.13
100.00	19 8 21	2446.05	-29.24	55.68	26.21	96.52	19 49 7	1846.1	-28.03	47.09
100.00	12 6 16	3882.81	-1.82	149.68	20.39	60.16	13 10 59	3282.8	-5.78	143.13
110.00	20 42 7	2152.69	-32.52	32.81	25.61	101.16	21 18 0	1552.7	-30.64	24.09
110.00	12 48 59	3748.94	1.00	137.77	18.63	55.83	13 51 28	3148.9	-3.49	131.56

DIFFERENTIAL CORRECTIONS
TDE -.2660 TRA 2.0133 TC3-6.2087 BAU 1.0467
RDE .4112 RRA -.3546 RC3 1.3753 FAU .57144
FDE-3.9666 FRA16.1597 FC-40.1838 BSP 19114
BDE .4897 BRA 2.0443 BC3 6.3592 FSP 11943

MID-COURSE EXECUTION ACCURACY
SGT 5592.8 SGR 1325.9 SG3 3474.5
RRT -.8940 RRF -.9130 RTF .9909
SGB 5747.8 R23 .0391 R13 -.9920
SG1 5718.4 SG2 581.1 THA 167.91

ORBIT DETERMINATION ACCURACY
ST 1138.2 SR 696.8 SS 2667.1
CRT -.6145 CRS .7989 CST -.9651
LSA 2937.9 MSA 512.6 SSA 24.1
EL1 1234.5 EL2 506.8 ALF 154.86

LAUNCH DATE OCT 24 1964 FLIGHT TIME 334.00 ARRIVAL DATE SEP 23 1965

HELIOCENTRIC CONIC DISTANCE 756.826 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 32.710 GAL -4.69 AZL 88.67 HCA 234.40 SMA 185.82 ECC .21492 INC 1.3286 V1 29.950
RP 219.07 LAP -1.08 LOP 265.02 VP 22.303 GAP -6.95 AZP 90.77 TAL 332.92 TAP 207.32 RCA 145.89 APO 225.76 V2 25.088
RC 275.589 GL 12.38 GP 5.51 ZAL 128.70 ZAP 78.82 ETS 180.32 ZAE 111.45 ETE 176.22 ZAC 89.74 ETC 257.92 CLP 78.77

PLANETOCENTRIC CONIC

C3 12.427 VHL 3.525 DLA 19.08 RAL 166.85 RAD 6567.5 VEL 11.568 PTH 2.02 VHP 2.929 DPA 12.97 RAP 167.99 ECC 1.2045

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 37 12	2746.80	-27.95	77.95	26.88	94.74	18 22 59	2146.8	-27.00	69.41
90.00	10 57 51	4110.82	-2.84	167.00	21.52	61.81	12 6 22	3510.8	-6.58	160.33
100.00	19 10 17	2446.61	-29.24	55.72	26.73	96.50	19 51 4	1846.6	-28.03	47.13
100.00	12 7 26	3886.24	-1.70	149.87	20.89	60.15	13 12 13	3286.2	-5.66	143.32
110.00	20 43 58	2153.50	-32.53	32.87	26.14	101.13	21 19 52	1553.5	-30.66	24.15
110.00	12 50 15	3752.11	1.12	137.93	19.13	55.83	13 52 47	3152.1	-3.37	131.73

DIFFERENTIAL CORRECTIONS
TDE -.3010 TRA 2.1923 TC3-6.5114 BAU 1.1042
RDE .4131 RRA -.3467 RC3 1.3325 FAU .55812
FDE-3.8862 FRA16.0722 FC-38.8812 BSP 20542
BDE .5111 BRA 2.2195 BC3 6.6463 FSP 11903

MID-COURSE EXECUTION ACCURACY
SGT 5960.7 SGR 1299.5 SG3 3407.5
RRT -.8893 RRF -.9068 RTF .9918
SGB 6100.7 R23 .0354 R13 -.9926
SG1 6072.8 SG2 583.2 THA 168.92

ORBIT DETERMINATION ACCURACY
ST 1240.0 SR 695.4 SS 2646.2
CRT -.6200 CRS .7904 CST -.9704
LSA 2958.8 MSA 518.2 SSA 24.0
EL1 1327.1 EL2 509.8 ALF 157.29

LAUNCH DATE OCT 24 1964 FLIGHT TIME 336.00 ARRIVAL DATE SEP 25 1965

HELIOCENTRIC CONIC DISTANCE 760.900 EARTH TO MARS
RL 148.77 LAL .00 LOL 30.62 VL 32.710 GAL -4.74 AZL 88.65 HCA 235.54 SMA 185.83 ECC .21524 INC 1.3460 V1 29.950
RP 218.70 LAP -1.11 LOP 266.15 VP 22.349 GAP -7.15 AZP 90.76 TAL 332.66 TAP 208.20 RCA 145.83 APO 225.82 V2 25.128
RC 276.940 GL 12.48 GP 5.40 ZAL 129.05 ZAP 76.96 ETS 180.50 ZAE 109.36 ETE 176.56 ZAC 89.48 ETC 258.02 CLP 76.90
PLANETOCENTRIC CONIC
C3 12.552 VHL 3.543 DLA 19.03 RAL 167.25 RAD 6567.5 VEL 11.573 PTH 2.02 VHP 2.956 DPA 13.16 RAP 167.25 ECC 1.2066

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 39 22	2746.75	-27.95	77.95	27.42	94.74	18 25 9	2146.8	-27.00	69.41
90.00	10 58 52	4115.13	-2.70	167.25	22.03	61.80	12 7 27	3515.1	-6.45	160.57
100.00	19 12 24	2446.76	-29.24	55.73	27.28	96.49	19 53 11	1846.8	-28.04	47.14
100.00	12 8 31	3890.36	-1.56	150.09	21.40	60.14	13 13 21	3290.4	-5.52	143.54
110.00	20 45 59	2154.00	-32.54	32.91	26.68	101.11	21 21 53	1554.0	-30.67	24.19
110.00	12 51 26	3755.88	1.26	138.13	19.64	55.84	13 54 2	3155.9	-3.23	131.92

DIFFERENTIAL CORRECTIONS
TDE -.3466 TRA 2.3609 TC3-6.8256 BAU 1.1660
RDE .4185 RRA -.3350 RC3 1.3003 FAU .54965
FDE-3.9242 FRA15.8438 FC-37.9096 BSP 21689
BDE .5434 BRA 2.3845 BC3 6.9483 FSP 11589

MID-COURSE EXECUTION ACCURACY
SGT 6325.9 SGR 1278.9 SG3 3342.3
RRT -.8839 RRF -.9011 RTF .9928
SGB 6453.9 R23 .0342 R13 -.9935
SG1 6426.9 SG2 588.8 THA 169.78

ORBIT DETERMINATION ACCURACY
ST 1342.8 SR 698.8 SS 2641.9
CRT -.6305 CRS .7905 CST -.9736
LSA 2999.6 MSA 523.0 SSA 23.4
EL1 1424.9 EL2 511.2 ALF 159.01

LAUNCH DATE OCT 24 1964 FLIGHT TIME 338.00 ARRIVAL DATE SEP 27 1965

HELIOCENTRIC CONIC DISTANCE 764.980 EARTH TO MARS
RL 148.77 LAL .00 LOL 30.62 VL 32.711 GAL -4.80 AZL 88.64 HCA 236.67 SMA 185.83 ECC .21559 INC 1.3631 V1 29.950
RP 218.34 LAP -1.14 LOP 267.28 VP 22.394 GAP -7.35 AZP 90.75 TAL 332.39 TAP 209.06 RCA 145.77 APO 225.89 V2 25.168
RC 278.273 GL 12.57 GP 5.28 ZAL 129.41 ZAP 75.13 ETS 180.68 ZAE 107.29 ETE 176.87 ZAC 89.23 ETC 258.11 CLP 75.07
PLANETOCENTRIC CONIC
C3 12.687 VHL 3.562 DLA 18.96 RAL 167.67 RAD 6567.5 VEL 11.579 PTH 2.02 VHP 2.985 DPA 13.34 RAP 166.55 ECC 1.2088

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 41 47	2746.22	-27.95	77.91	27.98	94.76	18 27 33	2146.2	-26.99	69.37
90.00	10 59 45	4120.23	-2.53	167.53	22.56	61.79	12 8 26	3520.2	-6.29	160.86
100.00	19 14 44	2446.46	-29.24	55.71	27.84	96.50	19 55 30	1846.5	-28.03	47.12
100.00	12 9 29	3895.21	-1.40	150.36	21.93	60.14	13 14 24	3295.2	-5.36	143.81
110.00	20 48 10	2154.16	-32.54	32.92	27.24	101.10	21 24 4	1554.2	-30.67	24.20
110.00	12 52 33	3760.28	1.43	138.36	20.16	55.84	13 55 13	3160.3	-3.06	132.15

DIFFERENTIAL CORRECTIONS
TDE -.3925 TRA 2.5322 TC3-7.1193 BAU 1.2264
RDE .4235 RRA -.3237 RC3 1.2652 FAU .53925
FDE-3.9435 FRA15.6121 FC-36.7981 BSP 22860
BDE .5774 BRA 2.5528 BC3 7.2308 FSP 11299

MID-COURSE EXECUTION ACCURACY
SGT 6683.5 SGR 1256.8 SG3 3270.1
RRT -.8777 RRF -.8949 RTF .9935
SGB 6800.7 R23 .0333 R13 -.9941
SG1 6774.7 SG2 594.2 THA 170.55

ORBIT DETERMINATION ACCURACY
ST 1446.1 SR 701.5 SS 2634.3
CRT -.6384 CRS .7898 CST -.9761
LSA 3040.3 MSA 527.7 SSA 22.8
EL1 1523.3 EL2 512.6 ALF 160.50

LAUNCH DATE OCT 24 1964 FLIGHT TIME 340.00 ARRIVAL DATE SEP 29 1965

HELIOCENTRIC CONIC DISTANCE 769.065 EARTH TO MARS
RL 148.77 LAL .00 LOL 30.62 VL 32.711 GAL -4.85 AZL 88.62 HCA 237.81 SMA 185.84 ECC .21599 INC 1.3798 V1 29.950
RP 217.98 LAP -1.17 LOP 268.42 VP 22.440 GAP -7.55 AZP 90.74 TAL 332.11 TAP 209.92 RCA 145.70 APO 225.98 V2 25.208
RC 279.589 GL 12.66 GP 5.17 ZAL 129.79 ZAP 73.34 ETS 180.84 ZAE 105.26 ETE 177.16 ZAC 88.99 ETC 258.20 CLP 73.27
PLANETOCENTRIC CONIC
C3 12.832 VHL 3.582 DLA 18.87 RAL 168.09 RAD 6567.5 VEL 11.585 PTH 2.03 VHP 3.018 DPA 13.49 RAP 165.88 ECC 1.2112

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 44 24	2745.21	-27.94	77.84	28.56	94.80	18 30 9	2145.2	-26.98	69.30
90.00	11 0 32	4126.10	-2.35	167.86	23.11	61.77	12 9 18	3526.1	-6.10	161.19
100.00	19 17 16	2445.75	-29.24	55.66	28.42	96.53	19 58 1	1845.8	-28.02	47.07
100.00	12 10 21	3900.79	-1.21	150.66	22.48	60.13	13 15 22	3300.8	-5.17	144.12
110.00	20 50 31	2154.00	-32.54	32.91	27.82	101.11	21 26 25	1554.0	-30.67	24.19
110.00	12 53 36	3765.31	1.63	138.62	20.71	55.85	13 56 21	3165.3	-2.87	132.42

DIFFERENTIAL CORRECTIONS
TDE -.4392 TRA 2.7055 TC3-7.3963 BAU 1.2862
RDE .4282 RRA -.3126 RC3 1.2286 FAU .52771
FDE-3.9482 FRA15.3697 FC-35.6042 BSP 24018
BDE .6134 BRA 2.7235 BC3 7.4977 FSP 11016

MID-COURSE EXECUTION ACCURACY
SGT 7034.7 SGR 1234.1 SG3 3192.7
RRT -.8710 RRF -.8882 RTF .9941
SGB 7142.1 R23 .0326 R13 -.9946
SG1 7116.9 SG2 599.3 THA 171.25

ORBIT DETERMINATION ACCURACY
ST 1549.5 SR 703.5 SS 2623.1
CRT -.6447 CRS .7885 CST -.9783
LSA 3081.1 MSA 531.9 SSA 22.3
EL1 1622.4 EL2 513.6 ALF 161.80

LAUNCH DATE OCT 24 1964 FLIGHT TIME 342.00 ARRIVAL DATE OCT 1 1965

HELIOCENTRIC CONIC DISTANCE 773.155 EARTH TO MARS
RL 148.77 LAL .00 LOL 30.62 VL 32.712 GAL -4.91 AZL 88.60 HCA 238.95 SMA 185.85 ECC .21642 INC 1.3960 V1 29.950
RP 217.62 LAP -1.20 LOP 269.56 VP 22.486 GAP -7.74 AZP 90.72 TAL 331.81 TAP 210.76 RCA 145.63 APO 226.07 V2 25.248
RC 280.887 GL 12.73 GP 5.05 ZAL 130.19 ZAP 71.58 ETS 181.00 ZAE 103.26 ETE 177.44 ZAC 88.76 ETC 258.28 CLP 71.51
PLANETOCENTRIC CONIC
C3 12.987 VHL 3.604 DLA 18.77 RAL 168.53 RAD 6567.5 VEL 11.592 PTH 2.03 VHP 3.053 DPA 13.63 RAP 165.26 ECC 1.2137

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 47 13	2743.76	-27.93	77.73	29.16	94.85	18 32 57	2143.8	-26.97	69.20
90.00	11 1 12	4132.72	-2.13	168.23	23.68	61.76	12 10 5	3532.7	-5.89	161.57
100.00	19 19 59	2444.64	-29.23	55.58	29.01	96.57	20 0 43	1844.6	-28.01	46.99
100.00	12 11 8	3907.08	-1.00	151.01	23.05	60.12	13 16 15	3307.1	-4.96	144.47
110.00	20 53 2	2153.53	-32.53	32.87	28.41	101.13	21 28 55	1553.5	-30.66	24.15
110.00	12 54 35	3770.95	1.84	138.91	21.27	55.86	13 57 25	3170.9	-2.65	132.71

DIFFERENTIAL CORRECTIONS
TDE -.4876 TRA 2.8803 TC3-7.6540 BAU 1.3449
RDE .4329 RRA -.3015 RC3 1.1911 FAU .51516
FDE-3.9495 FRA15.1156 FC-34.3417 BSP 25167
BDE .6521 BRA 2.8961 BC3 7.7461 FSP 10722

MID-COURSE EXECUTION ACCURACY
SGT 7377.5 SGR 1211.2 SG3 3110.8
RRT -.8837 RRF -.8810 RTF .9946
SGB 7476.3 R23 .0321 R13 -.9950
SG1 7451.8 SG2 604.3 THA 171.88

ORBIT DETERMINATION ACCURACY
ST 1653.4 SR 705.4 SS 2611.0
CRT -.6502 CRS .7875 CST -.9801
LSA 3124.3 MSA 535.8 SSA 21.8
EL1 1722.4 EL2 514.5 ALF 162.93

LAUNCH DATE OCT 24 1964 FLIGHT TIME 344.00 ARRIVAL DATE OCT 3 1965

HELIOCENTRIC CONIC DISTANCE 777.251 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 32.713 GAL -4.97 AZL 88.59 HCA 240.10 SMA 185.87 ECC .21689 INC 1.4120 V1 29.950
RP 217.27 LAP -1.22 LOP 270.71 VP 22.531 GAP -7.93 AZP 90.70 TAL 331.49 TAP 211.59 RCA 145.56 APO 226.18 V2 25.287
RC 282.167 GL 12.79 GP 4.94 ZAL 130.61 ZAP 69.87 ETS 181.14 ZAE 101.29 ETE 177.70 ZAC 88.54 ETC 258.36 CLP 69.79

PLANETOCENTRIC CONIC

C3 13.153 VHL 3.627 DLA 18.66 RAL 168.98 RAD 6567.5 VEL 11.599 PTH 2.03 VHP 3.092 DPA 13.76 RAP 164.67 ECC 1.2165

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 50 15	2741.87	-27.92	77.59	29.77	94.92	18 35 57	2141.9	-26.95	69.06
90.00	11 1 46	4140.09	-1.89	168.64	24.26	61.74	12 10 46	3540.1	-5.66	161.98
100.00	19 22 53	2443.14	-29.22	55.47	29.63	96.63	20 3 36	1843.1	-27.99	46.88
100.00	12 11 49	3914.06	-.76	151.39	23.63	60.12	13 17 3	3314.1	-4.73	144.86
110.00	20 55 42	2152.77	-32.52	32.81	29.02	101.16	21 31 35	1552.8	-30.64	24.10
110.00	12 55 30	3777.20	2.08	139.24	21.86	55.87	13 58 27	3177.2	-2.41	133.04

DIFFERENTIAL CORRECTIONS
TDE -.5373 TRA 3.0570 TC3-7.8923 BAU 1.4025
RDE .4376 RRA -.2906 RC3 1.1530 FAU .50187
FDE-3.9429 FRA14.8530 FC-33.0337 BSP 26290
BDE .6930 BRA 3.0707 BC3 7.9761 FSP 10428

MID-COURSE EXECUTION ACCURACY
SGT 7712.0 SGR 1188.4 SG3 3025.6
RRT -.8559 RRF -.8734 RTF .9949
SGB 7803.0 R23 .0318 R13 -.9953
SG1 7779.2 SG2 609.2 THA 172.44

ORBIT DETERMINATION ACCURACY
ST 1757.4 SR 706.9 SS 2596.9
CRT -.6548 CRS .7864 CST -.9817
LSA 3168.8 MSA 539.3 SSA 21.3
EL1 1822.9 EL2 515.1 ALF 163.93

LAUNCH DATE OCT 24 1964 FLIGHT TIME 346.00 ARRIVAL DATE OCT 5 1965

HELIOCENTRIC CONIC DISTANCE 781.353 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 32.714 GAL -5.03 AZL 88.57 HCA 241.25 SMA 185.89 ECC .21740 INC 1.4277 V1 29.950
RP 216.91 LAP -1.25 LOP 271.86 VP 22.577 GAP -8.12 AZP 90.69 TAL 331.16 TAP 212.41 RCA 145.48 APO 226.30 V2 25.327
RC 283.431 GL 12.85 GP 4.83 ZAL 131.04 ZAP 68.19 ETS 181.28 ZAE 99.37 ETE 177.94 ZAC 88.33 ETC 258.44 CLP 68.11

PLANETOCENTRIC CONIC

C3 13.330 VHL 3.651 DLA 18.53 RAL 169.44 RAD 6567.5 VEL 11.607 PTH 2.03 VHP 3.133 DPA 13.86 RAP 164.13 ECC 1.2194

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 53 29	2739.58	-27.91	77.43	30.41	95.00	18 39 8	2139.6	-26.92	68.90
90.00	11 2 14	4148.19	-1.63	169.09	24.86	61.73	12 11 22	3548.2	-5.40	162.44
100.00	19 25 59	2441.28	-29.20	55.33	30.26	96.70	20 6 40	1841.3	-27.97	46.75
100.00	12 12 25	3921.72	-.50	151.81	24.23	60.11	13 17 46	3321.7	-4.47	145.28
110.00	20 58 32	2151.72	-32.51	32.74	29.65	101.20	21 34 23	1551.7	-30.62	24.02
110.00	12 56 21	3784.04	2.34	139.60	22.46	55.89	13 59 25	3184.0	-2.15	133.40

DIFFERENTIAL CORRECTIONS
TDE -.5882 TRA 3.2352 TC3-8.1101 BAU 1.4589
RDE .4422 RRA -.2797 RC3 1.1145 FAU .48782
FDE-3.9288 FRA14.5789 FC-31.6818 BSP 27403
BDE .7359 BRA 3.2473 BC3 8.1863 FSP 10133

MID-COURSE EXECUTION ACCURACY
SGT 8037.0 SGR 1165.5 SG3 2936.9
RRT -.8476 RRF -.8652 RTF .9953
SGB 8121.1 R23 .0315 R13 -.9956
SG1 8097.8 SG2 613.8 THA 172.95

ORBIT DETERMINATION ACCURACY
ST 1861.2 SR 708.2 SS 2580.4
CRT -.6586 CRS .7852 CST -.9830
LSA 3214.0 MSA 542.3 SSA 20.9
EL1 1923.5 EL2 515.6 ALF 164.81

LAUNCH DATE OCT 24 1964 FLIGHT TIME 348.00 ARRIVAL DATE OCT 7 1965

HELIOCENTRIC CONIC DISTANCE 785.459 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 32.715 GAL -5.10 AZL 88.56 HCA 242.40 SMA 185.91 ECC .21795 INC 1.4430 V1 29.950
RP 216.57 LAP -1.28 LOP 273.01 VP 22.622 GAP -8.31 AZP 90.67 TAL 330.82 TAP 213.22 RCA 145.39 APO 226.43 V2 25.365
RC 284.679 GL 12.90 GP 4.72 ZAL 131.49 ZAP 66.55 ETS 181.41 ZAE 97.48 ETE 178.16 ZAC 88.13 ETC 258.51 CLP 66.47

PLANETOCENTRIC CONIC

C3 13.519 VHL 3.677 DLA 18.38 RAL 169.92 RAD 6567.5 VEL 11.615 PTH 2.04 VHP 3.176 DPA 13.95 RAP 163.62 ECC 1.2225

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 56 53	2736.90	-27.89	77.23	31.06	95.09	18 42 30	2136.9	-26.89	68.71
90.00	11 2 36	4156.99	-1.35	169.58	25.48	61.71	12 11 53	3557.0	-5.12	162.93
100.00	19 29 15	2439.07	-29.18	55.17	30.90	96.78	20 9 54	1839.1	-27.94	46.59
100.00	12 12 55	3930.05	-.22	152.27	24.85	60.11	13 18 25	3330.1	-4.19	145.74
110.00	21 1 30	2150.42	-32.49	32.64	30.29	101.26	21 37 21	1550.4	-30.60	23.93
110.00	12 57 9	3791.47	2.62	139.99	23.08	55.91	14 0 20	3191.5	-1.87	133.78

DIFFERENTIAL CORRECTIONS
TDE -.6415 TRA 3.4146 TC3-8.3093 BAU 1.5144
RDE .4471 RRA -.2690 RC3 1.0766 FAU .47361
FDE-3.9167 FRA14.2945 FC-30.3284 BSP 28477
BDE .7819 BRA 3.4252 BC3 8.3787 FSP 9825

MID-COURSE EXECUTION ACCURACY
SGT 8353.1 SGR 1143.3 SG3 2846.7
RRT -.8388 RRF -.8568 RTF .9955
SGB 8431.0 R23 .0316 R13 -.9958
SG1 8408.3 SG2 618.5 THA 173.42

ORBIT DETERMINATION ACCURACY
ST 1965.3 SR 709.5 SS 2564.0
CRT -.6624 CRS .7846 CST -.9841
LSA 3262.3 MSA 545.0 SSA 20.4
EL1 2024.7 EL2 516.0 ALF 165.60

LAUNCH DATE OCT 24 1964 FLIGHT TIME 350.00 ARRIVAL DATE OCT 9 1965

HELIOCENTRIC CONIC DISTANCE 789.567 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 32.717 GAL -5.17 AZL 88.54 HCA 243.56 SMA 185.94 ECC .21854 INC 1.4581 V1 29.950
RP 216.22 LAP -1.31 LOP 274.17 VP 22.668 GAP -8.49 AZP 90.65 TAL 330.46 TAP 214.02 RCA 145.30 APO 226.57 V2 25.404
RC 285.910 GL 12.93 GP 4.61 ZAL 131.96 ZAP 64.96 ETS 181.53 ZAE 95.64 ETE 178.37 ZAC 87.95 ETC 258.57 CLP 64.88

PLANETOCENTRIC CONIC

C3 13.721 VHL 3.704 DLA 18.22 RAL 170.40 RAD 6567.5 VEL 11.624 PTH 2.04 VHP 3.223 DPA 14.02 RAP 163.17 ECC 1.2258

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 0 30	2733.83	-27.87	77.01	31.73	95.20	18 46 4	2133.8	-26.86	68.49
90.00	11 2 52	4166.52	-1.04	170.11	26.12	61.70	12 12 18	3566.5	-4.82	163.47
100.00	19 32 42	2436.52	-29.16	54.98	31.57	96.88	20 13 18	1836.5	-27.90	46.41
100.00	12 13 21	3939.07	.09	152.76	25.49	60.11	13 19 0	3339.1	-3.89	146.24
110.00	21 4 39	2148.84	-32.47	32.52	30.95	101.33	21 40 27	1548.8	-30.57	23.82
110.00	12 57 53	3799.51	2.93	140.41	23.72	55.93	14 1 13	3199.5	-1.56	134.20

DIFFERENTIAL CORRECTIONS
TDE -.6829 TRA 3.6118 TC3-8.4500 BAU 1.5616
RDE .4498 RRA -.2604 RC3 1.0321 FAU .45520
FDE-3.8232 FRA14.0747 FC-28.7210 BSP 29896
BDE .8177 BRA 3.6212 BC3 8.5128 FSP 9676

MID-COURSE EXECUTION ACCURACY
SGT 8654.3 SGR 1117.4 SG3 2749.9
RRT -.8289 RRF -.8465 RTF .9956
SGB 8726.2 R23 .0302 R13 -.9959
SG1 8704.0 SG2 621.5 THA 173.86

ORBIT DETERMINATION ACCURACY
ST 2065.0 SR 707.6 SS 2531.6
CRT -.6595 CRS .7778 CST -.9853
LSA 3297.5 MSA 548.1 SSA 20.3
EL1 2120.5 EL2 518.0 ALF 166.44

LAUNCH DATE OCT 24 1964 FLIGHT TIME 352.00 ARRIVAL DATE OCT 11 1965

HELIOCENTRIC CONIC DISTANCE 793.687 EARTH TO MARS

RL	148.77	LAL	.00	LOL	30.62	VL	32.719	GAL	-5.25	AZL	88.53	HCA	244.72	SMA	185.97	ECC	.21917	INC	1.4729
RP	215.88	LAP	-1.33	LOP	275.33	VP	22.713	GAP	-8.68	AZP	90.63	TAL	330.09	TAP	214.81	RCA	145.21	APO	226.73
RC	287.127	GL	12.97	GP	4.50	ZAL	132.44	ZAP	63.41	ETS	181.64	ZAE	93.83	ETE	178.57	ZAC	87.77	ETC	258.63

V1	29.950	V2	25.442	CLP	63.32														

PLANETOCENTRIC CONIC

C3	13.935	VHL	3.733	DLA	18.05	RAL	170.90	RAD	6567.5	VEL	11.633	PTH	2.04	VHP	3.272	DPA	14.08	RAP	162.75

ECC	1.2293	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	18 4 15	2730.48	-27.85	76.77	32.41	95.32	18 49 46	2130.5	-26.82	68.25							
		90.00	11 3 2	4176.66	-.72	170.68	26.77	61.69	12 12 39	3576.7	-4.49	164.04							
		100.00	19 36 17	2433.70	-29.14	54.78	32.25	96.98	20 16 51	1833.7	-27.87	46.21							
		100.00	12 13 42	3948.67	.42	153.29	26.14	60.11	13 19 30	3348.7	-3.56	146.76							
		110.00	21 7 54	2147.07	-32.45	32.39	31.63	101.40	21 43 41	1547.1	-30.53	23.69							
		110.00	12 58 34	3808.07	3.26	140.85	24.37	55.95	14 2 2	3208.1	-1.23	134.65							

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.7536	TRA	3.7790	TC3	-8.6488	BAU	1.6220	SGT	8958.1	SGR	1100.6	SG3	2662.0	ST	2173.7	SR	711.9	SS	2527.8
RDE	.4570	RRA	-.2480	RC3	1.0016	FAU	.44406	RRT	-.8197	RRF	-.8387	RTF	.9959	CRT	-.6691	CRS	.7840	CST	-.9858
FDE	-3.8829	FRA	13.7058	FC	-27.5879	BSP	30554	SGB	9025.4	R23	.0320	R13	-.9961	LSA	3364.4	MSA	549.4	SSA	19.6
BDE	.8813	BRA	3.7871	BC3	8.7066	FSP	9209	SG1	9003.6	SG2	627.2	THA	174.22	EL1	2228.3	EL2	516.1	ALF	166.93

LAUNCH DATE OCT 24 1964 FLIGHT TIME 354.00 ARRIVAL DATE OCT 13 1965

HELIOCENTRIC CONIC DISTANCE 797.807 EARTH TO MARS

RL	148.77	LAL	.00	LOL	30.62	VL	32.720	GAL	-5.33	AZL	88.51	HCA	245.89	SMA	186.00	ECC	.21984	INC	1.4875
RP	215.54	LAP	-1.36	LOP	276.50	VP	22.758	GAP	-8.86	AZP	90.61	TAL	329.70	TAP	215.59	RCA	145.11	APO	226.89
RC	288.329	GL	12.99	GP	4.39	ZAL	132.94	ZAP	61.90	ETS	181.75	ZAE	92.06	ETE	178.76	ZAC	87.60	ETC	258.68

V1	29.950	V2	25.480	CLP	61.81														

PLANETOCENTRIC CONIC

C3	14.163	VHL	3.763	DLA	17.86	RAL	171.40	RAD	6567.6	VEL	11.643	PTH	2.04	VHP	3.323	DPA	14.12	RAP	162.38

ECC	1.2331	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	18 8 11	2726.78	-27.83	76.50	33.11	95.46	18 53 38	2126.8	-26.78	67.99							
		90.00	11 3 8	4187.49	-.37	171.28	27.45	61.69	12 12 56	3587.5	-4.15	164.64							
		100.00	19 40 2	2430.58	-29.11	54.55	32.95	97.10	20 20 33	1830.6	-27.82	45.98							
		100.00	12 13 58	3958.92	.76	153.85	26.82	60.12	13 19 57	3358.9	-3.22	147.33							
		110.00	21 11 18	2145.06	-32.42	32.24	32.32	101.49	21 47 3	1545.1	-30.50	23.55							
		110.00	12 59 12	3817.21	3.61	141.33	25.04	55.98	14 2 49	3217.2	-.88	135.13							

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.8131	TRA	3.9635	TC3	-8.7908	BAU	1.6745	SGT	9246.8	SGR	1080.5	SG3	2569.3	ST	2278.0	SR	713.0	SS	2508.4
RDE	.4621	RRA	-.2378	RC3	.9653	FAU	.42924	RRT	-.8097	RRF	-.8292	RTF	.9960	CRT	-.6725	CRS	.7842	CST	-.9865
FDE	-3.8629	FRA	13.4036	FC	-26.2388	BSP	31551	SGB	9309.8	R23	.0323	R13	-.9962	LSA	3418.5	MSA	550.9	SSA	19.2
BDE	.9353	BRA	3.9706	BC3	8.8437	FSP	8896	SG1	9288.3	SG2	631.3	THA	174.57	EL1	2330.6	EL2	515.8	ALF	167.49

LAUNCH DATE OCT 24 1964 FLIGHT TIME 356.00 ARRIVAL DATE OCT 15 1965

HELIOCENTRIC CONIC DISTANCE 801.932 EARTH TO MARS

RL	148.77	LAL	.00	LOL	30.62	VL	32.723	GAL	-5.41	AZL	88.50	HCA	247.06	SMA	186.04	ECC	.22056	INC	1.5018
RP	215.21	LAP	-1.38	LOP	277.67	VP	22.803	GAP	-9.03	AZP	90.59	TAL	329.30	TAP	216.36	RCA	145.00	APO	227.07
RC	289.516	GL	13.00	GP	4.29	ZAL	133.46	ZAP	60.43	ETS	181.84	ZAE	90.33	ETE	178.93	ZAC	87.44	ETC	258.72

V1	29.950	V2	25.517	CLP	60.34														

PLANETOCENTRIC CONIC

C3	14.404	VHL	3.795	DLA	17.66	RAL	171.92	RAD	6567.6	VEL	11.653	PTH	2.05	VHP	3.377	DPA	14.14	RAP	162.05

ECC	1.2371	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	18 12 16	2722.79	-27.80	76.21	33.83	95.60	18 57 39	2122.8	-26.74	67.71							
		90.00	11 3 9	4198.96	.01	171.92	28.14	61.68	12 13 8	3599.0	-3.78	165.29							
		100.00	19 43 56	2427.20	-29.08	54.30	33.67	97.23	20 24 23	1827.2	-27.78	45.74							
		100.00	12 14 10	3969.79	1.13	154.45	27.51	60.13	13 20 20	3369.8	-2.85	147.93							
		110.00	21 14 49	2142.85	-32.39	32.07	33.03	101.58	21 50 32	1542.8	-30.45	23.39							
		110.00	12 59 47	3826.90	3.97	141.84	25.74	56.02	14 3 34	3226.9	-.51	135.63							

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.8744	TRA	4.1499	TC3	-8.9129	BAU	1.7257	SGT	9525.7	SGR	1061.2	SG3	2476.1	ST	2382.1	SR	714.1	SS	2488.4
RDE	.4673	RRA	-.2279	RC3	.9297	FAU	.41425	RRT	-.7993	RRF	-.8194	RTF	.9961	CRT	-.6756	CRS	.7847	CST	-.9871
FDE	-3.8421	FRA	13.0967	FC	-24.8975	BSP	32516	SGB	9584.6	R23	.0328	R13	-.9963	LSA	3474.3	MSA	552.4	SSA	18.9
BDE	.9915	BRA	4.1561	BC3	8.9612	FSP	8586	SG1	9563.6	SG2	635.2	THA	174.89	EL1	2432.8	EL2	515.5	ALF	168.00

LAUNCH DATE OCT 24 1964 FLIGHT TIME 358.00 ARRIVAL DATE OCT 17 1965

HELIOCENTRIC CONIC DISTANCE 806.061 EARTH TO MARS

RL	148.77	LAL	.00	LOL	30.62	VL	32.725	GAL	-5.49	AZL	88.48	HCA	248.23	SMA	186.07	ECC	.22132	INC	1.5160
RP	214.88	LAP	-1.41	LOP	278.84	VP	22.847	GAP	-9.21	AZP	90.56	TAL	328.88	TAP	217.11	RCA	144.89	APO	227.26
RC	290.691	GL	13.01	GP	4.19	ZAL	133.98	ZAP	59.00	ETS	181.94	ZAE	88.64	ETE	179.10	ZAC	87.30	ETC	258.76

V1	29.950	V2	25.554	CLP	58.91														

PLANETOCENTRIC CONIC

C3	14.661	VHL	3.829	DLA	17.44	RAL	172.44	RAD	6567.6	VEL	11.664	PTH	2.05	VHP	3.434	DPA	14.15	RAP	161.77

ECC	1.2413	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	18 16 31	2718.53	-27.77	75.90	34.57	95.75	19 1 49	2118.5	-26.69	67.40							
		90.00	11 3 5	4211.05	.40	172.60	28.85	61.69	12 13 16	3611.1	-3.39	165.96							
		100.00	19 47 59	2423.57	-29.05	54.04	34.40	97.36	20 28 22	1823.6	-27.73	45.48							
		100.00	12 14 18	3981.25	1.52	155.08	28.22	60.14	13 20 40	3381.2	-2.46	148.56							
		110.00	21 18 28	2140.45	-32.36	31.89	33.76	101.68	21 54 9	1540.4	-30.41	23.22							
		110.00	13 0 18	3837.13	4.36	142.38	26.45	56.06	14 4 16	3237.1	-.12	136.16							

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.9383	TRA	4.3386	TC3	-9.0168	BAU	1.7760	SGT	9795.9	SGR	1042.8	SG3	2383.8	ST	2486.4	SR	715.1	SS	2467.5
RDE	.4727	RRA	-.2183	RC3	.8950	FAU	.39933	RRT	-.7886	RRF	-.8094	RTF	.9962	CRT	-.6789	CRS	.7855	CST	-.9876
FDE	-3.8188	FRA	12.7898	FC	-23.5809	BSP	33443	SGB	9851.3	R23	.0333	R13	-.9964	LSA	3532.1	MSA	553.4	SSA	18.6
BDE	1.0507	BRA	4.3441	BC3	9.0611	FSP	8274	SG1	9830.5	SG2	638.9	THA	175.18	EL1	2535.5	EL2	514.9	ALF	168.47

LAUNCH DATE OCT 24 1964 FLIGHT TIME 360.00 ARRIVAL DATE OCT 19 1965

HELIOCENTRIC CONIC DISTANCE 810.193 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 32.727 GAL -5.58 AZL 88.47 HCA 249.41 SMA 186.12 ECC .22212 INC 1.5300 V1 29.950
RP 214.56 LAP -1.43 LOP 280.02 VP 22.891 GAP -9.39 AZP 90.54 TAL 328.45 TAP 217.86 RCA 144.78 APO 227.46 V2 25.590
RC 291.851 GL 13.01 GP 4.10 ZAL 134.53 ZAP 57.61 ETS 182.02 ZAE 86.99 ETE 179.25 ZAC 87.16 ETC 258.79 CLP 57.52

PLANETOCENTRIC CONIC

C3 14.933 VHL 3.864 DLA 17.22 RAL 172.97 RAD 6567.6 VEL 11.676 PTH 2.05 VHP 3.493 DPA 14.14 RAP 161.53 ECC 1.2458

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 20 54	2714.03	-27.74	75.58	35.32	95.91	19 6 8	2114.0	-26.63	67.08
90.00	11 2 57	4223.75	.81	173.31	29.57	61.69	12 13 21	3623.8	-2.98	166.68
100.00	19 52 9	2419.72	-29.02	53.76	35.15	97.51	20 32 29	1819.7	-27.68	45.21
100.00	12 14 23	3993.29	1.93	155.74	28.95	60.16	13 20 56	3393.3	-2.06	149.22
110.00	21 22 14	2137.88	-32.32	31.70	34.50	101.79	21 57 52	1537.9	-30.36	23.03
110.00	13 0 47	3847.90	4.77	142.94	27.18	56.11	14 4 55	3247.9	.29	136.73

DIFFERENTIAL CORRECTIONS
TDE-1.0046 TRA 4.5304 TC3-9.1010 BAU 1.8250
RDE .4783 RRA -.2090 RC3 .8612 FAU .38443
FDE-3.7926 FRA12.4834 FC-22.2877 BSP 34359
BDE 1.1126 BRA 4.5352 BC3 9.1417 FSP 7971

MID-COURSE EXECUTION ACCURACY
SGT10057.2 SGR 1025.3 SG3 2292.2
RRT -.7778 RRF -.7993 RTF .9962
SGB10109.3 R23 .0339 R13 -.9964
SG110088.9 SG2 642.4 THA 175.45

ORBIT DETERMINATION ACCURACY
ST 2591.1 SR 716.0 SS 2445.7
CRT -.6822 CRS .7864 CST -.9881
LSA 3591.8 MSA 553.9 SSA 18.2
EL1 2638.6 EL2 514.1 ALF 168.90

LAUNCH DATE OCT 24 1964 FLIGHT TIME 362.00 ARRIVAL DATE OCT 21 1965

HELIOCENTRIC CONIC DISTANCE 814.329 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 32.730 GAL -5.67 AZL 88.46 HCA 250.58 SMA 186.16 ECC .22297 INC 1.5438 V1 29.950
RP 214.24 LAP -1.46 LOP 281.20 VP 22.935 GAP -9.56 AZP 90.51 TAL 328.01 TAP 218.59 RCA 144.65 APO 227.67 V2 25.626
RC 292.998 GL 13.00 GP 4.00 ZAL 135.08 ZAP 56.27 ETS 182.10 ZAE 85.38 ETE 179.39 ZAC 87.04 ETC 258.82 CLP 56.17

PLANETOCENTRIC CONIC

C3 15.221 VHL 3.901 DLA 16.98 RAL 173.51 RAD 6567.6 VEL 11.688 PTH 2.06 VHP 3.554 DPA 14.12 RAP 161.33 ECC 1.2505

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 25 25	2709.30	-27.71	75.23	36.09	96.08	19 10 34	2109.3	-26.58	66.75
90.00	11 2 45	4237.05	1.23	174.05	30.32	61.71	12 13 22	3637.0	-2.56	167.42
100.00	19 56 28	2415.67	-28.98	53.46	35.92	97.66	20 36 43	1815.7	-27.62	44.92
100.00	12 14 23	4005.91	2.36	156.43	29.70	60.19	13 21 9	3405.9	-1.63	149.91
110.00	21 26 7	2135.16	-32.28	31.50	35.26	101.90	22 1 42	1535.2	-30.31	22.84
110.00	13 1 13	3859.18	5.20	143.54	27.93	56.17	14 5 33	3259.2	.72	137.31

DIFFERENTIAL CORRECTIONS
TDE-1.0728 TRA 4.7245 TC3-9.1672 BAU 1.8730
RDE .4839 RRA -.2001 RC3 .8284 FAU .36962
FDE-3.7640 FRA12.1774 FC-21.0235 BSP 35244
BDE 1.1769 BRA 4.7288 BC3 9.2046 FSP 7670

MID-COURSE EXECUTION ACCURACY
SGT10309.1 SGR 1008.6 SG3 2201.6
RRT -.7667 RRF -.7890 RTF .9962
SGB10358.3 R23 .0345 R13 -.9964
SG110338.1 SG2 645.7 THA 175.69

ORBIT DETERMINATION ACCURACY
ST 2695.3 SR 716.9 SS 2422.9
CRT -.6854 CRS .7876 CST -.9885
LSA 3652.6 MSA 554.3 SSA 17.9
EL1 2741.4 EL2 513.2 ALF 169.29

LAUNCH DATE OCT 24 1964 FLIGHT TIME 364.00 ARRIVAL DATE OCT 23 1965

HELIOCENTRIC CONIC DISTANCE 818.468 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 32.733 GAL -5.77 AZL 88.44 HCA 251.77 SMA 186.21 ECC .22386 INC 1.5575 V1 29.950
RP 213.93 LAP -1.48 LOP 282.38 VP 22.979 GAP -9.73 AZP 90.49 TAL 327.54 TAP 219.31 RCA 144.52 APO 227.89 V2 25.662
RC 294.131 GL 12.98 GP 3.91 ZAL 135.65 ZAP 54.96 ETS 182.17 ZAE 83.80 ETE 179.53 ZAC 86.92 ETC 258.84 CLP 54.87

PLANETOCENTRIC CONIC

C3 15.526 VHL 3.940 DLA 16.73 RAL 174.06 RAD 6567.6 VEL 11.701 PTH 2.06 VHP 3.617 DPA 14.08 RAP 161.18 ECC 1.2555

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 30 3	2704.37	-27.67	74.88	36.88	96.26	19 15 7	2104.4	-26.52	66.40
90.00	11 2 30	4250.91	1.68	174.82	31.09	61.73	12 13 20	3650.9	-2.11	168.19
100.00	20 0 53	2411.44	-28.94	53.15	36.70	97.82	20 4[illegible] 5	1811.4	-27.56	44.62
100.00	12 14 20	4019.08	2.80	157.16	30.47	60.23	13 21 19	3419.1	-1.18	150.63
110.00	21 30 6	2132.30	-32.24	31.28	36.03	102.03	22 5 39	1532.3	-30.25	22.63
110.00	13 1 37	3870.98	5.65	144.16	28.70	56.23	14 6 8	3271.0	1.17	137.93

DIFFERENTIAL CORRECTIONS
TDE-1.1436 TRA 4.9216 TC3-9.2157 BAU 1.9200
RDE .4897 RRA -.1915 RC3 .7966 FAU .35500
FDE-3.7339 FRA11.8725 FC-19.7950 BSP 36096
BDE 1.2440 BRA 4.9254 BC3 9.2501 FSP 7376

MID-COURSE EXECUTION ACCURACY
SGT10552.3 SGR 992.9 SG3 2112.4
RRT -.7556 RRF -.7787 RTF .9962
SGB10598.9 R23 .0352 R13 -.9964
SG110579.1 SG2 648.7 THA 175.92

ORBIT DETERMINATION ACCURACY
ST 2799.7 SR 717.7 SS 2399.5
CRT -.6887 CRS .7889 CST -.9888
LSA 3715.2 MSA 554.4 SSA 17.7
EL1 2844.5 EL2 512.1 ALF 169.65

LAUNCH DATE OCT 24 1964 FLIGHT TIME 366.00 ARRIVAL DATE OCT 25 1965

HELIOCENTRIC CONIC DISTANCE 822.609 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 32.735 GAL -5.87 AZL 88.43 HCA 252.95 SMA 186.25 ECC .22481 INC 1.5710 V1 29.950
RP 213.62 LAP -1.50 LOP 283.57 VP 23.022 GAP -9.91 AZP 90.46 TAL 327.07 TAP 220.02 RCA 144.38 APO 228.13 V2 25.697
RC 295.251 GL 12.96 GP 3.82 ZAL 136.23 ZAP 53.69 ETS 182.24 ZAE 82.26 ETE 179.66 ZAC 86.82 ETC 258.85 CLP 53.60

PLANETOCENTRIC CONIC

C3 15.849 VHL 3.981 DLA 16.47 RAL 174.62 RAD 6567.6 VEL 11.715 PTH 2.06 VHP 3.683 DPA 14.03 RAP 161.06 ECC 1.2608

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 34 49	2699.27	-27.63	74.51	37.68	96.44	19 19 48	2099.3	-26.46	66.04
90.00	11 2 10	4265.33	2.15	175.63	31.87	61.76	12 13 16	3665.3	-1.65	169.00
100.00	20 5 26	2407.05	-28.90	52.83	37.50	97.98	20 45 33	1807.0	-27.50	44.31
100.00	12 14 14	4032.79	3.26	157.91	31.25	60.27	13 21 27	3432.8	-.72	151.39
110.00	21 34 12	2129.32	-32.20	31.06	36.82	102.15	22 9 41	1529.3	-30.19	22.42
110.00	13 1 58	3883.28	6.11	144.81	29.49	56.30	14 6 41	3283.3	1.64	138.57

DIFFERENTIAL CORRECTIONS
TDE-1.2164 TRA 5.1222 TC3-9.2471 BAU 1.9661
RDE .4957 RRA -.1834 RC3 .7660 FAU .34061
FDE-3.7006 FRA11.5709 FC-18.6051 BSP 36944
BDE 1.3135 BRA 5.1255 BC3 9.2788 FSP 7087

MID-COURSE EXECUTION ACCURACY
SGT10787.3 SGR 978.1 SG3 2025.1
RRT -.7445 RRF -.7683 RTF .9962
SGB10831.5 R23 .0359 R13 -.9964
SG110811.9 SG2 651.5 THA 176.12

ORBIT DETERMINATION ACCURACY
ST 2903.7 SR 718.3 SS 2374.8
CRT -.6919 CRS .7904 CST -.9891
LSA 3778.9 MSA 554.2 SSA 17.4
EL1 2947.3 EL2 511.0 ALF 169.98

LAUNCH DATE OCT 24 1964 FLIGHT TIME 368.00 ARRIVAL DATE OCT 27 1965

HELIOCENTRIC CONIC DISTANCE 826.753 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 32.738 GAL -5.97 AZL 88.42 HCA 254.14 SMA 186.31 ECC .22580 INC 1.5844 V1 29.950
RP 213.31 LAP -1.52 LOP 284.76 VP 23.065 GAP -10.08 AZP 90.43 TAL 326.57 TAP 220.72 RCA 144.24 APO 228.37 V2 25.731
RC 296.356 GL 12.93 GP 3.73 ZAL 136.83 ZAP 52.46 ETS 182.30 ZAE 80.76 ETE 179.78 ZAC 86.73 ETC 258.85 CLP 52.37

PLANETOCENTRIC CONIC

C3 16.192 VHL 4.024 DLA 16.19 RAL 175.18 RAD 6567.6 VEL 11.729 PTH 2.07 VHP 3.751 DPA 13.97 RAP 160.99 ECC 1.2665

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 39 41	2694.02	-27.59	74.13	38.50	96.62	19 24 35	2094.0	-26.39	65.67
90.00	11 1 48	4280.29	2.63	176.46	32.68	61.80	12 13 8	3680.3	-1.16	169.83
100.00	20 10 4	2402.52	-28.86	52.50	38.32	98.15	20 50 7	1802.5	-27.43	43.99
100.00	12 14 5	4047.03	3.74	158.69	32.06	60.32	13 21 32	3447.0	-.23	152.17
110.00	21 38 23	2126.24	-32.15	30.83	37.63	102.28	22 13 49	1526.2	-30.13	22.20
110.00	13 2 17	3896.08	6.60	145.48	30.29	56.38	14 7 13	3296.1	2.13	139.24

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.2923 TRA 5.3259 TC3-9.2616 BAU 2.0112 SGT11013.6 SGR 964.2 SG3 1939.4 ST 3008.0 SR 719.0 SS 2349.8
RDE .5018 RRA -.1756 RC3 .7364 FAU .32646 RRT -.7334 RRF -.7581 RTF .9962 CRT -.6953 CRS .7922 CST -.9894
FDE-3.6670 FRA11.2708 FC-17.4552 BSP 37752 SGB11055.8 R23 .0366 R13 -.9963 LSA 3844.4 MSA 553.7 SSA 17.2
BDE 1.3863 BRA 5.3288 BC3 9.2908 FSP 6803 SG111036.4 SG2 654.0 THA 176.31 EL1 3050.5 EL2 509.6 ALF 170.29

LAUNCH DATE OCT 24 1964 FLIGHT TIME 370.00 ARRIVAL DATE OCT 29 1965

HELIOCENTRIC CONIC DISTANCE 830.898 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 32.742 GAL -6.08 AZL 88.40 HCA 255.34 SMA 186.36 ECC .22684 INC 1.5976 V1 29.950
RP 213.01 LAP -1.55 LOP 285.95 VP 23.107 GAP -10.25 AZP 90.40 TAL 326.07 TAP 221.40 RCA 144.09 APO 228.63 V2 25.765
RC 297.448 GL 12.89 GP 3.65 ZAL 137.44 ZAP 51.27 ETS 182.36 ZAE 79.29 ETE 179.89 ZAC 86.65 ETC 258.85 CLP 51.17

PLANETOCENTRIC CONIC

C3 16.554 VHL 4.069 DLA 15.91 RAL 175.75 RAD 6567.7 VEL 11.745 PTH 2.07 VHP 3.821 DPA 13.89 RAP 160.96 ECC 1.2724

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 44 39	2688.64	-27.55	73.74	39.34	96.81	19 29 28	2088.6	-26.32	65.29
90.00	11 1 22	4295.78	3.13	177.33	33.50	61.84	12 12 58	3695.8	-.66	170.70
100.00	20 14 49	2397.87	-28.81	52.16	39.15	98.32	20 54 47	1797.9	-27.36	43.66
100.00	12 13 53	4061.78	4.24	159.51	32.88	60.38	13 21 35	3461.8	.27	152.98
110.00	21 42 39	2123.07	-32.11	30.60	38.45	102.41	22 18 2	1523.1	-30.07	21.98
110.00	13 2 33	3909.35	7.10	146.18	31.12	56.47	14 7 42	3309.4	2.64	139.93

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.3700 TRA 5.5339 TC3-9.2599 BAU 2.0553 SGT11232.2 SGR 951.1 SG3 1855.7 ST 3111.7 SR 719.6 SS 2323.6
RDE .5081 RRA -.1683 RC3 .7079 FAU .31255 RRT -.7224 RRF -.7480 RTF .9961 CRT -.6985 CRS .7941 CST -.9896
FDE-3.6306 FRA10.9748 FC-16.3458 BSP 38555 SGB11272.4 R23 .0375 R13 -.9963 LSA 3910.7 MSA 553.2 SSA 17.0
BDE 1.4612 BRA 5.5365 BC3 9.2869 FSP 6530 SG111253.2 SG2 656.4 THA 176.49 EL1 3153.2 EL2 508.1 ALF 170.58

LAUNCH DATE OCT 24 1964 FLIGHT TIME 372.00 ARRIVAL DATE OCT 31 1965

HELIOCENTRIC CONIC DISTANCE 835.045 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 32.745 GAL -6.20 AZL 88.39 HCA 256.53 SMA 186.42 ECC .22793 INC 1.6107 V1 29.950
RP 212.72 LAP -1.57 LOP 287.15 VP 23.149 GAP -10.42 AZP 90.38 TAL 325.54 TAP 222.08 RCA 143.93 APO 228.91 V2 25.798
RC 298.526 GL 12.85 GP 3.56 ZAL 138.05 ZAP 50.11 ETS 182.41 ZAE 77.86 ETE 180.00 ZAC 86.57 ETC 258.84 CLP 50.02

PLANETOCENTRIC CONIC

C3 16.937 VHL 4.115 DLA 15.61 RAL 176.33 RAD 6567.7 VEL 11.761 PTH 2.08 VHP 3.893 DPA 13.80 RAP 160.96 ECC 1.2787

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 49 44	2683.16	-27.51	73.35	40.19	97.01	19 34 27	2083.2	-26.25	64.91
90.00	11 0 54	4311.77	3.64	178.22	34.34	61.90	12 12 46	3711.8	-.15	171.59
100.00	20 19 40	2393.13	-28.77	51.82	40.00	98.50	20 59 33	1793.1	-27.29	43.33
100.00	12 13 39	4077.03	4.75	160.35	33.73	60.45	13 21 36	3477.0	.78	153.81
110.00	21 47 1	2119.83	-32.06	30.36	39.29	102.55	22 22 20	1519.8	-30.00	21.75
110.00	13 2 47	3923.10	7.61	146.91	31.97	56.57	14 8 10	3323.1	3.16	140.65

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.4510 TRA 5.7448 TC3-9.2429 BAU 2.0986 SGT11442.1 SGR 938.8 SG3 1773.9 ST 3215.5 SR 720.1 SS 2296.2
RDE .5146 RRA -.1613 RC3 .6804 FAU .29891 RRT -.7117 RRF -.7381 RTF .9960 CRT -.7020 CRS .7961 CST -.9898
FDE-3.5920 FRA10.6804 FC-15.2788 BSP 39325 SGB11480.5 R23 .0383 R13 -.9962 LSA 3978.1 MSA 552.0 SSA 16.8
BDE 1.5395 BRA 5.7471 BC3 9.2679 FSP 6260 SG111461.6 SG2 658.4 THA 176.65 EL1 3256.0 EL2 506.4 ALF 170.84

LAUNCH DATE OCT 24 1964 FLIGHT TIME 374.00 ARRIVAL DATE NOV 2 1965

HELIOCENTRIC CONIC DISTANCE 839.193 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 32.748 GAL -6.31 AZL 88.38 HCA 257.73 SMA 186.47 ECC .22908 INC 1.6237 V1 29.950
RP 212.43 LAP -1.59 LOP 288.35 VP 23.190 GAP -10.59 AZP 90.35 TAL 325.00 TAP 222.74 RCA 143.76 APO 229.19 V2 25.831
RC 299.592 GL 12.80 GP 3.49 ZAL 138.68 ZAP 48.99 ETS 182.46 ZAE 76.46 ETE 180.10 ZAC 86.51 ETC 258.83 CLP 48.89

PLANETOCENTRIC CONIC

C3 17.342 VHL 4.164 DLA 15.31 RAL 176.91 RAD 6567.7 VEL 11.778 PTH 2.08 VHP 3.968 DPA 13.70 RAP 161.00 ECC 1.2854

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 54 53	2677.59	-27.46	72.95	41.06	97.20	19 39 31	2077.6	-26.18	64.51
90.00	11 0 23	4328.26	4.17	179.15	35.21	61.97	12 12 31	3728.3	.39	172.51
100.00	20 24 35	2388.32	-28.72	51.47	40.86	98.68	21 4 24	1788.3	-27.22	42.99
100.00	12 13 22	4092.77	5.28	161.22	34.59	60.54	13 21 35	3492.8	1.32	154.68
110.00	21 51 27	2116.54	-32.01	30.11	40.14	102.68	22 26 43	1516.5	-29.94	21.51
110.00	13 3 0	3937.31	8.14	147.67	32.84	56.69	14 8 37	3337.3	3.70	141.40

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.5339 TRA 5.9616 TC3-9.2115 BAU 2.1411 SGT11646.0 SGR 927.4 SG3 1694.6 ST 3318.9 SR 720.5 SS 2268.1
RDE .5213 RRA -.1549 RC3 .6541 FAU .28563 RRT -.7011 RRF -.7284 RTF .9959 CRT -.7053 CRS .7982 CST -.9900
FDE-3.5512 FRA10.3930 FC-14.2584 BSP 40095 SGB11682.9 R23 .0392 R13 -.9961 LSA 4046.6 MSA 550.9 SSA 16.6
BDE 1.6201 BRA 5.9636 BC3 9.2347 FSP 6002 SG111664.2 SG2 660.2 THA 176.79 EL1 3358.5 EL2 504.7 ALF 171.09

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LAUNCH DATE OCT 24 1964 FLIGHT TIME 376.00 ARRIVAL DATE NOV 4 1965

HELIOCENTRIC CONIC DISTANCE 843.342 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 32.752 GAL -6.43 AZL 88.36 HCA 258.94 SMA 186.54 ECC .23028 INC 1.6568 V1 29.950
RP 212.15 LAP -1.61 LOP 289.55 VP 23.231 GAP -10.76 AZP 90.31 TAL 324.45 TAP 223.38 RCA 143.58 APO 229.49 V2 25.863
RC 300.645 GL 12.74 GP 3.41 ZAL 139.32 ZAP 47.90 ETS 182.51 ZAE 75.09 ETE 180.20 ZAC 86.45 ETC 258.81 CLP 47.81

PLANETOCENTRIC CONIC

C3 17.771 VHL 4.216 DLA 14.99 RAL 177.50 RAD 6567.7 VEL 11.796 PTH 2.09 VHP 4.044 DPA 13.58 RAP 161.08 ECC 1.2925

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 0 8	2671.96	-27.41	72.54	41.95	97.40	19 44 40	2072.0	-26.10	64.12
90.00	10 59 49	4345.23	4.71	180.10	36.09	62.05	12 12 15	3745.2	.93	173.45
100.00	20 29 36	2383.44	-28.67	51.12	41.74	98.85	21 9 19	1783.4	-27.15	42.64
100.00	12 13 3	4108.97	5.82	162.12	35.48	60.63	13 21 32	3509.0	1.87	155.57
110.00	21 55 58	2113.22	-31.96	29.86	41.01	102.82	22 31 11	1513.2	-29.87	21.28
110.00	13 3 10	3951.97	8.69	148.45	33.72	56.81	14 9 2	3352.0	4.26	142.16

DIFFERENTIAL CORRECTIONS
TDE-1.6195 TRA 6.1826 TC3-9.1642 BAU 2.1824
RDE .5282 RRA -.1489 RC3 .6287 FAU .27259
FDE-3.5091 FRA10.1084 FC-13.2791 BSP 40839
BDE 1.7034 BRA 6.1844 BC3 9.1857 FSP 5749

MID-COURSE EXECUTION ACCURACY
SGT11841.3 SGR 916.7 SG3 1617.3
RRT -.6908 RRF -.7191 RTF .9958
SGB11876.8 R23 .0401 R13 -.9960
SG111858.3 SG2 661.8 THA 176.93

ORBIT DETERMINATION ACCURACY
ST 3421.9 SR 720.8 SS 2239.1
CRT -.7086 CRS .8004 CST -.9901
LSA 4115.8 MSA 549.6 SSA 16.4
EL1 3460.6 EL2 502.9 ALF 171.33

LAUNCH DATE OCT 24 1964 FLIGHT TIME 378.00 ARRIVAL DATE NOV 6 1965

HELIOCENTRIC CONIC DISTANCE 847.491 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 32.755 GAL -6.56 AZL 88.35 HCA 260.14 SMA 186.60 ECC .23153 INC 1.6496 V1 29.950
RP 211.87 LAP -1.63 LOP 290.76 VP 23.271 GAP -10.93 AZP 90.28 TAL 323.88 TAP 224.02 RCA 143.39 APO 229.80 V2 25.895
RC 301.687 GL 12.68 GP 3.33 ZAL 139.97 ZAP 46.84 ETS 182.55 ZAE 73.76 ETE 180.29 ZAC 86.41 ETC 258.79 CLP 46.75

PLANETOCENTRIC CONIC

C3 18.225 VHL 4.269 DLA 14.67 RAL 178.09 RAD 6567.7 VEL 11.816 PTH 2.09 VHP 4.123 DPA 13.45 RAP 161.20 ECC 1.2999

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 5 27	2666.28	-27.36	72.13	42.85	97.60	19 49 53	2066.3	-26.03	63.72
90.00	10 59 14	4362.66	5.27	181.08	36.99	62.14	12 11 57	3762.7	1.50	174.43
100.00	20 34 41	2378.53	-28.62	50.76	42.64	99.04	21 14 19	1778.5	-27.07	42.30
100.00	12 12 42	4125.64	6.38	163.04	36.38	60.73	13 21 27	3525.6	2.43	156.48
110.00	22 0 32	2109.87	-31.91	29.62	41.90	102.96	22 35 42	1509.9	-29.80	21.04
110.00	13 3 19	3967.07	9.25	149.26	34.63	56.95	14 9 26	3367.1	4.84	142.96

DIFFERENTIAL CORRECTIONS
TDE-1.7083 TRA 6.4079 TC3-9.1059 BAU 2.2236
RDE .5353 RRA -.1433 RC3 .6045 FAU .25999
FDE-3.4656 FRA 9.8272 FC-12.3502 BSP 41567
BDE 1.7902 BRA 6.4095 BC3 9.1260 FSP 5504

MID-COURSE EXECUTION ACCURACY
SGT12030.5 SGR 906.7 SG3 1542.4
RRT -.6809 RRF -.7101 RTF .9957
SGB12064.6 R23 .0411 R13 -.9958
SG112046.4 SG2 663.2 THA 177.05

ORBIT DETERMINATION ACCURACY
ST 3524.7 SR 721.1 SS 2209.2
CRT -.7121 CRS .8029 CST -.9902
LSA 4186.1 MSA 548.0 SSA 16.3
EL1 3562.7 EL2 500.9 ALF 171.54

LAUNCH DATE OCT 24 1964 FLIGHT TIME 380.00 ARRIVAL DATE NOV 8 1965

HELIOCENTRIC CONIC DISTANCE 851.640 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 32.759 GAL -6.69 AZL 88.34 HCA 261.35 SMA 186.66 ECC .23285 INC 1.6625 V1 29.950
RP 211.60 LAP -1.64 LOP 291.97 VP 23.311 GAP -11.10 AZP 90.25 TAL 323.29 TAP 224.64 RCA 143.20 APO 230.13 V2 25.926
RC 302.717 GL 12.61 GP 3.26 ZAL 140.63 ZAP 45.82 ETS 182.59 ZAE 72.46 ETE 180.38 ZAC 86.37 ETC 258.76 CLP 45.73

PLANETOCENTRIC CONIC

C3 18.705 VHL 4.325 DLA 14.33 RAL 178.69 RAD 6567.8 VEL 11.836 PTH 2.10 VHP 4.204 DPA 13.32 RAP 161.34 ECC 1.3078

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 10 50	2660.59	-27.31	71.73	43.77	97.80	19 55 11	2060.6	-25.95	63.32
90.00	10 58 36	4380.54	5.83	182.08	37.92	62.24	12 11 37	3780.5	2.07	175.42
100.00	20 39 50	2373.60	-28.56	50.40	43.56	99.22	21 19 23	1773.6	-26.99	41.95
100.00	12 12 18	4142.75	6.95	164.00	37.31	60.85	13 21 21	3542.8	3.01	157.42
110.00	22 5 11	2106.52	-31.86	29.37	42.80	103.10	22 40 18	1506.5	-29.73	20.81
110.00	13 3 26	3982.60	9.83	150.10	35.56	57.09	14 9 49	3382.6	5.42	143.77

DIFFERENTIAL CORRECTIONS
TDE-1.7991 TRA 6.6390 TC3-9.0339 BAU 2.2638
RDE .5426 RRA -.1382 RC3 .5812 FAU .24764
FDE-3.4193 FRA 9.5505 FC-11.4619 BSP 42283
BDE 1.8791 BRA 6.6404 BC3 9.0526 FSP 5267

MID-COURSE EXECUTION ACCURACY
SGT12212.6 SGR 897.3 SG3 1469.7
RRT -.6713 RRF -.7015 RTF .9955
SGB12245.5 R23 .0421 R13 -.9957
SG112227.4 SG2 664.3 THA 177.17

ORBIT DETERMINATION ACCURACY
ST 3626.6 SR 721.3 SS 2177.9
CRT -.7154 CRS .8053 CST -.9903
LSA 4256.4 MSA 546.3 SSA 16.1
EL1 3663.8 EL2 498.8 ALF 171.75

LAUNCH DATE OCT 24 1964 FLIGHT TIME 382.00 ARRIVAL DATE NOV 10 1965

HELIOCENTRIC CONIC DISTANCE 855.788 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 32.763 GAL -6.83 AZL 88.32 HCA 262.56 SMA 186.73 ECC .23423 INC 1.6752 V1 29.950
RP 211.33 LAP -1.66 LOP 293.18 VP 23.350 GAP -11.27 AZP 90.22 TAL 322.69 TAP 225.25 RCA 142.99 APO 230.47 V2 25.956
RC 303.736 GL 12.53 GP 3.19 ZAL 141.29 ZAP 44.83 ETS 182.62 ZAE 71.18 ETE 180.46 ZAC 86.35 ETC 258.73 CLP 44.74

PLANETOCENTRIC CONIC

C3 19.212 VHL 4.383 DLA 13.99 RAL 179.29 RAD 6567.8 VEL 11.857 PTH 2.10 VHP 4.287 DPA 13.17 RAP 161.53 ECC 1.3162

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 16 17	2654.89	-27.26	71.32	44.70	97.99	20 0 32	2054.9	-25.87	62.92
90.00	10 57 57	4398.85	6.41	183.12	38.87	62.36	12 11 16	3798.9	2.66	176.45
100.00	20 45 2	2368.68	-28.51	50.05	44.49	99.40	21 24 31	1768.7	-26.92	41.61
100.00	12 11 53	4160.30	7.53	164.97	38.26	60.99	13 21 14	3560.3	3.60	158.39
110.00	22 9 53	2103.18	-31.81	29.12	43.72	103.24	22 44 56	1503.2	-29.66	20.57
110.00	13 3 32	3998.56	10.42	150.96	36.51	57.26	14 10 10	3398.6	6.03	144.61

DIFFERENTIAL CORRECTIONS
TDE-1.8935 TRA 6.8746 TC3-8.9506 BAU 2.3035
RDE .5502 RRA -.1335 RC3 .5590 FAU .23569
FDE-3.3726 FRA 9.2774 FC-10.6203 BSP 42977
BDE 1.9718 BRA 6.8759 BC3 8.9680 FSP 5037

MID-COURSE EXECUTION ACCURACY
SGT12387.7 SGR 888.7 SG3 1399.3
RRT -.6623 RRF -.6934 RTF .9954
SGB12419.6 R23 .0432 R13 -.9955
SG112401.7 SG2 665.1 THA 177.27

ORBIT DETERMINATION ACCURACY
ST 3728.3 SR 721.4 SS 2146.0
CRT -.7189 CRS .8080 CST -.9904
LSA 4327.7 MSA 544.3 SSA 16.0
EL1 3764.8 EL2 496.6 ALF 171.94

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LAUNCH DATE OCT 24 1964 FLIGHT TIME 384.00 ARRIVAL DATE NOV 12 1965

HELIOCENTRIC CONIC DISTANCE 859.935 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 32.767 GAL -6.97 AZL 88.31 HCA 263.78 SMA 186.80 ECC .23567 INC 1.6880 V1 29.950
RP 211.08 LAP -1.68 LOP 294.39 VP 23.389 GAP -11.44 AZP 90.18 TAL 322.07 TAP 225.85 RCA 142.78 APO 230.82 V2 25.986
RC 304.746 GL 12.45 GP 3.13 ZAL 141.97 ZAP 43.86 ETS 182.66 ZAE 69.94 ETE 180.54 ZAC 86.33 ETC 258.69 CLP 43.78

PLANETOCENTRIC CONIC

C3 19.749 VHL 4.444 DLA 13.64 RAL 179.89 RAD 6567.8 VEL 11.880 PTH 2.11 VHP 4.372 DPA 13.01 RAP 161.74 ECC 1.3250

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 21 48	2649.21	-27.20	70.91	45.65	98.19	20 5 57	2049.2	-25.79	62.53
90.00	10 57 16	4417.59	7.00	184.18	39.83	62.49	12 10 54	3817.6	3.26	177.49
100.00	20 50 18	2363.77	-28.45	49.69	45.43	99.57	21 29 42	1763.8	-26.84	41.26
100.00	12 11 27	4178.27	8.12	165.98	39.23	61.13	13 21 5	3578.3	4.21	159.38
110.00	22 14 39	2099.87	-31.76	28.88	44.66	103.37	22 49 39	1499.9	-29.59	20.34
110.00	13 3 36	4014.93	11.02	151.84	37.48	57.44	14 10 31	3414.9	6.65	145.48

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.9921 TRA 7.1154 TC3-8.8590 BAU 2.3434 SGT12558.1 SGR 880.7 SG3 1331.5 ST 3830.4 SR 721.5 SS 2113.8
RDE .5581 RRA -.1293 RC3 .5378 FAU .22418 RRT -.6538 RRF -.6860 RTF .9952 CRT -.7226 CRS .8109 CST -.9904
FDE-3.3263 FRA 9.0075 FC3-9.8273 BSP 43636 SGB12589.0 R23 .0443 R13 -.9953 LSA 4400.8 MSA 542.1 SSA 15.8
BDE 2.0688 BRA 7.1166 BC3 8.8753 FSP 4810 SG112571.4 SG2 665.7 THA 177.37 EL1 3866.4 EL2 494.1 ALF 172.12

LAUNCH DATE OCT 24 1964 FLIGHT TIME 386.00 ARRIVAL DATE NOV 14 1965

HELIOCENTRIC CONIC DISTANCE 864.080 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 32.771 GAL -7.11 AZL 88.30 HCA 265.00 SMA 186.87 ECC .23717 INC 1.7007 V1 29.950
RP 210.82 LAP -1.69 LOP 295.61 VP 23.427 GAP -11.61 AZP 90.15 TAL 321.43 TAP 226.43 RCA 142.55 APO 231.19 V2 26.015
RC 305.746 GL 12.36 GP 3.06 ZAL 142.65 ZAP 42.93 ETS 182.69 ZAE 68.72 ETE 180.62 ZAC 86.32 ETC 258.65 CLP 42.84

PLANETOCENTRIC CONIC

C3 20.317 VHL 4.507 DLA 13.28 RAL 180.50 RAD 6567.8 VEL 11.904 PTH 2.12 VHP 4.460 DPA 12.83 RAP 161.98 ECC 1.3344

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 27 21	2643.57	-27.15	70.51	46.62	98.39	20 11 25	2043.6	-25.71	62.13
90.00	10 56 34	4436.74	7.60	185.26	40.82	62.64	12 10 31	3836.7	3.88	178.57
100.00	20 55 38	2358.89	-28.40	49.34	46.39	99.75	21 34 57	1758.9	-26.76	40.92
100.00	12 10 59	4196.65	8.72	167.01	40.22	61.30	13 20 55	3596.6	4.82	160.39
110.00	22 19 27	2096.60	-31.70	28.64	45.61	103.50	22 54 24	1496.6	-29.52	20.11
110.00	13 3 39	4031.70	11.63	152.76	38.48	57.63	14 10 50	3431.7	7.28	146.37

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-2.0925 TRA 7.3623 TC3-8.7559 BAU 2.3825 SGT12721.6 SGR 873.2 SG3 1265.8 ST 3930.9 SR 721.5 SS 2080.0
RDE .5662 RRA -.1256 RC3 .5174 FAU .21297 RRT -.6458 RRF -.6791 RTF .9950 CRT -.7262 CRS .8138 CST -.9904
FDE-3.2769 FRA 8.7415 FC3-9.0750 BSP 44292 SGB12751.5 R23 .0455 R13 -.9951 LSA 4472.9 MSA 539.8 SSA 15.7
BDE 2.1677 BRA 7.3634 BC3 8.7712 FSP 4593 SG112734.1 SG2 666.1 THA 177.46 EL1 3966.2 EL2 491.7 ALF 172.29

LAUNCH DATE OCT 24 1964 FLIGHT TIME 388.00 ARRIVAL DATE NOV 16 1965

HELIOCENTRIC CONIC DISTANCE 868.222 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 32.775 GAL -7.26 AZL 88.29 HCA 266.22 SMA 186.94 ECC .23874 INC 1.7134 V1 29.950
RP 210.58 LAP -1.71 LOP 296.84 VP 23.464 GAP -11.78 AZP 90.11 TAL 320.78 TAP 227.00 RCA 142.31 APO 231.57 V2 26.043
RC 306.737 GL 12.27 GP 3.00 ZAL 143.34 ZAP 42.03 ETS 182.71 ZAE 67.53 ETE 180.69 ZAC 86.31 ETC 258.60 CLP 41.94

PLANETOCENTRIC CONIC

C3 20.918 VHL 4.574 DLA 12.91 RAL 181.11 RAD 6567.8 VEL 11.929 PTH 2.12 VHP 4.549 DPA 12.65 RAP 162.26 ECC 1.3443

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 32 58	2637.97	-27.09	70.11	47.60	98.58	20 16 56	2038.0	-25.62	61.75
90.00	10 55 50	4456.29	8.21	186.38	41.83	62.81	12 10 6	3856.3	4.50	179.66
100.00	21 1 0	2354.07	-28.34	48.99	47.37	99.93	21 40 14	1754.1	-26.68	40.59
100.00	12 10 29	4215.42	9.33	168.07	41.23	61.47	13 20 45	3615.4	5.45	161.43
110.00	22 24 18	2093.39	-31.65	28.40	46.57	103.64	22 59 12	1493.4	-29.46	19.88
110.00	13 3 40	4048.87	12.26	153.69	39.49	57.84	14 11 9	3448.9	7.92	147.28

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-2.1963 TRA 7.6152 TC3-8.6446 BAU 2.4215 SGT12879.9 SGR 866.2 SG3 1202.4 ST 4030.9 SR 721.5 SS 2045.3
RDE .5746 RRA -.1224 RC3 .4980 FAU .20216 RRT -.6383 RRF -.6727 RTF .9947 CRT -.7298 CRS .8169 CST -.9904
FDE-3.2265 FRA 8.4791 FC3-8.3665 BSP 44918 SGB12909.0 R23 .0468 R13 -.9948 LSA 4545.6 MSA 537.3 SSA 15.6
BDE 2.2702 BRA 7.6162 BC3 8.6589 FSP 4381 SG112891.8 SG2 666.2 THA 177.54 EL1 4065.6 EL2 489.1 ALF 172.45

LAUNCH DATE OCT 24 1964 FLIGHT TIME 390.00 ARRIVAL DATE NOV 18 1965

HELIOCENTRIC CONIC DISTANCE 872.361 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 32.780 GAL -7.42 AZL 88.27 HCA 267.44 SMA 187.02 ECC .24039 INC 1.7261 V1 29.950
RP 210.34 LAP -1.72 LOP 298.06 VP 23.501 GAP -11.95 AZP 90.08 TAL 320.11 TAP 227.55 RCA 142.06 APO 231.97 V2 26.071
RC 307.719 GL 12.18 GP 2.94 ZAL 144.04 ZAP 41.15 ETS 182.74 ZAE 66.37 ETE 180.76 ZAC 86.32 ETC 258.55 CLP 41.06

PLANETOCENTRIC CONIC

C3 21.554 VHL 4.643 DLA 12.54 RAL 181.73 RAD 6567.9 VEL 11.955 PTH 2.13 VHP 4.641 DPA 12.46 RAP 162.56 ECC 1.3547

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 38 37	2632.45	-27.03	69.71	48.60	98.77	20 22 29	2032.4	-25.54	61.36
90.00	10 55 5	4476.21	8.83	187.52	42.87	62.99	12 9 42	3876.2	5.14	180.78
100.00	21 6 24	2349.31	-28.28	48.65	48.37	100.10	21 45 34	1749.3	-26.60	40.26
100.00	12 9 59	4234.58	9.96	169.15	42.27	61.67	13 20 33	3634.6	6.09	162.49
110.00	22 29 12	2090.25	-31.60	28.17	47.56	103.76	23 4 2	1490.2	-29.39	19.66
110.00	13 3 41	4066.41	12.89	154.66	40.53	58.06	14 11 27	3466.4	8.58	148.22

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-2.3045 TRA 7.8743 TC3-8.5247 BAU 2.4604 SGT13032.7 SGR 859.7 SG3 1141.2 ST 4130.9 SR 721.4 SS 2010.0
RDE .5833 RRA -.1196 RC3 .4794 FAU .19168 RRT -.6315 RRF -.6671 RTF .9945 CRT -.7335 CRS .8201 CST -.9904
FDE-3.1757 FRA 8.2200 FC3-7.6991 BSP 45537 SGB13061.0 R23 .0482 R13 -.9946 LSA 4619.4 MSA 534.6 SSA 15.5
BDE 2.3772 BRA 7.8752 BC3 8.5382 FSP 4175 SG113044.0 SG2 666.0 THA 177.61 EL1 4165.1 EL2 486.3 ALF 172.60

LAUNCH DATE OCT 24 1964 FLIGHT TIME 392.00 ARRIVAL DATE NOV 20 1965

HELIOCENTRIC CONIC DISTANCE 876.496 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 32.784 GAL -7.58 AZL 88.26 HCA 268.67 SMA 187.09 ECC .24210 INC 1.7388 V1 29.950
RP 210.10 LAP -1.74 LOP 299.29 VP 23.537 GAP -12.13 AZP 90.04 TAL 319.42 TAP 228.09 RCA 141.80 APO 232.39 V2 26.098
RC 308.691 GL 12.07 GP 2.88 ZAL 144.74 ZAP 40.30 ETS 182.76 ZAE 65.23 ETE 180.83 ZAC 86.33 ETC 258.49 CLP 40.21

PLANETOCENTRIC CONIC

C3 22.227 VHL 4.715 DLA 12.16 RAL 182.34 RAD 6567.9 VEL 11.984 PTH 2.14 VHP 4.736 DPA 12.26 RAP 162.89 ECC 1.3658

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 44 18	2627.01	-26.98	69.32	49.61	98.96	20 28 5	2027.0	-25.46	60.98
90.00	10 54 19	4496.52	9.46	188.68	43.92	63.18	12 9 16	3896.5	5.78	181.92
100.00	21 11 51	2344.64	-28.23	48.32	49.38	100.27	21 50 56	1744.6	-26.52	39.93
100.00	12 9 27	4254.16	10.59	170.26	43.33	61.88	13 20 21	3654.2	6.74	163.58
110.00	22 34 8	2087.19	-31.55	27.95	48.56	103.89	23 8 55	1487.2	-29.32	19.45
110.00	13 3 40	4084.33	13.53	155.65	41.60	58.31	14 11 45	3484.3	9.24	149.17

DIFFERENTIAL CORRECTIONS
TDE-2.4161 TRA 8.1390 TC3-8.3983 BAU 2.4994
RDE .5923 RRA -.1174 RC3 .4617 FAU .18160
FDE-3.1237 FRA 7.9631 FC3-7.0733 BSP 46120
BDE 2.4877 BRA 8.1398 BC3 8.4110 FSP 3975

MID-COURSE EXECUTION ACCURACY
SGT13179.9 SGR 853.7 SG3 1082.2
RRT -.6254 RRF -.6621 RTF .9942
SGB13207.5 R23 .0496 R13 -.9943
SG113190.7 SG2 665.6 THA 177.67

ORBIT DETERMINATION ACCURACY
ST 4230.0 SR 721.2 SS 1973.7
CRT -.7373 CRS .8235 CST -.9904
LSA 4693.1 MSA 531.7 SSA 15.3
EL1 4263.7 EL2 483.3 ALF 172.74

LAUNCH DATE OCT 24 1964 FLIGHT TIME 394.00 ARRIVAL DATE NOV 22 1965

HELIOCENTRIC CONIC DISTANCE 880.626 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 32.789 GAL -7.74 AZL 88.25 HCA 269.90 SMA 187.17 ECC .24389 INC 1.7515 V1 29.950
RP 209.88 LAP -1.75 LOP 300.52 VP 23.572 GAP -12.31 AZP 90.00 TAL 318.72 TAP 228.62 RCA 141.52 APO 232.82 V2 26.124
RC 309.654 GL 11.97 GP 2.82 ZAL 145.45 ZAP 39.47 ETS 182.78 ZAE 64.11 ETE 180.89 ZAC 86.36 ETC 258.43 CLP 39.39

PLANETOCENTRIC CONIC

C3 22.940 VHL 4.790 DLA 11.77 RAL 182.96 RAD 6567.9 VEL 12.013 PTH 2.14 VHP 4.832 DPA 12.05 RAP 163.25 ECC 1.3775

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 50 1	2621.67	-26.92	68.94	50.65	99.14	20 33 43	2021.7	-25.38	60.61
90.00	10 53 33	4517.18	10.09	189.87	45.00	63.40	12 8 50	3917.2	6.44	183.09
100.00	21 17 20	2340.06	-28.17	47.99	50.40	100.43	21 56 20	1740.1	-26.44	39.61
100.00	12 8 55	4274.03	11.22	171.40	44.41	62.11	13 20 9	3674.0	7.40	164.69
110.00	22 39 5	2084.23	-31.50	27.73	49.57	104.01	23 13 50	1484.2	-29.26	19.24
110.00	13 3 39	4102.62	14.18	156.66	42.68	58.57	14 12 1	3502.6	9.92	150.16

DIFFERENTIAL CORRECTIONS
TDE-2.5316 TRA 8.4109 TC3-8.2661 BAU 2.5387
RDE .6016 RRA -.1156 RC3 .4448 FAU .17188
FDE-3.0710 FRA 7.7098 FC3-6.4868 BSP 46667
BDE 2.6021 BRA 8.4117 BC3 8.2780 FSP 3780

MID-COURSE EXECUTION ACCURACY
SGT13323.2 SGR 848.1 SG3 1025.5
RRT -.6199 RRF -.6578 RTF .9939
SGB13350.1 R23 .0512 R13 -.9940
SG113333.6 SG2 665.0 THA 177.73

ORBIT DETERMINATION ACCURACY
ST 4328.5 SR 721.0 SS 1936.7
CRT -.7412 CRS .8270 CST -.9903
LSA 4767.2 MSA 528.7 SSA 15.2
EL1 4361.7 EL2 480.3 ALF 172.87

LAUNCH DATE OCT 24 1964 FLIGHT TIME 396.00 ARRIVAL DATE NOV 24 1965

HELIOCENTRIC CONIC DISTANCE 884.751 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 32.793 GAL -7.92 AZL 88.24 HCA 271.13 SMA 187.25 ECC .24576 INC 1.7642 V1 29.950
RP 209.66 LAP -1.76 LOP 301.75 VP 23.607 GAP -12.49 AZP 89.97 TAL 318.00 TAP 229.13 RCA 141.23 APO 233.27 V2 26.149
RC 310.607 GL 11.86 GP 2.77 ZAL 146.16 ZAP 38.67 ETS 182.80 ZAE 63.02 ETE 180.95 ZAC 86.38 ETC 258.37 CLP 38.59

PLANETOCENTRIC CONIC

C3 23.694 VHL 4.868 DLA 11.38 RAL 183.58 RAD 6568.0 VEL 12.045 PTH 2.15 VHP 4.931 DPA 11.83 RAP 163.64 ECC 1.3899

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 55 46	2616.45	-26.86	68.57	51.69	99.32	20 39 22	2016.4	-25.30	60.25
90.00	10 52 45	4538.19	10.73	191.08	46.11	63.64	12 8 23	3938.2	7.10	184.28
100.00	21 22 50	2335.59	-28.12	47.67	51.44	100.59	22 1 46	1735.6	-26.37	39.30
100.00	12 8 21	4294.28	11.86	172.56	45.52	62.36	13 19 56	3694.3	8.07	165.82
110.00	22 44 5	2081.38	-31.46	27.52	50.60	104.12	23 18 46	1481.4	-29.20	19.04
110.00	13 3 36	4121.25	14.84	157.71	43.79	58.85	14 12 18	3521.3	10.61	151.16

DIFFERENTIAL CORRECTIONS
TDE-2.6513 TRA 8.6893 TC3-8.1281 BAU 2.5782
RDE .6112 RRA -.1144 RC3 .4286 FAU .16249
FDE-3.0173 FRA 7.4585 FC3-5.9373 BSP 47199
BDE 2.7208 BRA 8.6900 BC3 8.1394 FSP 3591

MID-COURSE EXECUTION ACCURACY
SGT13461.2 SGR 842.9 SG3 970.7
RRT -.6151 RRF -.6543 RTF .9935
SGB13487.6 R23 .0529 R13 -.9936
SG113471.2 SG2 664.1 THA 177.79

ORBIT DETERMINATION ACCURACY
ST 4426.3 SR 720.7 SS 1898.8
CRT -.7451 CRS .8306 CST -.9902
LSA 4841.5 MSA 525.6 SSA 15.1
EL1 4459.1 EL2 477.1 ALF 173.00

LAUNCH DATE OCT 24 1964 FLIGHT TIME 398.00 ARRIVAL DATE NOV 26 1965

HELIOCENTRIC CONIC DISTANCE 888.869 EARTH TO MARS

RL 148.77 LAL .00 LOL 30.62 VL 32.798 GAL -8.09 AZL 88.22 HCA 272.37 SMA 187.34 ECC .24771 INC 1.7770 V1 29.950
RP 209.44 LAP -1.78 LOP 302.99 VP 23.641 GAP -12.67 AZP 89.93 TAL 317.27 TAP 229.63 RCA 140.93 APO 233.74 V2 26.174
RC 311.551 GL 11.74 GP 2.72 ZAL 146.88 ZAP 37.90 ETS 182.82 ZAE 61.96 ETE 181.01 ZAC 86.42 ETC 258.31 CLP 37.82

PLANETOCENTRIC CONIC

C3 24.492 VHL 4.949 DLA 10.98 RAL 184.21 RAD 6568.0 VEL 12.078 PTH 2.16 VHP 5.033 DPA 11.60 RAP 164.05 ECC 1.4031

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 1 32	2611.35	-26.80	68.21	52.75	99.49	20 45 3	2011.3	-25.22	59.90
90.00	10 51 57	4559.54	11.37	192.32	47.23	63.89	12 7 57	3959.5	7.77	185.49
100.00	21 28 22	2331.25	-28.06	47.36	52.50	100.75	22 7 14	1731.2	-26.29	39.00
100.00	12 7 47	4314.88	12.51	173.74	46.65	62.63	13 19 42	3714.9	8.75	166.98
110.00	22 49 6	2078.65	-31.41	27.32	51.65	104.23	23 23 44	1478.6	-29.14	18.85
110.00	13 3 33	4140.24	15.51	158.77	44.93	59.15	14 12 34	3540.2	11.30	152.19

DIFFERENTIAL CORRECTIONS
TDE-2.7748 TRA 8.9749 TC3-7.9844 BAU 2.6179
RDE .6212 RRA -.1137 RC3 .4131 FAU .15344
FDE-2.9627 FRA 7.2099 FC3-5.4238 BSP 47709
BDE 2.8435 BRA 8.9756 BC3 7.9951 FSP 3407

MID-COURSE EXECUTION ACCURACY
SGT13594.4 SGR 838.1 SG3 918.0
RRT -.6110 RRF -.6516 RTF .9931
SGB13620.2 R23 .0548 R13 -.9932
SG113604.1 SG2 663.0 THA 177.84

ORBIT DETERMINATION ACCURACY
ST 4523.2 SR 720.4 SS 1860.0
CRT -.7491 CRS .8344 CST -.9901
LSA 4915.8 MSA 522.3 SSA 15.0
EL1 4555.6 EL2 473.8 ALF 173.12

LAUNCH DATE OCT 25 1964 FLIGHT TIME 240.00 ARRIVAL DATE JUN 22 1965

HELIOCENTRIC CONIC DISTANCE 574.276 EARTH TO MARS

RL 148.73 LAL .00 LOL 31.61 VL 33.178 GAL -5.43 AZL 94.87 HCA 184.83 SMA 194.07 ECC .25111 INC 4.8724 V1 29.958
RP 236.64 LAP .41 LOP 216.45 VP 20.924 GAP 7.20 AZP 85.15 TAL 332.41 TAP 157.26 RCA 145.34 APO 242.80 V2 23.226
RC 191.655 GL -35.15 GP 24.64 ZAL 123.25 ZAP 142.85 ETS 141.20 ZAE 152.21 ETE 63.98 ZAC 113.39 ETC 254.64 CLP 151.27

PLANETOCENTRIC CONIC

C3 23.735 VHL 4.872 DLA -25.91 RAL 150.77 RAD 6568.0 VEL 12.046 PTH 2.15 VHP 5.773 DPA 20.37 RAP 198.26 ECC 1.3906

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	23 25 17	1269.85	9.06	346.93	17.93	116.94	23 46 27	669.8	12.61	340.04
90.00	2 53 34	5885.65	25.50	282.60	24.12	102.75	4 31 40	5285.7	27.00	274.26
100.00	0 23 52	1093.36	6.71	332.70	16.66	119.20	0 42 6	493.4	10.55	326.01
100.00	4 41 36	5537.37	28.12	257.58	24.72	100.60	6 13 54	4937.4	29.29	248.97
110.00	0 44 10	1029.67	1.88	324.89	13.68	124.14	1 1 20	429.7	6.34	318.65
110.00	6 37 48	5173.83	33.73	230.92	25.67	95.92	8 4 2	4573.8	34.18	221.71

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 2.0179 TRA-2.4869 TC3 1.7339 BAU .7573 SGT 4365.8 SGR 2845.4 SG3 815.6 ST 2566.3 SR 1783.6 SS 2883.8
RDE 1.4593 RRA-1.2327 RC3 1.6400 FAU .15893 RRT .9671 RRF -.9989 RTF -.9559 CRT .9933 CRS 1.0000 CST .9926
FDE-4.7378 FRA 3.9110 FC3-5.7970 BSP 18294 SGB 5211.2 R23 -.2194 R13 -.9753 LSA 4245.4 MSA 245.5 SSA 3.1
BDE 2.4903 BRA 2.7757 BC3 2.3867 FSP 2686 SG1 5175.2 SG2 610.9 THA 32.74 EL1 3120.7 EL2 169.1 ALF 34.74

LAUNCH DATE OCT 25 1964 FLIGHT TIME 242.00 ARRIVAL DATE JUN 24 1965

HELIOCENTRIC CONIC DISTANCE 577.873 EARTH TO MARS

RL 148.73 LAL .00 LOL 31.61 VL 33.152 GAL -5.35 AZL 93.76 HCA 185.81 SMA 193.59 ECC .24881 INC 3.7615 V1 29.958
RP 236.29 LAP .38 LOP 217.42 VP 20.923 GAP 6.78 AZP 86.26 TAL 332.66 TAP 158.47 RCA 145.42 APO 241.75 V2 23.261
RC 193.877 GL -28.61 GP 21.45 ZAL 125.40 ZAP 144.34 ETS 145.29 ZAE 155.25 ETE 62.22 ZAC 110.40 ETC 254.96 CLP 150.80

PLANETOCENTRIC CONIC

C3 20.445 VHL 4.522 DLA -19.68 RAL 153.02 RAD 6567.8 VEL 11.909 PTH 2.12 VHP 5.497 DPA 17.30 RAP 197.21 ECC 1.3365

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	22 3 16	1555.37	-.02	2.99	14.63	118.32	22 29 11	955.4	3.77	356.36
90.00	4 33 31	5527.92	28.32	256.91	21.99	90.26	6 5 39	4927.9	28.05	248.26
100.00	23 12 12	1332.93	-1.37	345.89	13.88	119.86	23 34 25	732.9	2.61	339.37
100.00	6 7 16	5225.59	29.87	234.65	21.97	88.72	7 34 22	4625.6	29.37	225.89
110.00	23 53 44	1202.79	-4.73	333.93	11.79	123.89	24 13 47	602.8	-.25	327.72
110.00	7 42 14	4928.51	33.81	211.82	21.70	84.66	9 4 22	4328.5	32.70	202.76

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.7541 TRA-2.4686 TC3 2.0151 BAU .7144 SGT 4392.9 SGR 2525.6 SG3 913.9 ST 2436.6 SR 1468.8 SS 2805.1
RDE 1.1053 RRA-1.0898 RC3 1.6646 FAU .17421 RRT .9670 RRF -.9990 RTF -.9582 CRT .9931 CRS 1.0000 CST .9936
FDE-4.4376 FRA 4.4438 FC3-7.3769 BSP 17516 SGB 5067.1 R23 -.2237 R13 -.9742 LSA 3989.2 MSA 220.2 SSA 4.6
BDE 2.0733 BRA 2.6984 BC3 2.6137 FSP 2952 SG1 5035.9 SG2 561.3 THA 29.47 EL1 2841.2 EL2 147.5 ALF 31.00

LAUNCH DATE OCT 25 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUN 26 1965

HELIOCENTRIC CONIC DISTANCE 581.490 EARTH TO MARS

RL 148.73 LAL .00 LOL 31.61 VL 33.128 GAL -5.26 AZL 92.96 HCA 186.78 SMA 193.13 ECC .24661 INC 2.9652 V1 29.958
RP 235.94 LAP .35 LOP 218.39 VP 20.923 GAP 6.36 AZP 87.06 TAL 332.89 TAP 159.67 RCA 145.50 APO 240.75 V2 23.297
RC 196.086 GL -23.40 GP 19.06 ZAL 126.74 ZAP 145.06 ETS 148.87 ZAE 157.64 ETE 61.26 ZAC 108.14 ETC 255.16 CLP 150.15

PLANETOCENTRIC CONIC

C3 18.449 VHL 4.295 DLA -14.68 RAL 154.66 RAD 6567.7 VEL 11.825 PTH 2.09 VHP 5.285 DPA 15.01 RAP 196.41 ECC 1.3036

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 20 0	1721.01	-5.34	12.26	13.74	117.85	21 48 41	1121.0	-1.57	5.60
90.00	5 29 53	5313.66	27.39	241.33	19.64	82.52	6 58 27	4713.7	26.07	232.91
100.00	22 33 27	1484.02	-6.46	354.22	13.13	119.25	22 58 11	884.0	-2.51	347.66
100.00	6 59 8	5025.88	28.65	219.96	19.44	81.09	8 22 53	4425.9	27.12	211.49
110.00	23 24 3	1325.52	-9.34	340.44	11.37	123.03	23 46 8	725.5	-4.93	334.13
110.00	8 25 1	4757.15	31.96	198.81	18.70	77.18	9 44 18	4157.4	29.87	190.23

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.5601 TRA-2.4468 TC3 2.2132 BAU .6795 SGT 4396.5 SGR 2279.4 SG3 997.2 ST 2314.9 SR 1242.2 SS 2705.5
RDE .8795 RRA -.9818 RC3 1.6407 FAU .18635 RRT .9668 RRF -.9989 RTF -.9598 CRT .9928 CRS .9998 CST .9947
FDE-4.1687 FRA 4.9106 FC3-8.7443 BSP 17236 SGB 4952.3 R23 -.2260 R13 -.9733 LSA 3766.1 MSA 194.7 SSA 6.7
BDE 1.7909 BRA 2.6364 BC3 2.7550 FSP 3249 SG1 4924.9 SG2 519.9 THA 26.95 EL1 2623.9 EL2 130.9 ALF 28.12

LAUNCH DATE OCT 25 1964 FLIGHT TIME 246.00 ARRIVAL DATE JUN 28 1965

HELIOCENTRIC CONIC DISTANCE 585.125 EARTH TO MARS

RL 148.73 LAL .00 LOL 31.61 VL 33.104 GAL -5.19 AZL 92.36 HCA 187.75 SMA 192.69 ECC .24451 INC 2.3648 V1 29.958
RP 235.59 LAP .32 LOP 219.36 VP 20.926 GAP 5.95 AZP 87.66 TAL 333.12 TAP 160.87 RCA 145.57 APO 239.80 V2 23.333
RC 198.280 GL -19.19 GP 17.21 ZAL 127.54 ZAP 145.30 ETS 151.95 ZAE 159.60 ETE 61.02 ZAC 106.39 ETC 255.30 CLP 149.39

PLANETOCENTRIC CONIC

C3 17.126 VHL 4.138 DLA -10.61 RAL 155.89 RAD 6567.7 VEL 11.769 PTH 2.08 VHP 5.110 DPA 13.26 RAP 195.78 ECC 1.2819

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 50 5	1842.36	-9.15	19.14	13.63	116.92	21 20 47	1242.4	-5.46	12.40
90.00	6 9 40	5157.69	25.52	230.30	17.93	77.30	7 35 37	4557.7	23.52	222.20
100.00	22 6 8	1597.00	-10.16	.56	13.09	118.26	22 32 45	997.0	-6.31	353.90
100.00	7 36 18	4878.28	26.64	209.45	17.64	75.91	8 57 36	4278.3	24.44	201.34
110.00	23 2 22	1420.88	-12.83	345.62	11.51	121.96	23 26 3	820.9	-8.52	339.18
110.00	8 56 33	4627.16	29.61	189.42	16.67	72.08	10 13 40	4027.2	26.87	181.30

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.4336 TRA-2.3978 TC3 2.4070 BAU .6637 SGT 4395.0 SGR 2095.3 SG3 1075.8 ST 2229.3 SR 1085.1 SS 2628.8
RDE .7348 RRA -.8887 RC3 1.6156 FAU .19882 RRT .9677 RRF -.9986 RTF -.9624 CRT .9930 CRS .9995 CST .9961
FDE-3.9824 FRA 5.2859 FC-10.0505 BSP 16561 SGB 4868.9 R23 -.2226 R13 -.9737 LSA 3609.7 MSA 165.4 SSA 9.5
BDE 1.6109 BRA 2.5572 BC3 2.8990 FSP 3463 SG1 4845.2 SG2 479.1 THA 25.03 EL1 2476.6 EL2 115.7 ALF 25.86

LAUNCH DATE OCT 25 1964 FLIGHT TIME 248.00 ARRIVAL DATE JUN 30 1965

HELIOCENTRIC CONIC DISTANCE 588.774 EARTH TO MARS

RL 148.73 LAL .00 LOL 31.61 VL 33.081 GAL -5.11 AZL 91.90 HCA 188.73 SMA 192.27 ECC .24250 INC 1.8965 V1 29.958
RP 235.24 LAP .29 LOP 220.34 VP 20.930 GAP 5.54 AZP 88.13 TAL 333.34 TAP 162.07 RCA 145.65 APO 238.90 V2 23.369
RC 200.460 GL -15.73 GP 15.74 ZAL 127.99 ZAP 145.20 ETS 154.60 ZAE 161.26 ETE 61.46 ZAC 104.99 ETC 255.40 CLP 148.55

PLANETOCENTRIC CONIC

C3 16.186 VHL 4.023 DLA -7.26 RAL 156.85 RAD 6567.6 VEL 11.729 PTH 2.07 VHP 4.958 DPA 11.87 RAP 195.27 ECC 1.2664

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 27 13	1938.24	-12.05	24.69	13.85	115.82	20 59 31	1338.2	-8.48	17.83
90.00	6 40 8	5035.93	23.44	221.99	16.75	73.64	8 4 4	4435.9	20.97	214.19
100.00	21 45 5	1687.04	-13.02	5.73	13.35	117.15	22 13 12	1087.0	-9.27	358.94
100.00	8 4 57	4762.36	24.47	201.52	16.41	72.28	9 24 19	4162.4	21.82	193.73
110.00	22 45 23	1498.24	-15.58	349.94	11.89	120.82	23 10 21	898.2	-11.38	343.35
110.00	9 21 8	4523.93	27.23	182.33	15.31	68.49	10 36 32	3923.9	24.07	174.59

DIFFERENTIAL CORRECTIONS
TDE 1.3162 TRA-2.3646 TC3 2.5161 BAU .6425
RDE .6306 RRA -.8170 RC3 1.5765 FAU .20979
FDE-3.8171 FRA 5.6467 FC-11.2206 BSP 16447
BDE 1.4595 BRA 2.5017 BC3 2.9692 FSP 3717

MID-COURSE EXECUTION ACCURACY
SGT 4374.5 SGR 1947.1 SG3 1148.8
RRT .9666 RRF -.9982 RTF -.9626
SGB 4788.3 R23 -.2240 R13 -.9728
SG1 4766.3 SG2 458.1 THA 23.51

ORBIT DETERMINATION ACCURACY
ST 2134.1 SR 965.3 SS 2553.6
CRT .9922 CRS .9989 CST .9969
LSA 3462.0 MSA 147.7 SSA 12.9
EL1 2339.7 EL2 109.5 ALF 24.23

LAUNCH DATE OCT 25 1964 FLIGHT TIME 250.00 ARRIVAL DATE JUL 2 1965

HELIOCENTRIC CONIC DISTANCE 592.439 EARTH TO MARS

RL 148.73 LAL .00 LOL 31.61 VL 33.060 GAL -5.04 AZL 91.52 HCA 189.71 SMA 191.88 ECC .24058 INC 1.5211 V1 29.958
RP 234.89 LAP .26 LOP 221.32 VP 20.937 GAP 5.14 AZP 88.50 TAL 333.56 TAP 163.27 RCA 145.71 APO 238.04 V2 23.405
RC 202.623 GL -12.84 GP 14.56 ZAL 128.19 ZAP 144.86 ETS 156.88 ZAE 162.70 ETE 62.57 ZAC 103.85 ETC 255.47 CLP 147.66

PLANETOCENTRIC CONIC

C3 15.480 VHL 3.934 DLA -4.44 RAL 157.59 RAD 6567.6 VEL 11.699 PTH 2.06 VHP 4.821 DPA 10.76 RAP 194.84 ECC 1.2548

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 8 41	2017.08	-14.34	29.35	14.19	114.68	20 42 19	1417.1	-10.89	22.37
90.00	7 4 36	4936.85	21.39	215.45	15.94	70.99	8 26 53	4336.9	18.60	207.89
100.00	21 27 57	1761.40	-15.28	10.09	13.73	116.01	21 57 18	1161.4	-11.66	3.17
100.00	8 28 1	4667.77	22.37	195.28	15.56	69.64	9 45 49	4067.8	19.40	187.75
110.00	22 31 25	1562.70	-17.79	353.62	12.35	119.68	22 57 28	962.7	-13.71	346.89
110.00	9 41 3	4439.23	25.00	176.76	14.38	65.89	10 55 2	3839.2	21.53	169.33

DIFFERENTIAL CORRECTIONS
TDE 1.2213 TRA-2.3259 TC3 2.5984 BAU .6249
RDE .5553 RRA -.7579 RC3 1.5385 FAU .22037
FDE-3.6833 FRA 5.9856 FC-12.3247 BSP 16329
BDE 1.3416 BRA 2.4463 BC3 3.0197 FSP 3972

MID-COURSE EXECUTION ACCURACY
SGT 4345.8 SGR 1829.0 SG3 1219.6
RRT .9656 RRF -.9977 RTF -.9629
SGB 4715.0 R23 -.2236 R13 -.9723
SG1 4694.4 SG2 440.5 THA 22.32

ORBIT DETERMINATION ACCURACY
ST 2050.8 SR 875.0 SS 2490.0
CRT .9914 CRS .9979 CST .9977
LSA 3339.8 MSA 131.6 SSA 17.1
EL1 2227.2 EL2 105.3 ALF 22.98

LAUNCH DATE OCT 25 1964 FLIGHT TIME 252.00 ARRIVAL DATE JUL 4 1965

HELIOCENTRIC CONIC DISTANCE 596.119 EARTH TO MARS

RL 148.73 LAL .00 LOL 31.61 VL 33.039 GAL -4.97 AZL 91.21 HCA 190.69 SMA 191.50 ECC .23875 INC 1.2121 V1 29.958
RP 234.53 LAP .22 LOP 222.31 VP 20.946 GAP 4.75 AZP 88.81 TAL 333.77 TAP 164.46 RCA 145.78 APO 237.22 V2 23.442
RC 204.770 GL -10.39 GP 13.58 ZAL 128.24 ZAP 144.35 ETS 158.86 ZAE 163.98 ETE 64.34 ZAC 102.91 ETC 255.53 CLP 146.72

PLANETOCENTRIC CONIC

C3 14.924 VHL 3.863 DLA -2.04 RAL 158.18 RAD 6567.6 VEL 11.675 PTH 2.05 VHP 4.695 DPA 9.86 RAP 194.46 ECC 1.2456

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 53 6	2083.68	-16.19	33.36	14.57	113.55	20 27 50	1483.7	-12.87	26.26
90.00	7 24 54	4853.84	19.45	210.13	15.36	69.01	8 45 48	4253.8	16.43	202.77
100.00	21 13 30	1824.34	-17.12	13.85	14.14	114.88	21 43 55	1224.3	-13.63	6.81
100.00	8 47 12	4588.41	20.40	190.21	14.96	67.67	10 3 40	3988.4	17.20	182.89
110.00	22 19 34	1617.51	-19.61	356.84	12.82	118.58	22 46 32	1017.5	-15.64	349.96
110.00	9 57 37	4368.00	22.94	172.25	13.73	63.93	11 10 25	3768.0	19.25	165.06

DIFFERENTIAL CORRECTIONS
TDE 1.1447 TRA-2.2801 TC3 2.6686 BAU .6116
RDE .5008 RRA -.7071 RC3 1.5087 FAU .23147
FDE-3.5870 FRA 6.2971 FC-13.4275 BSP 16099
BDE 1.2494 BRA 2.3872 BC3 3.0656 FSP 4202

MID-COURSE EXECUTION ACCURACY
SGT 4310.8 SGR 1735.4 SG3 1291.0
RRT .9645 RRF -.9969 RTF -.9632
SGB 4647.0 R23 -.2221 R13 -.9719
SG1 4627.4 SG2 427.1 THA 21.41

ORBIT DETERMINATION ACCURACY
ST 1979.0 SR 807.4 SS 2442.9
CRT .9904 CRS .9964 CST .9983
LSA 3243.7 MSA 118.9 SSA 21.8
EL1 2134.9 EL2 103.3 ALF 22.06

LAUNCH DATE OCT 25 1964 FLIGHT TIME 254.00 ARRIVAL DATE JUL 6 1965

HELIOCENTRIC CONIC DISTANCE 599.813 EARTH TO MARS

RL 148.73 LAL .00 LOL 31.61 VL 33.020 GAL -4.90 AZL 90.96 HCA 191.68 SMA 191.14 ECC .23699 INC .9554 V1 29.958
RP 234.17 LAP .19 LOP 223.29 VP 20.956 GAP 4.36 AZP 89.06 TAL 333.97 TAP 165.64 RCA 145.84 APO 236.44 V2 23.479
RC 206.900 GL -8.29 GP 12.77 ZAL 128.17 ZAP 143.70 ETS 160.58 ZAE 165.11 ETE 66.83 ZAC 102.12 ETC 255.58 CLP 145.73

PLANETOCENTRIC CONIC

C3 14.470 VHL 3.804 DLA .04 RAL 158.66 RAD 6567.6 VEL 11.656 PTH 2.05 VHP 4.578 DPA 9.12 RAP 194.11 ECC 1.2381

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 39 38	2141.06	-17.72	36.88	14.96	112.46	20 15 19	1541.1	-14.52	29.66
90.00	7 42 10	4782.72	17.66	205.69	14.94	67.50	9 1 53	4182.7	14.46	198.47
100.00	21 1 0	1878.62	-18.65	17.16	14.54	113.80	21 32 18	1278.6	-15.27	10.00
100.00	9 3 29	4520.39	18.59	185.98	14.52	66.16	10 18 50	3920.4	15.21	178.82
110.00	22 9 17	1664.87	-21.12	359.67	13.27	117.52	22 37 2	1064.9	-17.27	352.66
110.00	10 11 42	4306.90	21.06	168.51	13.26	62.43	11 23 29	3706.9	17.20	161.50

DIFFERENTIAL CORRECTIONS
TDE 1.0752 TRA-2.2345 TC3 2.7114 BAU .5976
RDE .4580 RRA -.6660 RC3 1.4797 FAU .24200
FDE-3.4975 FRA 6.6153 FC-14.4781 BSP 15965
BDE 1.1686 BRA 2.3317 BC3 3.0889 FSP 4466

MID-COURSE EXECUTION ACCURACY
SGT 4266.8 SGR 1658.2 SG3 1361.6
RRT .9633 RRF -.9961 RTF -.9635
SGB 4577.6 R23 -.2197 R13 -.9717
SG1 4558.7 SG2 416.4 THA 20.71

ORBIT DETERMINATION ACCURACY
ST 1909.4 SR 753.4 SS 2399.4
CRT .9893 CRS .9945 CST .9989
LSA 3155.6 MSA 109.3 SSA 26.9
EL1 2050.1 EL2 102.5 ALF 21.38

LAUNCH DATE OCT 25 1964 FLIGHT TIME 256.00 ARRIVAL DATE JUL 8 1965

HELIOCENTRIC CONIC DISTANCE 603.522 EARTH TO MARS

RL	148.73	LAL	.00	LOL	31.61	VL	33.001	GAL	-4.84	AZL	90.74	HCA	192.67	SMA	190.80	ECC	.23532	INC	.7358	V1	29.958
RP	233.80	LAP	.16	LOP	224.28	VP	20.969	GAP	3.98	AZP	89.28	TAL	334.16	TAP	166.83	RCA	145.90	APO	235.70	V2	23.517
RC	209.011	GL	-6.47	GP	12.08	ZAL	128.04	ZAP	142.95	ETS	162.09	ZAE	166.11	ETE	70.05	ZAC	101.44	ETC	255.61	CLP	144.70

PLANETOCENTRIC CONIC

C3	14.090	VHL	3.754	DLA	1.85	RAL	159.04	RAD	6567.6	VEL	11.639	PTH	2.04	VHP	4.468	DPA	8.51	RAP	193.78	ECC	1.2319

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 27 45	2191.29	-19.00	40.01	15.32	111.40	20 4 16	1591.3	-15.92	32.69
90.00	7 57 7	4720.72	16.00	201.89	14.63	66.32	9 15 48	4120.7	12.67	194.80
100.00	20 49 57	1926.14	-19.93	20.11	14.92	112.75	21 22 3	1326.1	-16.67	12.83
100.00	9 17 36	4461.10	16.92	182.37	14.20	64.98	10 31 57	3861.1	13.40	175.34
110.00	22 0 10	1706.36	-22.41	2.21	13.70	116.52	22 28 37	1106.4	-18.67	355.07
110.00	10 23 52	4253.70	19.35	165.32	12.91	61.26	11 34 46	3653.7	15.37	158.47

DIFFERENTIAL CORRECTIONS

TDE	1.0175	TRA	-2.1821	TC3	2.7502	BAU	.5866
RDE	.4264	RRA	-.6296	RC3	1.4603	FAU	.25339
FDE	-3.4389	FRA	6.9128	FC	-15.5689	BSP	15702
BDE	1.1032	BRA	2.2711	BC3	3.1138	FSP	4702

MID-COURSE EXECUTION ACCURACY

SGT	4216.7	SGR	1596.8	SG3	1434.4		
RRT	.9621	RRF	-.9951	RTF	-.9637		
SGB	4508.9	R23	-.2165	R13	-.9715		
SG1	4490.3	SG2	408.7	THA	20.19		

ORBIT DETERMINATION ACCURACY

ST	1848.1	SR	712.7	SS	2370.4
CRT	.9880	CRS	.9921	CST	.9993
LSA	3087.1	MSA	104.4	SSA	31.6
EL1	1978.0	EL2	102.9	ALF	20.92

LAUNCH DATE OCT 25 1964 FLIGHT TIME 258.00 ARRIVAL DATE JUL 10 1965

HELIOCENTRIC CONIC DISTANCE 607.243 EARTH TO MARS

RL	148.73	LAL	.00	LOL	31.61	VL	32.983	GAL	-4.78	AZL	90.55	HCA	193.66	SMA	190.47	ECC	.23373	INC	.5482	V1	29.958
RP	233.44	LAP	.13	LOP	225.27	VP	20.983	GAP	3.60	AZP	89.47	TAL	334.35	TAP	168.01	RCA	145.95	APO	234.99	V2	23.555
RC	211.104	GL	-4.87	GP	11.49	ZAL	127.86	ZAP	142.10	ETS	163.42	ZAE	166.98	ETE	74.07	ZAC	100.85	ETC	255.65	CLP	143.63

PLANETOCENTRIC CONIC

C3	13.764	VHL	3.710	DLA	3.45	RAL	159.36	RAD	6567.5	VEL	11.625	PTH	2.04	VHP	4.363	DPA	8.01	RAP	193.47	ECC	1.2265

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 17 6	2235.84	-20.08	42.83	15.66	110.40	19 54 22	1635.8	-17.12	35.40
90.00	8 10 17	4665.89	14.47	198.59	14.40	65.39	9 28 3	4065.9	11.03	191.60
100.00	20 40 3	1968.27	-21.01	22.77	15.27	111.76	21 12 51	1368.3	-17.87	15.38
100.00	9 30 1	4408.69	15.38	179.23	13.96	64.05	10 43 29	3808.7	11.77	172.31
110.00	21 52 0	1743.11	-23.51	4.50	14.09	115.56	22 21 3	1143.1	-19.87	357.24
110.00	10 34 34	4206.61	17.79	162.57	12.64	60.32	11 44 40	3606.6	13.70	155.84

DIFFERENTIAL CORRECTIONS

TDE	.9641	TRA	-2.1293	TC3	2.7688	BAU	.5746
RDE	.4011	RRA	-.5993	RC3	1.4436	FAU	.26465
FDE	-3.3862	FRA	7.2183	FC	-16.6460	BSP	15479
BDE	1.0442	BRA	2.2121	BC3	3.1225	FSP	4963

MID-COURSE EXECUTION ACCURACY

SGT	4158.2	SGR	1546.2	SG3	1508.0		
RRT	.9608	RRF	-.9940	RTF	-.9639		
SGB	4436.4	R23	-.2130	R13	-.9714		
SG1	4418.0	SG2	403.4	THA	19.83		

ORBIT DETERMINATION ACCURACY

ST	1788.1	SR	679.9	SS	2345.4
CRT	.9865	CRS	.9891	CST	.9996
LSA	3024.6	MSA	104.2	SSA	35.1
EL1	1910.2	EL2	104.1	ALF	20.62

LAUNCH DATE OCT 25 1964 FLIGHT TIME 260.00 ARRIVAL DATE JUL 12 1965

HELIOCENTRIC CONIC DISTANCE 610.979 EARTH TO MARS

RL	148.73	LAL	.00	LOL	31.61	VL	32.966	GAL	-4.72	AZL	90.39	HCA	194.66	SMA	190.16	ECC	.23221	INC	.3847	V1	29.958
RP	233.07	LAP	.10	LOP	226.27	VP	20.999	GAP	3.23	AZP	89.63	TAL	334.53	TAP	169.18	RCA	146.01	APO	234.32	V2	23.593
RC	213.179	GL	-3.45	GP	10.98	ZAL	127.65	ZAP	141.18	ETS	164.60	ZAE	167.70	ETE	78.90	ZAC	100.33	ETC	255.67	CLP	142.53

PLANETOCENTRIC CONIC

C3	13.479	VHL	3.671	DLA	4.87	RAL	159.62	RAD	6567.5	VEL	11.613	PTH	2.03	VHP	4.263	DPA	7.59	RAP	193.15	ECC	1.2218

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 7 26	2275.78	-21.01	45.40	15.96	109.44	19 45 22	1675.8	-18.16	37.87
90.00	8 22 1	4616.82	13.06	195.68	14.23	64.65	9 38 58	4016.8	9.54	188.77
100.00	20 31 4	2006.02	-21.95	25.19	15.59	110.82	21 4 30	1406.0	-18.92	17.70
100.00	9 41 4	4361.81	13.96	176.47	13.77	63.30	10 53 46	3761.8	10.27	169.63
110.00	21 44 34	1775.99	-24.46	6.58	14.45	114.66	22 14 10	1176.0	-20.92	359.21
110.00	10 44 3	4164.61	16.35	160.16	12.43	59.56	11 53 28	3564.6	12.19	153.52

DIFFERENTIAL CORRECTIONS

TDE	.9175	TRA	-2.0722	TC3	2.7782	BAU	.5633
RDE	.3817	RRA	-.5729	RC3	1.4327	FAU	.27640
FDE	-3.3499	FRA	7.5186	FC	-17.7525	BSP	15170
BDE	.9937	BRA	2.1499	BC3	3.1259	FSP	5214

MID-COURSE EXECUTION ACCURACY

SGT	4092.1	SGR	1505.5	SG3	1583.6		
RRT	.9595	RRF	-.9927	RTF	-.9639		
SGB	4360.3	R23	-.2091	R13	-.9713		
SG1	4341.9	SG2	399.8	THA	19.62		

ORBIT DETERMINATION ACCURACY

ST	1732.6	SR	654.5	SS	2328.5
CRT	.9851	CRS	.9856	CST	.9996
LSA	2973.0	MSA	108.6	SSA	37.0
EL1	1849.1	EL2	105.6	ALF	20.48

LAUNCH DATE OCT 25 1964 FLIGHT TIME 262.00 ARRIVAL DATE JUL 14 1965

HELIOCENTRIC CONIC DISTANCE 614.724 EARTH TO MARS

RL	148.73	LAL	.00	LOL	31.61	VL	32.949	GAL	-4.67	AZL	90.24	HCA	195.66	SMA	189.87	ECC	.23076	INC	.2417	V1	29.958
RP	232.70	LAP	.07	LOP	227.27	VP	21.016	GAP	2.87	AZP	89.77	TAL	334.69	TAP	170.35	RCA	146.06	APO	233.69	V2	23.631
RC	215.236	GL	-2.18	GP	10.54	ZAL	127.42	ZAP	140.19	ETS	165.67	ZAE	168.28	ETE	84.53	ZAC	99.87	ETC	255.70	CLP	141.39

PLANETOCENTRIC CONIC

C3	13.228	VHL	3.637	DLA	6.15	RAL	159.84	RAD	6567.5	VEL	11.602	PTH	2.03	VHP	4.167	DPA	7.25	RAP	192.84	ECC	1.2177

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 58 36	2311.91	-21.81	47.74	16.25	108.53	19 37 8	1711.9	-19.07	40.13
90.00	8 32 35	4572.52	11.76	193.08	14.09	64.05	9 48 48	3972.5	8.17	186.23
100.00	20 22 52	2040.14	-22.75	27.40	15.89	109.93	20 56 52	1440.1	-19.83	19.82
100.00	9 51 1	4319.53	12.66	174.01	13.63	62.69	11 3 0	3719.5	8.90	167.24
110.00	21 37 47	1805.65	-25.29	8.48	14.78	113.81	22 7 53	1205.7	-21.85	1.02
110.00	10 52 34	4126.78	15.04	158.02	12.26	58.93	12 1 21	3526.8	10.81	151.46

DIFFERENTIAL CORRECTIONS

TDE	.8583	TRA	-2.0281	TC3	2.7259	BAU	.5434
RDE	.3640	RRA	-.5528	RC3	1.4187	FAU	.28707
FDE	-3.2920	FRA	7.8550	FC	-18.7878	BSP	15218
BDE	.9323	BRA	2.1021	BC3	3.0730	FSP	5541

MID-COURSE EXECUTION ACCURACY

SGT	4010.8	SGR	1470.0	SG3	1658.7		
RRT	.9559	RRF	-.9914	RTF	-.9624		
SGB	4271.7	R23	-.2104	R13	-.9701		
SG1	4252.2	SG2	407.1	THA	19.49		

ORBIT DETERMINATION ACCURACY

ST	1661.6	SR	631.6	SS	2305.7
CRT	.9820	CRS	.9811	CST	.9996
LSA	2908.7	MSA	118.4	SSA	37.9
EL1	1774.1	EL2	111.8	ALF	20.55

LAUNCH DATE OCT 25 1964 FLIGHT TIME 264.00 ARRIVAL DATE JUL 16 1965

HELIOCENTRIC CONIC DISTANCE 618.484 EARTH TO MARS

RL 148.73 LAL .00 LOL 31.61 VL 32.934 GAL -4.61 AZL 90.11 HCA 196.66 SMA 189.59 ECC .22939 INC .1164 V1 29.958
RP 232.32 LAP .03 LOP 228.27 VP 21.036 GAP 2.51 AZP 89.89 TAL 334.86 TAP 171.51 RCA 146.10 APO 233.08 V2 23.670
RC 217.275 GL -1.04 GP 10.15 ZAL 127.18 ZAP 139.14 ETS 166.62 ZAE 168.67 ETE 90.90 ZAC 99.45 ETC 255.72 CLP 140.20

PLANETOCENTRIC CONIC

C3 13.004 VHL 3.606 DLA 7.30 RAL 160.02 RAD 6567.5 VEL 11.593 PTH 2.03 VHP 4.076 DPA 6.97 RAP 192.51 ECC 1.2140

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 30 26	2344.89	-22.50	49.91	16.50	107.66	19 29 31	1744.9	-19.88	42.22
90.00	8 42 12	4532.15	10.54	190.73	13.99	63.57	9 57 44	3932.1	6.91	183.94
100.00	20 15 17	2071.24	-23.46	29.44	16.16	109.07	20 49 48	1471.2	-20.64	21.78
100.00	10 0 3	4281.03	11.44	171.80	13.52	62.20	11 11 24	3681.0	7.63	165.08
110.00	21 31 32	1832.63	-26.01	10.24	15.08	113.00	22 2 4	1232.6	-22.67	2.68
110.00	11 0 17	4092.40	13.82	156.10	12.13	58.42	12 8 30	3492.4	9.54	149.61

DIFFERENTIAL CORRECTIONS
TDE .8161 TRA-1.9682 TC3 2.7020 BAU .5302
RDE .3516 RRA -.5335 RC3 1.4148 FAU .29921
FDE-3.2657 FRA 8.1687 FC-19.9202 BSP 14910
BDE .8886 BRA 2.0392 BC3 3.0500 FSP 5821

MID-COURSE EXECUTION ACCURACY
SGT 3926.7 SGR 1443.4 SG3 1737.8
RRT .9540 RRF -.9899 RTF -.9620
SGB 4183.6 R23 -.2071 R13 -.9698
SG1 4163.6 SG2 408.2 THA 19.52

ORBIT DETERMINATION ACCURACY
ST 1606.1 SR 615.4 SS 2296.2
CRT .9800 CRS .9764 CST .9994
LSA 2865.8 MSA 128.8 SSA 37.8
EL1 1716.1 EL2 114.5 ALF 20.68

LAUNCH DATE OCT 25 1964 FLIGHT TIME 266.00 ARRIVAL DATE JUL 18 1965

HELIOCENTRIC CONIC DISTANCE 622.258 EARTH TO MARS

RL 148.73 LAL .00 LOL 31.61 VL 32.919 GAL -4.57 AZL 90.00 HCA 197.66 SMA 189.33 ECC .22808 INC .0000 V1 29.958
RP 231.95 LAP .00 LOP 229.28 VP 21.056 GAP 2.15 AZP 90.00 TAL 335.01 TAP 172.67 RCA 146.15 APO 232.51 V2 23.709
RC 219.295 GL -.01 GP 9.81 ZAL 126.93 ZAP 138.03 ETS 167.49 ZAE 168.87 ETE 97.84 ZAC 99.08 ETC 255.74 CLP 138.98

PLANETOCENTRIC CONIC

C3 12.801 VHL 3.578 DLA 8.36 RAL 160.17 RAD 6567.5 VEL 11.584 PTH 2.03 VHP 3.987 DPA 6.75 RAP 192.18 ECC 1.2107

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 42 51	2375.19	-23.11	51.92	16.74	106.83	19 22 26	1775.2	-20.59	44.16
90.00	8 51 1	4495.10	9.41	188.60	13.91	63.17	10 5 56	3895.1	5.74	181.84
100.00	20 8 14	2099.78	-24.08	31.33	16.40	108.26	20 43 14	1499.8	-21.36	23.59
100.00	10 8 19	4245.74	10.32	169.79	13.43	61.79	11 19 5	3645.7	6.47	163.11
110.00	21 25 43	1857.33	-26.66	11.87	15.35	112.23	21 56 40	1257.3	-23.41	4.22
110.00	11 7 20	4060.96	12.69	154.36	12.03	57.99	12 15 1	3461.0	8.37	147.92

DIFFERENTIAL CORRECTIONS
TDE .7870 TRA-1.8951 TC3 2.6973 BAU .5216
RDE .3435 RRA -.5150 RC3 1.4194 FAU .31282
FDE-3.2723 FRA 8.4589 FC-21.1555 BSP 14309
BDE .8587 BRA 1.9638 BC3 3.0480 FSP 6051

MID-COURSE EXECUTION ACCURACY
SGT 3836.9 SGR 1424.5 SG3 1820.7
RRT .9533 RRF -.9884 RTF -.9624
SGB 4092.8 R23 -.2005 R13 -.9702
SG1 4072.7 SG2 405.2 THA 19.69

ORBIT DETERMINATION ACCURACY
ST 1561.5 SR 605.0 SS 2299.2
CRT .9792 CRS .9717 CST .9989
LSA 2840.6 MSA 141.3 SSA 36.6
EL1 1670.7 EL2 114.7 ALF 20.88

LAUNCH DATE OCT 25 1964 FLIGHT TIME 268.00 ARRIVAL DATE JUL 20 1965

HELIOCENTRIC CONIC DISTANCE 626.041 EARTH TO MARS

RL 148.73 LAL .00 LOL 31.61 VL 32.905 GAL -4.52 AZL 89.90 HCA 198.67 SMA 189.08 ECC .22684 INC .0992 V1 29.958
RP 231.57 LAP -.03 LOP 230.29 VP 21.078 GAP 1.80 AZP 90.10 TAL 335.16 TAP 173.83 RCA 146.19 APO 231.97 V2 23.748
RC 221.297 GL .93 GP 9.51 ZAL 126.69 ZAP 136.86 ETS 168.28 ZAE 168.86 ETE 105.11 ZAC 98.73 ETC 255.77 CLP 137.72

PLANETOCENTRIC CONIC

C3 12.619 VHL 3.552 DLA 9.32 RAL 160.31 RAD 6567.5 VEL 11.576 PTH 2.02 VHP 3.903 DPA 6.58 RAP 191.82 ECC 1.2077

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 35 47	2403.19	-23.65	53.79	16.96	106.04	19 15 50	1803.2	-21.23	45.96
90.00	8 59 10	4460.96	8.36	186.64	13.86	62.85	10 13 31	3861.0	4.65	179.92
100.00	20 1 41	2126.12	-24.63	33.09	16.63	107.49	20 37 7	1526.1	-22.01	25.28
100.00	10 15 56	4213.26	9.26	167.95	13.37	61.45	11 26 10	3613.3	5.38	161.31
110.00	21 20 19	1880.05	-27.24	13.38	15.61	111.50	21 51 39	1280.1	-24.07	5.65
110.00	11 13 48	4032.09	11.65	152.78	11.95	57.63	12 21 0	3432.1	7.29	146.39

DIFFERENTIAL CORRECTIONS
TDE .7491 TRA-1.8310 TC3 2.6432 BAU .5063
RDE .3359 RRA -.5007 RC3 1.4220 FAU .32572
FDE-3.2622 FRA 8.7811 FC-22.3469 BSP 13946
BDE .8210 BRA 1.8983 BC3 3.0014 FSP 6338

MID-COURSE EXECUTION ACCURACY
SGT 3734.1 SGR 1408.5 SG3 1904.2
RRT .9509 RRF -.9869 RTF -.9615
SGB 3990.9 R23 -.1985 R13 -.9696
SG1 3969.8 SG2 410.2 THA 19.95

ORBIT DETERMINATION ACCURACY
ST 1506.4 SR 595.6 SS 2298.2
CRT .9772 CRS .9662 CST .9984
LSA 2807.2 MSA 155.0 SSA 35.9
EL1 1615.6 EL2 117.8 ALF 21.24

LAUNCH DATE OCT 25 1964 FLIGHT TIME 270.00 ARRIVAL DATE JUL 22 1965

HELIOCENTRIC CONIC DISTANCE 629.836 EARTH TO MARS

RL 148.73 LAL .00 LOL 31.61 VL 32.891 GAL -4.48 AZL 89.81 HCA 199.68 SMA 188.84 ECC .22567 INC .1894 V1 29.958
RP 231.20 LAP -.06 LOP 231.30 VP 21.102 GAP 1.46 AZP 90.18 TAL 335.29 TAP 174.97 RCA 146.22 APO 231.45 V2 23.788
RC 223.281 GL 1.79 GP 9.24 ZAL 126.45 ZAP 135.65 ETS 169.01 ZAE 168.63 ETE 112.40 ZAC 98.40 ETC 255.79 CLP 136.42

PLANETOCENTRIC CONIC

C3 12.453 VHL 3.529 DLA 10.20 RAL 160.42 RAD 6567.5 VEL 11.569 PTH 2.02 VHP 3.821 DPA 6.46 RAP 191.45 ECC 1.2050

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 29 9	2429.18	-24.13	55.55	17.16	105.28	19 9 39	1829.2	-21.80	47.65
90.00	9 6 44	4429.33	7.37	184.84	13.82	62.58	10 20 33	3829.3	3.64	178.15
100.00	19 55 33	2150.54	-25.12	34.74	16.85	106.75	20 31 24	1550.5	-22.59	26.86
100.00	10 23 1	4183.21	8.28	166.26	13.33	61.18	11 32 44	3583.2	4.37	159.65
110.00	21 15 17	1901.07	-27.75	14.80	15.85	110.81	21 46 58	1301.1	-24.67	6.99
110.00	11 19 47	4005.45	10.67	151.33	11.89	57.33	12 26 32	3405.4	6.29	144.98

DIFFERENTIAL CORRECTIONS
TDE .7123 TRA-1.7641 TC3 2.5734 BAU .4899
RDE .3301 RRA -.4882 RC3 1.4275 FAU .33903
FDE-3.2576 FRA 9.1060 FC-23.5686 BSP 13559
BDE .7851 BRA 1.8304 BC3 2.9428 FSP 6629

MID-COURSE EXECUTION ACCURACY
SGT 3620.1 SGR 1396.7 SG3 1989.7
RRT .9480 RRF -.9853 RTF -.9601
SGB 3880.2 R23 -.1972 R13 -.9688
SG1 3857.7 SG2 417.2 THA 20.34

ORBIT DETERMINATION ACCURACY
ST 1450.1 SR 588.7 SS 2300.1
CRT .9752 CRS .9604 CST .9977
LSA 2776.7 MSA 168.9 SSA 35.2
EL1 1560.3 EL2 121.2 ALF 21.73

LAUNCH DATE OCT 25 1964 FLIGHT TIME 272.00 ARRIVAL DATE JUL 24 1965

HELIOCENTRIC CONIC DISTANCE 633.642 EARTH TO MARS

RL	148.73	LAL	.00	LOL	31.61	VL	32.879	GAL	-4.44	AZL	89.72	HCA	200.70	SMA	188.61	ECC	.22456	INC	.2755	V1	29.958
RP	230.82	LAP	-.10	LOP	232.31	VP	21.127	GAP	1.12	AZP	90.26	TAL	335.42	TAP	176.12	RCA	146.26	APO	230.97	V2	23.827
RC	225.247	GL	2.58	GP	9.00	ZAL	126.22	ZAP	134.38	ETS	169.88	ZAE	168.17	ETE	119.43	ZAC	98.09	ETC	255.81	CLP	135.08

PLANETOCENTRIC CONIC

C3	12.303	VHL	3.508	DLA	11.01	RAL	160.53	RAD	6567.5	VEL	11.562	PTH	2.02	VHP	3.743	DPA	6.37	RAP	191.06	ECC	1.2025

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 22 57	2453.43	-24.56	57.20	17.36	104.56	19 3 50	1853.4	-22.32	49.24
90.00	9 13 48	4399.93	6.45	183.18	13.80	62.37	10 27 8	3799.9	2.70	176.51
100.00	19 49 49	2173.28	-25.56	36.29	17.05	106.05	20 26 2	1573.3	-23.11	28.35
100.00	10 29 37	4155.31	7.36	164.70	13.31	60.95	11 38 52	3555.3	3.43	158.11
110.00	21 10 34	1920.58	-28.22	16.13	16.08	110.14	21 42 35	1320.6	-25.21	8.24
110.00	11 25 21	3980.77	9.76	150.00	11.85	57.08	12 31 42	3380.8	5.36	143.68

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6759	TRA	-1.6958	TC3	2.4835	BAU	.4716	SGT	3495.5	SGR	1387.7	SG3	2076.4	ST	1392.3	SR	583.0	SS	2302.0
RDE	.3251	RRA	-.4780	RC3	1.4333	FAU	.35218	RRT	.9448	RRF	-.9836	RTF	-.9584	CRT	.9732	CRS	.9540	CST	.9967
FDE	-3.2477	FRA	9.4476	FC	-24.7816	BSP	13176	SGB	3760.8	R23	-.1965	R13	-.9679	LSA	2746.4	MSA	183.8	SSA	34.6
BDE	.7500	BRA	1.7619	BC3	2.8675	FSP	6949	SG1	3736.7	SG2	425.4	THA	20.84	EL1	1504.3	EL2	124.1	ALF	22.33

LAUNCH DATE OCT 25 1964 FLIGHT TIME 274.00 ARRIVAL DATE JUL 26 1965

HELIOCENTRIC CONIC DISTANCE 637.459 EARTH TO MARS

RL	148.73	LAL	.00	LOL	31.61	VL	32.866	GAL	-4.40	AZL	89.65	HCA	201.72	SMA	188.40	ECC	.22351	INC	.3515	V1	29.958
RP	230.43	LAP	-.13	LOP	233.33	VP	21.153	GAP	.79	AZP	90.33	TAL	335.53	TAP	177.25	RCA	146.29	APO	230.51	V2	23.867
RC	227.193	GL	3.32	GP	8.78	ZAL	126.01	ZAP	133.06	ETS	170.31	ZAE	167.51	ETE	125.98	ZAC	97.80	ETC	255.83	CLP	133.70

PLANETOCENTRIC CONIC

C3	12.167	VHL	3.488	DLA	11.76	RAL	160.63	RAD	6567.5	VEL	11.557	PTH	2.02	VHP	3.668	DPA	6.33	RAP	190.64	ECC	1.2002

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 17 6	2476.13	-24.94	58.75	17.54	103.87	18 58 23	1876.1	-22.78	50.74
90.00	9 20 25	4372.50	5.58	181.63	13.80	62.19	10 33 18	3772.5	1.81	174.97
100.00	19 44 25	2194.54	-25.95	37.75	17.25	105.38	20 21 0	1594.5	-23.59	29.75
100.00	10 35 48	4129.32	6.50	163.25	13.30	60.76	11 44 37	3529.3	2.56	156.68
110.00	21 6 9	1938.77	-28.64	17.38	16.30	109.51	21 38 28	1338.8	-25.71	9.42
110.00	11 30 33	3957.86	8.91	148.77	11.83	56.86	12 36 31	3357.9	4.49	142.47

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6421	TRA	-1.6232	TC3	2.3843	BAU	.4533	SGT	3361.0	SGR	1382.4	SG3	2165.6	ST	1335.2	SR	579.7	SS	2308.4
RDE	.3218	RRA	-.4688	RC3	1.4428	FAU	.36604	RRT	.9413	RRF	-.9819	RTF	-.9564	CRT	.9715	CRS	.9475	CST	.9956
FDE	-3.2495	FRA	9.7859	FC	-26.0463	BSP	12721	SGB	3634.2	R23	-.1963	R13	-.9668	LSA	2721.6	MSA	198.5	SSA	34.0
BDE	.7183	BRA	1.6895	BC3	2.7869	FSP	7258	SG1	3608.2	SG2	434.6	THA	21.49	EL1	1450.1	EL2	126.6	ALF	23.06

LAUNCH DATE OCT 25 1964 FLIGHT TIME 276.00 ARRIVAL DATE JUL 28 1965

HELIOCENTRIC CONIC DISTANCE 641.287 EARTH TO MARS

RL	148.73	LAL	.00	LOL	31.61	VL	32.855	GAL	-4.36	AZL	89.58	HCA	202.74	SMA	188.20	ECC	.22252	INC	.4218	V1	29.958
RP	230.05	LAP	-.16	LOP	234.36	VP	21.180	GAP	.46	AZP	90.39	TAL	335.64	TAP	178.38	RCA	146.32	APO	230.08	V2	23.907
RC	229.120	GL	3.99	GP	8.59	ZAL	125.80	ZAP	131.70	ETS	170.89	ZAE	166.67	ETE	131.91	ZAC	97.52	ETC	255.86	CLP	132.28

PLANETOCENTRIC CONIC

C3	12.043	VHL	3.470	DLA	12.46	RAL	160.72	RAD	6567.5	VEL	11.551	PTH	2.02	VHP	3.596	DPA	6.31	RAP	190.19	ECC	1.1982

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 11 37	2497.44	-25.28	60.22	17.72	103.21	18 53 14	1897.4	-23.21	52.16
90.00	9 26 40	4346.86	4.76	180.19	13.82	62.05	10 39 7	3746.9	.99	173.54
100.00	19 39 21	2214.47	-26.31	39.12	17.44	104.74	20 16 16	1614.5	-24.02	31.07
100.00	10 41 37	4105.07	5.69	161.90	13.31	60.61	11 50 2	3505.1	1.73	155.35
110.00	21 2 2	1955.76	-29.02	18.55	16.51	108.91	21 34 37	1355.8	-26.16	10.54
110.00	11 35 26	3936.53	8.11	147.63	11.82	56.68	12 41 2	3336.5	3.67	141.35

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6089	TRA	-1.5485	TC3	2.2649	BAU	.4333	SGT	3215.2	SGR	1379.6	SG3	2256.2	ST	1276.6	SR	577.6	SS	2316.2
RDE	.3194	RRA	-.4611	RC3	1.4532	FAU	.38000	RRT	.9372	RRF	-.9802	RTF	-.9536	CRT	.9699	CRS	.9406	CST	.9942
FDE	-3.2516	FRA	10.1339	FC	-27.3174	BSP	12244	SGB	3498.7	R23	-.1975	R13	-.9654	LSA	2698.5	MSA	213.3	SSA	33.5
BDE	.6875	BRA	1.6157	BC3	2.6911	FSP	7578	SG1	3470.1	SG2	445.9	THA	22.29	EL1	1395.3	EL2	128.7	ALF	23.91

LAUNCH DATE OCT 25 1964 FLIGHT TIME 278.00 ARRIVAL DATE JUL 30 1965

HELIOCENTRIC CONIC DISTANCE 645.125 EARTH TO MARS

RL	148.73	LAL	.00	LOL	31.61	VL	32.844	GAL	-4.33	AZL	89.51	HCA	203.77	SMA	188.01	ECC	.22159	INC	.4874	V1	29.958
RP	229.67	LAP	-.20	LOP	235.38	VP	21.209	GAP	.14	AZP	90.45	TAL	335.74	TAP	179.50	RCA	146.35	APO	229.67	V2	23.948
RC	231.027	GL	4.63	GP	8.41	ZAL	125.60	ZAP	130.28	ETS	171.43	ZAE	165.65	ETE	137.17	ZAC	97.25	ETC	255.88	CLP	130.81

PLANETOCENTRIC CONIC

C3	11.930	VHL	3.454	DLA	13.10	RAL	160.82	RAD	6567.5	VEL	11.546	PTH	2.02	VHP	3.527	DPA	6.33	RAP	189.72	ECC	1.1963

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 6 26	2517.50	-25.58	61.61	17.90	102.58	18 48 24	1917.5	-23.59	53.51
90.00	9 32 34	4322.86	3.99	178.84	13.85	61.94	10 44 37	3722.9	.21	172.21
100.00	19 34 35	2233.20	-26.62	40.43	17.62	104.12	20 11 49	1633.2	-24.42	32.32
100.00	10 47 6	4082.39	4.93	160.65	13.34	60.48	11 55 9	3482.4	.97	154.11
110.00	20 58 10	1971.69	-29.37	19.66	16.72	108.34	21 31 2	1371.7	-26.58	11.59
110.00	11 40 1	3916.66	7.37	146.57	11.84	56.53	12 45 18	3316.7	2.92	140.31

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5757	TRA	-1.4710	TC3	2.1278	BAU	.4119	SGT	3057.7	SGR	1378.5	SG3	2347.7	ST	1216.1	SR	576.3	SS	2324.0
RDE	.3174	RRA	-.4549	RC3	1.4640	FAU	.39389	RRT	.9325	RRF	-.9785	RTF	-.9502	CRT	.9686	CRS	.9334	CST	.9924
FDE	-3.2493	FRA	10.4936	FC	-28.5825	BSP	11744	SGB	3354.0	R23	-.1994	R13	-.9637	LSA	2675.6	MSA	228.5	SSA	33.0
BDE	.6574	BRA	1.5397	BC3	2.5828	FSP	7915	SG1	3322.6	SG2	458.3	THA	23.27	EL1	1339.4	EL2	130.2	ALF	24.91

LAUNCH DATE OCT 25 1964 FLIGHT TIME 280.00 ARRIVAL DATE AUG 1 1965

HELIOCENTRIC CONIC DISTANCE 648.973 EARTH TO MARS

RL 148.73 LAL .00 LOL 31.61 VL 32.834 GAL -4.30 AZL 89.45 HCA 204.80 SMA 187.83 ECC .22071 INC .5466 V1 29.958
RP 229.28 LAP -.23 LOP 236.41 VP 21.239 GAP -.18 AZP 90.50 TAL 335.82 TAP 180.62 RCA 146.37 APO 229.28 V2 23.988
RC 232.913 GL 5.21 GP 8.24 ZAL 125.42 ZAP 128.82 ETS 171.95 ZAE 164.48 ETE 141.78 ZAC 96.99 ETC 255.91 CLP 129.30

PLANETOCENTRIC CONIC

C3 11.829 VHL 3.439 DLA 13.70 RAL 160.91 RAD 6567.5 VEL 11.542 PTH 2.01 VHP 3.462 DPA 6.38 RAP 189.22 ECC 1.1947

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 1 34	2536.41	-25.85	62.93	18.07	101.97	18 43 50	1936.4	-23.95	54.78
90.00	9 38 10	4300.35	3.27	177.58	13.90	61.86	10 49 50	3700.3	-.52	170.95
100.00	19 30 7	2250.83	-26.91	41.66	17.81	103.53	20 7 38	1650.8	-24.78	33.50
100.00	10 52 18	4061.17	4.22	159.47	13.38	60.38	11 59 59	3461.2	.25	152.94
110.00	20 54 33	1986.64	-29.68	20.71	16.93	107.79	21 27 40	1386.6	-26.96	12.58
110.00	11 44 21	3898.12	6.67	145.59	11.86	56.40	12 49 20	3298.1	2.21	139.35

DIFFERENTIAL CORRECTIONS
TDE .5448 TRA-1.3896 TC3 1.9765 BAU .3902
RDE .3167 RRA -.4491 RC3 1.4773 FAU .40836
FDE-3.2603 FRA10.8485 FC-29.8872 BSP 11184
BDE .6301 BRA 1.4604 BC3 2.4676 FSP 8239

MID-COURSE EXECUTION ACCURACY
SGT 2889.6 SGR 1379.9 SG3 2441.0
RRT .9268 RRF -.9769 RTF -.9457
SGB 3202.2 R23 -.2026 R13 -.9616
SG1 3167.1 SG2 472.8 THA 24.45

ORBIT DETERMINATION ACCURACY
ST 1156.0 SR 576.8 SS 2336.3
CRT .9677 CRS .9263 CST .9904
LSA 2658.4 MSA 243.1 SSA 32.6
EL1 1285.2 EL2 130.8 ALF 26.06

LAUNCH DATE OCT 25 1964 FLIGHT TIME 282.00 ARRIVAL DATE AUG 3 1965

HELIOCENTRIC CONIC DISTANCE 652.832 EARTH TO MARS

RL 148.73 LAL .00 LOL 31.61 VL 32.824 GAL -4.28 AZL 89.40 HCA 205.83 SMA 187.66 ECC .21989 INC .6022 V1 29.958
RP 228.89 LAP -.26 LOP 237.44 VP 21.270 GAP -.49 AZP 90.54 TAL 335.90 TAP 181.73 RCA 146.39 APO 228.92 V2 24.029
RC 234.778 GL 5.77 GP 8.09 ZAL 125.26 ZAP 127.31 ETS 172.43 ZAE 163.19 ETE 145.80 ZAC 96.73 ETC 255.94 CLP 127.76

PLANETOCENTRIC CONIC

C3 11.738 VHL 3.426 DLA 14.26 RAL 161.00 RAD 6567.4 VEL 11.538 PTH 2.01 VHP 3.399 DPA 6.46 RAP 188.69 ECC 1.1932

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 56 59	2554.28	-26.10	64.18	18.25	101.39	18 39 34	1954.3	-24.27	55.99
90.00	9 43 29	4279.24	2.59	176.40	13.97	61.79	10 54 48	3679.2	-1.20	169.77
100.00	19 25 56	2267.46	-27.17	42.83	17.99	102.97	20 3 43	1667.5	-25.11	34.63
100.00	10 57 14	4041.29	3.55	158.38	13.44	60.30	12 4 35	3441.3	-.43	151.85
110.00	20 51 11	2000.70	-29.97	21.71	17.13	107.27	21 24 32	1400.7	-27.32	13.52
110.00	11 48 28	3880.81	6.02	144.68	11.91	56.29	12 53 9	3280.8	1.55	138.44

DIFFERENTIAL CORRECTIONS
TDE .5133 TRA-1.3055 TC3 1.8047 BAU .3673
RDE .3162 RRA -.4446 RC3 1.4904 FAU .42271
FDE-3.2651 FRA11.2130 FC-31.1782 BSP 10612
BDE .6029 BRA 1.3791 BC3 2.3406 FSP 8577

MID-COURSE EXECUTION ACCURACY
SGT 2709.4 SGR 1382.4 SG3 2534.6
RRT .9198 RRF -.9752 RTF -.9397
SGB 3041.7 R23 -.2074 R13 -.9591
SG1 3002.0 SG2 489.7 THA 25.88

ORBIT DETERMINATION ACCURACY
ST 1093.2 SR 577.6 SS 2347.8
CRT .9672 CRS .9189 CST .9879
LSA 2640.7 MSA 257.7 SSA 32.3
EL1 1229.5 EL2 130.5 ALF 27.40

LAUNCH DATE OCT 25 1964 FLIGHT TIME 284.00 ARRIVAL DATE AUG 5 1965

HELIOCENTRIC CONIC DISTANCE 656.701 EARTH TO MARS

RL 148.73 LAL .00 LOL 31.61 VL 32.815 GAL -4.25 AZL 89.35 HCA 206.87 SMA 187.50 ECC .21912 INC .6536 V1 29.958
RP 228.51 LAP -.30 LOP 238.48 VP 21.302 GAP -.79 AZP 90.58 TAL 335.96 TAP 182.83 RCA 146.41 APO 228.58 V2 24.070
RC 236.623 GL 6.28 GP 7.95 ZAL 125.11 ZAP 125.76 ETS 172.89 ZAE 161.77 ETE 149.29 ZAC 96.47 ETC 255.97 CLP 126.16

PLANETOCENTRIC CONIC

C3 11.656 VHL 3.414 DLA 14.78 RAL 161.10 RAD 6567.4 VEL 11.534 PTH 2.01 VHP 3.339 DPA 6.56 RAP 188.13 ECC 1.1918

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 52 42	2571.17	-26.32	65.37	18.43	100.84	18 35 33	1971.2	-24.56	57.14
90.00	9 48 33	4259.43	1.96	175.30	14.05	61.75	10 59 32	3659.4	-1.84	168.67
100.00	19 22 0	2283.15	-27.40	43.93	18.18	102.43	20 0 3	1683.1	-25.42	35.70
100.00	11 1 55	4022.68	2.92	157.35	13.51	60.24	12 8 58	3422.7	-1.06	150.83
110.00	20 48 2	2013.94	-30.23	22.65	17.34	106.77	21 21 36	1413.9	-27.64	14.41
110.00	11 52 22	3864.66	5.41	143.82	11.97	56.20	12 56 47	3264.7	.93	137.60

DIFFERENTIAL CORRECTIONS
TDE .4839 TRA-1.2167 TC3 1.6193 BAU .3445
RDE .3167 RRA -.4403 RC3 1.5048 FAU .43737
FDE-3.2803 FRA11.5722 FC-32.4854 BSP 9988
BDE .5784 BRA 1.2939 BC3 2.2105 FSP 8905

MID-COURSE EXECUTION ACCURACY
SGT 2518.2 SGR 1386.5 SG3 2628.8
RRT .9113 RRF -.9735 RTF -.9320
SGB 2874.7 R23 -.2131 R13 -.9561
SG1 2829.4 SG2 508.2 THA 27.61

ORBIT DETERMINATION ACCURACY
ST 1030.5 SR 579.7 SS 2362.5
CRT .9675 CRS .9118 CST .9848
LSA 2627.6 MSA 272.1 SSA 31.9
EL1 1175.4 EL2 128.6 ALF 28.93

LAUNCH DATE OCT 25 1964 FLIGHT TIME 286.00 ARRIVAL DATE AUG 7 1965

HELIOCENTRIC CONIC DISTANCE 660.579 EARTH TO MARS

RL 148.73 LAL .00 LOL 31.61 VL 32.806 GAL -4.23 AZL 89.30 HCA 207.91 SMA 187.35 ECC .21841 INC .7020 V1 29.958
RP 228.12 LAP -.33 LOP 239.52 VP 21.335 GAP -1.09 AZP 90.62 TAL 336.02 TAP 183.92 RCA 146.43 APO 228.27 V2 24.111
RC 238.446 GL 6.77 GP 7.82 ZAL 124.98 ZAP 124.16 ETS 173.33 ZAE 160.26 ETE 152.32 ZAC 96.21 ETC 256.01 CLP 124.53

PLANETOCENTRIC CONIC

C3 11.584 VHL 3.403 DLA 15.26 RAL 161.20 RAD 6567.4 VEL 11.531 PTH 2.01 VHP 3.283 DPA 6.69 RAP 187.54 ECC 1.1906

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 48 40	2587.13	-26.52	66.49	18.62	100.30	18 31 47	1987.1	-24.83	58.23
90.00	9 53 23	4240.86	1.36	174.26	14.14	61.71	11 4 4	3640.9	-2.43	167.63
100.00	19 18 20	2297.96	-27.62	44.98	18.38	101.92	19 56 38	1698.0	-25.69	36.71
100.00	11 6 24	4005.27	2.33	156.40	13.60	60.19	12 13 9	3405.3	-1.65	149.88
110.00	20 45 8	2026.40	-30.47	23.54	17.55	106.29	21 18 54	1426.4	-27.94	15.26
110.00	11 56 6	3849.60	4.84	143.03	12.04	56.12	13 0 15	3249.6	.35	136.81

DIFFERENTIAL CORRECTIONS
TDE .4536 TRA-1.1258 TC3 1.4104 BAU .3209
RDE .3172 RRA -.4372 RC3 1.5179 FAU .45157
FDE-3.2868 FRA11.9442 FC-33.7496 BSP 9351
BDE .5535 BRA 1.2078 BC3 2.0720 FSP 9248

MID-COURSE EXECUTION ACCURACY
SGT 2316.1 SGR 1391.0 SG3 2722.4
RRT .8997 RRF -.9718 RTF -.9212
SGB 2701.7 R23 -.2209 R13 -.9524
SG1 2649.0 SG2 530.8 THA 29.70

ORBIT DETERMINATION ACCURACY
ST 965.0 SR 581.8 SS 2376.2
CRT .9681 CRS .9042 CST .9809
LSA 2614.0 MSA 286.5 SSA 31.7
EL1 1119.8 EL2 125.6 ALF 30.70

LAUNCH DATE OCT 25 1964 FLIGHT TIME 288.00 ARRIVAL DATE AUG 9 1965

HELIOCENTRIC CONIC DISTANCE 664.467 EARTH TO MARS
RL 148.73 LAL .00 LOL 31.61 VL 32.798 GAL -4.21 AZL 89.25 HCA 208.95 SMA 187.21 ECC .21774 INC .7471 V1 29.958
RP 227.73 LAP -.36 LOP 240.56 VP 21.369 GAP -1.39 AZP 90.65 TAL 336.06 TAP 185.01 RCA 146.44 APO 227.97 V2 24.152
RC 240.248 GL 7.22 GP 7.70 ZAL 124.86 ZAP 122.52 ETS 173.75 ZAE 158.66 ETE 154.96 ZAC 95.96 ETC 256.04 CLP 122.86
PLANETOCENTRIC CONIC
C3 11.520 VHL 3.394 DLA 15.71 RAL 161.30 RAD 6567.4 VEL 11.529 PTH 2.01 VHP 3.229 DPA 6.84 RAP 186.91 ECC 1.1896

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 44 55	2602.24	-26.70	67.56	18.81	99.80	18 28 17	2002.2	-25.07	59.27
90.00	9 57 59	4223.47	.80	173.29	14.26	61.69	11 8 23	3623.5	-2.99	166.66
100.00	19 14 56	2311.96	-27.81	45.98	18.57	101.43	19 53 27	1712.0	-25.95	37.67
100.00	11 10 40	3988.98	1.78	155.50	13.71	60.16	12 17 9	3389.0	-2.20	148.98
110.00	20 42 26	2038.14	-30.70	24.38	17.77	105.84	21 16 24	1438.1	-28.22	16.06
110.00	11 59 38	3835.56	4.30	142.29	12.14	56.06	13 3 34	3235.6	-.18	136.08

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY
TDE .4248 TRA-1.0300 TC3 1.1881 BAU .2986 SGT 2104.1 SGR 1396.4 SG3 2815.6 ST 899.1 SR 584.7 SS 2391.4
RDE .3183 RRA -.4343 RC3 1.5319 FAU .46601 RRT .8847 RRF -.9702 RTF -.9064 CRT .9698 CRS .8969 CST .9759
FDE-3.3001 FRA12.3076 FC-35.0205 BSP 8687 SGB 2525.3 R23 -.2295 R13 -.9483 LSA 2603.4 MSA 300.6 SSA 31.4
BDE .5308 BRA 1.1178 BC3 1.9386 FSP 9582 SG1 2463.4 SG2 556.0 THA 32.26 EL1 1065.8 EL2 120.3 ALF 32.71

LAUNCH DATE OCT 25 1964 FLIGHT TIME 290.00 ARRIVAL DATE AUG 11 1965

HELIOCENTRIC CONIC DISTANCE 668.564 EARTH TO MARS
RL 148.73 LAL .00 LOL 31.61 VL 32.790 GAL -4.20 AZL 89.21 HCA 210.00 SMA 187.07 ECC .21713 INC .7895 V1 29.958
RP 227.34 LAP -.39 LOP 241.61 VP 21.404 GAP -1.68 AZP 90.68 TAL 336.09 TAP 186.09 RCA 146.45 APO 227.69 V2 24.193
RC 242.030 GL 7.65 GP 7.58 ZAL 124.77 ZAP 120.84 ETS 174.15 ZAE 156.98 ETE 157.28 ZAC 95.70 ETC 256.09 CLP 121.14
PLANETOCENTRIC CONIC
C3 11.465 VHL 3.386 DLA 16.13 RAL 161.42 RAD 6567.4 VEL 11.526 PTH 2.01 VHP 3.179 DPA 7.02 RAP 186.26 ECC 1.1887

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 41 25	2616.52	-26.86	68.58	19.01	99.31	18 25 2	2016.5	-25.30	60.26
90.00	10 2 24	4207.19	.27	172.38	14.39	61.68	11 12 31	3607.2	-3.52	165.75
100.00	19 11 46	2325.17	-27.98	46.92	18.78	100.96	19 50 31	1725.2	-26.19	38.58
100.00	11 14 44	3973.77	1.27	154.67	13.83	60.13	12 20 58	3373.8	-2.72	148.15
110.00	20 39 58	2049.20	-30.90	25.18	18.00	105.41	21 14 7	1449.2	-28.48	16.82
110.00	12 3 1	3822.51	3.81	141.61	12.25	56.00	13 6 44	3222.5	-.68	135.40

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY
TDE .3961 TRA -.9305 TC3 .9464 BAU .2777 SGT 1883.2 SGR 1402.2 SG3 2907.6 ST 831.6 SR 588.2 SS 2407.7
RDE .3198 RRA -.4317 RC3 1.5453 FAU .48021 RRT .8634 RRF -.9685 RTF -.8848 CRT .9723 CRS .8897 CST .9695
FDE-3.3157 FRA12.6689 FC-36.2616 BSP 7996 SGB 2347.9 R23 -.2391 R13 -.9435 LSA 2595.2 MSA 314.3 SSA 31.2
BDE .5091 BRA 1.0257 BC3 1.8121 FSP 9911 SG1 2273.6 SG2 586.1 THA 35.44 EL1 1012.3 EL2 112.8 ALF 35.02

LAUNCH DATE OCT 25 1964 FLIGHT TIME 292.00 ARRIVAL DATE AUG 13 1965

HELIOCENTRIC CONIC DISTANCE 672.270 EARTH TO MARS
RL 148.73 LAL .00 LOL 31.61 VL 32.783 GAL -4.19 AZL 89.17 HCA 211.05 SMA 186.95 ECC .21656 INC .8295 V1 29.958
RP 226.95 LAP -.43 LOP 242.66 VP 21.440 GAP -1.97 AZP 90.71 TAL 336.11 TAP 187.16 RCA 146.46 APO 227.44 V2 24.235
RC 243.792 GL 8.05 GP 7.47 ZAL 124.69 ZAP 119.11 ETS 174.54 ZAE 155.22 ETE 159.31 ZAC 95.44 ETC 256.13 CLP 119.38
PLANETOCENTRIC CONIC
C3 11.418 VHL 3.379 DLA 16.52 RAL 161.54 RAD 6567.4 VEL 11.524 PTH 2.01 VHP 3.132 DPA 7.21 RAP 185.57 ECC 1.1879

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 38 11	2630.01	-27.01	69.54	19.21	98.85	18 22 1	2030.0	-25.51	61.19
90.00	10 6 36	4192.00	-.22	171.53	14.53	61.68	11 16 28	3592.0	-4.00	164.90
100.00	19 8 51	2337.64	-28.14	47.81	18.99	100.52	19 47 49	1737.6	-26.40	39.44
100.00	11 18 38	3959.61	.79	153.89	13.97	60.12	12 24 37	3359.6	-3.20	147.37
110.00	20 37 42	2059.62	-31.08	25.93	18.23	104.99	21 12 2	1459.6	-28.71	17.53
110.00	12 6 16	3810.39	3.35	140.98	12.37	55.96	13 9 46	3210.4	-1.14	134.77

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY
TDE .3676 TRA -.8272 TC3 .6880 BAU .2600 SGT 1656.8 SGR 1408.1 SG3 2997.8 ST 762.5 SR 591.8 SS 2423.8
RDE .3216 RRA -.4294 RC3 1.5579 FAU .49415 RRT .8318 RRF -.9669 RTF -.8524 CRT .9758 CRS .8824 CST .9610
FDE-3.3296 FRA13.0273 FC-37.4667 BSP 7306 SGB 2174.3 R23 -.2480 R13 -.9385 LSA 2588.0 MSA 327.8 SSA 31.0
BDE .4884 BRA .9320 BC3 1.7031 FSP 10233 SG1 2083.6 SG2 621.4 THA 39.44 EL1 959.7 EL2 102.7 ALF 37.65

LAUNCH DATE OCT 25 1964 FLIGHT TIME 294.00 ARRIVAL DATE AUG 15 1965

HELIOCENTRIC CONIC DISTANCE 676.186 EARTH TO MARS
RL 148.73 LAL .00 LOL 31.61 VL 32.776 GAL -4.18 AZL 89.13 HCA 212.10 SMA 186.83 ECC .21605 INC .8671 V1 29.958
RP 226.56 LAP -.46 LOP 243.71 VP 21.477 GAP -2.25 AZP 90.73 TAL 336.12 TAP 188.22 RCA 146.47 APO 227.20 V2 24.277
RC 245.534 GL 8.44 GP 7.36 ZAL 124.63 ZAP 117.34 ETS 174.92 ZAE 153.40 ETE 161.11 ZAC 95.17 ETC 256.18 CLP 117.59
PLANETOCENTRIC CONIC
C3 11.379 VHL 3.373 DLA 16.88 RAL 161.67 RAD 6567.4 VEL 11.522 PTH 2.01 VHP 3.088 DPA 7.42 RAP 184.86 ECC 1.1873

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 35 13	2642.74	-27.14	70.45	19.43	98.41	18 19 15	2042.7	-25.69	62.08
90.00	10 10 38	4177.85	-.68	170.75	14.69	61.69	11 20 16	3577.9	-4.46	164.10
100.00	19 6 11	2349.38	-28.29	48.66	19.22	100.10	19 45 20	1749.4	-26.60	40.26
100.00	11 22 21	3946.44	.34	153.17	14.13	60.11	12 28 8	3346.4	-3.64	146.64
110.00	20 35 40	2069.41	-31.25	26.65	18.47	104.60	21 10 9	1469.4	-28.93	18.21
110.00	12 9 22	3799.18	2.92	140.39	12.52	55.93	13 12 41	3199.2	-1.57	134.19

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY
TDE .3403 TRA -.7194 TC3 .4125 BAU .2469 SGT 1429.0 SGR 1413.8 SG3 3085.3 ST 693.4 SR 596.0 SS 2441.1
RDE .3238 RRA -.4271 RC3 1.5697 FAU .50778 RRT .7824 RRF -.9652 RTF -.8006 CRT .9806 CRS .8755 CST .9494
FDE-3.3500 FRA13.3730 FC-38.6323 BSP 6615 SGB 2010.2 R23 -.2535 R13 -.9342 LSA 2584.1 MSA 341.1 SSA 30.7
BDE .4697 BRA .8367 BC3 1.6230 FSP 10540 SG1 1897.7 SG2 663.0 THA 44.61 EL1 910.0 EL2 89.1 ALF 40.59

LAUNCH DATE OCT 25 1964 FLIGHT TIME 296.00 ARRIVAL DATE AUG 17 1965

HELIOCENTRIC CONIC DISTANCE 680.111 EARTH TO MARS

RL 148.73 LAL .00 LOL 31.61 VL 32.770 GAL -4.17 AZL 89.10 HCA 213.16 SMA 186.73 ECC .21557 INC .9028 V1 29.958
RP 226.17 LAP -.49 LOP 244.77 VP 21.514 GAP -2.53 AZP 90.76 TAL 336.12 TAP 189.28 RCA 146.47 APO 226.98 V2 24.318
RC 247.256 GL 8.80 GP 7.26 ZAL 124.59 ZAP 115.54 ETS 175.28 ZAE 151.52 ETE 162.71 ZAC 94.91 ETC 256.23 CLP 115.76

PLANETOCENTRIC CONIC

C3 11.348 VHL 3.369 DLA 17.21 RAL 161.82 RAD 6567.4 VEL 11.521 PTH 2.01 VHP 3.048 DPA 7.65 RAP 184.11 ECC 1.1868

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 32 29	2654.74	-27.25	71.31	19.66	98.00	18 16 44	2054.7	-25.87	62.91
90.00	10 14 29	4164.72	-1.10	170.01	14.87	61.70	11 23 54	3564.7	-4.88	163.37
100.00	19 3 45	2360.44	-28.41	49.45	19.45	99.70	19 43 6	1760.4	-26.78	41.03
100.00	11 25 55	3934.25	-.07	152.50	14.30	60.11	12 31 29	3334.2	-4.05	145.97
110.00	20 33 50	2078.62	-31.41	27.32	18.72	104.23	21 8 28	1478.6	-29.14	18.85
110.00	12 12 20	3788.83	2.52	139.85	12.68	55.90	13 15 29	3188.8	-1.97	133.65

DIFFERENTIAL CORRECTIONS
TDE .3146 TRA -.6058 TC3 .1292 BAU .2408
RDE .3267 RRA -.4244 RC3 1.5823 FAU .52169
FDE-3.3844 FRA13.6958 FC-39.7991 BSP 5929
BDE .4536 BRA .7396 BC3 1.5875 FSP 10805

MID-COURSE EXECUTION ACCURACY
SGT 1207.2 SGR 1420.0 SG3 3170.8
RRT .7031 RRF -.9635 RTF -.7159
SGB 1863.8 R23 -.2470 R13 -.9329
SG1 1724.5 SG2 706.8 THA 51.53

ORBIT DETERMINATION ACCURACY
ST 625.3 SR 601.0 SS 2460.4
CRT .9866 CRS .8695 CST .9327
LSA 2584.5 MSA 354.4 SSA 30.3
EL1 864.4 EL2 71.0 ALF 43.85

LAUNCH DATE OCT 25 1964 FLIGHT TIME 298.00 ARRIVAL DATE AUG 19 1965

HELIOCENTRIC CONIC DISTANCE 684.045 EARTH TO MARS

RL 148.73 LAL .00 LOL 31.61 VL 32.764 GAL -4.17 AZL 89.06 HCA 214.22 SMA 186.63 ECC .21515 INC .9369 V1 29.958
RP 225.78 LAP -.53 LOP 245.83 VP 21.553 GAP -2.80 AZP 90.77 TAL 336.10 TAP 190.32 RCA 146.47 APO 226.78 V2 24.360
RC 248.959 GL 9.14 GP 7.16 ZAL 124.57 ZAP 113.70 ETS 175.63 ZAE 149.58 ETE 164.15 ZAC 94.63 ETC 256.29 CLP 113.89

PLANETOCENTRIC CONIC

C3 11.325 VHL 3.365 DLA 17.52 RAL 161.97 RAD 6567.4 VEL 11.520 PTH 2.01 VHP 3.011 DPA 7.89 RAP 183.34 ECC 1.1864

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 30 2	2666.01	-27.36	72.11	19.90	97.61	18 14 28	2066.0	-26.02	63.70
90.00	10 18 10	4152.59	-1.49	169.34	15.07	61.72	11 27 23	3552.6	-5.26	162.68
100.00	19 1 34	2370.82	-28.53	50.20	19.70	99.32	19 41 5	1770.8	-26.95	41.76
100.00	11 29 19	3923.02	-.45	151.88	14.49	60.11	12 34 42	3323.0	-4.43	145.35
110.00	20 32 12	2087.25	-31.55	27.95	18.98	103.89	21 6 59	1487.3	-29.32	19.45
110.00	12 15 10	3779.35	2.16	139.35	12.86	55.88	13 18 10	3179.3	-2.33	133.15

DIFFERENTIAL CORRECTIONS
TDE .2858 TRA -.4911 TC3 -.1840 BAU .2422
RDE .3288 RRA -.4228 RC3 1.5891 FAU .53351
FDE-3.3880 FRA14.0385 FC-40.7854 BSP 5395
BDE .4356 BRA .6480 BC3 1.5997 FSP 11123

MID-COURSE EXECUTION ACCURACY
SGT 1010.4 SGR 1423.7 SG3 3250.1
RRT .5574 RRF -.9617 RTF -.5626
SGB 1745.8 R23 -.2175 R13 -.9374
SG1 1571.8 SG2 759.9 THA 61.05

ORBIT DETERMINATION ACCURACY
ST 553.1 SR 604.7 SS 2474.4
CRT .9921 CRS .8619 CST .9087
LSA 2580.4 MSA 367.1 SSA 30.2
EL1 817.9 EL2 51.5 ALF 47.57

LAUNCH DATE OCT 25 1964 FLIGHT TIME 300.00 ARRIVAL DATE AUG 21 1965

HELIOCENTRIC CONIC DISTANCE 687.987 EARTH TO MARS

RL 148.73 LAL .00 LOL 31.61 VL 32.759 GAL -4.16 AZL 89.03 HCA 215.29 SMA 186.53 ECC .21476 INC .9690 V1 29.958
RP 225.38 LAP -.56 LOP 246.90 VP 21.592 GAP -3.07 AZP 90.79 TAL 336.08 TAP 191.36 RCA 146.47 APO 226.59 V2 24.402
RC 250.643 GL 9.46 GP 7.06 ZAL 124.57 ZAP 111.82 ETS 175.97 ZAE 147.60 ETE 165.43 ZAC 94.36 ETC 256.35 CLP 112.00

PLANETOCENTRIC CONIC

C3 11.309 VHL 3.363 DLA 17.80 RAL 162.13 RAD 6567.4 VEL 11.519 PTH 2.01 VHP 2.977 DPA 8.15 RAP 182.54 ECC 1.1861

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 27 50	2676.57	-27.45	72.87	20.15	97.24	18 12 26	2076.6	-26.16	64.44
90.00	10 21 41	4141.44	-1.85	168.71	15.28	61.74	11 30 43	3541.4	-5.62	162.06
100.00	18 59 38	2380.54	-28.64	50.91	19.96	98.96	19 39 18	1780.5	-27.10	42.44
100.00	11 32 34	3912.71	-.80	151.32	14.70	60.12	12 37 47	3312.7	-4.77	144.78
110.00	20 30 47	2095.33	-31.68	28.54	19.25	103.56	21 5 43	1495.3	-29.50	20.02
110.00	12 17 54	3770.68	1.83	138.90	13.05	55.86	13 20 45	3170.7	-2.66	132.70

DIFFERENTIAL CORRECTIONS
TDE .2589 TRA -.3707 TC3 -.5041 BAU .2532
RDE .3319 RRA -.4202 RC3 1.5973 FAU .54580
FDE-3.4166 FRA14.3423 FC-41.7839 BSP 4957
BDE .4209 BRA .5603 BC3 1.6749 FSP 11373

MID-COURSE EXECUTION ACCURACY
SGT 865.9 SGR 1428.0 SG3 3326.5
RRT .3106 RRF -.9600 RTF -.3020
SGB 1670.0 R23 -.1392 R13 -.9498
SG1 1464.5 SG2 802.5 THA 74.61

ORBIT DETERMINATION ACCURACY
ST 484.1 SR 609.6 SS 2492.0
CRT .9963 CRS .8559 CST .8724
LSA 2582.9 MSA 379.2 SSA 29.9
EL1 777.8 EL2 32.6 ALF 51.57

LAUNCH DATE OCT 25 1964 FLIGHT TIME 302.00 ARRIVAL DATE AUG 23 1965

HELIOCENTRIC CONIC DISTANCE 691.938 EARTH TO MARS

RL 148.73 LAL .00 LOL 31.61 VL 32.754 GAL -4.16 AZL 89.00 HCA 216.35 SMA 186.45 ECC .21442 INC .9996 V1 29.958
RP 224.99 LAP -.59 LOP 247.97 VP 21.631 GAP -3.33 AZP 90.81 TAL 336.04 TAP 192.39 RCA 146.47 APO 226.42 V2 24.444
RC 252.307 GL 9.76 GP 6.96 ZAL 124.59 ZAP 109.91 ETS 176.29 ZAE 145.56 ETE 166.59 ZAC 94.08 ETC 256.42 CLP 110.07

PLANETOCENTRIC CONIC

C3 11.300 VHL 3.362 DLA 18.06 RAL 162.31 RAD 6567.4 VEL 11.519 PTH 2.01 VHP 2.946 DPA 8.42 RAP 181.72 ECC 1.1860

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 25 53	2686.45	-27.53	73.58	20.41	96.89	18 10 39	2086.4	-26.29	65.14
90.00	10 25 2	4131.25	-2.18	168.15	15.51	61.76	11 33 54	3531.2	-5.94	161.48
100.00	18 57 56	2389.62	-28.73	51.56	20.23	98.63	19 37 45	1789.6	-27.24	43.08
100.00	11 35 41	3903.31	-1.12	150.80	14.92	60.13	12 40 44	3303.3	-5.09	144.26
110.00	20 29 35	2102.88	-31.80	29.10	19.54	103.25	21 4 38	1502.9	-29.65	20.55
110.00	12 20 31	3762.82	1.53	138.49	13.26	55.85	13 23 14	3162.8	-2.96	132.29

DIFFERENTIAL CORRECTIONS
TDE .2318 TRA -.2466 TC3 -.8403 BAU .2733
RDE .3349 RRA -.4176 RC3 1.6024 FAU .55693
FDE-3.4389 FRA14.6358 FC-42.6681 BSP 4731
BDE .4073 BRA .4850 BC3 1.8094 FSP 11615

MID-COURSE EXECUTION ACCURACY
SGT 819.0 SGR 1430.7 SG3 3396.9
RRT -.0445 RRF -.9581 RTF .0712
SGB 1648.5 R23 -.0078 R13 -.9585
SG1 1431.4 SG2 817.8 THA 92.17

ORBIT DETERMINATION ACCURACY
ST 417.1 SR 614.3 SS 2508.0
CRT .9944 CRS .8496 CST .8141
LSA 2586.0 MSA 391.3 SSA 29.7
EL1 741.6 EL2 36.7 ALF 55.88

LAUNCH DATE OCT 25 1964 FLIGHT TIME 304.00 ARRIVAL DATE AUG 25 1965

HELIOCENTRIC CONIC DISTANCE 695.897 EARTH TO MARS

RL 148.73 LAL .00 LOL 31.61 VL 32.749 GAL -4.17 AZL 88.97 HCA 217.43 SMA 186.37 ECC .21413 INC 1.0288 V1 29.958
RP 224.60 LAP -.63 LOP 249.04 VP 21.672 GAP -3.59 AZP 90.82 TAL 335.99 TAP 193.42 RCA 146.46 APO 226.27 V2 24.486
RC 253.951 GL 10.05 GP 6.86 ZAL 124.63 ZAP 107.98 ETS 176.61 ZAE 143.49 ETE 167.65 ZAC 93.79 ETC 256.49 CLP 108.11

PLANETOCENTRIC CONIC

C3 11.299 VHL 3.361 DLA 18.30 RAL 162.50 RAD 6567.4 VEL 11.519 PTH 2.01 VHP 2.919 DPA 8.70 RAP 180.87 ECC 1.1859

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 24 12	2695.64	-27.61	74.25	20.69	96.57	18 9 8	2095.6	-26.41	65.78
90.00	10 28 14	4122.01	-2.48	167.63	15.76	61.78	11 36 56	3522.0	-6.23	160.96
100.00	18 56 29	2398.07	-28.82	52.18	20.51	98.31	19 36 27	1798.1	-27.37	43.68
100.00	11 38 39	3894.81	-1.41	150.34	15.16	60.14	12 43 33	3294.8	-5.37	143.79
110.00	20 28 35	2109.90	-31.91	29.62	19.84	102.96	21 3 45	1509.9	-29.80	21.05
110.00	12 23 2	3755.75	1.26	138.12	13.49	55.84	13 25 37	3155.7	-3.23	131.92

DIFFERENTIAL CORRECTIONS

TDE .2040 TRA -.1187 TC3-1.1913 BAU .3019
RDE .3380 RRA -.4148 RC3 1.6046 FAU .56689
FDE-3.4587 FRA14.9107 FC-43.4366 BSP 4774
BDE .3948 BRA .4315 BC3 1.9985 FSP 11849

MID-COURSE EXECUTION ACCURACY

SGT 898.7 SGR 1431.9 SG3 3460.4
RRT -.3923 RRF -.9562 RTF .4342
SGB 1690.5 R23 .1140 R13 -.9515
SG1 1493.1 SG2 792.7 THA 109.55

ORBIT DETERMINATION ACCURACY

ST 354.3 SR 618.8 SS 2522.7
CRT .9752 CRS .8434 CST .7174
LSA 2590.2 MSA 402.6 SSA 29.5
EL1 709.8 EL2 68.3 ALF 60.52

LAUNCH DATE OCT 25 1964 FLIGHT TIME 306.00 ARRIVAL DATE AUG 27 1965

HELIOCENTRIC CONIC DISTANCE 699.865 EARTH TO MARS

RL 148.73 LAL .00 LOL 31.61 VL 32.745 GAL -4.17 AZL 88.94 HCA 218.50 SMA 186.29 ECC .21387 INC 1.0567 V1 29.958
RP 224.21 LAP -.66 LOP 250.11 VP 21.713 GAP -3.85 AZP 90.83 TAL 335.92 TAP 194.43 RCA 146.45 APO 226.14 V2 24.527
RC 255.576 GL 10.32 GP 6.76 ZAL 124.69 ZAP 106.02 ETS 176.92 ZAE 141.38 ETE 168.60 ZAC 93.51 ETC 256.57 CLP 106.14

PLANETOCENTRIC CONIC

C3 11.305 VHL 3.362 DLA 18.51 RAL 162.70 RAD 6567.4 VEL 11.519 PTH 2.01 VHP 2.896 DPA 8.98 RAP 180.01 ECC 1.1860

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 22 46	2704.16	-27.67	74.86	20.98	96.26	18 7 50	2104.2	-26.52	66.39
90.00	10 31 17	4113.71	-2.74	167.17	16.02	61.81	11 39 50	3513.7	-6.49	160.49
100.00	18 55 16	2405.90	-28.89	52.75	20.81	98.02	19 35 22	1805.9	-27.48	44.23
100.00	11 41 28	3887.20	-1.67	149.92	15.42	60.15	12 46 15	3287.2	-5.63	143.37
110.00	20 27 47	2116.42	-32.01	30.10	20.15	102.69	21 3 4	1516.4	-29.93	21.51
110.00	12 25 26	3749.45	1.02	137.79	13.74	55.83	13 27 55	3149.5	-3.47	131.59

DIFFERENTIAL CORRECTIONS

TDE .1764 TRA .0132 TC3-1.5521 BAU .3374
RDE .3413 RRA -.4116 RC3 1.6046 FAU .57594
FDE-3.4789 FRA15.1633 FC-44.1067 BSP 5095
BDE .3842 BRA .4119 BC3 2.2324 FSP 12049

MID-COURSE EXECUTION ACCURACY

SGT 1086.4 SGR 1431.7 SG3 3517.4
RRT -.6229 RRF -.9541 RTF .6742
SGB 1797.2 R23 .1713 R13 -.9441
SG1 1636.1 SG2 743.7 THA 122.92

ORBIT DETERMINATION ACCURACY

ST 302.3 SR 623.3 SS 2536.5
CRT .9140 CRS .8373 CST .5534
LSA 2596.5 MSA 413.9 SSA 29.2
EL1 683.7 EL2 111.8 ALF 65.39

LAUNCH DATE OCT 25 1964 FLIGHT TIME 308.00 ARRIVAL DATE AUG 29 1965

HELIOCENTRIC CONIC DISTANCE 703.839 EARTH TO MARS

RL 148.73 LAL .00 LOL 31.61 VL 32.741 GAL -4.18 AZL 88.92 HCA 219.58 SMA 186.23 ECC .21366 INC 1.0834 V1 29.958
RP 223.82 LAP -.69 LOP 251.19 VP 21.754 GAP -4.10 AZP 90.84 TAL 335.85 TAP 195.43 RCA 146.44 APO 226.02 V2 24.569
RC 257.180 GL 10.58 GP 6.66 ZAL 124.77 ZAP 104.04 ETS 177.23 ZAE 139.24 ETE 169.48 ZAC 93.22 ETC 256.65 CLP 104.14

PLANETOCENTRIC CONIC

C3 11.318 VHL 3.364 DLA 18.70 RAL 162.92 RAD 6567.4 VEL 11.520 PTH 2.01 VHP 2.876 DPA 9.28 RAP 179.13 ECC 1.1863

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 21 37	2711.99	-27.73	75.43	21.29	95.99	18 6 49	2112.0	-26.61	66.94
90.00	10 34 10	4106.37	-2.98	166.76	16.30	61.83	11 42 36	3506.4	-6.73	160.08
100.00	18 54 18	2413.10	-28.96	53.27	21.12	97.76	19 34 32	1813.1	-27.58	44.74
100.00	11 44 9	3880.50	-1.90	149.55	15.70	60.16	12 48 50	3280.5	-5.85	143.00
110.00	20 27 13	2122.42	-32.10	30.55	20.47	102.44	21 2 35	1522.4	-30.05	21.93
110.00	12 27 44	3743.94	.81	137.51	14.01	55.83	13 30 8	3143.9	-3.68	131.30

DIFFERENTIAL CORRECTIONS

TDE .1453 TRA .1467 TC3-1.9353 BAU .3795
RDE .3427 RRA -.4100 RC3 1.5952 FAU .58107
FDE-3.4376 FRA15.4509 FC-44.4470 BSP 5673
BDE .3722 BRA .4354 BC3 2.5080 FSP 12351

MID-COURSE EXECUTION ACCURACY

SGT 1351.5 SGR 1426.9 SG3 3562.8
RRT -.7507 RRF -.9516 RTF .8043
SGB 1965.3 R23 .1862 R13 -.9431
SG1 1839.2 SG2 692.7 THA 132.93

ORBIT DETERMINATION ACCURACY

ST 262.7 SR 625.0 SS 2540.7
CRT .7654 CRS .8277 CST .2808
LSA 2595.1 MSA 423.8 SSA 29.4
EL1 658.7 EL2 160.4 ALF 71.00

LAUNCH DATE OCT 25 1964 FLIGHT TIME 310.00 ARRIVAL DATE AUG 31 1965

HELIOCENTRIC CONIC DISTANCE 707.824 EARTH TO MARS

RL 148.73 LAL .00 LOL 31.61 VL 32.738 GAL -4.20 AZL 88.89 HCA 220.67 SMA 186.17 ECC .21348 INC 1.1090 V1 29.958
RP 223.44 LAP -.72 LOP 252.28 VP 21.796 GAP -4.34 AZP 90.84 TAL 335.76 TAP 196.43 RCA 146.42 APO 225.91 V2 24.611
RC 258.763 GL 10.82 GP 6.56 ZAL 124.87 ZAP 102.05 ETS 177.52 ZAE 137.07 ETE 170.29 ZAC 92.92 ETC 256.73 CLP 102.13

PLANETOCENTRIC CONIC

C3 11.338 VHL 3.367 DLA 18.88 RAL 163.15 RAD 6567.4 VEL 11.521 PTH 2.01 VHP 2.860 DPA 9.57 RAP 178.24 ECC 1.1866

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 20 42	2719.20	-27.78	75.95	21.61	95.73	18 6 2	2119.2	-26.69	67.45
90.00	10 36 54	4099.91	-3.19	166.39	16.60	61.85	11 45 14	3499.9	-6.93	159.71
100.00	18 53 34	2419.73	-29.02	53.76	21.45	97.51	19 33 54	1819.7	-27.68	45.21
100.00	11 46 43	3874.61	-2.10	149.23	15.99	60.17	12 51 17	3274.6	-6.05	142.67
110.00	20 26 50	2127.96	-32.18	30.96	20.81	102.21	21 2 18	1528.0	-30.16	22.33
110.00	12 29 57	3739.14	.62	137.26	14.29	55.82	13 32 16	3139.1	-3.86	131.05

DIFFERENTIAL CORRECTIONS

TDE .1189 TRA .2873 TC3-2.3070 BAU .4250
RDE .3473 RRA -.4048 RC3 1.5933 FAU .58922
FDE-3.4921 FRA15.6177 FC-44.9899 BSP 6448
BDE .3671 BRA .4964 BC3 2.8038 FSP 12427

MID-COURSE EXECUTION ACCURACY

SGT 1649.7 SGR 1425.0 SG3 3606.2
RRT -.8183 RRF -.9494 RTF .8769
SGB 2180.0 R23 .1689 R13 -.9503
SG1 2081.0 SG2 649.4 THA 140.09

ORBIT DETERMINATION ACCURACY

ST 259.1 SR 630.9 SS 2557.1
CRT .5152 CRS .8241 CST -.0545
LSA 2610.4 MSA 434.5 SSA 28.9
EL1 646.7 EL2 216.6 ALF 76.51

LAUNCH DATE OCT 25 1964 FLIGHT TIME 312.00 ARRIVAL DATE SEP 2 1965

HELIOCENTRIC CONIC DISTANCE 711.816 EARTH TO MARS

RL 148.73 LAL .00 LOL 31.61 VL 32.734 GAL -4.21 AZL 88.87 HCA 221.76 SMA 186.11 ECC .21335 INC 1.1335 V1 29.958
RP 223.05 LAP -.75 LOP 253.37 VP 21.839 GAP -4.58 AZP 90.85 TAL 335.66 TAP 197.41 RCA 146.41 APO 225.82 V2 24.653
RC 260.326 GL 11.04 GP 6.46 ZAL 125.00 ZAP 100.03 ETS 177.80 ZAE 134.88 ETE 171.03 ZAC 92.63 ETC 256.82 CLP 100.10

PLANETOCENTRIC CONIC

C3 11.366 VHL 3.371 DLA 19.03 RAL 163.39 RAD 6567.4 VEL 11.522 PTH 2.01 VHP 2.847 DPA 9.87 RAP 177.33 ECC 1.1871

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 20 4	2725.74	-27.82	76.42	21.95	95.49	18 5 29	2125.7	-26.77	67.91
90.00	10 39 29	4094.37	-3.37	166.08	16.91	61.87	11 47 43	3494.4	-7.10	159.40
100.00	18 53 5	2425.76	-29.07	54.20	21.79	97.28	19 33 31	1825.8	-27.76	45.64
100.00	11 49 8	3869.58	-2.27	148.95	16.30	60.19	12 53 38	3269.6	-6.22	142.39
110.00	20 26 39	2133.02	-32.25	31.34	21.17	101.99	21 2 12	1533.0	-30.26	22.69
110.00	12 32 3	3735.09	.47	137.04	14.59	55.82	13 34 19	3135.1	-4.02	130.83

DIFFERENTIAL CORRECTIONS
TDE .0907 TRA .4302 TC3-2.6905 BAU .4746
RDE .3515 RRA -.3996 RC3 1.5867 FAU .59531
FDE-3.5292 FRA15.7681 FC-45.3443 BSP 7373
BDE .3630 BRA .5872 BC3 3.1235 FSP 12503

MID-COURSE EXECUTION ACCURACY
SGT 1978.1 SGR 1420.4 SG3 3639.4
RRT -.8557 RRF -.9470 RTF .9177
SGB 2435.2 R23 .1465 R13 -.9583
SG1 2355.7 SG2 617.1 THA 145.75

ORBIT DETERMINATION ACCURACY
ST 283.8 SR 635.9 SS 2569.3
CRT .2235 CRS .8197 CST -.3704
LSA 2624.5 MSA 444.3 SSA 28.5
EL1 639.8 EL2 275.0 ALF 83.00

LAUNCH DATE OCT 25 1964 FLIGHT TIME 314.00 ARRIVAL DATE SEP 4 1965

HELIOCENTRIC CONIC DISTANCE 715.816 EARTH TO MARS

RL 148.73 LAL .00 LOL 31.61 VL 32.732 GAL -4.23 AZL 88.84 HCA 222.85 SMA 186.06 ECC .21326 INC 1.1571 V1 29.958
RP 222.66 LAP -.79 LOP 254.46 VP 21.882 GAP -4.82 AZP 90.85 TAL 335.54 TAP 198.39 RCA 146.39 APO 225.74 V2 24.695
RC 261.869 GL 11.26 GP 6.36 ZAL 125.14 ZAP 98.02 ETS 178.08 ZAE 132.68 ETE 171.72 ZAC 92.33 ETC 256.92 CLP 98.07

PLANETOCENTRIC CONIC

C3 11.401 VHL 3.376 DLA 19.16 RAL 163.65 RAD 6567.4 VEL 11.523 PTH 2.01 VHP 2.837 DPA 10.17 RAP 176.43 ECC 1.1876

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 19 41	2731.64	-27.86	76.85	22.31	95.28	18 5 12	2131.6	-26.84	68.33
90.00	10 41 55	4089.74	-3.51	165.83	17.25	61.88	11 50 4	3489.7	-7.25	159.13
100.00	18 52 51	2431.20	-29.12	54.59	22.15	97.08	19 33 22	1831.2	-27.83	46.03
100.00	11 51 26	3865.41	-2.41	148.72	16.63	60.20	12 55 51	3265.4	-6.36	142.16
110.00	20 26 41	2137.61	-32.32	31.68	21.54	101.80	21 2 19	1537.6	-30.35	23.01
110.80	12 34 5	3731.76	.34	136.87	14.91	55.82	13 36 16	3131.8	-4.14	130.66

DIFFERENTIAL CORRECTIONS
TDE .0619 TRA .5763 TC3-3.0787 BAU .5272
RDE .3554 RRA -.3943 RC3 1.5760 FAU .59956
FDE-3.5550 FRA15.9025 FC-45.5284 BSP 8412
BDE .3608 BRA .6983 BC3 3.4587 FSP 12581

MID-COURSE EXECUTION ACCURACY
SGT 2324.9 SGR 1413.6 SG3 3663.3
RRT -.8771 RRF -.9443 RTF .9420
SGB 2720.9 R23 .1244 R13 -.9656
SG1 2655.2 SG2 594.4 THA 150.29

ORBIT DETERMINATION ACCURACY
ST 333.7 SR 640.3 SS 2578.9
CRT -.0215 CRS .8149 CST -.5938
LSA 2639.2 MSA 454.0 SSA 28.2
EL1 640.3 EL2 333.6 ALF 90.88

LAUNCH DATE OCT 25 1964 FLIGHT TIME 316.00 ARRIVAL DATE SEP 6 1965

HELIOCENTRIC CONIC DISTANCE 719.824 EARTH TO MARS

RL 148.73 LAL .00 LOL 31.61 VL 32.729 GAL -4.25 AZL 88.82 HCA 223.94 SMA 186.02 ECC .21320 INC 1.1799 V1 29.958
RP 222.28 LAP -.82 LOP 255.55 VP 21.925 GAP -5.06 AZP 90.85 TAL 335.42 TAP 199.36 RCA 146.36 APO 225.68 V2 24.737
RC 263.392 GL 11.46 GP 6.26 ZAL 125.30 ZAP 95.99 ETS 178.34 ZAE 130.46 ETE 172.35 ZAC 92.03 ETC 257.01 CLP 96.03

PLANETOCENTRIC CONIC

C3 11.443 VHL 3.383 DLA 19.27 RAL 163.92 RAD 6567.4 VEL 11.525 PTH 2.01 VHP 2.831 DPA 10.46 RAP 175.52 ECC 1.1883

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 19 33	2736.89	-27.89	77.23	22.68	95.09	18 5 10	2136.9	-26.89	68.71
90.00	10 44 12	4086.02	-3.63	165.62	17.59	61.90	11 52 18	3486.0	-7.36	158.92
100.00	18 52 51	2436.06	-29.16	54.95	22.53	96.89	19 33 27	1836.1	-27.90	46.37
100.00	11 53 36	3862.08	-2.52	148.54	16.98	60.20	12 57 58	3262.1	-6.47	141.98
110.00	20 26 55	2141.74	-32.37	31.99	21.92	101.63	21 2 37	1541.7	-30.43	23.31
110.00	12 36 1	3729.16	.24	136.74	15.25	55.82	13 38 10	3129.2	-4.24	130.52

DIFFERENTIAL CORRECTIONS
TDE .0323 TRA .7253 TC3-3.4707 BAU .5822
RDE .3593 RRA -.3885 RC3 1.5619 FAU .60215
FDE-3.5751 FRA16.0075 FC-45.5570 BSP 9533
BDE .3607 BRA .8228 BC3 3.8059 FSP 12625

MID-COURSE EXECUTION ACCURACY
SGT 2685.1 SGR 1404.6 SG3 3677.4
RRT -.8896 RRF -.9413 RTF .9574
SGB 3030.3 R23 .1048 R13 -.9717
SG1 2974.4 SG2 579.2 THA 153.99

ORBIT DETERMINATION ACCURACY
ST 400.5 SR 644.3 SS 2586.1
CRT -.1962 CRS .8099 CST -.7318
LSA 2654.8 MSA 463.1 SSA 27.8
EL1 651.7 EL2 388.2 ALF 100.84

LAUNCH DATE OCT 25 1964 FLIGHT TIME 318.00 ARRIVAL DATE SEP 8 1965

HELIOCENTRIC CONIC DISTANCE 723.839 EARTH TO MARS

RL 148.73 LAL .00 LOL 31.61 VL 32.727 GAL -4.27 AZL 88.80 HCA 225.04 SMA 185.98 ECC .21318 INC 1.2019 V1 29.958
RP 221.89 LAP -.85 LOP 256.65 VP 21.969 GAP -5.29 AZP 90.85 TAL 335.27 TAP 200.32 RCA 146.34 APO 225.63 V2 24.779
RC 264.895 GL 11.65 GP 6.15 ZAL 125.48 ZAP 93.97 ETS 178.60 ZAE 128.24 ETE 172.94 ZAC 91.74 ETC 257.11 CLP 93.99

PLANETOCENTRIC CONIC

C3 11.492 VHL 3.390 DLA 19.36 RAL 164.20 RAD 6567.4 VEL 11.527 PTH 2.01 VHP 2.829 DPA 10.75 RAP 174.61 ECC 1.1891

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 19 42	2741.51	-27.92	77.57	23.07	94.93	18 5 23	2141.5	-26.94	69.04
90.00	10 46 20	4083.20	-3.72	165.46	17.96	61.91	11 54 23	3483.2	-7.45	158.76
100.00	18 53 5	2440.35	-29.19	55.27	22.92	96.73	19 33 46	1840.4	-27.95	46.68
100.00	11 55 38	3859.59	-2.60	148.40	17.34	60.21	12 59 57	3259.6	-6.55	141.84
110.00	20 27 21	2145.43	-32.42	32.26	22.32	101.47	21 3 7	1545.4	-30.50	23.57
110.00	12 37 51	3727.28	.17	136.64	15.61	55.82	13 39 58	3127.3	-4.31	130.42

DIFFERENTIAL CORRECTIONS
TDE .0018 TRA .8772 TC3-3.8630 BAU .6392
RDE .3632 RRA -.3823 RC3 1.5445 FAU .60314
FDE-3.5927 FRA16.0834 FC-45.4351 BSP 10707
BDE .3632 BRA .9569 BC3 4.1603 FSP 12641

MID-COURSE EXECUTION ACCURACY
SGT 3054.4 SGR 1393.7 SG3 3681.8
RRT -.8967 RRF -.9382 RTF .9676
SGB 3357.3 R23 .0885 R13 -.9766
SG1 3308.7 SG2 569.5 THA 157.03

ORBIT DETERMINATION ACCURACY
ST 477.9 SR 648.0 SS 2591.5
CRT -.3148 CRS .8051 CST -.8148
LSA 2672.3 MSA 471.7 SSA 27.5
EL1 678.9 EL2 433.0 ALF 112.76

LAUNCH DATE OCT 25 1964 FLIGHT TIME 320.00 ARRIVAL DATE SEP 10 1965

HELIOCENTRIC CONIC DISTANCE 727.861 EARTH TO MARS

RL	148.73	LAL	.00	LOL	31.61	VL	32.725	GAL	-4.30	AZL	88.78	HCA	226.15	SMA	185.95	ECC	.21320	INC	1.2230
RP	221.51	LAP	-.88	LOP	257.75	VP	22.013	GAP	-5.51	AZP	90.85	TAL	335.12	TAP	201.27	RCA	146.31	APO	225.60
RC	266.379	GL	11.83	GP	6.04	ZAL	125.69	ZAP	91.95	ETS	178.85	ZAE	126.02	ETE	173.49	ZAC	91.44	ETC	257.21

V1	29.958	V2	24.820	CLP	91.96														

PLANETOCENTRIC CONIC

C3	11.550	VHL	3.398	DLA	19.43	RAL	164.50	RAD	6567.4	VEL	11.530	PTH	2.01	VHP	2.830	DPA	11.04	RAP	173.71
ECC	1.1901																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 20 6	2745.51	-27.94	77.86	23.48	94.79	18 5 51	2145.5	-26.99	69.32
90.00	10 48 20	4081.26	-3.79	165.35	18.34	61.92	11 56 21	3481.3	-7.51	158.65
100.00	18 53 34	2444.09	-29.22	55.54	23.33	96.59	19 34 18	1844.1	-28.00	46.95
100.00	11 57 32	3857.92	-2.66	148.31	17.72	60.22	13 1 50	3257.9	-6.61	141.74
110.00	20 28 0	2148.67	-32.47	32.51	22.74	101.33	21 3 48	1548.7	-30.57	23.81
110.00	12 39 36	3726.09	.13	136.58	15.98	55.82	13 41 43	3126.1	-4.36	130.36

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0296	TRA	1.0312	TC3	-4.2535	BAU	.6977	SGT	3429.2	SGR	1381.1	SG3	3677.1	ST	562.1	SR	651.8	SS	2595.9
RDE	.3672	RRA	-.3754	RC3	1.5245	FAU	.60280	RRT	-.9003	RRF	-.9347	RTF	.9746	CRT	-.3956	CRS	.8006	CST	-.8657
FDE	-3.6125	FRA	16.1240	FC	-45.1848	BSP	11921	SGB	3696.9	R23	.0754	R13	-.9806	LSA	2692.3	MSA	479.8	SSA	27.1
BDE	.3684	BRA	1.0975	BC3	4.5185	FSP	12622	SG1	3653.6	SG2	564.3	THA	159.56	EL1	724.7	EL2	464.3	ALF	124.70

LAUNCH DATE OCT 25 1964 FLIGHT TIME 322.00 ARRIVAL DATE SEP 12 1965

HELIOCENTRIC CONIC DISTANCE 731.891 EARTH TO MARS

RL	148.73	LAL	.00	LOL	31.61	VL	32.723	GAL	-4.33	AZL	88.76	HCA	227.25	SMA	185.92	ECC	.21326	INC	1.2434
RP	221.13	LAP	-.91	LOP	258.86	VP	22.057	GAP	-5.74	AZP	90.84	TAL	334.95	TAP	202.21	RCA	146.27	APO	225.57
RC	267.844	GL	11.99	GP	5.93	ZAL	125.91	ZAP	89.93	ETS	179.09	ZAE	123.80	ETE	174.00	ZAC	91.15	ETC	257.31

V1	29.958	V2	24.862	CLP	89.93														

PLANETOCENTRIC CONIC

C3	11.614	VHL	3.408	DLA	19.48	RAL	164.82	RAD	6567.4	VEL	11.533	PTH	2.01	VHP	2.834	DPA	11.32	RAP	172.81
ECC	1.1911																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 20 45	2748.88	-27.96	78.10	23.90	94.66	18 6 34	2148.9	-27.02	69.56
90.00	10 50 11	4080.21	-3.82	165.29	18.74	61.92	11 58 11	3480.2	-7.55	158.59
100.00	18 54 17	2447.27	-29.25	55.77	23.76	96.47	19 35 5	1847.3	-28.04	47.18
100.00	11 59 20	3857.06	-2.69	148.26	18.12	60.22	13 3 37	3257.1	-6.63	141.70
110.00	20 28 50	2151.49	-32.50	32.72	23.17	101.21	21 4 41	1551.5	-30.62	24.01
110.00	12 41 17	3725.61	.11	136.55	16.37	55.82	13 43 22	3125.6	-4.38	130.34

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0618	TRA	1.1879	TC3	-4.6408	BAU	.7574	SGT	3808.4	SGR	1366.8	SG3	3662.6	ST	650.9	SR	655.3	SS	2598.0
RDE	.3713	RRA	-.3680	RC3	1.5018	FAU	.60095	RRT	-.9016	RRF	-.9310	RTF	.9796	CRT	-.4523	CRS	.7963	CST	-.8987
FDE	-3.6290	FRA	16.1317	FC	-44.7950	BSP	13159	SGB	4046.3	R23	.0649	R13	-.9837	LSA	2713.7	MSA	487.4	SSA	26.7
BDE	.3764	BRA	1.2436	BC3	4.8777	FSP	12574	SG1	4007.0	SG2	562.0	THA	161.70	EL1	787.1	EL2	483.3	ALF	134.58

LAUNCH DATE OCT 25 1964 FLIGHT TIME 324.00 ARRIVAL DATE SEP 14 1965

HELIOCENTRIC CONIC DISTANCE 735.928 EARTH TO MARS

RL	148.73	LAL	.00	LOL	31.61	VL	32.722	GAL	-4.36	AZL	88.74	HCA	228.36	SMA	185.90	ECC	.21336	INC	1.2634
RP	220.75	LAP	-.94	LOP	259.97	VP	22.102	GAP	-5.95	AZP	90.84	TAL	334.77	TAP	203.14	RCA	146.24	APO	225.57
RC	269.292	GL	12.15	GP	5.82	ZAL	126.15	ZAP	87.93	ETS	179.32	ZAE	121.59	ETE	174.47	ZAC	90.86	ETC	257.41

V1	29.958	V2	24.903	CLP	87.92														

PLANETOCENTRIC CONIC

C3	11.687	VHL	3.419	DLA	19.52	RAL	165.15	RAD	6567.4	VEL	11.536	PTH	2.01	VHP	2.842	DPA	11.59	RAP	171.94
ECC	1.1923																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 21 40	2751.66	-27.98	78.30	24.35	94.56	18 7 32	2151.7	-27.05	69.76
90.00	10 51 53	4080.04	-3.83	165.28	19.16	61.92	11 59 53	3480.0	-7.55	158.58
100.00	18 55 15	2449.91	-29.27	55.97	24.21	96.37	19 36 5	1849.9	-28.08	47.36
100.00	12 1 0	3857.02	-2.69	148.26	18.53	60.22	13 5 17	3257.0	-6.63	141.69
110.00	20 29 52	2153.89	-32.54	32.90	23.62	101.11	21 5 46	1553.9	-30.66	24.18
110.00	12 42 52	3725.81	.11	136.56	16.78	55.82	13 44 58	3125.8	-4.37	130.35

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0945	TRA	1.3470	TC3	-5.0212	BAU	.8177	SGT	4189.1	SGR	1350.8	SG3	3638.7	ST	743.0	SR	658.4	SS	2597.8
RDE	.3753	RRA	-.3602	RC3	1.4762	FAU	.59745	RRT	-.9011	RRF	-.9269	RTF	.9833	CRT	-.4922	CRS	.7920	CST	-.9205
FDE	-3.6399	FRA	16.1113	FC	-44.2583	BSP	14422	SGB	4401.5	R23	.0568	R13	-.9862	LSA	2736.5	MSA	495.0	SSA	26.3
BDE	.3870	BRA	1.3943	BC3	5.2337	FSP	12498	SG1	4365.4	SG2	562.1	THA	163.52	EL1	860.7	EL2	494.8	ALF	141.91

LAUNCH DATE OCT 25 1964 FLIGHT TIME 326.00 ARRIVAL DATE SEP 16 1965

HELIOCENTRIC CONIC DISTANCE 739.972 EARTH TO MARS

RL	148.73	LAL	.00	LOL	31.61	VL	32.721	GAL	-4.39	AZL	88.72	HCA	229.48	SMA	185.88	ECC	.21350	INC	1.2825
RP	220.37	LAP	-.97	LOP	261.09	VP	22.147	GAP	-6.17	AZP	90.83	TAL	334.58	TAP	204.06	RCA	146.20	APO	225.57
RC	270.721	GL	12.29	GP	5.71	ZAL	126.42	ZAP	85.95	ETS	179.54	ZAE	119.38	ETE	174.91	ZAC	90.57	ETC	257.52

V1	29.958	V2	24.945	CLP	85.93														

PLANETOCENTRIC CONIC

C3	11.767	VHL	3.430	DLA	19.54	RAL	165.49	RAD	6567.4	VEL	11.539	PTH	2.01	VHP	2.854	DPA	11.84	RAP	171.08
ECC	1.1937																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 22 50	2753.83	-27.99	78.46	24.81	94.49	18 8 44	2153.8	-27.07	69.92
90.00	10 53 27	4080.73	-3.80	165.32	19.60	61.92	12 1 28	3480.7	-7.53	158.62
100.00	18 56 26	2452.02	-29.28	56.12	24.67	96.29	19 37 18	1852.0	-28.10	47.52
100.00	12 2 33	3857.78	-2.67	148.30	18.97	60.22	13 6 50	3257.8	-6.61	141.74
110.00	20 31 5	2155.88	-32.56	33.05	24.09	101.03	21 7 1	1555.9	-30.70	24.32
110.00	12 44 23	3726.69	.15	136.61	17.21	55.82	13 46 29	3126.7	-4.34	130.39

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1289	TRA	1.5077	TC3	-5.3952	BAU	.8788	SGT	4570.2	SGR	1333.7	SG3	3606.4	ST	837.4	SR	661.7	SS	2597.2
RDE	.3796	RRA	-.3518	RC3	1.4488	FAU	.59283	RRT	-.8993	RRF	-.9225	RTF	.9860	CRT	-.5229	CRS	.7884	CST	-.9360
FDE	-3.6569	FRA	16.0539	FC	-43.6162	BSP	15686	SGB	4760.9	R23	.0503	R13	-.9881	LSA	2762.7	MSA	501.8	SSA	25.8
BDE	.4009	BRA	1.5482	BC3	5.5863	FSP	12379	SG1	4727.4	SG2	563.8	THA	165.08	EL1	942.3	EL2	501.3	ALF	147.22

LAUNCH DATE OCT 25 1964 FLIGHT TIME 328.00 ARRIVAL DATE SEP 18 1965

HELIOCENTRIC CONIC DISTANCE 744.023 EARTH TO MARS

RL 148.73 LAL .00 LOL 31.61 VL 32.720 GAL -4.43 AZL 88.70 HCA 230.60 SMA 185.87 ECC .21367 INC 1.3012 V1 29.958
RP 220.00 LAP -1.01 LOP 262.20 VP 22.192 GAP -6.38 AZP 90.83 TAL 334.37 TAP 204.97 RCA 146.16 APO 225.58 V2 24.986
RC 272.134 GL 12.42 GP 5.60 ZAL 126.70 ZAP 83.99 ETS 179.75 ZAE 117.20 ETE 175.33 ZAC 90.29 ETC 257.62 CLP 83.96

PLANETOCENTRIC CONIC

C3 11.856 VHL 3.443 DLA 19.54 RAL 165.85 RAD 6567.5 VEL 11.543 PTH 2.01 VHP 2.868 DPA 12.09 RAP 170.24 ECC 1.1951

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 24 15	2755.43	-28.00	78.58	25.28	94.43	18 10 11	2155.4	-27.09	70.03
90.00	10 54 53	4082.28	-3.75	165.41	20.05	61.91	12 2 55	3482.3	-7.48	158.71
100.00	18 57 51	2453.61	-29.29	56.24	25.15	96.23	19 38 45	1853.6	-28.12	47.63
100.00	12 3 58	3859.33	-2.61	148.39	19.42	60.21	13 8 18	3259.3	-6.56	141.82
110.00	20 32 31	2157.47	-32.58	33.17	24.57	100.96	21 8 28	1557.5	-30.73	24.44
110.00	12 45 48	3728.24	.21	136.69	17.65	55.82	13 47 56	3128.2	-4.28	130.48

DIFFERENTIAL CORRECTIONS
TDE -.1642 TRA 1.6701 TC3-5.7587 BAU .9400
RDE .3839 RRA -.3429 RC3 1.4188 FAU .58666
FDE-3.6693 FRA15.9678 FC-42.8393 BSP 16950
BDE .4175 BRA 1.7050 BC3 5.9309 FSP 12237

MID-COURSE EXECUTION ACCURACY
SGT 4949.5 SGR 1315.1 SG3 3565.0
RRT -.8965 RRF -.9177 RTF .9882
SGB 5121.3 R23 .0454 R13 -.9897
SG1 5089.8 SG2 566.7 THA 166.43

ORBIT DETERMINATION ACCURACY
ST 933.6 SR 664.8 SS 2594.4
CRT -.5459 CRS .7849 CST -.9471
LSA 2790.3 MSA 508.2 SSA 25.4
EL1 1028.5 EL2 505.5 ALF 151.19

LAUNCH DATE OCT 25 1964 FLIGHT TIME 330.00 ARRIVAL DATE SEP 20 1965

HELIOCENTRIC CONIC DISTANCE 748.081 EARTH TO MARS

RL 148.73 LAL .00 LOL 31.61 VL 32.720 GAL -4.47 AZL 88.68 HCA 231.72 SMA 185.86 ECC .21388 INC 1.3193 V1 29.958
RP 219.62 LAP -1.04 LOP 263.33 VP 22.238 GAP -6.59 AZP 90.82 TAL 334.15 TAP 205.87 RCA 146.11 APO 225.61 V2 25.027
RC 273.529 GL 12.55 GP 5.48 ZAL 127.00 ZAP 82.05 ETS 179.95 ZAE 115.03 ETE 175.72 ZAC 90.02 ETC 257.72 CLP 82.01

PLANETOCENTRIC CONIC

C3 11.953 VHL 3.457 DLA 19.52 RAL 166.22 RAD 6567.5 VEL 11.547 PTH 2.02 VHP 2.886 DPA 12.32 RAP 169.42 ECC 1.1967

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 25 55	2756.46	-28.00	78.65	25.78	94.39	18 11 52	2156.5	-27.10	70.10
90.00	10 56 11	4084.68	-3.68	165.54	20.52	61.90	12 4 15	3484.7	-7.41	158.85
100.00	18 59 30	2454.70	-29.30	56.32	25.64	96.19	19 40 25	1854.7	-28.14	47.71
100.00	12 5 17	3861.67	-2.53	148.52	19.88	60.21	13 9 39	3261.7	-6.48	141.95
110.00	20 34 7	2158.67	-32.60	33.26	25.07	100.91	21 10 6	1558.7	-30.75	24.52
110.00	12 47 9	3730.47	.29	136.80	18.12	55.82	13 49 20	3130.5	-4.19	130.59

DIFFERENTIAL CORRECTIONS
TDE -.2004 TRA 1.8347 TC3-6.1102 BAU 1.0012
RDE .3881 RRA -.3338 RC3 1.3868 FAU .57909
FDE-3.6762 FRA15.8573 FC-41.9439 BSP 18224
BDE .4368 BRA 1.8648 BC3 6.2656 FSP 12078

MID-COURSE EXECUTION ACCURACY
SGT 5326.1 SGR 1293.3 SG3 3515.6
RRT -.8927 RRF -.9125 RTF .9898
SGB 5481.4 R23 .0415 R13 -.9910
SG1 5451.6 SG2 570.3 THA 167.61

ORBIT DETERMINATION ACCURACY
ST 1031.1 SR 667.5 SS 2589.5
CRT -.5634 CRS .7814 CST -.9554
LSA 2819.4 MSA 514.4 SSA 24.9
EL1 1118.0 EL2 508.6 ALF 154.27

LAUNCH DATE OCT 25 1964 FLIGHT TIME 332.00 ARRIVAL DATE SEP 22 1965

HELIOCENTRIC CONIC DISTANCE 752.145 EARTH TO MARS

RL 148.73 LAL .00 LOL 31.61 VL 32.719 GAL -4.51 AZL 88.66 HCA 232.84 SMA 185.86 ECC .21412 INC 1.3370 V1 29.958
RP 219.25 LAP -1.07 LOP 264.45 VP 22.283 GAP -6.80 AZP 90.81 TAL 333.92 TAP 206.76 RCA 146.06 APO 225.65 V2 25.067
RC 274.906 GL 12.66 GP 5.37 ZAL 127.32 ZAP 80.13 ETS 180.14 ZAE 112.89 ETE 176.08 ZAC 89.75 ETC 257.82 CLP 80.09

PLANETOCENTRIC CONIC

C3 12.058 VHL 3.472 DLA 19.49 RAL 166.60 RAD 6567.5 VEL 11.552 PTH 2.02 VHP 2.907 DPA 12.54 RAP 168.63 ECC 1.1984

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 27 50	2756.93	-28.00	78.69	26.29	94.37	18 13 47	2156.9	-27.10	70.14
90.00	10 57 21	4087.91	-3.57	165.72	21.00	61.89	12 5 29	3487.9	-7.31	159.03
100.00	19 1 22	2455.29	-29.31	56.36	26.16	96.17	19 42 17	1855.3	-28.14	47.75
100.00	12 6 29	3864.78	-2.43	148.69	20.37	60.20	13 10 54	3264.8	-6.38	142.13
110.00	20 35 55	2159.49	-32.61	33.32	25.58	100.87	21 11 54	1559.5	-30.77	24.58
110.00	12 48 26	3733.35	.40	136.95	18.60	55.82	13 50 39	3133.3	-4.08	130.74

DIFFERENTIAL CORRECTIONS
TDE -.2380 TRA 2.0008 TC3-6.4492 BAU 1.0623
RDE .3925 RRA -.3244 RC3 1.3532 FAU .57038
FDE-3.6837 FRA15.7212 FC-40.9515 BSP 19487
BDE .4590 BRA 2.0270 BC3 6.5896 FSP 11888

MID-COURSE EXECUTION ACCURACY
SGT 5699.0 SGR 1274.7 SG3 3459.2
RRT -.8881 RRF -.9070 RTF .9911
SGB 5839.9 R23 .0386 R13 -.9920
SG1 5811.5 SG2 574.5 THA 168.65

ORBIT DETERMINATION ACCURACY
ST 1129.6 SR 670.2 SS 2583.8
CRT -.5773 CRS .7784 CST -.9616
LSA 2851.4 MSA 520.2 SSA 24.5
EL1 1210.1 EL2 510.8 ALF 156.71

LAUNCH DATE OCT 25 1964 FLIGHT TIME 334.00 ARRIVAL DATE SEP 24 1965

HELIOCENTRIC CONIC DISTANCE 756.213 EARTH TO MARS

RL 148.73 LAL .00 LOL 31.61 VL 32.719 GAL -4.56 AZL 88.65 HCA 233.97 SMA 185.85 ECC .21441 INC 1.3542 V1 29.958
RP 218.89 LAP -1.10 LOP 265.58 VP 22.328 GAP -7.00 AZP 90.80 TAL 333.66 TAP 207.64 RCA 146.01 APO 225.70 V2 25.108
RC 276.266 GL 12.76 GP 5.26 ZAL 127.67 ZAP 78.25 ETS 180.32 ZAE 110.78 ETE 176.42 ZAC 89.49 ETC 257.92 CLP 78.20

PLANETOCENTRIC CONIC

C3 12.173 VHL 3.489 DLA 19.44 RAL 167.00 RAD 6567.5 VEL 11.557 PTH 2.02 VHP 2.931 DPA 12.74 RAP 167.88 ECC 1.2003

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 29 59	2756.83	-28.00	78.68	26.83	94.38	18 15 56	2156.8	-27.10	70.13
90.00	10 58 23	4092.00	-3.44	165.95	21.51	61.88	12 6 35	3492.0	-7.18	159.26
100.00	19 3 28	2455.39	-29.31	56.37	26.69	96.16	19 44 23	1855.4	-28.15	47.76
100.00	12 7 35	3868.68	-2.30	148.90	20.87	60.19	13 12 3	3268.7	-6.25	142.34
110.00	20 37 54	2159.93	-32.61	33.35	26.11	100.85	21 13 54	1559.9	-30.77	24.62
110.00	12 49 38	3736.91	.54	137.14	19.10	55.82	13 51 55	3136.9	-3.95	130.93

DIFFERENTIAL CORRECTIONS
TDE -.2704 TRA 2.1766 TC3-6.7535 BAU 1.1196
RDE .3946 RRA -.3169 RC3 1.3106 FAU .55670
FDE-3.6062 FRA15.6359 FC-39.5928 BSP 20923
BDE .4784 BRA 2.1995 BC3 6.8795 FSP 11846

MID-COURSE EXECUTION ACCURACY
SGT 6064.0 SGR 1249.3 SG3 3390.3
RRT -.8829 RRF -.9002 RTF .9919
SGB 6191.4 R23 .0348 R13 -.9927
SG1 6164.4 SG2 577.0 THA 169.60

ORBIT DETERMINATION ACCURACY
ST 1228.9 SR 669.4 SS 2564.1
CRT -.5833 CRS .7692 CST -.9674
LSA 2873.4 MSA 525.6 SSA 24.4
EL1 1301.9 EL2 513.2 ALF 158.95

LAUNCH DATE OCT 25 1964 FLIGHT TIME 336.00 ARRIVAL DATE SEP 26 1965

HELIOCENTRIC CONIC DISTANCE 760.292 EARTH TO MARS

RL	148.73	LAL	.00	LOL	31.61	VL	32.719	GAL	-4.61	AZL	88.63	HCA	235.11	SMA	185.86	ECC	.21473	INC	1.3709
RP	218.52	LAP	-1.12	LOP	266.71	VP	22.374	GAP	-7.20	AZP	90.78	TAL	333.40	TAP	208.51	RCA	145.95	APO	225.77
RC	277.609	GL	12.86	GP	5.14	ZAL	128.03	ZAP	76.40	ETS	180.50	ZAE	108.69	ETE	176.73	ZAC	89.24	ETC	258.02

V1	29.958	V2	25.148	CLP	76.34														

PLANETOCENTRIC CONIC

C3	12.296	VHL	3.507	DLA	19.37	RAL	167.41	RAD	6567.5	VEL	11.562	PTH	2.02	VHP	2.959	DPA	12.93	RAP	167.15
ECC	1.2024																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 32 21	2756.26	-28.00	78.64	27.38	94.40	18 18 17	2156.3	-27.10	70.09
90.00	10 59 17	4096.85	-3.29	166.22	22.03	61.86	12 7 34	3496.8	-7.02	159.54
100.00	19 5 46	2455.06	-29.31	56.34	27.24	96.18	19 46 41	1855.1	-28.14	47.73
100.00	12 8 34	3873.29	-2.14	149.15	21.39	60.18	13 13 7	3273.3	-6.09	142.60
110.00	20 40 3	2160.04	-32.62	33.36	26.66	100.85	21 16 3	1560.0	-30.78	24.62
110.00	12 50 46	3741.07	.70	137.36	19.62	55.82	13 53 7	3141.1	-3.79	131.15

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3138	TRA	2.3414	TC3	-7.0713	BAU	1.1813	SGT	6426.7	SGR	1229.7	SG3	3323.7	ST	1328.6	SR	673.5	SS	2561.1
RDE	.4002	RRA	-.3058	RC3	1.2786	FAU	.54788	RRT	-.8769	RRF	-.8941	RTF	.9929	CRT	-.5953	CRS	.7700	CST	-.9708
FDE	-3.6510	FRA	15.4105	FC	-38.5744	BSP	22064	SGB	6543.3	R23	.0338	R13	-.9935	LSA	2914.8	MSA	530.4	SSA	23.7
BDE	.5086	BRA	2.3613	BC3	7.1860	FSP	11530	SG1	6517.2	SG2	582.9	THA	170.40	EL1	1397.9	EL2	514.3	ALF	160.46

LAUNCH DATE OCT 25 1964 FLIGHT TIME 338.00 ARRIVAL DATE SEP 28 1965

HELIOCENTRIC CONIC DISTANCE 764.376 EARTH TO MARS

RL	148.73	LAL	.00	LOL	31.61	VL	32.720	GAL	-4.66	AZL	88.61	HCA	236.24	SMA	185.86	ECC	.21508	INC	1.3873
RP	218.16	LAP	-1.15	LOP	267.85	VP	22.420	GAP	-7.40	AZP	90.77	TAL	333.13	TAP	209.37	RCA	145.89	APO	225.84
RC	278.933	GL	12.94	GP	5.03	ZAL	128.40	ZAP	74.58	ETS	180.66	ZAE	106.63	ETE	177.03	ZAC	88.99	ETC	258.11

V1	29.958	V2	25.188	CLP	74.52														

PLANETOCENTRIC CONIC

C3	12.429	VHL	3.525	DLA	19.29	RAL	167.84	RAD	6567.5	VEL	11.568	PTH	2.02	VHP	2.989	DPA	13.10	RAP	166.47
ECC	1.2046																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 34 57	2755.19	-28.00	78.56	27.95	94.44	18 20 52	2155.2	-27.09	70.01
90.00	11 0 5	4102.49	-3.10	166.54	22.57	61.84	12 8 27	3502.5	-6.85	159.86
100.00	19 8 16	2454.28	-29.30	56.29	27.81	96.20	19 49 10	1854.3	-28.13	47.68
100.00	12 9 27	3878.64	-1.96	149.45	21.93	60.17	13 14 6	3278.6	-5.92	142.89
110.00	20 42 23	2159.81	-32.61	33.34	27.23	100.86	21 18 23	1559.8	-30.77	24.61
110.00	12 51 49	3745.87	.88	137.61	20.16	55.83	13 54 15	3145.9	-3.61	131.40

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.3578	TRA	2.5087	TC3	-7.3697	BAU	1.2419	SGT	6782.2	SGR	1209.1	SG3	3250.8	ST	1428.9	SR	676.8	SS	2554.7
RDE	.4054	RRA	-.2951	RC3	1.2441	FAU	.53740	RRT	-.8702	RRF	-.8875	RTF	.9936	CRT	-.6047	CRS	.7699	CST	-.9736
FDE	-3.6774	FRA	15.1816	FC	-37.4320	BSP	23217	SGB	6889.2	R23	.0330	R13	-.9941	LSA	2956.3	MSA	534.8	SSA	23.1
BDE	.5408	BRA	2.5260	BC3	7.4740	FSP	11228	SG1	6864.0	SG2	588.5	THA	171.12	EL1	1494.8	EL2	515.3	ALF	161.78

LAUNCH DATE OCT 25 1964 FLIGHT TIME 340.00 ARRIVAL DATE SEP 30 1965

HELIOCENTRIC CONIC DISTANCE 768.466 EARTH TO MARS

RL	148.73	LAL	.00	LOL	31.61	VL	32.721	GAL	-4.72	AZL	88.60	HCA	237.38	SMA	185.88	ECC	.21548	INC	1.4032
RP	217.80	LAP	-1.18	LOP	268.99	VP	22.465	GAP	-7.59	AZP	90.76	TAL	332.83	TAP	210.22	RCA	145.82	APO	225.93
RC	280.240	GL	13.02	GP	4.92	ZAL	128.80	ZAP	72.80	ETS	180.82	ZAE	104.61	ETE	177.31	ZAC	88.76	ETC	258.19

V1	29.958	V2	25.228	CLP	72.74														

PLANETOCENTRIC CONIC

C3	12.572	VHL	3.546	DLA	19.19	RAL	168.28	RAD	6567.5	VEL	11.574	PTH	2.02	VHP	3.023	DPA	13.25	RAP	165.82
ECC	1.2069																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 37 46	2753.63	-27.99	78.45	28.53	94.49	18 23 39	2153.6	-27.07	69.90
90.00	11 0 45	4108.92	-2.90	166.90	23.12	61.82	12 9 14	3508.9	-6.64	160.22
100.00	19 10 58	2453.07	-29.29	56.20	28.39	96.25	19 51 51	1853.1	-28.12	47.59
100.00	12 10 14	3884.72	-1.75	149.78	22.49	60.15	13 14 59	3284.7	-5.71	143.23
110.00	20 44 53	2159.25	-32.61	33.30	27.81	100.88	21 20 52	1559.3	-30.76	24.57
110.00	12 52 49	3751.30	1.09	137.89	20.71	55.83	13 55 20	3151.3	-3.40	131.68

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.4028	TRA	2.6786	TC3	-7.6471	BAU	1.3012	SGT	7129.9	SGR	1187.6	SG3	3172.3	ST	1529.9	SR	679.6	SS	2545.3
RDE	.4104	RRA	-.2846	RC3	1.2078	FAU	.52550	RRT	-.8630	RRF	-.8803	RTF	.9941	CRT	-.6124	CRS	.7691	CST	-.9761
FDE	-3.6892	FRA	14.9469	FC	-36.1872	BSP	24369	SGB	7228.2	R23	.0323	R13	-.9946	LSA	2998.4	MSA	538.8	SSA	22.6
BDE	.5751	BRA	2.6937	BC3	7.7419	FSP	10941	SG1	7203.7	SG2	593.8	THA	171.76	EL1	1592.5	EL2	516.1	ALF	162.94

LAUNCH DATE OCT 25 1964 FLIGHT TIME 342.00 ARRIVAL DATE OCT 2 1965

HELIOCENTRIC CONIC DISTANCE 772.561 EARTH TO MARS

RL	148.73	LAL	.00	LOL	31.61	VL	32.721	GAL	-4.78	AZL	88.58	HCA	238.53	SMA	185.89	ECC	.21592	INC	1.4189
RP	217.44	LAP	-1.21	LOP	270.14	VP	22.511	GAP	-7.78	AZP	90.74	TAL	332.53	TAP	211.06	RCA	145.75	APO	226.03
RC	281.529	GL	13.08	GP	4.81	ZAL	129.22	ZAP	71.06	ETS	180.96	ZAE	102.62	ETE	177.57	ZAC	88.53	ETC	258.28

V1	29.958	V2	25.268	CLP	70.99														

PLANETOCENTRIC CONIC

C3	12.725	VHL	3.567	DLA	19.08	RAL	168.73	RAD	6567.5	VEL	11.581	PTH	2.03	VHP	3.059	DPA	13.39	RAP	165.21
ECC	1.2094																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 40 48	2751.61	-27.98	78.30	29.14	94.57	18 26 39	2151.6	-27.05	69.76
90.00	11 1 19	4116.12	-2.67	167.30	23.69	61.80	12 9 55	3516.1	-6.42	160.63
100.00	19 13 53	2451.45	-29.28	56.08	29.00	96.31	19 54 44	1851.4	-28.10	47.47
100.00	12 10 55	3891.51	-1.52	150.16	23.06	60.14	13 15 46	3291.5	-5.48	143.61
110.00	20 47 33	2158.38	-32.59	33.24	28.41	100.92	21 23 31	1558.4	-30.75	24.50
110.00	12 53 44	3757.35	1.32	138.21	21.28	55.84	13 56 21	3157.3	-3.17	132.00

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.4495	TRA	2.8500	TC3	-7.9065	BAU	1.3597	SGT	7470.0	SGR	1166.1	SG3	3089.7	ST	1631.3	SR	682.0	SS	2534.1
RDE	.4153	RRA	-.2741	RC3	1.1708	FAU	.51275	RRT	-.8553	RRF	-.8726	RTF	.9946	CRT	-.6192	CRS	.7683	CST	-.9782
FDE	-3.6945	FRA	14.7004	FC	-34.8851	BSP	25501	SGB	7560.4	R23	.0317	R13	-.9950	LSA	3042.0	MSA	542.2	SSA	22.1
BDE	.6120	BRA	2.8631	BC3	7.9927	FSP	10646	SG1	7536.7	SG2	598.9	THA	172.35	EL1	1691.0	EL2	516.6	ALF	163.95

LAUNCH DATE OCT 25 1964 FLIGHT TIME 344.00 ARRIVAL DATE OCT 4 1965

HELIOCENTRIC CONIC DISTANCE 776.662 EARTH TO MARS

RL 148.73 LAL .00 LOL 31.61 VL 32.722 GAL -4.84 AZL 88.57 HCA 239.68 SMA 185.91 ECC .21639 INC 1.4341 V1 29.958
RP 217.09 LAP -1.24 LOP 271.29 VP 22.557 GAP -7.97 AZP 90.72 TAL 332.21 TAP 211.89 RCA 145.68 APO 226.14 V2 25.307
RC 282.801 GL 13.14 GP 4.70 ZAL 129.65 ZAP 69.36 ETS 181.10 ZAE 100.67 ETE 177.81 ZAC 88.32 ETC 258.35 CLP 69.28

PLANETOCENTRIC CONIC

C3 12.889 VHL 3.590 DLA 18.95 RAL 169.19 RAD 6567.5 VEL 11.588 PTH 2.03 VHP 3.098 DPA 13.51 RAP 164.64 ECC 1.2121

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 44 2	2749.15	-27.96	78.12	29.76	94.65	18 29 51	2149.2	-27.02	69.58
90.00	11 1 46	4124.06	-2.41	167.74	24.28	61.78	12 10 30	3524.1	-6.17	161.08
100.00	19 16 58	2449.44	-29.26	55.93	29.62	96.39	19 57 48	1849.4	-28.07	47.33
100.00	12 11 30	3899.01	-1.27	150.57	23.65	60.13	13 16 29	3299.0	-5.23	144.02
110.00	20 50 23	2157.21	-32.58	33.15	29.03	100.97	21 26 20	1557.2	-30.72	24.42
110.00	12 54 35	3764.01	1.58	138.55	21.87	55.85	13 57 19	3164.0	-2.92	132.35

DIFFERENTIAL CORRECTIONS
TDE -.4973 TRA 3.0236 TC3-8.1446 BAU 1.4169
RDE .4202 RRA -.2639 RC3 1.1332 FAU .49922
FDE-3.6944 FRA14.4457 FC-33.5330 BSP 26627
BDE .6511 BRA 3.0351 BC3 8.2230 FSP 10351

MID-COURSE EXECUTION ACCURACY
SGT 7801.2 SGR 1144.6 SG3 3003.7
RRT -.8469 RRF -.8644 RTF .9950
SGB 7884.7 R23 .0315 R13 -.9953
SG1 7861.6 SG2 603.9 THA 172.87

ORBIT DETERMINATION ACCURACY
ST 1733.0 SR 684.3 SS 2521.6
CRT -.6249 CRS .7676 CST -.9799
LSA 3087.4 MSA 545.5 SSA 21.6
EL1 1790.0 EL2 517.2 ALF 164.85

LAUNCH DATE OCT 25 1964 FLIGHT TIME 346.00 ARRIVAL DATE OCT 6 1965

HELIOCENTRIC CONIC DISTANCE 780.768 EARTH TO MARS

RL 148.73 LAL .00 LOL 31.61 VL 32.724 GAL -4.91 AZL 88.55 HCA 240.83 SMA 185.93 ECC .21690 INC 1.4491 V1 29.958
RP 216.74 LAP -1.27 LOP 272.44 VP 22.602 GAP -8.16 AZP 90.71 TAL 331.88 TAP 212.71 RCA 145.60 APO 226.26 V2 25.346
RC 284.057 GL 13.19 GP 4.59 ZAL 130.10 ZAP 67.69 ETS 181.23 ZAE 98.76 ETE 178.04 ZAC 88.12 ETC 258.43 CLP 67.62

PLANETOCENTRIC CONIC

C3 13.063 VHL 3.614 DLA 18.80 RAL 169.66 RAD 6567.5 VEL 11.595 PTH 2.03 VHP 3.139 DPA 13.61 RAP 164.11 ECC 1.2150

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 47 28	2746.28	-27.95	77.91	30.40	94.76	18 33 14	2146.3	-26.99	69.38
90.00	11 2 7	4132.73	-2.13	168.23	24.89	61.76	12 11 0	3532.7	-5.89	161.57
100.00	19 20 15	2447.06	-29.25	55.76	30.25	96.48	20 1 2	1847.1	-28.04	47.16
100.00	12 12 1	3907.19	-.99	151.02	24.26	60.12	13 17 8	3307.2	-4.96	144.48
110.00	20 53 22	2155.75	-32.56	33.04	29.66	101.03	21 29 17	1555.7	-30.70	24.31
110.00	12 55 23	3771.27	1.85	138.93	22.48	55.86	13 58 15	3171.3	-2.64	132.73

DIFFERENTIAL CORRECTIONS
TDE -.5471 TRA 3.1981 TC3-8.3641 BAU 1.4732
RDE .4252 RRA -.2536 RC3 1.0957 FAU .48520
FDE-3.6914 FRA14.1783 FC-32.1552 BSP 27721
BDE .6929 BRA 3.2081 BC3 8.4356 FSP 10048

MID-COURSE EXECUTION ACCURACY
SGT 8123.4 SGR 1123.4 SG3 2915.0
RRT -.8380 RRF -.8559 RTF .9953
SGB 8200.7 R23 .0313 R13 -.9956
SG1 8178.1 SG2 608.8 THA 173.35

ORBIT DETERMINATION ACCURACY
ST 1834.8 SR 686.4 SS 2507.7
CRT -.6301 CRS .7672 CST -.9813
LSA 3134.4 MSA 548.2 SSA 21.2
EL1 1889.3 EL2 517.6 ALF 165.64

LAUNCH DATE OCT 25 1964 FLIGHT TIME 348.00 ARRIVAL DATE OCT 8 1965

HELIOCENTRIC CONIC DISTANCE 784.879 EARTH TO MARS

RL 148.73 LAL .00 LOL 31.61 VL 32.725 GAL -4.97 AZL 88.54 HCA 241.99 SMA 185.95 ECC .21745 INC 1.4638 V1 29.958
RP 216.39 LAP -1.29 LOP 273.59 VP 22.648 GAP -8.34 AZP 90.69 TAL 331.53 TAP 213.51 RCA 145.52 APO 226.39 V2 25.385
RC 285.296 GL 13.23 GP 4.48 ZAL 130.57 ZAP 66.07 ETS 181.35 ZAE 96.88 ETE 178.25 ZAC 87.92 ETC 258.49 CLP 65.99

PLANETOCENTRIC CONIC

C3 13.250 VHL 3.640 DLA 18.65 RAL 170.15 RAD 6567.5 VEL 11.603 PTH 2.03 VHP 3.184 DPA 13.70 RAP 163.63 ECC 1.2181

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 51 5	2743.02	-27.93	77.68	31.06	94.87	18 36 48	2143.0	-26.96	69.14
90.00	11 2 22	4142.12	-1.83	168.75	25.52	61.74	12 11 24	3542.1	-5.59	162.10
100.00	19 23 42	2444.33	-29.22	55.56	30.91	96.58	20 4 27	1844.3	-28.01	46.97
100.00	12 12 25	3916.04	-.69	151.50	24.89	60.11	13 17 42	3316.0	-4.66	144.97
110.00	20 56 30	2154.02	-32.54	32.91	30.31	101.11	21 32 24	1554.0	-30.67	24.19
110.00	12 56 7	3779.12	2.15	139.34	23.11	55.88	13 59 7	3179.1	-2.34	133.14

DIFFERENTIAL CORRECTIONS
TDE -.5984 TRA 3.3748 TC3-8.5632 BAU 1.5284
RDE .4302 RRA -.2436 RC3 1.0584 FAU .47076
FDE-3.6849 FRA13.9048 FC-30.7595 BSP 28798
BDE .7370 BRA 3.3836 BC3 8.6283 FSP 9746

MID-COURSE EXECUTION ACCURACY
SGT 8436.9 SGR 1102.7 SG3 2824.5
RRT -.8287 RRF -.8469 RTF .9955
SGB 8508.7 R23 .0313 R13 -.9958
SG1 8486.5 SG2 613.6 THA 173.79

ORBIT DETERMINATION ACCURACY
ST 1936.8 SR 688.3 SS 2492.8
CRT -.6348 CRS .7670 CST -.9826
LSA 3183.6 MSA 550.8 SSA 20.8
EL1 1989.2 EL2 517.8 ALF 166.34

LAUNCH DATE OCT 25 1964 FLIGHT TIME 350.00 ARRIVAL DATE OCT 10 1965

HELIOCENTRIC CONIC DISTANCE 788.991 EARTH TO MARS

RL 148.73 LAL .00 LOL 31.61 VL 32.727 GAL -5.05 AZL 88.52 HCA 243.15 SMA 185.98 ECC .21804 INC 1.4782 V1 29.958
RP 216.05 LAP -1.32 LOP 274.75 VP 22.693 GAP -8.52 AZP 90.67 TAL 331.16 TAP 214.31 RCA 145.43 APO 226.53 V2 25.423
RC 286.520 GL 13.26 GP 4.38 ZAL 131.05 ZAP 64.49 ETS 181.46 ZAE 95.05 ETE 178.45 ZAC 87.74 ETC 258.55 CLP 64.41

PLANETOCENTRIC CONIC

C3 13.448 VHL 3.667 DLA 18.47 RAL 170.64 RAD 6567.5 VEL 11.612 PTH 2.03 VHP 3.231 DPA 13.77 RAP 163.19 ECC 1.2213

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 54 54	2739.37	-27.91	77.41	31.73	95.01	18 40 33	2139.4	-26.92	68.88
90.00	11 2 31	4152.24	-1.50	169.32	26.16	61.72	12 11 44	3552.2	-5.27	162.66
100.00	19 27 21	2441.24	-29.20	55.33	31.58	96.70	20 8 2	1841.2	-27.97	46.74
100.00	12 12 45	3925.59	-.37	152.03	25.53	60.11	13 18 11	3325.6	-4.34	145.49
110.00	20 59 47	2152.02	-32.51	32.76	30.97	101.19	21 35 39	1552.0	-30.63	24.05
110.00	12 56 48	3787.56	2.48	139.78	23.76	55.90	13 59 56	3187.6	-2.02	133.58

DIFFERENTIAL CORRECTIONS
TDE -.6350 TRA 3.5724 TC3-8.6931 BAU 1.5735
RDE .4328 RRA -.2360 RC3 1.0136 FAU .45152
FDE-3.5824 FRA13.7087 FC-29.0668 BSP 30281
BDE .7684 BRA 3.5802 BC3 8.7520 FSP 9625

MID-COURSE EXECUTION ACCURACY
SGT 8732.9 SGR 1077.5 SG3 2726.4
RRT -.8181 RRF -.8356 RTF .9956
SGB 8799.2 R23 .0296 R13 -.9958
SG1 8777.5 SG2 616.5 THA 174.21

ORBIT DETERMINATION ACCURACY
ST 2034.0 SR 686.6 SS 2459.5
CRT -.6308 CRS .7586 CST -.9840
LSA 3217.2 MSA 553.9 SSA 20.7
EL1 2082.8 EL2 520.2 ALF 167.16

LAUNCH DATE OCT 25 1964 FLIGHT TIME 352.00 ARRIVAL DATE OCT 12 1965

HELIOCENTRIC CONIC DISTANCE 793.116 EARTH TO MARS

RL 148.73 LAL .00 LOL 31.61 VL 32.729 GAL -5.12 AZL 88.51 HCA 244.31 SMA 186.05 ECC .21867 INC 1.4924 V1 29.958
RP 215.71 LAP -1.34 LOP 275.92 VP 22.738 GAP -8.71 AZP 90.65 TAL 330.79 TAP 215.09 RCA 145.34 APO 226.69 V2 25.461
RC 287.729 GL 13.28 GP 4.27 ZAL 131.55 ZAP 62.95 ETS 181.57 ZAE 93.25 ETE 178.64 ZAC 87.57 ETC 258.61 CLP 62.87

PLANETOCENTRIC CONIC

C3 13.659 VHL 3.696 DLA 18.29 RAL 171.15 RAD 6567.5 VEL 11.621 PTH 2.04 VHP 3.280 DPA 13.82 RAP 162.79 ECC 1.2248

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 58 51	2735.43	-27.88	77.13	32.42	95.15	18 44 27	2135.4	-26.88	68.60
90.00	11 2 36	4162.94	-1.16	169.91	26.82	61.70	12 11 58	3562.9	-4.93	163.27
100.00	19 31 7	2437.91	-29.17	55.09	32.27	96.82	20 11 45	1837.9	-27.92	46.51
100.00	12 13 1	3935.70	-.02	152.58	26.19	60.11	13 18 37	3335.7	-4.00	146.05
110.00	21 3 12	2149.83	-32.48	32.59	31.65	101.28	21 39 2	1549.8	-30.59	23.89
110.00	12 57 26	3796.55	2.82	140.25	24.42	55.92	14 0 42	3196.5	-1.67	134.05

DIFFERENTIAL CORRECTIONS
TDE -.7078 TRA 3.7333 TC3-8.9006 BAU 1.6352
RDE .4406 RRA -.2239 RC3 .9853 FAU .44120
FDE-3.6667 FRA13.3365 FC-27.9642 BSP 30857
BDE .8338 BRA 3.7400 BC3 8.9550 FSP 9126

MID-COURSE EXECUTION ACCURACY
SGT 9035.6 SGR 1063.3 SG3 2640.1
RRT -.8087 RRF -.8278 RTF .9959
SGB 9098.0 R23 .0317 R13 -.9961
SG1 9076.6 SG2 622.7 THA 174.54

ORBIT DETERMINATION ACCURACY
ST 2141.8 SR 692.1 SS 2460.7
CRT -.6438 CRS .7677 CST -.9845
LSA 3288.3 MSA 554.7 SSA 19.9
EL1 2190.5 EL2 517.8 ALF 167.54

LAUNCH DATE OCT 25 1964 FLIGHT TIME 354.00 ARRIVAL DATE OCT 14 1965

HELIOCENTRIC CONIC DISTANCE 797.241 EARTH TO MARS

RL 148.73 LAL .00 LOL 31.61 VL 32.731 GAL -5.20 AZL 88.49 HCA 245.48 SMA 186.05 ECC .21934 INC 1.5064 V1 29.958
RP 215.38 LAP -1.37 LOP 277.08 VP 22.783 GAP -8.88 AZP 90.63 TAL 330.39 TAP 215.87 RCA 145.24 APO 226.85 V2 25.498
RC 288.924 GL 13.30 GP 4.17 ZAL 132.07 ZAP 61.46 ETS 181.66 ZAE 91.50 ETE 178.82 ZAC 87.41 ETC 258.66 CLP 61.37

PLANETOCENTRIC CONIC

C3 13.883 VHL 3.726 DLA 18.08 RAL 171.67 RAD 6567.5 VEL 11.631 PTH 2.04 VHP 3.332 DPA 13.86 RAP 162.43 ECC 1.2285

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 3 0	2731.15	-27.86	76.82	33.13	95.30	18 48 31	2131.1	-26.83	68.30
90.00	11 2 35	4174.35	-.79	170.55	27.50	61.69	12 12 9	3574.4	-4.57	163.91
100.00	19 35 4	2434.26	-29.14	54.82	32.98	96.96	20 15 38	1834.3	-27.87	46.25
100.00	12 13 12	3946.48	.34	153.17	26.88	60.11	13 18 58	3346.5	-3.64	146.64
110.00	21 6 45	2147.39	-32.45	32.41	32.35	101.39	21 42 33	1547.4	-30.54	23.71
110.00	12 58 0	3806.11	3.18	140.75	25.10	55.95	14 1 26	3206.1	-1.31	134.55

DIFFERENTIAL CORRECTIONS
TDE -.7659 TRA 3.9153 TC3-9.0407 BAU 1.6872
RDE .4459 RRA -.2144 RC3 .9497 FAU .42625
FDE-3.6538 FRA13.0453 FC-26.5803 BSP 31843
BDE .8862 BRA 3.9212 BC3 9.0904 FSP 8815

MID-COURSE EXECUTION ACCURACY
SGT 9321.5 SGR 1044.7 SG3 2547.3
RRT -.7982 RRF -.8179 RTF .9960
SGB 9379.9 R23 .0321 R13 -.9962
SG1 9358.9 SG2 626.9 THA 174.87

ORBIT DETERMINATION ACCURACY
ST 2244.6 SR 693.9 SS 2443.1
CRT -.6482 CRS .7684 CST -.9853
LSA 3343.5 MSA 556.1 SSA 19.5
EL1 2291.7 EL2 517.5 ALF 168.05

LAUNCH DATE OCT 25 1964 FLIGHT TIME 356.00 ARRIVAL DATE OCT 16 1965

HELIOCENTRIC CONIC DISTANCE 801.371 EARTH TO MARS

RL 148.73 LAL .00 LOL 31.61 VL 32.733 GAL -5.28 AZL 88.48 HCA 246.65 SMA 186.08 ECC .22006 INC 1.5201 V1 29.958
RP 215.05 LAP -1.40 LOP 278.25 VP 22.827 GAP -9.06 AZP 90.60 TAL 329.99 TAP 216.63 RCA 145.13 APO 227.03 V2 25.535
RC 290.105 GL 13.30 GP 4.08 ZAL 132.60 ZAP 60.00 ETS 181.76 ZAE 89.78 ETE 178.98 ZAC 87.26 ETC 258.70 CLP 59.92

PLANETOCENTRIC CONIC

C3 14.121 VHL 3.758 DLA 17.87 RAL 172.19 RAD 6567.6 VEL 11.641 PTH 2.04 VHP 3.387 DPA 13.88 RAP 162.12 ECC 1.2324

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 7 18	2726.58	-27.83	76.48	33.86	95.46	18 52 44	2126.6	-26.78	67.97
90.00	11 2 29	4186.40	-.40	171.22	28.20	61.69	12 12 15	3586.4	-4.18	164.58
100.00	19 39 9	2430.34	-29.11	54.53	33.70	97.11	20 19 40	1830.3	-27.82	45.97
100.00	12 13 18	3957.87	.73	153.80	27.58	60.12	13 19 16	3357.9	-3.25	147.27
110.00	21 10 26	2144.75	-32.41	32.21	33.07	101.50	21 46 11	1544.8	-30.49	23.52
110.00	12 58 31	3816.22	3.57	141.28	25.80	55.98	14 2 7	3216.2	-.92	135.07

DIFFERENTIAL CORRECTIONS
TDE -.8263 TRA 4.0992 TC3-9.1608 BAU 1.7380
RDE .4514 RRA -.2052 RC3 .9149 FAU .41119
FDE-3.6400 FRA12.7510 FC-25.2093 BSP 32792
BDE .9416 BRA 4.1044 BC3 9.2064 FSP 8506

MID-COURSE EXECUTION ACCURACY
SGT 9597.6 SGR 1026.9 SG3 2454.5
RRT -.7873 RRF -.8077 RTF .9961
SGB 9652.4 R23 .0325 R13 -.9963
SG1 9631.7 SG2 630.9 THA 175.16

ORBIT DETERMINATION ACCURACY
ST 2347.6 SR 695.6 SS 2425.1
CRT -.6526 CRS .7695 CST -.9860
LSA 3400.8 MSA 557.1 SSA 19.2
EL1 2393.3 EL2 517.0 ALF 168.51

LAUNCH DATE OCT 25 1964 FLIGHT TIME 358.00 ARRIVAL DATE OCT 18 1965

HELIOCENTRIC CONIC DISTANCE 805.505 EARTH TO MARS

RL 148.73 LAL .00 LOL 31.61 VL 32.735 GAL -5.37 AZL 88.47 HCA 247.82 SMA 186.12 ECC .22082 INC 1.5336 V1 29.958
RP 214.72 LAP -1.42 LOP 279.43 VP 22.872 GAP -9.24 AZP 90.58 TAL 329.56 TAP 217.38 RCA 145.02 APO 227.22 V2 25.572
RC 291.272 GL 13.30 GP 3.98 ZAL 133.14 ZAP 58.59 ETS 181.84 ZAE 88.10 ETE 179.14 ZAC 87.12 ETC 258.73 CLP 58.50

PLANETOCENTRIC CONIC

C3 14.374 VHL 3.791 DLA 17.64 RAL 172.73 RAD 6567.6 VEL 11.652 PTH 2.05 VHP 3.444 DPA 13.88 RAP 161.86 ECC 1.2366

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 11 44	2721.74	-27.80	76.13	34.60	95.64	18 57 6	2121.7	-26.72	67.63
90.00	11 2 19	4199.07	.01	171.93	28.92	61.68	12 12 18	3599.1	-3.78	165.29
100.00	19 43 23	2426.19	-29.08	54.23	34.44	97.27	20 23 50	1826.2	-27.77	45.67
100.00	12 13 21	3969.85	1.13	154.45	28.29	60.13	13 19 31	3369.8	-2.85	147.93
110.00	21 14 15	2141.93	-32.38	32.00	33.80	101.62	21 49 57	1541.9	-30.44	23.32
110.00	12 58 59	3826.88	3.97	141.84	26.52	56.02	14 2 46	3226.9	-.51	135.63

DIFFERENTIAL CORRECTIONS
TDE -.8894 TRA 4.2854 TC3-9.2637 BAU 1.7882
RDE .4571 RRA -.1962 RC3 .8813 FAU .39641
FDE-3.6249 FRA12.4540 FC-23.8760 BSP 33704
BDE 1.0000 BRA 4.2899 BC3 9.3055 FSP 8192

MID-COURSE EXECUTION ACCURACY
SGT 9865.7 SGR 1010.2 SG3 2362.7
RRT -.7763 RRF -.7973 RTF .9961
SGB 9917.3 R23 .0330 R13 -.9963
SG1 9897.0 SG2 634.8 THA 175.44

ORBIT DETERMINATION ACCURACY
ST 2451.1 SR 697.3 SS 2406.4
CRT -.6570 CRS .7710 CST -.9866
LSA 3460.3 MSA 557.8 SSA 18.8
EL1 2495.5 EL2 516.3 ALF 168.93

LAUNCH DATE OCT 25 1964 FLIGHT TIME 360.00 ARRIVAL DATE OCT 20 1965

DISTANCE 809.642

HELIOCENTRIC CONIC

RL 148.73 LAL .00 LOL 31.61 VL 32.737 GAL -5.46 AZL 88.45 HCA 249.00 SMA 186.17 ECC .22162 INC 1.5470 V1 29.958
RP 214.40 LAP -1.44 LOP 280.61 VP 22.916 GAP -9.41 AZP 90.55 TAL 329.13 TAP 218.12 RCA 144.91 APO 227.42 V2 25.608
RC 292.426 GL 13.29 GP 3.89 ZAL 133.70 ZAP 57.21 ETS 181.92 ZAE 86.46 ETE 179.28 ZAC 86.99 ETC 258.76 CLP 57.13

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 14.641 VHL 3.826 DLA 17.40 RAL 173.27 RAD 6567.6 VEL 11.663 PTH 2.05 VHP 3.503 DPA 13.87 RAP 161.63 ECC 1.2410

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 16 20	2716.66	-27.76	75.77	35.36	95.82	19 1 36	2116.7	-26.66	67.27
90.00	11 2 4	4212.34	.44	172.67	29.66	61.69	12 12 17	3612.3	-3.35	166.04
100.00	19 47 45	2421.82	-29.04	53.91	35.20	97.43	20 28 7	1821.8	-27.71	45.36
100.00	12 13 20	3982.41	1.56	155.14	29.03	60.14	13 19 42	3382.4	-2.42	148.62
110.00	21 18 10	2138.93	-32.33	31.78	34.55	101.75	21 53 49	1538.9	-30.38	23.11
110.00	12 59 24	3838.06	4.40	142.43	27.26	56.07	14 3 22	3238.1	-.09	136.21

DIFFERENTIAL CORRECTIONS

TDE -.9541 TRA 4.4749 TC3-9.3444 BAU 1.8366
RDE .4628 RRA -.1876 RC3 .8483 FAU .38144
FDE-3.6052 FRA12.1596 FC-22.5539 BSP 34618
BDE 1.0604 BRA 4.4788 BC3 9.3829 FSP 7891

MID-COURSE EXECUTION ACCURACY

SGT10123.7 SGR 994.1 SG3 2271.4
RRT -.7650 RRF -.7868 RTF .9962
SGB10172.3 R23 .0336 R13 -.9963
SG110152.3 SG2 638.4 THA 175.69

ORBIT DETERMINATION ACCURACY

ST 2554.4 SR 698.8 SS 2386.5
CRT -.6611 CRS .7724 CST -.9871
LSA 3520.9 MSA 558.3 SSA 18.5
EL1 2597.6 EL2 515.6 ALF 169.32

LAUNCH DATE OCT 25 1964 FLIGHT TIME 362.00 ARRIVAL DATE OCT 22 1965

DISTANCE 813.783

HELIOCENTRIC CONIC

RL 148.73 LAL .00 LOL 31.61 VL 32.740 GAL -5.55 AZL 88.44 HCA 250.18 SMA 186.21 ECC .22246 INC 1.5602 V1 29.958
RP 214.08 LAP -1.47 LOP 281.79 VP 22.959 GAP -9.58 AZP 90.53 TAL 328.67 TAP 218.85 RCA 144.79 APO 227.63 V2 25.644
RC 293.566 GL 13.28 GP 3.80 ZAL 134.27 ZAP 55.88 ETS 181.99 ZAE 84.86 ETE 179.42 ZAC 86.88 ETC 258.78 CLP 55.79

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 14.925 VHL 3.863 DLA 17.15 RAL 173.83 RAD 6567.6 VEL 11.675 PTH 2.05 VHP 3.564 DPA 13.85 RAP 161.45 ECC 1.2456

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 21 3	2711.36	-27.72	75.38	36.14	96.01	19 6 14	2111.4	-26.60	66.90
90.00	11 1 46	4226.19	.88	173.44	30.41	61.70	12 12 12	3626.2	-2.91	166.81
100.00	19 52 15	2417.25	-29.00	53.58	35.97	97.60	20 32 32	1817.2	-27.64	45.03
100.00	12 13 15	3995.54	2.00	155.86	29.79	60.17	13 19 51	3395.5	-1.98	149.34
110.00	21 22 12	2135.79	-32.29	31.54	35.31	101.88	21 57 48	1535.8	-30.32	22.88
110.00	12 59 47	3849.77	4.84	143.04	28.02	56.12	14 3 57	3249.8	.36	136.82

DIFFERENTIAL CORRECTIONS

TDE-1.0217 TRA 4.6665 TC3-9.4084 BAU 1.8844
RDE .4687 RRA -.1793 RC3 .8164 FAU .36673
FDE-3.5843 FRA11.8645 FC-21.2721 BSP 35491
BDE 1.1241 BRA 4.6699 BC3 9.4438 FSP 7593

MID-COURSE EXECUTION ACCURACY

SGT10373.0 SGR 979.0 SG3 2181.5
RRT -.7537 RRF -.7762 RTF .9962
SGB10419.1 R23 .0342 R13 -.9964
SG110399.4 SG2 641.8 THA 175.92

ORBIT DETERMINATION ACCURACY

ST 2658.0 SR 700.3 SS 2365.9
CRT -.6655 CRS .7742 CST -.9876
LSA 3583.4 MSA 558.3 SSA 18.2
EL1 2700.1 EL2 514.6 ALF 169.68

LAUNCH DATE OCT 25 1964 FLIGHT TIME 364.00 ARRIVAL DATE OCT 24 1965

DISTANCE 817.926

HELIOCENTRIC CONIC

RL 148.73 LAL .00 LOL 31.61 VL 32.743 GAL -5.65 AZL 88.43 HCA 251.36 SMA 186.26 ECC .22335 INC 1.5732 V1 29.958
RP 213.77 LAP -1.49 LOP 282.97 VP 23.003 GAP -9.75 AZP 90.50 TAL 328.21 TAP 219.57 RCA 144.66 APO 227.86 V2 25.679
RC 294.693 GL 13.25 GP 3.71 ZAL 134.86 ZAP 54.58 ETS 182.06 ZAE 83.30 ETE 179.55 ZAC 86.77 ETC 258.80 CLP 54.50

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 15.226 VHL 3.902 DLA 16.89 RAL 174.39 RAD 6567.6 VEL 11.688 PTH 2.06 VHP 3.628 DPA 13.81 RAP 161.31 ECC 1.2506

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 25 53	2705.88	-27.68	74.99	36.94	96.20	19 10 59	2105.9	-26.54	66.51
90.00	11 1 24	4240.61	1.35	174.25	31.18	61.71	12 12 5	3640.6	-2.44	167.62
100.00	19 56 51	2412.50	-28.95	53.23	36.76	97.78	20 37 4	1812.5	-27.57	44.70
100.00	12 13 7	4009.22	2.47	156.61	30.56	60.20	13 19 56	3409.2	-1.52	150.09
110.00	21 26 21	2132.51	-32.24	31.30	36.09	102.02	22 1 53	1532.5	-30.25	22.65
110.00	13 0 7	3861.98	5.31	143.68	28.80	56.18	14 4 29	3262.0	.83	137.46

DIFFERENTIAL CORRECTIONS

TDE-1.0918 TRA 4.8617 TC3-9.4546 BAU 1.9312
RDE .4747 RRA -.1713 RC3 .7856 FAU .35222
FDE-3.5614 FRA11.5708 FC-20.0268 BSP 36339
BDE 1.1905 BRA 4.8647 BC3 9.4872 FSP 7299

MID-COURSE EXECUTION ACCURACY

SGT10614.5 SGR 964.8 SG3 2093.1
RRT -.7424 RRF -.7656 RTF .9962
SGB10658.3 R23 .0349 R13 -.9963
SG110638.8 SG2 644.9 THA 176.13

ORBIT DETERMINATION ACCURACY

ST 2761.9 SR 701.7 SS 2344.5
CRT -.6697 CRS .7762 CST -.9880
LSA 3647.6 MSA 558.1 SSA 18.0
EL1 2803.0 EL2 513.4 ALF 170.00

LAUNCH DATE OCT 25 1964 FLIGHT TIME 366.00 ARRIVAL DATE OCT 26 1965

DISTANCE 822.072

HELIOCENTRIC CONIC

RL 148.73 LAL .00 LOL 31.61 VL 32.746 GAL -5.75 AZL 88.41 HCA 252.55 SMA 186.31 ECC .22429 INC 1.5861 V1 29.958
RP 213.46 LAP -1.51 LOP 284.16 VP 23.046 GAP -9.92 AZP 90.48 TAL 327.72 TAP 220.27 RCA 144.52 APO 228.10 V2 25.714
RC 295.805 GL 13.22 GP 3.62 ZAL 135.46 ZAP 53.33 ETS 182.12 ZAE 81.77 ETE 179.67 ZAC 86.67 ETC 258.81 CLP 53.24

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 15.544 VHL 3.943 DLA 16.61 RAL 174.96 RAD 6567.6 VEL 11.702 PTH 2.06 VHP 3.694 DPA 13.76 RAP 161.21 ECC 1.2558

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 30 51	2700.22	-27.64	74.58	37.75	96.40	19 15 51	2100.2	-26.47	66.11
90.00	11 0 59	4255.60	1.83	175.08	31.98	61.74	12 11 55	3655.6	-1.96	168.45
100.00	20 1 35	2407.61	-28.91	52.87	37.56	97.96	20 41 42	1807.6	-27.51	44.35
100.00	12 12 56	4023.44	2.95	157.40	31.36	60.24	13 19 59	3423.4	-1.03	150.87
110.00	21 30 35	2129.11	-32.20	31.05	36.89	102.16	22 6 5	1529.1	-30.19	22.41
110.00	13 0 25	3874.70	5.79	144.35	29.59	56.25	14 4 59	3274.7	1.31	138.12

DIFFERENTIAL CORRECTIONS

TDE-1.1636 TRA 5.0604 TC3-9.4815 BAU 1.9766
RDE .4808 RRA -.1638 RC3 .7556 FAU .33781
FDE-3.5349 FRA11.2811 FC-18.8143 BSP 37169
BDE 1.2591 BRA 5.0631 BC3 9.5116 FSP 7014

MID-COURSE EXECUTION ACCURACY

SGT10846.6 SGR 951.3 SG3 2006.2
RRT -.7310 RRF -.7550 RTF .9962
SGB10888.3 R23 .0356 R13 -.9963
SG110869.0 SG2 647.8 THA 176.32

ORBIT DETERMINATION ACCURACY

ST 2865.4 SR 703.0 SS 2321.9
CRT -.6738 CRS .7782 CST -.9883
LSA 3712.7 MSA 557.8 SSA 17.7
EL1 2905.5 EL2 512.2 ALF 170.31

LAUNCH DATE OCT 25 1964 FLIGHT TIME 368.00 ARRIVAL DATE OCT 28 1965

HELIOCENTRIC CONIC DISTANCE 826.221 EARTH TO MARS

RL	148.73	LAL	.00	LOL	31.61	VL	32.749	GAL	-5.85	AZL	88.40	HCA	253.74	SMA	186.36	ECC	.22528	INC	1.5988	V1	29.958
RP	213.16	LAP	-1.53	LOP	285.35	VP	23.088	GAP	-10.09	AZP	90.45	TAL	327.22	TAP	220.97	RCA	144.38	APO	228.34	V2	25.748
RC	296.904	GL	13.18	GP	3.54	ZAL	136.07	ZAP	52.11	ETS	182.18	ZAE	80.28	ETE	179.79	ZAC	86.59	ETC	258.81	CLP	52.03

PLANETOCENTRIC CONIC

C3	15.881	VHL	3.985	DLA	16.32	RAL	175.53	RAD	6567.6	VEL	11.716	PTH	2.06	VHP	3.762	DPA	13.69	RAP	161.16	ECC	1.2614

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 35 54	2694.42	-27.60	74.16	38.57	96.61	19 20 49	2094.4	-26.39	65.70
90.00	11 0 31	4271.10	2.33	175.95	32.79	61.77	12 11 42	3671.1	-1.46	169.32
100.00	20 6 24	2402.58	-28.86	52.51	38.39	98.15	20 46 27	1802.6	-27.43	43.99
100.00	12 12 42	4038.17	3.45	158.21	32.17	60.29	13 20 0	3438.2	-.53	151.68
110.00	21 34 56	2125.61	-32.15	30.78	37.70	102.31	22 10 21	1525.6	-30.12	22.16
110.00	13 0 40	3887.90	6.29	145.05	30.41	56.33	14 5 28	3287.9	1.82	138.81

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-1.2386	TRA	5.2619	TC3	-9.4929	BAU	2.0214	SGT	11070.6	SGR	938.8	SG3	1921.2	ST	2969.1	SR	704.2	SS	2298.7
RDE	.4872	RRA	-.1566	RC3	.7269	FAU	.32374	RRT	-.7197	RRF	-.7446	RTF	.9961	CRT	-.6781	CRS	.7806	CST	-.9886
FDE	-3.5074	FRA	10.9920	FC	-17.6481	BSP	37977	SGB	11110.3	R23	.0363	R13	-.9963	LSA	3779.5	MSA	557.0	SSA	17.5
BDE	1.3310	BRA	5.2643	BC3	9.5207	FSP	6733	SG	111091.2	SG2	650.5	THA	176.50	EL1	3008.4	EL2	510.8	ALF	170.59

LAUNCH DATE OCT 25 1964 FLIGHT TIME 370.00 ARRIVAL DATE OCT 30 1965

HELIOCENTRIC CONIC DISTANCE 830.372 EARTH TO MARS

RL	148.73	LAL	.00	LOL	31.61	VL	32.752	GAL	-5.96	AZL	88.39	HCA	254.94	SMA	186.42	ECC	.22632	INC	1.6115	V1	29.958
RP	212.87	LAP	-1.56	LOP	286.55	VP	23.130	GAP	-10.26	AZP	90.42	TAL	326.71	TAP	221.65	RCA	144.23	APO	228.60	V2	25.782
RC	297.989	GL	13.14	GP	3.46	ZAL	136.70	ZAP	50.93	ETS	182.23	ZAE	78.82	ETE	179.90	ZAC	86.51	ETC	258.81	CLP	50.84

PLANETOCENTRIC CONIC

C3	16.238	VHL	4.030	DLA	16.02	RAL	176.12	RAD	6567.7	VEL	11.731	PTH	2.07	VHP	3.832	DPA	13.61	RAP	161.14	ECC	1.2672

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 41 4	2688.51	-27.55	73.73	39.42	96.82	19 25 53	2088.5	-26.32	65.28
90.00	11 0 0	4287.12	2.85	176.84	33.62	61.81	12 11 27	3687.1	-.94	170.21
100.00	20 11 20	2397.44	-28.81	52.13	39.23	98.34	20 51 17	1797.4	-27.36	43.63
100.00	12 12 25	4053.42	3.96	159.05	33.00	60.35	13 19 59	3453.4	-.02	152.52
110.00	21 39 21	2122.03	-32.09	30.52	38.53	102.45	22 14 43	1522.0	-30.05	21.90
110.00	13 0 53	3901.59	6.80	145.77	31.25	56.42	14 5 55	3301.6	2.34	139.53

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-1.3161	TRA	5.4686	TC3	-9.4868	BAU	2.0651	SGT	11287.3	SGR	927.0	SG3	1838.2	ST	3073.2	SR	705.3	SS	2274.8
RDE	.4937	RRA	-.1498	RC3	.6991	FAU	.30989	RRT	-.7086	RRF	-.7344	RTF	.9961	CRT	-.6822	CRS	.7830	CST	-.9889
FDE	-3.4783	FRA	10.7077	FC	-16.5215	BSP	38764	SGB	11325.3	R23	.0372	R13	-.9962	LSA	3848.0	MSA	556.3	SSA	17.2
BDE	1.4056	BRA	5.4706	BC3	9.5125	FSP	6460	SG	111306.5	SG2	653.0	THA	176.66	EL1	3111.6	EL2	509.3	ALF	170.85

LAUNCH DATE OCT 25 1964 FLIGHT TIME 372.00 ARRIVAL DATE NOV 1 1965

HELIOCENTRIC CONIC DISTANCE 834.524 EARTH TO MARS

RL	148.73	LAL	.00	LOL	31.61	VL	32.755	GAL	-6.08	AZL	88.38	HCA	256.14	SMA	186.47	ECC	.22740	INC	1.6240	V1	29.958
RP	212.57	LAP	-1.58	LOP	287.75	VP	23.172	GAP	-10.43	AZP	90.39	TAL	326.18	TAP	222.32	RCA	144.07	APO	228.88	V2	25.815
RC	299.061	GL	13.09	GP	3.38	ZAL	137.33	ZAP	49.78	ETS	182.28	ZAE	77.40	ETE	180.00	ZAC	86.44	ETC	258.80	CLP	49.70

PLANETOCENTRIC CONIC

C3	16.616	VHL	4.076	DLA	15.71	RAL	176.70	RAD	6567.7	VEL	11.747	PTH	2.07	VHP	3.905	DPA	13.52	RAP	161.16	ECC	1.2735

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 46 20	2682.49	-27.50	73.30	40.28	97.03	19 31 2	2082.5	-26.24	64.86
90.00	10 59 26	4303.64	3.38	177.77	34.47	61.87	12 11 9	3703.6	-.41	171.13
100.00	20 16 21	2392.21	-28.76	51.75	40.08	98.53	20 56 13	1792.2	-27.28	43.26
100.00	12 12 6	4069.15	4.49	159.91	33.86	60.42	13 19 55	3469.2	.52	153.38
110.00	21 43 52	2118.39	-32.04	30.25	39.37	102.61	22 19 10	1518.4	-29.97	21.65
110.00	13 1 4	3915.74	7.34	146.52	32.10	56.52	14 6 20	3315.7	2.88	140.27

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-1.3960	TRA	5.6785	TC3	-9.4654	BAU	2.1079	SGT	11495.5	SGR	916.0	SG3	1757.3	ST	3176.7	SR	706.3	SS	2249.3
RDE	.5004	RRA	-.1434	RC3	.6725	FAU	.29636	RRT	-.6977	RRF	-.7244	RTF	.9960	CRT	-.6864	CRS	.7855	CST	-.9892
FDE	-3.4454	FRA	10.4254	FC	-15.4416	BSP	39536	SGB	11532.0	R23	.0380	R13	-.9961	LSA	3916.8	MSA	555.0	SSA	17.0
BDE	1.4829	BRA	5.6803	BC3	9.4893	FSP	6195	SG	111513.4	SG2	655.2	THA	176.81	EL1	3214.4	EL2	507.6	ALF	171.10

LAUNCH DATE OCT 25 1964 FLIGHT TIME 374.00 ARRIVAL DATE NOV 3 1965

HELIOCENTRIC CONIC DISTANCE 838.677 EARTH TO MARS

RL	148.73	LAL	.00	LOL	31.61	VL	32.759	GAL	-6.19	AZL	88.36	HCA	257.34	SMA	186.53	ECC	.22854	INC	1.6364	V1	29.958
RP	212.29	LAP	-1.60	LOP	288.95	VP	23.213	GAP	-10.60	AZP	90.36	TAL	325.63	TAP	222.97	RCA	143.90	APO	229.16	V2	25.847
RC	300.120	GL	13.03	GP	3.30	ZAL	137.98	ZAP	48.67	ETS	182.33	ZAE	76.01	ETE	180.10	ZAC	86.38	ETC	258.79	CLP	48.59

PLANETOCENTRIC CONIC

C3	17.015	VHL	4.125	DLA	15.39	RAL	177.30	RAD	6567.7	VEL	11.764	PTH	2.08	VHP	3.979	DPA	13.41	RAP	161.21	ECC	1.2800

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 51 41	2676.41	-27.45	72.86	41.15	97.24	19 36 17	2076.4	-26.16	64.43
90.00	10 58 49	4320.65	3.92	178.72	35.34	61.93	12 10 50	3720.6	.14	172.08
100.00	20 21 27	2386.92	-28.70	51.37	40.95	98.73	21 1 13	1786.9	-27.20	42.89
100.00	12 11 44	4085.37	5.03	160.81	34.73	60.50	13 19 50	3485.4	1.07	154.27
110.00	21 48 27	2114.70	-31.98	29.97	40.23	102.76	22 23 41	1514.7	-29.90	21.38
110.00	13 1 14	3930.35	7.88	147.30	32.98	56.63	14 6 44	3330.4	3.44	141.03

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-1.4788	TRA	5.8932	TC3	-9.4299	BAU	2.1501	SGT	11697.3	SGR	905.8	SG3	1678.6	ST	3280.5	SR	707.3	SS	2223.6
RDE	.5073	RRA	-.1375	RC3	.6469	FAU	.28316	RRT	-.6871	RRF	-.7147	RTF	.9959	CRT	-.6906	CRS	.7883	CST	-.9893
FDE	-3.4125	FRA	10.1475	FC	-14.4072	BSP	40289	SGB	11732.3	R23	.0389	R13	-.9960	LSA	3987.4	MSA	553.8	SSA	16.8
BDE	1.5634	BRA	5.8948	BC3	9.4521	FSP	5937	SG	111713.9	SG2	657.2	THA	176.94	EL1	3317.5	EL2	505.8	ALF	171.33

LAUNCH DATE OCT 25 1964 FLIGHT TIME 376.00 ARRIVAL DATE NOV 5 1965

HELIOCENTRIC CONIC DISTANCE 842.831 EARTH TO MARS

RL 148.73 LAL .00 LOL 31.61 VL 32.763 GAL -6.32 AZL 88.35 HCA 258.54 SMA 186.60 ECC .22974 INC 1.6487 V1 29.958
RP 212.01 LAP -1.62 LOP 290.15 VP 23.254 GAP -10.76 AZP 90.33 TAL 325.07 TAP 223.62 RCA 143.73 APO 229.46 V2 25.879
RC 301.167 GL 12.97 GP 3.23 ZAL 138.63 ZAP 47.59 ETS 182.37 ZAE 74.66 ETE 180.19 ZAC 86.34 ETC 258.77 CLP 47.51

PLANETOCENTRIC CONIC

C3 17.438 VHL 4.176 DLA 15.07 RAL 177.90 RAD 6567.7 VEL 11.782 PTH 2.08 VHP 4.056 DPA 13.30 RAP 161.30 ECC 1.2870

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 57 6	2670.27	-27.40	72.42	42.05	97.46	19 41 36	2070.3	-26.08	64.00
90.00	10 58 11	4338.12	4.48	179.70	36.23	62.01	12 10 29	3738.1	.70	173.06
100.00	20 26 37	2381.58	-28.65	50.98	41.84	98.92	21 6 19	1781.6	-27.12	42.51
100.00	12 11 21	4102.05	5.59	161.73	35.63	60.59	13 19 43	3502.0	1.63	155.19
110.00	21 53 6	2110.98	-31.93	29.70	41.11	102.91	22 28 17	1511.0	-29.82	21.12
110.00	13 1 21	3945.41	8.45	148.10	33.88	56.75	14 7 7	3345.4	4.01	141.82

DIFFERENTIAL CORRECTIONS
TDE-1.5640 TRA 6.1127 TC3-9.3795 BAU 2.1914
RDE .5143 RRA -.1319 RC3 .6223 FAU .27027
FDE-3.3752 FRA 9.8736 FC-13.4182 BSP 41035
BDE 1.6464 BRA 6.1141 BC3 9.4001 FSP 5690

MID-COURSE EXECUTION ACCURACY
SGT11891.5 SGR 896.2 SG3 1602.2
RRT -.6769 RRF -.7053 RTF .9958
SGB11925.2 R23 .0397 R13 -.9959
SG111907.0 SG2 658.9 THA 177.07

ORBIT DETERMINATION ACCURACY
ST 3383.7 SR 708.1 SS 2196.1
CRT -.6947 CRS .7910 CST -.9895
LSA 4058.1 MSA 552.1 SSA 16.7
EL1 3420.1 EL2 503.9 ALF 171.54

LAUNCH DATE OCT 25 1964 FLIGHT TIME 378.00 ARRIVAL DATE NOV 7 1965

HELIOCENTRIC CONIC DISTANCE 846.985 EARTH TO MARS

RL 148.73 LAL .00 LOL 31.61 VL 32.766 GAL -6.44 AZL 88.34 HCA 259.75 SMA 186.66 ECC .23099 INC 1.6610 V1 29.958
RP 211.73 LAP -1.63 LOP 291.36 VP 23.294 GAP -10.93 AZP 90.30 TAL 324.50 TAP 224.25 RCA 143.54 APO 229.78 V2 25.911
RC 302.203 GL 12.90 GP 3.16 ZAL 139.30 ZAP 46.55 ETS 182.41 ZAE 73.33 ETE 180.27 ZAC 86.30 ETC 258.74 CLP 46.47

PLANETOCENTRIC CONIC

C3 17.885 VHL 4.229 DLA 14.73 RAL 178.50 RAD 6567.7 VEL 11.801 PTH 2.09 VHP 4.135 DPA 13.17 RAP 161.43 ECC 1.2943

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 2 36	2664.10	-27.34	71.98	42.95	97.67	19 47 0	2064.1	-26.00	63.57
90.00	10 57 30	4356.05	5.06	180.71	37.15	62.10	12 10 6	3756.1	1.28	174.06
100.00	20 31 52	2376.21	-28.59	50.59	42.75	99.12	21 11 28	1776.2	-27.03	42.14
100.00	12 10 55	4119.18	6.16	162.68	36.54	60.69	13 19 34	3519.2	2.21	156.13
110.00	21 57 49	2107.24	-31.87	29.42	42.00	103.07	22 32 57	1507.2	-29.75	20.86
110.00	13 1 27	3960.91	9.02	148.93	34.79	56.89	14 7 28	3360.9	4.60	142.63

DIFFERENTIAL CORRECTIONS
TDE-1.6522 TRA 6.3368 TC3-9.3156 BAU 2.2320
RDE .5216 RRA -.1268 RC3 .5986 FAU .25769
FDE-3.3378 FRA 9.6024 FC-12.4735 BSP 41751
BDE 1.7326 BRA 6.3380 BC3 9.3348 FSP 5446

MID-COURSE EXECUTION ACCURACY
SGT12078.5 SGR 887.3 SG3 1527.8
RRT -.6670 RRF -.6964 RTF .9956
SGB12111.1 R23 .0407 R13 -.9958
SG112093.0 SG2 660.3 THA 177.19

ORBIT DETERMINATION ACCURACY
ST 3486.9 SR 708.9 SS 2168.1
CRT -.6989 CRS .7939 CST -.9897
LSA 4130.2 MSA 550.4 SSA 16.5
EL1 3522.6 EL2 501.9 ALF 171.74

LAUNCH DATE OCT 25 1964 FLIGHT TIME 380.00 ARRIVAL DATE NOV 9 1965

HELIOCENTRIC CONIC DISTANCE 851.139 EARTH TO MARS

RL 148.73 LAL .00 LOL 31.61 VL 32.770 GAL -6.57 AZL 88.33 HCA 260.96 SMA 186.73 ECC .23230 INC 1.6732 V1 29.958
RP 211.47 LAP -1.65 LOP 292.57 VP 23.333 GAP -11.10 AZP 90.26 TAL 323.90 TAP 224.86 RCA 143.35 APO 230.10 V2 25.941
RC 303.228 GL 12.82 GP 3.09 ZAL 139.98 ZAP 45.54 ETS 182.44 ZAE 72.04 ETE 180.36 ZAC 86.27 ETC 258.71 CLP 45.45

PLANETOCENTRIC CONIC

C3 18.358 VHL 4.285 DLA 14.38 RAL 179.11 RAD 6567.7 VEL 11.821 PTH 2.09 VHP 4.216 DPA 13.03 RAP 161.59 ECC 1.3021

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 8 9	2657.92	-27.28	71.53	43.88	97.89	19 52 27	2057.9	-25.91	63.14
90.00	10 56 48	4374.43	5.64	181.74	38.08	62.20	12 9 43	3774.4	1.88	175.08
100.00	20 37 10	2370.83	-28.53	50.20	43.67	99.32	21 16 41	1770.8	-26.95	41.76
100.00	12 10 28	4136.75	6.75	163.66	37.48	60.81	13 19 25	3536.8	2.81	157.09
110.00	22 2 36	2103.51	-31.81	29.15	42.91	103.22	22 37 40	1503.5	-29.67	20.59
110.00	13 1 31	3976.83	9.61	149.79	35.73	57.04	14 7 48	3376.8	5.21	143.47

DIFFERENTIAL CORRECTIONS
TDE-1.7430 TRA 6.5661 TC3-9.2392 BAU 2.2720
RDE .5291 RRA -.1222 RC3 .5760 FAU .24550
FDE-3.2977 FRA 9.3357 FC-11.5771 BSP 42462
BDE 1.8216 BRA 6.5672 BC3 9.2571 FSP 5212

MID-COURSE EXECUTION ACCURACY
SGT12258.9 SGR 879.1 SG3 1455.9
RRT -.6576 RRF -.6879 RTF .9955
SGB12290.3 R23 .0417 R13 -.9956
SG112272.5 SG2 661.6 THA 177.29

ORBIT DETERMINATION ACCURACY
ST 3589.4 SR 709.5 SS 2138.8
CRT -.7030 CRS .7969 CST -.9898
LSA 4202.5 MSA 548.5 SSA 16.3
EL1 3624.6 EL2 499.7 ALF 171.93

LAUNCH DATE OCT 25 1964 FLIGHT TIME 382.00 ARRIVAL DATE NOV 11 1965

HELIOCENTRIC CONIC DISTANCE 855.292 EARTH TO MARS

RL 148.73 LAL .00 LOL 31.61 VL 32.774 GAL -6.71 AZL 88.31 HCA 262.18 SMA 186.79 ECC .23367 INC 1.6854 V1 29.958
RP 211.20 LAP -1.67 LOP 293.79 VP 23.372 GAP -11.27 AZP 90.23 TAL 323.29 TAP 225.47 RCA 143.15 APO 230.44 V2 25.971
RC 304.242 GL 12.74 GP 3.03 ZAL 140.66 ZAP 44.55 ETS 182.47 ZAE 70.77 ETE 180.44 ZAC 86.24 ETC 258.67 CLP 44.47

PLANETOCENTRIC CONIC

C3 18.859 VHL 4.343 DLA 14.02 RAL 179.72 RAD 6567.8 VEL 11.842 PTH 2.10 VHP 4.299 DPA 12.88 RAP 161.78 ECC 1.3104

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 13 46	2651.76	-27.23	71.09	44.82	98.10	19 57 58	2051.8	-25.82	62.71
90.00	10 56 4	4393.22	6.23	182.80	39.04	62.32	12 9 17	3793.2	2.48	176.13
100.00	20 42 33	2365.46	-28.47	49.82	44.60	99.51	21 21 58	1765.5	-26.86	41.38
100.00	12 9 59	4154.75	7.34	164.66	38.43	60.94	13 19 14	3554.8	3.41	158.08
110.00	22 7 27	2099.80	-31.76	28.87	43.83	103.37	22 42 27	1499.8	-29.59	20.33
110.00	13 1 34	3993.17	10.22	150.67	36.69	57.20	14 8 7	3393.2	5.82	144.33

DIFFERENTIAL CORRECTIONS
TDE-1.8367 TRA 6.8012 TC3-9.1510 BAU 2.3114
RDE .5369 RRA -.1180 RC3 .5543 FAU .23362
FDE-3.2561 FRA 9.0730 FC-10.7245 BSP 43148
BDE 1.9136 BRA 6.8023 BC3 9.1677 FSP 4983

MID-COURSE EXECUTION ACCURACY
SGT12433.3 SGR 871.3 SG3 1386.3
RRT -.6486 RRF -.6800 RTF .9953
SGB12463.8 R23 .0428 R13 -.9954
SG112446.2 SG2 662.5 THA 177.39

ORBIT DETERMINATION ACCURACY
ST 3691.7 SR 710.1 SS 2108.7
CRT -.7070 CRS .8000 CST -.9899
LSA 4275.6 MSA 546.4 SSA 16.2
EL1 3726.3 EL2 497.5 ALF 172.11

LAUNCH DATE OCT 25 1964 FLIGHT TIME 384.00 ARRIVAL DATE NOV 13 1965

HELIOCENTRIC CONIC DISTANCE 859.444 EARTH TO MARS

RL 148.73 LAL .00 LOL 31.61 VL 32.778 GAL -6.85 AZL 88.30 HCA 263.39 SMA 186.86 ECC .23510 INC 1.6975 V1 29.958
RP 210.95 LAP -1.69 LOP 295.00 VP 23.410 GAP -11.44 AZP 90.20 TAL 322.67 TAP 226.06 RCA 142.93 APO 230.80 V2 26.001
RC 305.247 GL 12.65 GP 2.96 ZAL 141.35 ZAP 43.60 ETS 182.50 ZAE 69.54 ETE 180.51 ZAC 86.23 ETC 258.63 CLP 43.52

PLANETOCENTRIC CONIC

C3 19.388 VHL 4.403 DLA 13.66 RAL 180.34 RAD 6567.8 VEL 11.865 PTH 2.10 VHP 4.384 DPA 12.72 RAP 162.01 ECC 1.3191

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 19 27	2645.62	-27.17	70.65	45.78	98.32	20 3 32	2045.6	-25.74	62.28
90.00	10 55 19	4412.44	6.84	183.89	40.01	62.46	12 8 51	3812.4	3.10	177.21
100.00	20 47 58	2360.12	-28.41	49.43	45.55	99.71	21 27 18	1760.1	-26.78	41.01
100.00	12 9 28	4173.16	7.95	165.69	39.41	61.09	13 19 2	3573.2	4.04	159.10
110.00	22 12 20	2096.12	-31.70	28.60	44.77	103.52	22 47 16	1496.1	-29.51	20.08
110.00	13 1 35	4009.92	10.83	151.57	37.67	57.38	14 8 25	3409.9	6.46	145.21

DIFFERENTIAL CORRECTIONS
TDE-1.9344 TRA 7.0408 TC3-9.0534 BAU 2.3507
RDE .5449 RRA -.1142 RC3 .5336 FAU .22217
FDE-3.2142 FRA 8.8125 FC3-9.9203 BSP 43808
BDE 2.0097 BRA 7.0417 BC3 9.0691 FSP 4761

MID-COURSE EXECUTION ACCURACY
SGT12601.4 SGR 864.3 SG3 1319.1
RRT -.6402 RRF -.6726 RTF .9951
SGB12631.0 R23 .0439 R13 -.9952
SG112613.6 SG2 663.2 THA 177.48

ORBIT DETERMINATION ACCURACY
ST 3793.9 SR 710.7 SS 2077.9
CRT -.7113 CRS .8033 CST -.9900
LSA 4349.7 MSA 544.1 SSA 16.1
EL1 3828.0 EL2 495.1 ALF 172.28

LAUNCH DATE OCT 25 1964 FLIGHT TIME 386.00 ARRIVAL DATE NOV 15 1965

HELIOCENTRIC CONIC DISTANCE 863.594 EARTH TO MARS

RL 148.73 LAL .00 LOL 31.61 VL 32.782 GAL -6.99 AZL 88.29 HCA 264.61 SMA 186.94 ECC .23660 INC 1.7096 V1 29.958
RP 210.70 LAP -1.70 LOP 296.22 VP 23.448 GAP -11.61 AZP 90.16 TAL 322.03 TAP 226.64 RCA 142.71 APO 231.16 V2 26.029
RC 306.243 GL 12.55 GP 2.90 ZAL 142.05 ZAP 42.68 ETS 182.53 ZAE 68.33 ETE 180.59 ZAC 86.23 ETC 258.59 CLP 42.60

PLANETOCENTRIC CONIC

C3 19.948 VHL 4.466 DLA 13.29 RAL 180.96 RAD 6567.8 VEL 11.888 PTH 2.11 VHP 4.471 DPA 12.54 RAP 162.26 ECC 1.3283

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 25 10	2639.52	-27.11	70.22	46.75	98.53	20 9 9	2039.5	-25.65	61.85
90.00	10 54 32	4432.05	7.46	185.00	41.01	62.60	12 8 24	3832.0	3.73	178.30
100.00	20 53 26	2354.83	-28.35	49.05	46.52	99.90	21 32 41	1754.8	-26.69	40.64
100.00	12 8 57	4191.97	8.57	166.75	40.41	61.25	13 18 49	3592.0	4.67	160.13
110.00	22 17 17	2092.50	-31.64	28.34	45.73	103.67	22 52 9	1492.5	-29.44	19.82
110.00	13 1 36	4027.07	11.46	152.50	38.68	57.57	14 8 43	3427.1	7.10	146.12

DIFFERENTIAL CORRECTIONS
TDE-2.0351 TRA 7.2868 TC3-8.9463 BAU 2.3898
RDE .5532 RRA -.1109 RC3 .5138 FAU .21109
FDE-3.1704 FRA 8.5553 FC3-9.1609 BSP 44455
+ BDE 2.1089 BRA 7.2877 BC3 8.9610 FSP 4544

MID-COURSE EXECUTION ACCURACY
SGT12764.6 SGR 857.7 SG3 1254.1
RRT -.6325 RRF -.6659 RTF .9949
SGB12793.3 R23 .0452 R13 -.9950
SG112776.1 SG2 663.7 THA 177.56

ORBIT DETERMINATION ACCURACY
ST 3895.6 SR 711.1 SS 2045.9
CRT -.7155 CRS .8066 CST -.9900
LSA 4424.2 MSA 541.6 SSA 15.9
EL1 3929.3 EL2 492.5 ALF 172.44 +

LAUNCH DATE OCT 25 1964 FLIGHT TIME 388.00 ARRIVAL DATE NOV 17 1965

HELIOCENTRIC CONIC DISTANCE 867.742 EARTH TO MARS

RL 148.73 LAL .00 LOL 31.61 VL 32.787 GAL -7.15 AZL 88.28 HCA 265.83 SMA 187.01 ECC .23816 INC 1.7217 V1 29.958
RP 210.46 LAP -1.72 LOP 297.45 VP 23.485 GAP -11.78 AZP 90.13 TAL 321.37 TAP 227.20 RCA 142.47 APO 231.55 V2 26.057
RC 307.229 GL 12.45 GP 2.84 ZAL 142.76 ZAP 41.78 ETS 182.55 ZAE 67.15 ETE 180.65 ZAC 86.23 ETC 258.54 CLP 41.70

PLANETOCENTRIC CONIC

C3 20.541 VHL 4.532 DLA 12.91 RAL 181.58 RAD 6567.8 VEL 11.913 PTH 2.12 VHP 4.561 DPA 12.36 RAP 162.55 ECC 1.3381

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 30 55	2633.50	-27.04	69.79	47.74	98.73	20 14 49	2033.5	-25.56	61.43
90.00	10 53 44	4452.04	8.08	186.14	42.03	62.77	12 7 56	3852.0	4.37	179.42
100.00	20 58 57	2349.60	-28.29	48.67	47.50	100.09	21 38 7	1749.6	-26.60	40.28
100.00	12 8 24	4211.18	9.20	167.83	41.44	61.43	13 18 35	3611.2	5.31	161.20
110.00	22 22 15	2088.94	-31.58	28.07	46.70	103.82	22 57 4	1488.9	-29.36	19.57
110.00	13 1 35	4044.60	12.10	153.46	39.70	57.78	14 8 59	3444.6	7.76	147.05

DIFFERENTIAL CORRECTIONS
TDE-2.1384 TRA 7.5388 TC3-8.8283 BAU 2.4282
RDE .5617 RRA -.1080 RC3 .4947 FAU .20031
FDE-3.1243 FRA 8.3019 FC3-8.4425 BSP 45089
BDE 2.2109 BRA 7.5396 BC3 8.8422 FSP 4337

MID-COURSE EXECUTION ACCURACY
SGT12920.8 SGR 851.5 SG3 1191.2
RRT -.6252 RRF -.6598 RTF .9947
SGB12948.9 R23 .0464 R13 -.9948
SG112931.8 SG2 664.0 THA 177.63

ORBIT DETERMINATION ACCURACY
ST 3996.2 SR 711.5 SS 2012.7
CRT -.7197 CRS .8100 CST -.9900
LSA 4498.4 MSA 539.0 SSA 15.8
EL1 4029.4 EL2 489.9 ALF 172.59

LAUNCH DATE OCT 25 1964 FLIGHT TIME 390.00 ARRIVAL DATE NOV 19 1965

HELIOCENTRIC CONIC DISTANCE 871.886 EARTH TO MARS

RL 148.73 LAL .00 LOL 31.61 VL 32.791 GAL -7.30 AZL 88.27 HCA 267.06 SMA 187.09 ECC .23979 INC 1.7337 V1 29.958
RP 210.22 LAP -1.73 LOP 298.67 VP 23.521 GAP -11.95 AZP 90.09 TAL 320.69 TAP 227.75 RCA 142.22 APO 231.95 V2 26.085
RC 308.206 GL 12.35 GP 2.78 ZAL 143.47 ZAP 40.91 ETS 182.57 ZAE 65.99 ETE 180.72 ZAC 86.24 ETC 258.49 CLP 40.83

PLANETOCENTRIC CONIC

C3 21.169 VHL 4.601 DLA 12.52 RAL 182.20 RAD 6567.9 VEL 11.939 PTH 2.12 VHP 4.653 DPA 12.17 RAP 162.86 ECC 1.3484

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 36 43	2627.55	-26.98	69.36	48.74	98.94	20 20 31	2027.6	-25.47	61.02
90.00	10 52 55	4472.42	8.71	187.30	43.08	62.95	12 7 28	3872.4	5.02	180.57
100.00	21 4 30	2344.45	-28.23	48.30	48.50	100.27	21 43 34	1744.4	-26.52	39.92
100.00	12 7 50	4230.75	9.83	168.94	42.48	61.63	13 18 20	3630.8	5.97	162.28
110.00	22 27 16	2085.46	-31.52	27.82	47.69	103.96	23 2 2	1485.5	-29.29	19.33
110.00	13 1 33	4062.51	12.75	154.44	40.75	58.01	14 9 15	3462.5	8.43	148.01

DIFFERENTIAL CORRECTIONS
TDE-2.2456 TRA 7.7971 TC3-8.7036 BAU 2.4668
RDE .5705 RRA -.1057 RC3 .4766 FAU .18996
FDE-3.0777 FRA 8.0512 FC3-7.7690 BSP 45688
BDE 2.3170 BRA 7.7978 BC3 8.7166 FSP 4133

MID-COURSE EXECUTION ACCURACY
SGT13072.7 SGR 845.8 SG3 1130.8
RRT -.6187 RRF -.6543 RTF .9944
SGB13100.0 R23 .0478 R13 -.9945
SG113083.2 SG2 663.9 THA 177.70

ORBIT DETERMINATION ACCURACY
ST 4096.6 SR 711.8 SS 1978.8
CRT -.7239 CRS .8136 CST -.9900
LSA 4573.4 MSA 536.3 SSA 15.6
EL1 4129.3 EL2 487.2 ALF 172.73

LAUNCH DATE OCT 25 1964 FLIGHT TIME 392.00 ARRIVAL DATE NOV 21 1965

HELIOCENTRIC CONIC DISTANCE 876.026 EARTH TO MARS

RL 148.73 LAL .00 LOL 31.61 VL 32.796 GAL -7.46 AZL 88.25 HCA 268.29 SMA 187.16 ECC .24150 INC 1.7458 V1 29.958
RP 209.99 LAP -1.75 LOP 299.90 VP 23.557 GAP -12.12 AZP 90.05 TAL 320.00 TAP 228.29 RCA 141.96 APO 232.36 V2 26.111
RC 309.174 GL 12.24 GP 2.73 ZAL 144.19 ZAP 40.07 ETS 182.59 ZAE 64.86 ETE 180.78 ZAC 86.26 ETC 258.43 CLP 39.99

PLANETOCENTRIC CONIC

C3 21.833 VHL 4.673 DLA 12.13 RAL 182.83 RAD 6567.9 VEL 11.967 PTH 2.13 VHP 4.747 DPA 11.97 RAP 163.20 ECC 1.3593

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 42 33	2621.71	-26.92	68.95	49.76	99.14	20 26 15	2021.7	-25.38	60.62
90.00	10 52 6	4493.15	9.35	188.49	44.14	63.15	12 6 59	3893.2	5.68	181.73
100.00	21 10 5	2339.39	-28.16	47.94	49.52	100.45	21 49 5	1739.4	-26.43	39.57
100.00	12 7 15	4250.68	10.48	170.07	43.55	61.84	13 18 5	3650.7	6.63	163.39
110.00	22 32 20	2082.07	-31.47	27.57	48.69	104.10	23 7 2	1482.1	-29.21	19.09
110.00	13 1 30	4080.79	13.41	155.45	41.83	58.26	14 9 31	3480.8	9.11	148.98

DIFFERENTIAL CORRECTIONS
TDE-2.3570 TRA 8.0616 TC3-8.5709 BAU 2.5053
RDE .5797 RRA -.1038 RC3 .4592 FAU .17991
FDE-3.0301 FRA 7.8032 FC3-7.1340 BSP 46279
BDE 2.4273 BRA 8.0622 BC3 8.5832 FSP 3936

MID-COURSE EXECUTION ACCURACY
SGT13218.9 SGR 840.4 SG3 1072.3
RRT -.6128 RRF -.6496 RTF .9941
SGB13245.6 R23 .0492 R13 -.9942
SG113229.0 SG2 663.7 THA 177.76

ORBIT DETERMINATION ACCURACY
ST 4196.7 SR 712.0 SS 1944.0
CRT -.7282 CRS .8173 CST -.9900
LSA 4649.1 MSA 533.3 SSA 15.5
EL1 4229.1 EL2 484.2 ALF 172.86

LAUNCH DATE OCT 25 1964 FLIGHT TIME 394.00 ARRIVAL DATE NOV 23 1965

HELIOCENTRIC CONIC DISTANCE 880.162 EARTH TO MARS

RL 148.73 LAL .00 LOL 31.61 VL 32.800 GAL -7.63 AZL 88.24 HCA 269.52 SMA 187.24 ECC .24328 INC 1.7579 V1 29.958
RP 209.77 LAP -1.76 LOP 301.13 VP 23.592 GAP -12.30 AZP 90.01 TAL 319.30 TAP 228.81 RCA 141.69 APO 232.80 V2 26.137
RC 310.132 GL 12.13 GP 2.67 ZAL 144.91 ZAP 39.25 ETS 182.61 ZAE 63.75 ETE 180.85 ZAC 86.28 ETC 258.38 CLP 39.18

PLANETOCENTRIC CONIC

C3 22.536 VHL 4.747 DLA 11.73 RAL 183.46 RAD 6567.9 VEL 11.996 PTH 2.14 VHP 4.843 DPA 11.76 RAP 163.57 ECC 1.3709

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 48 25	2615.97	-26.86	68.54	50.80	99.33	20 32 1	2016.0	-25.29	60.22
90.00	10 51 15	4514.24	10.00	189.70	45.23	63.37	12 6 30	3914.2	6.35	182.92
100.00	21 15 42	2334.44	-28.10	47.58	50.55	100.63	21 54 37	1734.4	-26.35	39.22
100.00	12 6 39	4271.00	11.12	171.22	44.64	62.08	13 17 50	3671.0	7.30	164.52
110.00	22 37 24	2078.79	-31.41	27.33	49.71	104.23	23 12 3	1478.8	-29.14	18.86
110.00	13 1 26	4099.42	14.07	156.49	42.92	58.52	14 9 46	3499.4	9.80	149.99

DIFFERENTIAL CORRECTIONS
TDE-2.4716 TRA 8.3325 TC3-8.4333 BAU 2.5443
RDE .5891 RRA -.1024 RC3 .4427 FAU .17028
FDE-2.9815 FRA 7.5577 FC3-6.5416 BSP 46831
BDE 2.5408 BRA 8.3332 BC3 8.4449 FSP 3743

MID-COURSE EXECUTION ACCURACY
SGT13360.9 SGR 835.5 SG3 1016.1
RRT -.6075 RRF -.6456 RTF .9938
SGB13387.0 R23 .0509 R13 -.9939
SG113370.6 SG2 663.2 THA 177.82

ORBIT DETERMINATION ACCURACY
ST 4295.6 SR 712.1 SS 1908.3
CRT -.7325 CRS .8212 CST -.9900
LSA 4724.3 MSA 530.3 SSA 15.4
EL1 4327.5 EL2 481.2 ALF 172.99

LAUNCH DATE OCT 25 1964 FLIGHT TIME 396.00 ARRIVAL DATE NOV 25 1965

HELIOCENTRIC CONIC DISTANCE 884.293 EARTH TO MARS

RL 148.73 LAL .00 LOL 31.61 VL 32.805 GAL -7.80 AZL 88.23 HCA 270.75 SMA 187.32 ECC .24514 INC 1.7699 V1 29.958
RP 209.55 LAP -1.77 LOP 302.37 VP 23.626 GAP -12.48 AZP 89.98 TAL 318.57 TAP 229.32 RCA 141.40 APO 233.24 V2 26.162
RC 311.080 GL 12.01 GP 2.62 ZAL 145.64 ZAP 38.46 ETS 182.63 ZAE 62.67 ETE 180.90 ZAC 86.32 ETC 258.31 CLP 38.38

PLANETOCENTRIC CONIC

C3 23.280 VHL 4.825 DLA 11.33 RAL 184.09 RAD 6567.9 VEL 12.027 PTH 2.15 VHP 4.942 DPA 11.53 RAP 163.96 ECC 1.3831

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 54 18	2610.37	-26.79	68.14	51.85	99.52	20 37 48	2010.4	-25.20	59.83
90.00	10 50 24	4535.66	10.65	190.94	46.35	63.61	12 6 0	3935.7	7.02	184.14
100.00	21 21 21	2329.61	-28.04	47.24	51.60	100.80	22 0 10	1729.6	-26.26	38.89
100.00	12 6 2	4291.65	11.78	172.41	45.76	62.33	13 17 34	3691.6	7.98	165.68
110.00	22 42 31	2075.62	-31.36	27;10	50.75	104.36	23 17 6	1475.6	-29.07	18.64
110.00	13 1 22	4118.41	14.74	157.55	44.04	58.80	14 10 0	3518.4	10.50	151.01

DIFFERENTIAL CORRECTIONS
TDE-2.5910 TRA 8.6102 TC3-8.2901 BAU 2.5835
RDE .5989 RRA -.1014 RC3 .4268 FAU .16097
FDE-2.9318 FRA 7.3143 FC3-5.9862 BSP 47360
BDE 2.6593 BRA 8.6108 BC3 8.3010 FSP 3556

MID-COURSE EXECUTION ACCURACY
SGT13498.2 SGR 830.9 SG3 962.0
RRT -.6030 RRF -.6424 RTF .9934
SGB13523.8 R23 .0525 R13 -.9935
SG113507.5 SG2 662.4 THA 177.87

ORBIT DETERMINATION ACCURACY
ST 4394.4 SR 712.2 SS 1871.6
CRT -.7369 CRS .8251 CST -.9899
LSA 4800.3 MSA 527.0 SSA 15.3
EL1 4426.0 EL2 478.0 ALF 173.11

LAUNCH DATE OCT 25 1964 FLIGHT TIME 398.00 ARRIVAL DATE NOV 27 1965

HELIOCENTRIC CONIC DISTANCE 888.417 EARTH TO MARS

RL 148.73 LAL .00 LOL 31.61 VL 32.810 GAL -7.98 AZL 88.22 HCA 271.99 SMA 187.41 ECC .24708 INC 1.7821 V1 29.958
RP 209.34 LAP -1.78 LOP 303.60 VP 23.660 GAP -12.66 AZP 89.94 TAL 317.83 TAP 229.82 RCA 141.10 APO 233.71 V2 26.186
RC 312.019 GL 11.89 GP 2.57 ZAL 146.38 ZAP 37.69 ETS 182.64 ZAE 61.61 ETE 180.96 ZAC 86.36 ETC 258.25 CLP 37.62

PLANETOCENTRIC CONIC

C3 24.068 VHL 4.906 DLA 10.92 RAL 184.72 RAD 6568.0 VEL 12.060 PTH 2.16 VHP 5.043 DPA 11.30 RAP 164.38 ECC 1.3961

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 0 12	2604.90	-26.73	67.75	52.92	99.71	20 43 37	2004.9	-25.12	59.46
90.00	10 49 33	4557.42	11.31	192.20	47.48	63.87	12 5 30	3957.4	7.70	185.37
100.00	21 27 0	2324.92	-27.98	46.90	52.66	100.97	22 5 45	1724.9	-26.18	38.56
100.00	12 5 25	4312.63	12.44	173.61	46.90	62.60	13 17 18	3712.6	8.67	166.85
110.00	22 47 39	2072.59	-31.31	26.88	51.80	104.48	23 22 11	1472.6	-29.00	18.43
110.00	13 1 16	4137.73	15.42	158.63	45.19	59.11	14 10 14	3537.7	11.21	152.06

DIFFERENTIAL CORRECTIONS
TDE-2.7140 TRA 8.8953 TC3-8.1411 BAU 2.6229
RDE .6090 RRA -.1010 RC3 .4116 FAU .15199
FDE-2.8807 FRA 7.0735 FC3-5.4672 BSP 47865
BDE 2.7815 BRA 8.8959 BC3 8.1515 FSP 3375

MID-COURSE EXECUTION ACCURACY
SGT13630.7 SGR 826.7 SG3 909.8
RRT -.5992 RRF -.6399 RTF .9930
SGB13655.8 R23 .0543 R13 -.9931
SG113639.8 SG2 661.4 THA 177.91

ORBIT DETERMINATION ACCURACY
ST 4492.1 SR 712.2 SS 1834.0
CRT -.7413 CRS .8292 CST -.9898
LSA 4876.0 MSA 523.7 SSA 15.1
EL1 4523.4 EL2 474.7 ALF 173.22

LAUNCH DATE OCT 26 1964 FLIGHT TIME 240.00 ARRIVAL DATE JUN 23 1965

HELIOCENTRIC CONIC DISTANCE 573.443 EARTH TO MARS

RL 148.69 LAL -.00 LOL 32.61 VL 33.179 GAL -5.25 AZL 95.24 HCA 184.34 SMA 193.96 ECC .24977 INC 5.2428 V1 29.966
RP 236.46 LAP .40 LOP 216.93 VP 20.935 GAP 7.06 AZP 84.77 TAL 333.26 TAP 157.60 RCA 145.51 APO 242.41 V2 23.244
RC 192.768 GL -37.72 GP 25.99 ZAL 121.36 ZAP 141.75 ETS 140.23 ZAE 151.09 ETE 65.70 ZAC 114.72 ETC 254.47 CLP 150.89

PLANETOCENTRIC CONIC

C3 24.356 VHL 4.935 DLA -28.25 RAL 149.55 RAD 6568.0 VEL 12.072 PTH 2.16 VHP 5.807 DPA 21.54 RAP 199.00 ECC 1.4008

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	0 45 37	995.15	17.02	330.68	20.68	112.98	1 2 13	395.2	19.99	323.27
90.00	1 19 36	884.95	19.81	323.80	21.86	110.66	1 34 21	284.9	22.45	316.12
100.00	1 0 56	945.59	11.51	324.36	17.99	117.78	1 16 42	345.6	15.14	317.45
100.00	3 46 59	5697.78	25.59	268.83	23.93	105.99	5 21 57	5097.8	27.54	260.57
110.00	1 1 48	942.88	5.18	320.34	14.18	123.84	1 17 31	342.9	9.59	314.03
110.00	6 2 37	5273.25	32.77	238.52	25.85	100.32	7 30 30	4673.3	33.85	229.45

DIFFERENTIAL CORRECTIONS
TDE 2.1251 TRA-2.3627 TC3 1.7365 BAU .7975
RDE 1.6332 RRA-1.2209 RC3 1.7273 FAU .15912
FDE-4.9623 FRA 3.5691 FC3-5.6561 BSP 17873
BDE 2.6802 BRA 2.6595 BC3 2.4492 FSP 2542

MID-COURSE EXECUTION ACCURACY
SGT 4326.8 SGR 3015.1 SG3 803.5
RRT .9666 RRF -.9990 RTF -.9551
SGB 5273.7 R23 -.2148 R13 -.9765
SG1 5234.9 SG2 638.2 THA 34.55

ORBIT DETERMINATION ACCURACY
ST 2638.6 SR 1957.3 SS 2976.9
CRT .9936 CRS 1.0000 CST .9926
LSA 4426.2 MSA 253.1 SSA 2.5
EL1 3280.5 EL2 177.3 ALF 36.52

LAUNCH DATE OCT 26 1964 FLIGHT TIME 242.00 ARRIVAL DATE JUN 25 1965

HELIOCENTRIC CONIC DISTANCE 577.045 EARTH TO MARS

RL 148.69 LAL -.00 LOL 32.61 VL 33.154 GAL -5.16 AZL 93.96 HCA 185.30 SMA 193.48 ECC .24751 INC 3.9548 V1 29.966
RP 236.12 LAP .37 LOP 217.90 VP 20.933 GAP 6.63 AZP 86.06 TAL 333.51 TAP 158.81 RCA 145.59 APO 241.37 V2 23.279
RC 194.983 GL -30.30 GP 22.29 ZAL 123.88 ZAP 143.64 ETS 144.64 ZAE 154.60 ETE 63.63 ZAC 111.25 ETC 254.86 CLP 150.50

PLANETOCENTRIC CONIC

C3 20.397 VHL 4.516 DLA -21.18 RAL 152.21 RAD 6567.8 VEL 11.907 PTH 2.12 VHP 5.495 DPA 17.98 RAP 197.76 ECC 1.3357

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	22 13 43	1490.21	2.08	359.36	14.33	118.25	22 38 33	890.2	5.84	352.70
90.00	4 8 47	5591.96	28.21	261.59	21.72	92.60	5 41 59	4992.0	28.27	252.93
100.00	23 20 42	1274.06	.62	342.66	13.52	119.89	23 41 56	674.1	4.59	336.12
100.00	5 44 30	5283.34	29.88	238.95	21.78	90.97	7 12 33	4683.3	29.69	230.15
110.00	0 2 34	1155.13	-2.92	331.43	11.31	124.07	0 21 49	555.1	1.57	325.23
110.00	7 23 2	4975.04	34.05	215.44	21.69	86.78	8 45 57	4375.0	33.23	206.29

DIFFERENTIAL CORRECTIONS
TDE 1.8016 TRA-2.3619 TC3 2.0596 BAU .7394
RDE 1.1862 RRA-1.0765 RC3 1.7640 FAU .17566
FDE-4.5930 FRA 4.1777 FC3-7.4560 BSP 17180
BDE 2.1570 BRA 2.5956 BC3 2.7117 FSP 2867

MID-COURSE EXECUTION ACCURACY
SGT 4360.2 SGR 2636.0 SG3 912.8
RRT .9667 RRF -.9991 RTF -.9576
SGB 5095.1 R23 -.2208 R13 -.9749
SG1 5061.8 SG2 581.5 THA 30.75

ORBIT DETERMINATION ACCURACY
ST 2481.2 SR 1568.5 SS 2884.1
CRT .9934 CRS 1.0000 CST .9934
LSA 4108.8 MSA 227.5 SSA 3.9
EL1 2931.4 EL2 152.8 ALF 32.22

LAUNCH DATE OCT 26 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUN 27 1965

HELIOCENTRIC CONIC DISTANCE 580.666 EARTH TO MARS

RL 148.69 LAL -.00 LOL 32.61 VL 33.129 GAL -5.08 AZL 93.06 HCA 186.27 SMA 193.03 ECC .24534 INC 3.0620 V1 29.966
RP 235.77 LAP .33 LOP 218.88 VP 20.935 GAP 6.22 AZP 86.96 TAL 333.74 TAP 160.02 RCA 145.67 APO 240.38 V2 23.315
RC 197.185 GL -24.46 GP 19.58 ZAL 125.42 ZAP 144.58 ETS 148.49 ZAE 157.28 ETE 62.46 ZAC 108.69 ETC 255.10 CLP 149.88

PLANETOCENTRIC CONIC

C3 18.139 VHL 4.259 DLA -15.60 RAL 154.11 RAD 6567.7 VEL 11.812 PTH 2.09 VHP 5.266 DPA 15.39 RAP 196.84 ECC 1.2985

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 22 17	1684.21	-4.17	10.19	13.08	118.03	21 50 21	1084.2	-.38	3.55
90.00	5 15 20	5342.52	27.63	243.41	19.18	83.54	6 44 23	4742.5	26.45	234.94
100.00	22 35 3	1449.43	-5.30	352.30	12.45	119.46	22 59 13	849.4	-1.34	345.76
100.00	6 45 15	5052.53	28.92	221.89	18.99	82.07	8 9 28	4452.5	27.52	213.37
110.00	23 24 13	1295.42	-8.22	338.83	10.66	123.30	23 45 48	695.4	-3.79	332.55
110.00	8 12 35	4779.31	32.28	200.46	18.31	78.10	9 32 14	4179.3	30.31	191.80

DIFFERENTIAL CORRECTIONS
TDE 1.5730 TRA-2.3522 TC3 2.2800 BAU .6948
RDE .9143 RRA -.9668 RC3 1.7348 FAU .18826
FDE-4.2613 FRA 4.6961 FC3-8.9854 BSP 16999
BDE 1.8194 BRA 2.5431 BC3 2.8649 FSP 3213

MID-COURSE EXECUTION ACCURACY
SGT 4363.8 SGR 2349.4 SG3 1001.9
RRT .9665 RRF -.9991 RTF -.9593
SGB 4956.1 R23 -.2247 R13 -.9738
SG1 4927.2 SG2 534.2 THA 27.85

ORBIT DETERMINATION ACCURACY
ST 2335.1 SR 1295.7 SS 2759.9
CRT .9930 CRS .9999 CST .9944
LSA 3835.1 MSA 200.8 SSA 5.9
EL1 2667.1 EL2 133.6 ALF 28.94

LAUNCH DATE OCT 26 1964 FLIGHT TIME 246.00 ARRIVAL DATE JUN 29 1965

HELIOCENTRIC CONIC DISTANCE 584.307 EARTH TO MARS

RL 148.69 LAL -.00 LOL 32.61 VL 33.106 GAL -5.01 AZL 92.41 HCA 187.25 SMA 192.59 ECC .24327 INC 2.4058 V1 29.966
RP 235.42 LAP .30 LOP 219.85 VP 20.938 GAP 5.81 AZP 87.61 TAL 333.98 TAP 161.22 RCA 145.74 APO 239.45 V2 23.351
RC 199.372 GL -19.80 GP 17.52 ZAL 126.32 ZAP 144.94 ETS 151.79 ZAE 159.43 ETE 62.09 ZAC 106.74 ETC 255.26 CLP 149.13

PLANETOCENTRIC CONIC

C3 16.710 VHL 4.088 DLA -11.11 RAL 155.51 RAD 6567.7 VEL 11.751 PTH 2.07 VHP 5.083 DPA 13.44 RAP 196.12 ECC 1.2750

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 48 42	1820.13	-8.46	17.87	12.91	117.12	21 19 2	1220.1	-4.75	11.15
90.00	6 0 4	5168.60	25.68	231.06	17.32	77.65	7 26 13	4568.6	23.73	222.94
100.00	22 4 28	1575.70	-9.47	359.36	12.37	118.48	22 30 44	975.7	-5.60	352.72
100.00	7 27 0	4888.26	26.80	210.15	17.03	76.25	8 48 28	4288.3	24.65	202.01
110.00	23 0 4	1401.59	-12.14	344.56	10.78	122.20	23 23 26	801.6	-7.80	338.15
110.00	8 47 53	4635.14	29.77	189.98	16.08	72.37	10 5 8	4035.1	27.08	181.83

DIFFERENTIAL CORRECTIONS
TDE 1.4230 TRA-2.3135 TC3 2.4799 BAU .6713
RDE .7442 RRA -.8729 RC3 1.6968 FAU .20064
FDE-4.0177 FRA 5.1119 FC-10.3953 BSP 16485
BDE 1.6058 BRA 2.4727 BC3 3.0048 FSP 3481

MID-COURSE EXECUTION ACCURACY
SGT 4360.0 SGR 2137.0 SG3 1083.5
RRT .9674 RRF -.9988 RTF -.9619
SGB 4855.5 R23 -.2226 R13 -.9739
SG1 4830.9 SG2 488.8 THA 25.65

ORBIT DETERMINATION ACCURACY
ST 2228.2 SR 1108.9 SS 2656.0
CRT .9931 CRS .9996 CST .9958
LSA 3635.9 MSA 169.8 SSA 8.6
EL1 2486.1 EL2 116.3 ALF 26.36

LAUNCH DATE OCT 26 1964 FLIGHT TIME 248.00 ARRIVAL DATE JUL 1 1965

HELIOCENTRIC CONIC DISTANCE 587.961 EARTH TO MARS

RL	148.69	LAL	-.00	LOL	32.61	VL	33.084	GAL	-4.93	AZL	91.90	HCA	188.22	SMA	192.18	ECC	.24129	INC	1.9018	V1	29.966
RP	235.06	LAP	.27	LOP	220.83	VP	20.943	GAP	5.41	AZP	88.12	TAL	334.20	TAP	162.42	RCA	145.81	APO	238.55	V2	23.387
RC	201.544	GL	-16.02	GP	15.91	ZAL	126.81	ZAP	144.90	ETS	154.59	ZAE	161.22	ETE	62.45	ZAC	105.20	ETC	255.38	CLP	148.29

PLANETOCENTRIC CONIC

C3	15.731	VHL	3.966	DLA	-7.46	RAL	156.57	RAD	6567.6	VEL	11.710	PTH	2.06	VHP	4.926	DPA	11.93	RAP	195.55	ECC	1.2589

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 23 44	1925.27	-11.66	23.93	13.15	115.99	20 55 50	1325.3	-8.07	17.09
90.00	6 33 30	5035.94	23.44	221.99	16.08	73.64	7 57 26	4435.9	20.97	214.19
100.00	21 41 30	1674.41	-12.62	5.00	12.66	117.32	22 9 24	1074.4	-8.86	358.23
100.00	7 58 26	4762.03	24.47	201.50	15.73	72.27	9 17 48	4162.0	21.81	193.71
110.00	22 41 34	1486.34	-15.16	349.26	11.20	121.01	23 6 20	886.3	-10.94	342.70
110.00	9 14 51	4522.86	27.21	182.26	14.65	68.46	10 30 14	3922.9	24.04	174.53

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY			ORBIT DETERMINATION ACCURACY		
TDE	1.3002	TRA	-2.2785	TC3	2.6123	BAU .6502	SGT 4340.7	SGR 1973.3	SG3 1160.6	ST 2126.8	SR 974.5	SS 2569.9
RDE	.6295	RRA	-.7962	RC3	1.6539	FAU .21265	RRT .9664	RRF -.9985	RTF -.9623	CRT .9925	CRS .9991	CST .9967
FDE	-3.8324	FRA	5.4739	FC	-11.7029	BSP 16219	SGB 4768.2	R23 -.2243	R13 -.9730	LSA 3472.0	MSA 149.9	SSA 11.9
BDE	1.4446	BRA	2.4136	BC3	3.0919	FSP 3720	SG1 4745.5	SG2 464.0	THA 23.96	EL1 2337.0	EL2 108.3	ALF 24.51

LAUNCH DATE OCT 26 1964 FLIGHT TIME 250.00 ARRIVAL DATE JUL 3 1965

HELIOCENTRIC CONIC DISTANCE 591.631 EARTH TO MARS

RL	148.69	LAL	-.00	LOL	32.61	VL	33.062	GAL	-4.86	AZL	91.51	HCA	189.20	SMA	191.79	ECC	.23940	INC	1.5046	V1	29.966
RP	234.71	LAP	.24	LOP	221.81	VP	20.950	GAP	5.01	AZP	88.51	TAL	334.42	TAP	163.62	RCA	145.88	APO	237.71	V2	23.424
RC	203.699	GL	-12.90	GP	14.62	ZAL	127.03	ZAP	144.60	ETS	156.99	ZAE	162.76	ETE	63.53	ZAC	103.97	ETC	255.46	CLP	147.40

PLANETOCENTRIC CONIC

C3	15.015	VHL	3.875	DLA	-4.43	RAL	157.39	RAD	6567.6	VEL	11.679	PTH	2.05	VHP	4.788	DPA	10.73	RAP	195.07	ECC	1.2471

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 3 52	2010.55	-14.15	28.96	13.55	114.78	20 37 22	1410.5	-10.69	21.99
90.00	6 59 56	4929.68	21.23	214.99	15.25	70.81	8 22 5	4329.7	18.42	207.44
100.00	21 23 8	1754.85	-15.09	9.70	13.09	116.12	21 52 22	1154.9	-11.45	2.79
100.00	8 23 21	4660.61	22.20	194.82	14.88	69.45	9 41 1	4060.6	19.20	187.31
110.00	22 26 36	1556.12	-17.57	353.24	11.72	119.81	22 52 32	956.1	-13.47	346.53
110.00	9 36 21	4432.11	24.80	176.30	13.71	65.68	10 50 13	3832.1	21.30	168.90

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY			ORBIT DETERMINATION ACCURACY		
TDE	1.1954	TRA	-2.2447	TC3	2.6933	BAU .6293	SGT 4308.5	SGR 1840.9	SG3 1232.9	ST 2031.1	SR 871.7	SS 2488.1
RDE	.5457	RRA	-.7363	RC3	1.6042	FAU .22325	RRT .9653	RRF -.9979	RTF -.9626	CRT .9917	CRS .9981	CST .9975
FDE	-3.6648	FRA	5.8288	FC	-12.8724	BSP 16158	SGB 4685.4	R23 -.2249	R13 -.9723	LSA 3325.4	MSA 132.2	SSA 16.1
BDE	1.3140	BRA	2.3624	BC3	3.1348	FSP 4001	SG1 4664.3	SG2 444.2	THA 22.63	EL1 2207.9	EL2 103.3	ALF 23.11

LAUNCH DATE OCT 26 1964 FLIGHT TIME 252.00 ARRIVAL DATE JUL 5 1965

HELIOCENTRIC CONIC DISTANCE 595.317 EARTH TO MARS

RL	148.69	LAL	-.00	LOL	32.61	VL	33.042	GAL	-4.79	AZL	91.18	HCA	190.19	SMA	191.42	ECC	.23760	INC	1.1820	V1	29.966
RP	234.35	LAP	.21	LOP	222.80	VP	20.960	GAP	4.62	AZP	88.84	TAL	334.63	TAP	164.81	RCA	145.94	APO	236.90	V2	23.461
RC	205.837	GL	-10.29	GP	13.58	ZAL	127.08	ZAP	144.10	ETS	159.05	ZAE	164.09	ETE	65.33	ZAC	102.96	ETC	255.52	CLP	146.44

PLANETOCENTRIC CONIC

C3	14.463	VHL	3.803	DLA	-1.87	RAL	158.03	RAD	6567.6	VEL	11.655	PTH	2.05	VHP	4.661	DPA	9.77	RAP	194.65	ECC	1.2380

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 47 20	2081.86	-16.14	33.25	13.99	113.58	20 22 2	1481.9	-12.82	26.15
90.00	7 21 36	4841.69	19.15	209.37	14.70	68.74	8 42 17	4241.7	16.10	202.03
100.00	21 7 48	1822.27	-17.06	13.73	13.56	114.92	21 38 10	1222.3	-13.56	6.68
100.00	8 43 48	4576.51	20.09	189.46	14.30	67.39	10 0 5	3976.5	16.85	182.17
110.00	22 14 3	1614.89	-19.52	356.68	12.25	118.63	22 40 58	1014.9	-15.55	349.81
110.00	9 54 3	4356.66	22.60	171.55	13.07	63.64	11 6 40	3756.7	18.87	164.39

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY			ORBIT DETERMINATION ACCURACY		
TDE	1.1128	TRA	-2.2025	TC3	2.7602	BAU .6134	SGT 4270.9	SGR 1736.9	SG3 1305.3	ST 1951.1	SR 795.8	SS 2426.2
RDE	.4860	RRA	-.6850	RC3	1.5636	FAU .23427	RRT .9642	RRF -.9972	RTF -.9629	CRT .9907	CRS .9967	CST .9983
FDE	-3.5403	FRA	6.1530	FC	-14.0228	BSP 15978	SGB 4610.6	R23 -.2238	R13 -.9718	LSA 3211.3	MSA 117.4	SSA 21.2
BDE	1.2143	BRA	2.3065	BC3	3.1723	FSP 4257	SG1 4590.6	SG2 428.5	THA 21.61	EL1 2104.8	EL2 100.2	ALF 22.06

LAUNCH DATE OCT 26 1964 FLIGHT TIME 254.00 ARRIVAL DATE JUL 7 1965

HELIOCENTRIC CONIC DISTANCE 599.016 EARTH TO MARS

RL	148.69	LAL	-.00	LOL	32.61	VL	33.023	GAL	-4.73	AZL	90.92	HCA	191.18	SMA	191.06	ECC	.23587	INC	.9139	V1	29.966
RP	233.98	LAP	.18	LOP	223.79	VP	20.971	GAP	4.23	AZP	89.10	TAL	334.83	TAP	166.00	RCA	146.00	APO	236.13	V2	23.498
RC	207.958	GL	-8.07	GP	12.71	ZAL	127.00	ZAP	143.46	ETS	160.83	ZAE	165.27	ETE	67.89	ZAC	102.11	ETC	255.57	CLP	145.45

PLANETOCENTRIC CONIC

C3	14.021	VHL	3.744	DLA	.32	RAL	158.54	RAD	6567.6	VEL	11.636	PTH	2.04	VHP	4.544	DPA	8.98	RAP	194.28	ECC	1.2307

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 33 9	2142.81	-17.76	36.99	14.43	112.42	20 8 52	1542.8	-14.57	29.77
90.00	7 39 51	4767.02	17.25	204.72	14.31	67.19	8 59 18	4167.0	14.01	197.54
100.00	20 54 39	1879.95	-18.68	17.25	14.02	113.77	21 25 59	1279.9	-15.31	10.07
100.00	9 1 3	4505.12	18.16	185.04	13.90	65.84	10 16 8	3905.1	14.75	177.91
110.00	22 3 14	1665.27	-21.14	359.70	12.77	117.51	22 30 59	1065.3	-17.28	352.69
110.00	10 8 57	4292.56	20.61	167.64	12.63	62.10	11 20 30	3692.6	16.71	160.68

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY			ORBIT DETERMINATION ACCURACY		
TDE	1.0437	TRA	-2.1554	TC3	2.8132	BAU .6004	SGT 4227.0	SGR 1654.0	SG3 1378.5	ST 1879.8	SR 738.4	SS 2378.7
RDE	.4420	RRA	-.6413	RC3	1.5314	FAU .24568	RRT .9630	RRF -.9964	RTF -.9631	CRT .9896	CRS .9948	CST .9988
FDE	-3.4462	FRA	6.4585	FC	-15.1703	BSP 15746	SGB 4539.0	R23 -.2218	R13 -.9715	LSA 3118.5	MSA 107.0	SSA 26.6
BDE	1.1335	BRA	2.2488	BC3	3.2030	FSP 4499	SG1 4519.9	SG2 416.7	THA 20.83	EL1 2017.2	EL2 99.1	ALF 21.30

LAUNCH DATE OCT 26 1964 FLIGHT TIME 256.00 ARRIVAL DATE JUL 9 1965

HELIOCENTRIC CONIC DISTANCE 602.730 EARTH TO MARS

RL	148.69	LAL	-.00	LOL	32.61	VL	33.004	GAL	-4.66	AZL	90.69	HCA	192.17	SMA	190.73	ECC	.23423	INC	.6887
RP	233.62	LAP	.15	LOP	224.78	VP	20.984	GAP	3.85	AZP	89.33	TAL	335.02	TAP	167.19	RCA	146.05	APO	235.40
RC	210.060	GL	-6.16	GP	11.98	ZAL	126.86	ZAP	142.70	ETS	162.37	ZAE	166.29	ETE	71.24	ZAC	101.39	ETC	255.61

V1	29.966	V2	23.536	CLP	144.41														

PLANETOCENTRIC CONIC

C3	13.654	VHL	3.695	DLA	2.22	RAL	158.95	RAD	6567.5	VEL	11.621	PTH	2.04	VHP	4.433	DPA	8.34	RAP	193.92

ECC	1.2247	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	19 20 43	2195.81	-19.11	40.30	14.85	111.30	19 57 19	1595.8	-16.05	32.96							
		90.00	7 55 34	4702.40	15.50	200.78	14.04	66.00	9 13 56	4102.4	12.13	193.73							
		100.00	20 43 6	1930.11	-20.03	20.36	14.45	112.66	21 15 16	1330.1	-16.79	13.07							
		100.00	9 15 52	4443.34	16.40	181.30	13.61	64.65	10 29 56	3843.3	12.85	174.30							
		110.00	21 53 43	1709.09	-22.49	2.38	13.25	116.45	22 22 12	1109.1	-18.76	355.23							
		110.00	10 21 45	4237.12	18.81	164.35	12.32	60.91	11 32 22	3637.1	14.78	157.54							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.9839	TRA	-2.1053	TC3	2.8473	BAU	.5878	SGT	4174.6	SGR	1586.5	SG3	1452.1	ST	1814.4	SR	693.7	SS	2340.1
RDE	.4083	RRA	-.6047	RC3	1.5041	FAU	.25708	RRT	.9619	RRF	-.9954	RTF	-.9634	CRT	.9883	CRS	.9923	CST	.9993
FDE	-3.3687	FRA	6.7612	FC	-16.3009	BSP	15500	SGB	4465.9	R23	-.2189	R13	-.9713	LSA	3039.5	MSA	100.6	SSA	31.9
BDE	1.0653	BRA	2.1904	BC3	3.2202	FSP	4751	SG1	4447.3	SG2	407.4	THA	20.26	EL1	1940.0	EL2	98.9	ALF	20.76

LAUNCH DATE OCT 26 1964 FLIGHT TIME 258.00 ARRIVAL DATE JUL 11 1965

HELIOCENTRIC CONIC DISTANCE 606.456 EARTH TO MARS

RL	148.69	LAL	-.00	LOL	32.61	VL	32.986	GAL	-4.60	AZL	90.50	HCA	193.16	SMA	190.40	ECC	.23266	INC	.4954
RP	233.25	LAP	.11	LOP	225.77	VP	20.999	GAP	3.48	AZP	89.51	TAL	335.21	TAP	168.37	RCA	146.11	APO	234.70
RC	212.144	GL	-4.49	GP	11.36	ZAL	126.66	ZAP	141.85	ETS	163.73	ZAE	167.17	ETE	75.42	ZAC	100.77	ETC	255.64

V1	29.966	V2	23.574	CLP	143.33														

PLANETOCENTRIC CONIC

C3	13.342	VHL	3.653	DLA	3.88	RAL	159.29	RAD	6567.5	VEL	11.607	PTH	2.03	VHP	4.329	DPA	7.81	RAP	193.59

ECC	1.2196	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	19 9 38	2242.55	-20.24	43.26	15.23	110.24	19 47 1	1642.6	-17.30	35.82							
		90.00	8 9 18	4645.60	13.90	197.38	13.85	65.08	9 26 44	4045.6	10.42	190.42							
		100.00	20 32 48	1974.32	-21.16	23.16	14.85	111.62	21 5 42	1374.3	-18.04	15.75							
		100.00	9 28 50	4389.06	14.79	178.07	13.41	63.72	10 41 59	3789.1	11.14	171.18							
		110.00	21 45 13	1747.69	-23.64	4.78	13.68	115.44	22 14 20	1147.7	-20.02	357.52							
		110.00	10 32 54	4188.46	17.17	161.52	12.08	59.98	11 42 43	3588.3	13.05	154.83							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.9298	TRA	-2.0528	TC3	2.8651	BAU	.5754	SGT	4113.9	SGR	1531.7	SG3	1527.1	ST	1751.7	SR	658.7	SS	2309.8
RDE	.3824	RRA	-.5734	RC3	1.4829	FAU	.26877	RRT	.9604	RRF	-.9943	RTF	-.9634	CRT	.9868	CRS	.9892	CST	.9995
FDE	-3.3067	FRA	7.0588	FC	-17.4402	BSP	15234	SGB	4389.7	R23	-.2159	R13	-.9711	LSA	2970.9	MSA	100.2	SSA	35.8
BDE	1.0053	BRA	2.1313	BC3	3.2261	FSP	5004	SG1	4371.3	SG2	401.6	THA	19.85	EL1	1868.8	EL2	100.1	ALF	20.42

LAUNCH DATE OCT 26 1964 FLIGHT TIME 260.00 ARRIVAL DATE JUL 13 1965

HELIOCENTRIC CONIC DISTANCE 610.196 EARTH TO MARS

RL	148.69	LAL	-.00	LOL	32.61	VL	32.969	GAL	-4.55	AZL	90.33	HCA	194.16	SMA	190.10	ECC	.23117	INC	.3305
RP	232.88	LAP	.08	LOP	226.77	VP	21.015	GAP	3.11	AZP	89.68	TAL	335.39	TAP	169.55	RCA	146.16	APO	234.05
RC	214.210	GL	-3.02	GP	10.83	ZAL	126.44	ZAP	140.92	ETS	164.94	ZAE	167.90	ETE	80.47	ZAC	100.22	ETC	255.67

V1	29.966	V2	23.612	CLP	142.21														

PLANETOCENTRIC CONIC

C3	13.072	VHL	3.615	DLA	5.35	RAL	159.56	RAD	6567.5	VEL	11.596	PTH	2.03	VHP	4.230	DPA	7.38	RAP	193.25

ECC	1.2151	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	18 59 38	2284.26	-21.20	45.94	15.58	109.23	19 37 42	1684.3	-18.38	38.40							
		90.00	8 21 30	4595.03	12.43	194.39	13.71	64.35	9 38 5	3995.0	8.87	187.52							
		100.00	20 23 30	2013.75	-22.13	25.68	15.21	110.62	20 57 4	1413.7	-19.13	18.18							
		100.00	9 40 19	4340.78	13.32	175.25	13.26	62.99	10 52 40	3740.8	9.59	168.44							
		110.00	21 37 32	1782.05	-24.63	6.96	14.08	114.49	22 7 14	1182.0	-21.11	359.58							
		110.00	10 42 46	4145.25	15.68	159.06	11.91	59.23	11 51 51	3545.2	11.49	152.47							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8790	TRA	-2.0002	TC3	2.8601	BAU	.5615	SGT	4043.9	SGR	1486.2	SG3	1602.9	ST	1690.1	SR	630.4	SS	2283.3
RDE	.3614	RRA	-.5475	RC3	1.4645	FAU	.28027	RRT	.9588	RRF	-.9931	RTF	-.9632	CRT	.9850	CRS	.9853	CST	.9996
FDE	-3.2484	FRA	7.3673	FC	-18.5622	BSP	15002	SGB	4308.4	R23	-.2128	R13	-.9708	LSA	2907.7	MSA	105.2	SSA	37.8
BDE	.9504	BRA	2.0738	BC3	3.2132	FSP	5283	SG1	4289.9	SG2	398.2	THA	19.59	EL1	1801.0	EL2	102.0	ALF	20.24

LAUNCH DATE OCT 26 1964 FLIGHT TIME 262.00 ARRIVAL DATE JUL 15 1965

HELIOCENTRIC CONIC DISTANCE 613.946 EARTH TO MARS

RL	148.69	LAL	-.00	LOL	32.61	VL	32.953	GAL	-4.50	AZL	90.19	HCA	195.16	SMA	189.81	ECC	.22975	INC	.1824
RP	232.51	LAP	.05	LOP	227.77	VP	21.033	GAP	2.74	AZP	89.82	TAL	335.56	TAP	170.72	RCA	146.20	APO	233.42
RC	218.258	GL	-1.72	GP	10.37	ZAL	126.20	ZAP	139.91	ETS	166.01	ZAE	168.46	ETE	86.34	ZAC	99.74	ETC	255.70

V1	29.966	V2	23.650	CLP	141.06														

PLANETOCENTRIC CONIC

C3	12.835	VHL	3.583	DLA	6.67	RAL	159.79	RAD	6567.5	VEL	11.585	PTH	2.03	VHP	4.135	DPA	7.02	RAP	192.92

ECC	1.2112	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	18 50 30	2321.84	-22.02	48.39	15.89	108.27	19 29 12	1721.8	-19.32	40.76							
		90.00	8 32 27	4549.58	11.07	191.74	13.61	63.77	9 48 16	3949.6	7.46	184.93							
		100.00	20 15 1	2049.23	-22.96	27.99	15.54	109.68	20 49 11	1449.2	-20.07	20.39							
		100.00	9 50 36	4297.43	11.96	172.74	13.15	62.40	11 2 14	3697.4	8.17	166.00							
		110.00	21 30 32	1812.90	-25.48	8.95	14.45	113.59	22 0 45	1212.9	-22.07	1.46							
		110.00	10 51 35	4106.51	14.32	156.88	11.78	58.63	12 0 1	3506.5	10.06	150.37							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.8152	TRA	-1.9623	TC3	2.7873	BAU	.5387	SGT	3958.7	SGR	1447.1	SG3	1678.4	ST	1613.0	SR	605.6	SS	2253.5
RDE	.3430	RRA	-.5275	RC3	1.4448	FAU	.29086	RRT	.9542	RRF	-.9917	RTF	-.9610	CRT	.9812	CRS	.9804	CST	.9995
FDE	-3.1729	FRA	7.7078	FC	-19.6189	BSP	15151	SGB	4214.9	R23	-.2166	R13	-.9690	LSA	2834.0	MSA	115.8	SSA	38.8
BDE	.8844	BRA	2.0319	BC3	3.1395	FSP	5627	SG1	4195.1	SG2	408.4	THA	19.42	EL1	1719.5	EL2	109.6	ALF	20.31

LAUNCH DATE OCT 26 1964 FLIGHT TIME 264.00 ARRIVAL DATE JUL 17 1965

HELIOCENTRIC CONIC DISTANCE 617.711 EARTH TO MARS

RL 148.69 LAL -.00 LOL 32.61 VL 32.938 GAL -4.45 AZL 90.06 HCA 196.16 SMA 189.54 ECC .22840 INC .0425 V1 29.966
RP 232.14 LAP .02 LOP 228.77 VP 21.053 GAP 2.39 AZP 89.94 TAL 335.72 TAP 171.88 RCA 146.25 APO 232.83 V2 23.689
RC 218.287 GL -.55 GP 9.97 ZAL 125.94 ZAP 138.85 ETS 166.97 ZAE 168.83 ETE 92.95 ZAC 99.31 ETC 255.72 CLP 139.86

PLANETOCENTRIC CONIC

C3 12.623 VHL 3.553 DLA 7.85 RAL 159.98 RAD 6567.5 VEL 11.576 PTH 2.02 VHP 4.044 DPA 6.74 RAP 192.58 ECC 1.2077

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 42 5	2356.02	-22.73	50.65	16.18	107.36	19 21 21	1756.0	-20.14	42.93
90.00	8 42 22	4508.27	9.82	189.35	13.54	63.31	9 57 30	3908.3	6.16	182.59
100.00	20 7 12	2081.46	-23.69	30.11	15.84	108.79	20 41 54	1481.5	-20.90	22.42
100.00	9 59 55	4258.07	10.71	170.49	13.07	61.93	11 10 53	3658.1	6.87	163.80
110.00	21 24 5	1840.86	-26.23	10.78	14.77	112.75	21 54 46	1240.9	-22.92	3.19
110.00	10 59 32	4071.43	13.07	154.93	11.68	58.13	12 7 23	3471.4	8.76	148.48

DIFFERENTIAL CORRECTIONS
TDE .7791 TRA-1.8977 TC3 2.7759 BAU .5277
RDE .3313 RRA -.5070 RC3 1.4398 FAU .30372
FDE-3.1492 FRA 8.0035 FC-20.8301 BSP 14693
BDE .8467 BRA 1.9642 BC3 3.1271 FSP 5884

MID-COURSE EXECUTION ACCURACY
SGT 3874.6 SGR 1418.9 SG3 1759.3
RRT .9529 RRF -.9902 RTF -.9611
SGB 4126.3 R23 -.2116 R13 -.9690
SG1 4106.3 SG2 406.0 THA 19.43

ORBIT DETERMINATION ACCURACY
ST 1562.4 SR 589.6 SS 2244.3
CRT .9797 CRS .9754 CST .9993
LSA 2794.4 MSA 126.4 SSA 38.4
EL1 1666.3 EL2 110.8 ALF 20.38

LAUNCH DATE OCT 26 1964 FLIGHT TIME 266.00 ARRIVAL DATE JUL 19 1965

HELIOCENTRIC CONIC DISTANCE 621.490 EARTH TO MARS

RL 148.69 LAL -.00 LOL 32.61 VL 32.923 GAL -4.40 AZL 89.95 HCA 197.17 SMA 189.28 ECC .22712 INC .0431 V1 29.966
RP 231.76 LAP -.02 LOP 229.78 VP 21.074 GAP 2.03 AZP 90.05 TAL 335.87 TAP 173.04 RCA 146.29 APO 232.26 V2 23.728
RC 220.299 GL .50 GP 9.62 ZAL 125.69 ZAP 137.72 ETS 167.84 ZAE 168.99 ETE 100.12 ZAC 98.91 ETC 255.75 CLP 138.63

PLANETOCENTRIC CONIC

C3 12.433 VHL 3.526 DLA 8.93 RAL 160.13 RAD 6567.5 VEL 11.568 PTH 2.02 VHP 3.956 DPA 6.51 RAP 192.23 ECC 1.2046

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 34 16	2387.33	-23.35	52.73	16.44	106.49	19 14 4	1787.3	-20.87	44.94
90.00	8 51 26	4470.49	8.65	187.19	13.49	62.93	10 5 56	3870.5	4.96	180.46
100.00	19 59 58	2110.94	-24.32	32.08	16.11	107.94	20 35 9	1510.9	-21.64	24.30
100.00	10 8 25	4222.11	9.55	168.45	13.01	61.54	11 18 47	3622.1	5.68	161.80
110.00	21 18 7	1866.36	-26.89	12.47	15.07	111.94	21 49 14	1266.4	-23.67	4.78
110.00	11 6 45	4039.46	11.91	153.18	11.60	57.72	12 14 5	3439.5	7.57	146.78

DIFFERENTIAL CORRECTIONS
TDE .7513 TRA-1.8245 TC3 2.7699 BAU .5190
RDE .3230 RRA -.4883 RC3 1.4413 FAU .31757
FDE-3.1453 FRA 8.2879 FC-22.1125 BSP 14071
BDE .8178 BRA 1.8887 BC3 3.1224 FSP 6120

MID-COURSE EXECUTION ACCURACY
SGT 3783.1 SGR 1397.7 SG3 1843.2
RRT .9525 RRF -.9887 RTF -.9616
SGB 4033.1 R23 -.2045 R13 -.9695
SG1 4013.0 SG2 401.4 THA 19.59

ORBIT DETERMINATION ACCURACY
ST 1518.0 SR 578.3 SS 2243.1
CRT .9790 CRS .9702 CST .9987
LSA 2765.7 MSA 140.4 SSA 36.8
EL1 1620.7 EL2 110.4 ALF 20.55

LAUNCH DATE OCT 26 1964 FLIGHT TIME 268.00 ARRIVAL DATE JUL 21 1965

HELIOCENTRIC CONIC DISTANCE 625.278 EARTH TO MARS

RL 148.69 LAL -.00 LOL 32.61 VL 32.909 GAL -4.35 AZL 89.84 HCA 198.18 SMA 189.03 ECC .22590 INC .1556 V1 29.966
RP 231.38 LAP -.05 LOP 230.79 VP 21.096 GAP 1.69 AZP 90.15 TAL 336.02 TAP 174.20 RCA 146.33 APO 231.73 V2 23.768
RC 222.292 GL 1.46 GP 9.30 ZAL 125.44 ZAP 136.54 ETS 168.63 ZAE 168.93 ETE 107.54 ZAC 98.55 ETC 255.77 CLP 137.35

PLANETOCENTRIC CONIC

C3 12.262 VHL 3.502 DLA 9.90 RAL 160.27 RAD 6567.5 VEL 11.561 PTH 2.02 VHP 3.872 DPA 6.34 RAP 191.86 ECC 1.2018

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 27 1	2416.17	-23.89	54.67	16.68	105.66	19 7 17	1816.2	-21.52	46.81
90.00	8 59 47	4435.78	7.57	185.21	13.46	62.63	10 13 43	3835.8	3.85	178.51
100.00	19 53 15	2138.06	-24.88	33.90	16.36	107.13	20 28 53	1538.1	-22.29	26.05
100.00	10 10 15	4189.12	8.48	166.59	12.97	61.23	11 26 4	3589.1	4.57	159.98
110.00	21 12 36	1889.75	-27.48	14.04	15.35	111.18	21 44 6	1289.7	-24.35	6.26
110.00	11 13 23	4010.20	10.84	151.59	11.55	57.38	12 20 13	3410.2	6.47	145.23

DIFFERENTIAL CORRECTIONS
TDE .7121 TRA-1.7632 TC3 2.7034 BAU .5021
RDE .3148 RRA -.4743 RC3 1.4390 FAU .33025
FDE-3.1165 FRA 8.6133 FC-23.3160 BSP 13737
BDE .7786 BRA 1.8259 BC3 3.0625 FSP 6428

MID-COURSE EXECUTION ACCURACY
SGT 3676.8 SGR 1379.0 SG3 1926.8
RRT .9497 RRF -.9870 RTF -.9605
SGB 3926.9 R23 -.2029 R13 -.9688
SG1 3905.8 SG2 406.4 THA 19.83

ORBIT DETERMINATION ACCURACY
ST 1460.4 SR 567.5 SS 2235.9
CRT .9767 CRS .9639 CST .9980
LSA 2725.6 MSA 155.4 SSA 35.9
EL1 1562.7 EL2 113.7 ALF 20.90

LAUNCH DATE OCT 26 1964 FLIGHT TIME 270.00 ARRIVAL DATE JUL 23 1965

HELIOCENTRIC CONIC DISTANCE 629.077 EARTH TO MARS

RL 148.69 LAL -.00 LOL 32.61 VL 32.896 GAL -4.31 AZL 89.75 HCA 199.19 SMA 188.79 ECC .22475 INC .2462 V1 29.966
RP 231.01 LAP -.08 LOP 231.81 VP 21.120 GAP 1.35 AZP 90.23 TAL 336.15 TAP 175.35 RCA 146.36 APO 231.23 V2 23.807
RC 224.266 GL 2.33 GP 9.03 ZAL 125.19 ZAP 135.31 ETS 169.35 ZAE 168.64 ETE 114.90 ZAC 98.22 ETC 255.79 CLP 136.04

PLANETOCENTRIC CONIC

C3 12.108 VHL 3.480 DLA 10.79 RAL 160.39 RAD 6567.5 VEL 11.554 PTH 2.02 VHP 3.792 DPA 6.21 RAP 191.47 ECC 1.1993

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 20 14	2442.89	-24.37	56.48	16.90	104.88	19 0 57	1842.9	-22.09	48.55
90.00	9 7 32	4403.69	6.57	183.39	13.45	62.39	10 20 56	3803.7	2.82	176.72
100.00	19 46 58	2163.14	-25.37	35.60	16.59	106.37	20 23 1	1563.1	-22.88	27.68
100.00	10 23 29	4158.67	7.47	164.88	12.96	60.97	11 32 48	3558.7	3.55	158.30
110.00	21 7 27	1911.31	-28.00	15.50	15.61	110.46	21 39 18	1311.3	-24.96	7.64
110.00	11 19 30	3983.26	9.85	150.13	11.51	57.10	12 25 53	3383.3	5.45	143.81

DIFFERENTIAL CORRECTIONS
TDE .6763 TRA-1.6973 TC3 2.6268 BAU .4850
RDE .3089 RRA -.4616 RC3 1.4416 FAU .34370
FDE-3.1014 FRA 8.9329 FC-24.5752 BSP 13339
BDE .7435 BRA 1.7590 BC3 2.9964 FSP 6725

MID-COURSE EXECUTION ACCURACY
SGT 3560.5 SGR 1365.3 SG3 2012.9
RRT .9467 RRF -.9854 RTF -.9590
SGB 3813.3 R23 -.2017 R13 -.9679
SG1 3790.8 SG2 413.0 THA 20.20

ORBIT DETERMINATION ACCURACY
ST 1404.1 SR 559.9 SS 2234.6
CRT .9746 CRS .9572 CST .9971
LSA 2692.2 MSA 170.4 SSA 35.1
EL1 1507.1 EL2 116.9 ALF 21.37

LAUNCH DATE OCT 26 1964 FLIGHT TIME 272.00 ARRIVAL DATE JUL 25 1965

HELIOCENTRIC CONIC DISTANCE 632.888 EARTH TO MARS

RL	148.69	LAL	-.00	LOL	32.61	VL	32.883	GAL	-4.27	AZL	89.67	HCA	200.21	SMA	188.57	ECC	.22367
RP	230.62	LAP	-.11	LOP	232.82	VP	21.145	GAP	1.01	AZP	90.31	TAL	336.28	TAP	176.49	RCA	146.39
RC	226.222	GL	3.13	GP	8.78	ZAL	124.96	ZAP	134.02	ETS	170.02	ZAE	168.12	ETE	121.91	ZAC	97.90

INC	.3307	V1	29.966	APO	230.75	V2	23.847	ETC	255.81	CLP	134.68						

PLANETOCENTRIC CONIC

C3	11.968	VHL	3.459	DLA	11.62	RAL	160.50	RAD	6567.5	VEL	11.548	PTH	2.02	VHP	3.714	DPA	6.12
RAP	191.06	ECC	1.1970														

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 13 53	2467.75	-24.80	58.18	17.11	104.13	18 55 1	1867.8	-22.61	50.19
90.00	9 14 45	4373.91	5.62	181.71	13.46	62.20	10 27 39	3773.9	1.86	175.05
100.00	19 41 6	2186.45	-25.81	37.19	16.81	105.64	20 17 33	1586.4	-23.41	29.21
100.00	10 30 13	4130.45	6.54	163.31	12.95	60.77	11 39 4	3530.4	2.59	156.75
110.00	21 2 39	1931.28	-28.47	16.86	15.86	109.78	21 34 50	1331.3	-25.51	8.94
110.00	11 25 10	3958.38	8.93	148.80	11.49	56.87	12 31 8	3358.4	4.51	142.50

DIFFERENTIAL CORRECTIONS

TDE	.6406	TRA	-1.6302	TC3	2.5289	BAU	.4660
RDE	.3040	RRA	-.4512	RC3	1.4449	FAU	.35700
FDE	-3.0821	FRA	9.2678	FC	-25.8253	BSP	12937
BDE	.7090	BRA	1.6915	BC3	2.9126	FSP	7048

MID-COURSE EXECUTION ACCURACY

SGT	3432.9	SGR	1354.6	SG3	2100.2		
RRT	.9432	RRF	-.9836	RTF	-.9572		
SGB	3690.5	R23	-.2015	R13	-.9668		
SG1	3666.4	SG2	421.3	THA	20.70		

ORBIT DETERMINATION ACCURACY

ST	1346.2	SR	553.9	SS	2233.7		
CRT	.9724	CRS	.9499	CST	.9959		
LSA	2659.4	MSA	186.1	SSA	34.4		
EL1	1450.7	EL2	120.0	ALF	21.96		

LAUNCH DATE OCT 26 1964 FLIGHT TIME 274.00 ARRIVAL DATE JUL 27 1965

HELIOCENTRIC CONIC DISTANCE 636.710 EARTH TO MARS

RL	148.69	LAL	-.00	LOL	32.61	VL	32.871	GAL	-4.24	AZL	89.59	HCA	201.23	SMA	188.36	ECC	.22264
RP	230.24	LAP	-.15	LOP	233.84	VP	21.172	GAP	.68	AZP	90.38	TAL	336.39	TAP	177.62	RCA	146.43
RC	228.159	GL	3.87	GP	8.55	ZAL	124.73	ZAP	132.69	ETS	170.63	ZAE	167.40	ETE	128.36	ZAC	97.60

INC	.4058	V1	29.966	APO	230.30	V2	23.887	ETC	255.84	CLP	133.29						

PLANETOCENTRIC CONIC

C3	11.841	VHL	3.441	DLA	12.37	RAL	160.60	RAD	6567.5	VEL	11.542	PTH	2.01	VHP	3.640	DPA	6.08
RAP	190.63	ECC	1.1949														

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 7 55	2490.98	-25.17	59.78	17.31	103.41	18 49 26	1891.0	-23.08	51.73
90.00	9 21 31	4346.20	4.74	180.15	13.48	62.05	10 33 57	3746.2	.96	173.51
100.00	19 35 36	2208.18	-26.20	38.69	17.02	104.94	20 12 24	1608.2	-23.89	30.65
100.00	10 36 31	4104.23	5.66	161.85	12.97	60.60	11 44 55	3504.2	1.71	155.30
110.00	20 58 10	1949.84	-28.89	18.14	16.09	109.12	21 30 40	1349.8	-26.01	10.15
110.00	11 30 27	3935.33	8.07	147.56	11.49	56.67	12 36 2	3335.3	3.63	141.29

DIFFERENTIAL CORRECTIONS

TDE	.6076	TRA	-1.5592	TC3	2.4213	BAU	.4469
RDE	.3007	RRA	-.4418	RC3	1.4521	FAU	.37101
FDE	-3.0739	FRA	9.6001	FC	-27.1267	BSP	12467
BDE	.6780	BRA	1.6205	BC3	2.8233	FSP	7359

MID-COURSE EXECUTION ACCURACY

SGT	3296.1	SGR	1347.8	SG3	2190.1		
RRT	.9395	RRF	-.9818	RTF	-.9549		
SGB	3561.1	R23	-.2017	R13	-.9656		
SG1	3534.9	SG2	430.6	THA	21.35		

ORBIT DETERMINATION ACCURACY

ST	1289.2	SR	550.1	SS	2237.6		
CRT	.9704	CRS	.9425	CST	.9945		
LSA	2632.4	MSA	201.7	SSA	33.8		
EL1	1396.3	EL2	122.6	ALF	22.68		

LAUNCH DATE OCT 26 1964 FLIGHT TIME 276.00 ARRIVAL DATE JUL 29 1965

HELIOCENTRIC CONIC DISTANCE 640.542 EARTH TO MARS

RL	148.69	LAL	-.00	LOL	32.61	VL	32.860	GAL	-4.20	AZL	89.52	HCA	202.26	SMA	188.16	ECC	.22167
RP	229.86	LAP	-.18	LOP	234.87	VP	21.200	GAP	.36	AZP	90.44	TAL	336.50	TAP	178.75	RCA	146.45
RC	230.076	GL	4.55	GP	8.35	ZAL	124.52	ZAP	131.31	ETS	171.21	ZAE	166.49	ETE	134.14	ZAC	97.31

INC	.4749	V1	29.966	APO	229.87	V2	23.927	ETC	255.86	CLP	131.85						

PLANETOCENTRIC CONIC

C3	11.725	VHL	3.424	DLA	13.07	RAL	160.70	RAD	6567.4	VEL	11.537	PTH	2.01	VHP	3.569	DPA	6.07
RAP	190.17	ECC	1.1930														

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 2 18	2512.75	-25.51	61.28	17.50	102.73	18 44 11	1912.7	-23.50	53.19
90.00	9 27 53	4320.33	3.91	178.70	13.51	61.93	10 39 53	3720.3	.13	172.06
100.00	19 30 26	2228.51	-26.54	40.10	17.22	104.28	20 7 35	1628.5	-24.32	32.01
100.00	10 42 26	4079.80	4.85	160.50	13.00	60.47	11 50 26	3479.8	.88	153.96
110.00	20 53 58	1967.15	-29.27	19.35	16.32	108.50	21 26 45	1367.2	-26.46	11.29
110.00	11 35 24	3913.92	7.27	146.43	11.51	56.51	12 40 38	3313.9	2.81	140.17

DIFFERENTIAL CORRECTIONS

TDE	.5758	TRA	-1.4854	TC3	2.2948	BAU	.4264
RDE	.2983	RRA	-.4339	RC3	1.4606	FAU	.38515
FDE	-3.0675	FRA	9.9395	FC	-28.4378	BSP	11976
BDE	.6485	BRA	1.5475	BC3	2.7202	FSP	7681

MID-COURSE EXECUTION ACCURACY

SGT	3147.7	SGR	1343.6	SG3	2281.3		
RRT	.9351	RRF	-.9801	RTF	-.9519		
SGB	3422.5	R23	-.2030	R13	-.9640		
SG1	3393.9	SG2	441.8	THA	22.15		

ORBIT DETERMINATION ACCURACY

ST	1231.4	SR	547.8	SS	2243.4		
CRT	.9688	CRS	.9347	CST	.9928		
LSA	2607.8	MSA	217.3	SSA	33.3		
EL1	1342.0	EL2	124.6	ALF	23.53		

LAUNCH DATE OCT 26 1964 FLIGHT TIME 278.00 ARRIVAL DATE JUL 31 1965

HELIOCENTRIC CONIC DISTANCE 644.386 EARTH TO MARS

RL	148.69	LAL	-.00	LOL	32.61	VL	32.849	GAL	-4.17	AZL	89.46	HCA	203.28	SMA	187.98	ECC	.22076
RP	229.47	LAP	-.21	LOP	235.90	VP	21.229	GAP	.04	AZP	90.49	TAL	336.59	TAP	179.88	RCA	146.48
RC	231.973	GL	5.18	GP	8.17	ZAL	124.32	ZAP	129.83	ETS	171.74	ZAE	165.41	ETE	139.24	ZAC	97.04

INC	.5389	V1	29.966	APO	229.47	V2	23.968	ETC	255.89	CLP	130.37						

PLANETOCENTRIC CONIC

C3	11.621	VHL	3.409	DLA	13.72	RAL	160.79	RAD	6567.4	VEL	11.533	PTH	2.01	VHP	3.501	DPA	6.09
RAP	189.68	ECC	1.1913														

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 57 2	2533.19	-25.81	62.71	17.69	102.07	18 39 15	1933.2	-23.89	54.56
90.00	9 33 53	4296.15	3.14	177.35	13.56	61.84	10 45 29	3696.1	-.65	170.72
100.00	19 25 36	2247.58	-26.86	41.43	17.42	103.64	20 3 4	1647.6	-24.71	33.29
100.00	10 48 1	4057.00	4.08	159.24	13.04	60.36	11 55 38	3457.0	.10	152.71
110.00	20 50 3	1983.33	-29.61	20.48	16.54	107.91	21 23 6	1383.3	-26.88	12.36
110.00	11 40 3	3894.01	6.52	145.37	11.53	56.37	12 44 57	3294.0	2.05	139.13

DIFFERENTIAL CORRECTIONS

TDE	.5439	TRA	-1.4091	TC3	2.1473	BAU	.4042
RDE	.2965	RRA	-.4273	RC3	1.4695	FAU	.39923
FDE	-3.0580	FRA	10.2884	FC	-29.7418	BSP	11463
BDE	.6195	BRA	1.4725	BC3	2.6020	FSP	8018

MID-COURSE EXECUTION ACCURACY

SGT	2987.1	SGR	1341.1	SG3	2373.1		
RRT	.9297	RRF	-.9783	RTF	-.9480		
SGB	3274.3	R23	-.2058	R13	-.9621		
SG1	3242.6	SG2	455.0	THA	23.14		

ORBIT DETERMINATION ACCURACY

ST	1171.6	SR	546.3	SS	2249.6		
CRT	.9673	CRS	.9265	CST	.9906		
LSA	2583.9	MSA	233.0	SSA	32.8		
EL1	1286.5	EL2	126.2	ALF	24.53		

LAUNCH DATE OCT 26 1964 FLIGHT TIME 280.00 ARRIVAL DATE AUG 2 1965

HELIOCENTRIC CONIC DISTANCE 648.238 EARTH TO MARS

RL 148.69 LAL -.00 LOL 32.61 VL 32.839 GAL -4.14 AZL 89.40 HCA 204.32 SMA 187.80 ECC .21990 INC .5970 V1 29.966
RP 229.09 LAP -.25 LOP 236.93 VP 21.259 GAP -.28 AZP 90.54 TAL 336.68 TAP 180.99 RCA 146.50 APO 229.10 V2 24.009
RC 233.848 GL 5.77 GP 8.00 ZAL 124.14 ZAP 128.40 ETS 172.25 ZAE 164.20 ETE 143.67 ZAC 96.76 ETC 255.91 CLP 128.85

PLANETOCENTRIC CONIC

C3 11.527 VHL 3.395 DLA 14.32 RAL 160.88 RAD 6567.4 VEL 11.529 PTH 2.01 VHP 3.436 DPA 6.14 RAP 189.17 ECC 1.1897

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 52 5	2552.44	-26.08	64.05	17.87	101.45	18 34 38	1952.4	-24.23	55.87
90.00	9 39 34	4273.51	2.41	176.08	13.63	61.78	10 50 48	3673.5	-1.38	169.45
100.00	19 21 4	2265.49	-27.14	42.69	17.61	103.04	19 58 49	1665.5	-25.07	34.50
100.00	10 53 17	4035.69	3.36	158.07	13.10	60.28	12 0 32	3435.7	-.62	151.55
110.00	20 46 24	1998.48	-29.92	21.55	16.75	107.35	21 19 42	1398.5	-27.26	13.37
110.00	11 44 26	3875.47	5.82	144.39	11.58	56.26	12 49 1	3275.5	1.34	138.16

DIFFERENTIAL CORRECTIONS
TDE .5148 TRA-1.3290 TC3 1.9876 BAU .3820
RDE .2960 RRA -.4212 RC3 1.4813 FAU .41394
FDE-3.0625 FRA10.6323 FC-31.0894 BSP 10876
BDE .5938 BRA 1.3942 BC3 2.4789 FSP 8335

MID-COURSE EXECUTION ACCURACY
SGT 2816.7 SGR 1341.4 SG3 2467.0
RRT .9235 RRF -.9765 RTF -.9430
SGB 3119.8 R23 -.2097 R13 -.9597
SG1 3084.2 SG2 469.9 THA 24.34

ORBIT DETERMINATION ACCURACY
ST 1112.9 SR 546.7 SS 2260.7
CRT .9665 CRS .9185 CST .9881
LSA 2566.2 MSA 248.1 SSA 32.5
EL1 1233.4 EL2 126.7 ALF 25.69

LAUNCH DATE OCT 26 1964 FLIGHT TIME 282.00 ARRIVAL DATE AUG 4 1965

HELIOCENTRIC CONIC DISTANCE 652.101 EARTH TO MARS

RL 148.69 LAL -.00 LOL 32.61 VL 32.830 GAL -4.12 AZL 89.35 HCA 205.35 SMA 187.63 ECC .21910 INC .6515 V1 29.966
RP 228.70 LAP -.28 LOP 237.96 VP 21.291 GAP -.59 AZP 90.59 TAL 336.75 TAP 182.10 RCA 146.52 APO 228.74 V2 24.049
RC 235.703 GL 6.32 GP 7.85 ZAL 123.97 ZAP 126.87 ETS 172.72 ZAE 162.85 ETE 147.52 ZAC 96.50 ETC 255.94 CLP 127.28

PLANETOCENTRIC CONIC

C3 11.443 VHL 3.383 DLA 14.87 RAL 160.97 RAD 6567.4 VEL 11.525 PTH 2.01 VHP 3.375 DPA 6.22 RAP 188.63 ECC 1.1883

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 47 26	2570.59	-26.31	65.33	18.06	100.85	18 30 17	1970.6	-24.55	57.10
90.00	9 44 58	4252.31	1.73	174.90	13.71	61.73	10 55 50	3652.3	-2.07	168.27
100.00	19 16 49	2282.35	-27.39	43.88	17.81	102.46	19 54 51	1682.4	-25.40	35.64
100.00	10 58 16	4015.78	2.69	156.97	13.17	60.22	12 5 12	3415.8	-1.29	150.45
110.00	20 43 0	2012.70	-30.21	22.56	16.97	106.81	21 16 32	1412.7	-27.61	14.33
110.00	11 48 35	3858.20	5.16	143.48	11.64	56.16	12 52 53	3258.2	.68	137.26

DIFFERENTIAL CORRECTIONS
TDE .4854 TRA-1.2461 TC3 1.8074 BAU .3586
RDE .2957 RRA -.4163 RC3 1.4929 FAU .42848
FDE-3.0608 FRA10.9862 FC-32.4182 BSP 10285
BDE .5683 BRA 1.3138 BC3 2.3442 FSP 8672

MID-COURSE EXECUTION ACCURACY
SGT 2634.4 SGR 1342.8 SG3 2561.0
RRT .9159 RRF -.9747 RTF -.9365
SGB 2956.9 R23 -.2151 R13 -.9569
SG1 2916.5 SG2 487.0 THA 25.80

ORBIT DETERMINATION ACCURACY
ST 1051.9 SR 547.4 SS 2271.1
CRT .9660 CRS .9101 CST .9850
LSA 2548.3 MSA 263.4 SSA 32.1
EL1 1179.0 EL2 126.2 ALF 27.02

LAUNCH DATE OCT 26 1964 FLIGHT TIME 284.00 ARRIVAL DATE AUG 6 1965

HELIOCENTRIC CONIC DISTANCE 655.974 EARTH TO MARS

RL 148.69 LAL -.00 LOL 32.61 VL 32.821 GAL -4.10 AZL 89.30 HCA 206.39 SMA 187.47 ECC .21835 INC .7022 V1 29.966
RP 228.31 LAP -.31 LOP 239.00 VP 21.323 GAP -.89 AZP 90.63 TAL 336.81 TAP 183.20 RCA 146.54 APO 228.41 V2 24.090
RC 237.537 GL 6.83 GP 7.70 ZAL 123.83 ZAP 125.31 ETS 173.17 ZAE 161.40 ETE 150.85 ZAC 96.23 ETC 255.98 CLP 125.68

PLANETOCENTRIC CONIC

C3 11.367 VHL 3.372 DLA 15.39 RAL 161.07 RAD 6567.4 VEL 11.522 PTH 2.01 VHP 3.316 DPA 6.32 RAP 188.05 ECC 1.1871

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 43 5	2587.70	-26.53	66.53	18.24	100.29	18 26 13	1987.7	-24.84	58.27
90.00	9 50 6	4232.46	1.09	173.79	13.80	61.70	11 0 38	3632.5	-2.70	167.16
100.00	19 12 51	2298.23	-27.62	45.00	18.00	101.91	19 51 9	1698.2	-25.70	36.73
100.00	11 3 1	3997.16	2.06	155.95	13.26	60.17	12 9 38	3397.2	-1.92	149.43
110.00	20 39 50	2026.05	-30.47	23.51	17.19	106.31	21 13 36	1426.0	-27.93	15.23
110.00	11 52 31	3842.11	4.55	142.64	11.71	56.08	12 56 33	3242.1	.07	136.42

DIFFERENTIAL CORRECTIONS
TDE .4564 TRA-1.1598 TC3 1.6072 BAU .3346
RDE .2959 RRA -.4120 RC3 1.5046 FAU .44292
FDE-3.0600 FRA11.3417 FC-33.7330 BSP 9664
BDE .5439 BRA 1.2309 BC3 2.2016 FSP 9012

MID-COURSE EXECUTION ACCURACY
SGT 2440.3 SGR 1345.2 SG3 2654.7
RRT .9060 RRF -.9729 RTF -.9276
SGB 2786.5 R23 -.2223 R13 -.9534
SG1 2740.0 SG2 507.1 THA 27.56

ORBIT DETERMINATION ACCURACY
ST 989.3 SR 548.8 SS 2282.5
CRT .9661 CRS .9016 CST .9812
LSA 2532.1 MSA 278.4 SSA 31.9
EL1 1124.4 EL2 124.6 ALF 28.57

LAUNCH DATE OCT 26 1964 FLIGHT TIME 286.00 ARRIVAL DATE AUG 8 1965

HELIOCENTRIC CONIC DISTANCE 659.856 EARTH TO MARS

RL 148.69 LAL -.00 LOL 32.61 VL 32.812 GAL -4.08 AZL 89.25 HCA 207.43 SMA 187.33 ECC .21766 INC .7493 V1 29.966
RP 227.92 LAP -.35 LOP 240.04 VP 21.356 GAP -1.19 AZP 90.67 TAL 336.86 TAP 184.29 RCA 146.55 APO 228.10 V2 24.132
RC 239.350 GL 7.32 GP 7.57 ZAL 123.70 ZAP 123.69 ETS 173.60 ZAE 159.85 ETE 153.73 ZAC 95.97 ETC 256.01 CLP 124.03

PLANETOCENTRIC CONIC

C3 11.301 VHL 3.362 DLA 15.87 RAL 161.17 RAD 6567.4 VEL 11.519 PTH 2.01 VHP 3.260 DPA 6.45 RAP 187.44 ECC 1.1860

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 39 1	2603.86	-26.72	67.68	18.44	99.74	18 22 25	2003.9	-25.10	59.38
90.00	9 54 59	4213.87	.49	172.75	13.91	61.69	11 5 13	3613.9	-3.30	166.12
100.00	19 9 9	2313.19	-27.83	46.07	18.20	101.39	19 47 42	1713.2	-25.97	37.75
100.00	11 7 32	3979.77	1.47	155.00	13.37	60.14	12 13 52	3379.8	-2.51	148.48
110.00	20 36 55	2038.59	-30.70	24.41	17.41	105.82	21 10 53	1438.6	-28.23	16.09
110.00	11 56 15	3827.14	3.98	141.85	11.80	56.02	13 0 3	3227.1	-.50	135.64

DIFFERENTIAL CORRECTIONS
TDE .4286 TRA-1.0699 TC3 1.3906 BAU .3109
RDE .2966 RRA -.4084 RC3 1.5167 FAU .45741
FDE-3.0624 FRA11.6990 FC-35.0415 BSP 9007
BDE .5212 BRA 1.1452 BC3 2.0577 FSP 9350

MID-COURSE EXECUTION ACCURACY
SGT 2236.4 SGR 1348.8 SG3 2748.6
RRT .8933 RRF -.9711 RTF -.9156
SGB 2611.6 R23 -.2309 R13 -.9493
SG1 2557.3 SG2 530.1 THA 29.72

ORBIT DETERMINATION ACCURACY
ST 926.2 SR 551.0 SS 2295.7
CRT .9672 CRS .8931 CST .9763
LSA 2518.9 MSA 293.4 SSA 31.6
EL1 1070.9 EL2 121.1 ALF 30.34

LAUNCH DATE OCT 26 1964 FLIGHT TIME 288.00 ARRIVAL DATE AUG 10 1965

HELIOCENTRIC CONIC DISTANCE 663.749 EARTH TO MARS

RL	148.69	LAL	-.00	LOL	32.61	VL	32.804	GAL	-4.06	AZL	89.21	HCA	208.48	SMA	187.19	ECC	.21701	INC	.7935
RP	227.53	LAP	-.38	LOP	241.08	VP	21.391	GAP	-1.49	AZP	90.70	TAL	336.90	TAP	185.38	RCA	146.57	APO	227.81
RC	241.142	GL	7.77	GP	7.44	ZAL	123.58	ZAP	122.03	ETS	174.01	ZAE	158.21	ETE	156.25	ZAC	95.71	ETC	256.05

V1	29.966	V2	24.173	CLP	122.34														

PLANETOCENTRIC CONIC

C3	11.243	VHL	3.353	DLA	16.31	RAL	161.28	RAD	6567.4	VEL	11.517	PTH	2.01	VHP	3.208	DPA	6.61	RAP	186.81
ECC	1.1850																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 35 13	2619.11	-26.89	68.76	18.63	99.22	18 18 52	2019.1	-25.34	60.44
90.00	9 59 38	4196.49	-.07	171.78	14.04	61.68	11 9 35	3596.5	-3.86	165.15
100.00	19 5 43	2327.29	-28.01	47.07	18.41	100.89	19 44 30	1727.3	-26.22	38.73
100.00	11 11 50	3963.54	.92	154.11	13.49	60.12	12 17 54	3363.5	-3.06	147.58
110.00	20 34 13	2050.37	-30.92	25.26	17.63	105.36	21 8 23	1450.4	-28.50	16.90
110.00	11 59 49	3813.22	3.45	141.12	11.90	55.97	13 3 22	3213.2	-1.04	134.92

DIFFERENTIAL CORRECTIONS

TDE	.4013	TRA	-.9761	TC3	1.1552	BAU	.2880
RDE	.2977	RRA	-.4052	RC3	1.5287	FAU	.47175
FDE	-3.0669	FRA	12.0534	FC	-36.3270	BSP	8329
BDE	.4997	BRA	1.0568	BC3	1.9161	FSP	9685

MID-COURSE EXECUTION ACCURACY

SGT	2022.5	SGR	1352.9	SG3	2841.3		
RRT	.8760	RRF	-.9693	RTF	-.8985		
SGB	2433.3	R23	-.2410	R13	-.9444		
SG1	2368.6	SG2	557.2	THA	32.38		

ORBIT DETERMINATION ACCURACY

ST	861.7	SR	553.8	SS	2309.8		
CRT	.9691	CRS	.8846	CST	.9702		
LSA	2507.7	MSA	307.9	SSA	31.4		
EL1	1017.8	EL2	115.7	ALF	32.38		

LAUNCH DATE OCT 26 1964 FLIGHT TIME 290.00 ARRIVAL DATE AUG 12 1965

HELIOCENTRIC CONIC DISTANCE 667.650 EARTH TO MARS

RL	148.69	LAL	-.00	LOL	32.61	VL	32.797	GAL	-4.04	AZL	89.17	HCA	209.52	SMA	187.06	ECC	.21641	INC	.8347
RP	227.14	LAP	-.41	LOP	242.13	VP	21.426	GAP	-1.78	AZP	90.73	TAL	336.93	TAP	186.46	RCA	146.58	APO	227.54
RC	242.914	GL	8.19	GP	7.32	ZAL	123.49	ZAP	120.33	ETS	174.40	ZAE	156.50	ETE	158.44	ZAC	95.44	ETC	256.09

V1	29.966	V2	24.214	CLP	120.61														

PLANETOCENTRIC CONIC

C3	11.193	VHL	3.346	DLA	16.72	RAL	161.40	RAD	6567.4	VEL	11.514	PTH	2.01	VHP	3.159	DPA	6.78	RAP	186.14
ECC	1.1842																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 31 42	2633.50	-27.04	69.79	18.84	98.73	18 15 36	2033.5	-25.56	61.43
90.00	10 4 5	4180.26	-.60	170.88	14.18	61.69	11 13 46	3580.3	-4.38	164.24
100.00	19 2 32	2340.57	-28.18	48.02	18.62	100.41	19 41 33	1740.6	-26.45	39.65
100.00	11 15 56	3948.42	.41	153.28	13.62	60.11	12 21 45	3348.4	-3.57	146.75
110.00	20 31 45	2061.45	-31.12	26.07	17.86	104.92	21 6 6	1461.4	-28.76	17.66
110.00	12 3 13	3800.30	2.96	140.45	12.03	55.93	13 6 33	3200.3	-1.53	134.24

DIFFERENTIAL CORRECTIONS

TDE	.3746	TRA	-.8787	TC3	.9015	BAU	.2671
RDE	.2993	RRA	-.4023	RC3	1.5405	FAU	.48597
FDE	-3.0733	FRA	12.4039	FC	-37.5888	BSP	7638
BDE	.4795	BRA	.9664	BC3	1.7849	FSP	10014

MID-COURSE EXECUTION ACCURACY

SGT	1801.2	SGR	1357.5	SG3	2932.9		
RRT	.8511	RRF	-.9675	RTF	-.8734		
SGB	2255.5	R23	-.2522	R13	-.9388		
SG1	2177.0	SG2	589.6	THA	35.69		

ORBIT DETERMINATION ACCURACY

ST	796.3	SR	557.0	SS	2324.7		
CRT	.9720	CRS	.8763	CST	.9623		
LSA	2498.8	MSA	322.0	SSA	31.2		
EL1	965.8	EL2	107.9	ALF	34.71		

LAUNCH DATE OCT 26 1964 FLIGHT TIME 292.00 ARRIVAL DATE AUG 14 1965

HELIOCENTRIC CONIC DISTANCE 671.561 EARTH TO MARS

RL	148.69	LAL	-.00	LOL	32.61	VL	32.790	GAL	-4.03	AZL	89.13	HCA	210.58	SMA	186.94	ECC	.21586	INC	.8737
RP	226.75	LAP	-.44	LOP	243.19	VP	21.462	GAP	-2.06	AZP	90.75	TAL	336.95	TAP	187.53	RCA	146.58	APO	227.29
RC	244.666	GL	8.58	GP	7.21	ZAL	123.42	ZAP	118.59	ETS	174.78	ZAE	154.71	ETE	160.38	ZAC	95.18	ETC	256.14

V1	29.966	V2	24.256	CLP	118.84														

PLANETOCENTRIC CONIC

C3	11.150	VHL	3.339	DLA	17.11	RAL	161.52	RAD	6567.4	VEL	11.513	PTH	2.01	VHP	3.113	DPA	6.98	RAP	185.44
ECC	1.1835																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 28 27	2647.06	-27.18	70.76	19.05	98.27	18 12 34	2047.1	-25.76	62.38
90.00	10 8 20	4165.13	-1.09	170.04	14.34	61.70	11 17 45	3565.1	-4.86	163.39
100.00	18 59 37	2353.06	-28.33	48.92	18.84	99.96	19 38 50	1753.1	-26.66	40.52
100.00	11 19 51	3934.36	-.07	152.51	13.77	60.11	12 25 25	3334.4	-4.05	145.98
110.00	20 29 30	2071.84	-31.30	26.82	18.10	104.51	21 4 2	1471.8	-28.99	18.38
110.00	12 6 28	3788.35	2.51	139.82	12.16	55.90	13 9 36	3188.3	-1.99	133.62

DIFFERENTIAL CORRECTIONS

TDE	.3484	TRA	-.7773	TC3	.6312	BAU	.2497
RDE	.3011	RRA	-.3998	RC3	1.5513	FAU	.49980
FDE	-3.0803	FRA	12.7516	FC	-38.8053	BSP	6935
BDE	.4605	BRA	.8741	BC3	1.6748	FSP	10333

MID-COURSE EXECUTION ACCURACY

SGT	1575.6	SGR	1362.1	SG3	3022.3		
RRT	.8141	RRF	-.9656	RTF	-.8352		
SGB	2082.8	R23	-.2622	R13	-.9332		
SG1	1986.0	SG2	627.6	THA	39.91		

ORBIT DETERMINATION ACCURACY

ST	729.9	SR	560.6	SS	2340.1		
CRT	.9761	CRS	.8680	CST	.9518		
LSA	2491.8	MSA	336.0	SSA	31.0		
EL1	915.2	EL2	97.2	ALF	37.35		

LAUNCH DATE OCT 26 1964 FLIGHT TIME 294.00 ARRIVAL DATE AUG 16 1965

HELIOCENTRIC CONIC DISTANCE 675.481 EARTH TO MARS

RL	148.69	LAL	-.00	LOL	32.61	VL	32.783	GAL	-4.02	AZL	89.09	HCA	211.63	SMA	186.82	ECC	.21536	INC	.9103
RP	226.36	LAP	-.48	LOP	244.24	VP	21.499	GAP	-2.34	AZP	90.78	TAL	336.96	TAP	188.59	RCA	146.59	APO	227.06
RC	246.398	GL	8.97	GP	7.10	ZAL	123.36	ZAP	116.81	ETS	175.14	ZAE	152.86	ETE	162.08	ZAC	94.91	ETC	256.19

V1	29.966	V2	24.297	CLP	117.03														

PLANETOCENTRIC CONIC

C3	11.116	VHL	3.334	DLA	17.46	RAL	161.66	RAD	6567.4	VEL	11.511	PTH	2.01	VHP	3.070	DPA	7.19	RAP	184.72
ECC	1.1829																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 25 29	2659.82	-27.30	71.67	19.27	97.82	18 9 49	2059.8	-25.94	63.27
90.00	10 12 23	4151.09	-1.54	169.25	14.51	61.72	11 21 34	3551.1	-5.31	162.60
100.00	18 56 58	2364.81	-28.46	49.77	19.07	99.54	19 36 22	1764.8	-26.85	41.34
100.00	11 23 35	3921.33	-.51	151.79	13.94	60.11	12 28 57	3321.3	-4.49	145.26
110.00	20 27 29	2081.59	-31.46	27.54	18.34	104.11	21 2 10	1481.6	-29.20	19.06
110.00	12 9 33	3777.31	2.08	139.25	12.32	55.87	13 12 31	3177.3	-2.41	133.04

DIFFERENTIAL CORRECTIONS

TDE	.3228	TRA	-.6717	TC3	.3444	BAU	.2376
RDE	.3032	RRA	-.3973	RC3	1.5614	FAU	.51333
FDE	-3.0894	FRA	13.0891	FC	-39.9804	BSP	6248
BDE	.4429	BRA	.7804	BC3	1.5990	FSP	10641

MID-COURSE EXECUTION ACCURACY

SGT	1350.8	SGR	1366.7	SG3	3109.1		
RRT	.7552	RRF	-.9638	RTF	-.7735		
SGB	1921.6	R23	-.2672	R13	-.9286		
SG1	1800.2	SG2	672.2	THA	45.44		

ORBIT DETERMINATION ACCURACY

ST	663.0	SR	564.5	SS	2355.7		
CRT	.9813	CRS	.8599	CST	.9373		
LSA	2486.8	MSA	349.7	SSA	30.8		
EL1	866.8	EL2	83.2	ALF	40.33		

LAUNCH DATE OCT 26 1964 FLIGHT TIME 296.00 ARRIVAL DATE AUG 18 1965

HELIOCENTRIC CONIC DISTANCE 679.411 EARTH TO MARS

RL 148.69 LAL -.00 LOL 32.61 VL 32.777 GAL -4.02 AZL 89.05 HCA 212.69 SMA 186.72 ECC .21490 INC .9452 V1 29.966
RP 225.97 LAP -.51 LOP 245.30 VP 21.537 GAP -2.62 AZP 90.80 TAL 336.95 TAP 189.64 RCA 146.59 APO 226.84 V2 24.339
RC 248.110 GL 9.32 GP 6.99 ZAL 123.33 ZAP 114.99 ETS 175.49 ZAE 150.96 ETE 163.60 ZAC 94.64 ETC 256.24 CLP 115.19

PLANETOCENTRIC CONIC

C3 11.088 VHL 3.330 DLA 17.79 RAL 161.80 RAD 6567.4 VEL 11.510 PTH 2.00 VHP 3.031 DPA 7.42 RAP 183.96 ECC 1.1825

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 22 46	2671.81	-27.41	72.53	19.50	97.40	18 7 18	2071.8	-26.10	64.11
90.00	10 16 15	4138.08	-1.96	168.53	14.70	61.75	11 25 13	3538.1	-5.72	161.87
100.00	18 54 33	2375.83	-28.59	50.57	19.31	99.13	19 34 9	1775.8	-27.03	42.11
100.00	11 27 9	3909.29	-.92	151.13	14.12	60.12	12 32 19	3309.3	-4.89	144.59
110.00	20 25 40	2090.73	-31.61	28.21	18.60	103.74	21 0 31	1490.7	-29.40	19.70
110.00	12 12 31	3767.16	1.70	138.72	12.49	55.85	13 15 19	3167.2	-2.80	132.51

DIFFERENTIAL CORRECTIONS
TDE .2994 TRA -.5606 TC3 .0470 BAU .2331
RDE .3061 RRA -.3944 RC3 1.5719 FAU .52693
FDE-3.1139 FRA13.4028 FC-41.1410 BSP 5584
BDE .4281 BRA .6854 BC3 1.5726 FSP 10911

MID-COURSE EXECUTION ACCURACY
SGT 1136.8 SGR 1371.6 SG3 3193.3
RRT .6580 RRF -.9620 RTF -.6700
SGB 1781.4 R23 -.2575 R13 -.9282
SG1 1629.1 SG2 720.7 THA 53.01

ORBIT DETERMINATION ACCURACY
ST 598.0 SR 569.3 SS 2373.7
CRT .9877 CRS .8528 CST .9165
LSA 2486.6 MSA 363.6 SSA 30.4
EL1 823.2 EL2 64.6 ALF 43.57

LAUNCH DATE OCT 26 1964 FLIGHT TIME 298.00 ARRIVAL DATE AUG 20 1965

HELIOCENTRIC CONIC DISTANCE 683.349 EARTH TO MARS

RL 148.69 LAL -.00 LOL 32.61 VL 32.771 GAL -4.01 AZL 89.02 HCA 213.76 SMA 186.62 ECC .21449 INC .9779 V1 29.966
RP 225.58 LAP -.54 LOP 246.36 VP 21.576 GAP -2.89 AZP 90.81 TAL 336.93 TAP 190.69 RCA 146.59 APO 226.65 V2 24.381
RC 249.803 GL 9.65 GP 6.89 ZAL 123.31 ZAP 113.13 ETS 175.83 ZAE 149.00 ETE 164.96 ZAC 94.36 ETC 256.30 CLP 113.31

PLANETOCENTRIC CONIC

C3 11.068 VHL 3.327 DLA 18.09 RAL 161.96 RAD 6567.4 VEL 11.509 PTH 2.00 VHP 2.995 DPA 7.67 RAP 183.18 ECC 1.1822

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 20 20	2683.04	-27.51	73.34	19.74	97.01	18 5 3	2083.0	-26.25	64.90
90.00	10 19 57	4126.11	-2.35	167.86	14.91	61.77	11 28 43	3526.1	-6.10	161.19
100.00	18 52 24	2386.14	-28.70	51.31	19.56	98.76	19 32 10	1786.1	-27.19	42.83
100.00	11 30 34	3898.24	-1.30	150.52	14.33	60.13	12 35 32	3298.2	-5.26	143.98
110.00	20 24 5	2099.27	-31.75	28.83	18.87	103.40	20 59 5	1499.3	-29.58	20.30
110.00	12 15 22	3757.88	1.34	138.23	12.68	55.84	13 17 59	3157.9	-3.15	132.03

DIFFERENTIAL CORRECTIONS
TDE .2731 TRA -.4480 TC3 -.2760 BAU .2371
RDE .3085 RRA -.3921 RC3 1.5786 FAU .53910
FDE-3.1202 FRA13.7232 FC-42.1667 BSP 5062
BDE .4120 BRA .5954 BC3 1.6025 FSP 11203

MID-COURSE EXECUTION ACCURACY
SGT 955.9 SGR 1374.9 SG3 3272.0
RRT .4821 RRF -.9600 RTF -.4849
SGB 1674.5 R23 -.2147 R13 -.9361
SG1 1483.9 SG2 775.9 THA 63.81

ORBIT DETERMINATION ACCURACY
ST 529.6 SR 573.4 SS 2388.5
CRT .9932 CRS .8448 CST .8875
LSA 2484.3 MSA 376.0 SSA 30.3
EL1 779.2 EL2 45.3 ALF 47.29

LAUNCH DATE OCT 26 1964 FLIGHT TIME 300.00 ARRIVAL DATE AUG 22 1965

HELIOCENTRIC CONIC DISTANCE 687.296 EARTH TO MARS

RL 148.69 LAL -.00 LOL 32.61 VL 32.766 GAL -4.01 AZL 88.99 HCA 214.82 SMA 186.53 ECC .21412 INC 1.0090 V1 29.966
RP 225.19 LAP -.58 LOP 247.43 VP 21.615 GAP -3.15 AZP 90.83 TAL 336.90 TAP 191.73 RCA 146.59 APO 226.47 V2 24.423
RC 251.477 GL 9.97 GP 6.79 ZAL 123.32 ZAP 111.24 ETS 176.16 ZAE 146.99 ETE 166.18 ZAC 94.08 ETC 256.36 CLP 111.40

PLANETOCENTRIC CONIC

C3 11.055 VHL 3.325 DLA 18.36 RAL 162.13 RAD 6567.4 VEL 11.508 PTH 2.00 VHP 2.962 DPA 7.93 RAP 182.37 ECC 1.1819

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 18 9	2693.54	-27.59	74.10	20.00	96.64	18 3 3	2093.5	-26.38	65.64
90.00	10 23 28	4115.13	-2.70	167.25	15.13	61.80	11 32 3	3515.1	-6.45	160.57
100.00	18 50 30	2395.77	-28.79	52.01	19.82	98.40	19 30 26	1795.8	-27.33	43.51
100.00	11 33 49	3888.13	-1.64	149.97	14.54	60.15	12 38 37	3288.1	-5.60	143.42
110.00	20 22 43	2107.23	-31.87	29.42	19.14	103.07	20 57 50	1507.2	-29.75	20.86
110.00	12 18 5	3749.43	1.02	137.79	12.88	55.83	13 20 34	3149.4	-3.47	131.59

DIFFERENTIAL CORRECTIONS
TDE .2488 TRA -.3298 TC3 -.6089 BAU .2510
RDE .3117 RRA -.3892 RC3 1.5850 FAU .55111
FDE-3.1434 FRA14.0134 FC-43.1571 BSP 4677
BDE .3988 BRA .5102 BC3 1.6979 FSP 11446

MID-COURSE EXECUTION ACCURACY
SGT 840.5 SGR 1378.0 SG3 3346.6
RRT .1957 RRF -.9581 RTF -.1824
SGB 1614.1 R23 -.1076 R13 -.9520
SG1 1393.0 SG2 815.3 THA 79.59

ORBIT DETERMINATION ACCURACY
ST 465.0 SR 578.3 SS 2405.3
CRT .9965 CRS .8379 CST .8427
LSA 2486.9 MSA 388.6 SSA 30.0
EL1 741.5 EL2 30.2 ALF 51.22

LAUNCH DATE OCT 26 1964 FLIGHT TIME 302.00 ARRIVAL DATE AUG 24 1965

HELIOCENTRIC CONIC DISTANCE 691.251 EARTH TO MARS

RL 148.69 LAL -.00 LOL 32.61 VL 32.761 GAL -4.02 AZL 88.96 HCA 215.89 SMA 186.45 ECC .21379 INC 1.0385 V1 29.966
RP 224.80 LAP -.61 LOP 248.50 VP 21.655 GAP -3.41 AZP 90.84 TAL 336.86 TAP 192.75 RCA 146.58 APO 226.31 V2 24.465
RC 253.132 GL 10.27 GP 6.69 ZAL 123.35 ZAP 109.33 ETS 176.47 ZAE 144.93 ETE 167.28 ZAC 93.80 ETC 256.43 CLP 109.46

PLANETOCENTRIC CONIC

C3 11.050 VHL 3.324 DLA 18.61 RAL 162.31 RAD 6567.4 VEL 11.508 PTH 2.00 VHP 2.933 DPA 8.20 RAP 181.54 ECC 1.1818

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 16 15	2703.31	-27.67	74.80	20.27	96.29	18 1 19	2103.3	-26.50	66.33
90.00	10 26 49	4105.15	-3.02	166.69	15.37	61.83	11 35 14	3505.1	-6.76	160.01
100.00	18 48 51	2404.72	-28.88	52.66	20.10	98.07	19 28 56	1804.7	-27.46	44.15
100.00	11 36 54	3878.96	-1.95	149.47	14.78	60.17	12 41 33	3279.0	-5.90	142.91
110.00	20 21 34	2114.63	-31.98	29.97	19.43	102.76	20 56 49	1514.6	-29.90	21.38
110.00	12 20 40	3741.81	.73	137.39	13.11	55.82	13 23 2	3141.8	-3.76	131.19

DIFFERENTIAL CORRECTIONS
TDE .2237 TRA -.2087 TC3 -.9584 BAU .2741
RDE .3148 RRA -.3864 RC3 1.5885 FAU .56196
FDE-3.1595 FRA14.2948 FC-44.0296 BSP 4538
BDE .3862 BRA .4392 BC3 1.8552 FSP 11686

MID-COURSE EXECUTION ACCURACY
SGT 835.9 SGR 1379.7 SG3 3415.2
RRT -.1707 RRF -.9560 RTF .2022
SGB 1613.2 R23 .0497 R13 -.9556
SG1 1391.0 SG2 816.9 THA 99.05

ORBIT DETERMINATION ACCURACY
ST 402.5 SR 583.0 SS 2420.6
CRT .9914 CRS .8308 CST .7728
LSA 2490.0 MSA 400.5 SSA 29.8
EL1 707.1 EL2 43.5 ALF 55.46

LAUNCH DATE OCT 26 1964 FLIGHT TIME 304.00 ARRIVAL DATE AUG 26 1965

HELIOCENTRIC CONIC DISTANCE 695.215 EARTH TO MARS

RL	148.69	LAL	-.00	LOL	32.61	VL	32.757	GAL	-4.02	AZL	88.93	HCA	216.97	SMA	186.37	ECC	.21351	INC	1.0668
RP	224.41	LAP	-.64	LOP	249.58	VP	21.695	GAP	-3.67	AZP	90.85	TAL	336.80	TAP	193.77	RCA	146.58	APO	226.16
RC	254.766	GL	10.55	GP	6.59	ZAL	123.40	ZAP	107.38	ETS	176.78	ZAE	142.84	ETE	168.28	ZAC	93.51	ETC	256.50

PLANETOCENTRIC CONIC

C3	11.051	VHL	3.324	DLA	18.84	RAL	162.51	RAD	6567.4	VEL	11.508	PTH	2.00	VHP	2.907	DPA	8.48	RAP	180.69

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 14 38	2712.36	-27.73	75.45	20.55	95.97	17 59 50	2112.4	-26.61	66.97
90.00	10 30 0	4096.14	-3.31	166.18	15.63	61.86	11 38 16	3496.1	-7.05	159.50
100.00	18 47 27	2413.02	-28.96	53.27	20.38	97.76	19 27 40	1813.0	-27.58	44.73
100.00	11 39 51	3870.71	-2.23	149.01	15.03	60.18	12 44 22	3270.7	-6.18	142.46
110.00	20 20 38	2121.49	-32.09	30.48	19.74	102.48	20 55 59	1521.5	-30.04	21.87
110.00	12 23 10	3735.00	.47	137.04	13.34	55.82	13 25 25	3135.0	-4.02	130.83

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.1984	TRA	-.0838	TC3	-1.3204	BAU	.3053	SGT	954.4	SGR	1380.0	SG3	3477.1	ST	346.1	SR	587.5	SS	2434.4
RDE	.3179	RRA	-.3834	RC3	1.5895	FAU	.57174	RRT	-.4812	RRF	-.9539	RTF	.5266	CRT	.9649	CRS	.8237	CST	.6591
FDE	-3.1727	FRA	14.5577	FC	-44.7915	BSP	4683	SGB	1677.9	R23	.1600	R13	-.9435	LSA	2494.1	MSA	412.1	SSA	29.6
BDE	.3748	BRA	.3924	BC3	2.0664	FSP	11909	SG1	1487.6	SG2	776.2	THA	115.96	EL1	677.3	EL2	78.9	ALF	59.94

LAUNCH DATE OCT 26 1964 FLIGHT TIME 306.00 ARRIVAL DATE AUG 28 1965

HELIOCENTRIC CONIC DISTANCE 699.187 EARTH TO MARS

RL	148.69	LAL	-.00	LOL	32.61	VL	32.753	GAL	-4.03	AZL	88.91	HCA	218.05	SMA	186.30	ECC	.21327	INC	1.0938
RP	224.02	LAP	-.67	LOP	250.65	VP	21.737	GAP	-3.92	AZP	90.86	TAL	336.74	TAP	194.78	RCA	146.57	APO	226.03
RC	256.380	GL	10.81	GP	6.49	ZAL	123.47	ZAP	105.41	ETS	177.08	ZAE	140.72	ETE	169.19	ZAC	93.22	ETC	256.58

PLANETOCENTRIC CONIC

C3	11.059	VHL	3.325	DLA	19.04	RAL	162.71	RAD	6567.4	VEL	11.509	PTH	2.00	VHP	2.884	DPA	8.77	RAP	179.82

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 13 16	2720.70	-27.79	76.06	20.85	95.67	17 58 37	2120.7	-26.71	67.56
90.00	10 33 1	4088.10	-3.57	165.73	15.90	61.89	11 41 9	3488.1	-7.30	159.04
100.00	18 46 19	2420.66	-29.03	53.82	20.69	97.47	19 26 39	1820.7	-27.69	45.28
100.00	11 42 39	3863.37	-2.48	148.61	15.30	60.20	12 47 3	3263.4	-6.42	142.05
110.00	20 19 54	2127.82	-32.18	30.95	20.05	102.21	20 55 22	1527.8	-30.16	22.32
110.00	12 25 33	3728.97	.24	136.73	13.60	55.82	13 27 42	3129.0	-4.25	130.51

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.1732	TRA	.0453	TC3	-1.6941	BAU	.3433	SGT	1168.5	SGR	1378.9	SG3	3531.7	ST	301.4	SR	592.0	SS	2447.8
RDE	.3212	RRA	-.3801	RC3	1.5879	FAU	.58036	RRT	-.6714	RRF	-.9516	RTF	.7251	CRT	.8909	CRS	.8169	CST	.4757
FDE	-3.1875	FRA	14.7996	FC	-45.4333	BSP	5114	SGB	1807.5	R23	.1963	R13	-.9384	LSA	2500.6	MSA	423.4	SSA	29.4
BDE	.3650	BRA	.3827	BC3	2.3219	FSP	12103	SG1	1657.7	SG2	720.3	THA	128.04	EL1	652.7	EL2	124.2	ALF	64.62

LAUNCH DATE OCT 26 1964 FLIGHT TIME 308.00 ARRIVAL DATE AUG 30 1965

HELIOCENTRIC CONIC DISTANCE 703.165 EARTH TO MARS

RL	148.69	LAL	-.00	LOL	32.61	VL	32.749	GAL	-4.04	AZL	88.88	HCA	219.13	SMA	186.23	ECC	.21306	INC	1.1196
RP	223.63	LAP	-.71	LOP	251.74	VP	21.778	GAP	-4.17	AZP	90.87	TAL	336.66	TAP	195.79	RCA	146.55	APO	225.91
RC	257.974	GL	11.06	GP	6.39	ZAL	123.56	ZAP	103.43	ETS	177.37	ZAE	138.57	ETE	170.03	ZAC	92.93	ETC	256.66

PLANETOCENTRIC CONIC

C3	11.074	VHL	3.328	DLA	19.22	RAL	162.94	RAD	6567.4	VEL	11.509	PTH	2.00	VHP	2.866	DPA	9.06	RAP	178.94

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 12 11	2728.32	-27.84	76.61	21.16	95.40	17 57 40	2128.3	-26.80	68.10
90.00	10 35 52	4081.04	-3.79	165.34	16.19	61.92	11 43 53	3481.0	-7.52	158.64
100.00	18 45 26	2427.65	-29.09	54.34	21.01	97.21	19 25 54	1827.6	-27.79	45.77
100.00	11 45 19	3856.95	-2.69	148.26	15.58	60.22	12 49 36	3256.9	-6.64	141.69
110.00	20 19 25	2133.62	-32.26	31.38	20.38	101.97	20 54 58	1533.6	-30.28	22.73
110.00	12 27 49	3723.74	.04	136.45	13.88	55.82	13 29 53	3123.7	-4.45	130.24

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.1452	TRA	.1761	TC3	-2.0881	BAU	.3874	SGT	1448.1	SGR	1373.6	SG3	3574.9	ST	271.1	SR	594.1	SS	2453.2
RDE	.3229	RRA	-.3782	RC3	1.5772	FAU	.58513	RRT	-.7749	RRF	-.9489	RTF	.8309	CRT	.7310	CRS	.8062	CST	.1938
FDE	-3.1444	FRA	15.0774	FC	-45.7437	BSP	5782	SGB	1995.9	R23	.1961	R13	-.9406	LSA	2501.1	MSA	433.5	SSA	29.6
BDE	.3541	BRA	.4172	BC3	2.6169	FSP	12398	SG1	1880.6	SG2	668.5	THA	136.95	EL1	629.2	EL2	174.7	ALF	69.94

LAUNCH DATE OCT 26 1964 FLIGHT TIME 310.00 ARRIVAL DATE SEP 1 1965

HELIOCENTRIC CONIC DISTANCE 707.155 EARTH TO MARS

RL	148.69	LAL	-.00	LOL	32.61	VL	32.745	GAL	-4.05	AZL	88.86	HCA	220.21	SMA	186.18	ECC	.21290	INC	1.1442
RP	223.24	LAP	-.74	LOP	252.82	VP	21.820	GAP	-4.41	AZP	90.87	TAL	336.56	TAP	196.78	RCA	146.54	APO	225.81
RC	259.547	GL	11.29	GP	6.29	ZAL	123.67	ZAP	101.43	ETS	177.65	ZAE	136.39	ETE	170.79	ZAC	92.64	ETC	256.75

PLANETOCENTRIC CONIC

C3	11.096	VHL	3.331	DLA	19.38	RAL	163.17	RAD	6567.4	VEL	11.510	PTH	2.00	VHP	2.850	DPA	9.36	RAP	178.04

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 11 22	2735.28	-27.88	77.12	21.49	95.15	17 56 57	2135.3	-26.88	68.59
90.00	10 38 34	4074.89	-3.99	164.99	16.50	61.94	11 46 29	3474.9	-7.71	158.29
100.00	18 44 47	2434.03	-29.14	54.80	21.34	96.97	19 25 21	1834.0	-27.87	46.23
100.00	11 47 50	3851.37	-2.88	147.95	15.88	60.23	12 52 1	3251.4	-6.82	141.38
110.00	20 19 6	2138.94	-32.33	31.78	20.73	101.75	20 54 45	1538.9	-30.38	23.11
110.00	12 30 0	3719.23	-.14	136.22	14.17	55.82	13 31 59	3119.2	-4.62	130.00

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.1212	TRA	.3131	TC3	-2.4709	BAU	.4346	SGT	1754.7	SGR	1371.1	SG3	3615.9	ST	274.3	SR	600.2	SS	2468.7
RDE	.3277	RRA	-.3728	RC3	1.5744	FAU	.59306	RRT	-.8301	RRF	-.9465	RTF	.8912	CRT	.4920	CRS	.8024	CST	-.1185
FDE	-3.1980	FRA	15.2269	FC	-46.2728	BSP	6631	SGB	2226.9	R23	.1717	R13	-.9498	LSA	2516.3	MSA	444.1	SSA	29.1
BDE	.3494	BRA	.4869	BC3	2.9299	FSP	12457	SG1	2136.6	SG2	627.9	THA	143.35	EL1	617.8	EL2	232.0	ALF	75.19

LAUNCH DATE OCT 26 1964 FLIGHT TIME 312.00 ARRIVAL DATE SEP 3 1965

HELIOCENTRIC CONIC DISTANCE 711.152 EARTH TO MARS

```
RL  148.69 LAL   -.00 LOL  32.61 VL  32.742 GAL  -4.07 AZL  88.83 HCA 221.30 SMA 186.12 ECC .21278 INC 1.1680 V1  29.966
RP  222.85 LAP   -.77 LOP 253.91 VP  21.863 GAP  -4.65 AZP  90.88 TAL 336.46 TAP 197.76 RCA 146.52 APO 225.73 V2  24.674
RC 261.100 GL   11.51 GP    6.19 ZAL 123.80 ZAP  99.41 ETS 177.92 ZAE 134.19 ETE 171.50 ZAC  92.34 ETC 256.83 CLP  99.47
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PLANETOCENTRIC CONIC

```
C3  11.125 VHL  3.335 DLA  19.52 RAL 163.42 RAD 6567.4 VEL 11.511 PTH   2.01 VHP  2.838 DPA   9.66 RAP 177.14 ECC 1.1831
```

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 10 49	2741.55	-27.92	77.57	21.84	94.93	17 56 31	2141.6	-26.94	69.04
90.00	10 41 6	4069.69	-4.16	164.70	16.82	61.96	11 48 56	3469.7	-7.88	158.00
100.00	18 44 24	2439.79	-29.19	55.22	21.69	96.75	19 25 4	1839.8	-27.95	46.64
100.00	11 50 13	3846.68	-3.04	147.69	16.20	60.25	12 54 19	3246.7	-6.98	141.12
110.00	20 19 1	2143.75	-32.40	32.14	21.09	101.54	20 54 45	1543.8	-30.47	23.45
110.00	12 32 5	3715.48	-.28	136.02	14.48	55.82	13 34 0	3115.5	-4.76	129.81

```
DIFFERENTIAL CORRECTIONS                MID-COURSE EXECUTION ACCURACY          ORBIT DETERMINATION ACCURACY
 TDE  .0957 TRA  .4528 TC3-2.8651 BAU  .4856   SGT 2088.3 SGR 1365.9 SG3 3646.6   ST   302.7 SR   605.2 SS  2480.2
 RDE  .3318 RRA -.3678 RC3 1.5661 FAU .59850   RRT -.8611 RRF -.9437 RTF  .9258   CRT  .2301 CRS  .7973 CST -.3995
 FDE-3.2275 FRA15.3749 FC-46.5763 BSP   7615   SGB 2495.3 R23  .1462 R13 -.9585   LSA 2530.3 MSA  454.2 SSA   28.8
 BDE  .3453 BRA  .5834 BC3 3.2652 FSP  12541   SG1 2422.4 SG2  598.6 THA 148.47   EL1  610.4 EL2  292.1 ALF  81.47
```

LAUNCH DATE OCT 26 1964 FLIGHT TIME 314.00 ARRIVAL DATE SEP 5 1965

HELIOCENTRIC CONIC DISTANCE 715.156 EARTH TO MARS

```
RL  148.69 LAL   -.00 LOL  32.61 VL  32.740 GAL  -4.09 AZL  88.81 HCA 222.40 SMA 186.08 ECC .21269 INC 1.1907 V1  29.966
RP  222.47 LAP   -.80 LOP 255.00 VP  21.906 GAP  -4.89 AZP  90.88 TAL 336.34 TAP 198.74 RCA 146.50 APO 225.65 V2  24.716
RC 262.633 GL   11.72 GP    6.08 ZAL 123.95 ZAP  97.39 ETS 178.19 ZAE 131.98 ETE 172.15 ZAC  92.04 ETC 256.93 CLP  97.43
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PLANETOCENTRIC CONIC

```
C3  11.161 VHL  3.341 DLA  19.64 RAL 163.69 RAD 6567.4 VEL 11.513 PTH   2.01 VHP  2.830 DPA   9.95 RAP 176.23 ECC 1.1837
```

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 10 33	2747.14	-27.95	77.98	22.20	94.73	17 56 20	2147.1	-27.00	69.44
90.00	10 43 29	4065.42	-4.29	164.46	17.16	61.98	11 51 14	3465.4	-8.01	157.75
100.00	18 44 16	2444.94	-29.23	55.60	22.05	96.56	19 25 1	1844.9	-28.01	47.01
100.00	11 52 27	3842.86	-3.17	147.48	16.54	60.26	12 56 30	3242.9	-7.10	140.91
110.00	20 19 9	2148.08	-32.46	32.46	21.46	101.36	20 54 57	1548.1	-30.55	23.76
110.00	12 34 3	3712.48	-.39	135.87	14.81	55.82	13 35 56	3112.5	-4.88	129.65

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DIFFERENTIAL CORRECTIONS                MID-COURSE EXECUTION ACCURACY          ORBIT DETERMINATION ACCURACY
 TDE  .0690 TRA  .5954 TC3-3.2650 BAU  .5396   SGT 2439.0 SGR 1358.6 SG3 3667.7   ST   352.3 SR   609.8 SS  2489.2
 RDE  .3358 RRA -.3624 RC3 1.5545 FAU .60238   RRT -.8791 RRF -.9408 RTF  .9470   CRT  .0080 CRS  .7920 CST -.6009
 FDE-3.2514 FRA15.4951 FC-46.7276 BSP   8692   SGB 2791.9 R23  .1225 R13 -.9661   LSA 2544.9 MSA  463.4 SSA   28.4
 BDE  .3428 BRA  .6970 BC3 3.6162 FSP  12594   SG1 2731.3 SG2  578.2 THA 152.58   EL1  609.8 EL2  352.3 ALF  89.60
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LAUNCH DATE OCT 26 1964 FLIGHT TIME 316.00 ARRIVAL DATE SEP 7 1965

HELIOCENTRIC CONIC DISTANCE 719.168 EARTH TO MARS

```
RL  148.69 LAL   -.00 LOL  32.61 VL  32.737 GAL  -4.11 AZL  88.79 HCA 223.50 SMA 186.04 ECC .21265 INC 1.2127 V1  29.966
RP  222.08 LAP   -.83 LOP 256.10 VP  21.950 GAP  -5.12 AZP  90.88 TAL 336.21 TAP 199.70 RCA 146.48 APO 225.60 V2  24.758
RC 264.145 GL   11.92 GP    5.98 ZAL 124.12 ZAP  95.36 ETS 178.44 ZAE 129.76 ETE 172.75 ZAC  91.75 ETC 257.02 CLP  95.39
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PLANETOCENTRIC CONIC

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C3  11.203 VHL  3.347 DLA  19.74 RAL 163.96 RAD 6567.4 VEL 11.515 PTH   2.01 VHP  2.825 DPA  10.25 RAP 175.32 ECC 1.1844
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LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 10 33	2752.06	-27.98	78.33	22.57	94.55	17 56 25	2152.1	-27.05	69.79
90.00	10 45 43	4062.09	-4.40	164.28	17.52	62.00	11 53 25	3462.1	-8.11	157.56
100.00	18 44 23	2449.48	-29.26	55.93	22.43	96.39	19 25 12	1849.5	-28.07	47.33
100.00	11 54 34	3839.90	-3.27	147.32	16.89	60.27	12 58 34	3239.9	-7.20	140.74
110.00	20 19 29	2151.94	-32.51	32.75	21.85	101.19	20 55 21	1551.9	-30.63	24.04
110.00	12 35 57	3710.21	-.48	135.75	15.15	55.82	13 37 47	3110.2	-4.96	129.53

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DIFFERENTIAL CORRECTIONS                MID-COURSE EXECUTION ACCURACY          ORBIT DETERMINATION ACCURACY
 TDE  .0424 TRA  .7410 TC3-3.6654 BAU  .5954   SGT 2800.4 SGR 1349.3 SG3 3679.1   ST   417.3 SR   614.1 SS  2496.7
 RDE  .3398 RRA -.3567 RC3 1.5391 FAU .60440   RRT -.8893 RRF -.9375 RTF  .9605   CRT -.1514 CRS  .7867 CST -.7270
 FDE-3.2704 FRA15.5941 FC-46.7046 BSP   9847   SGB 3108.5 R23  .1027 R13 -.9722   LSA 2561.3 MSA  472.8 SSA   28.1
 BDE  .3424 BRA  .8224 BC3 3.9754 FSP  12639   SG1 3056.7 SG2  565.4 THA 155.93   EL1  619.9 EL2  408.6 ALF 100.46
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LAUNCH DATE OCT 26 1964 FLIGHT TIME 318.00 ARRIVAL DATE SEP 9 1965

HELIOCENTRIC CONIC DISTANCE 723.188 EARTH TO MARS

```
RL  148.69 LAL   -.00 LOL  32.61 VL  32.735 GAL  -4.13 AZL  88.77 HCA 224.60 SMA 186.00 ECC .21264 INC 1.2338 V1  29.966
RP  221.70 LAP   -.87 LOP 257.20 VP  21.994 GAP  -5.35 AZP  90.88 TAL 336.06 TAP 200.66 RCA 146.45 APO 225.55 V2  24.799
RC 265.639 GL   12.10 GP    5.87 ZAL 124.32 ZAP  93.34 ETS 178.69 ZAE 127.53 ETE 173.31 ZAC  91.45 ETC 257.12 CLP  93.36
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PLANETOCENTRIC CONIC

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C3  11.253 VHL  3.355 DLA  19.82 RAL 164.26 RAD 6567.4 VEL 11.517 PTH   2.01 VHP  2.824 DPA  10.54 RAP 174.41 ECC 1.1852
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LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 10 49	2756.31	-28.00	78.64	22.97	94.40	17 56 46	2156.3	-27.10	70.09
90.00	10 47 47	4059.68	-4.48	164.14	17.89	62.01	11 55 27	3459.7	-8.19	157.43
100.00	18 44 45	2453.43	-29.29	56.22	22.83	96.24	19 25 38	1853.4	-28.12	47.62
100.00	11 56 32	3837.80	-3.34	147.20	17.26	60.28	13 0 30	3237.8	-7.27	140.62
110.00	20 20 2	2155.33	-32.56	33.01	22.26	101.05	20 55 57	1555.3	-30.69	24.28
110.00	12 37 45	3708.66	-.54	135.67	15.52	55.82	13 39 33	3108.7	-5.02	129.45

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DIFFERENTIAL CORRECTIONS                MID-COURSE EXECUTION ACCURACY          ORBIT DETERMINATION ACCURACY
 TDE  .0145 TRA  .8892 TC3-4.0664 BAU  .6532   SGT 3170.1 SGR 1338.5 SG3 3681.3   ST   491.8 SR   618.3 SS  2502.5
 RDE  .3439 RRA -.3505 RC3 1.5212 FAU .60509   RRT -.8949 RRF -.9341 RTF  .9696   CRT -.2646 CRS  .7816 CST -.8066
 FDE-3.2895 FRA15.6604 FC-46.5501 BSP  11044   SGB 3441.1 R23  .0864 R13 -.9771   LSA 2579.6 MSA  481.3 SSA   27.7
 BDE  .3442 BRA  .9558 BC3 4.3416 FSP  12639   SG1 3395.6 SG2  557.6 THA 158.70   EL1  647.2 EL2  453.1 ALF 114.44
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LAUNCH DATE OCT 26 1964 FLIGHT TIME 320.00 ARRIVAL DATE SEP 11 1965

HELIOCENTRIC CONIC DISTANCE 727.215 EARTH TO MARS

RL 148.69 LAL -.00 LOL 32.61 VL 32.733 GAL -4.16 AZL 88.75 HCA 225.70 SMA 185.97 ECC .21267 INC 1.2541 V1 29.966
RP 221.32 LAP -.90 LOP 258.31 VP 22.038 GAP -5.57 AZP 90.88 TAL 335.90 TAP 201.60 RCA 146.42 APO 225.52 V2 24.841
RC 267.114 GL 12.27 GP 5.77 ZAL 124.53 ZAP 91.32 ETS 178.92 ZAE 125.31 ETE 173.83 ZAC 91.16 ETC 257.22 CLP 91.33

PLANETOCENTRIC CONIC

C3 11.311 VHL 3.363 DLA 19.88 RAL 164.57 RAD 6567.4 VEL 11.519 PTH 2.01 VHP 2.826 DPA 10.82 RAP 173.52 ECC 1.1861

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 11 22	2759.91	-28.02	78.90	23.38	94.27	17 57 22	2159.9	-27.13	70.35
90.00	10 49 42	4058.19	-4.52	164.06	18.28	62.02	11 57 20	3458.2	-8.23	157.34
100.00	18 45 22	2456.79	-29.32	56.47	23.25	96.11	19 26 19	1856.8	-28.16	47.86
100.00	11 58 23	3836.53	-3.38	147.13	17.65	60.28	13 2 20	3236.5	-7.31	140.55
110.00	20 20 47	2158.26	-32.59	33.23	22.68	100.92	20 56 45	1558.3	-30.74	24.50
110.00	12 39 27	3707.83	-.57	135.62	15.90	55.82	13 41 15	3107.8	-5.05	129.40

DIFFERENTIAL CORRECTIONS
TDE -.0142 TRA 1.0396 TC3-4.4667 BAU .7125
RDE .3481 RRA -.3438 RC3 1.5004 FAU .60421
FDE-3.3100 FRA15.6946 FC-46.2464 BSP 12270
BDE .3484 BRA 1.0950 BC3 4.7120 FSP 12612

MID-COURSE EXECUTION ACCURACY
SGT 3546.1 SGR 1325.9 SG3 3673.6
RRT -.8974 RRF -.9303 RTF .9759
SGB 3785.9 R23 .0737 R13 -.9809
SG1 3745.1 SG2 553.9 THA 161.02

ORBIT DETERMINATION ACCURACY
ST 572.7 SR 622.5 SS 2507.1
CRT -.3441 CRS .7770 CST -.8571
LSA 2600.2 MSA 489.3 SSA 27.4
EL1 695.6 EL2 481.2 ALF 128.18

LAUNCH DATE OCT 26 1964 FLIGHT TIME 322.00 ARRIVAL DATE SEP 13 1965

HELIOCENTRIC CONIC DISTANCE 731.249 EARTH TO MARS

RL 148.69 LAL -.00 LOL 32.61 VL 32.732 GAL -4.19 AZL 88.73 HCA 226.81 SMA 185.94 ECC .21274 INC 1.2739 V1 29.966
RP 220.94 LAP -.93 LOP 259.42 VP 22.082 GAP -5.80 AZP 90.87 TAL 335.73 TAP 202.54 RCA 146.39 APO 225.50 V2 24.883
RC 268.570 GL 12.43 GP 5.66 ZAL 124.77 ZAP 89.31 ETS 179.15 ZAE 123.08 ETE 174.31 ZAC 90.86 ETC 257.32 CLP 89.31

PLANETOCENTRIC CONIC

C3 11.375 VHL 3.373 DLA 19.93 RAL 164.89 RAD 6567.4 VEL 11.522 PTH 2.01 VHP 2.832 DPA 11.10 RAP 172.63 ECC 1.1872

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 12 11	2762.86	-28.03	79.12	23.81	94.16	17 58 13	2162.9	-27.16	70.56
90.00	10 51 28	4057.59	-4.54	164.02	18.69	62.02	11 59 6	3457.6	-8.25	157.31
100.00	18 46 14	2459.58	-29.34	56.68	23.68	96.00	19 27 13	1859.6	-28.20	48.06
100.00	12 0 6	3836.11	-3.40	147.11	18.06	60.28	13 4 2	3236.1	-7.33	140.53
110.00	20 21 45	2160.75	-32.63	33.41	23.11	100.82	20 57 45	1560.8	-30.79	24.68
110.00	12 41 5	3707.70	-.58	135.62	16.30	55.82	13 42 52	3107.7	-5.06	129.40

DIFFERENTIAL CORRECTIONS
TDE -.0436 TRA 1.1930 TC3-4.8598 BAU .7724
RDE .3522 RRA -.3367 RC3 1.4769 FAU .60176
FDE-3.3242 FRA15.6997 FC-45.7976 BSP 13528
BDE .3549 BRA 1.2396 BC3 5.0793 FSP 12561

MID-COURSE EXECUTION ACCURACY
SGT 3924.1 SGR 1311.7 SG3 3656.5
RRT -.8979 RRF -.9262 RTF .9806
SGB 4137.5 R23 .0634 R13 -.9840
SG1 4100.5 SG2 552.7 THA 162.98

ORBIT DETERMINATION ACCURACY
ST 658.3 SR 626.2 SS 2509.1
CRT -.4009 CRS .7722 CST -.8906
LSA 2621.7 MSA 497.1 SSA 27.0
EL1 761.1 EL2 496.2 ALF 138.55

LAUNCH DATE OCT 26 1964 FLIGHT TIME 324.00 ARRIVAL DATE SEP 15 1965

HELIOCENTRIC CONIC DISTANCE 735.290 EARTH TO MARS

RL 148.69 LAL -.00 LOL 32.61 VL 32.731 GAL -4.22 AZL 88.71 HCA 227.92 SMA 185.92 ECC .21284 INC 1.2928 V1 29.966
RP 220.56 LAP -.96 LOP 260.53 VP 22.127 GAP -6.01 AZP 90.87 TAL 335.55 TAP 203.47 RCA 146.35 APO 225.49 V2 24.924
RC 270.009 GL 12.57 GP 5.55 ZAL 125.03 ZAP 87.31 ETS 179.37 ZAE 120.87 ETE 174.76 ZAC 90.58 ETC 257.42 CLP 87.30

PLANETOCENTRIC CONIC

C3 11.448 VHL 3.383 DLA 19.95 RAL 165.23 RAD 6567.4 VEL 11.525 PTH 2.01 VHP 2.841 DPA 11.36 RAP 171.76 ECC 1.1884

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 13 15	2765.18	-28.05	79.29	24.26	94.08	17 59 20	2165.2	-27.19	70.73
90.00	10 53 6	4057.90	-4.53	164.04	19.12	62.02	12 0 43	3457.9	-8.24	157.32
100.00	18 47 20	2461.81	-29.35	56.84	24.13	95.92	19 28 22	1861.8	-28.22	48.22
100.00	12 1 42	3836.51	-3.38	147.13	18.48	60.28	13 5 38	3236.5	-7.31	140.55
110.00	20 22 54	2162.81	-32.65	33.57	23.57	100.73	20 58 57	1562.8	-30.83	24.82
110.00	12 42 37	3708.27	-.56	135.65	16.72	55.82	13 44 25	3108.3	-5.04	129.43

DIFFERENTIAL CORRECTIONS
TDE -.0742 TRA 1.3479 TC3-5.2485 BAU .8334
RDE .3565 RRA -.3291 RC3 1.4511 FAU .59791
FDE-3.3415 FRA15.6729 FC-45.2172 BSP 14791
BDE .3641 BRA 1.3875 BC3 5.4454 FSP 12467

MID-COURSE EXECUTION ACCURACY
SGT 4304.2 SGR 1296.2 SG3 3630.3
RRT -.8967 RRF -.9217 RTF .9839
SGB 4495.2 R23 .0555 R13 -.9864
SG1 4461.0 SG2 553.6 THA 164.65

ORBIT DETERMINATION ACCURACY
ST 746.9 SR 630.1 SS 2510.2
CRT -.4431 CRS .7681 CST -.9136
LSA 2646.0 MSA 504.2 SSA 26.6
EL1 837.2 EL2 503.9 ALF 145.55

LAUNCH DATE OCT 26 1964 FLIGHT TIME 326.00 ARRIVAL DATE SEP 17 1965

HELIOCENTRIC CONIC DISTANCE 739.339 EARTH TO MARS

RL 148.69 LAL -.00 LOL 32.61 VL 32.730 GAL -4.26 AZL 88.69 HCA 229.04 SMA 185.91 ECC .21298 INC 1.3113 V1 29.966
RP 220.18 LAP -.99 LOP 261.64 VP 22.172 GAP -6.23 AZP 90.86 TAL 335.35 TAP 204.39 RCA 146.31 APO 225.50 V2 24.965
RC 271.430 GL 12.71 GP 5.44 ZAL 125.30 ZAP 85.34 ETS 179.58 ZAE 118.68 ETE 175.18 ZAC 90.29 ETC 257.53 CLP 85.32

PLANETOCENTRIC CONIC

C3 11.528 VHL 3.395 DLA 19.96 RAL 165.58 RAD 6567.4 VEL 11.529 PTH 2.01 VHP 2.853 DPA 11.62 RAP 170.91 ECC 1.1897

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 14 35	2766.88	-28.05	79.41	24.73	94.01	18 0 42	2166.9	-27.20	70.85
90.00	10 54 34	4059.09	-4.50	164.11	19.56	62.01	12 2 13	3459.1	-8.21	157.39
100.00	18 48 41	2463.49	-29.37	56.96	24.60	95.85	19 29 44	1863.5	-28.24	48.34
100.00	12 3 10	3837.72	-3.34	147.20	18.92	60.28	13 7 8	3237.7	-7.27	140.62
110.00	20 24 16	2164.45	-32.67	33.69	24.04	100.66	21 0 20	1564.4	-30.86	24.94
110.00	12 44 4	3709.53	-.51	135.71	17.15	55.82	13 45 54	3109.5	-4.99	129.49

DIFFERENTIAL CORRECTIONS
TDE -.1061 TRA 1.5047 TC3-5.6280 BAU .8946
RDE .3610 RRA -.3209 RC3 1.4233 FAU .59282
FDE-3.3606 FRA15.6123 FC-44.5214 BSP 16058
BDE .3762 BRA 1.5385 BC3 5.8052 FSP 12340

MID-COURSE EXECUTION ACCURACY
SGT 4683.5 SGR 1279.5 SG3 3595.5
RRT -.8943 RRF -.9169 RTF .9865
SGB 4855.1 R23 .0493 R13 -.9883
SG1 4823.2 SG2 555.9 THA 166.08

ORBIT DETERMINATION ACCURACY
ST 837.9 SR 633.9 SS 2510.0
CRT -.4754 CRS .7645 CST -.9299
LSA 2672.5 MSA 510.8 SSA 26.2
EL1 919.6 EL2 508.1 ALF 150.37

LAUNCH DATE OCT 26 1964 FLIGHT TIME 328.00 ARRIVAL DATE SEP 19 1965

HELIOCENTRIC CONIC DISTANCE 743.395 EARTH TO MARS

RL 148.69 LAL -.00 LOL 32.61 VL 32.729 GAL -4.30 AZL 88.67 HCA 230.16 SMA 185.89 ECC .21316 INC 1.3291 V1 29.966
RP 219.81 LAP -1.02 LOP 262.76 VP 22.217 GAP -6.44 AZP 90.85 TAL 335.13 TAP 205.29 RCA 146.27 APO 225.52 V2 25.006
RC 272.833 GL 12.84 GP 5.33 ZAL 125.60 ZAP 83.38 ETS 179.78 ZAE 116.50 ETE 175.57 ZAC 90.02 ETC 257.63 CLP 83.35

PLANETOCENTRIC CONIC

C3 11.615 VHL 3.408 DLA 19.94 RAL 165.95 RAD 6567.4 VEL 11.533 PTH 2.01 VHP 2.869 DPA 11.86 RAP 170.08 ECC 1.1912

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 16 11	2767.98	-28.06	79.49	25.21	93.97	18 2 19	2168.0	-27.21	70.93
90.00	10 55 54	4061.16	-4.43	164.22	20.02	62.00	12 3 35	3461.2	-8.14	157.51
100.00	18 50 16	2464.63	-29.37	57.05	25.08	95.81	19 31 20	1864.6	-28.26	48.42
100.00	12 4 31	3839.75	-3.27	147.31	19.38	60.27	13 8 30	3239.7	-7.21	140.73
110.00	20 25 49	2165.67	-32.69	33.78	24.53	100.61	21 1 55	1565.7	-30.88	25.03
110.00	12 45 27	3711.47	-.43	135.81	17.61	55.82	13 47 18	3111.5	-4.91	129.59

DIFFERENTIAL CORRECTIONS
TDE -.1388 TRA 1.6637 TC3-5.9969 BAU .9560
RDE .3654 RRA -.3125 RC3 1.3933 FAU .58621
FDE-3.3760 FRA15.5270 FC-43.6926 BSP 17330
BDE .3909 BRA 1.6928 BC3 6.1567 FSP 12193

MID-COURSE EXECUTION ACCURACY
SGT 5061.3 SGR 1261.6 SG3 3552.2
RRT -.8908 RRF -.9117 RTF .9885
SGB 5216.1 R23 .0446 R13 -.9898
SG1 5186.1 SG2 559.4 THA 167.33

ORBIT DETERMINATION ACCURACY
ST 930.7 SR 637.4 SS 2508.0
CRT -.4998 CRS .7610 CST -.9417
LSA 2700.9 MSA 517.2 SSA 25.7
EL1 1005.8 EL2 510.9 ALF 153.90

LAUNCH DATE OCT 26 1964 FLIGHT TIME 330.00 ARRIVAL DATE SEP 21 1965

HELIOCENTRIC CONIC DISTANCE 747.457 EARTH TO MARS

RL 148.69 LAL -.00 LOL 32.61 VL 32.728 GAL -4.34 AZL 88.65 HCA 231.28 SMA 185.89 ECC .21337 INC 1.3466 V1 29.966
RP 219.44 LAP -1.05 LOP 263.89 VP 22.263 GAP -6.64 AZP 90.84 TAL 334.91 TAP 206.19 RCA 146.22 APO 225.55 V2 25.047
RC 274.220 GL 12.95 GP 5.22 ZAL 125.92 ZAP 81.45 ETS 179.97 ZAE 114.34 ETE 175.94 ZAC 89.75 ETC 257.73 CLP 81.41

PLANETOCENTRIC CONIC

C3 11.711 VHL 3.422 DLA 19.92 RAL 166.33 RAD 6567.4 VEL 11.537 PTH 2.01 VHP 2.887 DPA 12.09 RAP 169.28 ECC 1.1927

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 18 2	2768.48	-28.06	79.53	25.72	93.96	18 4 11	2168.5	-27.22	70.96
90.00	10 57 6	4064.10	-4.34	164.39	20.49	61.99	12 4 50	3464.1	-8.05	157.68
100.00	18 52 5	2465.24	-29.38	57.09	25.59	95.79	19 33 10	1865.2	-28.27	48.47
100.00	12 5 44	3842.57	-3.18	147.47	19.85	60.26	13 9 47	3242.6	-7.11	140.89
110.00	20 27 34	2166.49	-32.70	33.85	25.03	100.57	21 3 41	1566.5	-30.89	25.09
110.00	12 46 44	3714.09	-.33	135.95	18.08	55.82	13 48 38	3114.1	-4.82	129.73

DIFFERENTIAL CORRECTIONS
TDE -.1727 TRA 1.8246 TC3-6.3528 BAU 1.0172
RDE .3699 RRA -.3039 RC3 1.3613 FAU .57830
FDE-3.3882 FRA15.4166 FC-42.7495 BSP 18603
BDE .4082 BRA 1.8498 BC3 6.4970 FSP 12025

MID-COURSE EXECUTION ACCURACY
SGT 5435.7 SGR 1242.7 SG3 3501.0
RRT -.8865 RRF -.9061 RTF .9900
SGB 5576.0 R23 .0409 R13 -.9911
SG1 5547.4 SG2 563.5 THA 168.42

ORBIT DETERMINATION ACCURACY
ST 1025.1 SR 640.8 SS 2504.4
CRT -.5190 CRS .7577 CST -.9506
LSA 2731.1 MSA 523.2 SSA 25.2
EL1 1094.7 EL2 512.9 ALF 156.60

LAUNCH DATE OCT 26 1964 FLIGHT TIME 332.00 ARRIVAL DATE SEP 23 1965

HELIOCENTRIC CONIC DISTANCE 751.526 EARTH TO MARS

RL 148.69 LAL -.00 LOL 32.61 VL 32.728 GAL -4.38 AZL 88.64 HCA 232.41 SMA 185.88 ECC .21362 INC 1.3634 V1 29.966
RP 219.07 LAP -1.08 LOP 265.02 VP 22.308 GAP -6.85 AZP 90.83 TAL 334.67 TAP 207.08 RCA 146.17 APO 225.59 V2 25.088
RC 275.589 GL 13.06 GP 5.11 ZAL 126.25 ZAP 79.54 ETS 180.15 ZAE 112.20 ETE 176.28 ZAC 89.49 ETC 257.83 CLP 79.50

PLANETOCENTRIC CONIC

C3 11.816 VHL 3.437 DLA 19.87 RAL 166.73 RAD 6567.5 VEL 11.541 PTH 2.01 VHP 2.909 DPA 12.31 RAP 168.50 ECC 1.1945

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 20 8	2768.42	-28.06	79.52	26.24	93.96	18 6 17	2168.4	-27.22	70.96
90.00	10 58 9	4067.88	-4.21	164.60	20.99	61.97	12 5 57	3467.9	-7.93	157.89
100.00	18 54 7	2465.35	-29.38	57.10	26.11	95.78	19 35 13	1865.4	-28.27	48.47
100.00	12 6 51	3846.17	-3.06	147.66	20.35	60.25	13 10 57	3246.2	-6.99	141.09
110.00	20 29 30	2166.92	-32.70	33.88	25.55	100.55	21 5 37	1566.9	-30.90	25.12
110.00	12 47 57	3717.37	-.21	136.12	18.57	55.82	13 49 55	3117.4	-4.69	129.90

DIFFERENTIAL CORRECTIONS
TDE -.2085 TRA 1.9862 TC3-6.6975 BAU 1.0786
RDE .3745 RRA -.2947 RC3 1.3283 FAU .56940
FDE-3.4029 FRA15.2755 FC-41.7198 BSP 19849
BDE .4287 BRA 2.0079 BC3 6.8280 FSP 11825

MID-COURSE EXECUTION ACCURACY
SGT 5806.3 SGR 1223.3 SG3 3442.8
RRT -.8814 RRF -.9001 RTF .9912
SGB 5933.8 R23 .0380 R13 -.9921
SG1 5906.5 SG2 568.0 THA 169.38

ORBIT DETERMINATION ACCURACY
ST 1120.3 SR 644.2 SS 2499.6
CRT -.5352 CRS .7551 CST -.9576
LSA 2763.7 MSA 528.4 SSA 24.8
EL1 1185.7 EL2 514.2 ALF 158.70

LAUNCH DATE OCT 26 1964 FLIGHT TIME 334.00 ARRIVAL DATE SEP 25 1965

HELIOCENTRIC CONIC DISTANCE 755.598 EARTH TO MARS

RL 148.69 LAL -.00 LOL 32.61 VL 32.728 GAL -4.43 AZL 88.62 HCA 233.54 SMA 185.88 ECC .21391 INC 1.3799 V1 29.966
RP 218.70 LAP -1.11 LOP 266.15 VP 22.354 GAP -7.05 AZP 90.82 TAL 334.41 TAP 207.95 RCA 146.12 APO 225.65 V2 25.128
RC 276.940 GL 13.15 GP 5.00 ZAL 126.61 ZAP 77.67 ETS 180.32 ZAE 110.10 ETE 176.60 ZAC 89.23 ETC 257.92 CLP 77.63

PLANETOCENTRIC CONIC

C3 11.929 VHL 3.454 DLA 19.81 RAL 167.14 RAD 6567.5 VEL 11.546 PTH 2.02 VHP 2.935 DPA 12.50 RAP 167.76 ECC 1.1963

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 22 30	2767.76	-28.06	79.48	26.78	93.98	18 8 37	2167.8	-27.21	70.91
90.00	10 59 4	4072.54	-4.07	164.86	21.50	61.95	12 6 57	3472.5	-7.79	158.16
100.00	18 56 24	2464.95	-29.38	57.07	26.65	95.80	19 37 29	1864.9	-28.26	48.44
100.00	12 7 51	3850.59	-2.91	147.91	20.86	60.24	13 12 2	3250.6	-6.85	141.34
110.00	20 31 39	2166.96	-32.70	33.88	26.09	100.55	21 7 46	1567.0	-30.90	25.12
110.00	12 49 6	3721.33	-.06	136.33	19.08	55.82	13 51 7	3121.3	-4.54	130.11

DIFFERENTIAL CORRECTIONS
TDE -.2382 TRA 2.1590 TC3-7.0031 BAU 1.1355
RDE .3769 RRA -.2877 RC3 1.2859 FAU .55519
FDE-3.3292 FRA15.1973 FC-40.2926 BSP 21288
BDE .4459 BRA 2.1781 BC3 7.1202 FSP 11777

MID-COURSE EXECUTION ACCURACY
SGT 6168.4 SGR 1198.9 SG3 3372.0
RRT -.8756 RRF -.8927 RTF .9921
SGB 6283.8 R23 .0343 R13 -.9927
SG1 6257.8 SG2 570.9 THA 170.26

ORBIT DETERMINATION ACCURACY
ST 1217.1 SR 644.1 SS 2481.9
CRT -.5417 CRS .7453 CST -.9639
LSA 2787.6 MSA 533.7 SSA 24.7
EL1 1276.6 EL2 516.2 ALF 160.73

LAUNCH DATE OCT 26 1964 FLIGHT TIME 336.00 ARRIVAL DATE SEP 27 1965

HELIOCENTRIC CONIC DISTANCE 759.681 EARTH TO MARS

RL 148.69 LAL -.00 LOL 32.61 VL 32.729 GAL -4.48 AZL 88.60 HCA 234.68 SMA 185.89 ECC .21423 INC 1.3959 V1 29.966
RP 218.34 LAP -1.14 LOP 267.28 VP 22.399 GAP -7.25 AZP 90.81 TAL 334.14 TAP 208.82 RCA 146.07 APO 225.71 V2 25.168
RC 278.273 GL 13.24 GP 4.89 ZAL 126.99 ZAP 75.83 ETS 180.49 ZAE 108.02 ETE 176.90 ZAC 88.98 ETC 258.01 CLP 75.78

PLANETOCENTRIC CONIC

C3 12.051 VHL 3.471 DLA 19.73 RAL 167.56 RAD 6567.5 VEL 11.552 PTH 2.02 VHP 2.963 DPA 12.69 RAP 167.05 ECC 1.1983

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 25 4	2766.62	-28.05	79.39	27.33	94.02	18 11 10	2166.6	-27.20	70.83
90.00	10 59 52	4077.96	-3.89	165.17	22.02	61.93	12 7 50	3478.0	-7.62	158.47
100.00	18 58 53	2464.11	-29.37	57.01	27.20	95.83	19 39 57	1864.1	-28.25	48.38
100.00	12 8 45	3855.71	-2.74	148.19	21.38	60.22	13 13 0	3255.7	-6.68	141.62
110.00	20 33 57	2166.67	-32.70	33.86	26.64	100.56	21 10 3	1566.7	-30.90	25.10
110.00	12 50 10	3725.91	.12	136.57	19.60	55.82	13 52 16	3125.9	-4.37	130.35

DIFFERENTIAL CORRECTIONS
TDE -.2797 TRA 2.3201 TC3-7.3241 BAU 1.1971
RDE .3827 RRA -.2773 RC3 1.2541 FAU .54606
FDE-3.3808 FRA14.9776 FC-39.2297 BSP 22429
BDE .4740 BRA 2.3366 BC3 7.4307 FSP 11456

MID-COURSE EXECUTION ACCURACY
SGT 6528.3 SGR 1180.5 SG3 3304.3
RRT -.8690 RRF -.8862 RTF .9929
SGB 6634.2 R23 .0334 R13 -.9935
SG1 6609.1 SG2 577.0 THA 171.00

ORBIT DETERMINATION ACCURACY
ST 1313.7 SR 648.9 SS 2480.1
CRT -.5556 CRS .7469 CST -.9676
LSA 2829.8 MSA 538.3 SSA 24.0
EL1 1371.0 EL2 517.0 ALF 162.01

LAUNCH DATE OCT 26 1964 FLIGHT TIME 338.00 ARRIVAL DATE SEP 29 1965

HELIOCENTRIC CONIC DISTANCE 763.770 EARTH TO MARS

RL 148.69 LAL -.00 LOL 32.61 VL 32.729 GAL -4.53 AZL 88.59 HCA 235.82 SMA 185.90 ECC .21460 INC 1.4116 V1 29.966
RP 217.98 LAP -1.17 LOP 268.42 VP 22.445 GAP -7.44 AZP 90.79 TAL 333.86 TAP 209.68 RCA 146.00 APO 225.79 V2 25.208
RC 279.589 GL 13.31 GP 4.78 ZAL 127.38 ZAP 74.03 ETS 180.64 ZAE 105.97 ETE 177.18 ZAC 88.75 ETC 258.10 CLP 73.97

PLANETOCENTRIC CONIC

C3 12.182 VHL 3.490 DLA 19.63 RAL 167.99 RAD 6567.5 VEL 11.557 PTH 2.02 VHP 2.994 DPA 12.86 RAP 166.38 ECC 1.2005

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 27 52	2764.96	-28.05	79.27	27.91	94.08	18 13 57	2165.0	-27.18	70.71
90.00	11 0 33	4084.19	-3.69	165.51	22.57	61.90	12 8 37	3484.2	-7.42	158.82
100.00	19 1 34	2462.80	-29.36	56.91	27.78	95.88	19 42 37	1862.8	-28.24	48.29
100.00	12 9 32	3861.58	-2.54	148.51	21.93	60.21	13 13 53	3261.6	-6.48	141.95
110.00	20 36 26	2166.03	-32.69	33.81	27.21	100.59	21 12 32	1566.0	-30.89	25.06
110.00	12 51 10	3731.12	.32	136.84	20.15	55.82	13 53 21	3131.1	-4.17	130.63

DIFFERENTIAL CORRECTIONS
TDE -.3222 TRA 2.4836 TC3-7.6256 BAU 1.2577
RDE .3882 RRA -.2671 RC3 1.2203 FAU .53541
FDE-3.4136 FRA14.7517 FC-38.0508 BSP 23566
BDE .5045 BRA 2.4979 BC3 7.7226 FSP 11151

MID-COURSE EXECUTION ACCURACY
SGT 6881.2 SGR 1161.2 SG3 3230.4
RRT -.8618 RRF -.8791 RTF .9936
SGB 6978.5 R23 .0326 R13 -.9941
SG1 6954.1 SG2 582.8 THA 171.67

ORBIT DETERMINATION ACCURACY
ST 1411.2 SR 652.8 SS 2474.8
CRT -.5671 CRS .7474 CST -.9708
LSA 2871.9 MSA 542.2 SSA 23.4
EL1 1466.3 EL2 517.6 ALF 163.14

LAUNCH DATE OCT 26 1964 FLIGHT TIME 340.00 ARRIVAL DATE OCT 1 1965

HELIOCENTRIC CONIC DISTANCE 767.865 EARTH TO MARS

RL 148.69 LAL -.00 LOL 32.61 VL 32.730 GAL -4.59 AZL 88.57 HCA 236.96 SMA 185.91 ECC .21499 INC 1.4268 V1 29.966
RP 217.62 LAP -1.20 LOP 269.56 VP 22.491 GAP -7.63 AZP 90.78 TAL 333.57 TAP 210.52 RCA 145.94 APO 225.88 V2 25.248
RC 280.887 GL 13.38 GP 4.67 ZAL 127.79 ZAP 72.26 ETS 180.78 ZAE 103.96 ETE 177.45 ZAC 88.52 ETC 258.19 CLP 72.20

PLANETOCENTRIC CONIC

C3 12.323 VHL 3.510 DLA 19.52 RAL 168.44 RAD 6567.5 VEL 11.563 PTH 2.02 VHP 3.028 DPA 13.01 RAP 165.75 ECC 1.2028

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 30 54	2762.81	-28.03	79.11	28.50	94.16	18 16 56	2162.8	-27.16	70.56
90.00	11 1 6	4091.21	-3.47	165.91	23.13	61.88	12 9 17	3491.2	-7.20	159.22
100.00	19 4 28	2461.06	-29.35	56.78	28.37	95.95	19 45 29	1861.1	-28.22	48.16
100.00	12 10 13	3868.19	-2.31	148.88	22.49	60.19	13 14 41	3268.2	-6.26	142.32
110.00	20 39 5	2165.04	-32.68	33.74	27.80	100.63	21 15 10	1565.0	-30.87	24.98
110.00	12 52 5	3736.98	.54	137.14	20.71	55.82	13 54 22	3137.0	-3.95	130.93

DIFFERENTIAL CORRECTIONS
TDE -.3652 TRA 2.6500 TC3-7.9050 BAU 1.3168
RDE .3933 RRA -.2572 RC3 1.1845 FAU .52321
FDE-3.4322 FRA14.5234 FC-36.7590 BSP 24710
BDE .5368 BRA 2.6625 BC3 7.9933 FSP 10858

MID-COURSE EXECUTION ACCURACY
SGT 7226.1 SGR 1141.1 SG3 3150.9
RRT -.8540 RRF -.8713 RTF .9942
SGB 7315.6 R23 .0320 R13 -.9946
SG1 7291.9 SG2 588.3 THA 172.27

ORBIT DETERMINATION ACCURACY
ST 1509.4 SR 656.3 SS 2466.9
CRT -.5762 CRS .7473 CST -.9735
LSA 2914.8 MSA 546.0 SSA 22.9
EL1 1562.2 EL2 518.2 ALF 164.15

LAUNCH DATE OCT 26 1964 FLIGHT TIME 342.00 ARRIVAL DATE OCT 3 1965

HELIOCENTRIC CONIC DISTANCE 771.965 EARTH TO MARS

RL 148.69 LAL -.00 LOL 32.61 VL 32.731 GAL -4.65 AZL 88.56 HCA 238.11 SMA 185.93 ECC .21543 INC 1.4418 V1 29.966
RP 217.27 LAP -1.22 LOP 270.71 VP 22.536 GAP -7.82 AZP 90.76 TAL 333.25 TAP 211.36 RCA 145.87 APO 225.98 V2 25.287
RC 282.167 GL 13.44 GP 4.56 ZAL 128.22 ZAP 70.53 ETS 180.92 ZAE 101.98 ETE 177.69 ZAC 88.30 ETC 258.27 CLP 70.47

PLANETOCENTRIC CONIC

C3 12.473 VHL 3.532 DLA 19.39 RAL 168.91 RAD 6567.5 VEL 11.570 PTH 2.02 VHP 3.065 DPA 13.14 RAP 165.15 ECC 1.2053

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 34 8	2760.18	-28.02	78.92	29.11	94.26	18 20 8	2160.2	-27.14	70.37
90.00	11 1 33	4099.01	-3.22	166.34	23.71	61.85	12 9 52	3499.0	-6.96	159.66
100.00	19 7 34	2458.90	-29.33	56.63	28.98	96.03	19 48 33	1858.9	-28.19	48.01
100.00	12 10 48	3875.53	-2.06	149.28	23.07	60.17	13 15 23	3275.5	-6.02	142.72
110.00	20 41 55	2163.74	-32.66	33.64	28.41	100.69	21 17 58	1563.7	-30.84	24.89
110.00	12 52 57	3743.45	.79	137.48	21.29	55.82	13 55 20	3143.5	-3.70	131.27

DIFFERENTIAL CORRECTIONS
TDE -.4099 TRA 2.8183 TC3-8.1658 BAU 1.3751
RDE .3985 RRA -.2474 RC3 1.1483 FAU .51033
FDE-3.4444 FRA14.2855 FC-35.4202 BSP 25840
BDE .5717 BRA 2.8291 BC3 8.2461 FSP 10561

MID-COURSE EXECUTION ACCURACY
SGT 7563.4 SGR 1121.1 SG3 3067.9
RRT -.8457 RRF -.8632 RTF .9946
SGB 7646.1 R23 .0315 R13 -.9950
SG1 7623.0 SG2 593.6 THA 172.81

ORBIT DETERMINATION ACCURACY
ST 1608.3 SR 659.4 SS 2457.4
CRT -.5844 CRS .7471 CST -.9758
LSA 2959.4 MSA 549.3 SSA 22.4
EL1 1659.0 EL2 518.7 ALF 165.03

LAUNCH DATE OCT 26 1964 FLIGHT TIME 344.00 ARRIVAL DATE OCT 5 1965

HELIOCENTRIC CONIC DISTANCE 776.070 EARTH TO MARS

RL 148.69 LAL -.00 LOL 32.61 VL 32.732 GAL -4.71 AZL 88.54 HCA 239.26 SMA 185.95 ECC .21591 INC 1.4564 V1 29.966
RP 216.91 LAP -1.25 LOP 271.86 VP 22.582 GAP -8.01 AZP 90.74 TAL 332.93 TAP 212.19 RCA 145.80 APO 226.09 V2 25.327
RC 283.431 GL 13.49 GP 4.45 ZAL 128.67 ZAP 68.84 ETS 181.05 ZAE 100.04 ETE 177.92 ZAC 88.09 ETC 258.34 CLP 68.77

PLANETOCENTRIC CONIC

C3 12.634 VHL 3.554 DLA 19.25 RAL 169.38 RAD 6567.5 VEL 11.577 PTH 2.02 VHP 3.105 DPA 13.26 RAP 164.60 ECC 1.2079

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 37 35	2757.12	-28.01	78.70	29.74	94.37	18 23 32	2157.1	-27.11	70.15
90.00	11 1 53	4107.56	-2.94	166.82	24.31	61.82	12 10 20	3507.6	-6.69	160.14
100.00	19 10 52	2456.34	-29.31	56.44	29.60	96.13	19 51 48	1856.3	-28.16	47.83
100.00	12 11 17	3883.56	-1.79	149.72	23.67	60.16	13 16 1	3283.6	-5.75	143.17
110.00	20 44 54	2162.13	-32.64	33.52	29.03	100.76	21 20 56	1562.1	-30.82	24.77
110.00	12 53 44	3750.54	1.06	137.85	21.89	55.83	13 56 15	3150.5	-3.43	131.64

DIFFERENTIAL CORRECTIONS
TDE -.4561 TRA 2.9882 TC3-8.4047 BAU 1.4320
RDE .4036 RRA -.2377 RC3 1.1115 FAU .49660
FDE-3.4511 FRA14.0366 FC-34.0279 BSP 26946
BDE .6091 BRA 2.9977 BC3 8.4779 FSP 10261

MID-COURSE EXECUTION ACCURACY
SGT 7891.2 SGR 1101.1 SG3 2981.1
RRT -.8368 RRF -.8545 RTF .9950
SGB 7967.7 R23 .0312 R13 -.9953
SG1 7945.1 SG2 598.8 THA 173.30

ORBIT DETERMINATION ACCURACY
ST 1707.5 SR 662.3 SS 2446.1
CRT -.5916 CRS .7470 CST -.9778
LSA 3005.4 MSA 552.2 SSA 22.0
EL1 1756.3 EL2 519.1 ALF 165.81

LAUNCH DATE OCT 26 1964 FLIGHT TIME 346.00 ARRIVAL DATE OCT 7 1965

HELIOCENTRIC CONIC DISTANCE 780.181 EARTH TO MARS

RL 148.69 LAL -.00 LOL 32.61 VL 32.733 GAL -4.78 AZL 88.53 HCA 240.41 SMA 185.97 ECC .21642 INC 1.4707 V1 29.966
RP 216.57 LAP -1.28 LOP 273.01 VP 22.627 GAP -8.19 AZP 90.73 TAL 332.59 TAP 213.00 RCA 145.72 APO 226.22 V2 25.365
RC 284.679 GL 13.53 GP 4.35 ZAL 129.14 ZAP 67.19 ETS 181.17 ZAE 98.14 ETE 178.14 ZAC 87.90 ETC 258.41 CLP 67.12

PLANETOCENTRIC CONIC

C3 12.807 VHL 3.579 DLA 19.09 RAL 169.87 RAD 6567.5 VEL 11.584 PTH 2.03 VHP 3.147 DPA 13.36 RAP 164.09 ECC 1.2108

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 41 14	2753.63	-27.99	78.45	30.39	94.49	18 27 8	2153.6	-27.07	69.90
90.00	11 2 6	4116.84	-2.64	167.34	24.92	61.80	12 10 43	3516.8	-6.39	160.67
100.00	19 14 20	2453.41	-29.29	56.22	30.25	96.24	19 55 14	1853.4	-28.12	47.62
100.00	12 11 41	3892.29	-1.50	150.20	24.28	60.14	13 16 34	3292.3	-5.46	143.65
110.00	20 48 3	2160.24	-32.62	33.38	29.67	100.84	21 24 3	1560.2	-30.78	24.64
110.00	12 54 28	3758.23	1.35	138.25	22.50	55.84	13 57 7	3158.2	-3.14	132.05

DIFFERENTIAL CORRECTIONS
TDE -.5044 TRA 3.1600 TC3-8.6244 BAU 1.4880
RDE .4088 RRA -.2282 RC3 1.0750 FAU .48249
FDE-3.4569 FRA13.7806 FC-32.6167 BSP 28037
BDE .6493 BRA 3.1682 BC3 8.6911 FSP 9959

MID-COURSE EXECUTION ACCURACY
SGT 8210.9 SGR 1081.6 SG3 2892.4
RRT -.8274 RRF -.8454 RTF .9952
SGB 8281.8 R23 .0311 R13 -.9955
SG1 8259.8 SG2 603.9 THA 173.75

ORBIT DETERMINATION ACCURACY
ST 1807.3 SR 665.2 SS 2434.7
CRT -.5983 CRS .7473 CST -.9794
LSA 3054.2 MSA 554.8 SSA 21.5
EL1 1854.4 EL2 519.4 ALF 166.50

LAUNCH DATE OCT 26 1964 FLIGHT TIME 348.00 ARRIVAL DATE OCT 9 1965

HELIOCENTRIC CONIC DISTANCE 784.297 EARTH TO MARS

RL 148.69 LAL -.00 LOL 32.61 VL 32.735 GAL -4.85 AZL 88.52 HCA 241.57 SMA 185.99 ECC .21697 INC 1.4847 V1 29.966
RP 216.22 LAP -1.31 LOP 274.17 VP 22.673 GAP -8.38 AZP 90.71 TAL 332.23 TAP 213.80 RCA 145.64 APO 226.35 V2 25.404
RC 285.910 GL 13.56 GP 4.25 ZAL 129.62 ZAP 65.58 ETS 181.28 ZAE 96.28 ETE 178.34 ZAC 87.71 ETC 258.48 CLP 65.51

PLANETOCENTRIC CONIC

C3 12.990 VHL 3.604 DLA 18.92 RAL 170.36 RAD 6567.5 VEL 11.592 PTH 2.03 VHP 3.192 DPA 13.44 RAP 163.62 ECC 1.2138

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 45 5	2749.75	-27.97	78.17	31.05	94.63	18 30 54	2149.8	-27.03	69.62
90.00	11 2 14	4126.83	-2.32	167.90	25.55	61.77	12 11 1	3526.8	-6.08	161.23
100.00	19 18 0	2450.13	-29.27	55.98	30.91	96.36	19 58 50	1850.1	-28.08	47.38
100.00	12 12 0	3901.69	-1.18	150.71	24.92	60.13	13 17 2	3301.7	-5.14	144.17
110.00	20 51 21	2158.07	-32.59	33.21	30.32	100.93	21 27 19	1558.1	-30.74	24.48
110.00	12 55 9	3766.51	1.67	138.68	23.14	55.85	13 57 55	3166.5	-2.82	132.48

DIFFERENTIAL CORRECTIONS
TDE -.5544 TRA 3.3335 TC3-8.8229 BAU 1.5428
RDE .4141 RRA -.2188 RC3 1.0386 FAU .46794
FDE-3.4568 FRA13.5162 FC-31.1869 BSP 29095
BDE .6919 BRA 3.3406 BC3 8.8838 FSP 9653

MID-COURSE EXECUTION ACCURACY
SGT 8520.9 SGR 1062.5 SG3 2801.7
RRT -.8175 RRF -.8359 RTF .9955
SGB 8586.9 R23 .0311 R13 -.9957
SG1 8565.3 SG2 608.8 THA 174.15

ORBIT DETERMINATION ACCURACY
ST 1907.2 SR 667.8 SS 2421.3
CRT -.6044 CRS .7477 CST -.9808
LSA 3104.1 MSA 557.0 SSA 21.1
EL1 1952.8 EL2 519.6 ALF 167.12

LAUNCH DATE OCT 26 1964 FLIGHT TIME 350.00 ARRIVAL DATE OCT 11 1965

HELIOCENTRIC CONIC DISTANCE 788.418 EARTH TO MARS

RL 148.69 LAL -.00 LOL 32.61 VL 32.736 GAL -4.92 AZL 88.50 HCA 242.73 SMA 186.02 ECC .21756 INC 1.4984 V1 29.966
RP 215.88 LAP -1.33 LOP 275.33 VP 22.718 GAP -8.56 AZP 90.69 TAL 331.87 TAP 214.60 RCA 145.55 APO 226.50 V2 25.442
RC 287.127 GL 13.59 GP 4.15 ZAL 130.13 ZAP 64.02 ETS 181.39 ZAE 94.46 ETE 178.53 ZAC 87.54 ETC 258.54 CLP 63.95

PLANETOCENTRIC CONIC

C3 13.185 VHL 3.631 DLA 18.73 RAL 170.87 RAD 6567.5 VEL 11.600 PTH 2.03 VHP 3.239 DPA 13.51 RAP 163.20 ECC 1.2170

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 49 6	2745.51	-27.94	77.86	31.74	94.79	18 34 52	2145.5	-26.99	69.32
90.00	11 2 16	4137.52	-1.98	168.50	26.21	61.75	12 11 14	3537.5	-5.74	161.84
100.00	19 21 49	2446.52	-29.24	55.72	31.59	96.50	20 2 36	1846.5	-28.03	47.12
100.00	12 12 14	3911.74	-.84	151.27	25.57	60.12	13 17 26	3311.7	-4.81	144.73
110.00	20 54 47	2155.65	-32.56	33.03	30.99	101.04	21 30 43	1555.6	-30.70	24.31
110.00	12 55 46	3775.38	2.01	139.15	23.79	55.87	13 58 41	3175.4	-2.48	132.94

DIFFERENTIAL CORRECTIONS
TDE -.6067 TRA 3.5086 TC3-9.0006 BAU 1.5964
RDE .4194 RRA -.2095 RC3 1.0026 FAU .45317
FDE-3.4557 FRA13.2434 FC-29.7549 BSP 30128
BDE .7375 BRA 3.5148 BC3 9.0563 FSP 9345

MID-COURSE EXECUTION ACCURACY
SGT 8821.4 SGR 1044.0 SG3 2709.7
RRT -.8071 RRF -.8260 RTF .9957
SGB 8883.0 R23 .0312 R13 -.9959
SG1 8861.7 SG2 613.5 THA 174.52

ORBIT DETERMINATION ACCURACY
ST 2007.6 SR 670.4 SS 2407.3
CRT -.6104 CRS .7485 CST -.9820
LSA 3156.3 MSA 558.7 SSA 20.7
EL1 2051.8 EL2 519.6 ALF 167.68

LAUNCH DATE OCT 26 1964 FLIGHT TIME 352.00 ARRIVAL DATE OCT 13 1965

HELIOCENTRIC CONIC DISTANCE 792.539 EARTH TO MARS

RL	148.69	LAL	-.00	LOL	32.61	VL	32.738	GAL	-5.00	AZL	88.49	HCA	243.90	SMA	186.06	ECC	.21819	INC	1.5120
RP	215.54	LAP	-1.36	LOP	276.50	VP	22.763	GAP	-8.74	AZP	90.67	TAL	331.48	TAP	215.38	RCA	145.46	APO	226.65
RC	288.329	GL	13.60	GP	4.05	ZAL	130.64	ZAP	62.50	ETS	181.49	ZAE	92.68	ETE	178.71	ZAC	87.37	ETC	258.59

V1	29.966	V2	25.480	CLP	62.42														

PLANETOCENTRIC CONIC

C3	13.393	VHL	3.660	DLA	18.53	RAL	171.39	RAD	6567.5	VEL	11.609	PTH	2.03	VHP	3.289	DPA	13.56	RAP	162.82

ECC	1.2204	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	17 53 19	2740.89	-27.92	77.52	32.44	94.95	18 39 0	2140.9	-26.94	68.99							
		90.00	11 2 13	4148.92	-1.61	169.13	26.88	61.73	12 11 22	3548.9	-5.38	162.48							
		100.00	19 25 49	2442.57	-29.21	55.43	32.29	96.65	20 6 32	1842.6	-27.98	46.84							
		100.00	12 12 24	3922.48	-.47	151.85	26.24	60.11	13 17 46	3322.5	-4.45	145.32							
		110.00	20 58 23	2152.96	-32.52	32.83	31.68	101.15	21 34 16	1553.0	-30.65	24.11							
		110.00	12 56 19	3784.84	2.37	139.64	24.47	55.89	13 59 24	3184.8	-2.12	133.44							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.6436	TRA	3.7056	TC3	-9.1076	BAU	1.6398	SGT	9104.6	SGR	1021.6	SG3	2611.4	ST	2103.5	SR	669.6	SS	2376.7
RDE	.4226	RRA	-.2025	RC3	.9602	FAU	.43399	RRT	-.7954	RRF	-.8137	RTF	.9957	CRT	-.6071	CRS	.7409	CST	-.9834
FDE	-3.3664	FRA	13.0473	FC	-28.0536	BSP	31587	SGB	9161.7	R23	.0297	R13	-.9959	LSA	3194.7	MSA	561.3	SSA	20.7
BDE	.7699	BRA	3.7111	BC3	9.1581	FSP	9209	SG1	9140.9	SG2	616.7	THA	174.88	EL1	2145.0	EL2	521.8	ALF	168.36

LAUNCH DATE OCT 26 1964 FLIGHT TIME 354.00 ARRIVAL DATE OCT 15 1965

HELIOCENTRIC CONIC DISTANCE 796.674 EARTH TO MARS

RL	148.69	LAL	-.00	LOL	32.61	VL	32.740	GAL	-5.08	AZL	88.47	HCA	245.06	SMA	186.09	ECC	.21886	INC	1.5253
RP	215.21	LAP	-1.38	LOP	277.67	VP	22.807	GAP	-8.91	AZP	90.64	TAL	331.08	TAP	216.15	RCA	145.36	APO	226.82
RC	289.516	GL	13.61	GP	3.95	ZAL	131.17	ZAP	61.01	ETS	181.58	ZAE	90.93	ETE	178.87	ZAC	87.22	ETC	258.63

V1	29.966	V2	25.517	CLP	60.94														

PLANETOCENTRIC CONIC

C3	13.613	VHL	3.690	DLA	18.32	RAL	171.92	RAD	6567.5	VEL	11.619	PTH	2.04	VHP	3.342	DPA	13.59	RAP	162.48

ECC	1.2240	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	17 57 39	2736.02	-27.89	77.17	33.15	95.13	18 43 15	2136.0	-26.88	68.65							
		90.00	11 2 5	4160.90	-1.22	1[illegible]0	27.56	61.71	12 11 26	3560.9	-5.00	163.15							
		100.00	19 29 57	2438.39	-29.18	55.12	33.00	96.81	20 10 35	1838.4	-27.93	46.54							
		100.00	12 12 29	3933.76	-.09	152.47	26.93	60.11	13 18 2	3333.8	-4.07	145.94							
		110.00	21 2 6	2150.10	-32.49	32.61	32.39	101.27	21 37 56	1550.1	-30.59	23.91							
		110.00	12 56 49	3794.81	2.75	140.16	25.16	55.91	14 0 4	3194.8	-1.74	133.96							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.7176	TRA	3.8657	TC3	-9.2959	BAU	1.7003	SGT	9396.0	SGR	1009.3	SG3	2524.7	ST	2209.8	SR	675.3	SS	2377.4
RDE	.4304	RRA	-.1916	RC3	.9327	FAU	.42320	RRT	-.7854	RRF	-.8054	RTF	.9959	CRT	-.6216	CRS	.7511	CST	-.9839
FDE	-3.4475	FRA	12.6889	FC	-26.9132	BSP	32119	SGB	9450.0	R23	.0318	R13	-.9961	LSA	3267.3	MSA	561.5	SSA	19.9
BDE	.8368	BRA	3.8705	BC3	9.3426	FSP	8727	SG1	9429.5	SG2	622.5	THA	175.16	EL1	2251.5	EL2	519.2	ALF	168.63

LAUNCH DATE OCT 26 1964 FLIGHT TIME 356.00 ARRIVAL DATE OCT 17 1965

HELIOCENTRIC CONIC DISTANCE 800.808 EARTH TO MARS

RL	148.69	LAL	-.00	LOL	32.61	VL	32.743	GAL	-5.16	AZL	88.46	HCA	246.24	SMA	186.13	ECC	.21958	INC	1.5383
RP	214.88	LAP	-1.41	LOP	278.84	VP	22.852	GAP	-9.09	AZP	90.62	TAL	330.67	TAP	216.91	RCA	145.26	APO	227.00
RC	290.691	GL	13.61	GP	3.86	ZAL	131.72	ZAP	59.57	ETS	181.66	ZAE	89.23	ETE	179.03	ZAC	87.08	ETC	258.67

V1	29.966	V2	25.554	CLP	59.49														

PLANETOCENTRIC CONIC

C3	13.848	VHL	3.721	DLA	18.09	RAL	172.46	RAD	6567.5	VEL	11.629	PTH	2.04	VHP	3.397	DPA	13.61	RAP	162.19

ECC	1.2279	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	18 2 10	2730.83	-27.85	76.79	33.89	95.31	18 47 41	2130.8	-26.83	68.28							
		90.00	11 1 53	4173.54	-.82	170.51	28.27	61.69	12 11 26	3573.5	-4.59	163.86							
		100.00	19 34 15	2433.92	-29.14	54.79	33.73	96.97	20 14 48	1833.9	-27.87	46.22							
		100.00	12 12 29	3945.69	.31	153.13	27.64	60.11	13 18 15	3345.7	-3.66	146.60							
		110.00	21 5 57	2147.02	-32.45	32.38	33.11	101.40	21 41 44	1547.0	-30.53	23.69							
		110.00	12 57 17	3805.36	3.15	140.71	25.86	55.95	14 0 42	3205.4	-1.34	134.51							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.7772	TRA	4.0470	TC3	-9.4158	BAU	1.7511	SGT	9670.1	SGR	993.2	SG3	2432.5	ST	2311.6	SR	677.6	SS	2361.3
RDE	.4361	RRA	-.1830	RC3	.8990	FAU	.40825	RRT	-.7742	RRF	-.7948	RTF	.9960	CRT	-.6273	CRS	.7529	CST	-.9847
FDE	-3.4408	FRA	12.4053	FC	-25.5234	BSP	33055	SGB	9721.0	R23	.0322	R13	-.9962	LSA	3326.0	MSA	562.1	SSA	19.5
BDE	.8912	BRA	4.0512	BC3	9.4586	FSP	8417	SG1	9700.7	SG2	626.6	THA	175.43	EL1	2352.4	EL2	518.6	ALF	169.04

LAUNCH DATE OCT 26 1964 FLIGHT TIME 358.00 ARRIVAL DATE OCT 19 1965

HELIOCENTRIC CONIC DISTANCE 804.947 EARTH TO MARS

RL	148.69	LAL	-.00	LOL	32.61	VL	32.745	GAL	-5.25	AZL	88.45	HCA	247.41	SMA	186.17	ECC	.22033	INC	1.5512
RP	214.56	LAP	-1.43	LOP	280.02	VP	22.896	GAP	-9.26	AZP	90.60	TAL	330.24	TAP	217.65	RCA	145.15	APO	227.19
RC	291.851	GL	13.60	GP	3.76	ZAL	132.29	ZAP	58.17	ETS	181.74	ZAE	87.56	ETE	179.18	ZAC	86.94	ETC	258.70

V1	29.966	V2	25.590	CLP	58.09														

PLANETOCENTRIC CONIC

C3	14.096	VHL	3.754	DLA	17.85	RAL	173.01	RAD	6567.6	VEL	11.640	PTH	2.04	VHP	3.454	DPA	13.62	RAP	161.94

ECC	1.2320	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	18 6 50	2725.39	-27.82	76.40	34.64	95.51	18 52 15	2125.4	-26.77	67.89							
		90.00	11 1 36	4186.81	-.39	171.25	28.99	61.69	12 11 23	3586.8	-4.17	164.61							
		100.00	19 38 40	2429.22	-29.10	54.45	34.48	97.15	20 19 10	1829.2	-27.81	45.89							
		100.00	12 12 26	3958.21	.74	153.81	28.36	60.12	13 18 24	3358.2	-3.24	147.29							
		110.00	21 9 55	2143.75	-32.40	32.14	33.84	101.54	21 45 39	1543.7	-30.47	23.45							
		110.00	12 57 41	3816.45	3.58	141.29	26.59	55.98	14 1 18	3216.4	-.91	135.09							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.8392	TRA	4.2309	TC3	-9.5150	BAU	1.8005	SGT	9934.8	SGR	978.0	SG3	2341.0	ST	2414.0	SR	679.9	SS	2344.7
RDE	.4419	RRA	-.1747	RC3	.8663	FAU	.39336	RRT	-.7628	RRF	-.7841	RTF	.9961	CRT	-.6330	CRS	.7551	CST	-.9854
FDE	-3.4331	FRA	12.1206	FC	-24.1589	BSP	33964	SGB	9982.8	R23	.0328	R13	-.9963	LSA	3386.8	MSA	562.5	SSA	19.2
BDE	.9485	BRA	4.2346	BC3	9.5544	FSP	8109	SG1	9962.9	SG2	630.6	THA	175.69	EL1	2453.9	EL2	517.8	ALF	169.41

LAUNCH DATE OCT 26 1964 FLIGHT TIME 360.00 ARRIVAL DATE OCT 21 1965

HELIOCENTRIC CONIC DISTANCE 809.089 EARTH TO MARS

RL 148.69 LAL -.00 LOL 32.61 VL 32.748 GAL -5.34 AZL 88.44 HCA 248.59 SMA 186.21 ECC .22113 INC 1.5640 V1 29.966
RP 214.24 LAP -1.46 LOP 281.20 VP 22.940 GAP -9.43 AZP 90.57 TAL 329.80 TAP 218.39 RCA 145.04 APO 227.39 V2 25.626
RC 292.998 GL 13.58 GP 3.68 ZAL 132.86 ZAP 56.81 ETS 181.81 ZAE 85.93 ETE 179.31 ZAC 86.82 ETC 258.73 CLP 56.73

PLANETOCENTRIC CONIC

C3 14.360 VHL 3.789 DLA 17.60 RAL 173.57 RAD 6567.6 VEL 11.651 PTH 2.05 VHP 3.514 DPA 13.60 RAP 161.73 ECC 1.2363

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 11 38	2719.70	-27.78	75.99	35.40	95.71	18 56 57	2119.7	-26.70	67.49
90.00	11 1 15	4200.67	.06	172.02	29.73	61.68	12 11 15	3600.7	-3.73	165.38
100.00	19 43 14	2424.30	-29.06	54.09	35.24	97.34	20 23 38	1824.3	-27.74	45.54
100.00	12 12 19	3971.31	1.18	154.53	29.11	60.13	13 18 31	3371.3	-2.80	148.01
110.00	21 14 0	2140.31	-32.35	31.88	34.60	101.69	21 49 40	1540.3	-30.41	23.21
110.00	12 58 3	3828.06	4.02	141.90	27.34	56.03	14 1 51	3228.1	-.47	135.69

DIFFERENTIAL CORRECTIONS
TDE -.9030 TRA 4.4180 TC3-9.5937 BAU 1.8487
RDE .4479 RRA -.1667 RC3 .8342 FAU .37845
FDE-3.4212 FRA11.8369 FC-22.8165 BSP 34866
BDE 1.0080 BRA 4.4211 BC3 9.6299 FSP 7809

MID-COURSE EXECUTION ACCURACY
SGT10190.2 SGR 963.4 SG3 2250.2
RRT -.7511 RRF -.7732 RTF .9961
SGB10235.7 R23 .0333 R13 -.9963
SG110216.0 SG2 634.4 THA 175.92

ORBIT DETERMINATION ACCURACY
ST 2516.3 SR 682.1 SS 2327.0
CRT -.6383 CRS .7573 CST -.9860
LSA 3448.8 MSA 562.8 SSA 18.9
EL1 2555.3 EL2 517.0 ALF 169.76

LAUNCH DATE OCT 26 1964 FLIGHT TIME 362.00 ARRIVAL DATE OCT 23 1965

HELIOCENTRIC CONIC DISTANCE 813.234 EARTH TO MARS

RL 148.69 LAL -.00 LOL 32.61 VL 32.750 GAL -5.43 AZL 88.42 HCA 249.77 SMA 186.26 ECC .22197 INC 1.5765 V1 29.966
RP 213.93 LAP -1.48 LOP 282.38 VP 22.983 GAP -9.60 AZP 90.55 TAL 329.34 TAP 219.11 RCA 144.92 APO 227.61 V2 25.662
RC 294.131 GL 13.56 GP 3.59 ZAL 133.45 ZAP 55.49 ETS 181.88 ZAE 84.35 ETE 179.44 ZAC 86.71 ETC 258.75 CLP 55.41

PLANETOCENTRIC CONIC

C3 14.639 VHL 3.826 DLA 17.33 RAL 174.13 RAD 6567.6 VEL 11.663 PTH 2.05 VHP 3.575 DPA 13.58 RAP 161.57 ECC 1.2409

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 16 33	2713.81	-27.74	75.56	36.19	95.92	19 1 47	2113.8	-26.63	67.07
90.00	11 0 50	4215.11	.53	172.82	30.50	61.69	12 11 5	3615.1	-3.26	166.19
100.00	19 47 55	2419.19	-29.01	53.72	36.02	97.53	20 28 14	1819.2	-27.67	45.17
100.00	12 12 9	3984.97	1.65	155.28	29.87	60.15	13 18 34	3385.0	-2.34	148.76
110.00	21 18 12	2136.72	-32.30	31.61	35.37	101.84	21 53 49	1536.7	-30.34	22.95
110.00	12 58 22	3840.20	4.48	142.54	28.11	56.08	14 2 22	3240.2	-.00	136.32

DIFFERENTIAL CORRECTIONS
TDE -.9694 TRA 4.6084 TC3-9.6532 BAU 1.8958
RDE .4539 RRA -.1590 RC3 .8032 FAU .36373
FDE-3.4067 FRA11.5552 FC-21.5107 BSP 35736
BDE 1.0704 BRA 4.6111 BC3 9.6866 FSP 7514

MID-COURSE EXECUTION ACCURACY
SGT10437.1 SGR 949.8 SG3 2160.9
RRT -.7395 RRF -.7623 RTF .9961
SGB10480.3 R23 .0339 R13 -.9963
SG110460.8 SG2 637.9 THA 176.14

ORBIT DETERMINATION ACCURACY
ST 2619.2 SR 684.1 SS 2308.4
CRT -.6436 CRS .7597 CST -.9865
LSA 3512.8 MSA 562.7 SSA 18.6
EL1 2657.4 EL2 516.1 ALF 170.08

LAUNCH DATE OCT 26 1964 FLIGHT TIME 364.00 ARRIVAL DATE OCT 25 1965

HELIOCENTRIC CONIC DISTANCE 817.383 EARTH TO MARS

RL 148.69 LAL -.00 LOL 32.61 VL 32.753 GAL -5.53 AZL 88.41 HCA 250.96 SMA 186.31 ECC .22286 INC 1.5889 V1 29.966
RP 213.62 LAP -1.50 LOP 283.57 VP 23.026 GAP -9.77 AZP 90.52 TAL 328.87 TAP 219.83 RCA 144.79 APO 227.83 V2 25.697
RC 295.251 GL 13.53 GP 3.50 ZAL 134.06 ZAP 54.21 ETS 181.94 ZAE 82.79 ETE 179.57 ZAC 86.61 ETC 258.76 CLP 54.13

PLANETOCENTRIC CONIC

C3 14.935 VHL 3.865 DLA 17.05 RAL 174.71 RAD 6567.6 VEL 11.676 PTH 2.05 VHP 3.639 DPA 13.54 RAP 161.45 ECC 1.2458

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 21 36	2707.74	-27.70	75.12	36.99	96.14	19 6 44	2107.7	-26.56	66.64
90.00	11 0 22	4230.11	1.01	173.66	31.28	61.70	12 10 52	3630.1	-2.78	167.03
100.00	19 52 43	2413.91	-28.97	53.33	36.82	97.73	20 32 57	1813.9	-27.59	44.80
100.00	12 11 56	3999.17	2.13	156.06	30.66	60.18	13 18 35	3399.2	-1.86	149.54
110.00	21 22 30	2133.00	-32.25	31.34	36.15	102.00	21 58 3	1533.0	-30.26	22.68
110.00	12 58 38	3852.84	4.96	143.20	28.89	56.14	14 2 51	3252.8	.48	136.98

DIFFERENTIAL CORRECTIONS
TDE-1.0386 TRA 4.8011 TC3-9.6967 BAU 1.9423
RDE .4601 RRA -.1517 RC3 .7734 FAU .34928
FDE-3.3906 FRA11.2724 FC-20.2466 BSP 36570
BDE 1.1360 BRA 4.8035 BC3 9.7275 FSP 7221

MID-COURSE EXECUTION ACCURACY
SGT10675.9 SGR 937.0 SG3 2073.1
RRT -.7279 RRF -.7514 RTF .9961
SGB10717.0 R23 .0346 R13 -.9963
SG110697.8 SG2 641.2 THA 176.33

ORBIT DETERMINATION ACCURACY
ST 2722.3 SR 686.1 SS 2289.0
CRT -.6490 CRS .7624 CST -.9870
LSA 3578.3 MSA 562.3 SSA 18.3
EL1 2759.8 EL2 514.9 ALF 170.37

LAUNCH DATE OCT 26 1964 FLIGHT TIME 366.00 ARRIVAL DATE OCT 27 1965

HELIOCENTRIC CONIC DISTANCE 821.534 EARTH TO MARS

RL 148.69 LAL -.00 LOL 32.61 VL 32.756 GAL -5.63 AZL 88.40 HCA 252.15 SMA 186.36 ECC .22380 INC 1.6012 V1 29.966
RP 213.31 LAP -1.52 LOP 284.76 VP 23.069 GAP -9.94 AZP 90.49 TAL 328.38 TAP 220.53 RCA 144.65 APO 228.07 V2 25.731
RC 296.356 GL 13.49 GP 3.42 ZAL 134.68 ZAP 52.97 ETS 182.00 ZAE 81.28 ETE 179.68 ZAC 86.52 ETC 258.77 CLP 52.89

PLANETOCENTRIC CONIC

C3 15.248 VHL 3.905 DLA 16.76 RAL 175.29 RAD 6567.6 VEL 11.689 PTH 2.06 VHP 3.705 DPA 13.48 RAP 161.36 ECC 1.2510

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 26 46	2701.51	-27.65	74.67	37.81	96.36	19 11 48	2101.5	-26.48	66.20
90.00	10 59 50	4245.65	1.51	174.53	32.08	61.72	12 10 36	3645.7	-2.28	167.90
100.00	19 57 38	2408.48	-28.92	52.94	37.63	97.93	20 37 46	1808.5	-27.52	44.41
100.00	12 11 39	4013.91	2.63	156.87	31.46	60.21	13 18 33	3413.9	-1.36	150.35
110.00	21 26 54	2129.17	-32.20	31.05	36.95	102.16	22 2 23	1529.2	-30.19	22.41
110.00	12 58 52	3865.99	5.46	143.89	29.70	56.20	14 3 18	3266.0	.98	137.67

DIFFERENTIAL CORRECTIONS
TDE-1.1099 TRA 4.9983 TC3-9.7202 BAU 1.9873
RDE .4665 RRA -.1447 RC3 .7444 FAU .33497
FDE-3.3714 FRA10.9937 FC-19.0180 BSP 37404
BDE 1.2040 BRA 5.0004 BC3 9.7487 FSP 6939

MID-COURSE EXECUTION ACCURACY
SGT10906.1 SGR 925.0 SG3 1987.0
RRT -.7163 RRF -.7407 RTF .9961
SGB10945.3 R23 .0353 R13 -.9963
SG110926.3 SG2 644.3 THA 176.51

ORBIT DETERMINATION ACCURACY
ST 2825.6 SR 687.9 SS 2268.6
CRT -.6542 CRS .7652 CST -.9874
LSA 3645.2 MSA 561.7 SSA 18.0
EL1 2862.4 EL2 513.6 ALF 170.65

LAUNCH DATE OCT 26 1964 FLIGHT TIME 368.00 ARRIVAL DATE OCT 29 1965

HELIOCENTRIC CONIC DISTANCE 825.687 EARTH TO MARS

RL 148.69 LAL -.00 LOL 32.61 VL 32.759 GAL -5.73 AZL 88.39 HCA 253.34 SMA 186.42 ECC .22478 INC 1.6133 V1 29.966
RP 213.01 LAP -1.55 LOP 285.95 VP 23.111 GAP -10.11 AZP 90.46 TAL 327.87 TAP 221.22 RCA 144.51 APO 228.32 V2 25.765
RC 297.448 GL 13.44 GP 3.34 ZAL 135.31 ZAP 51.76 ETS 182.05 ZAE 79.80 ETE 179.79 ZAC 86.44 ETC 258.77 CLP 51.68

PLANETOCENTRIC CONIC

C3 15.580 VHL 3.947 DLA 16.46 RAL 175.88 RAD 6567.6 VEL 11.703 PTH 2.06 VHP 3.774 DPA 13.41 RAP 161.32 ECC 1.2564

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 32 2	2695.14	-27.60	74.21	38.64	96.58	19 16 57	2095.1	-26.40	65.75
90.00	10 59 16	4261.72	2.03	175.42	32.90	61.75	12 10 17	3661.7	-1.76	168.80
100.00	20 2 39	2402.93	-28.86	52.53	38.46	98.13	20 42 42	1802.9	-27.44	44.02
100.00	12 11 20	4029.16	3.14	157.71	32.28	60.26	13 18 29	3429.2	-.84	151.19
110.00	21 31 24	2125.24	-32.14	30.76	37.77	102.32	22 6 49	1525.2	-30.11	22.13
110.00	12 59 4	3879.61	5.97	144.61	30.52	56.28	14 3 44	3279.6	1.50	138.38

DIFFERENTIAL CORRECTIONS
TDE-1.1843 TRA 5.1982 TC3-9.7270 BAU 2.0316
RDE .4730 RRA -.1381 RC3 .7165 FAU .32094
FDE-3.3503 FRA10.7166 FC-17.8335 BSP 38201
BDE 1.2753 BRA 5.2001 BC3 9.7533 FSP 6662

MID-COURSE EXECUTION ACCURACY
SGT11127.6 SGR 913.8 SG3 1902.7
RRT -.7049 RRF -.7301 RTF .9961
SGB11165.1 R23 .0360 R13 -.9962
SG111146.3 SG2 647.1 THA 176.68

ORBIT DETERMINATION ACCURACY
ST 2929.1 SR 689.7 SS 2247.4
CRT -.6595 CRS .7681 CST -.9878
LSA 3713.7 MSA 560.7 SSA 17.7
EL1 2965.3 EL2 512.1 ALF 170.90

LAUNCH DATE OCT 26 1964 FLIGHT TIME 370.00 ARRIVAL DATE OCT 31 1965

HELIOCENTRIC CONIC DISTANCE 829.843 EARTH TO MARS

RL 148.69 LAL -.00 LOL 32.61 VL 32.763 GAL -5.84 AZL 88.37 HCA 254.54 SMA 186.47 ECC .22581 INC 1.6253 V1 29.966
RP 212.72 LAP -1.57 LOP 287.15 VP 23.153 GAP -10.27 AZP 90.43 TAL 327.35 TAP 221.89 RCA 144.36 APO 228.58 V2 25.798
RC 298.526 GL 13.39 GP 3.27 ZAL 135.95 ZAP 50.59 ETS 182.10 ZAE 78.35 ETE 179.89 ZAC 86.37 ETC 258.77 CLP 50.51

PLANETOCENTRIC CONIC

C3 15.932 VHL 3.991 DLA 16.15 RAL 176.47 RAD 6567.6 VEL 11.718 PTH 2.06 VHP 3.844 DPA 13.33 RAP 161.31 ECC 1.2622

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 37 24	2688.66	-27.55	73.74	39.49	96.81	19 22 13	2088.7	-26.32	65.29
90.00	10 58 39	4278.29	2.56	176.35	33.74	61.79	12 9 57	3678.3	-1.23	169.72
100.00	20 7 45	2397.28	-28.81	52.12	39.30	98.34	20 47 42	1797.3	-27.35	43.62
100.00	12 10 58	4044.91	3.67	158.58	33.12	60.31	13 18 23	3444.9	-.31	152.05
110.00	21 35 59	2121.24	-32.08	30.46	38.61	102.49	22 11 20	1521.2	-30.03	21.85
110.00	12 59 14	3893.72	6.51	145.36	31.37	56.37	14 4 8	3293.7	2.04	139.12

DIFFERENTIAL CORRECTIONS
TDE-1.2612 TRA 5.4025 TC3-9.7182 BAU 2.0751
RDE .4797 RRA -.1318 RC3 .6897 FAU .30722
FDE-3.3272 FRA10.4423 FC-16.6942 BSP 38980
BDE 1.3494 BRA 5.4041 BC3 9.7426 FSP 6392

MID-COURSE EXECUTION ACCURACY
SGT11342.2 SGR 903.4 SG3 1820.4
RRT -.6937 RRF -.7198 RTF .9960
SGB11378.1 R23 .0368 R13 -.9961
SG111359.5 SG2 649.6 THA 176.83

ORBIT DETERMINATION ACCURACY
ST 3032.9 SR 691.3 SS 2225.3
CRT -.6647 CRS .7712 CST -.9882
LSA 3783.5 MSA 559.5 SSA 17.5
EL1 3068.5 EL2 510.5 ALF 171.14

LAUNCH DATE OCT 26 1964 FLIGHT TIME 372.00 ARRIVAL DATE NOV 2 1965

HELIOCENTRIC CONIC DISTANCE 834.000 EARTH TO MARS

RL 148.69 LAL -.00 LOL 32.61 VL 32.766 GAL -5.96 AZL 88.36 HCA 255.74 SMA 186.53 ECC .22690 INC 1.6372 V1 29.966
RP 212.43 LAP -1.59 LOP 288.35 VP 23.195 GAP -10.44 AZP 90.40 TAL 326.82 TAP 222.56 RCA 144.21 APO 228.85 V2 25.831
RC 299.592 GL 13.33 GP 3.19 ZAL 136.60 ZAP 49.46 ETS 182.15 ZAE 76.94 ETE 179.99 ZAC 86.31 ETC 258.76 CLP 49.38

PLANETOCENTRIC CONIC

C3 16.304 VHL 4.038 DLA 15.82 RAL 177.07 RAD 6567.7 VEL 11.734 PTH 2.07 VHP 3.917 DPA 13.24 RAP 161.35 ECC 1.2683

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 42 51	2682.11	-27.50	73.27	40.36	97.04	19 27 33	2082.1	-26.24	64.83
90.00	10 57 59	4295.36	3.11	177.30	34.60	61.84	12 9 34	3695.4	-.68	170.67
100.00	20 12 57	2391.55	-28.75	51.70	40.16	98.56	20 52 48	1791.5	-27.27	43.22
100.00	12 10 34	4061.14	4.22	159.47	33.98	60.38	13 18 15	3461.1	.24	152.94
110.00	21 40 38	2117.17	-32.02	30.16	39.46	102.66	22 15 56	1517.2	-29.95	21.56
110.00	12 59 22	3908.28	7.05	146.13	32.23	56.47	14 4 30	3308.3	2.60	139.88

DIFFERENTIAL CORRECTIONS
TDE-1.3408 TRA 5.6110 TC3-9.6935 BAU 2.1178
RDE .4866 RRA -.1259 RC3 .6639 FAU .29379
FDE-3.3013 FRA10.1712 FC-15.6002 BSP 39736
BDE 1.4264 BRA 5.6124 BC3 9.7162 FSP 6128

MID-COURSE EXECUTION ACCURACY
SGT11549.2 SGR 893.7 SG3 1740.3
RRT -.6828 RRF -.7097 RTF .9959
SGB11583.7 R23 .0376 R13 -.9960
SG111565.3 SG2 652.0 THA 176.97

ORBIT DETERMINATION ACCURACY
ST 3136.7 SR 692.9 SS 2202.0
CRT -.6698 CRS .7744 CST -.9884
LSA 3854.3 MSA 558.1 SSA 17.3
EL1 3171.7 EL2 508.8 ALF 171.36

LAUNCH DATE OCT 26 1964 FLIGHT TIME 374.00 ARRIVAL DATE NOV 4 1965

HELIOCENTRIC CONIC DISTANCE 838.158 EARTH TO MARS

RL 148.69 LAL -.00 LOL 32.61 VL 32.770 GAL -6.08 AZL 88.35 HCA 256.94 SMA 186.59 ECC .22803 INC 1.6490 V1 29.966
RP 212.15 LAP -1.61 LOP 289.55 VP 23.236 GAP -10.61 AZP 90.37 TAL 326.27 TAP 223.21 RCA 144.04 APO 229.14 V2 25.863
RC 300.645 GL 13.27 GP 3.12 ZAL 137.27 ZAP 48.36 ETS 182.19 ZAE 75.56 ETE 180.08 ZAC 86.26 ETC 258.74 CLP 48.28

PLANETOCENTRIC CONIC

C3 16.697 VHL 4.086 DLA 15.49 RAL 177.68 RAD 6567.7 VEL 11.751 PTH 2.07 VHP 3.991 DPA 13.13 RAP 161.42 ECC 1.2748

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 48 23	2675.48	-27.44	72.80	41.24	97.28	19 32 58	2075.5	-26.15	64.37
90.00	10 57 17	4312.90	3.68	178.28	35.48	61.90	12 9 10	3712.9	-.11	171.65
100.00	20 18 13	2385.76	-28.69	51.28	41.04	98.77	20 57 59	1785.8	-27.18	42.81
100.00	12 10 8	4077.85	4.78	160.39	34.87	60.46	13 18 6	3477.9	.81	153.86
110.00	21 45 22	2113.07	-31.96	29.85	40.32	102.83	22 20 36	1513.1	-29.87	21.27
110.00	12 59 28	3923.31	7.62	146.93	33.12	56.58	14 4 51	3323.3	3.17	140.66

DIFFERENTIAL CORRECTIONS
TDE-1.4222 TRA 5.8250 TC3-9.6520 BAU 2.1593
RDE .4936 RRA -.1205 RC3 .6389 FAU .28061
FDE-3.2723 FRA 9.9054 FC-14.5493 BSP 40499
BDE 1.5054 BRA 5.8262 BC3 9.6731 FSP 5875

MID-COURSE EXECUTION ACCURACY
SGT11748.6 SGR 884.5 SG3 1662.3
RRT -.6722 RRF -.7000 RTF .9958
SGB11781.9 R23 .0385 R13 -.9959
SG111763.7 SG2 654.1 THA 177.09

ORBIT DETERMINATION ACCURACY
ST 3240.0 SR 694.3 SS 2177.7
CRT -.6747 CRS .7775 CST -.9887
LSA 3925.8 MSA 556.7 SSA 17.1
EL1 3274.5 EL2 507.0 ALF 171.57

LAUNCH DATE OCT 26 1964 FLIGHT TIME 376.00 ARRIVAL DATE NOV 6 1965

HELIOCENTRIC CONIC DISTANCE 842.317 EARTH TO MARS

RL 148.69 LAL -.00 LOL 32.61 VL 32.773 GAL -6.20 AZL 88.34 HCA 258.15 SMA 186.65 ECC .22922 INC 1.6607 V1 29.966
RP 211.87 LAP -1.63 LOP 290.76 VP 23.276 GAP -10.77 AZP 90.34 TAL 325.70 TAP 223.85 RCA 143.87 APO 229.44 V2 25.895
RC 301.687 GL 13.19 GP 3.05 ZAL 137.94 ZAP 47.29 ETS 182.23 ZAE 74.22 ETE 180.17 ZAC 86.22 ETC 258.72 CLP 47.21

PLANETOCENTRIC CONIC

C3 17.114 VHL 4.137 DLA 15.15 RAL 178.29 RAD 6567.7 VEL 11.768 PTH 2.08 VHP 4.068 DPA 13.01 RAP 161.52 ECC 1.2816

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 53 59	2668.82	-27.38	72.32	42.14	97.51	19 38 28	2068.8	-26.06	63.90
90.00	10 56 33	4330.89	4.25	179.29	36.38	61.98	12 8 44	3730.9	.47	172.65
100.00	20 23 34	2379.93	-28.63	50.86	41.94	98.98	21 3 14	1779.9	-27.09	42.40
100.00	12 9 40	4095.01	5.36	161.34	35.77	60.55	13 17 55	3495.0	1.39	154.80
110.00	21 50 11	2108.94	-31.90	29.55	41.20	103.00	22 25 20	1508.9	-29.78	20.98
110.00	12 59 32	3938.77	8.20	147.75	34.02	56.70	14 5 11	3338.8	3.76	141.47

DIFFERENTIAL CORRECTIONS
TDE-1.5076 TRA 6.0426 TC3-9.5976 BAU 2.2004
RDE .5009 RRA -.1155 RC3 .6151 FAU .26781
FDE-3.2430 FRA 9.6405 FC-13.5479 BSP 41227
BDE 1.5886 BRA 6.0437 BC3 9.6173 FSP 5628

MID-COURSE EXECUTION ACCURACY
SGT11941.0 SGR 876.1 SG3 1586.5
RRT -.6620 RRF -.6907 RTF .9957
SGB11973.1 R23 .0394 R13 -.9958
SG111955.2 SG2 655.9 THA 177.21

ORBIT DETERMINATION ACCURACY
ST 3343.9 SR 695.6 SS 2152.6
CRT -.6798 CRS .7809 CST -.9889
LSA 3998.9 MSA 554.9 SSA 16.9
EL1 3378.0 EL2 505.0 ALF 171.77

LAUNCH DATE OCT 26 1964 FLIGHT TIME 378.00 ARRIVAL DATE NOV 8 1965

HELIOCENTRIC CONIC DISTANCE 846.477 EARTH TO MARS

RL 148.69 LAL -.00 LOL 32.61 VL 32.777 GAL -6.33 AZL 88.33 HCA 259.36 SMA 186.72 ECC .23047 INC 1.6724 V1 29.966
RP 211.60 LAP -1.64 LOP 291.97 VP 23.316 GAP -10.94 AZP 90.31 TAL 325.12 TAP 224.48 RCA 143.69 APO 229.75 V2 25.926
RC 302.717 GL 13.12 GP 2.98 ZAL 138.62 ZAP 46.25 ETS 182.26 ZAE 72.90 ETE 180.25 ZAC 86.18 ETC 258.69 CLP 46.18

PLANETOCENTRIC CONIC

C3 17.554 VHL 4.190 DLA 14.79 RAL 178.91 RAD 6567.7 VEL 11.787 PTH 2.08 VHP 4.147 DPA 12.88 RAP 161.66 ECC 1.2889

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 59 40	2662.14	-27.32	71.84	43.06	97.74	19 44 2	2062.1	-25.97	63.43
90.00	10 55 48	4349.34	4.84	180.33	37.30	62.07	12 8 17	3749.3	1.07	173.68
100.00	20 28 59	2374.09	-28.57	50.44	42.85	99.20	21 8 33	1774.1	-27.00	41.99
100.00	12 9 10	4112.62	5.95	162.32	36.69	60.65	13 17 42	3512.6	1.99	155.77
110.00	21 55 3	2104.81	-31.83	29.24	42.10	103.17	22 30 8	1504.8	-29.69	20.69
110.00	12 59 35	3954.67	8.79	148.60	34.95	56.83	14 5 30	3354.7	4.36	142.31

DIFFERENTIAL CORRECTIONS
TDE-1.5953 TRA 6.2656 TC3-9.5285 BAU 2.2405
RDE .5083 RRA -.1108 RC3 .5922 FAU .25537
FDE-3.2107 FRA 9.3803 FC-12.5943 BSP 41940
BDE 1.6743 BRA 6.2666 BC3 9.5469 FSP 5388

MID-COURSE EXECUTION ACCURACY
SGT12126.4 SGR 868.3 SG3 1513.1
RRT -.6522 RRF -.6819 RTF .9956
SGB12157.4 R23 .0404 R13 -.9957
SG112139.6 SG2 657.5 THA 177.32

ORBIT DETERMINATION ACCURACY
ST 3447.4 SR 696.9 SS 2126.4
CRT -.6847 CRS .7844 CST -.9891
LSA 4072.6 MSA 553.0 SSA 16.7
EL1 3481.0 EL2 503.0 ALF 171.95

LAUNCH DATE OCT 26 1964 FLIGHT TIME 380.00 ARRIVAL DATE NOV 10 1965

HELIOCENTRIC CONIC DISTANCE 850.636 EARTH TO MARS

RL 148.69 LAL -.00 LOL 32.61 VL 32.781 GAL -6.46 AZL 88.32 HCA 260.57 SMA 186.79 ECC .23177 INC 1.6839 V1 29.966
RP 211.33 LAP -1.66 LOP 293.18 VP 23.355 GAP -11.10 AZP 90.28 TAL 324.52 TAP 225.09 RCA 143.50 APO 230.08 V2 25.956
RC 303.736 GL 13.03 GP 2.92 ZAL 139.32 ZAP 45.25 ETS 182.29 ZAE 71.62 ETE 180.33 ZAC 86.16 ETC 258.66 CLP 45.18

PLANETOCENTRIC CONIC

C3 18.021 VHL 4.245 DLA 14.43 RAL 179.53 RAD 6567.7 VEL 11.807 PTH 2.09 VHP 4.228 DPA 12.74 RAP 161.83 ECC 1.2966

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 5 24	2655.46	-27.26	71.36	43.99	97.97	19 49 40	2055.5	-25.88	62.96
90.00	10 55 0	4368.21	5.44	181.39	38.24	62.17	12 7 49	3768.2	1.68	174.74
100.00	20 34 28	2368.25	-28.50	50.02	43.77	99.41	21 13 56	1768.2	-26.91	41.58
100.00	12 8 38	4130.66	6.55	163.32	37.64	60.77	13 17 29	3530.7	2.60	156.76
110.00	21 59 58	2100.68	-31.77	28.94	43.01	103.34	22 34 59	1500.7	-29.61	20.40
110.00	12 59 37	3970.99	9.40	149.47	35.90	56.98	14 5 48	3371.0	4.98	143.16

DIFFERENTIAL CORRECTIONS
TDE-1.6856 TRA 6.4936 TC3-9.4478 BAU 2.2803
RDE .5160 RRA -.1066 RC3 .5702 FAU .24325
FDE-3.1762 FRA 9.1231 FC-11.6859 BSP 42635
BDE 1.7628 BRA 6.4945 BC3 9.4650 FSP 5155

MID-COURSE EXECUTION ACCURACY
SGT12305.3 SGR 861.1 SG3 1441.8
RRT -.6429 RRF -.6735 RTF .9954
SGB12335.4 R23 .0414 R13 -.9955
SG112317.8 SG2 658.8 THA 177.42

ORBIT DETERMINATION ACCURACY
ST 3550.4 SR 698.0 SS 2099.0
CRT -.6896 CRS .7879 CST -.9892
LSA 4146.6 MSA 550.9 SSA 16.6
EL1 3583.5 EL2 500.8 ALF 172.12

LAUNCH DATE OCT 26 1964 FLIGHT TIME 382.00 ARRIVAL DATE NOV 12 1965

HELIOCENTRIC CONIC DISTANCE 854.794 EARTH TO MARS

RL 148.69 LAL -.00 LOL 32.61 VL 32.785 GAL -6.59 AZL 88.30 HCA 261.79 SMA 186.86 ECC .23313 INC 1.6954 V1 29.966
RP 211.08 LAP -1.68 LOP 294.[illegible] VP 23.394 GAP -11.27 AZP 90.24 TAL 323.90 TAP 225.69 RCA 143.29 APO 230.42 V2 25.986
RC 304.746 GL 12.94 GP 2.[illegible] ZAL 140.02 ZAP 44.28 ETS 182.32 ZAE 70.36 ETE 180.41 ZAC 86.14 ETC 258.62 CLP 44.21

PLANETOCENTRIC CONIC

C3 18.514 VHL 4.303 DLA 14.06 RAL 180.15 RAD 6567.7 VEL 11.828 PTH 2.09 VHP 4.311 DPA 12.59 RAP 162.04 ECC 1.3047

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 11 12	2648.81	-27.20	70.88	44.94	98.20	19 55 20	2048.8	-25.78	62.50
90.00	10 54 12	4387.50	6.05	182.48	39.21	62.29	12 7 19	3787.5	2.30	175.81
100.00	20 40 0	2362.43	-28.44	49.60	44.72	99.62	21 19 22	1762.4	-26.81	41.17
100.00	12 8 5	4149.12	7.16	164.35	38.60	60.90	13 17 14	3549.1	3.22	157.77
110.00	22 4 57	2096.59	-31.70	28.64	43.94	103.51	22 39 54	1496.6	-29.52	20.11
110.00	12 59 36	3987.72	10.02	150.37	36.87	57.15	14 6 4	3387.7	5.62	144.04

DIFFERENTIAL CORRECTIONS
TDE-1.7796 TRA 6.7272 TC3-9.3555 BAU 2.3196
RDE .5239 RRA -.1028 RC3 .5492 FAU .23150
FDE-3.1408 FRA 8.8693 FC-10.8254 BSP 43308
BDE 1.8551 BRA 6.7280 BC3 9.3716 FSP 4928

MID-COURSE EXECUTION ACCURACY
SGT12478.5 SGR 854.4 SG3 1373.0
RRT -.6342 RRF -.6657 RTF .9952
SGB12507.7 R23 .0424 R13 -.9953
SG112490.3 SG2 659.9 THA 177.51

ORBIT DETERMINATION ACCURACY
ST 3653.6 SR 699.0 SS 2070.9
CRT -.6945 CRS .7915 CST -.9894
LSA 4221.9 MSA 548.6 SSA 16.4
EL1 3686.3 EL2 498.5 ALF 172.29

LAUNCH DATE OCT 26 1964 FLIGHT TIME 384.00 ARRIVAL DATE NOV 14 1965

HELIOCENTRIC CONIC DISTANCE 858.951 EARTH TO MARS

RL 148.69 LAL -.00 LOL 32.61 VL 32.789 GAL -6.73 AZL 88.29 HCA 263.00 SMA 186.93 ECC .23455 INC 1.7069 V1 29.966
RP 210.82 LAP -1.69 LOP 295.61 VP 23.432 GAP -11.44 AZP 90.21 TAL 323.27 TAP 226.28 RCA 143.08 APO 230.77 V2 26.015
RC 305.746 GL 12.85 GP 2.80 ZAL 140.73 ZAP 43.34 ETS 182.34 ZAE 69.13 ETE 180.48 ZAC 86.13 ETC 258.58 CLP 43.26

PLANETOCENTRIC CONIC

C3 19.036 VHL 4.363 DLA 13.69 RAL 180.78 RAD 6567.8 VEL 11.850 PTH 2.10 VHP 4.396 DPA 12.43 RAP 162.27 ECC 1.3133

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 17 2	2642.20	-27.13	70.41	45.90	98.43	20 1 4	2042.2	-25.69	62.04
90.00	10 53 22	4407.19	6.68	183.59	40.19	62.42	12 6 49	3807.2	2.93	176.91
100.00	20 45 34	2356.65	-28.37	49.18	45.67	99.83	21 24 51	1756.6	-26.72	40.77
100.00	12 7 30	4167.98	7.78	165.40	39.59	61.05	13 16 58	3568.0	3.86	158.81
110.00	22 9 59	2092.53	-31.64	28.34	44.89	103.67	22 44 52	1492.5	-29.44	19.82
110.00	12 59 35	4004.86	10.65	151.30	37.86	57.32	14 6 20	3404.9	6.27	144.95

DIFFERENTIAL CORRECTIONS
TDE-1.8763 TRA 6.9664 TC3-9.2515 BAU 2.3583
RDE .5320 RRA -.0995 RC3 .5290 FAU .22012
FDE-3.1028 FRA 8.6189 FC-10.0109 BSP 43983
BDE 1.9503 BRA 6.9671 BC3 9.2666 FSP 4711

MID-COURSE EXECUTION ACCURACY
SGT12645.1 SGR 848.1 SG3 1306.4
RRT -.6260 RRF -.6586 RTF .9950
SGB12673.5 R23 .0435 R13 -.9951
SG112656.2 SG2 660.8 THA 177.59

ORBIT DETERMINATION ACCURACY
ST 3756.1 SR 700.0 SS 2041.4
CRT -.6994 CRS .7952 CST -.9895
LSA 4297.3 MSA 546.1 SSA 16.3
EL1 3788.5 EL2 496.1 ALF 172.44

LAUNCH DATE OCT 26 1964 FLIGHT TIME 386.00 ARRIVAL DATE NOV 16 1965

HELIOCENTRIC CONIC DISTANCE 863.106 EARTH TO MARS

RL 148.69 LAL -.00 LOL 32.61 VL 32.793 GAL -6.88 AZL 88.28 HCA 264.23 SMA 187.00 ECC .23604 INC 1.7184 V1 29.966
RP 210.58 LAP -1.71 LOP 296.84 VP 23.469 GAP -11.60 AZP 90.17 TAL 322.62 TAP 226.85 RCA 142.86 APO 231.14 V2 26.043
RC 306.737 GL 12.74 GP 2.74 ZAL 141.44 ZAP 42.42 ETS 182.37 ZAE 67.93 ETE 180.55 ZAC 86.13 ETC 258.54 CLP 42.35

PLANETOCENTRIC CONIC

C3 19.589 VHL 4.426 DLA 13.30 RAL 181.41 RAD 6567.8 VEL 11.873 PTH 2.11 VHP 4.484 DPA 12.25 RAP 162.54 ECC 1.3224

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 22 55	2635.65	-27.07	69.94	46.88	98.66	20 6 50	2035.6	-25.59	61.58
90.00	10 52 31	4427.28	7.34	184.73	41.20	62.57	12 6 18	3827.3	3.58	178.04
100.00	20 51 12	2350.93	-28.30	48.77	46.65	100.04	21 30 23	1750.9	-26.63	40.37
100.00	12 6 55	4187.23	8.41	166.48	40.60	61.21	13 16 42	3587.2	4.51	159.87
110.00	22 15 3	2088.54	-31.57	28.05	45.85	103.83	22 49 52	1488.5	-29.35	19.54
110.00	12 59 33	4022.38	11.29	152.25	38.87	57.52	14 6 35	3422.4	6.93	145.87

DIFFERENTIAL CORRECTIONS
TDE-1.9762 TRA 7.2118 TC3-9.1378 BAU 2.3968
RDE .5405 RRA -.0965 RC3 .5097 FAU .20909
FDE-3.0637 FRA 8.3715 FC3-9.2409 BSP 44628
BDE 2.0488 BRA 7.2124 BC3 9.1520 FSP 4498

MID-COURSE EXECUTION ACCURACY
SGT12806.4 SGR 842.3 SG3 1242.0
RRT -.6184 RRF -.6520 RTF .9948
SGB12834.1 R23 .0447 R13 -.9949
SG112817.0 SG2 661.4 THA 177.66

ORBIT DETERMINATION ACCURACY
ST 3858.4 SR 700.8 SS 2011.1
CRT -.7042 CRS .7990 CST -.9895
LSA 4373.4 MSA 543.6 SSA 16.1
EL1 3890.3 EL2 493.5 ALF 172.59

LAUNCH DATE OCT 26 1964 FLIGHT TIME 388.00 ARRIVAL DATE NOV 18 1965

HELIOCENTRIC CONIC DISTANCE 867.259 EARTH TO MARS

RL 148.69 LAL -.00 LOL 32.61 VL 32.798 GAL -7.03 AZL 88.27 HCA 265.45 SMA 187.08 ECC .23760 INC 1.7299 V1 29.966
RP 210.34 LAP -1.72 LOP 298.06 VP 23.506 GAP -11.77 AZP 90.14 TAL 321.96 TAP 227.41 RCA 142.63 APO 231.52 V2 26.071
RC 307.719 GL 12.64 GP 2.68 ZAL 142.17 ZAP 41.53 ETS 182.39 ZAE 66.76 ETE 180.61 ZAC 86.14 ETC 258.49 CLP 41.46

PLANETOCENTRIC CONIC

C3 20.173 VHL 4.491 DLA 12.91 RAL 182.04 RAD 6567.8 VEL 11.898 PTH 2.11 VHP 4.573 DPA 12.07 RAP 162.84 ECC 1.3320

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 28 50	2629.18	-27.00	69.48	47.87	98.88	20 12 39	2029.2	-25.49	61.13
90.00	10 51 39	4447.73	7.95	185.89	42.23	62.73	12 5 46	3847.7	4.23	179.18
100.00	20 56 52	2345.28	-28.24	48.36	47.64	100.24	21 35 57	1745.3	-26.53	39.97
100.00	12 6 18	4206.87	9.06	167.59	41.64	61.39	13 16 25	3606.9	5.17	160.96
110.00	22 20 10	2084.62	-31.51	27.76	46.83	103.99	22 54 55	1484.6	-29.27	19.27
110.00	12 59 29	4040.29	11.94	153.22	39.91	57.73	14 6 49	3440.3	7.60	146.82

DIFFERENTIAL CORRECTIONS
TDE-2.0797 TRA 7.4630 TC3-9.0155 BAU 2.4351
RDE .5491 RRA -.0941 RC3 .4912 FAU .19846
FDE-3.0232 FRA 8.1263 FC3-8.5167 BSP 45256
BDE 2.1510 BRA 7.4635 BC3 9.0289 FSP 4291

MID-COURSE EXECUTION ACCURACY
SGT12962.3 SGR 837.0 SG3 1180.0
RRT -.6115 RRF -.6462 RTF .9946
SGB12989.3 R23 .0461 R13 -.9947
SG112972.4 SG2 661.8 THA 177.73

ORBIT DETERMINATION ACCURACY
ST 3960.2 SR 701.6 SS 1979.7
CRT -.7090 CRS .8029 CST -.9896
LSA 4449.9 MSA 540.9 SSA 16.0
EL1 3991.8 EL2 490.9 ALF 172.73

LAUNCH DATE OCT 26 1964 FLIGHT TIME 390.00 ARRIVAL DATE NOV 20 1965

HELIOCENTRIC CONIC DISTANCE 871.409 EARTH TO MARS

RL 148.69 LAL -.00 LOL 32.61 VL 32.802 GAL -7.19 AZL 88.26 HCA 266.68 SMA 187.15 ECC .23922 INC 1.7413 V1 29.966
RP 210.10 LAP -1.74 LOP 299.29 VP 23.542 GAP -11.94 AZP 90.10 TAL 321.28 TAP 227.96 RCA 142.38 APO 231.92 V2 26.098
RC 308.691 GL 12.53 GP 2.63 ZAL 142.90 ZAP 40.67 ETS 182.41 ZAE 65.61 ETE 180.68 ZAC 86.16 ETC 258.43 CLP 40.60

PLANETOCENTRIC CONIC

C3 20.792 VHL 4.560 DLA 12.51 RAL 182.68 RAD 6567.8 VEL 11.924 PTH 2.12 VHP 4.665 DPA 11.88 RAP 163.16 ECC 1.3422

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 34 47	2622.80	-26.93	69.02	48.88	99.10	20 18 30	2022.8	-25.40	60.69
90.00	10 50 46	4468.56	8.59	187.08	43.28	62.92	12 5 14	3868.6	4.90	180.35
100.00	21 2 34	2339.72	-28.17	47.96	48.64	100.44	21 41 33	1739.7	-26.44	39.59
100.00	12 5 40	4226.87	9.71	168.72	42.69	61.59	13 16 7	3626.9	5.84	162.07
110.00	22 25 19	2080.79	-31.45	27.48	47.82	104.15	22 59 59	1480.8	-29.18	19.00
110.00	12 59 25	4058.57	12.61	154.23	40.97	57.96	14 7 3	3458.6	8.28	147.80

DIFFERENTIAL CORRECTIONS
TDE-2.1869 TRA 7.7198 TC3-8.8854 BAU 2.4734
RDE .5581 RRA -.0920 RC3 .4735 FAU .18818
FDE-2.9812 FRA 7.8836 FC3-7.8352 BSP 45853
BDE 2.2570 BRA 7.7204 BC3 8.8980 FSP 4090

MID-COURSE EXECUTION ACCURACY
SGT13112.6 SGR 832.0 SG3 1120.0
RRT -.6052 RRF -.6410 RTF .9943
SGB13139.0 R23 .0474 R13 -.9944
SG113122.3 SG2 661.9 THA 177.80

ORBIT DETERMINATION ACCURACY
ST 4061.4 SR 702.3 SS 1947.3
CRT -.7138 CRS .8069 CST -.9896
LSA 4526.7 MSA 538.0 SSA 15.8
EL1 4092.7 EL2 488.1 ALF 172.86

LAUNCH DATE OCT 26 1964 FLIGHT TIME 392.00 ARRIVAL DATE NOV 22 1965

HELIOCENTRIC CONIC DISTANCE 875.555 EARTH TO MARS

RL 148.69 LAL -.00 LOL 32.61 VL 32.807 GAL -7.35 AZL 88.25 HCA 267.91 SMA 187.23 ECC .24091 INC 1.7527 V1 29.966
RP 209.88 LAP -1.75 LOP 300.52 VP 23.577 GAP -12.12 AZP 90.06 TAL 320.58 TAP 228.49 RCA 142.13 APO 232.34 V2 26.124
RC 309.654 GL 12.41 GP 2.57 ZAL 143.63 ZAP 39.84 ETS 182.42 ZAE 64.49 ETE 180.74 ZAC 86.18 ETC 258.38 CLP 39.77

PLANETOCENTRIC CONIC

C3 21.447 VHL 4.631 DLA 12.11 RAL 183.31 RAD 6567.9 VEL 11.951 PTH 2.13 VHP 4.759 DPA 11.67 RAP 163.51 ECC 1.3530

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 40 46	2616.54	-26.86	68.58	49.91	99.31	20 24 22	2016.5	-25.30	60.26
90.00	10 49 52	4489.73	9.25	188.29	44.36	63.12	12 4 42	3889.7	5.57	181.54
100.00	21 8 17	2334.27	-28.10	47.57	49.67	100.64	21 47 12	1734.3	-26.34	39.21
100.00	12 5 2	4247.22	10.36	169.87	43.77	61.80	13 15 49	3647.2	6.51	163.20
110.00	22 30 29	2077.06	-31.38	27.20	48.83	104.30	23 5 6	1477.1	-29.10	18.74
110.00	12 59 19	4077.21	13.28	155.25	42.05	58.21	14 7 17	3477.2	8.98	148.79

DIFFERENTIAL CORRECTIONS
TDE-2.2979 TRA 7.9836 TC3-8.7479 BAU 2.5117
RDE .5674 RRA -.0905 RC3 .4566 FAU .17825
FDE-2.9381 FRA 7.6440 FC3-7.1950 BSP 46425
BDE 2.3669 BRA 7.9841 BC3 8.7598 FSP 3894

MID-COURSE EXECUTION ACCURACY
SGT13258.2 SGR 827.5 SG3 1062.3
RRT -.5996 RRF -.6366 RTF .9940
SGB13284.0 R23 .0489 R13 -.9941
SG113267.5 SG2 661.7 THA 177.85

ORBIT DETERMINATION ACCURACY
ST 4162.4 SR 702.9 SS 1914.1
CRT -.7187 CRS .8110 CST -.9896
LSA 4604.0 MSA 534.9 SSA 15.7
EL1 4193.3 EL2 485.1 ALF 172.99

LAUNCH DATE OCT 26 1964 FLIGHT TIME 394.00 ARRIVAL DATE NOV 24 1965

HELIOCENTRIC CONIC DISTANCE 879.696 EARTH TO MARS

RL 148.69 LAL -.00 LOL 32.61 VL 32.811 GAL -7.52 AZL 88.24 HCA 269.14 SMA 187.31 ECC .24268 INC 1.7641 V1 29.966
RP 209.66 LAP -1.76 LOP 301.75 VP 23.612 GAP -12.29 AZP 90.03 TAL 319.87 TAP 229.01 RCA 141.86 APO 232.77 V2 26.149
RC 310.607 GL 12.29 GP 2.52 ZAL 144.37 ZAP 39.03 ETS 182.44 ZAE 63.39 ETE 180.80 ZAC 86.21 ETC 258.32 CLP 38.96

PLANETOCENTRIC CONIC

C3 22.141 VHL 4.705 DLA 11.69 RAL 183.95 RAD 6567.9 VEL 11.980 PTH 2.14 VHP 4.855 DPA 11.46 RAP 163.89 ECC 1.3644

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 46 46	2610.40	-26.79	68.14	50.95	99.52	20 30 16	2010.4	-25.20	59.83
90.00	10 48 58	4511.25	9.91	189.53	45.46	63.34	12 4 9	3911.2	6.25	182.76
100.00	21 14 2	2328.94	-28.03	47.19	50.70	100.83	21 52 51	1728.9	-26.25	38.84
100.00	12 4 23	4267.94	11.03	171.05	44.87	62.04	13 15 31	3667.9	7.20	164.35
110.00	22 35 41	2073.45	-31.32	26.94	49.85	104.44	23 10 15	1473.4	-29.02	18.49
110.00	12 59 13	4096.20	13.96	156.31	43.16	58.47	14 7 29	3496.2	9.68	149.81

DIFFERENTIAL CORRECTIONS
TDE-2.4123 TRA 8.2539 TC3-8.6039 BAU 2.5502
RDE .5770 RRA -.0894 RC3 .4403 FAU .16866
FDE-2.8932 FRA 7.4063 FC3-6.5947 BSP 46981
BDE 2.4803 BRA 8.2544 BC3 8.6152 FSP 3705

MID-COURSE EXECUTION ACCURACY
SGT13398.8 SGR 823.2 SG3 1006.6
RRT -.5947 RRF -.6329 RTF .9937
SGB13424.0 R23 .0504 R13 -.9938
SG113407.7 SG2 661.3 THA 177.90

ORBIT DETERMINATION ACCURACY
ST 4262.3 SR 703.4 SS 1879.6
CRT -.7235 CRS .8152 CST -.9896
LSA 4681.0 MSA 531.8 SSA 15.6
EL1 4293.0 EL2 482.1 ALF 173.10

LAUNCH DATE OCT 26 1964 FLIGHT TIME 396.00 ARRIVAL DATE NOV 26 1965

HELIOCENTRIC CONIC DISTANCE 883.832 EARTH TO MARS

RL 148.69 LAL -.00 LOL 32.61 VL 32.816 GAL -7.69 AZL 88.22 HCA 270.37 SMA 187.40 ECC .24453 INC 1.7755 V1 29.966
RP 209.44 LAP -1.78 LOP 302.99 VP 23.645 GAP -12.47 AZP 89.99 TAL 319.14 TAP 229.51 RCA 141.57 APO 233.22 V2 26.174
RC 311.551 GL 12.16 GP 2.48 ZAL 145.12 ZAP 38.25 ETS 182.45 ZAE 62.31 ETE 180.85 ZAC 86.25 ETC 258.25 CLP 38.18

PLANETOCENTRIC CONIC

C3 22.876 VHL 4.783 DLA 11.28 RAL 184.59 RAD 6567.9 VEL 12.011 PTH 2.14 VHP 4.954 DPA 11.24 RAP 164.29 ECC 1.3765

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 52 47	2604.40	-26.73	67.72	52.01	99.72	20 36 12	2004.4	-25.11	59.42
90.00	10 48 4	4533.09	10.57	190.79	46.59	63.58	12 3 37	3933.1	6.94	183.99
100.00	21 19 49	2323.75	-27.97	46.82	51.76	101.01	21 58 32	1723.7	-26.16	38.48
100.00	12 3 43	4288.98	11.70	172.25	46.00	62.29	13 15 12	3689.0	7.90	165.53
110.00	22 40 55	2069.96	-31.26	26.69	50.90	104.58	23 15 25	1470.0	-28.95	18.25
110.00	12 59 7	4115.53	14.64	157.39	44.29	58.76	14 7 42	3515.5	10.40	150.85

DIFFERENTIAL CORRECTIONS
TDE-2.5314 TRA 8.5300 TC3-8.4567 BAU 2.5895
RDE .5869 RRA -.0887 RC3 .4249 FAU .15947
FDE-2.8477 FRA 7.1701 FC3-6.0352 BSP 47489
BDE 2.5985 BRA 8.5305 BC3 8.4673 FSP 3519

MID-COURSE EXECUTION ACCURACY
SGT13535.3 SGR 819.3 SG3 953.1
RRT -.5906 RRF -.6301 RTF .9933
SGB13560.1 R23 .0521 R13 -.9934
SG113544.0 SG2 660.7 THA 177.95

ORBIT DETERMINATION ACCURACY
ST 4361.9 SR 703.9 SS 1844.4
CRT -.7284 CRS .8195 CST -.9895
LSA 4758.5 MSA 528.4 SSA 15.4
EL1 4392.3 EL2 478.9 ALF 173.21

LAUNCH DATE OCT 26 1964 FLIGHT TIME 398.00 ARRIVAL DATE NOV 28 1965

HELIOCENTRIC CONIC DISTANCE 887.962 EARTH TO MARS

RL 148.69 LAL -.00 LOL 32.61 VL 32.821 GAL -7.87 AZL 88.21 HCA 271.61 SMA 187.48 ECC .24646 INC 1.7870 V1 29.966
RP 209.24 LAP -1.79 LOP 304.22 VP 23.678 GAP -12.64 AZP 89.95 TAL 318.39 TAP 230.00 RCA 141.27 APO 233.68 V2 26.198
RC 312.486 GL 12.03 GP 2.43 ZAL 145.87 ZAP 37.48 ETS 182.47 ZAE 61.26 ETE 180.91 ZAC 86.30 ETC 258.19 CLP 37.42

PLANETOCENTRIC CONIC

C3 23.654 VHL 4.864 DLA 10.86 RAL 185.24 RAD 6568.0 VEL 12.043 PTH 2.15 VHP 5.055 DPA 11.01 RAP 164.71 ECC 1.3893

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 58 50	2598.56	-26.66	67.30	53.09	99.92	20 42 8	1998.6	-25.02	59.02
90.00	10 47 9	4555.25	11.24	192.07	47.73	63.84	12 3 4	3955.3	7.64	185.25
100.00	21 25 36	2318.70	-27.90	46.46	52.83	101.19	22 4 15	1718.7	-26.07	38.13
100.00	12 3 3	4310.35	12.37	173.48	47.15	62.57	13 14 54	3710.3	8.60	166.72
110.00	22 46 9	2066.62	-31.21	26.44	51.95	104.72	23 20 36	1466.6	-28.87	18.02
110.00	12 58 59	4135.19	15.33	158.49	45.45	59.07	14 7 54	3535.2	11.12	151.92

DIFFERENTIAL CORRECTIONS
TDE-2.6540 TRA 8.8147 TC3-8.3016 BAU 2.6284
RDE .5971 RRA -.0886 RC3 .4100 FAU .15055
FDE-2.8004 FRA 6.9367 FC3-5.5102 BSP 47999
BDE 2.7203 BRA 8.8152 BC3 8.3117 FSP 3340

MID-COURSE EXECUTION ACCURACY
SGT13666.8 SGR 815.5 SG3 901.4
RRT -.5871 RRF -.6279 RTF .9929
SGB13691.1 R23 .0539 R13 -.9930
SG113675.2 SG2 659.8 THA 177.99

ORBIT DETERMINATION ACCURACY
ST 4460.5 SR 704.2 SS 1808.0
CRT -.7333 CRS .8239 CST -.9894
LSA 4835.9 MSA 525.0 SSA 15.3
EL1 4490.7 EL2 475.6 ALF 173.32

LAUNCH DATE OCT 27 1964 FLIGHT TIME 240.00 ARRIVAL DATE JUN 24 1965

HELIOCENTRIC CONIC DISTANCE 572.606 EARTH TO MARS

RL 148.65 LAL -.00 LOL 33.61 VL 33.180 GAL -5.07 AZL 95.71 HCA 183.83 SMA 193.85 ECC .24845 INC 5.7143 V1 29.974
RP 236.29 LAP .38 LOP 217.42 VP 20.945 GAP 6.91 AZP 84.30 TAL 334.12 TAP 157.94 RCA 145.68 APO 242.01 V2 23.261
RC 193.877 GL -40.76 GP 27.63 ZAL 119.28 ZAP 140.42 ETS 139.13 ZAE 149.71 ETE 67.59 ZAC 116.32 ETC 254.26 CLP 150.45

PLANETOCENTRIC CONIC

C3 25.416 VHL 5.041 DLA -31.00 RAL 148.07 RAD 6568.0 VEL 12.116 PTH 2.17 VHP 5.862 DPA 22.98 RAP 199.83 ECC 1.4183

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
76.83	23 4 3	1287.37	19.80	353.52	21.24	114.35	23 25 30	687.4	22.92	346.03
103.17	2 37 33	613.70	19.81	303.80	21.25	114.34	2 47 47	13.7	22.93	296.31
76.83	23 4 3	1287.37	19.80	353.52	21.24	114.35	23 25 30	687.4	22.92	346.03
103.17	2 37 33	613.70	19.81	303.80	21.25	114.34	2 47 47	13.7	22.93	296.31
110.00	1 31 28	820.67	9.77	313.85	15.59	122.92	1 45 8	220.7	14.03	307.35
110.00	5 13 15	5416.44	30.53	249.07	25.61	106.19	6 43 31	4816.4	32.44	240.38

DIFFERENTIAL CORRECTIONS
TDE 2.2394 TRA-2.2559 TC3 1.6738 BAU .8298
RDE 1.8478 RRA-1.2241 RC3 1.7785 FAU .15607
FDE-5.1666 FRA 3.2389 FC3-5.3162 BSP 18161
BDE 2.9033 BRA 2.5666 BC3 2.4423 FSP 2480

MID-COURSE EXECUTION ACCURACY
SGT 4274.5 SGR 3203.1 SG3 780.7
RRT .9659 RRF -.9989 RTF -.9536
SGB 5341.5 R23 -.2104 R13 -.9775
SG1 5299.5 SG2 668.5 THA 36.57

ORBIT DETERMINATION ACCURACY
ST 2699.1 SR 2156.4 SS 3045.9
CRT .9938 CRS .9999 CST .9924
LSA 4598.3 MSA 261.4 SSA 1.9
EL1 3449.7 EL2 187.3 ALF 38.58

LAUNCH DATE OCT 27 1964 FLIGHT TIME 242.00 ARRIVAL DATE JUN 26 1965

HELIOCENTRIC CONIC DISTANCE 576.213 EARTH TO MARS

RL 148.65 LAL -.00 LOL 33.61 VL 33.155 GAL -4.98 AZL 94.19 HCA 184.79 SMA 193.37 ECC .24622 INC 4.1920 V1 29.974
RP 235.94 LAP .35 LOP 218.39 VP 20.944 GAP 6.49 AZP 85.82 TAL 334.37 TAP 159.16 RCA 145.76 APO 240.99 V2 23.297
RC 196.086 GL -32.24 GP 23.27 ZAL 122.24 ZAP 142.84 ETS 143.89 ZAE 153.82 ETE 65.15 ZAC 112.24 ETC 254.75 CLP 150.17

PLANETOCENTRIC CONIC

C3 20.492 VHL 4.527 DLA -22.92 RAL 151.26 RAD 6567.8 VEL 11.911 PTH 2.12 VHP 5.500 DPA 18.80 RAP 198.35 ECC 1.3372

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	22 28 45	1409.63	4.67	354.85	14.24	117.96	22 52 15	809.6	8.38	348.13
90.00	3 38 20	5674.77	27.80	267.61	21.44	95.60	5 12 54	5074.8	28.29	258.98
100.00	23 32 47	1202.96	3.03	338.76	13.33	119.75	23 52 50	603.0	6.97	332.18
100.00	5 16 59	5356.66	29.67	244.39	21.62	93.83	6 46 16	4756.7	29.88	235.59
110.00	0 9 39	1099.66	-.80	328.54	10.94	124.17	0 27 59	499.7	3.69	322.33
110.00	7 0 32	5032.73	34.18	219.94	21.77	89.44	8 24 24	4432.7	33.72	210.72

DIFFERENTIAL CORRECTIONS
TDE 1.8401 TRA-2.2748 TC3 2.0476 BAU .7537
RDE 1.2739 RRA-1.0776 RC3 1.8376 FAU .17414
FDE-4.7157 FRA 3.9478 FC3-7.3571 BSP 17472
BDE 2.2381 BRA 2.5171 BC3 2.7513 FSP 2888

MID-COURSE EXECUTION ACCURACY
SGT 4316.6 SGR 2749.7 SG3 903.8
RRT .9663 RRF -.9992 RTF -.9569
SGB 5118.0 R23 -.2178 R13 -.9757
SG1 5082.5 SG2 601.5 THA 32.12

ORBIT DETERMINATION ACCURACY
ST 2511.4 SR 1673.3 SS 2941.6
CRT .9935 CRS 1.0000 CST .9932
LSA 4207.7 MSA 234.4 SSA 3.3
EL1 3013.6 EL2 158.8 ALF 33.61

LAUNCH DATE OCT 27 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUN 28 1965

HELIOCENTRIC CONIC DISTANCE 579.840 EARTH TO MARS

RL 148.65 LAL -.00 LOL 33.61 VL 33.131 GAL -4.90 AZL 93.18 HCA 185.76 SMA 192.93 ECC .24409 INC 3.1770 V1 29.974
RP 235.59 LAP .32 LOP 219.36 VP 20.946 GAP 6.08 AZP 86.84 TAL 334.61 TAP 160.37 RCA 145.83 APO 240.02 V2 23.333
RC 198.280 GL -25.64 GP 20.16 ZAL 124.03 ZAP 144.06 ETS 148.06 ZAE 156.86 ETE 63.74 ZAC 109.31 ETC 255.04 CLP 149.60

PLANETOCENTRIC CONIC

C3 17.884 VHL 4.229 DLA -16.62 RAL 153.47 RAD 6567.7 VEL 11.801 PTH 2.09 VHP 5.250 DPA 15.84 RAP 197.28 ECC 1.2943

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 25 36	1643.16	-2.85	7.89	12.42	118.19	21 52 59	1043.2	.94	1.26
90.00	4 59 6	5376.97	27.87	245.90	18.73	84.76	6 28 43	4777.0	26.85	237.38
100.00	22 37 32	1411.05	-4.02	350.18	11.78	119.65	23 1 3	811.0	-.04	343.66
100.00	6 29 51	5084.31	29.19	224.21	18.57	83.27	7 54 35	4484.3	27.95	215.63
110.00	23 24 59	1262.39	-6.98	337.08	9.94	123.55	23 46 2	662.4	-2.53	330.83
110.00	7 58 53	4805.73	32.64	202.44	17.95	79.22	9 18 59	4205.7	30.81	193.70

DIFFERENTIAL CORRECTIONS
TDE 1.5838 TRA-2.2635 TC3 2.3256 BAU .7069
RDE .9528 RRA -.9555 RC3 1.8255 FAU .18917
FDE-4.3474 FRA 4.4892 FC3-9.1576 BSP 16973
BDE 1.8483 BRA 2.4570 BC3 2.9565 FSP 3214

MID-COURSE EXECUTION ACCURACY
SGT 4326.3 SGR 2424.0 SG3 1003.8
RRT .9661 RRF -.9992 RTF -.9588
SGB 4959.1 R23 -.2232 R13 -.9742
SG1 4928.6 SG2 549.5 THA 28.82

ORBIT DETERMINATION ACCURACY
ST 2351.6 SR 1353.8 SS 2810.0
CRT .9932 CRS 1.0000 CST .9941
LSA 3900.8 MSA 207.0 SSA 5.1
EL1 2710.0 EL2 136.9 ALF 29.84

LAUNCH DATE OCT 27 1964 FLIGHT TIME 246.00 ARRIVAL DATE JUN 30 1965

HELIOCENTRIC CONIC DISTANCE 583.486 EARTH TO MARS

RL 148.65 LAL -.00 LOL 33.61 VL 33.108 GAL -4.83 AZL 92.45 HCA 186.74 SMA 192.50 ECC .24205 INC 2.4531 V1 29.974
RP 235.24 LAP .29 LOP 220.34 VP 20.950 GAP 5.67 AZP 87.56 TAL 334.84 TAP 161.58 RCA 145.90 APO 239.09 V2 23.369
RC 200.460 GL -20.46 GP 17.85 ZAL 125.06 ZAP 144.56 ETS 151.60 ZAE 159.24 ETE 63.21 ZAC 107.11 ETC 255.23 CLP 148.86

PLANETOCENTRIC CONIC

C3 16.321 VHL 4.040 DLA -11.65 RAL 155.06 RAD 6567.7 VEL 11.735 PTH 2.07 VHP 5.056 DPA 13.66 RAP 196.47 ECC 1.2686

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 47 30	1796.72	-7.73	16.54	12.16	117.33	21 17 26	1196.7	-4.01	9.84
90.00	5 49 54	5181.21	25.87	231.94	16.69	78.05	7 16 15	4581.2	23.96	223.79
100.00	22 2 56	1553.33	-8.75	358.10	11.61	118.70	22 28 49	953.3	-4.85	351.48
100.00	7 17 9	4899.83	26.99	210.96	16.40	76.63	8 38 49	4299.8	24.88	202.79
110.00	22 57 50	1381.43	-11.40	343.46	10.02	122.45	23 20 51	781.4	-7.04	337.08
110.00	8 38 45	4644.51	29.97	190.64	15.48	72.72	9 56 9	4044.5	27.31	182.46

DIFFERENTIAL CORRECTIONS
TDE 1.4135 TRA-2.2306 TC3 2.5500 BAU .6787
RDE .7555 RRA -.8574 RC3 1.7815 FAU .20234
FDE-4.0557 FRA 4.9357 FC-10.7334 BSP 16415
BDE 1.6028 BRA 2.3897 BC3 3.1107 FSP 3503

MID-COURSE EXECUTION ACCURACY
SGT 4324.1 SGR 2182.1 SG3 1090.8
RRT .9670 RRF -.9990 RTF -.9615
SGB 4843.5 R23 -.2223 R13 -.9741
SG1 4817.7 SG2 499.0 THA 26.32

ORBIT DETERMINATION ACCURACY
ST 2227.5 SR 1135.2 SS 2684.3
CRT .9933 CRS .9997 CST .9955
LSA 3664.1 MSA 174.4 SSA 7.7
EL1 2497.4 EL2 117.3 ALF 26.91

LAUNCH DATE OCT 27 1964 FLIGHT TIME 248.00 ARRIVAL DATE JUL 2 1965

HELIOCENTRIC CONIC DISTANCE 587.146 EARTH TO MARS

RL 148.65 LAL -.00 LOL 33.61 VL 33.086 GAL -4.75 AZL 91.91 HCA 187.72 SMA 192.09 ECC .24010 INC 1.9102 V1 29.974
RP 234.89 LAP .26 LOP 221.32 VP 20.956 GAP 5.27 AZP 88.11 TAL 335.07 TAP 162.78 RCA 145.97 APO 238.21 V2 23.405
RC 202.623 GL -16.32 GP 16.08 ZAL 125.60 ZAP 144.60 ETS 154.59 ZAE 161.18 ETE 63.48 ZAC 105.42 ETC 255.36 CLP 148.02

PLANETOCENTRIC CONIC

C3 15.293 VHL 3.911 DLA -7.66 RAL 156.25 RAD 6567.6 VEL 11.691 PTH 2.06 VHP 4.895 DPA 11.99 RAP 195.82 ECC 1.2517

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 20 6	1912.53	-11.28	23.19	12.43	116.15	20 51 59	1312.5	-7.68	16.37
90.00	6 26 46	5035.92	23.44	221.99	15.37	73.64	7 50 42	4435.9	20.97	214.19
100.00	21 37 46	1662.00	-12.23	4.28	11.94	117.49	22 5 28	1062.0	-8.46	357.53
100.00	7 51 48	4761.68	24.46	201.48	15.03	72.26	9 11 9	4161.7	21.80	193.69
110.00	22 37 36	1474.66	-14.75	348.61	10.48	121.19	23 2 10	874.7	-10.51	342.07
110.00	9 8 27	4521.79	27.18	182.18	13.95	68.43	10 23 49	3921.8	24.01	174.46

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.2727 TRA-2.2043 TC3 2.6795 BAU .6512 SGT 4299.8 SGR 1994.7 SG3 1169.4 ST 2106.4 SR 978.1 SS 2569.9
RDE .6238 RRA -.7802 RC3 1.7218 FAU .21401 RRT .9659 RRF -.9987 RTF -.9618 CRT .9926 CRS .9992 CST .9965
FDE-3.8151 FRA 5.3334 FC-12.1156 BSP 16297 SGB 4740.0 R23 -.2253 R13 -.9730 LSA 3460.4 MSA 152.3 SSA 11.0
BDE 1.4174 BRA 2.3383 BC3 3.1850 FSP 3797 SG1 4716.5 SG2 470.6 THA 24.40 EL1 2319.9 EL2 107.6 ALF 24.80

LAUNCH DATE OCT 27 1964 FLIGHT TIME 250.00 ARRIVAL DATE JUL 4 1965

HELIOCENTRIC CONIC DISTANCE 590.821 EARTH TO MARS

RL 148.65 LAL -.00 LOL 33.61 VL 33.065 GAL -4.68 AZL 91.49 HCA 188.70 SMA 191.70 ECC .23824 INC 1.4863 V1 29.974
RP 234.53 LAP .22 LOP 222.31 VP 20.964 GAP 4.87 AZP 88.53 TAL 335.28 TAP 163.98 RCA 146.03 APO 237.38 V2 23.442
RC 204.770 GL -12.95 GP 14.68 ZAL 125.84 ZAP 144.33 ETS 157.12 ZAE 162.81 ETE 64.53 ZAC 104.07 ETC 255.45 CLP 147.12

PLANETOCENTRIC CONIC

C3 14.564 VHL 3.816 DLA -4.39 RAL 157.16 RAD 6567.6 VEL 11.660 PTH 2.05 VHP 4.754 DPA 10.69 RAP 195.29 ECC 1.2397

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 58 42	2005.04	-14.00	28.63	12.89	114.87	20 32 7	1405.0	-10.53	21.67
90.00	6 55 23	4921.61	21.05	214.47	14.54	70.61	8 17 25	4321.6	18.21	206.94
100.00	21 17 59	1749.28	-14.92	9.37	12.44	116.21	21 47 9	1149.3	-11.28	2.47
100.00	8 18 47	4652.60	22.01	194.30	14.17	69.24	9 36 20	4052.6	18.99	186.81
110.00	22 21 31	1550.41	-17.37	352.91	11.07	119.91	22 47 21	950.4	-13.27	346.21
110.00	9 31 45	4424.24	24.58	175.80	13.00	65.46	10 45 29	3824.2	21.06	168.42

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.1683 TRA-2.1657 TC3 2.7867 BAU .6326 SGT 4270.2 SGR 1851.9 SG3 1246.4 ST 2009.4 SR 867.1 SS 2483.6
RDE .5354 RRA -.7144 RC3 1.6707 FAU .22611 RRT .9649 RRF -.9982 RTF -.9621 CRT .9919 CRS .9984 CST .9973
FDE-3.6422 FRA 5.6735 FC-13.4405 BSP 16012 SGB 4654.5 R23 -.2263 R13 -.9722 LSA 3307.6 MSA 133.2 SSA 15.2
BDE 1.2851 BRA 2.2805 BC3 3.2491 FSP 4037 SG1 4632.8 SG2 448.4 THA 22.93 EL1 2186.1 EL2 101.4 ALF 23.22

LAUNCH DATE OCT 27 1964 FLIGHT TIME 252.00 ARRIVAL DATE JUL 6 1965

HELIOCENTRIC CONIC DISTANCE 594.511 EARTH TO MARS

RL 148.65 LAL -.00 LOL 33.61 VL 33.045 GAL -4.61 AZL 91.15 HCA 189.68 SMA 191.34 ECC .23646 INC 1.1483 V1 29.974
RP 234.17 LAP .19 LOP 223.29 VP 20.973 GAP 4.48 AZP 88.87 TAL 335.49 TAP 165.18 RCA 146.09 APO 236.58 V2 23.479
RC 206.900 GL -10.16 GP 13.55 ZAL 125.88 ZAP 143.85 ETS 159.26 ZAE 164.22 ETE 66.36 ZAC 102.98 ETC 255.51 CLP 146.16

PLANETOCENTRIC CONIC

C3 14.017 VHL 3.744 DLA -1.66 RAL 157.86 RAD 6567.6 VEL 11.636 PTH 2.04 VHP 4.626 DPA 9.66 RAP 194.83 ECC 1.2307

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 41 8	2081.52	-16.13	33.23	13.40	113.59	20 15 50	1481.5	-12.81	26.13
90.00	7 18 33	4828.20	18.82	208.52	14.02	68.44	8 39 1	4228.2	15.73	201.21
100.00	21 1 42	1821.61	-17.05	13.69	12.97	114.93	21 32 4	1221.6	-13.54	6.65
100.00	8 40 40	4563.34	19.75	188.64	13.61	67.09	9 56 43	3963.3	16.47	181.38
110.00	22 8 11	1613.52	-19.48	356.60	11.68	118.66	22 35 4	1013.5	-15.50	349.74
110.00	9 50 40	4344.20	22.22	170.78	12.39	63.33	11 3 5	3744.2	18.46	163.66

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.0802 TRA-2.1262 TC3 2.8547 BAU .6151 SGT 4230.7 SGR 1736.9 SG3 1320.4 ST 1921.1 SR 782.6 SS 2406.6
RDE .4706 RRA -.6620 RC3 1.6196 FAU .23731 RRT .9638 RRF -.9975 RTF -.9624 CRT .9910 CRS .9970 CST .9982
FDE-3.4902 FRA 6.0067 FC-14.6571 BSP 15854 SGB 4573.4 R23 -.2257 R13 -.9716 LSA 3175.1 MSA 116.3 SSA 20.5
BDE 1.1782 BRA 2.2269 BC3 3.2822 FSP 4311 SG1 4553.1 SG2 430.2 THA 21.79 EL1 2072.1 EL2 97.4 ALF 22.03

LAUNCH DATE OCT 27 1964 FLIGHT TIME 254.00 ARRIVAL DATE JUL 8 1965

HELIOCENTRIC CONIC DISTANCE 598.216 EARTH TO MARS

RL 148.65 LAL -.00 LOL 33.61 VL 33.025 GAL -4.55 AZL 90.87 HCA 190.67 SMA 190.99 ECC .23477 INC .8703 V1 29.974
RP 233.80 LAP .16 LOP 224.28 VP 20.985 GAP 4.10 AZP 89.14 TAL 335.70 TAP 166.37 RCA 146.15 APO 235.82 V2 23.517
RC 209.011 GL -7.81 GP 12.63 ZAL 125.80 ZAP 143.21 ETS 161.10 ZAE 165.44 ETE 68.99 ZAC 102.08 ETC 255.57 CLP 145.16

PLANETOCENTRIC CONIC

C3 13.586 VHL 3.686 DLA .66 RAL 158.41 RAD 6567.5 VEL 11.618 PTH 2.04 VHP 4.509 DPA 8.83 RAP 194.43 ECC 1.2236

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 26 12	2146.30	-17.86	37.20	13.91	112.35	20 1 59	1546.3	-14.67	29.98
90.00	7 37 53	4749.72	16.79	203.66	13.67	66.86	8 57 2	4149.7	13.51	196.51
100.00	20 47 51	1882.94	-18.77	17.43	13.50	113.70	21 19 14	1282.9	-15.40	10.25
100.00	8 58 54	4488.32	17.69	184.02	13.25	65.51	10 13 43	3888.3	14.24	176.93
110.00	21 56 48	1667.14	-21.20	359.81	12.26	117.47	22 24 35	1067.1	-17.35	352.79
110.00	10 6 28	4276.88	20.10	166.70	11.99	61.75	11 17 45	3676.9	16.17	159.79

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.0094 TRA-2.0795 TC3 2.9073 BAU .6009 SGT 4184.0 SGR 1646.0 SG3 1394.9 ST 1845.7 SR 720.1 SS 2349.3
RDE .4240 RRA -.6171 RC3 1.5787 FAU .24895 RRT .9627 RRF -.9967 RTF -.9627 CRT .9899 CRS .9950 CST .9988
FDE-3.3782 FRA 6.3132 FC-15.8643 BSP 15577 SGB 4496.1 R23 -.2241 R13 -.9713 LSA 3071.3 MSA 103.8 SSA 26.6
BDE 1.0949 BRA 2.1691 BC3 3.3083 FSP 4557 SG1 4476.8 SG2 416.3 THA 20.93 EL1 1978.9 EL2 95.4 ALF 21.17

LAUNCH DATE OCT 27 1964 FLIGHT TIME 256.00 ARRIVAL DATE JUL 10 1965

HELIOCENTRIC CONIC DISTANCE 601.935 EARTH TO MARS

RL 148.65 LAL -.00 LOL 33.61 VL 33.007 GAL -4.49 AZL 90.64 HCA 191.67 SMA 190.65 ECC .23315 INC .6385 V1 29.974
RP 233.44 LAP .13 LOP 225.27 VP 20.999 GAP 3.72 AZP 89.37 TAL 335.89 TAP 167.56 RCA 146.20 APO 235.10 V2 23.555
RC 211.104 GL -5.80 GP 11.86 ZAL 125.64 ZAP 142.45 ETS 162.69 ZAE 166.50 ETE 72.48 ZAC 101.31 ETC 255.61 CLP 144.11

PLANETOCENTRIC CONIC

C3 13.233 VHL 3.638 DLA 2.64 RAL 158.85 RAD 6567.5 VEL 11.603 PTH 2.03 VHP 4.399 DPA 8.15 RAP 194.05 ECC 1.2178

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 13 12	2202.23	-19.27	40.70	14.38	111.16	19 49 55	1602.2	-16.22	33.35
90.00	7 54 23	4682.36	14.94	199.57	13.44	65.66	9 12 25	4082.4	11.53	192.56
100.00	20 35 47	1935.88	-20.18	20.72	13.99	112.53	21 8 3	1335.9	-16.95	13.42
100.00	9 14 30	4423.94	15.83	180.14	13.01	64.31	10 28 13	3823.9	12.25	173.18
110.00	21 46 51	1713.44	-22.62	2.65	12.80	116.34	22 15 24	1113.4	-18.90	355.49
110.00	10 19 55	4219.15	18.21	163.30	11.71	60.56	11 30 14	3619.2	14.15	156.54

DIFFERENTIAL CORRECTIONS
TDE .9469 TRA-2.0316 TC3 2.9386 BAU .5873
RDE .3887 RRA -.5797 RC3 1.5442 FAU .26061
FDE-3.2841 FRA 6.6156 FC-17.0497 BSP 15333
BDE 1.0236 BRA 2.1127 BC3 3.3196 FSP 4815

MID-COURSE EXECUTION ACCURACY
SGT 4129.9 SGR 1572.4 SG3 1469.9
RRT .9614 RRF -.9957 RTF -.9628
SGB 4419.1 R23 -.2218 R13 -.9709
SG1 4400.4 SG2 406.3 THA 20.28

ORBIT DETERMINATION ACCURACY
ST 1775.4 SR 671.7 SS 2301.9
CRT .9885 CRS .9924 CST .9993
LSA 2981.9 MSA 96.9 SSA 32.4
EL1 1895.8 EL2 95.1 ALF 20.56

LAUNCH DATE OCT 27 1964 FLIGHT TIME 258.00 ARRIVAL DATE JUL 12 1965

HELIOCENTRIC CONIC DISTANCE 605.666 EARTH TO MARS

RL 148.65 LAL -.00 LOL 33.61 VL 32.990 GAL -4.43 AZL 90.44 HCA 192.66 SMA 190.34 ECC .23162 INC .4418 V1 29.974
RP 233.07 LAP .10 LOP 226.27 VP 21.014 GAP 3.35 AZP 89.57 TAL 336.08 TAP 168.74 RCA 146.25 APO 234.42 V2 23.593
RC 213.179 GL -4.07 GP 11.21 ZAL 125.43 ZAP 141.59 ETS 164.08 ZAE 167.39 ETE 76.85 ZAC 100.66 ETC 255.65 CLP 143.02

PLANETOCENTRIC CONIC

C3 12.936 VHL 3.597 DLA 4.37 RAL 159.20 RAD 6567.5 VEL 11.590 PTH 2.03 VHP 4.295 DPA 7.60 RAP 193.69 ECC 1.2129

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 1 40	2251.26	-20.44	43.82	14.81	110.03	19 39 12	1651.3	-17.53	36.35
90.00	8 8 44	4623.54	13.26	196.07	13.29	64.75	9 25 47	4023.5	9.75	189.15
100.00	20 25 4	1982.27	-21.36	23.66	14.44	111.42	20 58 6	1382.3	-18.26	16.24
100.00	9 28 1	4367.76	14.15	176.82	12.85	63.39	10 40 49	3767.8	10.46	169.97
110.00	21 38 1	1753.95	-23.82	5.18	13.29	115.27	22 7 15	1154.0	-20.22	357.89
110.00	10 31 34	4168.84	16.50	160.40	11.52	59.63	11 41 2	3568.8	12.34	153.76

DIFFERENTIAL CORRECTIONS
TDE .8899 TRA-1.9825 TC3 2.9467 BAU .5731
RDE .3614 RRA -.5484 RC3 1.5153 FAU .27229
FDE-3.2026 FRA 6.9179 FC-18.2226 BSP 15118
BDE .9605 BRA 2.0570 BC3 3.3135 FSP 5088

MID-COURSE EXECUTION ACCURACY
SGT 4066.4 SGR 1512.4 SG3 1545.6
RRT .9597 RRF -.9946 RTF -.9627
SGB 4338.6 R23 -.2196 R13 -.9705
SG1 4320.1 SG2 400.2 THA 19.82

ORBIT DETERMINATION ACCURACY
ST 1707.9 SR 633.7 SS 2262.5
CRT .9868 CRS .9890 CST .9995
LSA 2902.9 MSA 96.5 SSA 36.7
EL1 1819.1 EL2 96.4 ALF 20.17

LAUNCH DATE OCT 27 1964 FLIGHT TIME 260.00 ARRIVAL DATE JUL 14 1965

HELIOCENTRIC CONIC DISTANCE 609.411 EARTH TO MARS

RL 148.65 LAL -.00 LOL 33.61 VL 32.973 GAL -4.38 AZL 90.28 HCA 193.66 SMA 190.04 ECC .23015 INC .2718 V1 29.974
RP 232.70 LAP .07 LOP 227.27 VP 21.031 GAP 2.98 AZP 89.73 TAL 336.26 TAP 169.92 RCA 146.30 APO 233.77 V2 23.631
RC 215.236 GL -2.55 GP 10.65 ZAL 125.19 ZAP 140.64 ETS 165.29 ZAE 168.12 ETE 82.14 ZAC 100.09 ETC 255.68 CLP 141.89

PLANETOCENTRIC CONIC

C3 12.681 VHL 3.561 DLA 5.90 RAL 159.49 RAD 6567.5 VEL 11.579 PTH 2.02 VHP 4.196 DPA 7.15 RAP 193.34 ECC 1.2087

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 51 17	2294.79	-21.43	46.63	15.20	108.96	19 29 32	1694.8	-18.65	39.06
90.00	8 21 24	4571.44	11.73	193.01	13.19	64.04	9 37 35	3971.4	8.14	186.17
100.00	20 15 26	2023.42	-22.36	26.31	14.84	110.37	20 49 9	1423.4	-19.39	18.78
100.00	9 39 57	4318.05	12.61	173.93	12.74	62.67	10 51 55	3718.0	8.85	167.16
110.00	21 30 4	1789.83	-24.85	7.46	13.73	114.27	21 59 54	1189.8	-21.36	.05
110.00	10 41 48	4124.40	14.95	157.88	11.39	58.90	11 50 32	3524.4	10.72	151.33

DIFFERENTIAL CORRECTIONS
TDE .8435 TRA-1.9259 TC3 2.9531 BAU .5611
RDE .3411 RRA -.5209 RC3 1.4950 FAU .28464
FDE-3.1449 FRA 7.2081 FC-19.4328 BSP 14766
BDE .9098 BRA 1.9951 BC3 3.3099 FSP 5341

MID-COURSE EXECUTION ACCURACY
SGT 3996.2 SGR 1464.4 SG3 1623.5
RRT .9584 RRF -.9934 RTF -.9628
SGB 4256.1 R23 -.2156 R13 -.9704
SG1 4237.8 SG2 394.3 THA 19.53

ORBIT DETERMINATION ACCURACY
ST 1649.0 SR 605.0 SS 2235.1
CRT .9853 CRS .9850 CST .9996
LSA 2840.6 MSA 101.5 SSA 38.6
EL1 1753.8 EL2 97.3 ALF 19.94

LAUNCH DATE OCT 27 1964 FLIGHT TIME 262.00 ARRIVAL DATE JUL 16 1965

HELIOCENTRIC CONIC DISTANCE 613.168 EARTH TO MARS

RL 148.65 LAL -.00 LOL 33.61 VL 32.957 GAL -4.32 AZL 90.13 HCA 194.66 SMA 189.75 ECC .22876 INC .1263 V1 29.974
RP 232.32 LAP .03 LOP 228.27 VP 21.049 GAP 2.62 AZP 89.87 TAL 336.43 TAP 171.09 RCA 146.34 APO 233.16 V2 23.670
RC 217.275 GL -1.21 GP 10.18 ZAL 124.93 ZAP 139.63 ETS 166.37 ZAE 168.66 ETE 88.28 ZAC 99.59 ETC 255.70 CLP 140.72

PLANETOCENTRIC CONIC

C3 12.457 VHL 3.529 DLA 7.25 RAL 159.72 RAD 6567.5 VEL 11.569 PTH 2.02 VHP 4.102 DPA 6.78 RAP 192.99 ECC 1.2050

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 41 51	2333.85	-22.27	49.18	15.55	107.95	19 20 45	1733.9	-19.61	41.52
90.00	8 32 43	4524.80	10.32	190.31	13.13	63.48	9 48 8	3924.8	6.68	183.52
100.00	20 6 40	2060.30	-23.22	28.72	15.20	109.38	20 41 0	1460.3	-20.36	21.08
100.00	9 50 35	4273.59	11.21	171.37	12.67	62.11	11 1 49	3673.6	7.39	164.67
110.00	21 22 51	1821.90	-25.73	9.54	14.13	113.32	21 53 12	1221.9	-22.35	2.01
110.00	10 50 54	4084.75	13.55	155.67	11.29	58.31	11 58 59	3484.7	9.26	149.20

DIFFERENTIAL CORRECTIONS
TDE .7905 TRA-1.8782 TC3 2.9089 BAU .5431
RDE .3235 RRA -.4993 RC3 1.4741 FAU .29612
FDE-3.0728 FRA 7.5272 FC-20.5791 BSP 14632
BDE .8541 BRA 1.9434 BC3 3.2610 FSP 5655

MID-COURSE EXECUTION ACCURACY
SGT 3912.7 SGR 1423.4 SG3 1701.1
RRT .9555 RRF -.9920 RTF -.9617
SGB 4163.5 R23 -.2151 R13 -.9695
SG1 4144.6 SG2 396.3 THA 19.35

ORBIT DETERMINATION ACCURACY
ST 1581.3 SR 580.3 SS 2205.3
CRT .9826 CRS .9798 CST .9994
LSA 2772.4 MSA 112.4 SSA 38.9
EL1 1681.4 EL2 101.3 ALF 19.91

LAUNCH DATE OCT 27 1964 FLIGHT TIME 264.00 ARRIVAL DATE JUL 18 1965

HELIOCENTRIC CONIC DISTANCE 616.936 EARTH TO MARS

RL 148.65 LAL -.00 LOL 33.61 VL 32.942 GAL -4.28 AZL 90.00 HCA 195.67 SMA 189.48 ECC .22743 INC .0000 V1 29.974
RP 231.95 LAP .00 LOP 229.28 VP 21.069 GAP 2.27 AZP 90.00 TAL 336.59 TAP 172.26 RCA 146.38 APO 232.57 V2 23.709
RC 219.295 GL -.01 GP 9.76 ZAL 124.67 ZAP 138.55 ETS 167.34 ZAE 169.00 ETE 95.15 ZAC 99.14 ETC 255.73 CLP 139.51

PLANETOCENTRIC CONIC

C3 12.260 VHL 3.501 DLA 8.46 RAL 159.92 RAD 6567.5 VEL 11.561 PTH 2.02 VHP 4.011 DPA 6.49 RAP 192.63 ECC 1.2018

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 33 11	2369.22	-23.00	51.52	15.87	106.99	19 12 41	1769.2	-20.45	43.77
90.00	8 42 57	4482.63	9.03	187.88	13.09	63.05	9 57 40	3882.6	5.34	181.14
100.00	19 58 38	2093.64	-23.95	30.92	15.53	108.44	20 33 32	1493.6	-21.21	23.20
100.00	10 0 11	4233.44	9.92	169.09	12.62	61.66	11 10 45	3633.4	6.06	162.43
110.00	21 16 14	1850.81	-26.49	11.44	14.49	112.44	21 47 5	1250.8	-23.22	3.81
110.00	10 59 5	4049.04	12.26	153.70	11.23	57.84	12 6 34	3449.0	7.93	147.29

DIFFERENTIAL CORRECTIONS
TDE .7397 TRA-1.8294 TC3 2.8439 BAU .5238
RDE .3097 RRA -.4807 RC3 1.4585 FAU .30792
FDE-3.0098 FRA 7.8486 FC-21.7444 BSP 14518
BDE .8019 BRA 1.8915 BC3 3.1961 FSP 5977

MID-COURSE EXECUTION ACCURACY
SGT 3819.8 SGR 1390.1 SG3 1780.6
RRT .9518 RRF -.9904 RTF -.9601
SGB 4064.9 R23 -.2160 R13 -.9683
SG1 4044.9 SG2 402.4 THA 19.30

ORBIT DETERMINATION ACCURACY
ST 1514.2 SR 560.9 SS 2182.1
CRT .9793 CRS .9738 CST .9991
LSA 2711.4 MSA 125.1 SSA 38.8
EL1 1611.3 EL2 106.7 ALF 20.03

LAUNCH DATE OCT 27 1964 FLIGHT TIME 266.00 ARRIVAL DATE JUL 20 1965

HELIOCENTRIC CONIC DISTANCE 620.719 EARTH TO MARS

RL 148.65 LAL -.00 LOL 33.61 VL 32.927 GAL -4.23 AZL 89.89 HCA 196.68 SMA 189.22 ECC .22618 INC .1119 V1 29.974
RP 231.57 LAP -.03 LOP 230.29 VP 21.091 GAP 1.91 AZP 90.11 TAL 336.74 TAP 173.42 RCA 146.42 APO 232.02 V2 23.748
RC 221.297 GL 1.06 GP 9.40 ZAL 124.40 ZAP 137.40 ETS 168.21 ZAE 169.11 ETE 102.54 ZAC 98.73 ETC 255.75 CLP 138.26

PLANETOCENTRIC CONIC

C3 12.082 VHL 3.476 DLA 9.55 RAL 160.08 RAD 6567.5 VEL 11.553 PTH 2.02 VHP 3.925 DPA 6.26 RAP 192.26 ECC 1.1988

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 25 10	2401.54	-23.62	53.68	16.15	106.09	19 5 11	1801.5	-21.19	45.86
90.00	8 52 16	4444.14	7.84	185.69	13.07	62.70	10 6 20	3844.1	4.12	178.98
100.00	19 51 12	2124.06	-24.59	32.95	15.83	107.55	20 26 36	1524.1	-21.96	25.15
100.00	10 8 55	4196.86	8.73	167.02	12.59	61.30	11 18 52	3596.9	4.83	160.40
110.00	21 10 7	1877.10	-27.16	13.19	14.81	111.60	21 41 24	1277.1	-23.99	5.46
110.00	11 6 30	4016.58	11.08	151.93	11.18	57.45	12 13 26	3416.6	6.71	145.57

DIFFERENTIAL CORRECTIONS
TDE .7126 TRA-1.7579 TC3 2.8319 BAU .5143
RDE .3013 RRA -.4620 RC3 1.4559 FAU .32187
FDE-2.9950 FRA 8.1303 FC-23.0635 BSP 13881
BDE .7737 BRA 1.8176 BC3 3.1842 FSP 6218

MID-COURSE EXECUTION ACCURACY
SGT 3726.9 SGR 1366.5 SG3 1865.4
RRT .9513 RRF -.9889 RTF -.9606
SGB 3969.5 R23 -.2090 R13 -.9687
SG1 3949.6 SG2 397.3 THA 19.43

ORBIT DETERMINATION ACCURACY
ST 1469.8 SR 548.8 SS 2177.2
CRT .9785 CRS .9679 CST .9983
LSA 2679.7 MSA 140.9 SSA 36.8
EL1 1565.3 EL2 106.2 ALF 20.17

LAUNCH DATE OCT 27 1964 FLIGHT TIME 268.00 ARRIVAL DATE JUL 22 1965

HELIOCENTRIC CONIC DISTANCE 624.512 EARTH TO MARS

RL 148.65 LAL -.00 LOL 33.61 VL 32.914 GAL -4.19 AZL 89.79 HCA 197.69 SMA 188.98 ECC .22499 INC .2134 V1 29.974
RP 231.20 LAP -.06 LOP 231.30 VP 21.114 GAP 1.57 AZP 90.20 TAL 336.88 TAP 174.57 RCA 146.46 APO 231.50 V2 23.788
RC 223.281 GL 2.03 GP 9.07 ZAL 124.14 ZAP 136.21 ETS 168.99 ZAE 168.99 ETE 110.10 ZAC 98.36 ETC 255.77 CLP 136.97

PLANETOCENTRIC CONIC

C3 11.923 VHL 3.453 DLA 10.54 RAL 160.22 RAD 6567.5 VEL 11.546 PTH 2.02 VHP 3.842 DPA 6.08 RAP 191.87 ECC 1.1962

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 17 43	2431.21	-24.17	55.69	16.41	105.22	18 58 14	1831.2	-21.84	47.79
90.00	9 0 50	4408.88	6.73	183.69	13.07	62.43	10 14 19	3808.9	2.98	177.01
100.00	19 44 18	2151.94	-25.15	34.84	16.10	106.71	20 20 10	1551.9	-22.62	26.95
100.00	10 16 56	4163.38	7.63	165.15	12.58	61.01	11 26 19	3563.4	3.71	158.56
110.00	21 4 27	1901.13	-27.76	14.80	15.11	110.80	21 36 9	1301.1	-24.67	6.99
110.00	11 13 16	3986.96	9.99	150.33	11.15	57.14	12 19 43	3387.0	5.59	144.00

DIFFERENTIAL CORRECTIONS
TDE .6746 TRA-1.6965 TC3 2.7603 BAU .4971
RDE .2935 RRA -.4474 RC3 1.4516 FAU .33501
FDE-2.9617 FRA 8.4426 FC-24.3251 BSP 13517
BDE .7357 BRA 1.7545 BC3 3.1188 FSP 6519

MID-COURSE EXECUTION ACCURACY
SGT 3617.4 SGR 1346.2 SG3 1950.0
RRT .9483 RRF -.9871 RTF -.9593
SGB 3859.8 R23 -.2077 R13 -.9678
SG1 3838.7 SG2 402.5 THA 19.66

ORBIT DETERMINATION ACCURACY
ST 1412.2 SR 538.0 SS 2168.4
CRT .9760 CRS .9609 CST .9974
LSA 2638.1 MSA 156.6 SSA 35.8
EL1 1507.2 EL2 109.7 ALF 20.51

LAUNCH DATE OCT 27 1964 FLIGHT TIME 270.00 ARRIVAL DATE JUL 24 1965

HELIOCENTRIC CONIC DISTANCE 628.316 EARTH TO MARS

RL 148.65 LAL -.00 LOL 33.61 VL 32.901 GAL -4.14 AZL 89.70 HCA 198.71 SMA 188.75 ECC .22386 INC .3055 V1 29.974
RP 230.82 LAP -.10 LOP 232.31 VP 21.138 GAP 1.23 AZP 90.29 TAL 337.02 TAP 175.72 RCA 146.49 APO 231.00 V2 23.827
RC 225.247 GL 2.92 GP 8.79 ZAL 123.89 ZAP 134.96 ETS 169.71 ZAE 168.63 ETE 117.51 ZAC 98.01 ETC 255.79 CLP 135.64

PLANETOCENTRIC CONIC

C3 11.779 VHL 3.432 DLA 11.44 RAL 160.35 RAD 6567.4 VEL 11.540 PTH 2.01 VHP 3.762 DPA 5.95 RAP 191.47 ECC 1.1939

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 10 46	2458.64	-24.65	57.55	16.65	104.40	18 51 45	1858.6	-22.42	49.59
90.00	9 8 46	4376.36	5.70	181.85	13.09	62.22	10 21 42	3776.4	1.94	175.19
100.00	19 37 53	2177.67	-25.64	36.59	16.35	105.91	20 14 11	1577.7	-23.21	28.63
100.00	10 24 20	4132.56	6.61	163.43	12.59	60.78	11 33 12	3532.6	2.66	156.86
110.00	20 59 12	1923.21	-28.28	16.31	15.39	110.05	21 31 15	1323.2	-25.29	8.41
110.00	11 19 30	3959.78	8.98	148.87	11.14	56.88	12 25 30	3359.8	4.56	142.57

DIFFERENTIAL CORRECTIONS
TDE .6397 TRA-1.6317 TC3 2.6772 BAU .4795
RDE .2874 RRA -.4348 RC3 1.4505 FAU .34844
FDE-2.9320 FRA 8.7604 FC-25.6094 BSP 13098
BDE .7013 BRA 1.6886 BC3 3.0449 FSP 6827

MID-COURSE EXECUTION ACCURACY
SGT 3498.7 SGR 1330.4 SG3 2036.6
RRT .9453 RRF -.9854 RTF -.9579
SGB 3743.2 R23 -.2063 R13 -.9669
SG1 3720.9 SG2 408.0 THA 20.02

ORBIT DETERMINATION ACCURACY
ST 1356.0 SR 529.6 SS 2162.8
CRT .9738 CRS .9532 CST .9962
LSA 2601.0 MSA 173.3 SSA 34.8
EL1 1451.4 EL2 112.6 ALF 20.96

LAUNCH DATE OCT 27 1964 FLIGHT TIME 280.00 ARRIVAL DATE AUG 3 1965

DISTANCE 647.499

HELIOCENTRIC CONIC

RL 148.65 LAL -.00 LOL 33.61 VL 32.845 GAL -3.98 AZL 89.35 HCA 203.83 SMA 187.77 ECC .21912 INC .6489 V1 29.974
RP 228.89 LAP -.26 LOP 237.44 VP 21.280 GAP -.38 AZP 90.59 TAL 337.53 TAP 181.37 RCA 146.62 APO 228.91 V2 24.029
RC 234.778 GL 6.36 GP 7.74 ZAL 122.82 ZAP 127.96 ETS 172.55 ZAE 163.89 ETE 145.58 ZAC 96.52 ETC 255.92 CLP 128.37

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 11.241 VHL 3.353 DLA 14.97 RAL 160.84 RAD 6567.4 VEL 11.516 PTH 2.01 VHP 3.411 DPA 5.88 RAP 189.10 ECC 1.1850

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 42 4	2570.40	-26.31	65.31	17.68	100.86	18 24 54	1970.4	-24.55	57.09
90.00	9 41 23	4245.13	1.50	174.50	13.36	61.72	10 52 8	3645.1	-2.30	167.87
100.00	19 11 30	2281.93	-27.39	43.85	17.43	102.47	19 49 32	1681.9	-25.39	35.61
100.00	10 54 37	4000.83	2.45	156.59	12.83	60.20	12 1 26	3408.8	-1.53	150.07
110.00	20 37 50	2011.80	-30.19	22.50	16.59	106.85	21 11 22	1411.8	-27.59	14.27
110.00	11 44 46	3851.72	4.92	143.14	11.30	56.13	12 48 58	3251.7	.44	136.93

DIFFERENTIAL CORRECTIONS

TDE .4847 TRA-1.2099 TC3 1.9927 BAU .3730
RDE .2754 RRA -.3930 RC3 1.4800 FAU .41975
FDE-2.8531 FRA10.4125 FC-32.3275 BSP 10561
BDE .5575 BRA 1.3293 BC3 2.4822 FSP 8432

MID-COURSE EXECUTION ACCURACY

SGT 2741.9 SGR 1290.9 SG3 2493.6
RRT .9196 RRF -.9759 RTF -.9400
SGB 3034.4 R23 -.2177 R13 -.9575
SG1 2998.2 SG2 467.0 THA 24.18

ORBIT DETERMINATION ACCURACY

ST 1068.6 SR 515.7 SS 2180.4
CRT .9647 CRS .9087 CST .9852
LSA 2469.1 MSA 254.2 SSA 32.3
EL1 1180.1 EL2 122.9 ALF 25.26

LAUNCH DATE OCT 27 1964 FLIGHT TIME 282.00 ARRIVAL DATE AUG 5 1965

DISTANCE 651.367

HELIOCENTRIC CONIC

RL 148.65 LAL -.00 LOL 33.61 VL 32.835 GAL -3.96 AZL 89.30 HCA 204.87 SMA 187.60 ECC .21834 INC .7027 V1 29.974
RP 228.51 LAP -.30 LOP 238.48 VP 21.311 GAP -.69 AZP 90.64 TAL 337.61 TAP 182.48 RCA 146.64 APO 228.57 V2 24.070
RC 236.623 GL 6.91 GP 7.58 ZAL 122.66 ZAP 126.42 ETS 173.02 ZAE 162.50 ETE 149.25 ZAC 96.25 ETC 255.95 CLP 126.79

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 11.163 VHL 3.341 DLA 15.52 RAL 160.93 RAD 6567.4 VEL 11.513 PTH 2.01 VHP 3.350 DPA 5.96 RAP 188.54 ECC 1.1837

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 37 20	2580.80	-26.54	66.61	17.87	100.25	18 20 29	1988.8	-24.86	58.35
90.00	9 46 51	4223.87	.81	173.31	13.46	61.89	10 57 15	3623.9	-2.98	166.68
100.00	19 7 12	2290.99	-27.63	45.06	17.63	101.88	19 45 31	1699.0	-25.71	36.78
100.00	10 59 40	3988.91	1.78	155.50	12.92	60.16	12 6 9	3388.9	-2.20	148.98
110.00	20 34 25	2026.14	-30.47	23.52	16.82	106.30	21 8 11	1426.1	-27.94	15.24
110.00	11 48 57	3834.52	4.26	142.24	11.37	56.05	12 52 52	3234.5	-.22	136.03

DIFFERENTIAL CORRECTIONS

TDE .4569 TRA-1.1885 TC3 1.8003 BAU .3487
RDE .2751 RRA -.3880 RC3 1.4890 FAU .43417
FDE-2.8401 FRA10.7600 FC-33.6711 BSP 9957
BDE .5334 BRA 1.2902 BC3 2.3363 FSP 8777

MID-COURSE EXECUTION ACCURACY

SGT 2556.4 SGR 1290.8 SG3 2587.3
RRT .9111 RRF -.9740 RTF -.9326
SGB 2867.9 R23 -.2240 R13 -.9542
SG1 2926.6 SG2 484.6 THA 25.66

ORBIT DETERMINATION ACCURACY

ST 1008.9 SR 516.1 SS 2189.0
CRT .9644 CRS .8988 CST .9812
LSA 2449.9 MSA 270.6 SSA 32.0
EL1 1126.7 EL2 122.2 ALF 26.60

LAUNCH DATE OCT 27 1964 FLIGHT TIME 284.00 ARRIVAL DATE AUG 7 1965

DISTANCE 655.244

HELIOCENTRIC CONIC

RL 148.65 LAL -.00 LOL 33.61 VL 32.826 GAL -3.94 AZL 89.25 HCA 205.91 SMA 187.45 ECC .21761 INC .7519 V1 29.974
RP 228.12 LAP -.33 LOP 239.52 VP 21.344 GAP -.99 AZP 90.68 TAL 337.67 TAP 183.58 RCA 146.66 APO 228.24 V2 24.111
RC 238.446 GL 7.42 GP 7.43 ZAL 122.51 ZAP 124.83 ETS 173.46 ZAE 161.00 ETE 152.41 ZAC 95.98 ETC 255.98 CLP 125.17

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 11.094 VHL 3.331 DLA 16.03 RAL 161.03 RAD 6567.4 VEL 11.510 PTH 2.00 VHP 3.293 DPA 6.07 RAP 187.95 ECC 1.1826

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 32 56	2606.12	-26.75	67.84	18.07	99.67	18 16 22	2006.1	-25.14	59.54
90.00	9 52 2	4203.99	.17	172.20	13.57	61.68	11 2 6	3604.0	-3.62	165.57
100.00	19 3 12	2315.03	-27.85	46.20	17.84	101.32	19 41 47	1715.0	-26.01	37.88
100.00	11 4 28	3970.32	1.15	154.48	13.02	60.13	12 10 38	3370.3	-2.83	147.96
110.00	20 31 14	2039.57	-30.72	24.48	17.04	105.78	21 5 14	1439.6	-28.25	16.16
110.00	11 52 55	3818.54	3.66	141.40	11.46	55.99	12 56 33	3218.5	-.83	135.20

DIFFERENTIAL CORRECTIONS

TDE .4302 TRA-1.1036 TC3 1.5907 BAU .3242
RDE .2755 RRA -.3834 RC3 1.4993 FAU .44882
FDE-2.8336 FRA11.1036 FC-35.0240 BSP 9320
BDE .5109 BRA 1.1683 BC3 2.1859 FSP 9113

MID-COURSE EXECUTION ACCURACY

SGT 2360.6 SGR 1301.2 SG3 2681.3
RRT .9001 RRF -.9720 RTF -.9226
SGB 2695.5 R23 -.2323 R13 -.9502
SG1 2647.6 SG2 505.6 THA 27.47

ORBIT DETERMINATION ACCURACY

ST 948.6 SR 517.6 SS 2199.9
CRT .9648 CRS .8891 CST .9764
LSA 2434.1 MSA 286.1 SSA 31.7
EL1 1073.9 EL2 120.3 ALF 28.15

LAUNCH DATE OCT 27 1964 FLIGHT TIME 286.00 ARRIVAL DATE AUG 9 1965

DISTANCE 659.131

HELIOCENTRIC CONIC

RL 148.65 LAL -.00 LOL 33.61 VL 32.818 GAL -3.92 AZL 89.20 HCA 206.95 SMA 187.31 ECC .21693 INC .7980 V1 29.974
RP 227.73 LAP -.36 LOP 240.56 VP 21.378 GAP -1.29 AZP 90.71 TAL 337.72 TAP 184.67 RCA 146.67 APO 227.94 V2 24.152
RC 240.248 GL 7.89 GP 7.30 ZAL 122.38 ZAP 123.20 ETS 173.88 ZAE 159.42 ETE 155.15 ZAC 95.71 ETC 256.02 CLP 123.51

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 11.033 VHL 3.322 DLA 16.51 RAL 161.13 RAD 6567.4 VEL 11.507 PTH 2.00 VHP 3.238 DPA 6.21 RAP 187.33 ECC 1.1816

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 28 49	2622.44	-26.93	69.00	18.26	99.11	18 12 31	2022.4	-25.39	60.67
90.00	9 56 59	4185.41	-.43	171.17	13.69	61.69	11 6 44	3585.4	-4.21	164.53
100.00	18 59 28	2330.10	-28.05	47.27	18.04	100.79	19 38 18	1730.1	-26.27	38.92
100.00	11 9 1	3952.98	.56	153.53	13.14	60.11	12 14 54	3353.0	-3.42	147.00
110.00	20 28 18	2052.15	-30.95	25.39	17.27	105.29	21 2 30	1452.2	-28.54	17.02
110.00	11 56 40	3803.69	3.09	140.63	11.56	55.94	13 0 4	3203.7	-1.40	134.42

DIFFERENTIAL CORRECTIONS

TDE .4046 TRA-1.0152 TC3 1.3637 BAU .3001
RDE .2764 RRA -.3795 RC3 1.5099 FAU .46341
FDE-2.8290 FRA11.4495 FC-36.3620 BSP 8638
BDE .4900 BRA 1.0838 BC3 2.0345 FSP 9445

MID-COURSE EXECUTION ACCURACY

SGT 2154.9 SGR 1303.7 SG3 2775.1
RRT .8858 RRF -.9701 RTF -.9089
SGB 2518.6 R23 -.2421 R13 -.9455
SG1 2462.3 SG2 529.5 THA 29.70

ORBIT DETERMINATION ACCURACY

ST 887.7 SR 519.8 SS 2212.3
CRT .9661 CRS .8793 CST .9704
LSA 2420.9 MSA 301.7 SSA 31.5
EL1 1022.1 EL2 116.5 ALF 29.93

LAUNCH DATE OCT 27 1964 FLIGHT TIME 272.00 ARRIVAL DATE JUL 26 1965

HELIOCENTRIC CONIC DISTANCE 632.132 EARTH TO MARS

RL 148.65 LAL -.00 LOL 33.61 VL 32.888 GAL -4.11 AZL 89.61 HCA 199.72 SMA 188.53 ECC .22280 INC .3863 V1 29.974
RP 230.43 LAP -.13 LOP 233.33 VP 21.164 GAP .90 AZP 90.36 TAL 337.14 TAP 176.87 RCA 146.53 APO 230.53 V2 23.867
RC 227.193 GL 3.72 GP 8.53 ZAL 123.65 ZAP 133.66 ETS 170.37 ZAE 168.05 ETE 124.48 ZAC 97.68 ETC 255.82 CLP 134.27

PLANETOCENTRIC CONIC

C3 11.649 VHL 3.413 DLA 12.27 RAL 160.46 RAD 6567.4 VEL 11.534 PTH 2.01 VHP 3.686 DPA 5.86 RAP 191.05 ECC 1.1917

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 4 16	2484.10	-25.06	59.30	16.88	103.63	18 45 40	1884.1	-22.94	51.27
90.00	9 16 8	4346.24	4.74	180.15	13.12	62.05	10 28 34	3746.2	.97	173.51
100.00	19 31 53	2201.51	-26.08	38.23	16.59	105.15	20 8 35	1601.5	-23.74	30.21
100.00	10 31 12	4104.07	5.66	161.85	12.61	60.60	11 39 36	3504.1	1.70	155.30
110.00	20 54 19	1943.60	-28.75	17.71	15.65	109.34	21 26 42	1343.6	-25.84	9.74
110.00	11 25 16	3934.74	8.05	147.53	11.15	56.67	12 30 51	3334.7	3.61	141.26

DIFFERENTIAL CORRECTIONS

TDE .6070 TRA-1.5646 TC3 2.5775 BAU .4608
RDE .2833 RRA -.4236 RC3 1.4534 FAU .36247
FDE-2.9159 FRA 9.0766 FC-26.9386 BSP 12644
BDE .6699 BRA 1.6210 BC3 2.9590 FSP 7127

MID-COURSE EXECUTION ACCURACY

SGT 3370.3 SGR 1319.1 SG3 2125.6
RRT .9416 RRF -.9836 RTF -.9558
SGB 3619.3 R23 -.2064 R13 -.9657
SG1 3595.2 SG2 416.4 THA 20.52

ORBIT DETERMINATION ACCURACY

ST 1300.5 SR 524.2 SS 2163.2
CRT .9715 CRS .9452 CST .9948
LSA 2570.7 MSA 189.3 SSA 34.2
EL1 1397.4 EL2 115.7 ALF 21.54

LAUNCH DATE OCT 27 1964 FLIGHT TIME 274.00 ARRIVAL DATE JUL 28 1965

HELIOCENTRIC CONIC DISTANCE 635.958 EARTH TO MARS

RL 148.65 LAL -.00 LOL 33.61 VL 32.876 GAL -4.07 AZL 89.54 HCA 200.75 SMA 188.32 ECC .22179 INC .4615 V1 29.974
RP 230.05 LAP -.16 LOP 234.36 VP 21.191 GAP .57 AZP 90.43 TAL 337.26 TAP 178.00 RCA 146.55 APO 230.09 V2 23.907
RC 229.120 GL 4.46 GP 8.31 ZAL 123.42 ZAP 132.30 ETS 170.97 ZAE 167.26 ETE 130.81 ZAC 97.38 ETC 255.84 CLP 132.86

PLANETOCENTRIC CONIC

C3 11.531 VHL 3.396 DLA 13.03 RAL 160.56 RAD 6567.4 VEL 11.529 PTH 2.01 VHP 3.612 DPA 5.82 RAP 190.60 ECC 1.1898

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 58 11	2507.83	-25.44	60.94	17.09	102.88	18 39 58	1907.8	-23.41	52.86
90.00	9 23 2	4318.26	3.85	178.59	13.16	61.92	10 35 0	3718.3	.06	171.95
100.00	19 26 17	2223.69	-26.46	39.76	16.81	104.43	20 3 21	1623.7	-24.22	31.68
100.00	10 37 37	4077.64	4.77	160.38	12.65	60.46	11 45 34	3477.6	.80	153.85
110.00	20 49 45	1962.51	-29.17	19.02	15.90	108.67	21 22 28	1362.5	-26.34	10.98
110.00	11 30 38	3911.59	7.18	146.30	11.16	56.49	12 35 49	3311.6	2.72	140.05

DIFFERENTIAL CORRECTIONS

TDE .5737 TRA-1.4956 TC3 2.4551 BAU .4401
RDE .2797 RRA -.4143 RC3 1.4568 FAU .37629
FDE-2.8902 FRA 9.4075 FC-28.2514 BSP 12195
BDE .6382 BRA 1.5519 BC3 2.8548 FSP 7456

MID-COURSE EXECUTION ACCURACY

SGT 3228.9 SGR 1310.1 SG3 2215.2
RRT .9373 RRF -.9817 RTF -.9532
SGB 3484.6 R23 -.2075 R13 -.9642
SG1 3458.4 SG2 426.3 THA 21.16

ORBIT DETERMINATION ACCURACY

ST 1242.3 SR 519.6 SS 2162.4
CRT .9692 CRS .9364 CST .9930
LSA 2538.8 MSA 206.0 SSA 33.6
EL1 1341.3 EL2 118.5 ALF 22.25

LAUNCH DATE OCT 27 1964 FLIGHT TIME 276.00 ARRIVAL DATE JUL 30 1965

HELIOCENTRIC CONIC DISTANCE 639.794 EARTH TO MARS

RL 148.65 LAL -.00 LOL 33.61 VL 32.865 GAL -4.04 AZL 89.47 HCA 201.77 SMA 188.13 ECC .22084 INC .5292 V1 29.974
RP 229.67 LAP -.20 LOP 235.38 VP 21.220 GAP .25 AZP 90.49 TAL 337.36 TAP 179.13 RCA 146.58 APO 229.67 V2 23.948
RC 231.027 GL 5.14 GP 8.10 ZAL 123.20 ZAP 130.90 ETS 171.54 ZAE 166.29 ETE 136.42 ZAC 97.08 ETC 255.87 CLP 131.41

PLANETOCENTRIC CONIC

C3 11.424 VHL 3.380 DLA 13.73 RAL 160.65 RAD 6567.4 VEL 11.524 PTH 2.01 VHP 3.542 DPA 5.81 RAP 190.13 ECC 1.1880

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 52 28	2530.03	-25.76	62.48	17.29	102.18	18 34 38	1930.0	-23.83	54.35
90.00	9 29 30	4292.20	3.01	177.13	13.21	61.83	10 41 3	3692.2	-.78	170.50
100.00	19 21 2	2244.39	-26.81	41.21	17.02	103.75	19 58 26	1644.4	-24.65	33.07
100.00	10 43 37	4053.07	3.95	159.03	12.69	60.35	11 51 10	3453.1	-.03	152.50
110.00	20 45 30	1980.09	-29.54	20.25	16.14	108.03	21 18 30	1380.1	-26.80	12.14
110.00	11 35 39	3890.14	6.37	145.17	11.19	56.34	12 40 29	3290.1	1.90	138.93

DIFFERENTIAL CORRECTIONS

TDE .5430 TRA-1.4235 TC3 2.3182 BAU .4187
RDE .2775 RRA -.4062 RC3 1.4631 FAU .39060
FDE-2.8763 FRA 9.7387 FC-29.5998 BSP 11690
BDE .6098 BRA 1.4803 BC3 2.7413 FSP 7779

MID-COURSE EXECUTION ACCURACY

SGT 3077.8 SGR 1304.5 SG3 2307.0
RRT .9323 RRF -.9798 RTF -.9498
SGB 3342.9 R23 -.2097 R13 -.9623
SG1 3314.0 SG2 438.1 THA 21.97

ORBIT DETERMINATION ACCURACY

ST 1185.2 SR 517.1 SS 2166.8
CRT .9673 CRS .9275 CST .9909
LSA 2513.3 MSA 222.1 SSA 33.1
EL1 1287.5 EL2 120.7 ALF 23.10

LAUNCH DATE OCT 27 1964 FLIGHT TIME 278.00 ARRIVAL DATE AUG 1 1965

HELIOCENTRIC CONIC DISTANCE 643.641 EARTH TO MARS

RL 148.65 LAL -.00 LOL 33.61 VL 32.855 GAL -4.01 AZL 89.41 HCA 202.80 SMA 187.94 ECC .21995 INC .5917 V1 29.974
RP 229.28 LAP -.23 LOP 236.41 VP 21.249 GAP -.07 AZP 90.55 TAL 337.45 TAP 180.25 RCA 146.60 APO 229.28 V2 23.988
RC 232.913 GL 5.78 GP 7.91 ZAL 123.01 ZAP 129.46 ETS 172.06 ZAE 165.16 ETE 141.33 ZAC 96.80 ETC 255.89 CLP 129.91

PLANETOCENTRIC CONIC

C3 11.328 VHL 3.366 DLA 14.37 RAL 160.74 RAD 6567.4 VEL 11.520 PTH 2.01 VHP 3.475 DPA 5.83 RAP 189.63 ECC 1.1864

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 47 6	2550.85	-26.05	63.94	17.49	101.50	18 29 36	1950.8	-24.21	55.76
90.00	9 35 37	4267.87	2.23	175.77	13.28	61.76	10 46 44	3667.9	-1.56	169.14
100.00	19 16 7	2263.77	-27.11	42.57	17.23	103.10	19 53 50	1663.8	-25.04	34.38
100.00	10 49 17	4030.18	3.18	157.77	12.76	60.26	11 56 27	3430.2	-.81	151.24
110.00	20 41 32	1996.49	-29.88	21.41	16.37	107.43	21 14 48	1396.5	-27.21	13.24
110.00	11 40 21	3870.22	5.62	144.12	11.24	56.23	12 44 51	3270.2	1.14	137.89

DIFFERENTIAL CORRECTIONS

TDE .5137 TRA-1.3477 TC3 2.1660 BAU .3963
RDE .2761 RRA -.3991 RC3 1.4710 FAU .40513
FDE-2.8642 FRA10.0731 FC-30.9623 BSP 11120
BDE .5832 BRA 1.4056 BC3 2.6183 FSP 8101

MID-COURSE EXECUTION ACCURACY

SGT 2915.5 SGR 1301.3 SG3 2399.9
RRT .9267 RRF -.9779 RTF -.9456
SGB 3192.7 R23 -.2126 R13 -.9602
SG1 3160.7 SG2 451.0 THA 22.97

ORBIT DETERMINATION ACCURACY

ST 1127.7 SR 515.9 SS 2172.8
CRT .9659 CRS .9182 CST .9883
LSA 2490.2 MSA 238.5 SSA 32.6
EL1 1234.0 EL2 122.0 ALF 24.09

LAUNCH DATE OCT 27 1964 FLIGHT TIME 288.00 ARRIVAL DATE AUG 11 1965

HELIOCENTRIC CONIC DISTANCE 663.028 EARTH TO MARS

RL	148.65	LAL	-.00	LOL	33.61	VL	32.810	GAL	-3.90	AZL	89.16	HCA	208.00	SMA	187.17	ECC	.21630	INC	.8410	V1	29.974
RP	227.34	LAP	-.39	LOP	241.61	VP	21.412	GAP	-1.58	AZP	90.74	TAL	337.75	TAP	185.75	RCA	146.68	APO	227.65	V2	24.193
RC	242.030	GL	8.34	GP	7.17	ZAL	122.27	ZAP	121.53	ETS	174.27	ZAE	157.74	ETE	157.53	ZAC	95.44	ETC	256.06	CLP	121.80

PLANETOCENTRIC CONIC

C3	10.980	VHL	3.314	DLA	16.95	RAL	161.24	RAD	6567.4	VEL	11.505	PTH	2.00	VHP	3.187	DPA	6.36	RAP	186.68	ECC	1.1807

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 24 59	2637.81	-27.09	70.09	18.47	98.58	18 8 57	2037.8	-25.62	61.73
90.00	10 1 41	4168.06	-.99	170.20	13.83	61.70	11 11 9	3568.1	-4.77	163.55
100.00	18 56 1	2344.27	-28.22	48.29	18.25	100.28	19 35 5	1744.3	-26.52	39.90
100.00	11 13 21	3936.83	.01	152.64	13.27	60.11	12 18 57	3336.8	-3.96	146.11
110.00	20 25 37	2063.95	-31.16	26.25	17.50	104.82	21 0 1	1463.9	-28.81	17.83
110.00	12 0 14	3789.92	2.57	139.91	11.68	55.90	13 3 24	3189.9	-1.93	133.70

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.3793	TRA	-.9234	TC3	1.1163	BAU	.2769	SGT	1939.9	SGR	1306.6	SG3	2867.6	ST	825.4	SR	522.4	SS	2225.3
RDE	.2776	RRA	-.3760	RC3	1.5201	FAU	.47777	RRT	.8658	RRF	-.9681	RTF	-.8892	CRT	.9684	CRS	.8695	CST	.9627
FDE	-2.8246	FRA	11.7936	FC	-37.6692	BSP	7956	SGB	2338.9	R23	-.2540	R13	-.9398	LSA	2409.3	MSA	316.8	SSA	31.3
BDE	.4700	BRA	.9970	BC3	1.8860	FSP	9782	SG1	2271.3	SG2	558.4	THA	32.45	EL1	970.5	EL2	110.8	ALF	31.97

LAUNCH DATE OCT 27 1964 FLIGHT TIME 290.00 ARRIVAL DATE AUG 13 1965

HELIOCENTRIC CONIC DISTANCE 666.934 EARTH TO MARS

RL	148.65	LAL	-.00	LOL	33.61	VL	32.803	GAL	-3.89	AZL	89.12	HCA	209.05	SMA	187.04	ECC	.21572	INC	.8813	V1	29.974
RP	226.95	LAP	-.43	LOP	242.66	VP	21.448	GAP	-1.87	AZP	90.77	TAL	337.78	TAP	186.83	RCA	146.69	APO	227.39	V2	24.235
RC	243.792	GL	8.76	GP	7.05	ZAL	122.18	ZAP	119.81	ETS	174.65	ZAE	156.00	ETE	159.61	ZAC	95.17	ETC	256.10	CLP	120.06

PLANETOCENTRIC CONIC

C3	10.935	VHL	3.307	DLA	17.35	RAL	161.36	RAD	6567.4	VEL	11.503	PTH	2.00	VHP	3.139	DPA	6.54	RAP	186.00	ECC	1.1800

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 21 27	2652.28	-27.23	71.13	18.67	98.08	18 5 39	2052.3	-25.83	62.74
90.00	10 6 10	4151.90	-1.51	169.30	13.99	61.72	11 15 22	3551.9	-5.28	162.65
100.00	18 52 50	2357.59	-28.38	49.25	18.47	99.80	19 32 8	1757.6	-26.74	40.83
100.00	11 17 28	3921.82	-.50	151.82	13.42	60.11	12 22 50	3321.8	-4.47	145.28
110.00	20 23 9	2075.00	-31.35	27.05	17.74	104.38	20 57 44	1475.0	-29.06	18.60
110.00	12 3 38	3777.18	2.08	139.24	11.81	55.87	13 6 35	3177.2	-2.41	133.04

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.3540	TRA	-.8281	TC3	.8492	BAU	.2557	SGT	1717.8	SGR	1309.8	SG3	2958.0	ST	761.5	SR	525.4	SS	2238.4
RDE	.2791	RRA	-.3731	RC3	1.5294	FAU	.49169	RRT	.8367	RRF	-.9661	RTF	-.8599	CRT	.9716	CRS	.8596	CST	.9528
FDE	-2.8183	FRA	12.1374	FC	-38.9276	BSP	7258	SGB	2160.2	R23	-.2669	R13	-.9333	LSA	2399.1	MSA	331.4	SSA	31.1
BDE	.4508	BRA	.9082	BC3	1.7493	FSP	10116	SG1	2077.1	SG2	593.3	THA	35.92	EL1	919.4	EL2	102.9	ALF	34.33

LAUNCH DATE OCT 27 1964 FLIGHT TIME 292.00 ARRIVAL DATE AUG 15 1965

HELIOCENTRIC CONIC DISTANCE 670.850 EARTH TO MARS

RL	148.65	LAL	-.00	LOL	33.61	VL	32.796	GAL	-3.88	AZL	89.08	HCA	210.11	SMA	186.92	ECC	.21519	INC	.9189	V1	29.974
RP	226.56	LAP	-.46	LOP	243.71	VP	21.485	GAP	-2.15	AZP	90.80	TAL	337.79	TAP	187.90	RCA	146.70	APO	227.15	V2	24.277
RC	245.534	GL	9.15	GP	6.93	ZAL	122.11	ZAP	118.05	ETS	175.02	ZAE	154.18	ETE	161.44	ZAC	94.90	ETC	256.15	CLP	118.28

PLANETOCENTRIC CONIC

C3	10.897	VHL	3.301	DLA	17.73	RAL	161.49	RAD	6567.4	VEL	11.502	PTH	2.00	VHP	3.094	DPA	6.74	RAP	185.29	ECC	1.1793

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 18 12	2665.88	-27.36	72.11	18.89	97.61	18 2 38	2065.9	-26.02	63.69
90.00	10 10 26	4136.87	-2.00	168.46	14.16	61.75	11 19 23	3536.9	-5.76	161.80
100.00	18 49 55	2370.09	-28.52	50.15	18.69	99.34	19 29 25	1770.1	-26.94	41.71
100.00	11 21 24	3907.90	-.97	151.05	13.58	60.12	12 26 32	3307.9	-4.94	144.52
110.00	20 20 56	2085.34	-31.52	27.81	17.98	103.96	20 55 41	1485.3	-29.28	19.32
110.00	12 6 53	3765.41	1.63	138.63	11.96	55.85	13 9 38	3165.4	-2.86	132.42

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.3300	TRA	-.7284	TC3	.5668	BAU	.2389	SGT	1493.3	SGR	1313.4	SG3	3046.7	ST	697.6	SR	529.0	SS	2252.9
RDE	.2810	RRA	-.3701	RC3	1.5390	FAU	.50561	RRT	.7927	RRF	-.9641	RTF	-.8144	CRT	.9763	CRS	.8501	CST	.9397
FDE	-2.8191	FRA	12.4687	FC	-40.1691	BSP	6546	SGB	1988.7	R23	-.2782	R13	-.9268	LSA	2392.0	MSA	345.6	SSA	31.0
BDE	.4334	BRA	.8171	BC3	1.6401	FSP	10428	SG1	1884.8	SG2	634.4	THA	40.39	EL1	870.7	EL2	91.8	ALF	36.99

LAUNCH DATE OCT 27 1964 FLIGHT TIME 294.00 ARRIVAL DATE AUG 17 1965

HELIOCENTRIC CONIC DISTANCE 674.774 EARTH TO MARS

RL	148.65	LAL	-.00	LOL	33.61	VL	32.790	GAL	-3.87	AZL	89.05	HCA	211.16	SMA	186.81	ECC	.21470	INC	.9544	V1	29.974
RP	226.17	LAP	-.49	LOP	244.77	VP	21.522	GAP	-2.43	AZP	90.82	TAL	337.80	TAP	188.96	RCA	146.70	APO	226.92	V2	24.318
RC	247.256	GL	9.52	GP	6.82	ZAL	122.06	ZAP	116.25	ETS	175.37	ZAE	152.31	ETE	163.05	ZAC	94.63	ETC	256.20	CLP	116.46

PLANETOCENTRIC CONIC

C3	10.866	VHL	3.296	DLA	18.07	RAL	161.63	RAD	6567.4	VEL	11.500	PTH	2.00	VHP	3.052	DPA	6.96	RAP	184.56	ECC	1.1788

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 15 13	2678.65	-27.47	73.02	19.12	97.16	17 59 52	2078.6	-26.19	64.59
90.00	10 14 31	4122.95	-2.45	167.68	14.34	61.78	11 23 14	3522.9	-6.20	161.01
100.00	18 47 17	2381.80	-28.65	51.00	18.93	98.92	19 26 58	1781.8	-27.12	42.53
100.00	11 25 9	3895.03	-1.40	150.35	13.76	60.14	12 30 4	3295.0	-5.37	143.80
110.00	20 18 56	2095.02	-31.68	28.52	18.23	103.57	20 53 51	1495.0	-29.49	20.00
110.00	12 9 58	3754.58	1.22	138.06	12.13	55.84	13 12 33	3154.6	-3.28	131.85

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.3068	TRA	-.6255	TC3	.2673	BAU	.2282	SGT	1274.0	SGR	1317.1	SG3	3132.9	ST	634.0	SR	533.0	SS	2268.6
RDE	.2833	RRA	-.3673	RC3	1.5478	FAU	.51911	RRT	.7213	RRF	-.9621	RTF	-.7398	CRT	.9821	CRS	.8410	CST	.9219
FDE	-2.8235	FRA	12.7950	FC	-41.3579	BSP	5867	SGB	1832.4	R23	-.2832	R13	-.9219	LSA	2388.0	MSA	359.5	SSA	30.8
BDE	.4176	BRA	.7253	BC3	1.5707	FSP	10732	SG1	1700.2	SG2	683.5	THA	46.32	EL1	824.7	EL2	77.3	ALF	39.96

LAUNCH DATE OCT 27 1964 FLIGHT TIME 296.00 ARRIVAL DATE AUG 19 1965

HELIOCENTRIC CONIC DISTANCE 678.709 EARTH TO MARS

RL 148.65 LAL -.00 LOL 33.61 VL 32.784 GAL -3.87 AZL 89.01 HCA 212.23 SMA 186.71 ECC .21426 INC .9881 V1 29.974
RP 225.78 LAP -.53 LOP 245.83 VP 21.560 GAP -2.70 AZP 90.84 TAL 337.79 TAP 190.01 RCA 146.71 APO 226.71 V2 24.360
RC 248.959 GL 9.86 GP 6.71 ZAL 122.04 ZAP 114.42 ETS 175.71 ZAE 150.37 ETE 164.49 ZAC 94.35 ETC 256.25 CLP 114.60

PLANETOCENTRIC CONIC

C3 10.843 VHL 3.293 DLA 18.39 RAL 161.77 RAD 6567.4 VEL 11.499 PTH 2.00 VHP 3.014 DPA 7.19 RAP 183.79 ECC 1.1784

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 12 31	2690.61	-27.57	73.88	19.35	96.74	17 57 22	2090.6	-26.35	65.43
90.00	10 18 24	4110.09	-2.86	166.96	14.54	61.82	11 26 54	3510.1	-6.61	160.29
100.00	18 44 53	2392.76	-28.76	51.79	19.17	98.51	19 24 46	1792.8	-27.29	43.30
100.00	11 28 43	3883.17	-1.81	149.70	13.96	60.16	12 33 26	3283.2	-5.76	143.15
110.00	20 17 10	2104.05	-31.82	29.19	18.49	103.20	20 52 14	1504.1	-29.68	20.63
110.00	12 12 55	3744.64	.84	137.54	12.31	55.83	13 15 20	3144.6	-3.65	131.33

DIFFERENTIAL CORRECTIONS
TDE .2856 TRA -.5166 TC3 -.0419 BAU .2257
RDE .2863 RRA -.3641 RC3 1.5567 FAU .53263
FDE-2.8421 FRA13.0950 FC-42.5283 BSP 5212
BDE .4044 BRA .6320 BC3 1.5573 FSP 10992

MID-COURSE EXECUTION ACCURACY
SGT 1070.1 SGR 1321.0 SG3 3215.9
RRT .6026 RRF -.9601 RTF -.6134
SGB 1700.0 R23 -.2679 R13 -.9230
SG1 1532.3 SG2 736.2 THA 54.70

ORBIT DETERMINATION ACCURACY
ST 572.5 SR 537.8 SS 2285.8
CRT .9889 CRS .8330 CST .8963
LSA 2387.7 MSA 373.7 SSA 30.5
EL1 783.3 EL2 58.4 ALF 43.19

LAUNCH DATE OCT 27 1964 FLIGHT TIME 298.00 ARRIVAL DATE AUG 21 1965

HELIOCENTRIC CONIC DISTANCE 682.651 EARTH TO MARS

RL 148.65 LAL -.00 LOL 33.61 VL 32.778 GAL -3.86 AZL 88.98 HCA 213.29 SMA 186.61 ECC .21386 INC 1.0198 V1 29.974
RP 225.38 LAP -.56 LOP 246.90 VP 21.599 GAP -2.97 AZP 90.85 TAL 337.77 TAP 191.06 RCA 146.70 APO 226.52 V2 24.402
RC 250.643 GL 10.19 GP 6.61 ZAL 122.03 ZAP 112.55 ETS 176.03 ZAE 148.39 ETE 165.77 ZAC 94.07 ETC 256.31 CLP 112.71

PLANETOCENTRIC CONIC

C3 10.826 VHL 3.290 DLA 18.68 RAL 161.93 RAD 6567.4 VEL 11.498 PTH 2.00 VHP 2.979 DPA 7.44 RAP 183.00 ECC 1.1782

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 10 7	2701.78	-27.65	74.69	19.60	96.35	17 55 9	2101.8	-26.49	66.22
90.00	10 22 5	4098.29	-3.24	166.30	14.76	61.85	11 30 23	3498.3	-6.98	159.62
100.00	18 42 46	2402.97	-28.86	52.54	19.42	98.13	19 22 49	1803.0	-27.44	44.02
100.00	11 32 7	3872.33	-2.17	149.10	14.17	60.18	12 36 39	3272.3	-6.13	142.54
110.00	20 15 38	2112.46	-31.95	29.81	18.76	102.85	20 50 50	1512.5	-29.85	21.23
110.00	12 15 45	3735.60	.49	137.07	12.51	55.82	13 18 0	3135.6	-4.00	130.86

DIFFERENTIAL CORRECTIONS
TDE .2619 TRA -.4063 TC3 -.3774 BAU .2326
RDE .2888 RRA -.3616 RC3 1.5619 FAU .54462
FDE-2.8416 FRA13.4042 FC-43.5527 BSP 4732
BDE .3899 BRA .5439 BC3 1.6068 FSP 11281

MID-COURSE EXECUTION ACCURACY
SGT 909.6 SGR 1323.3 SG3 3293.4
RRT .3909 RRF -.9580 RTF -.3905
SGB 1605.8 R23 -.2054 R13 -.9359
SG1 1396.0 SG2 793.7 THA 67.23

ORBIT DETERMINATION ACCURACY
ST 508.1 SR 541.9 SS 2300.1
CRT .9943 CRS .8237 CST .8602
LSA 2385.8 MSA 386.4 SSA 30.4
EL1 741.8 EL2 39.6 ALF 46.85

LAUNCH DATE OCT 27 1964 FLIGHT TIME 300.00 ARRIVAL DATE AUG 23 1965

HELIOCENTRIC CONIC DISTANCE 686.602 EARTH TO MARS

RL 148.65 LAL -.00 LOL 33.61 VL 32.773 GAL -3.86 AZL 88.95 HCA 214.36 SMA 186.53 ECC .21350 INC 1.0499 V1 29.974
RP 224.99 LAP -.59 LOP 247.97 VP 21.638 GAP -3.24 AZP 90.87 TAL 337.73 TAP 192.09 RCA 146.70 APO 226.35 V2 24.444
RC 252.307 GL 10.50 GP 6.50 ZAL 122.04 ZAP 110.65 ETS 176.35 ZAE 146.36 ETE 166.93 ZAC 93.79 ETC 256.37 CLP 110.79

PLANETOCENTRIC CONIC

C3 10.816 VHL 3.289 DLA 18.94 RAL 162.11 RAD 6567.4 VEL 11.498 PTH 2.00 VHP 2.947 DPA 7.70 RAP 182.18 ECC 1.1780

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 7 59	2712.17	-27.73	75.44	19.86	95.98	17 53 11	2112.2	-26.61	66.95
90.00	10 25 36	4087.52	-3.59	165.70	14.99	61.89	11 33 43	3487.5	-7.32	159.01
100.00	18 40 55	2412.47	-28.95	53.23	19.69	97.78	19 21 8	1812.5	-27.57	44.70
100.00	11 35 21	3862.45	-2.51	148.56	14.40	60.20	12 39 43	3262.5	-6.45	142.00
110.00	20 14 19	2120.27	-32.07	30.39	19.04	102.53	20 49 39	1520.3	-30.01	21.78
110.00	12 18 26	3727.41	.18	136.64	12.72	55.82	13 20 34	3127.4	-4.31	130.43

DIFFERENTIAL CORRECTIONS
TDE .2401 TRA -.2099 TC3 -.7231 BAU .2495
RDE .2920 RRA -.3586 RC3 1.5665 FAU .55631
FDE-2.8583 FRA13.6838 FC-44.5287 BSP 4417
BDE .3780 BRA .4617 BC3 1.7253 FSP 11521

MID-COURSE EXECUTION ACCURACY
SGT 829.6 SGR 1325.4 SG3 3366.2
RRT .0697 RRF -.9558 RTF -.0513
SGB 1563.6 R23 -.0578 R13 -.9542
SG1 1327.5 SG2 826.3 THA 85.92

ORBIT DETERMINATION ACCURACY
ST 448.3 SR 546.9 SS 2316.4
CRT .9961 CRS .8159 CST .8057
LSA 2388.6 MSA 399.3 SSA 30.1
EL1 706.5 EL2 30.7 ALF 50.68

LAUNCH DATE OCT 27 1964 FLIGHT TIME 302.00 ARRIVAL DATE AUG 25 1965

HELIOCENTRIC CONIC DISTANCE 690.562 EARTH TO MARS

RL 148.65 LAL -.00 LOL 33.61 VL 32.768 GAL -3.87 AZL 88.92 HCA 215.43 SMA 186.44 ECC .21319 INC 1.0785 V1 29.974
RP 224.60 LAP -.63 LOP 249.04 VP 21.678 GAP -3.49 AZP 90.88 TAL 337.68 TAP 193.12 RCA 146.70 APO 226.19 V2 24.485
RC 253.951 GL 10.79 GP 6.40 ZAL 122.08 ZAP 108.72 ETS 176.65 ZAE 144.29 ETE 167.97 ZAC 93.50 ETC 256.44 CLP 108.85

PLANETOCENTRIC CONIC

C3 10.813 VHL 3.288 DLA 19.18 RAL 162.29 RAD 6567.4 VEL 11.498 PTH 2.00 VHP 2.919 DPA 7.98 RAP 181.34 ECC 1.1779

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 6 8	2721.80	-27.80	76.14	20.13	95.64	17 51 30	2121.8	-26.72	67.63
90.00	10 28 56	4077.77	-3.90	165.15	15.24	61.93	11 36 54	3477.8	-7.62	158.46
100.00	18 39 20	2421.26	-29.03	53.87	19.97	97.45	19 19 41	1821.3	-27.70	45.32
100.00	11 38 25	3853.53	-2.81	148.07	14.64	60.23	12 42 39	3253.5	-6.75	141.50
110.00	20 13 13	2127.50	-32.17	30.93	19.34	102.23	20 48 41	1527.5	-30.16	22.29
110.00	12 21 1	3720.06	-.10	136.26	12.95	55.82	13 23 1	3120.1	-4.59	130.05

DIFFERENTIAL CORRECTIONS
TDE .2173 TRA -.1724 TC3-1.0849 BAU .2757
RDE .2951 RRA -.3556 RC3 1.5684 FAU .56683
FDE-2.8652 FRA13.9545 FC-45.3847 BSP 4378
BDE .3665 BRA .3952 BC3 1.9071 FSP 11759

MID-COURSE EXECUTION ACCURACY
SGT 868.1 SGR 1326.2 SG3 3432.8
RRT -.2889 RRF -.9536 RTF .3252
SGB 1585.1 R23 .1164 R13 -.9479
SG1 1363.4 SG2 808.5 THA 106.75

ORBIT DETERMINATION ACCURACY
ST 391.1 SR 551.4 SS 2330.5
CRT .9868 CRS .8076 CST .7218
LSA 2391.3 MSA 411.5 SSA 30.0
EL1 674.1 EL2 51.7 ALF 54.77

LAUNCH DATE OCT 27 1964 FLIGHT TIME 304.00 ARRIVAL DATE AUG 27 1965

HELIOCENTRIC CONIC DISTANCE 694.530 EARTH TO MARS

RL 148.65 LAL -.00 LOL 33.61 VL 32.764 GAL -3.87 AZL 88.89 HCA 216.51 SMA 186.37 ECC .21292 INC 1.1058 V1 29.974
RP 224.21 LAP -.66 LOP 250.11 VP 21.719 GAP -3.75 AZP 90.89 TAL 337.63 TAP 194.14 RCA 146.69 APO 226.05 V2 24.527
RC 255.576 GL 11.06 GP 6.30 ZAL 122.13 ZAP 106.77 ETS 176.95 ZAE 142.18 ETE 168.92 ZAC 93.21 ETC 256.52 CLP 106.87

PLANETOCENTRIC CONIC

C3 10.816 VHL 3.289 DLA 19.40 RAL 162.49 RAD 6567.4 VEL 11.498 PTH 2.00 VHP 2.895 DPA 8.26 RAP 180.48 ECC 1.1780

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 4 34	2730.67	-27.85	76.78	20.42	95.32	17 50 4	2130.7	-26.82	68.27
90.00	10 32 6	4069.02	-4.18	164.66	15.51	61.97	11 39 55	3469.0	-7.90	157.96
100.00	18 38 0	2429.37	-29.10	54.46	20.26	97.15	19 18 29	1829.4	-27.81	45.90
100.00	11 41 21	3845.56	-3.08	147.63	14.90	60.25	12 45 26	3245.6	-7.02	141.06
110.00	20 12 21	2134.17	-32.27	31.42	19.64	101.95	20 47 55	1534.2	-30.29	22.77
110.00	12 23 29	3713.52	-.35	135.92	13.20	55.82	13 25 22	3113.5	-4.84	129.70

DIFFERENTIAL CORRECTIONS
TDE .1947 TRA -.0502 TC3-1.4592 BAU .3097
RDE .2984 RRA -.3523 RC3 1.5682 FAU .57636
FDE-2.8771 FRA14.2039 FC-46.1333 BSP 4635
BDE .3564 BRA .3559 BC3 2.1421 FSP 11968

MID-COURSE EXECUTION ACCURACY
SGT 1022.2 SGR 1325.8 SG3 3492.7
RRT -.5558 RRF -.9512 RTF .6047
SGB 1674.2 R23 .2020 R13 -.9340
SG1 1494.9 SG2 753.7 THA 122.34

ORBIT DETERMINATION ACCURACY
ST 341.6 SR 556.2 SS 2344.7
CRT .9522 CRS .7998 CST .5912
LSA 2396.6 MSA 423.1 SSA 29.8
EL1 646.6 EL2 89.8 ALF 59.02

LAUNCH DATE OCT 27 1964 FLIGHT TIME 306.00 ARRIVAL DATE AUG 29 1965

HELIOCENTRIC CONIC DISTANCE 698.506 EARTH TO MARS

RL 148.65 LAL -.00 LOL 33.61 VL 32.760 GAL -3.88 AZL 88.87 HCA 217.59 SMA 186.30 ECC .21269 INC 1.1319 V1 29.974
RP 223.82 LAP -.69 LOP 251.19 VP 21.760 GAP -4.00 AZP 90.90 TAL 337.55 TAP 195.14 RCA 146.68 APO 225.92 V2 24.569
RC 257.180 GL 11.32 GP 6.20 ZAL 122.21 ZAP 104.79 ETS 177.24 ZAE 140.04 ETE 169.78 ZAC 92.92 ETC 256.59 CLP 104.88

PLANETOCENTRIC CONIC

C3 10.826 VHL 3.290 DLA 19.59 RAL 162.71 RAD 6567.4 VEL 11.498 PTH 2.00 VHP 2.873 DPA 8.55 RAP 179.61 ECC 1.1782

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 3 17	2738.80	-27.90	77.37	20.72	95.03	17 48 55	2138.8	-26.91	68.84
90.00	10 35 5	4061.27	-4.43	164.23	15.79	62.00	11 42 46	3461.3	-8.14	157.52
100.00	18 36 56	2436.79	-29.16	55.00	20.57	96.87	19 17 33	1836.8	-27.91	46.43
100.00	11 44 7	3838.52	-3.32	147.24	15.18	60.28	12 48 5	3238.5	-7.25	140.66
110.00	20 11 42	2140.28	-32.35	31.88	19.96	101.69	20 47 23	1540.3	-30.41	23.20
110.00	12 25 50	3707.79	-.57	135.62	13.47	55.82	13 27 37	3107.8	-5.05	129.40

DIFFERENTIAL CORRECTIONS
TDE .1721 TRA .0756 TC3-1.8453 BAU .3502
RDE .3017 RRA -.3490 RC3 1.5649 FAU .58449
FDE-2.8841 FRA14.4376 FC-46.7409 BSP 5175
BDE .3474 BRA .3571 BC3 2.4195 FSP 12162

MID-COURSE EXECUTION ACCURACY
SGT 1258.6 SGR 1323.9 SG3 3545.0
RRT -.7101 RRF -.9486 RTF .7664
SGB 1826.6 R23 .2160 R13 -.9330
SG1 1689.5 SG2 694.4 THA 132.96

ORBIT DETERMINATION ACCURACY
ST 304.9 SR 560.8 SS 2357.4
CRT .8672 CRS .7918 CST .3925
LSA 2403.1 MSA 434.6 SSA 29.6
EL1 623.5 EL2 136.5 ALF 63.38

LAUNCH DATE OCT 27 1964 FLIGHT TIME 308.00 ARRIVAL DATE AUG 31 1965

HELIOCENTRIC CONIC DISTANCE 702.489 EARTH TO MARS

RL 148.65 LAL -.00 LOL 33.61 VL 32.756 GAL -3.89 AZL 88.84 HCA 218.67 SMA 186.24 ECC .21249 INC 1.1566 V1 29.974
RP 223.44 LAP -.72 LOP 252.28 VP 21.802 GAP -4.25 AZP 90.90 TAL 337.47 TAP 196.14 RCA 146.66 APO 225.81 V2 24.611
RC 258.763 GL 11.56 GP 6.10 ZAL 122.31 ZAP 102.80 ETS 177.51 ZAE 137.88 ETE 170.57 ZAC 92.63 ETC 256.67 CLP 102.87

PLANETOCENTRIC CONIC

C3 10.843 VHL 3.293 DLA 19.76 RAL 162.94 RAD 6567.4 VEL 11.499 PTH 2.00 VHP 2.856 DPA 8.84 RAP 178.72 ECC 1.1784

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 2 17	2746.18	-27.95	77.91	21.04	94.76	17 48 3	2146.2	-26.99	69.37
90.00	10 37 54	4054.53	-4.64	163.85	16.09	62.03	11 45 29	3454.5	-8.35	157.13
100.00	18 36 9	2443.52	-29.22	55.50	20.89	96.61	19 16 52	1843.5	-28.00	46.91
100.00	11 46 44	3832.42	-3.52	146.91	15.47	60.30	12 50 36	3232.4	-7.45	140.32
110.00	20 11 18	2145.84	-32.43	32.29	20.30	101.45	20 47 3	1545.8	-30.51	23.60
110.00	12 28 4	3702.87	-.76	135.36	13.75	55.82	13 29 47	3102.9	-5.24	129.14

DIFFERENTIAL CORRECTIONS
TDE .1470 TRA .2039 TC3-2.2492 BAU .3963
RDE .3037 RRA -.3468 RC3 1.5535 FAU .58904
FDE-2.8390 FRA14.6989 FC-47.0310 BSP 5929
BDE .3374 BRA .4023 BC3 2.7336 FSP 12443

MID-COURSE EXECUTION ACCURACY
SGT 1549.7 SGR 1318.0 SG3 3585.7
RRT -.7941 RRF -.9457 RTF .8530
SGB 2034.4 R23 .2021 R13 -.9389
SG1 1930.0 SG2 643.2 THA 140.79

ORBIT DETERMINATION ACCURACY
ST 283.2 SR 563.2 SS 2363.2
CRT .7026 CRS .7800 CST .1107
LSA 2404.9 MSA 444.7 SSA 29.8
EL1 601.5 EL2 188.7 ALF 68.30

LAUNCH DATE OCT 27 1964 FLIGHT TIME 310.00 ARRIVAL DATE SEP 2 1965

HELIOCENTRIC CONIC DISTANCE 706.483 EARTH TO MARS

RL 148.65 LAL -.00 LOL 33.61 VL 32.753 GAL -3.91 AZL 88.82 HCA 219.76 SMA 186.18 ECC .21234 INC 1.1803 V1 29.974
RP 223.05 LAP -.75 LOP 253.37 VP 21.845 GAP -4.49 AZP 90.91 TAL 337.37 TAP 197.13 RCA 146.65 APO 225.72 V2 24.653
RC 260.326 GL 11.78 GP 6.00 ZAL 122.43 ZAP 100.79 ETS 177.78 ZAE 135.69 ETE 171.29 ZAC 92.33 ETC 256.76 CLP 100.85

PLANETOCENTRIC CONIC

C3 10.866 VHL 3.296 DLA 19.91 RAL 163.18 RAD 6567.4 VEL 11.500 PTH 2.00 VHP 2.841 DPA 9.14 RAP 177.83 ECC 1.1788

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 1 34	2752.86	-27.98	78.39	21.37	94.52	17 47 27	2152.9	-27.06	69.85
90.00	10 40 33	4048.72	-4.83	163.52	16.40	62.06	11 48 2	3448.7	-8.53	156.80
100.00	18 35 36	2449.63	-29.27	55.95	21.23	96.38	19 16 26	1849.6	-28.07	47.34
100.00	11 49 12	3827.18	-3.70	146.62	15.78	60.32	12 52 59	3227.2	-7.62	140.03
110.00	20 11 5	2150.90	-32.50	32.67	20.65	101.24	20 46 56	1550.9	-30.61	23.97
110.00	12 30 12	3698.68	-.92	135.15	14.05	55.83	13 31 51	3098.7	-5.40	128.92

DIFFERENTIAL CORRECTIONS
TDE .1256 TRA .3377 TC3-2.6445 BAU .4452
RDE .3085 RRA -.3415 RC3 1.5492 FAU .59642
FDE-2.8889 FRA14.8418 FC-47.5187 BSP 6850
BDE .3331 BRA .4803 BC3 3.0649 FSP 12500

MID-COURSE EXECUTION ACCURACY
SGT 1864.7 SGR 1315.0 SG3 3624.1
RRT -.8392 RRF -.9429 RTF .9033
SGB 2281.7 R23 .1725 R13 -.9496
SG1 2199.7 SG2 606.2 THA 146.51

ORBIT DETERMINATION ACCURACY
ST 292.4 SR 569.4 SS 2378.4
CRT .4805 CRS .7759 CST -.1745
LSA 2420.4 MSA 455.4 SSA 29.3
EL1 590.4 EL2 247.3 ALF 73.09

LAUNCH DATE OCT 27 1964 FLIGHT TIME 312.00 ARRIVAL DATE SEP 4 1965

DISTANCE 710.484

HELIOCENTRIC CONIC

RL 148.65 LAL -.00 LOL 33.61 VL 32.750 GAL -3.92 AZL 88.80 HCA 220.85 SMA 186.13 ECC .21223 INC 1.2030 V1 29.974
RP 222.66 LAP -.79 LOP 254.46 VP 21.888 GAP -4.73 AZP 90.91 TAL 337.26 TAP 198.12 RCA 146.63 APO 225.64 V2 24.695
RC 261.869 GL 12.00 GP 5.90 ZAL 122.58 ZAP 98.77 ETS 178.04 ZAE 133.48 ETE 171.96 ZAC 92.04 ETC 256.85 CLP 98.82

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 10.896 VHL 3.301 DLA 20.04 RAL 163.43 RAD 6567.4 VEL 11.501 PTH 2.00 VHP 2.831 DPA 9.44 RAP 176.92 ECC 1.1793

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 1 8	2758.82	-28.01	78.82	21.72	94.31	17 47 7	2158.8	-27.12	70.27
90.00	10 43 2	4043.89	-4.98	163.25	16.74	62.09	11 50 26	3443.9	-8.68	156.52
100.00	18 35 19	2455.09	-29.31	56.35	21.58	96.17	19 16 14	1855.1	-28.14	47.74
100.00	11 51 32	3822.85	-3.84	146.38	16.11	60.33	12 55 15	3222.9	-7.77	139.79
110.00	20 11 6	2155.44	-32.56	33.01	21.01	101.05	20 47 1	1555.4	-30.69	24.29
110.00	12 32 15	3695.26	-1.05	134.97	14.37	55.83	13 33 50	3095.3	-5.53	128.74

DIFFERENTIAL CORRECTIONS

TDE .1026 TRA .4739 TC3-3.0484 BAU .4975
RDE .3128 RRA -.3363 RC3 1.5405 FAU .60174
FDE-2.9211 FRA14.9726 FC-47.8115 BSP 7883
BDE .3292 BRA .5811 BC3 3.4155 FSP 12558

MID-COURSE EXECUTION ACCURACY

SGT 2201.9 SGR 1309.6 SG3 3652.7
RRT -.8649 RRF -.9400 RTF .9329
SGB 2561.9 R23 .1442 R13 -.9591
SG1 2495.4 SG2 580.1 THA 151.07

ORBIT DETERMINATION ACCURACY

ST 323.0 SR 574.9 SS 2389.9
CRT .2471 CRS .7706 CST -.4227
LSA 2435.0 MSA 465.2 SSA 29.0
EL1 582.6 EL2 308.9 ALF 78.95

LAUNCH DATE OCT 27 1964 FLIGHT TIME 314.00 ARRIVAL DATE SEP 6 1965

DISTANCE 714.493

HELIOCENTRIC CONIC

RL 148.65 LAL -.00 LOL 33.61 VL 32.747 GAL -3.94 AZL 88.77 HCA 221.95 SMA 186.09 ECC .21215 INC 1.2250 V1 29.974
RP 222.28 LAP -.82 LOP 255.55 VP 21.931 GAP -4.96 AZP 90.91 TAL 337.14 TAP 199.09 RCA 146.61 APO 225.57 V2 24.737
RC 263.392 GL 12.19 GP 5.80 ZAL 122.74 ZAP 96.75 ETS 178.29 ZAE 131.26 ETE 172.57 ZAC 91.74 ETC 256.94 CLP 96.78

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 10.933 VHL 3.306 DLA 20.15 RAL 163.71 RAD 6567.4 VEL 11.503 PTH 2.00 VHP 2.824 DPA 9.73 RAP 176.01 ECC 1.1799

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 0 59	2764.06	-28.04	79.21	22.08	94.12	17 47 3	2164.1	-27.17	70.65
90.00	10 45 21	4040.02	-5.10	163.04	17.08	62.11	11 52 41	3440.0	-8.80	156.30
100.00	18 35 18	2459.90	-29.34	56.70	21.95	95.99	19 16 18	1859.9	-28.20	48.08
100.00	11 53 43	3819.42	-3.96	146.19	16.45	60.35	12 57 22	3219.4	-7.88	139.60
110.00	20 11 20	2159.48	-32.61	33.32	21.39	100.87	20 47 19	1559.5	-30.77	24.58
110.00	12 34 11	3692.60	-1.16	134.83	14.71	55.83	13 35 44	3092.6	-5.63	128.60

DIFFERENTIAL CORRECTIONS

TDE .0789 TRA .6133 TC3-3.4575 BAU .5525
RDE .3169 RRA -.3311 RC3 1.5274 FAU .60492
FDE-2.9405 FRA15.0892 FC-47.9026 BSP 9001
BDE .3265 BRA .6969 BC3 3.7799 FSP 12611

MID-COURSE EXECUTION ACCURACY

SGT 2555.0 SGR 1301.9 SG3 3670.9
RRT -.8796 RRF -.9367 RTF .9512
SGB 2867.5 R23 .1199 R13 -.9668
SG1 2811.8 SG2 562.7 THA 154.78

ORBIT DETERMINATION ACCURACY

ST 372.5 SR 579.6 SS 2398.8
CRT .0499 CRS .7647 CST -.6022
LSA 2450.0 MSA 474.8 SSA 28.7
EL1 580.2 EL2 371.7 ALF 86.88

LAUNCH DATE OCT 27 1964 FLIGHT TIME 316.00 ARRIVAL DATE SEP 8 1965

DISTANCE 718.510

HELIOCENTRIC CONIC

RL 148.65 LAL -.00 LOL 33.61 VL 32.745 GAL -3.97 AZL 88.75 HCA 223.05 SMA 186.05 ECC .21212 INC 1.2460 V1 29.974
RP 221.89 LAP -.85 LOP 256.65 VP 21.974 GAP -5.19 AZP 90.91 TAL 337.00 TAP 200.05 RCA 146.58 APO 225.51 V2 24.779
RC 264.895 GL 12.38 GP 5.69 ZAL 122.93 ZAP 94.72 ETS 178.54 ZAE 129.03 ETE 173.14 ZAC 91.45 ETC 257.03 CLP 94.74

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 10.976 VHL 3.313 DLA 20.24 RAL 163.99 RAD 6567.4 VEL 11.505 PTH 2.00 VHP 2.820 DPA 10.03 RAP 175.11 ECC 1.1806

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 1 7	2768.59	-28.06	79.54	22.47	93.95	17 47 16	2168.6	-27.22	70.97
90.00	10 47 31	4037.12	-5.20	162.87	17.45	62.13	11 54 48	3437.1	-8.89	156.14
100.00	18 35 33	2464.08	-29.37	57.01	22.34	95.83	19 16 37	1864.1	-28.25	48.38
100.00	11 55 46	3816.86	-4.05	146.05	16.81	60.36	12 59 23	3216.9	-7.96	139.45
110.00	20 11 47	2163.02	-32.65	33.58	21.78	100.72	20 47 50	1563.0	-30.83	24.84
110.00	12 36 2	3690.68	-1.23	134.73	15.06	55.84	13 37 32	3090.7	-5.70	128.50

DIFFERENTIAL CORRECTIONS

TDE .0545 TRA .7549 TC3-3.8681 BAU .6094
RDE .3211 RRA -.3254 RC3 1.5116 FAU .60666
FDE-2.9633 FRA15.1758 FC-47.8504 BSP 10176
BDE .3257 BRA .8220 BC3 4.1530 FSP 12638

MID-COURSE EXECUTION ACCURACY

SGT 2917.9 SGR 1292.8 SG3 3679.8
RRT -.8879 RRF -.9331 RTF .9632
SGB 3191.4 R23 .1001 R13 -.9728
SG1 3143.3 SG2 552.1 THA 157.81

ORBIT DETERMINATION ACCURACY

ST 434.8 SR 584.5 SS 2406.8
CRT -.0987 CRS .7593 CST -.7202
LSA 2467.5 MSA 483.6 SSA 28.3
EL1 587.9 EL2 430.1 ALF 99.10

LAUNCH DATE OCT 27 1964 FLIGHT TIME 318.00 ARRIVAL DATE SEP 10 1965

DISTANCE 722.534

HELIOCENTRIC CONIC

RL 148.65 LAL -.00 LOL 33.61 VL 32.743 GAL -3.99 AZL 88.73 HCA 224.15 SMA 186.01 ECC .21212 INC 1.2661 V1 29.974
RP 221.51 LAP -.88 LOP 257.75 VP 22.018 GAP -5.42 AZP 90.91 TAL 336.85 TAP 201.00 RCA 146.56 APO 225.47 V2 24.820
RC 266.379 GL 12.55 GP 5.59 ZAL 123.13 ZAP 92.70 ETS 178.77 ZAE 126.81 ETE 173.67 ZAC 91.15 ETC 257.13 CLP 92.71

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 11.026 VHL 3.321 DLA 20.31 RAL 164.30 RAD 6567.4 VEL 11.507 PTH 2.00 VHP 2.820 DPA 10.32 RAP 174.21 ECC 1.1815

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 1 32	2772.43	-28.08	79.81	22.87	93.81	17 47 45	2172.4	-27.26	71.25
90.00	10 49 30	4035.16	-5.26	162.76	17.83	62.14	11 56 46	3435.2	-8.95	156.03
100.00	18 36 3	2467.64	-29.39	57.27	22.74	95.70	19 17 11	1867.6	-28.29	48.64
100.00	11 57 40	3815.18	-4.10	145.96	17.19	60.36	13 1 15	3215.2	-8.02	139.36
110.00	20 12 26	2166.09	-32.69	33.82	22.19	100.59	20 48 33	1566.1	-30.89	25.06
110.00	12 37 46	3689.50	-1.27	134.67	15.43	55.84	13 39 16	3089.5	-5.75	128.44

DIFFERENTIAL CORRECTIONS

TDE .0292 TRA .8996 TC3-4.2792 BAU .6681
RDE .3252 RRA -.3193 RC3 1.4928 FAU .60674
FDE-2.9798 FRA15.2354 FC-47.6385 BSP 11389
BDE .3266 BRA .9546 BC3 4.5321 FSP 12632

MID-COURSE EXECUTION ACCURACY

SGT 3289.1 SGR 1281.8 SG3 3678.9
RRT -.8922 RRF -.9293 RTF .9714
SGB 3530.1 R23 .0841 R13 -.9776
SG1 3487.6 SG2 545.9 THA 160.33

ORBIT DETERMINATION ACCURACY

ST 506.3 SR 589.0 SS 2412.3
CRT -.2072 CRS .7537 CST -.7973
LSA 2485.9 MSA 491.9 SSA 28.0
EL1 615.0 EL2 474.4 ALF 116.88

LAUNCH DATE OCT 27 1964 FLIGHT TIME 320.00 ARRIVAL DATE SEP 12 1965

HELIOCENTRIC CONIC DISTANCE 726.565 EARTH TO MARS

RL	148.65	LAL	-.00	LOL	33.61	VL	32.741	GAL	-4.02	AZL	88.71	HCA	225.26	SMA	185.99	ECC	.21215	INC	1.2857
RP	221.13	LAP	-.91	LOP	258.86	VP	22.063	GAP	-5.64	AZP	90.91	TAL	336.69	TAP	201.95	RCA	146.53	APO	225.44
RC	267.844	GL	12.72	GP	5.48	ZAL	123.36	ZAP	90.68	ETS	179.00	ZAE	124.58	ETE	174.16	ZAC	90.86	ETC	257.23

V1	29.974	V2	24.862	CLP	90.68														

PLANETOCENTRIC CONIC

C3	11.084	VHL	3.329	DLA	20.35	RAL	164.61	RAD	6567.4	VEL	11.510	PTH	2.00	VHP	2.823	DPA	10.60	RAP	173.32
ECC	1.1824																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 2 14	2775.58	-28.09	80.04	23.29	93.70	17 48 30	2175.6	-27.29	71.47
90.00	10 51 20	4034.14	-5.29	162.70	18.23	62.14	11 58 35	3434.1	-8.98	155.97
100.00	18 36 49	2470.59	-29.41	57.49	23.16	95.58	19 18 0	1870.6	-28.33	48.85
100.00	11 59 27	3814.36	-4.13	145.91	17.59	60.37	13 3 1	3214.4	-8.05	139.31
110.00	20 13 19	2168.68	-32.72	34.01	22.62	100.48	20 49 28	1568.7	-30.93	25.25
110.00	12 39 26	3689.04	-1.29	134.64	15.82	55.84	13 40 55	3089.0	-5.76	128.41

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.0034	TRA	1.0467	TC3	-4.6851	BAU	.7277	SGT	3663.7	SGR	1269.5	SG3	3668.9	ST	584.0	SR	593.6	SS	2417.3
RDE	.3296	RRA	-.3128	RC3	1.4715	FAU	.60538	RRT	-.8937	RRF	-.9251	RTF	.9772	CRT	-.2849	CRS	.7489	CST	-.8472
FDE	-3.0008	FRA	15.2653	FC	-47.2857	BSP	12640	SGB	3877.4	R23	.0716	R13	-.9814	LSA	2507.1	MSA	500.1	SSA	27.7
BDE	.3296	BRA	1.0924	BC3	4.9108	FSP	12598	SG1	3839.1	SG2	543.6	THA	162.43	EL1	667.5	EL2	497.7	ALF	133.36

LAUNCH DATE OCT 27 1964 FLIGHT TIME 322.00 ARRIVAL DATE SEP 14 1965

HELIOCENTRIC CONIC DISTANCE 730.604 EARTH TO MARS

RL	148.65	LAL	-.00	LOL	33.61	VL	32.740	GAL	-4.05	AZL	88.70	HCA	226.37	SMA	185.96	ECC	.21223	INC	1.3046
RP	220.75	LAP	-.94	LOP	259.97	VP	22.107	GAP	-5.86	AZP	90.90	TAL	336.51	TAP	202.88	RCA	146.50	APO	225.43
RC	269.292	GL	12.87	GP	5.38	ZAL	123.61	ZAP	88.67	ETS	179.21	ZAE	122.36	ETE	174.62	ZAC	90.57	ETC	257.33

V1	29.974	V2	24.903	CLP	88.67														

PLANETOCENTRIC CONIC

C3	11.148	VHL	3.339	DLA	20.38	RAL	164.95	RAD	6567.4	VEL	11.512	PTH	2.01	VHP	2.829	DPA	10.87	RAP	172.44
ECC	1.1835																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 3 13	2778.06	-28.11	80.23	23.72	93.61	17 49 31	2178.1	-27.31	71.65
90.00	10 53 1	4034.05	-5.29	162.70	18.64	62.14	12 0 15	3434.0	-8.98	155.96
100.00	18 37 50	2472.95	-29.43	57.66	23.60	95.49	19 19 3	1873.0	-28.36	49.02
100.00	12 1 5	3814.39	-4.13	145.91	18.00	60.37	13 4 39	3214.4	-8.04	139.31
110.00	20 14 24	2170.81	-32.75	34.17	23.06	100.39	20 50 35	1570.8	-30.97	25.40
110.00	12 41 0	3689.29	-1.28	134.66	16.23	55.84	13 42 29	3089.3	-5.76	128.43

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0235	TRA	1.1961	TC3	-5.0871	BAU	.7883	SGT	4041.8	SGR	1255.6	SG3	3649.0	ST	666.0	SR	597.9	SS	2419.8
RDE	.3340	RRA	-.3059	RC3	1.4477	FAU	.60248	RRT	-.8933	RRF	-.9206	RTF	.9814	CRT	-.3427	CRS	.7442	CST	-.8815
FDE	-3.0190	FRA	15.2627	FC	-46.7871	BSP	13900	SGB	4232.4	R23	.0618	R13	-.9843	LSA	2529.5	MSA	507.5	SSA	27.3
BDE	.3348	BRA	1.2346	BC3	5.2891	FSP	12531	SG1	4197.3	SG2	543.5	THA	164.22	EL1	737.3	EL2	507.4	ALF	143.75

LAUNCH DATE OCT 27 1964 FLIGHT TIME 324.00 ARRIVAL DATE SEP 16 1965

HELIOCENTRIC CONIC DISTANCE 734.650 EARTH TO MARS

RL	148.65	LAL	-.00	LOL	33.61	VL	32.739	GAL	-4.08	AZL	88.68	HCA	227.48	SMA	185.94	ECC	.21234	INC	1.3227
RP	220.37	LAP	-.97	LOP	261.09	VP	22.152	GAP	-6.07	AZP	90.89	TAL	336.32	TAP	203.80	RCA	146.46	APO	225.43
RC	270.721	GL	13.01	GP	5.27	ZAL	123.88	ZAP	86.68	ETS	179.42	ZAE	120.15	ETE	175.05	ZAC	90.29	ETC	257.43

V1	29.974	V2	24.945	CLP	86.67														

PLANETOCENTRIC CONIC

C3	11.220	VHL	3.350	DLA	20.40	RAL	165.29	RAD	6567.4	VEL	11.516	PTH	2.01	VHP	2.839	DPA	11.14	RAP	171.58
ECC	1.1847																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 4 28	2779.88	-28.11	80.36	24.18	93.54	17 50 48	2179.9	-27.33	71.78
90.00	10 54 32	4034.88	-5.27	162.75	19.07	62.14	12 1 47	3434.9	-8.96	156.01
100.00	18 39 6	2474.72	-29.44	57.79	24.06	95.43	19 20 21	1874.7	-28.38	49.15
100.00	12 2 35	3815.27	-4.10	145.96	18.43	60.36	13 6 11	3215.3	-8.02	139.36
110.00	20 15 42	2172.50	-32.77	34.30	23.52	100.31	20 51 55	1572.5	-31.00	25.52
110.00	12 42 29	3690.26	-1.24	134.71	16.65	55.84	13 43 59	3090.3	-5.72	128.48

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0520	TRA	1.3469	TC3	-5.4830	BAU	.8497	SGT	4420.6	SGR	1240.8	SG3	3620.8	ST	750.9	SR	602.4	SS	2422.0
RDE	.3385	RRA	-.2985	RC3	1.4221	FAU	.59839	RRT	-.8914	RRF	-.9158	RTF	.9845	CRT	-.3873	CRS	.7403	CST	-.9057
FDE	-3.0426	FRA	15.2292	FC	-46.1719	BSP	15159	SGB	4591.5	R23	.0542	R13	-.9866	LSA	2554.9	MSA	514.1	SSA	26.9
BDE	.3425	BRA	1.3796	BC3	5.6644	FSP	12426	SG1	4559.0	SG2	545.2	THA	165.74	EL1	815.7	EL2	511.3	ALF	149.92

LAUNCH DATE OCT 27 1964 FLIGHT TIME 326.00 ARRIVAL DATE SEP 18 1965

HELIOCENTRIC CONIC DISTANCE 738.704 EARTH TO MARS

RL	148.65	LAL	-.00	LOL	33.61	VL	32.738	GAL	-4.12	AZL	88.66	HCA	228.60	SMA	185.93	ECC	.21249	INC	1.3404
RP	220.00	LAP	-1.01	LOP	262.20	VP	22.197	GAP	-6.28	AZP	90.89	TAL	336.12	TAP	204.72	RCA	146.42	APO	225.44
RC	272.134	GL	13.14	GP	5.16	ZAL	124.17	ZAP	84.71	ETS	179.62	ZAE	117.96	ETE	175.44	ZAC	90.01	ETC	257.53

V1	29.974	V2	24.986	CLP	84.69														

PLANETOCENTRIC CONIC

C3	11.299	VHL	3.361	DLA	20.39	RAL	165.66	RAD	6567.4	VEL	11.519	PTH	2.01	VHP	2.853	DPA	11.39	RAP	170.73
ECC	1.1860																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 5 59	2781.06	-28.12	80.44	24.65	93.50	17 52 20	2181.1	-27.34	71.86
90.00	10 55 55	4036.61	-5.21	162.84	19.52	62.13	12 3 11	3436.6	-8.90	156.11
100.00	18 40 37	2475.93	-29.45	57.88	24.53	95.38	19 21 53	1875.9	-28.39	49.23
100.00	12 3 58	3816.98	-4.04	146.06	18.88	60.36	13 7 35	3217.0	-7.96	139.46
110.00	20 17 12	2173.75	-32.79	34.39	24.00	100.26	20 53 26	1573.8	-31.02	25.62
110.00	12 43 52	3691.92	-1.18	134.79	17.10	55.83	13 45 24	3091.9	-5.66	128.57

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.0810	TRA	1.5006	TC3	-5.8676	BAU	.9110	SGT	4798.5	SGR	1224.6	SG3	3583.1	ST	838.6	SR	606.6	SS	2421.9
RDE	.3431	RRA	-.2908	RC3	1.3937	FAU	.59256	RRT	-.8883	RRF	-.9105	RTF	.9869	CRT	-.4206	CRS	.7365	CST	-.9228
FDE	-3.0607	FRA	15.1704	FC	-45.4015	BSP	16441	SGB	4952.3	R23	.0483	R13	-.9885	LSA	2581.6	MSA	520.8	SSA	26.5
BDE	.3525	BRA	1.5285	BC3	6.0309	FSP	12298	SG1	4921.8	SG2	548.2	THA	167.06	EL1	898.5	EL2	513.6	ALF	154.04

LAUNCH DATE OCT 27 1964 FLIGHT TIME 328.00 ARRIVAL DATE SEP 20 1965

HELIOCENTRIC CONIC DISTANCE 742.764 EARTH TO MARS

RL 148.65 LAL -.00 LOL 33.61 VL 32.738 GAL -4.16 AZL 88.64 HCA 229.72 SMA 185.92 ECC .21267 INC 1.3575 V1 29.974
RP 219.62 LAP -1.04 LOP 263.33 VP 22.243 GAP -6.49 AZP 90.88 TAL 335.90 TAP 205.62 RCA 146.38 APO 225.46 V2 25.027
RC 273.529 GL 13.25 GP 5.05 ZAL 124.48 ZAP 82.77 ETS 179.80 ZAE 115.78 ETE 175.81 ZAC 89.74 ETC 257.63 CLP 82.74

PLANETOCENTRIC CONIC

C3 11.386 VHL 3.374 DLA 20.36 RAL 166.03 RAD 6567.4 VEL 11.523 PTH 2.01 VHP 2.869 DPA 11.63 RAP 169.92 ECC 1.1874

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 7 47	2781.61	-28.12	80.48	25.14	93.48	17 54 8	2181.6	-27.34	71.90
90.00	10 57 8	4039.24	-5.13	162.99	19.99	62.11	12 4 27	3439.2	-8.82	156.26
100.00	18 42 22	2476.57	-29.45	57.93	25.02	95.35	19 23 39	1876.6	-28.40	49.28
100.00	12 5 13	3819.51	-3.96	146.20	19.34	60.35	13 8 53	3219.5	-7.88	139.60
110.00	20 18 54	2174.58	-32.80	34.46	24.49	100.22	20 55 9	1574.6	-31.04	25.68
110.00	12 45 11	3694.27	-1.09	134.92	17.56	55.83	13 46 45	3094.3	-5.57	128.69

DIFFERENTIAL CORRECTIONS
TDE -.1114 TRA 1.6557 TC3-6.2420 BAU .9726
RDE .3477 RRA -.2828 RC3 1.3639 FAU .58564
FDE-3.0809 FRA15.0839 FC-44.5280 BSP 17715
BDE .3651 BRA 1.6797 BC3 6.3892 FSP 12144

MID-COURSE EXECUTION ACCURACY
SGT 5174.3 SGR 1207.6 SG3 3537.9
RRT -.8842 RRF -.9048 RTF .9888
SGB 5313.4 R23 .0437 R13 -.9900
SG1 5284.6 SG2 552.2 THA 168.21

ORBIT DETERMINATION ACCURACY
ST 928.0 SR 610.7 SS 2420.9
CRT -.4471 CRS .7333 CST -.9355
LSA 2610.8 MSA 527.0 SSA 26.0
EL1 984.3 EL2 515.0 ALF 156.96

LAUNCH DATE OCT 27 1964 FLIGHT TIME 330.00 ARRIVAL DATE SEP 22 1965

HELIOCENTRIC CONIC DISTANCE 746.831 EARTH TO MARS

RL 148.65 LAL -.00 LOL 33.61 VL 32.737 GAL -4.20 AZL 88.63 HCA 230.85 SMA 185.91 ECC .21289 INC 1.3741 V1 29.974
RP 219.25 LAP -1.07 LOP 264.45 VP 22.288 GAP -6.70 AZP 90.87 TAL 335.67 TAP 206.52 RCA 146.33 APO 225.49 V2 25.067
RC 274.906 GL 13.36 GP 4.94 ZAL 124.81 ZAP 80.84 ETS 179.98 ZAE 113.63 ETE 176.16 ZAC 89.47 ETC 257.73 CLP 80.81

PLANETOCENTRIC CONIC

C3 11.481 VHL 3.388 DLA 20.32 RAL 166.43 RAD 6567.4 VEL 11.527 PTH 2.01 VHP 2.889 DPA 11.86 RAP 169.13 ECC 1.1889

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 9 50	2781.54	-28.12	80.48	25.65	93.48	17 56 11	2181.5	-27.34	71.90
90.00	10 58 13	4042.75	-5.02	163.19	20.47	62.09	12 5 36	3442.8	-8.71	156.46
100.00	18 44 22	2476.68	-29.45	57.93	25.53	95.35	19 25 39	1876.7	-28.40	49.29
100.00	12 6 21	3822.85	-3.84	146.38	19.82	60.33	13 10 4	3222.8	-7.77	139.79
110.00	20 20 48	2174.99	-32.80	34.49	25.00	100.21	20 57 3	1575.0	-31.05	25.71
110.00	12 46 25	3697.30	-.98	135.07	18.04	55.83	13 48 2	3097.3	-5.45	128.85

DIFFERENTIAL CORRECTIONS
TDE -.1433 TRA 1.8125 TC3-6.6040 BAU 1.0341
RDE .3524 RRA -.2745 RC3 1.3325 FAU .57743
FDE-3.0992 FRA14.9726 FC-43.5417 BSP 18971
BDE .3804 BRA 1.8331 BC3 6.7371 FSP 11961

MID-COURSE EXECUTION ACCURACY
SGT 5547.0 SGR 1189.8 SG3 3485.1
RRT -.8793 RRF -.8987 RTF .9902
SGB 5673.2 R23 .0402 R13 -.9912
SG1 5645.8 SG2 556.6 THA 169.21

ORBIT DETERMINATION ACCURACY
ST 1018.8 SR 614.8 SS 2418.3
CRT -.4688 CRS .7304 CST -.9453
LSA 2641.9 MSA 532.5 SSA 25.6
EL1 1072.3 EL2 516.0 ALF 159.17

LAUNCH DATE OCT 27 1964 FLIGHT TIME 332.00 ARRIVAL DATE SEP 24 1965

HELIOCENTRIC CONIC DISTANCE 750.904 EARTH TO MARS

RL 148.65 LAL -.00 LOL 33.61 VL 32.737 GAL -4.25 AZL 88.61 HCA 231.98 SMA 185.91 ECC .21314 INC 1.3902 V1 29.974
RP 218.89 LAP -1.10 LOP 265.58 VP 22.333 GAP -6.90 AZP 90.86 TAL 335.42 TAP 207.40 RCA 146.29 APO 225.54 V2 25.108
RC 276.266 GL 13.46 GP 4.84 ZAL 125.17 ZAP 78.95 ETS 180.15 ZAE 111.50 ETE 176.48 ZAC 89.21 ETC 257.83 CLP 78.91

PLANETOCENTRIC CONIC

C3 11.584 VHL 3.404 DLA 20.26 RAL 166.83 RAD 6567.4 VEL 11.531 PTH 2.01 VHP 2.912 DPA 12.07 RAP 168.36 ECC 1.1906

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 12 8	2780.88	-28.12	80.43	26.18	93.51	17 58 29	2180.9	-27.33	71.85
90.00	10 59 9	4047.13	-4.88	163.44	20.97	62.07	12 6 36	3447.1	-8.58	156.71
100.00	18 46 36	2476.26	-29.45	57.90	26.06	95.37	19 27 52	1876.3	-28.40	49.26
100.00	12 7 22	3826.98	-3.71	146.61	20.32	60.32	13 11 9	3227.0	-7.63	140.02
110.00	20 22 54	2175.01	-32.80	34.49	25.52	100.21	20 59 9	1575.0	-31.05	25.71
110.00	12 47 34	3701.00	-.83	135.27	18.53	55.83	13 49 15	3101.0	-5.31	129.04

DIFFERENTIAL CORRECTIONS
TDE -.1764 TRA 1.9711 TC3-6.9502 BAU 1.0950
RDE .3572 RRA -.2660 RC3 1.2995 FAU .56799
FDE-3.1174 FRA14.8361 FC-42.4491 BSP 20227
BDE .3984 BRA 1.9890 BC3 7.0706 FSP 11756

MID-COURSE EXECUTION ACCURACY
SGT 5914.6 SGR 1171.2 SG3 3424.8
RRT -.8736 RRF -.8922 RTF .9914
SGB 6029.4 R23 .0375 R13 -.9921
SG1 6003.2 SG2 561.7 THA 170.10

ORBIT DETERMINATION ACCURACY
ST 1111.0 SR 618.7 SS 2414.4
CRT -.4862 CRS .7280 CST -.9527
LSA 2675.2 MSA 537.8 SSA 25.1
EL1 1161.8 EL2 517.0 ALF 160.93

LAUNCH DATE OCT 27 1964 FLIGHT TIME 334.00 ARRIVAL DATE SEP 26 1965

HELIOCENTRIC CONIC DISTANCE 754.981 EARTH TO MARS

RL 148.65 LAL -.00 LOL 33.61 VL 32.737 GAL -4.30 AZL 88.59 HCA 233.11 SMA 185.91 ECC .21343 INC 1.4059 V1 29.974
RP 218.52 LAP -1.12 LOP 266.71 VP 22.379 GAP -7.10 AZP 90.84 TAL 335.16 TAP 208.27 RCA 146.23 APO 225.59 V2 25.148
RC 277.609 GL 13.55 GP 4.73 ZAL 125.54 ZAP 77.09 ETS 180.32 ZAE 109.40 ETE 176.79 ZAC 88.97 ETC 257.92 CLP 77.04

PLANETOCENTRIC CONIC

C3 11.696 VHL 3.420 DLA 20.19 RAL 167.26 RAD 6567.4 VEL 11.536 PTH 2.01 VHP 2.938 DPA 12.27 RAP 167.64 ECC 1.1925

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 14 42	2779.63	-28.11	80.34	26.72	93.55	18 1 2	2179.6	-27.32	71.76
90.00	10 59 57	4052.39	-4.71	163.73	21.49	62.05	12 7 29	3452.4	-8.41	157.01
100.00	18 49 5	2475.32	-29.44	57.83	26.60	95.40	19 30 20	1875.3	-28.38	49.19
100.00	12 8 16	3831.94	-3.54	146.88	20.84	60.30	13 12 8	3231.9	-7.47	140.30
110.00	20 25 11	2174.62	-32.80	34.48	26.07	100.22	21 1 26	1574.6	-31.04	25.68
110.00	12 48 39	3705.39	-.67	135.50	19.05	55.82	13 50 24	3105.4	-5.15	129.28

DIFFERENTIAL CORRECTIONS
TDE -.2038 TRA 2.1399 TC3-7.2595 BAU 1.1520
RDE .3600 RRA -.2593 RC3 1.2581 FAU .55358
FDE-3.0514 FRA14.7590 FC-40.9769 BSP 21661
BDE .4137 BRA 2.1555 BC3 7.3677 FSP 11702

MID-COURSE EXECUTION ACCURACY
SGT 6273.8 SGR 1148.2 SG3 3352.6
RRT -.8671 RRF -.8841 RTF .9922
SGB 6378.0 R23 .0337 R13 -.9927
SG1 6353.0 SG2 564.9 THA 170.91

ORBIT DETERMINATION ACCURACY
ST 1204.9 SR 619.5 SS 2399.0
CRT -.4942 CRS .7179 CST -.9597
LSA 2701.1 MSA 542.5 SSA 25.1
EL1 1251.8 EL2 518.4 ALF 162.68

LAUNCH DATE OCT 27 1964 FLIGHT TIME 336.00 ARRIVAL DATE SEP 28 1965

HELIOCENTRIC CONIC DISTANCE 759.069 EARTH TO MARS

RL 148.65 LAL -.00 LOL 33.61 VL 32.738 GAL -4.35 AZL 88.58 HCA 234.25 SMA 185.92 ECC .21376 INC 1.4212 V1 29.974
RP 218.16 LAP -1.15 LOP 267.85 VP 22.425 GAP -7.29 AZP 90.83 TAL 334.89 TAP 209.14 RCA 146.18 APO 225.66 V2 25.188
RC 278.933 GL 13.62 GP 4.62 ZAL 125.93 ZAP 75.26 ETS 180.47 ZAE 107.34 ETE 177.07 ZAC 88.73 ETC 258.01 CLP 75.21

PLANETOCENTRIC CONIC

C3 11.816 VHL 3.437 DLA 20.09 RAL 167.69 RAD 6567.5 VEL 11.541 PTH 2.01 VHP 2.967 DPA 12.45 RAP 166.94 ECC 1.1945

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 17 30	2777.86	-28.10	80.21	27.29	93.62	18 3 47	2177.9	-27.31	71.64
90.00	11 0 37	4058.43	-4.52	164.07	22.02	62.02	12 8 16	3458.4	-8.23	157.35
100.00	18 51 45	2473.92	-29.44	57.73	27.17	95.46	19 32 59	1873.9	-28.37	49.09
100.00	12 9 3	3837.61	-3.35	147.19	21.38	60.28	13 13 1	3237.6	-7.28	140.61
110.00	20 27 39	2173.90	-32.79	34.40	26.63	100.25	21 3 53	1573.9	-31.03	25.63
110.00	12 49 39	3710.40	-.47	135.76	19.58	55.82	13 51 29	3110.4	-4.96	129.54

DIFFERENTIAL CORRECTIONS
TDE -.2431 TRA 2.2975 TC3-7.5823 BAU 1.2133
RDE .3659 RRA -.2495 RC3 1.2266 FAU .54404
FDE-3.1057 FRA14.5453 FC-39.8613 BSP 22797
BDE .4393 BRA 2.3110 BC3 7.6809 FSP 11380

MID-COURSE EXECUTION ACCURACY
SGT 6630.6 SGR 1131.0 SG3 3283.5
RRT -.8599 RRF -.8771 RTF .9930
SGB 6726.4 R23 .0329 R13 -.9935
SG1 6702.1 SG2 571.2 THA 171.59

ORBIT DETERMINATION ACCURACY
ST 1298.2 SR 624.7 SS 2397.4
CRT -.5100 CRS .7201 CST -.9638
LSA 2742.9 MSA 546.9 SSA 24.4
EL1 1343.9 EL2 519.1 ALF 163.72

LAUNCH DATE OCT 27 1964 FLIGHT TIME 338.00 ARRIVAL DATE SEP 30 1965

HELIOCENTRIC CONIC DISTANCE 763.163 EARTH TO MARS

RL 148.65 LAL -.00 LOL 33.61 VL 32.738 GAL -4.40 AZL 88.56 HCA 235.39 SMA 185.93 ECC .21413 INC 1.4361 V1 29.974
RP 217.80 LAP -1.18 LOP 268.99 VP 22.470 GAP -7.49 AZP 90.82 TAL 334.60 TAP 209.99 RCA 146.12 APO 225.74 V2 25.228
RC 280.240 GL 13.69 GP 4.52 ZAL 126.34 ZAP 73.47 ETS 180.61 ZAE 105.30 ETE 177.33 ZAC 88.49 ETC 258.10 CLP 73.41

PLANETOCENTRIC CONIC

C3 11.945 VHL 3.456 DLA 19.99 RAL 168.14 RAD 6567.5 VEL 11.547 PTH 2.02 VHP 2.999 DPA 12.61 RAP 166.29 ECC 1.1966

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 20 31	2775.57	-28.09	80.04	27.87	93.70	18 6 47	2175.6	-27.29	71.47
90.00	11 1 10	4065.29	-4.30	164.46	22.57	61.98	12 8 55	3465.3	-8.01	157.75
100.00	18 54 39	2472.06	-29.42	57.59	27.75	95.53	19 35 51	1872.1	-28.35	48.96
100.00	12 9 44	3844.04	-3.13	147.55	21.93	60.26	13 13 48	3244.0	-7.07	140.97
110.00	20 30 18	2172.81	-32.78	34.32	27.20	100.30	21 6 30	1572.8	-31.01	25.55
110.00	12 50 34	3716.05	-.26	136.05	20.13	55.82	13 52 30	3116.1	-4.74	129.84

DIFFERENTIAL CORRECTIONS
TDE -.2839 TRA 2.4578 TC3-7.8866 BAU 1.2738
RDE .3715 RRA -.2399 RC3 1.1934 FAU .53308
FDE-3.1464 FRA14.3265 FC-38.6365 BSP 23921
BDE .4676 BRA 2.4695 BC3 7.9764 FSP 11068

MID-COURSE EXECUTION ACCURACY
SGT 6981.2 SGR 1113.1 SG3 3208.6
RRT -.8521 RRF -.8694 RTF .9937
SGB 7069.4 R23 .0322 R13 -.9941
SG1 7045.8 SG2 577.1 THA 172.21

ORBIT DETERMINATION ACCURACY
ST 1392.9 SR 629.4 SS 2393.6
CRT -.5237 CRS .7216 CST -.9674
LSA 2786.0 MSA 550.6 SSA 23.8
EL1 1437.5 EL2 519.5 ALF 164.63

LAUNCH DATE OCT 27 1964 FLIGHT TIME 340.00 ARRIVAL DATE OCT 2 1965

HELIOCENTRIC CONIC DISTANCE 767.262 EARTH TO MARS

RL 148.65 LAL -.00 LOL 33.61 VL 32.739 GAL -4.46 AZL 88.55 HCA 236.54 SMA 185.94 ECC .21453 INC 1.4507 V1 29.974
RP 217.44 LAP -1.21 LOP 270.14 VP 22.516 GAP -7.68 AZP 90.80 TAL 334.30 TAP 210.83 RCA 146.05 APO 225.84 V2 25.268
RC 281.529 GL 13.75 GP 4.41 ZAL 126.77 ZAP 71.71 ETS 180.75 ZAE 103.30 ETE 177.58 ZAC 88.27 ETC 258.18 CLP 71.66

PLANETOCENTRIC CONIC

C3 12.083 VHL 3.476 DLA 19.86 RAL 168.60 RAD 6567.5 VEL 11.553 PTH 2.02 VHP 3.034 DPA 12.76 RAP 165.67 ECC 1.1989

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 23 46	2772.78	-28.08	79.84	28.47	93.80	18 9 59	2172.8	-27.26	71.27
90.00	11 1 36	4072.95	-4.05	164.88	23.14	61.95	12 9 29	3472.9	-7.77	158.18
100.00	18 57 45	2469.75	-29.41	57.42	28.34	95.62	19 38 54	1869.7	-28.32	48.79
100.00	12 10 18	3851.21	-2.89	147.94	22.50	60.23	13 14 30	3251.2	-6.83	141.37
110.00	20 33 7	2171.38	-32.76	34.21	27.80	100.36	21 9 18	1571.4	-30.98	25.44
110.00	12 51 26	3722.35	-.02	136.38	20.70	55.82	13 53 28	3122.3	-4.50	130.17

DIFFERENTIAL CORRECTIONS
TDE -.3255 TRA 2.6205 TC3-8.1678 BAU 1.3327
RDE .3769 RRA -.2306 RC3 1.1586 FAU .52079
FDE-3.1731 FRA14.1033 FC-37.3124 BSP 25059
BDE .4980 BRA 2.6307 BC3 8.2496 FSP 10773

MID-COURSE EXECUTION ACCURACY
SGT 7322.9 SGR 1094.6 SG3 3128.5
RRT -.8438 RRF -.8612 RTF .9942
SGB 7404.2 R23 .0316 R13 -.9946
SG1 7381.2 SG2 582.8 THA 172.77

ORBIT DETERMINATION ACCURACY
ST 1488.3 SR 633.5 SS 2387.2
CRT -.5351 CRS .7223 CST -.9705
LSA 2829.8 MSA 554.0 SSA 23.3
EL1 1531.6 EL2 520.0 ALF 165.46

LAUNCH DATE OCT 27 1964 FLIGHT TIME 342.00 ARRIVAL DATE OCT 4 1965

HELIOCENTRIC CONIC DISTANCE 771.366 EARTH TO MARS

RL 148.65 LAL -.00 LOL 33.61 VL 32.740 GAL -4.52 AZL 88.54 HCA 237.68 SMA 185.96 ECC .21497 INC 1.4649 V1 29.974
RP 217.09 LAP -1.24 LOP 271.29 VP 22.561 GAP -7.86 AZP 90.78 TAL 333.98 TAP 211.66 RCA 145.99 APO 225.94 V2 25.307
RC 282.801 GL 13.80 GP 4.31 ZAL 127.22 ZAP 70.00 ETS 180.88 ZAE 101.33 ETE 177.81 ZAC 88.06 ETC 258.26 CLP 69.94

PLANETOCENTRIC CONIC

C3 12.232 VHL 3.497 DLA 19.72 RAL 169.07 RAD 6567.5 VEL 11.559 PTH 2.02 VHP 3.072 DPA 12.89 RAP 165.09 ECC 1.2013

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 27 15	2769.50	-28.07	79.60	29.09	93.92	18 13 24	2169.5	-27.23	71.04
90.00	11 1 54	4081.38	-3.78	165.36	23.73	61.92	12 9 56	3481.4	-7.51	158.66
100.00	19 1 3	2467.01	-29.39	57.22	28.96	95.72	19 42 10	1867.0	-28.29	48.59
100.00	12 10 47	3859.11	-2.62	148.38	23.08	60.21	13 15 6	3259.1	-6.57	141.81
110.00	20 36 6	2169.62	-32.74	34.08	28.41	100.44	21 12 16	1569.6	-30.95	25.32
110.00	12 52 13	3729.26	.25	136.74	21.29	55.82	13 54 22	3129.3	-4.24	130.53

DIFFERENTIAL CORRECTIONS
TDE -.3683 TRA 2.7857 TC3-8.4286 BAU 1.3905
RDE .3823 RRA -.2215 RC3 1.1232 FAU .50763
FDE-3.1931 FRA13.8735 FC-35.9287 BSP 26178
BDE .5308 BRA 2.7945 BC3 8.5031 FSP 10471

MID-COURSE EXECUTION ACCURACY
SGT 7656.7 SGR 1076.1 SG3 3044.8
RRT -.8348 RRF -.8524 RTF .9946
SGB 7731.9 R23 .0312 R13 -.9949
SG1 7709.5 SG2 588.4 THA 173.27

ORBIT DETERMINATION ACCURACY
ST 1584.5 SR 637.3 SS 2379.5
CRT -.5449 CRS .7230 CST -.9730
LSA 2875.4 MSA 557.1 SSA 22.8
EL1 1626.6 EL2 520.6 ALF 166.20

LAUNCH DATE OCT 27 1964 FLIGHT TIME 344.00 ARRIVAL DATE OCT 6 1965

HELIOCENTRIC CONIC DISTANCE 775.477 EARTH TO MARS

RL 148.65 LAL -.00 LOL 33.61 VL 32.741 GAL -4.58 AZL 88.52 HCA 238.84 SMA 185.98 ECC .21544 INC 1.4788 V1 29.974
RP 216.74 LAP -1.27 LOP 272.44 VP 22.607 GAP -8.05 AZP 90.77 TAL 333.65 TAP 212.49 RCA 145.91 APO 226.05 V2 25.346
RC 284.057 GL 13.84 GP 4.21 ZAL 127.68 ZAP 68.32 ETS 181.00 ZAE 99.41 ETE 178.03 ZAC 87.86 ETC 258.33 CLP 68.26

PLANETOCENTRIC CONIC

C3 12.390 VHL 3.520 DLA 19.56 RAL 169.56 RAD 6567.5 VEL 11.566 PTH 2.02 VHP 3.112 DPA 13.01 RAP 164.56 ECC 1.2039

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 30 56	2765.78	-28.05	79.33	29.72	94.05	18 17 1	2165.8	-27.19	70.77
90.00	11 2 6	4090.57	-3.49	165.87	24.33	61.88	12 10 17	3490.6	-7.22	159.18
100.00	19 4 33	2463.87	-29.37	56.99	29.59	95.84	19 45 37	1863.9	-28.25	48.37
100.00	12 11 10	3867.72	-2.33	148.85	23.69	60.19	13 15 38	3267.7	-6.28	142.29
110.00	20 39 16	2167.56	-32.71	33.93	29.03	100.53	21 15 23	1567.6	-30.91	25.17
110.00	12 52 57	3736.80	.54	137.13	21.90	55.82	13 55 14	3136.8	-3.95	130.92

DIFFERENTIAL CORRECTIONS
TDE -.4132 TRA 2.9521 TC3-8.6695 BAU 1.4474
RDE .3877 RRA -.2124 RC3 1.0876 FAU .49306
FDE-3.2091 FRA13.6325 FC-34.5065 BSP 27277
BDE .5666 BRA 2.9598 BC3 8.7375 FSP 10172

MID-COURSE EXECUTION ACCURACY
SGT 7981.9 SGR 1057.8 SG3 2957.9
RRT -.8253 RRF -.8432 RTF .9950
SGB 8051.7 R23 .0310 R13 -.9952
SG1 8029.7 SG2 593.8 THA 173.72

ORBIT DETERMINATION ACCURACY
ST 1681.2 SR 641.0 SS 2370.4
CRT -.5540 CRS .7239 CST -.9752
LSA 2922.7 MSA 559.7 SSA 22.3
EL1 1722.2 EL2 520.9 ALF 166.85

LAUNCH DATE OCT 27 1964 FLIGHT TIME 346.00 ARRIVAL DATE OCT 8 1965

HELIOCENTRIC CONIC DISTANCE 779.592 EARTH TO MARS

RL 148.65 LAL -.00 LOL 33.61 VL 32.743 GAL -4.65 AZL 88.51 HCA 239.99 SMA 186.01 ECC .21596 INC 1.4924 V1 29.974
RP 216.39 LAP -1.29 LOP 273.59 VP 22.652 GAP -8.23 AZP 90.75 TAL 333.30 TAP 213.30 RCA 145.84 APO 226.18 V2 25.385
RC 285.296 GL 13.88 GP 4.11 ZAL 128.17 ZAP 66.69 ETS 181.11 ZAE 97.52 ETE 178.23 ZAC 87.67 ETC 258.40 CLP 66.62

PLANETOCENTRIC CONIC

C3 12.560 VHL 3.544 DLA 19.39 RAL 170.06 RAD 6567.5 VEL 11.574 PTH 2.02 VHP 3.155 DPA 13.10 RAP 164.07 ECC 1.2067

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 34 48	2761.64	-28.03	79.03	30.38	94.20	18 20 50	2161.6	-27.15	70.47
90.00	11 2 12	4100.50	-3.17	166.43	24.95	61.85	12 10 33	3500.5	-6.91	159.74
100.00	19 8 14	2460.36	-29.34	56.73	30.24	95.97	19 49 15	1860.4	-28.21	48.11
100.00	12 11 28	3877.01	-2.01	149.36	24.31	60.17	13 16 5	3277.0	-5.97	142.80
110.00	20 42 35	2165.20	-32.68	33.75	29.68	100.63	21 18 40	1565.2	-30.87	25.00
110.00	12 53 37	3744.94	.85	137.56	22.52	55.83	13 56 1	3144.9	-3.64	131.35

DIFFERENTIAL CORRECTIONS
TDE -.4595 TRA 3.1212 TC3-8.8877 BAU 1.5028
RDE .3930 RRA -.2035 RC3 1.0518 FAU .47950
FDE-3.2190 FRA13.3865 FC-33.0520 BSP 28354
BDE .6046 BRA 3.1278 BC3 8.9497 FSP 9869

MID-COURSE EXECUTION ACCURACY
SGT 8297.8 SGR 1039.8 SG3 2868.6
RRT -.8153 RRF -.8335 RTF .9952
SGB 8362.7 R23 .0308 R13 -.9955
SG1 8341.2 SG2 599.0 THA 174.14

ORBIT DETERMINATION ACCURACY
ST 1778.5 SR 644.4 SS 2359.9
CRT -.5621 CRS .7247 CST -.9771
LSA 2971.7 MSA 562.0 SSA 21.9
EL1 1818.4 EL2 521.2 ALF 167.44

LAUNCH DATE OCT 27 1964 FLIGHT TIME 348.00 ARRIVAL DATE OCT 10 1965

HELIOCENTRIC CONIC DISTANCE 783.713 EARTH TO MARS

RL 148.65 LAL -.00 LOL 33.61 VL 32.744 GAL -4.72 AZL 88.49 HCA 241.15 SMA 186.04 ECC .21651 INC 1.5057 V1 29.974
RP 216.05 LAP -1.32 LOP 274.75 VP 22.697 GAP -8.41 AZP 90.73 TAL 332.94 TAP 214.10 RCA 145.76 APO 226.31 V2 25.423
RC 286.520 GL 13.90 GP 4.01 ZAL 128.67 ZAP 65.09 ETS 181.21 ZAE 95.67 ETE 178.42 ZAC 87.49 ETC 258.46 CLP 65.03

PLANETOCENTRIC CONIC

C3 12.740 VHL 3.569 DLA 19.21 RAL 170.57 RAD 6567.5 VEL 11.581 PTH 2.03 VHP 3.200 DPA 13.19 RAP 163.62 ECC 1.2097

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 38 53	2757.10	-28.01	78.70	31.05	94.37	18 24 50	2157.1	-27.11	70.15
90.00	11 2 12	4111.14	-2.83	167.02	25.59	61.81	12 10 43	3511.1	-6.57	160.35
100.00	19 12 6	2456.48	-29.32	56.45	30.91	96.12	19 53 3	1856.5	-28.16	47.84
100.00	12 11 40	3886.98	-1.68	149.91	24.95	60.15	13 16 27	3287.0	-5.64	143.36
110.00	20 46 3	2162.57	-32.65	33.55	30.34	100.74	21 22 5	1562.6	-30.82	24.81
110.00	12 54 13	3753.67	1.18	138.01	23.17	55.83	13 56 46	3153.7	-3.31	131.81

DIFFERENTIAL CORRECTIONS
TDE -.5083 TRA 3.2915 TC3-9.0870 BAU 1.5574
RDE .3985 RRA -.1947 RC3 1.0166 FAU .46494
FDE-3.2284 FRA13.1304 FC-31.5948 BSP 29400
BDE .6459 BRA 3.2973 BC3 9.1437 FSP 9561

MID-COURSE EXECUTION ACCURACY
SGT 8605.2 SGR 1022.5 SG3 2777.9
RRT -.8049 RRF -.8235 RTF .9955
SGB 8665.8 R23 .0309 R13 -.9957
SG1 8644.7 SG2 604.0 THA 174.51

ORBIT DETERMINATION ACCURACY
ST 1876.4 SR 647.7 SS 2348.8
CRT -.5701 CRS .7261 CST -.9787
LSA 3023.1 MSA 563.9 SSA 21.4
EL1 1915.4 EL2 521.3 ALF 167.96

LAUNCH DATE OCT 27 1964 FLIGHT TIME 350.00 ARRIVAL DATE OCT 12 1965

HELIOCENTRIC CONIC DISTANCE 787.838 EARTH TO MARS

RL 148.65 LAL -.00 LOL 33.61 VL 32.746 GAL -4.79 AZL 88.48 HCA 242.32 SMA 186.07 ECC .21710 INC 1.5188 V1 29.974
RP 215.71 LAP -1.34 LOP 275.92 VP 22.742 GAP -8.59 AZP 90.71 TAL 332.57 TAP 214.88 RCA 145.67 APO 226.46 V2 25.461
RC 287.729 GL 13.92 GP 3.91 ZAL 129.19 ZAP 63.54 ETS 181.31 ZAE 93.86 ETE 178.60 ZAC 87.33 ETC 258.52 CLP 63.48

PLANETOCENTRIC CONIC

C3 12.932 VHL 3.596 DLA 19.01 RAL 171.09 RAD 6567.5 VEL 11.590 PTH 2.03 VHP 3.249 DPA 13.25 RAP 163.21 ECC 1.2128

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 43 8	2752.20	-27.98	78.34	31.74	94.54	18 29 0	2152.2	-27.06	69.80
90.00	11 2 7	4122.46	-2.46	167.65	26.25	61.78	12 10 49	3522.5	-6.22	160.99
100.00	19 16 8	2452.28	-29.29	56.14	31.60	96.28	19 57 1	1852.3	-28.11	47.53
100.00	12 11 48	3897.61	-1.32	150.49	25.61	60.13	13 16 45	3297.6	-5.28	143.95
110.00	20 49 40	2159.68	-32.61	33.33	31.01	100.86	21 25 40	1559.7	-30.77	24.60
110.00	12 54 45	3762.98	1.54	138.50	23.83	55.85	13 57 28	3163.0	-2.96	132.29

DIFFERENTIAL CORRECTIONS
TDE -.5590 TRA 3.4642 TC3-9.2621 BAU 1.6103
RDE .4040 RRA -.1861 RC3 .9816 FAU .45000
FDE-3.2338 FRA12.8688 FC-30.1254 BSP 30436
BDE .6897 BRA 3.4692 BC3 9.3140 FSP 9257

MID-COURSE EXECUTION ACCURACY
SGT 8902.1 SGR 1005.6 SG3 2685.7
RRT -.7940 RRF -.8131 RTF .9956
SGB 8958.7 R23 .0310 R13 -.9959
SG1 8938.0 SG2 608.9 THA 174.85

ORBIT DETERMINATION ACCURACY
ST 1974.9 SR 650.9 SS 2336.4
CRT -.5775 CRS .7276 CST -.9801
LSA 3076.1 MSA 565.4 SSA 21.0
EL1 2012.9 EL2 521.4 ALF 168.44

LAUNCH DATE OCT 27 1964 FLIGHT TIME 352.00 ARRIVAL DATE OCT 14 1965

HELIOCENTRIC CONIC DISTANCE 791.966 EARTH TO MARS

RL	148.65	LAL	-.00	LOL	33.61	VL	32.748	GAL	-4.87	AZL	88.47	HCA	243.48	SMA	186.10	ECC	.21773	INC	1.5316
RP	215.38	LAP	-1.37	LOP	277.08	VP	22.787	GAP	-8.77	AZP	90.68	TAL	332.18	TAP	215.66	RCA	145.58	APO	226.62
RC	288.924	GL	13.92	GP	3.82	ZAL	129.72	ZAP	62.03	ETS	181.40	ZAE	92.09	ETE	178.77	ZAC	87.17	ETC	258.57

PLANETOCENTRIC CONIC

C3	13.136	VHL	3.624	DLA	18.79	RAL	171.62	RAD	6567.5	VEL	11.598	PTH	2.03	VHP	3.299	DPA	13.30	RAP	162.85

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 47 34	2746.93	-27.95	77.96	32.45	94.73	18 33 21	2146.9	-27.00	69.42
90.00	11 1 56	4134.50	-2.08	168.33	26.92	61.75	12 10 50	3534.5	-5.84	161.67
100.00	19 20 21	2447.75	-29.25	55.81	32.30	96.45	20 1 9	1847.8	-28.05	47.21
100.00	12 11 50	3908.91	-.93	151.11	26.29	60.12	13 16 59	3308.9	-4.90	144.57
110.00	20 53 26	2156.53	-32.57	33.10	31.71	101.00	21 29 22	1556.5	-30.71	24.37
110.00	12 55 15	3772.89	1.92	139.02	24.51	55.86	13 58 8	3172.9	-2.58	132.81

DIFFERENTIAL CORRECTIONS

TDE	-.5985	TRA	3.6543	TC3	-9.3793	BAU	1.6555
RDE	.4080	RRA	-.1793	RC3	.9421	FAU	.43175
FDE	-3.1704	FRA	12.6668	FC	-28.4537	BSP	31778
BDE	.7243	BRA	3.6587	BC3	9.4265	FSP	9079

MID-COURSE EXECUTION ACCURACY

SGT	9184.5	SGR	985.9	SG3	2589.0		
RRT	-.7819	RRF	-.8005	RTF	.9957		
SGB	9237.3	R23	.0297	R13	-.9959		
SG1	9217.0	SG2	612.5	THA	175.18		

ORBIT DETERMINATION ACCURACY

ST	2070.7	SR	651.5	SS	2311.6
CRT	-.5773	CRS	.7221	CST	-.9816
LSA	3119.9	MSA	567.0	SSA	20.9
EL1	2106.9	EL2	522.9	ALF	169.02

LAUNCH DATE OCT 27 1964 FLIGHT TIME 354.00 ARRIVAL DATE OCT 16 1965

HELIOCENTRIC CONIC DISTANCE 796.104 EARTH TO MARS

RL	148.65	LAL	-.00	LOL	33.61	VL	32.750	GAL	-4.95	AZL	88.46	HCA	244.65	SMA	186.14	ECC	.21840	INC	1.5443
RP	215.05	LAP	-1.40	LOP	278.25	VP	22.832	GAP	-8.94	AZP	90.66	TAL	331.77	TAP	216.43	RCA	145.48	APO	226.79
RC	290.105	GL	13.92	GP	3.72	ZAL	130.27	ZAP	60.56	ETS	181.49	ZAE	90.36	ETE	178.93	ZAC	87.02	ETC	258.61

PLANETOCENTRIC CONIC

C3	13.353	VHL	3.654	DLA	18.56	RAL	172.17	RAD	6567.5	VEL	11.608	PTH	2.03	VHP	3.352	DPA	13.33	RAP	162.53

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 52 9	2741.40	-27.92	77.56	33.17	94.93	18 37 50	2141.4	-26.94	69.03
90.00	11 1 40	4147.11	-1.67	169.03	27.62	61.73	12 10 48	3547.1	-5.44	162.38
100.00	19 24 41	2442.98	-29.21	55.46	33.02	96.63	20 5 24	1843.0	-27.99	46.87
100.00	12 11 49	3920.76	-.53	151.76	26.98	60.11	13 17 10	3320.8	-4.50	145.23
110.00	20 57 19	2153.20	-32.53	32.84	32.42	101.14	21 33 12	1553.2	-30.65	24.13
110.00	12 55 41	3783.31	2.31	139.56	25.21	55.89	13 58 44	3183.3	-2.18	133.36

DIFFERENTIAL CORRECTIONS

TDE	-.6683	TRA	3.8153	TC3	-9.5569	BAU	1.7139
RDE	.4155	RRA	-.1695	RC3	.9142	FAU	.42011
FDE	-3.2423	FRA	12.3341	FC	-27.2374	BSP	32380
BDE	.7869	BRA	3.8190	BC3	9.6005	FSP	8632

MID-COURSE EXECUTION ACCURACY

SGT	9471.2	SGR	974.3	SG3	2501.5		
RRT	-.7714	RRF	-.7916	RTF	.9959		
SGB	9521.2	R23	.0316	R13	-.9961		
SG1	9501.1	SG2	618.1	THA	175.44		

ORBIT DETERMINATION ACCURACY

ST	2173.9	SR	657.1	SS	2310.7
CRT	-.5922	CRS	.7321	CST	-.9823
LSA	3189.8	MSA	567.2	SSA	20.2
EL1	2210.5	EL2	520.7	ALF	169.25

LAUNCH DATE OCT 27 1964 FLIGHT TIME 356.00 ARRIVAL DATE OCT 18 1965

HELIOCENTRIC CONIC DISTANCE 800.243 EARTH TO MARS

RL	148.65	LAL	-.00	LOL	33.61	VL	32.753	GAL	-5.03	AZL	88.44	HCA	245.83	SMA	186.18	ECC	.21911	INC	1.5567
RP	214.72	LAP	-1.42	LOP	279.43	VP	22.876	GAP	-9.11	AZP	90.64	TAL	331.36	TAP	217.18	RCA	145.38	APO	226.97
RC	291.272	GL	13.92	GP	3.64	ZAL	130.84	ZAP	59.14	ETS	181.56	ZAE	88.67	ETE	179.07	ZAC	86.89	ETC	258.65

PLANETOCENTRIC CONIC

C3	13.584	VHL	3.686	DLA	18.32	RAL	172.72	RAD	6567.5	VEL	11.618	PTH	2.04	VHP	3.407	DPA	13.35	RAP	162.25

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 56 53	2735.57	-27.88	77.14	33.91	95.14	18 42 29	2135.6	-26.88	68.61
90.00	11 1 20	4160.39	-1.24	169.77	28.33	61.71	12 10 41	3560.4	-5.01	163.12
100.00	19 29 11	2437.94	-29.17	55.09	33.76	96.82	20 9 49	1837.9	-27.92	46.51
100.00	12 11 44	3933.26	-.11	152.45	27.70	60.11	13 17 17	3333.3	-4.08	145.92
110.00	21 1 20	2149.65	-32.48	32.58	33.14	101.29	21 37 10	1549.6	-30.58	23.88
110.00	12 56 4	3794.31	2.73	140.14	25.92	55.91	13 59 19	3194.3	-1.76	133.93

DIFFERENTIAL CORRECTIONS

TDE	-.7269	TRA	3.9942	TC3	-9.6750	BAU	1.7643
RDE	.4214	RRA	-.1615	RC3	.8817	FAU	.40523
FDE	-3.2441	FRA	12.0616	FC	-25.8268	BSP	33312
BDE	.8402	BRA	3.9974	BC3	9.7151	FSP	8325

MID-COURSE EXECUTION ACCURACY

SGT	9742.6	SGR	959.9	SG3	2409.9		
RRT	-.7597	RRF	-.7806	RTF	.9960		
SGB	9789.8	R23	.0320	R13	-.9962		
SG1	9770.0	SG2	622.4	THA	175.70		

ORBIT DETERMINATION ACCURACY

ST	2274.4	SR	660.1	SS	2296.9
CRT	-.5995	CRS	.7349	CST	-.9833
LSA	3249.9	MSA	567.6	SSA	19.8
EL1	2310.5	EL2	520.1	ALF	169.60

LAUNCH DATE OCT 27 1964 FLIGHT TIME 358.00 ARRIVAL DATE OCT 20 1965

HELIOCENTRIC CONIC DISTANCE 804.386 EARTH TO MARS

RL	148.65	LAL	-.00	LOL	33.61	VL	32.755	GAL	-5.12	AZL	88.43	HCA	247.00	SMA	186.22	ECC	.21987	INC	1.5689
RP	214.40	LAP	-1.44	LOP	280.61	VP	22.920	GAP	-9.29	AZP	90.61	TAL	330.92	TAP	217.93	RCA	145.28	APO	227.16
RC	292.426	GL	13.90	GP	3.55	ZAL	131.42	ZAP	57.75	ETS	181.64	ZAE	87.02	ETE	179.21	ZAC	86.76	ETC	258.68

PLANETOCENTRIC CONIC

C3	13.828	VHL	3.719	DLA	18.06	RAL	173.28	RAD	6567.5	VEL	11.628	PTH	2.04	VHP	3.465	DPA	13.35	RAP	162.02

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 1 47	2729.48	-27.85	76.69	34.67	95.36	18 47 16	2129.5	-26.81	68.18
90.00	11 0 56	4174.28	-.79	170.55	29.06	61.69	12 10 30	3574.3	-4.57	163.90
100.00	19 33 49	2432.65	-29.13	54.70	34.51	97.02	20 14 22	1832.7	-27.85	46.13
100.00	12 11 34	3946.34	.34	153.16	28.43	60.11	13 17 21	3346.3	-3.64	146.64
110.00	21 5 28	2145.91	-32.43	32.30	33.89	101.45	21 41 14	1545.9	-30.51	23.61
110.00	12 56 25	3805.85	3.17	140.74	26.66	55.95	13 59 51	3205.8	-1.32	134.53

DIFFERENTIAL CORRECTIONS

TDE	-.7873	TRA	4.1763	TC3	-9.7702	BAU	1.8130
RDE	.4273	RRA	-.1538	RC3	.8498	FAU	.39020
FDE	-3.2414	FRA	11.7906	FC	-24.4294	BSP	34230
BDE	.8958	BRA	4.1792	BC3	9.8071	FSP	8025

MID-COURSE EXECUTION ACCURACY

SGT	10004.1	SGR	946.1	SG3	2318.7		
RRT	-.7479	RRF	-.7694	RTF	.9961		
SGB	10048.8	R23	.0325	R13	-.9962		
SG1	10029.2	SG2	626.5	THA	175.94		

ORBIT DETERMINATION ACCURACY

ST	2375.3	SR	663.0	SS	2282.0
CRT	-.6063	CRS	.7376	CST	-.9841
LSA	3311.5	MSA	567.9	SSA	19.5
EL1	2410.7	EL2	519.5	ALF	169.92

LAUNCH DATE OCT 27 1964 FLIGHT TIME 360.00 ARRIVAL DATE OCT 22 1965

HELIOCENTRIC CONIC DISTANCE 808.533 EARTH TO MARS

RL 148.65 LAL -.00 LOL 33.61 VL 32.758 GAL -5.21 AZL 88.42 HCA 248.19 SMA 186.26 ECC .22066 INC 1.5810 V1 29.974
RP 214.08 LAP -1.47 LOP 281.79 VP 22.964 GAP -9.46 AZP 90.59 TAL 330.47 TAP 218.66 RCA 145.16 APO 227.37 V2 25.644
RC 293.566 GL 13.88 GP 3.46 ZAL 132.01 ZAP 56.41 ETS 181.70 ZAE 85.40 ETE 179.34 ZAC 86.65 ETC 258.70 CLP 56.34

PLANETOCENTRIC CONIC

C3 14.087 VHL 3.753 DLA 17.80 RAL 173.85 RAD 6567.6 VEL 11.639 PTH 2.04 VHP 3.525 DPA 13.33 RAP 161.83 ECC 1.2318

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 6 48	2723.17	-27.81	76.24	35.44	95.59	18 52 11	2123.2	-26.74	67.73
90.00	11 0 28	4188.75	-.32	171.35	29.81	61.68	12 10 17	3588.8	-4.11	164.72
100.00	19 38 35	2427.16	-29.08	54.30	35.28	97.23	20 19 3	1827.2	-27.78	45.74
100.00	12 11 22	3959.99	.80	153.91	29.18	60.12	13 17 22	3360.0	-3.18	147.39
110.00	21 9 44	2142.01	-32.38	32.01	34.65	101.62	21 45 26	1542.0	-30.44	23.33
110.00	12 56 43	3817.91	3.63	141.37	27.42	55.99	14 0 20	3217.9	-.86	135.16

DIFFERENTIAL CORRECTIONS
TDE -.8509 TRA 4.3608 TC3-9.8479 BAU 1.8611
RDE .4335 RRA -.1464 RC3 .8190 FAU .37542
FDE-3.2388 FRA11.5175 FC-23.0713 BSP 35099
BDE .9550 BRA 4.3633 BC3 9.8819 FSP 7722

MID-COURSE EXECUTION ACCURACY
SGT10257.5 SGR 933.3 SG3 2228.6
RRT -.7360 RRF -.7583 RTF .9961
SGB10299.9 R23 .0331 R13 -.9962
SG110280.6 SG2 630.4 THA 176.15

ORBIT DETERMINATION ACCURACY
ST 2477.1 SR 665.8 SS 2266.8
CRT -.6133 CRS .7409 CST -.9848
LSA 3375.6 MSA 567.7 SSA 19.2
EL1 2512.0 EL2 518.5 ALF 170.22

LAUNCH DATE OCT 27 1964 FLIGHT TIME 362.00 ARRIVAL DATE OCT 24 1965

HELIOCENTRIC CONIC DISTANCE 812.684 EARTH TO MARS

RL 148.65 LAL -.00 LOL 33.61 VL 32.761 GAL -5.31 AZL 88.41 HCA 249.37 SMA 186.31 ECC .22150 INC 1.5929 V1 29.974
RP 213.77 LAP -1.49 LOP 282.97 VP 23.007 GAP -9.62 AZP 90.56 TAL 330.01 TAP 219.38 RCA 145.04 APO 227.58 V2 25.679
RC 294.693 GL 13.84 GP 3.38 ZAL 132.62 ZAP 55.10 ETS 181.77 ZAE 83.83 ETE 179.46 ZAC 86.55 ETC 258.72 CLP 55.03

PLANETOCENTRIC CONIC

C3 14.362 VHL 3.790 DLA 17.51 RAL 174.43 RAD 6567.6 VEL 11.651 PTH 2.05 VHP 3.587 DPA 13.30 RAP 161.68 ECC 1.2364

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 11 57	2716.65	-27.76	75.77	36.24	95.82	18 57 13	2116.7	-26.66	67.27
90.00	10 59 56	4203.80	.16	172.19	30.58	61.68	12 10 0	3603.8	-3.63	165.56
100.00	19 43 29	2421.49	-29.03	53.88	36.07	97.44	20 23 50	1821.5	-27.70	45.34
100.00	12 11 5	3974.20	1.28	154.69	29.96	60.13	13 17 20	3374.2	-2.70	148.17
110.00	21 14 6	2137.96	-32.32	31.71	35.42	101.79	21 49 44	1538.0	-30.36	23.04
110.00	12 56 58	3830.49	4.11	142.03	28.19	56.04	14 0 48	3230.5	-.38	135.82

DIFFERENTIAL CORRECTIONS
TDE -.9162 TRA 4.5491 TC3-9.9037 BAU 1.9076
RDE .4397 RRA -.1394 RC3 .7890 FAU .36068
FDE-3.2305 FRA11.2472 FC-21.7418 BSP 35975
BDE 1.0163 BRA 4.5513 BC3 9.9351 FSP 7430

MID-COURSE EXECUTION ACCURACY
SGT10501.4 SGR 921.1 SG3 2139.8
RRT -.7240 RRF -.7470 RTF .9961
SGB10541.7 R23 .0336 R13 -.9962
SG110522.6 SG2 634.1 THA 176.35

ORBIT DETERMINATION ACCURACY
ST 2578.9 SR 668.3 SS 2250.1
CRT -.6198 CRS .7440 CST -.9854
LSA 3440.6 MSA 567.3 SSA 18.9
EL1 2613.4 EL2 517.5 ALF 170.50

LAUNCH DATE OCT 27 1964 FLIGHT TIME 364.00 ARRIVAL DATE OCT 26 1965

HELIOCENTRIC CONIC DISTANCE 816.837 EARTH TO MARS

RL 148.65 LAL -.00 LOL 33.61 VL 32.763 GAL -5.41 AZL 88.40 HCA 250.56 SMA 186.36 ECC .22239 INC 1.6046 V1 29.974
RP 213.46 LAP -1.51 LOP 284.16 VP 23.050 GAP -9.79 AZP 90.53 TAL 329.53 TAP 220.09 RCA 144.92 APO 227.81 V2 25.714
RC 295.805 GL 13.80 GP 3.30 ZAL 133.25 ZAP 53.83 ETS 181.82 ZAE 82.29 ETE 179.58 ZAC 86.45 ETC 258.73 CLP 53.76

PLANETOCENTRIC CONIC

C3 14.653 VHL 3.828 DLA 17.22 RAL 175.02 RAD 6567.6 VEL 11.664 PTH 2.05 VHP 3.651 DPA 13.26 RAP 161.58 ECC 1.2412

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 17 13	2709.97	-27.71	75.28	37.04	96.06	19 2 23	2110.0	-26.59	66.80
90.00	10 59 21	4219.39	.66	173.06	31.37	61.69	12 9 41	3619.4	-3.12	166.43
100.00	19 48 29	2415.65	-28.98	53.46	36.87	97.66	20 28 44	1815.6	-27.62	44.92
100.00	12 10 46	3988.94	1.78	155.50	30.75	60.16	13 17 15	3388.9	-2.20	148.98
110.00	21 18 34	2133.79	-32.26	31.39	36.21	101.96	21 54 8	1533.8	-30.28	22.74
110.00	12 57 10	3843.57	4.61	142.72	28.99	56.09	14 1 14	3243.6	.12	136.50

DIFFERENTIAL CORRECTIONS
TDE -.9849 TRA 4.7396 TC3-9.9446 BAU 1.9538
RDE .4461 RRA -.1326 RC3 .7603 FAU .34634
FDE-3.2222 FRA10.9761 FC-20.4619 BSP 36793
BDE 1.0813 BRA 4.7415 BC3 9.9736 FSP 7139

MID-COURSE EXECUTION ACCURACY
SGT10737.8 SGR 909.9 SG3 2052.8
RRT -.7123 RRF -.7361 RTF .9961
SGB10776.3 R23 .0343 R13 -.9962
SG110757.4 SG2 637.5 THA 176.53

ORBIT DETERMINATION ACCURACY
ST 2681.4 SR 670.9 SS 2233.0
CRT -.6266 CRS .7476 CST -.9860
LSA 3507.9 MSA 566.6 SSA 18.6
EL1 2715.4 EL2 516.3 ALF 170.75

LAUNCH DATE OCT 27 1964 FLIGHT TIME 366.00 ARRIVAL DATE OCT 28 1965

HELIOCENTRIC CONIC DISTANCE 820.993 EARTH TO MARS

RL 148.65 LAL -.00 LOL 33.61 VL 32.767 GAL -5.51 AZL 88.38 HCA 251.75 SMA 186.41 ECC .22332 INC 1.6162 V1 29.974
RP 213.16 LAP -1.53 LOP 285.35 VP 23.093 GAP -9.96 AZP 90.51 TAL 329.03 TAP 220.78 RCA 144.78 APO 228.05 V2 25.748
RC 296.904 GL 13.76 GP 3.22 ZAL 133.88 ZAP 52.60 ETS 181.87 ZAE 80.78 ETE 179.69 ZAC 86.37 ETC 258.73 CLP 52.53

PLANETOCENTRIC CONIC

C3 14.962 VHL 3.868 DLA 16.92 RAL 175.61 RAD 6567.6 VEL 11.677 PTH 2.05 VHP 3.718 DPA 13.21 RAP 161.51 ECC 1.2462

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 22 35	2703.13	-27.66	74.79	37.87	96.30	19 7 38	2103.1	-26.50	66.31
90.00	10 58 43	4235.52	1.19	173.96	32.18	61.71	12 9 19	3635.5	-2.61	167.33
100.00	19 53 35	2409.67	-28.93	53.02	37.69	97.88	20 33 45	1809.7	-27.53	44.50
100.00	12 10 24	4004.21	2.30	156.34	31.56	60.19	13 17 9	3404.2	-1.69	149.82
110.00	21 23 8	2129.50	-32.20	31.07	37.02	102.14	21 58 37	1529.5	-30.20	22.44
110.00	12 57 21	3857.15	5.12	143.43	29.80	56.16	14 1 38	3257.1	.64	137.21

DIFFERENTIAL CORRECTIONS
TDE-1.0561 TRA 4.9345 TC3-9.9653 BAU 1.9987
RDE .4527 RRA -.1261 RC3 .7324 FAU .33212
FDE-3.2109 FRA10.7077 FC-19.2176 BSP 37605
BDE 1.1491 BRA 4.9361 BC3 9.9922 FSP 6859

MID-COURSE EXECUTION ACCURACY
SGT10965.7 SGR 899.3 SG3 1967.4
RRT -.7006 RRF -.7252 RTF .9961
SGB11002.6 R23 .0350 R13 -.9962
SG110983.9 SG2 640.7 THA 176.70

ORBIT DETERMINATION ACCURACY
ST 2784.6 SR 673.3 SS 2215.0
CRT -.6332 CRS .7512 CST -.9865
LSA 3576.7 MSA 565.6 SSA 18.3
EL1 2818.2 EL2 514.9 ALF 170.99

LAUNCH DATE OCT 27 1964 FLIGHT TIME 368.00 ARRIVAL DATE OCT 30 1965

HELIOCENTRIC CONIC DISTANCE 825.152 EARTH TO MARS

RL	148.65	LAL	-.00	LOL	33.61	VL	32.770	GAL	-5.61	AZL	88.37	HCA	252.94	SMA	186.47	ECC	.22430	INC	1.6277
RP	212.87	LAP	-1.56	LOP	286.55	VP	23.135	GAP	-10.12	AZP	90.48	TAL	328.52	TAP	221.47	RCA	144.64	APO	228.30
RC	297.989	GL	13.71	GP	3.15	ZAL	134.53	ZAP	51.41	ETS	181.92	ZAE	79.31	ETE	179.79	ZAC	86.30	ETC	258.73

PLANETOCENTRIC CONIC

C3	15.289	VHL	3.910	DLA	16.60	RAL	176.21	RAD	6567.6	VEL	11.691	PTH	2.06	VHP	3.786	DPA	13.14	RAP	161.48

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 28 4	2696.17	-27.61	74.29	38.71	96.55	19 13 0	2096.2	-26.42	65.82
90.00	10 58 2	4252.15	1.72	174.89	33.00	61.73	12 8 55	3652.2	-2.07	168.26
100.00	19 58 47	2403.58	-28.87	52.58	38.53	98.11	20 38 51	1803.6	-27.45	44.07
100.00	12 10 0	4019.99	2.83	157.21	32.39	60.23	13 17 0	3420.0	-1.15	150.68
110.00	21 27 47	2125.13	-32.14	30.75	37.84	102.33	22 3 12	1525.1	-30.11	22.12
110.00	12 57 29	3871.21	5.66	144.17	30.63	56.23	14 2 0	3271.2	1.18	137.94

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-1.1297	TRA	5.1328	TC3	-9.9691	BAU	2.0427	SGT	11185.5	SGR	889.5	SG3	1883.9	ST	2887.8	SR	675.6	SS	2195.9
RDE	.4594	RRA	-.1200	RC3	.7055	FAU	.31822	RRT	-.6891	RRF	-.7145	RTF	.9960	CRT	-.6396	CRS	.7550	CST	-.9869
FDE	-3.1968	FRA	10.4416	FC	-18.0197	BSP	38399	SGB	11220.9	R23	.0358	R13	-.9961	LSA	3646.7	MSA	564.5	SSA	18.1
BDE	1.2196	BRA	5.1342	BC3	9.9940	FSP	6584	SG	111202.4	SG2	643.6	THA	176.85	EL1	2921.0	EL2	513.4	ALF	171.22

LAUNCH DATE OCT 27 1964 FLIGHT TIME 370.00 ARRIVAL DATE NOV 1 1965

HELIOCENTRIC CONIC DISTANCE 829.312 EARTH TO MARS

RL	148.65	LAL	-.00	LOL	33.61	VL	32.773	GAL	-5.73	AZL	88.36	HCA	254.14	SMA	186.53	ECC	.22533	INC	1.6390
RP	212.57	LAP	-1.58	LOP	287.75	VP	23.176	GAP	-10.29	AZP	90.45	TAL	328.00	TAP	222.14	RCA	144.50	APO	228.56
RC	299.061	GL	13.64	GP	3.07	ZAL	135.19	ZAP	50.25	ETS	181.97	ZAE	77.88	ETE	179.89	ZAC	86.23	ETC	258.72

PLANETOCENTRIC CONIC

C3	15.634	VHL	3.954	DLA	16.27	RAL	176.82	RAD	6567.6	VEL	11.706	PTH	2.06	VHP	3.857	DPA	13.05	RAP	161.49

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 33 38	2689.12	-27.56	73.78	39.57	96.80	19 18 27	2089.1	-26.33	65.32
90.00	10 57 19	4269.31	2.27	175.85	33.85	61.77	12 8 29	3669.3	-1.52	169.22
100.00	20 4 5	2397.40	-28.81	52.13	39.38	98.34	20 44 3	1797.4	-27.36	43.63
100.00	12 9 33	4036.26	3.38	158.10	33.24	60.28	13 16 49	3436.3	-.60	151.58
110.00	21 32 32	2120.68	-32.07	30.42	38.68	102.51	22 7 52	1520.7	-30.02	21.81
110.00	12 57 36	3885.74	6.21	144.94	31.49	56.32	14 2 21	3285.7	1.74	138.70

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-1.2054	TRA	5.3362	TC3	-9.9545	BAU	2.0855	SGT	11397.6	SGR	880.2	SG3	1802.3	ST	2991.1	SR	677.7	SS	2175.4
RDE	.4662	RRA	-.1143	RC3	.6795	FAU	.30449	RRT	-.6778	RRF	-.7040	RTF	.9959	CRT	-.6457	CRS	.7586	CST	-.9873
FDE	-3.1783	FRA	10.1797	FC	-16.8605	BSP	39182	SGB	11431.6	R23	.0365	R13	-.9961	LSA	3717.6	MSA	563.2	SSA	17.8
BDE	1.2925	BRA	5.3374	BC3	9.9777	FSP	6319	SG	111413.3	SG2	646.3	THA	176.99	EL1	3023.9	EL2	511.9	ALF	171.43

LAUNCH DATE OCT 27 1964 FLIGHT TIME 372.00 ARRIVAL DATE NOV 3 1965

HELIOCENTRIC CONIC DISTANCE 833.474 EARTH TO MARS

RL	148.65	LAL	-.00	LOL	33.61	VL	32.777	GAL	-5.84	AZL	88.35	HCA	255.34	SMA	186.59	ECC	.22641	INC	1.6503
RP	212.29	LAP	-1.60	LOP	288.95	VP	23.217	GAP	-10.45	AZP	90.42	TAL	327.46	TAP	222.80	RCA	144.34	APO	228.83
RC	300.120	GL	13.58	GP	3.00	ZAL	135.86	ZAP	49.13	ETS	182.01	ZAE	76.48	ETE	179.98	ZAC	86.18	ETC	258.71

PLANETOCENTRIC CONIC

C3	16.001	VHL	4.000	DLA	15.94	RAL	177.43	RAD	6567.6	VEL	11.721	PTH	2.07	VHP	3.929	DPA	12.96	RAP	161.54

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 39 17	2681.99	-27.50	73.26	40.44	97.05	19 23 59	2082.0	-26.24	64.82
90.00	10 56 34	4286.93	2.84	176.83	34.72	61.81	12 8 1	3686.9	-.95	170.20
100.00	20 9 28	2391.14	-28.75	51.68	40.25	98.57	20 49 19	1791.1	-27.26	43.19
100.00	12 9 4	4053.00	3.95	159.02	34.11	60.35	13 16 37	3453.0	-.03	152.49
110.00	21 37 21	2116.18	-32.01	30.08	39.54	102.70	22 12 37	1516.2	-29.93	21.49
110.00	12 57 40	3900.73	6.77	145.73	32.36	56.41	14 2 41	3300.7	2.31	139.48

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-1.2842	TRA	5.5440	TC3	-9.9232	BAU	2.1273	SGT	11602.1	SGR	871.7	SG3	1722.8	ST	3094.9	SR	679.7	SS	2154.3
RDE	.4732	RRA	-.1090	RC3	.6544	FAU	.29109	RRT	-.6668	RRF	-.6940	RTF	.9959	CRT	-.6518	CRS	.7624	CST	-.9876
FDE	-3.1586	FRA	9.9206	FC	-15.7496	BSP	39944	SGB	11634.8	R23	.0373	R13	-.9960	LSA	3790.2	MSA	561.7	SSA	17.6
BDE	1.3687	BRA	5.5451	BC3	9.9447	FSP	6059	SG	111616.7	SG2	648.8	THA	177.12	EL1	3127.4	EL2	510.1	ALF	171.63

LAUNCH DATE OCT 27 1964 FLIGHT TIME 374.00 ARRIVAL DATE NOV 5 1965

HELIOCENTRIC CONIC DISTANCE 837.638 EARTH TO MARS

RL	148.65	LAL	-.00	LOL	33.61	VL	32.780	GAL	-5.96	AZL	88.34	HCA	256.55	SMA	186.65	ECC	.22754	INC	1.6615
RP	212.01	LAP	-1.62	LOP	290.15	VP	23.258	GAP	-10.62	AZP	90.39	TAL	326.90	TAP	223.45	RCA	144.18	APO	229.12
RC	301.167	GL	13.50	GP	2.94	ZAL	136.54	ZAP	48.04	ETS	182.04	ZAE	75.11	ETE	180.07	ZAC	86.13	ETC	258.69

PLANETOCENTRIC CONIC

C3	16.388	VHL	4.048	DLA	15.59	RAL	178.05	RAD	6567.7	VEL	11.738	PTH	2.07	VHP	4.004	DPA	12.85	RAP	161.62

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 45 0	2674.82	-27.44	72.75	41.33	97.30	19 29 35	2074.8	-26.14	64.32
90.00	10 55 46	4305.01	3.42	177.84	35.61	61.87	12 7 31	3705.0	-.37	171.21
100.00	20 14 55	2384.84	-28.68	51.22	41.13	98.80	20 54 40	1784.8	-27.17	42.74
100.00	12 8 32	4070.21	4.52	159.97	35.00	60.42	13 16 23	3470.2	.55	153.44
110.00	21 42 14	2111.65	-31.94	29.75	40.41	102.89	22 17 26	1511.7	-29.84	21.17
110.00	12 57 43	3916.17	7.35	146.55	35.26	56.52	14 2 59	3316.2	2.90	140.29

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-1.3662	TRA	5.7549	TC3	-9.8795	BAU	2.1690	SGT	11799.4	SGR	863.9	SG3	1645.6	ST	3198.7	SR	681.7	SS	2132.2
RDE	.4804	RRA	-.1040	RC3	.6305	FAU	.27810	RRT	-.6563	RRF	-.6844	RTF	.9958	CRT	-.6580	CRS	.7664	CST	-.9879
FDE	-3.1373	FRA	9.6624	FC	-14.6910	BSP	40676	SGB	11831.0	R23	.0302	R13	-.9959	LSA	3863.8	MSA	559.8	SSA	17.4
BDE	1.4482	BRA	5.7558	BC3	9.8996	FSP	5806	SG	111813.1	SG2	651.0	THA	177.24	EL1	3230.8	EL2	508.2	ALF	171.81

LAUNCH DATE OCT 27 1964 FLIGHT TIME 376.00 ARRIVAL DATE NOV 7 1965

HELIOCENTRIC CONIC DISTANCE 841.802 EARTH TO MARS

RL 148.65 LAL -.00 LOL 33.61 VL 32.784 GAL -6.08 AZL 88.33 HCA 257.76 SMA 186.71 ECC .22872 INC 1.6726 V1 29.974
RP 211.73 LAP -1.63 LOP 291.36 VP 23.298 GAP -10.78 AZP 90.35 TAL 326.32 TAP 224.08 RCA 144.01 APO 229.42 V2 25.911
RC 302.203 GL 13.42 GP 2.87 ZAL 137.24 ZAP 46.98 ETS 182.08 ZAE 73.78 ETE 180.15 ZAC 86.10 ETC 258.67 CLP 46.92

PLANETOCENTRIC CONIC

C3 16.799 VHL 4.099 DLA 15.23 RAL 178.67 RAD 6567.7 VEL 11.755 PTH 2.07 VHP 4.081 DPA 12.73 RAP 161.74 ECC 1.2765

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 50 48	2667.61	-27.37	72.23	42.24	97.55	19 35 16	2067.6	-26.04	63.81
90.00	10 54 57	4323.55	4.02	178.88	36.52	61.95	12 7 0	3723.5	.23	172.24
100.00	20 20 27	2378.52	-28.62	50.76	42.03	99.04	21 0 5	1778.5	-27.07	42.30
100.00	12 7 59	4087.87	5.12	160.95	35.91	60.51	13 16 7	3487.9	1.15	154.41
110.00	21 47 12	2107.10	-31.87	29.41	41.30	103.07	22 22 19	1507.1	-29.74	20.85
110.00	12 57 44	3932.05	7.95	147.39	34.17	56.64	14 3 16	3332.1	3.50	141.12

DIFFERENTIAL CORRECTIONS
TDE-1.4508 TRA 5.9718 TC3-9.8196 BAU 2.2095
RDE .4878 RRA -.0994 RC3 .6074 FAU .26538
FDE-3.1126 FRA 9.4094 FC-13.6768 BSP 41406
BDE 1.5306 BRA 5.9726 BC3 9.8384 FSP 5563

MID-COURSE EXECUTION ACCURACY
SGT11990.2 SGR 856.5 SG3 1570.7
RRT -.6462 RRF -.6751 RTF .9956
SGB12020.7 R23 .0391 R13 -.9957
SG112003.0 SG2 653.0 THA 177.35

ORBIT DETERMINATION ACCURACY
ST 3302.8 SR 683.5 SS 2108.8
CRT -.6639 CRS .7703 CST -.9882
LSA 3938.5 MSA 557.8 SSA 17.2
EL1 3334.6 EL2 506.2 ALF 171.99

LAUNCH DATE OCT 27 1964 FLIGHT TIME 378.00 ARRIVAL DATE NOV 9 1965

HELIOCENTRIC CONIC DISTANCE 845.966 EARTH TO MARS

RL 148.65 LAL -.00 LOL 33.61 VL 32.788 GAL -6.21 AZL 88.32 HCA 258.97 SMA 186.78 ECC .22996 INC 1.6836 V1 29.974
RP 211.47 LAP -1.65 LOP 292.57 VP 23.338 GAP -10.94 AZP 90.32 TAL 325.74 TAP 224.70 RCA 143.83 APO 229.73 V2 25.941
RC 303.228 GL 13.34 GP 2.81 ZAL 137.94 ZAP 45.96 ETS 182.11 ZAE 72.47 ETE 180.23 ZAC 86.07 ETC 258.64 CLP 45.89

PLANETOCENTRIC CONIC

C3 17.233 VHL 4.151 DLA 14.87 RAL 179.30 RAD 6567.7 VEL 11.774 PTH 2.08 VHP 4.160 DPA 12.60 RAP 161.89 ECC 1.2836

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 56 40	2660.40	-27.31	71.71	43.16	97.80	19 41 0	2060.4	-25.94	63.31
90.00	10 54 6	4342.51	4.62	179.95	37.45	62.03	12 6 28	3742.5	.85	173.30
100.00	20 26 2	2372.18	-28.55	50.30	42.95	99.27	21 5 35	1772.2	-26.97	41.85
100.00	12 7 25	4105.97	5.72	161.95	36.84	60.61	13 15 51	3506.0	1.76	155.40
110.00	21 52 13	2102.56	-31.80	29.08	42.20	103.26	22 27 15	1502.6	-29.65	20.53
110.00	12 57 44	3948.36	8.56	148.26	35.11	56.78	14 3 32	3348.4	4.12	141.97

DIFFERENTIAL CORRECTIONS
TDE-1.5376 TRA 6.1938 TC3-9.7459 BAU 2.2494
RDE .4954 RRA -.0952 RC3 .5852 FAU .25300
FDE-3.0854 FRA 9.1595 FC-12.7099 BSP 42119
BDE 1.6154 BRA 6.1945 BC3 9.7634 FSP 5326

MID-COURSE EXECUTION ACCURACY
SGT12174.0 SGR 849.7 SG3 1497.9
RRT -.6366 RRF -.6664 RTF .9955
SGB12203.6 R23 .0400 R13 -.9956
SG112186.0 SG2 654.7 THA 177.45

ORBIT DETERMINATION ACCURACY
ST 3406.4 SR 685.1 SS 2084.3
CRT -.6697 CRS .7743 CST -.9884
LSA 4013.5 MSA 555.8 SSA 17.0
EL1 3437.8 EL2 504.2 ALF 172.16

LAUNCH DATE OCT 27 1964 FLIGHT TIME 380.00 ARRIVAL DATE NOV 11 1965

HELIOCENTRIC CONIC DISTANCE 850.130 EARTH TO MARS

RL 148.65 LAL -.00 LOL 33.61 VL 32.792 GAL -6.34 AZL 88.31 HCA 260.18 SMA 186.85 ECC .23125 INC 1.6945 V1 29.974
RP 211.20 LAP -1.67 LOP 293.79 VP 23.377 GAP -11.11 AZP 90.29 TAL 325.13 TAP 225.31 RCA 143.64 APO 230.06 V2 25.971
RC 304.242 GL 13.25 GP 2.75 ZAL 138.65 ZAP 44.97 ETS 182.14 ZAE 71.20 ETE 180.30 ZAC 86.05 ETC 258.61 CLP 44.90

PLANETOCENTRIC CONIC

C3 17.692 VHL 4.206 DLA 14.49 RAL 179.93 RAD 6567.7 VEL 11.793 PTH 2.09 VHP 4.241 DPA 12.45 RAP 162.08 ECC 1.2912

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 2 35	2653.21	-27.24	71.20	44.10	98.05	19 46 48	2053.2	-25.84	62.81
90.00	10 53 14	4361.90	5.24	181.03	38.40	62.13	12 5 55	3761.9	1.47	174.38
100.00	20 31 41	2365.86	-28.48	49.85	43.88	99.50	21 11 7	1765.9	-26.87	41.41
100.00	12 6 49	4124.48	6.34	162.98	37.80	60.73	13 15 33	3524.5	2.39	156.42
110.00	21 57 17	2098.03	-31.73	28.74	43.12	103.45	22 32 15	1498.0	-29.55	20.21
110.00	12 57 42	3965.08	9.18	149.15	36.07	56.93	14 3 47	3365.1	4.76	142.85

DIFFERENTIAL CORRECTIONS
TDE-1.6283 TRA 6.4203 TC3-9.6614 BAU 2.2891
RDE .5032 RRA -.0914 RC3 .5640 FAU .24102
FDE-3.0575 FRA 8.9114 FC-11.7940 BSP 42800
BDE 1.7043 BRA 6.4210 BC3 9.6778 FSP 5095

MID-COURSE EXECUTION ACCURACY
SGT12352.0 SGR 843.5 SG3 1427.5
RRT -.6275 RRF -.6583 RTF .9953
SGB12380.7 R23 .0410 R13 -.9954
SG112363.3 SG2 656.2 THA 177.54

ORBIT DETERMINATION ACCURACY
ST 3510.4 SR 686.7 SS 2059.1
CRT -.6755 CRS .7785 CST -.9886
LSA 4089.9 MSA 553.4 SSA 16.8
EL1 3541.5 EL2 501.9 ALF 172.32

LAUNCH DATE OCT 27 1964 FLIGHT TIME 382.00 ARRIVAL DATE NOV 13 1965

HELIOCENTRIC CONIC DISTANCE 854.294 EARTH TO MARS

RL 148.65 LAL -.00 LOL 33.61 VL 32.796 GAL -6.48 AZL 88.29 HCA 261.40 SMA 186.92 ECC .23261 INC 1.7054 V1 29.974
RP 210.95 LAP -1.69 LOP 295.00 VP 23.415 GAP -11.27 AZP 90.26 TAL 324.51 TAP 225.91 RCA 143.44 APO 230.40 V2 26.001
RC 305.247 GL 13.15 GP 2.69 ZAL 139.37 ZAP 44.00 ETS 182.16 ZAE 69.95 ETE 180.38 ZAC 86.04 ETC 258.57 CLP 43.94

PLANETOCENTRIC CONIC

C3 18.179 VHL 4.264 DLA 14.11 RAL 180.57 RAD 6567.7 VEL 11.814 PTH 2.09 VHP 4.324 DPA 12.30 RAP 162.29 ECC 1.2992

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 8 33	2646.06	-27.17	70.68	45.05	98.30	19 52 39	2046.1	-25.74	62.31
90.00	10 52 20	4381.69	5.87	182.15	39.37	62.25	12 5 22	3781.7	2.11	175.49
100.00	20 37 23	2359.58	-28.41	49.39	44.83	99.73	21 16 43	1759.6	-26.77	40.97
100.00	12 6 11	4143.40	6.97	164.03	38.77	60.86	13 15 15	3543.4	3.03	157.46
110.00	22 2 25	2093.53	-31.66	28.41	44.05	103.63	22 37 18	1493.5	-29.46	19.89
110.00	12 57 39	3982.21	9.81	150.07	37.04	57.09	14 4 1	3382.2	5.41	143.75

DIFFERENTIAL CORRECTIONS
TDE-1.7218 TRA 6.6530 TC3-9.5630 BAU 2.3279
RDE .5113 RRA -.0880 RC3 .5436 FAU .22940
FDE-3.0267 FRA 8.6669 FC-10.9249 BSP 43477
BDE 1.7961 BRA 6.6536 BC3 9.5784 FSP 4872

MID-COURSE EXECUTION ACCURACY
SGT12523.3 SGR 837.8 SG3 1359.4
RRT -.6190 RRF -.6508 RTF .9952
SGB12551.3 R23 .0421 R13 -.9953
SG112534.1 SG2 657.4 THA 177.62

ORBIT DETERMINATION ACCURACY
ST 3614.1 SR 688.2 SS 2032.5
CRT -.6812 CRS .7826 CST -.9888
LSA 4166.8 MSA 551.0 SSA 16.7
EL1 3645.0 EL2 499.5 ALF 172.47

LAUNCH DATE OCT 27 1964 FLIGHT TIME 384.00 ARRIVAL DATE NOV 15 1965

HELIOCENTRIC CONIC DISTANCE 858.456 EARTH TO MARS

RL	148.65	LAL	-.00	LOL	33.61	VL	32.800	GAL	-6.62	AZL	88.28	HCA	262.62	SMA	186.99	ECC	.23402	INC	1.7163	V1	29.974
RP	210.70	LAP	-1.70	LOP	296.22	VP	23.453	GAP	-11.44	AZP	90.22	TAL	323.87	TAP	226.49	RCA	143.23	APO	230.75	V2	26.029
RC	306.243	GL	13.04	GP	2.63	ZAL	140.09	ZAP	43.07	ETS	182.18	ZAE	68.73	ETE	180.44	ZAC	86.04	ETC	258.53	CLP	43.01

PLANETOCENTRIC CONIC

C3	18.693	VHL	4.324	DLA	13.72	RAL	181.21	RAD	6567.8	VEL	11.835	PTH	2.10	VHP	4.409	DPA	12.14	RAP	162.54	ECC	1.3076

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 14 34	2638.96	-27.10	70.18	46.02	98.54	19 58 33	2039.0	-25.64	61.81
90.00	10 51 25	4401.87	6.51	183.29	40.37	62.38	12 4 47	3801.9	2.76	176.62
100.00	20 43 8	2353.35	-28.33	48.94	45.79	99.95	21 22 21	1753.3	-26.67	40.54
100.00	12 5 33	4162.72	7.61	165.11	39.77	61.01	13 14 55	3562.7	3.68	158.52
110.00	22 7 35	2089.09	-31.58	28.09	45.00	103.81	22 42 24	1489.1	-29.36	19.58
110.00	12 57 35	3999.74	10.46	151.02	38.05	57.27	14 4 15	3399.7	6.07	144.68

DIFFERENTIAL CORRECTIONS

TDE	-1.8187	TRA	6.8910	TC3	-9.4552	BAU	2.3666
RDE	.5196	RRA	-.0850	RC3	.5241	FAU	.21812
FDE	-2.9946	FRA	8.4253	FC3	-10.1019	BSP	44123
BDE	1.8914	BRA	6.8915	BC3	9.4698	FSP	4656

MID-COURSE EXECUTION ACCURACY

SGT	12689.2	SGR	832.4	SG3	1293.5		
RRT	-.6111	RRF	-.6439	RTF	.9950		
SGB	12716.5	R23	.0432	R13	-.9951		
SG1	12699.4	SG2	658.4	THA	177.70		

ORBIT DETERMINATION ACCURACY

ST	3717.7	SR	689.6	SS	2005.1		
CRT	-.6869	CRS	.7869	CST	-.9889		
LSA	4244.5	MSA	548.4	SSA	16.5		
EL1	3748.3	EL2	497.0	ALF	172.61		

LAUNCH DATE OCT 27 1964 FLIGHT TIME 386.00 ARRIVAL DATE NOV 17 1965

HELIOCENTRIC CONIC DISTANCE 862.616 EARTH TO MARS

RL	148.65	LAL	-.00	LOL	33.61	VL	32.804	GAL	-6.77	AZL	88.27	HCA	263.84	SMA	187.07	ECC	.23550	INC	1.7271	V1	29.974
RP	210.46	LAP	-1.72	LOP	297.45	VP	23.490	GAP	-11.60	AZP	90.19	TAL	323.22	TAP	227.06	RCA	143.01	APO	231.12	V2	26.057
RC	307.229	GL	12.94	GP	2.57	ZAL	140.83	ZAP	42.17	ETS	182.20	ZAE	67.54	ETE	180.51	ZAC	86.04	ETC	258.48	CLP	42.10

PLANETOCENTRIC CONIC

C3	19.238	VHL	4.386	DLA	13.32	RAL	181.85	RAD	6567.8	VEL	11.858	PTH	2.10	VHP	4.496	DPA	11.96	RAP	162.82	ECC	1.3166

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 20 37	2631.94	-27.03	69.68	47.01	98.79	20 4 29	2031.9	-25.53	61.33
90.00	10 50 30	4422.44	7.16	184.45	41.39	62.53	12 4 12	3822.4	3.42	177.76
100.00	20 48 54	2347.18	-28.26	48.50	46.77	100.17	21 28 2	1747.2	-26.56	40.11
100.00	12 4 53	4182.43	8.26	166.21	40.79	61.17	13 14 35	3582.4	4.35	159.61
110.00	22 12 47	2084.72	-31.51	27.77	45.97	103.99	22 47 32	1484.7	-29.27	19.28
110.00	12 57 30	4017.65	11.12	151.99	39.07	57.47	14 4 27	3417.7	6.75	145.62

DIFFERENTIAL CORRECTIONS

TDE	-1.9176	TRA	7.1359	TC3	-9.3346	BAU	2.4043
RDE	.5281	RRA	-.0825	RC3	.5053	FAU	.20714
FDE	-2.9593	FRA	8.1873	FC3	-9.3214	BSP	44780
BDE	1.9890	BRA	7.1364	BC3	9.3482	FSP	4447

MID-COURSE EXECUTION ACCURACY

SGT	12848.6	SGR	827.4	SG3	1229.8		
RRT	-.6038	RRF	-.6375	RTF	.9947		
SGB	12875.3	R23	.0444	R13	-.9948		
SG1	12858.4	SG2	659.1	THA	177.77		

ORBIT DETERMINATION ACCURACY

ST	3820.1	SR	690.8	SS	1976.1		
CRT	-.6923	CRS	.7910	CST	-.9890		
LSA	4321.7	MSA	545.8	SSA	16.3		
EL1	3850.5	EL2	494.6	ALF	172.74		

LAUNCH DATE OCT 27 1964 FLIGHT TIME 388.00 ARRIVAL DATE NOV 19 1965

HELIOCENTRIC CONIC DISTANCE 866.774 EARTH TO MARS

RL	148.65	LAL	-.00	LOL	33.61	VL	32.809	GAL	-6.92	AZL	88.26	HCA	265.07	SMA	187.14	ECC	.23705	INC	1.7379	V1	29.974
RP	210.22	LAP	-1.73	LOP	298.67	VP	23.526	GAP	-11.77	AZP	90.15	TAL	322.55	TAP	227.62	RCA	142.78	APO	231.50	V2	26.085
RC	308.206	GL	12.82	GP	2.52	ZAL	141.57	ZAP	41.29	ETS	182.22	ZAE	66.37	ETE	180.57	ZAC	86.06	ETC	258.43	CLP	41.22

PLANETOCENTRIC CONIC

C3	19.815	VHL	4.451	DLA	12.91	RAL	182.50	RAD	6567.8	VEL	11.883	PTH	2.11	VHP	4.586	DPA	11.78	RAP	163.12	ECC	1.3261

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 26 42	2625.01	-26.95	69.18	48.01	99.02	20 10 27	2025.0	-25.43	60.85
90.00	10 49 33	4443.36	7.81	185.64	42.43	62.70	12 3 37	3843.4	4.09	178.94
100.00	20 54 43	2341.11	-28.19	48.06	47.77	100.39	21 33 45	1741.1	-26.46	39.68
100.00	12 4 13	4202.50	8.91	167.34	41.83	61.35	13 14 15	3602.5	5.02	160.72
110.00	22 18 2	2080.43	-31.44	27.45	46.95	104.16	22 52 42	1480.4	-29.18	18.98
110.00	12 57 23	4035.94	11.79	152.99	40.12	57.68	14 4 39	3435.9	7.44	146.59

DIFFERENTIAL CORRECTIONS

TDE	-2.0212	TRA	7.3859	TC3	-9.2076	BAU	2.4425
RDE	.5369	RRA	-.0804	RC3	.4873	FAU	.19660
FDE	-2.9240	FRA	7.9509	FC3	-8.5900	BSP	45394
BDE	2.0913	BRA	7.3864	BC3	9.2205	FSP	4242

MID-COURSE EXECUTION ACCURACY

SGT	13003.6	SGR	822.9	SG3	1168.4		
RRT	-.5972	RRF	-.6321	RTF	.9945		
SGB	13029.6	R23	.0457	R13	-.9946		
SG1	13012.9	SG2	659.6	THA	177.83		

ORBIT DETERMINATION ACCURACY

ST	3923.1	SR	692.0	SS	1946.6		
CRT	-.6978	CRS	.7955	CST	-.9891		
LSA	4400.4	MSA	542.9	SSA	16.2		
EL1	3953.1	EL2	491.9	ALF	172.87		

LAUNCH DATE OCT 27 1964 FLIGHT TIME 390.00 ARRIVAL DATE NOV 21 1965

HELIOCENTRIC CONIC DISTANCE 870.929 EARTH TO MARS

RL	148.65	LAL	-.00	LOL	33.61	VL	32.813	GAL	-7.07	AZL	88.25	HCA	266.29	SMA	187.22	ECC	.23866	INC	1.7487	V1	29.974
RP	209.99	LAP	-1.75	LOP	299.90	VP	23.562	GAP	-11.94	AZP	90.11	TAL	321.86	TAP	228.16	RCA	142.54	APO	231.90	V2	26.111
RC	309.174	GL	12.70	GP	2.47	ZAL	142.31	ZAP	40.44	ETS	182.24	ZAE	65.23	ETE	180.63	ZAC	86.08	ETC	258.38	CLP	40.37

PLANETOCENTRIC CONIC

C3	20.425	VHL	4.519	DLA	12.50	RAL	183.14	RAD	6567.8	VEL	11.908	PTH	2.12	VHP	4.677	DPA	11.58	RAP	163.46	ECC	1.3361

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 32 48	2618.19	-26.88	68.70	49.03	99.26	20 16 26	2018.2	-25.33	60.37
90.00	10 48 36	4464.64	8.47	186.85	43.49	62.88	12 3 1	3864.6	4.77	180.13
100.00	21 0 34	2335.13	-28.11	47.63	48.78	100.61	21 39 29	1735.1	-26.36	39.27
100.00	12 3 31	4222.93	9.58	168.49	42.90	61.55	13 13 54	3622.9	5.70	161.85
110.00	22 23 18	2076.24	-31.37	27.14	47.95	104.33	22 57 55	1476.2	-29.08	18.69
110.00	12 57 16	4054.59	12.46	154.01	41.19	57.91	14 4 51	3454.6	8.13	147.58

DIFFERENTIAL CORRECTIONS

TDE	-2.1284	TRA	7.6425	TC3	-9.0709	BAU	2.4803
RDE	.5460	RRA	-.0787	RC3	.4701	FAU	.18638
FDE	-2.8866	FRA	7.7170	FC3	-7.8999	BSP	45994
BDE	2.1973	BRA	7.6429	BC3	9.0831	FSP	4044

MID-COURSE EXECUTION ACCURACY

SGT	13152.7	SGR	818.7	SG3	1109.1		
RRT	-.5912	RRF	-.6272	RTF	.9942		
SGB	13178.2	R23	.0470	R13	-.9943		
SG1	13161.7	SG2	659.8	THA	177.89		

ORBIT DETERMINATION ACCURACY

ST	4025.6	SR	693.1	SS	1915.8		
CRT	-.7034	CRS	.7999	CST	-.9891		
LSA	4479.3	MSA	539.8	SSA	16.1		
EL1	4055.4	EL2	489.0	ALF	172.99		

LAUNCH DATE OCT 27 1964 FLIGHT TIME 392.00 ARRIVAL DATE NOV 23 1965

HELIOCENTRIC CONIC DISTANCE 875.080 EARTH TO MARS

RL 148.65 LAL -.00 LOL 33.61 VL 32.818 GAL -7.24 AZL 88.24 HCA 267.53 SMA 187.30 ECC .24035 INC 1.7594 V1 29.974
RP 209.77 LAP -1.76 LOP 301.13 VP 23.597 GAP -12.11 AZP 90.08 TAL 321.16 TAP 228.69 RCA 142.28 APO 232.32 V2 26.137
RC 310.132 GL 12.58 GP 2.42 ZAL 143.07 ZAP 39.61 ETS 182.25 ZAE 64.12 ETE 180.69 ZAC 86.11 ETC 258.32 CLP 39.55

PLANETOCENTRIC CONIC

C3 21.072 VHL 4.590 DLA 12.08 RAL 183.79 RAD 6567.9 VEL 11.935 PTH 2.12 VHP 4.771 DPA 11.38 RAP 163.82 ECC 1.3468

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 38 56	2611.50	-26.81	68.22	50.06	99.48	20 22 28	2011.5	-25.22	59.91
90.00	10 47 39	4486.26	9.14	188.09	44.58	63.08	12 2 25	3886.3	5.46	181.35
100.00	21 6 26	2329.28	-28.04	47.21	49.81	100.82	21 45 16	1729.3	-26.26	38.86
100.00	12 2 49	4243.71	10.25	169.67	43.99	61.77	13 13 33	3643.7	6.40	163.00
110.00	22 28 37	2072.17	-31.30	26.85	48.97	104.49	23 3 9	1472.2	-28.99	18.40
110.00	12 57 9	4073.59	13.15	155.05	42.28	58.16	14 5 2	3473.6	8.84	148.60

DIFFERENTIAL CORRECTIONS
TDE-2.2384 TRA 7.9050 TC3-8.9291 BAU 2.5186
RDE .5554 RRA -.0775 RC3 .4537 FAU .17657
FDE-2.8472 FRA 7.4851 FC3-7.2545 BSP 46565
BDE 2.3063 BRA 7.9054 BC3 8.9406 FSP 3851

MID-COURSE EXECUTION ACCURACY
SGT13297.4 SGR 814.8 SG3 1052.1
RRT -.5860 RRF -.6232 RTF .9939
SGB13322.4 R23 .0485 R13 -.9940
SG113306.0 SG2 659.8 THA 177.94

ORBIT DETERMINATION ACCURACY
ST 4126.7 SR 694.0 SS 1883.8
CRT -.7087 CRS .8044 CST -.9892
LSA 4557.6 MSA 536.7 SSA 15.9
EL1 4156.4 EL2 486.1 ALF 173.11

LAUNCH DATE OCT 27 1964 FLIGHT TIME 394.00 ARRIVAL DATE NOV 25 1965

HELIOCENTRIC CONIC DISTANCE 879.227 EARTH TO MARS

RL 148.65 LAL -.00 LOL 33.61 VL 32.823 GAL -7.40 AZL 88.23 HCA 268.76 SMA 187.38 ECC .24210 INC 1.7702 V1 29.974
RP 209.55 LAP -1.77 LOP 302.37 VP 23.631 GAP -12.28 AZP 90.04 TAL 320.44 TAP 229.20 RCA 142.02 APO 232.75 V2 26.162
RC 311.080 GL 12.45 GP 2.37 ZAL 143.82 ZAP 38.81 ETS 182.26 ZAE 63.02 ETE 180.74 ZAC 86.14 ETC 258.26 CLP 38.75

PLANETOCENTRIC CONIC

C3 21.756 VHL 4.664 DLA 11.66 RAL 184.44 RAD 6567.9 VEL 11.964 PTH 2.13 VHP 4.867 DPA 11.16 RAP 164.20 ECC 1.3581

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 45 5	2604.95	-26.73	67.76	51.11	99.71	20 28 30	2005.0	-25.12	59.46
90.00	10 46 41	4508.21	9.82	189.35	45.69	63.31	12 1 49	3908.2	6.16	182.58
100.00	21 12 20	2323.56	-27.96	46.81	50.85	101.02	21 51 4	1723.6	-26.16	38.47
100.00	12 2 7	4264.84	10.93	170.87	45.10	62.00	13 13 12	3664.8	7.10	164.18
110.00	22 33 56	2068.22	-31.23	26.56	50.00	104.65	23 8 24	1468.2	-28.91	18.13
110.00	12 57 0	4092.94	13.84	156.13	43.40	58.43	14 5 13	3492.9	9.56	149.64

DIFFERENTIAL CORRECTIONS
TDE-2.3527 TRA 8.1752 TC3-8.7786 BAU 2.5565
RDE .5651 RRA -.0767 RC3 .4378 FAU .16705
FDE-2.8066 FRA 7.2558 FC3-6.6472 BSP 47131
BDE 2.4196 BRA 8.1755 BC3 8.7896 FSP 3665

MID-COURSE EXECUTION ACCURACY
SGT13437.1 SGR 811.1 SG3 997.0
RRT -.5814 RRF -.6198 RTF .9936
SGB13461.6 R23 .0500 R13 -.9937
SG113445.4 SG2 659.5 THA 177.98

ORBIT DETERMINATION ACCURACY
ST 4227.9 SR 694.9 SS 1850.9
CRT -.7141 CRS .8090 CST -.9891
LSA 4636.7 MSA 533.4 SSA 15.8
EL1 4257.3 EL2 483.1 ALF 173.22

LAUNCH DATE OCT 27 1964 FLIGHT TIME 396.00 ARRIVAL DATE NOV 27 1965

HELIOCENTRIC CONIC DISTANCE 883.368 EARTH TO MARS

RL 148.65 LAL -.00 LOL 33.61 VL 32.827 GAL -7.58 AZL 88.22 HCA 269.99 SMA 187.47 ECC .24394 INC 1.7810 V1 29.974
RP 209.34 LAP -1.78 LOP 303.60 VP 23.664 GAP -12.46 AZP 90.00 TAL 319.70 TAP 229.70 RCA 141.74 APO 233.20 V2 26.186
RC 312.019 GL 12.32 GP 2.33 ZAL 144.59 ZAP 38.03 ETS 182.28 ZAE 61.95 ETE 180.80 ZAC 86.19 ETC 258.20 CLP 37.97

PLANETOCENTRIC CONIC

C3 22.481 VHL 4.741 DLA 11.23 RAL 185.09 RAD 6567.9 VEL 11.994 PTH 2.14 VHP 4.965 DPA 10.94 RAP 164.61 ECC 1.3700

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 51 15	2598.55	-26.66	67.30	52.17	99.92	20 34 33	1998.6	-25.02	59.02
90.00	10 45 43	4530.48	10.49	190.64	46.82	63.55	12 1 13	3930.5	6.86	183.84
100.00	21 18 14	2317.99	-27.89	46.41	51.91	101.22	21 56 52	1718.0	-26.06	38.08
100.00	12 1 24	4286.28	11.61	172.10	46.24	62.26	13 12 51	3686.3	7.81	165.37
110.00	22 39 17	2064.40	-31.17	26.28	51.04	104.80	23 13 41	1464.4	-28.82	17.86
110.00	12 56 51	4112.63	14.54	157.22	44.54	58.72	14 5 24	3512.6	10.29	150.70

DIFFERENTIAL CORRECTIONS
TDE-2.4714 TRA 8.4509 TC3-8.6252 BAU 2.5954
RDE .5751 RRA -.0764 RC3 .4227 FAU .15793
FDE-2.7646 FRA 7.0271 FC3-6.0816 BSP 47632
BDE 2.5374 BRA 8.4512 BC3 8.6356 FSP 3482

MID-COURSE EXECUTION ACCURACY
SGT13572.6 SGR 807.8 SG3 944.0
RRT -.5777 RRF -.6173 RTF .9932
SGB13596.6 R23 .0517 R13 -.9933
SG113580.6 SG2 659.0 THA 178.03

ORBIT DETERMINATION ACCURACY
ST 4328.4 SR 695.7 SS 1816.9
CRT -.7196 CRS .8136 CST -.9891
LSA 4715.8 MSA 529.9 SSA 15.6
EL1 4357.6 EL2 479.9 ALF 173.32

LAUNCH DATE OCT 27 1964 FLIGHT TIME 398.00 ARRIVAL DATE NOV 29 1965

HELIOCENTRIC CONIC DISTANCE 887.504 EARTH TO MARS

RL 148.65 LAL -.00 LOL 33.61 VL 32.832 GAL -7.76 AZL 88.21 HCA 271.23 SMA 187.55 ECC .24586 INC 1.7918 V1 29.974
RP 209.14 LAP -1.79 LOP 304.84 VP 23.697 GAP -12.63 AZP 89.96 TAL 318.95 TAP 230.18 RCA 141.44 APO 233.66 V2 26.209
RC 312.950 GL 12.18 GP 2.28 ZAL 145.35 ZAP 37.28 ETS 182.29 ZAE 60.91 ETE 180.85 ZAC 86.24 ETC 258.13 CLP 37.22

PLANETOCENTRIC CONIC

C3 23.249 VHL 4.822 DLA 10.80 RAL 185.74 RAD 6567.9 VEL 12.026 PTH 2.15 VHP 5.066 DPA 10.71 RAP 165.05 ECC 1.3826

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 57 25	2592.33	-26.58	66.86	53.25	100.13	20 40 38	1992.3	-24.91	58.59
90.00	10 44 44	4553.06	11.18	191.94	47.98	63.81	12 0 37	3953.1	7.57	185.12
100.00	21 24 10	2312.58	-27.82	46.02	52.99	101.41	22 2 42	1712.6	-25.96	37.71
100.00	12 0 41	4308.04	12.30	173.35	47.40	62.54	13 12 29	3708.0	8.52	166.59
110.00	22 44 38	2060.74	-31.10	26.02	52.11	104.95	23 18 59	1460.7	-28.74	17.61
110.00	12 56 42	4132.64	15.24	158.35	45.70	59.03	14 5 34	3532.6	11.03	151.78

DIFFERENTIAL CORRECTIONS
TDE-2.5939 TRA 8.7347 TC3-8.4657 BAU 2.6344
RDE .5855 RRA -.0765 RC3 .4082 FAU .14911
FDE-2.7213 FRA 6.8008 FC3-5.5524 BSP 48129
BDE 2.6592 BRA 8.7350 BC3 8.4755 FSP 3304

MID-COURSE EXECUTION ACCURACY
SGT13703.9 SGR 804.7 SG3 892.9
RRT -.5746 RRF -.6156 RTF .9928
SGB13727.5 R23 .0535 R13 -.9929
SG113711.7 SG2 658.2 THA 178.06

ORBIT DETERMINATION ACCURACY
ST 4428.2 SR 696.4 SS 1782.0
CRT -.7249 CRS .8184 CST -.9890
LSA 4795.0 MSA 526.4 SSA 15.5
EL1 4457.2 EL2 476.6 ALF 173.42

LAUNCH DATE OCT 28 1964 FLIGHT TIME 240.00 ARRIVAL DATE JUN 25 1965

HELIOCENTRIC CONIC DISTANCE 571.767 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 33.181 GAL -4.88 AZL 96.33 HCA 183.31 SMA 193.73 ECC .24716 INC 6.3284 V1 29.982
RP 236.12 LAP .37 LOP 217.90 VP 20.955 GAP 6.77 AZP 83.68 TAL 334.98 TAP 158.29 RCA 145.85 APO 241.61 V2 23.279
RC 194.983 GL -44.38 GP 29.65 ZAL 116.95 ZAP 138.76 ETS 137.89 ZAE 147.95 ETE 69.68 ZAC 118.27 ETC 253.97 CLP 149.92

PLANETOCENTRIC CONIC

C3 27.176 VHL 5.213 DLA -34.27 RAL 146.22 RAD 6568.1 VEL 12.188 PTH 2.19 VHP 5.952 DPA 24.80 RAP 200.79 ECC 1.4472

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
69.84	22 6 55	1446.22	21.21	6.42	21.47	117.56	22 31 2	846.2	24.73	359.03
110.16	3 12 4	5776.07	21.23	272.83	21.48	117.55	4 48 20	5176.1	24.75	265.44
69.84	22 6 55	1446.22	21.21	6.42	21.47	117.56	22 31 2	846.2	24.73	359.03
110.16	3 12 4	5776.07	21.23	272.83	21.48	117.55	4 48 20	5176.1	24.75	265.44
69.84	22 6 55	1446.22	21.21	6.42	21.47	117.56	22 31 2	846.2	24.73	359.03
110.16	3 12 4	5776.07	21.23	272.83	21.48	117.55	4 48 20	5176.1	24.75	265.44

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 2.4313 TRA-2.1075 TC3 1.6236 BAU .8940 SGT 4226.4 SGR 3458.8 SG3 754.5 ST 2801.9 SR 2438.4 SS 3144.3
RDE 2.1750 RRA-1.1964 RC3 1.8491 FAU .15471 RRT .9653 RRF -.9989 RTF -.9522 CRT .9942 CRS .9999 CST .9925
FDE-5.4687 FRA 2.7857 FC3-4.9286 BSP 17515 SGB 5461.3 R23 -.2034 R13 -.9790 LSA 4859.0 MSA 268.8 SSA 1.5
BDE 3.2622 BRA 2.4234 BC3 2.4608 FSP 2243 SG1 5415.7 SG2 704.6 THA 39.10 EL1 3709.0 EL2 198.3 ALF 41.01

LAUNCH DATE OCT 28 1964 FLIGHT TIME 242.00 ARRIVAL DATE JUN 27 1965

HELIOCENTRIC CONIC DISTANCE 575.379 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 33.156 GAL -4.80 AZL 94.48 HCA 184.28 SMA 193.27 ECC .24496 INC 4.4851 V1 29.982
RP 235.77 LAP .33 LOP 218.88 VP 20.955 GAP 6.35 AZP 85.53 TAL 335.23 TAP 159.51 RCA 145.92 APO 240.61 V2 23.315
RC 197.185 GL -34.52 GP 24.44 ZAL 120.48 ZAP 141.90 ETS 143.02 ZAE 152.86 ETE 66.79 ZAC 113.40 ETC 254.61 CLP 149.81

PLANETOCENTRIC CONIC

C3 20.789 VHL 4.559 DLA -24.95 RAL 150.13 RAD 6567.8 VEL 11.923 PTH 2.12 VHP 5.517 DPA 19.80 RAP 199.00 ECC 1.3421

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	22 52 17	1301.43	8.09	348.73	14.55	117.23	23 13 58	701.4	11.67	341.89
90.00	2 57 55	5789.85	26.76	275.87	21.04	99.61	4 34 25	5189.9	27.82	267.37
100.00	23 50 59	1111.89	6.09	333.73	13.47	119.32	24 9 31	511.9	9.95	327.07
100.00	4 41 54	5454.63	29.01	251.59	21.42	97.56	6 12 48	4854.6	29.75	242.87
110.00	0 20 7	1032.88	1.76	325.06	10.79	124.14	0 37 20	432.9	6.22	318.82
110.00	6 33 12	5106.40	34.08	225.69	21.96	92.84	7 58 18	4506.4	34.10	216.44

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.8934 TRA-2.1866 TC3 2.0117 BAU .7702 SGT 4267.3 SGR 2882.3 SG3 890.0 ST 2547.6 SR 1802.4 SS 3003.8
RDE 1.5884 RRA-1.0806 RC3 1.9060 FAU .17183 RRT .9657 RRF -.9992 RTF -.9560 CRT .9936 CRS 1.0000 CST .9929
FDE-4.8611 FRA 3.6948 FC3-7.1557 BSP 17878 SGB 5149.5 R23 -.2143 R13 -.9766 LSA 4324.7 MSA 241.9 SSA 2.7
BDE 2.3479 BRA 2.4390 BC3 2.7712 FSP 2906 SG1 5111.5 SG2 624.7 THA 33.69 EL1 3116.3 EL2 166.4 ALF 35.22

LAUNCH DATE OCT 28 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUN 29 1965

HELIOCENTRIC CONIC DISTANCE 579.013 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 33.133 GAL -4.72 AZL 93.32 HCA 185.25 SMA 192.82 ECC .24285 INC 3.3145 V1 29.982
RP 235.42 LAP .30 LOP 219.85 VP 20.957 GAP 5.94 AZP 86.70 TAL 335.48 TAP 160.73 RCA 145.99 APO 239.65 V2 23.351
RC 199.372 GL -27.00 GP 20.83 ZAL 122.57 ZAP 143.47 ETS 147.56 ZAE 156.36 ETE 65.10 ZAC 110.00 ETC 254.97 CLP 149.29

PLANETOCENTRIC CONIC

C3 17.697 VHL 4.207 DLA -17.80 RAL 152.74 RAD 6567.7 VEL 11.793 PTH 2.09 VHP 5.237 DPA 16.37 RAP 197.74 ECC 1.2913

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 30 21	1596.36	-1.34	5.28	11.79	118.29	21 56 57	996.4	2.45	358.65
90.00	4 40 36	5418.88	28.09	248.94	18.30	86.28	6 10 55	4818.9	27.28	240.37
100.00	22 41 15	1367.61	-2.55	347.79	11.12	119.79	23 4 2	767.6	1.43	341.27
100.00	6 12 24	5122.87	29.47	227.05	18.18	84.73	7 37 46	4522.9	28.43	218.40
110.00	23 26 35	1225.53	-5.59	335.13	9.23	123.78	23 47 1	625.5	-1.12	328.90
110.00	7 43 32	4837.71	33.02	204.86	17.64	80.61	9 4 10	4237.7	31.37	196.02

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.6182 TRA-2.1579 TC3 2.4015 BAU .7285 SGT 4297.4 SGR 2512.3 SG3 1005.1 ST 2391.4 SR 1426.6 SS 2871.4
RDE 1.0040 RRA -.9415 RC3 1.9268 FAU .19028 RRT .9676 RRF -.9993 RTF -.9604 CRT .9939 CRS 1.0000 CST .9944
FDE-4.4583 FRA 4.2594 FC3-9.3085 BSP 16563 SGB 4977.9 R23 -.2152 R13 -.9762 LSA 3994.6 MSA 204.9 SSA 4.4
BDE 1.9043 BRA 2.3544 BC3 3.0789 FSP 3189 SG1 4947.3 SG2 551.2 THA 29.90 EL1 2781.3 EL2 135.6 ALF 30.75

LAUNCH DATE OCT 28 1964 FLIGHT TIME 246.00 ARRIVAL DATE JUL 1 1965

HELIOCENTRIC CONIC DISTANCE 582.661 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 33.110 GAL -4.64 AZL 92.51 HCA 186.23 SMA 192.40 ECC .24085 INC 2.5091 V1 29.982
RP 235.06 LAP .27 LOP 220.83 VP 20.962 GAP 5.53 AZP 87.51 TAL 335.71 TAP 161.94 RCA 146.06 APO 238.74 V2 23.387
RC 201.544 GL -21.20 GP 18.22 ZAL 123.75 ZAP 144.15 ETS 151.40 ZAE 159.02 ETE 64.38 ZAC 107.51 ETC 255.19 CLP 148.58

PLANETOCENTRIC CONIC

C3 15.961 VHL 3.995 DLA -12.24 RAL 154.57 RAD 6567.6 VEL 11.719 PTH 2.06 VHP 5.031 DPA 13.90 RAP 196.81 ECC 1.2627

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 46 32	1771.78	-6.95	15.12	11.39	117.52	21 16 4	1171.8	-3.21	8.44
90.00	5 39 1	5196.00	26.07	232.97	16.04	78.53	7 5 37	4596.0	24.23	224.79
100.00	22 1 37	1529.56	-7.97	356.76	10.84	118.91	22 27 7	929.6	-4.05	350.17
100.00	7 6 38	4913.45	27.20	211.92	15.77	77.10	8 28 31	4313.5	25.15	203.72
110.00	22 55 43	1360.12	-10.62	342.31	9.23	122.68	23 18 23	760.1	-6.24	335.96
110.00	8 29 1	4655.66	30.19	191.44	14.86	73.14	9 46 37	4055.7	27.59	183.21

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.3981 TRA-2.1545 TC3 2.5984 BAU .6821 SGT 4281.1 SGR 2226.7 SG3 1095.3 ST 2219.0 SR 1160.8 SS 2704.2
RDE .7661 RRA -.8451 RC3 1.8617 FAU .20303 RRT .9664 RRF -.9991 RTF -.9608 CRT .9933 CRS .9998 CST .9952
FDE-4.0788 FRA 4.7728 FC-11.0129 BSP 16556 SGB 4825.6 R23 -.2223 R13 -.9743 LSA 3681.3 MSA 179.4 SSA 6.8
BDE 1.5942 BRA 2.3143 BC3 3.1965 FSP 3568 SG1 4798.5 SG2 510.3 THA 27.02 EL1 2501.5 EL2 118.9 ALF 27.52

LAUNCH DATE OCT 28 1964 FLIGHT TIME 248.00 ARRIVAL DATE JUL 3 1965

HELIOCENTRIC CONIC DISTANCE 586.327 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 33.088 GAL -4.57 AZL 91.92 HCA 187.21 SMA 192.00 ECC .23893 INC 1.9166 V1 29.982
RP 234.71 LAP .24 LOP 221.81 VP 20.968 GAP 5.13 AZP 88.10 TAL 335.94 TAP 163.15 RCA 146.12 APO 237.87 V2 23.424
RC 203.699 GL -16.64 GP 16.25 ZAL 124.36 ZAP 144.28 ETS 154.59 ZAE 161.13 ETE 64.55 ZAC 105.63 ETC 255.33 CLP 147.75

PLANETOCENTRIC CONIC

C3 14.872 VHL 3.856 DLA -7.85 RAL 155.90 RAD 6567.6 VEL 11.673 PTH 2.05 VHP 4.864 DPA 12.06 RAP 196.09 ECC 1.2448

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 16 17	1900.06	-10.91	22.47	11.68	116.29	20 47 57	1300.1	-7.29	15.66
90.00	6 19 55	5035.90	23.44	221.99	14.64	73.64	7 43 51	4435.9	20.97	214.18
100.00	21 33 51	1649.86	-11.85	3.58	11.19	117.64	22 1 20	1049.9	-8.06	356.85
100.00	7 45 3	4761.34	24.45	201.46	14.30	72.25	9 4 24	4161.3	21.80	193.67
110.00	22 33 27	1463.22	-14.35	347.97	9.74	121.36	22 57 50	863.2	-10.09	341.45
110.00	9 1 56	4520.74	27.15	182.11	13.23	68.39	10 17 17	3920.7	23.98	174.39

DIFFERENTIAL CORRECTIONS
TDE 1.2579 TRA-2.1183 TC3 2.7807 BAU .6594
RDE .6240 RRA -.7576 RC3 1.8077 FAU .21719
FDE-3.8359 FRA 5.1495 FC-12.6433 BSP 16027
BDE 1.4042 BRA 2.2497 BC3 3.3166 FSP 3792

MID-COURSE EXECUTION ACCURACY
SGT 4264.5 SGR 2023.5 SG3 1182.2
RRT .9657 RRF -.9988 RTF -.9615
SGB 4720.2 R23 -.2254 R13 -.9732
SG1 4696.0 SG2 477.4 THA 24.89

ORBIT DETERMINATION ACCURACY
ST 2098.9 SR 988.6 SS 2588.2
CRT .9928 CRS .9994 CST .9962
LSA 3472.4 MSA 155.3 SSA 10.0
EL1 2317.7 EL2 106.9 ALF 25.12

LAUNCH DATE OCT 28 1964 FLIGHT TIME 250.00 ARRIVAL DATE JUL 5 1965

HELIOCENTRIC CONIC DISTANCE 590.007 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 33.067 GAL -4.50 AZL 91.47 HCA 188.19 SMA 191.61 ECC .23710 INC 1.4654 V1 29.982
RP 234.35 LAP .21 LOP 222.80 VP 20.977 GAP 4.74 AZP 88.55 TAL 336.16 TAP 164.35 RCA 146.18 APO 237.05 V2 23.461
RC 205.837 GL -12.98 GP 14.73 ZAL 124.62 ZAP 144.06 ETS 157.26 ZAE 162.88 ETE 65.56 ZAC 104.16 ETC 255.44 CLP 146.84

PLANETOCENTRIC CONIC

C3 14.129 VHL 3.759 DLA -4.31 RAL 156.90 RAD 6567.6 VEL 11.641 PTH 2.04 VHP 4.720 DPA 10.65 RAP 195.50 ECC 1.2325

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 53 11	2000.70	-13.87	28.37	12.22	114.94	20 26 32	1400.7	-10.39	21.42
90.00	6 51 0	4912.51	20.84	213.88	13.81	70.38	8 12 53	4312.5	17.98	206.37
100.00	21 12 30	1744.82	-14.78	9.11	11.77	116.28	21 41 35	1144.8	-11.14	2.22
100.00	8 14 22	4643.62	21.79	193.73	13.43	69.01	9 31 46	4043.6	18.74	186.26
110.00	22 16 7	1545.69	-17.21	352.64	10.41	120.00	22 41 53	945.7	-13.10	345.95
110.00	9 27 15	4415.52	24.33	175.24	12.27	65.21	10 40 51	3815.5	20.78	167.90

DIFFERENTIAL CORRECTIONS
TDE 1.1405 TRA-2.0870 TC3 2.8827 BAU .6359
RDE .5246 RRA -.6916 RC3 1.7393 FAU .22914
FDE-3.6171 FRA 5.5149 FC-14.0406 BSP 15866
BDE 1.2554 BRA 2.1986 BC3 3.3668 FSP 4074

MID-COURSE EXECUTION ACCURACY
SGT 4230.5 SGR 1861.9 SG3 1260.6
RRT .9644 RRF -.9984 RTF -.9616
SGB 4622.1 R23 -.2277 R13 -.9721
SG1 4599.9 SG2 452.7 THA 23.24

ORBIT DETERMINATION ACCURACY
ST 1985.6 SR 861.2 SS 2477.0
CRT .9920 CRS .9986 CST .9971
LSA 3286.5 MSA 134.4 SSA 14.3
EL1 2162.0 EL2 99.6 ALF 23.33

LAUNCH DATE OCT 28 1964 FLIGHT TIME 252.00 ARRIVAL DATE JUL 7 1965

HELIOCENTRIC CONIC DISTANCE 593.703 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 33.047 GAL -4.44 AZL 91.11 HCA 189.18 SMA 191.25 ECC .23535 INC 1.1099 V1 29.982
RP 233.98 LAP .18 LOP 223.79 VP 20.987 GAP 4.35 AZP 88.90 TAL 336.37 TAP 165.55 RCA 146.24 APO 236.26 V2 23.498
RC 207.958 GL -9.99 GP 13.51 ZAL 124.66 ZAP 143.60 ETS 159.50 ZAE 164.36 ETE 67.42 ZAC 102.99 ETC 255.51 CLP 145.87

PLANETOCENTRIC CONIC

C3 13.585 VHL 3.686 DLA -1.39 RAL 157.67 RAD 6567.5 VEL 11.618 PTH 2.04 VHP 4.591 DPA 9.54 RAP 195.00 ECC 1.2236

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 34 29	2082.85	-16.17	33.31	12.81	113.57	20 9 12	1482.8	-12.85	26.21
90.00	7 15 49	4813.16	18.44	207.58	13.31	68.12	8 36 2	4213.2	15.31	200.30
100.00	20 55 11	1822.55	-17.07	13.74	12.39	114.92	21 25 33	1222.5	-13.57	6.70
100.00	8 37 48	4548.70	19.35	187.73	12.91	66.77	9 53 37	3948.7	16.05	180.50
110.00	22 1 56	1613.57	-19.48	356.60	11.11	118.66	22 28 50	1013.6	-15.50	349.74
110.00	9 47 32	4330.44	21.80	169.94	11.69	62.99	10 59 43	3730.4	18.00	162.86

DIFFERENTIAL CORRECTIONS
TDE 1.0477 TRA-2.0496 TC3 2.9538 BAU .6169
RDE .4549 RRA -.6375 RC3 1.6771 FAU .24074
FDE-3.4406 FRA 5.8529 FC-15.3414 BSP 15680
BDE 1.1422 BRA 2.1465 BC3 3.3967 FSP 4353

MID-COURSE EXECUTION ACCURACY
SGT 4189.3 SGR 1735.3 SG3 1336.6
RRT .9633 RRF -.9978 RTF -.9619
SGB 4534.5 R23 -.2279 R13 -.9714
SG1 4513.9 SG2 432.3 THA 21.97

ORBIT DETERMINATION ACCURACY
ST 1889.7 SR 768.1 SS 2385.8
CRT .9911 CRS .9972 CST .9980
LSA 3136.7 MSA 115.7 SSA 19.8
EL1 2037.6 EL2 94.7 ALF 21.99

LAUNCH DATE OCT 28 1964 FLIGHT TIME 254.00 ARRIVAL DATE JUL 9 1965

HELIOCENTRIC CONIC DISTANCE 597.413 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 33.028 GAL -4.37 AZL 90.82 HCA 190.17 SMA 190.91 ECC .23369 INC .8223 V1 29.982
RP 233.62 LAP .15 LOP 224.78 VP 20.999 GAP 3.97 AZP 89.19 TAL 336.57 TAP 166.74 RCA 146.29 APO 235.52 V2 23.536
RC 210.060 GL -7.50 GP 12.53 ZAL 124.56 ZAP 142.96 ETS 161.41 ZAE 165.64 ETE 70.15 ZAC 102.02 ETC 255.57 CLP 144.86

PLANETOCENTRIC CONIC

C3 13.166 VHL 3.628 DLA 1.05 RAL 158.26 RAD 6567.5 VEL 11.600 PTH 2.03 VHP 4.473 DPA 8.66 RAP 194.56 ECC 1.2167

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 18 45	2151.76	-18.00	37.54	13.39	112.24	19 54 37	1551.8	-14.82	30.30
90.00	7 36 18	4730.62	16.27	202.49	13.01	66.50	8 55 8	4130.6	12.96	195.38
100.00	20 40 35	1887.81	-18.90	17.73	12.98	113.60	21 12 3	1287.8	-15.55	10.54
100.00	8 57 9	4469.81	17.17	182.89	12.60	65.15	10 11 39	3869.8	13.67	175.84
110.00	21 49 57	1670.69	-21.31	.03	11.76	117.38	22 17 48	1070.7	-17.47	353.00
110.00	10 4 16	4259.70	19.55	165.88	11.33	61.38	11 15 16	3659.7	15.58	158.81

DIFFERENTIAL CORRECTIONS
TDE .9715 TRA-2.0065 TC3 3.0010 BAU .6006
RDE .4047 RRA -.5924 RC3 1.6243 FAU .25236
FDE-3.2991 FRA 6.1698 FC-16.5943 BSP 15457
BDE 1.0524 BRA 2.0922 BC3 3.4124 FSP 4625

MID-COURSE EXECUTION ACCURACY
SGT 4139.9 SGR 1634.9 SG3 1412.1
RRT .9621 RRF -.9970 RTF -.9621
SGB 4451.0 R23 -.2267 R13 -.9709
SG1 4431.5 SG2 416.4 THA 21.00

ORBIT DETERMINATION ACCURACY
ST 1806.0 SR 698.9 SS 2312.9
CRT .9900 CRS .9952 CST .9988
LSA 3014.7 MSA 101.4 SSA 26.4
EL1 1934.3 EL2 92.1 ALF 21.01

LAUNCH DATE OCT 28 1964 FLIGHT TIME 256.00 ARRIVAL DATE JUL 11 1965

HELIOCENTRIC CONIC DISTANCE 601.136 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 33.010 GAL -4.32 AZL 90.59 HCA 191.17 SMA 190.58 ECC .23210 INC .5842 V1 29.982
RP 233.25 LAP .11 LOP 225.77 VP 21.013 GAP 3.59 AZP 89.43 TAL 336.77 TAP 167.93 RCA 146.34 APO 234.81 V2 23.574
RC 212.144 GL -5.39 GP 11.71 ZAL 124.39 ZAP 142.19 ETS 163.04 ZAE 166.72 ETE 73.79 ZAC 101.21 ETC 255.61 CLP 143.79

PLANETOCENTRIC CONIC

C3 12.828 VHL 3.582 DLA 3.13 RAL 158.73 RAD 6567.5 VEL 11.585 PTH 2.03 VHP 4.363 DPA 7.94 RAP 194.15 ECC 1.2111

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 5 9	2210.79	-19.48	41.24	13.92	110.97	19 42 0	1610.8	-16.45	33.87
90.00	7 53 38	4660.40	14.32	198.26	12.84	65.31	9 11 19	4060.4	10.87	191.28
100.00	20 27 57	1943.70	-20.38	21.22	13.54	112.35	21 0 21	1343.7	-17.18	13.89
100.00	9 13 31	4402.72	15.20	178.88	12.40	63.95	10 26 54	3802.7	11.58	171.96
110.00	21 39 33	1719.60	-22.81	3.03	12.36	116.18	22 8 13	1119.6	-19.10	355.85
110.00	10 18 24	4199.59	17.55	162.16	11.11	60.18	11 28 24	3599.6	13.45	155.45

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .9068 TRA-1.9611 TC3 3.0249 BAU .5853 SGT 4082.9 SGR 1554.5 SG3 1487.9 ST 1731.1 SR 646.6 SS 2255.1
RDE .3676 RRA -.5546 RC3 1.5801 FAU .26407 RRT .9607 RRF -.9960 RTF -.9621 CRT .9886 CRS .9924 CST .9993
FDE-3.1843 FRA 6.4764 FC-17.8216 BSP 15224 SGB 4368.9 RZ3 -.2252 R13 -.9704 LSA 2913.9 MSA 93.2 SSA 33.0
BDE .9785 BRA 2.0380 BC3 3.4127 FSP 4896 SG1 4350.0 SG2 405.2 THA 20.27 EL1 1845.7 EL2 91.4 ALF 20.32

LAUNCH DATE OCT 28 1964 FLIGHT TIME 258.00 ARRIVAL DATE JUL 13 1965

HELIOCENTRIC CONIC DISTANCE 604.873 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 32.993 GAL -4.26 AZL 90.39 HCA 192.16 SMA 190.26 ECC .23059 INC .3830 V1 29.982
RP 232.88 LAP .08 LOP 226.77 VP 21.029 GAP 3.22 AZP 89.62 TAL 336.96 TAP 169.12 RCA 146.39 APO 234.14 V2 23.612
RC 214.210 GL -3.58 GP 11.03 ZAL 124.16 ZAP 141.32 ETS 164.45 ZAE 167.63 ETE 78.38 ZAC 100.53 ETC 255.65 CLP 142.69

PLANETOCENTRIC CONIC

C3 12.547 VHL 3.542 DLA 4.93 RAL 159.11 RAD 6567.5 VEL 11.573 PTH 2.02 VHP 4.260 DPA 7.37 RAP 193.77 ECC 1.2065

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 53 9	2262.19	-20.69	44.52	14.41	109.77	19 30 51	1662.2	-17.81	37.03
90.00	8 8 37	4599.50	12.56	194.66	12.73	64.41	9 25 17	3999.5	9.01	187.77
100.00	20 16 49	1992.34	-21.61	24.31	14.04	111.17	20 50 1	1392.3	-18.54	16.86
100.00	9 27 38	4344.59	13.43	175.47	12.29	63.04	10 40 3	3744.6	9.71	168.65
110.00	21 30 22	1762.10	-24.06	5.69	12.91	115.05	21 59 45	1162.1	-20.48	358.38
110.00	10 30 34	4147.59	15.76	159.19	10.96	59.27	11 39 41	3547.6	11.57	152.59

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .8507 TRA-1.9111 TC3 3.0344 BAU .5712 SGT 4017.7 SGR 1490.0 SG3 1565.2 ST 1662.6 SR 606.8 SS 2210.4
RDE .3400 RRA -.5222 RC3 1.5455 FAU .27620 RRT .9590 RRF -.9949 RTF -.9620 CRT .9869 CRS .9888 CST .9995
FDE-3.0929 FRA 6.7711 FC-19.0580 BSP 14936 SGB 4285.1 RZ3 -.2229 R13 -.9700 LSA 2829.9 MSA 92.3 SSA 37.7
BDE .9162 BRA 1.9812 BC3 3.4053 FSP 5160 SG1 4266.6 SG2 387.5 THA 19.76 EL1 1767.5 EL2 92.1 ALF 19.87

LAUNCH DATE OCT 28 1964 FLIGHT TIME 260.00 ARRIVAL DATE JUL 15 1965

HELIOCENTRIC CONIC DISTANCE 608.623 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 32.976 GAL -4.20 AZL 90.21 HCA 193.16 SMA 189.97 ECC .22915 INC .2109 V1 29.982
RP 232.51 LAP .05 LOP 227.77 VP 21.047 GAP 2.86 AZP 89.79 TAL 337.14 TAP 170.30 RCA 146.44 APO 233.50 V2 23.650
RC 216.258 GL -2.01 GP 10.45 ZAL 123.90 ZAP 140.37 ETS 165.68 ZAE 168.35 ETE 83.92 ZAC 99.93 ETC 255.68 CLP 141.55

PLANETOCENTRIC CONIC

C3 12.306 VHL 3.508 DLA 6.50 RAL 159.40 RAD 6567.5 VEL 11.563 PTH 2.02 VHP 4.162 DPA 6.90 RAP 193.40 ECC 1.2025

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 42 23	2307.59	-21.71	47.46	14.84	108.64	19 20 51	1707.6	-18.97	39.86
90.00	8 21 46	4545.87	10.96	191.53	12.68	63.73	9 37 32	3945.9	7.34	184.72
100.00	20 6 49	2035.25	-22.64	27.08	14.49	110.06	20 40 45	1435.2	-19.70	19.51
100.00	9 40 1	4293.45	11.84	172.51	12.22	62.35	10 51 35	3693.5	8.04	165.78
110.00	21 22 9	1799.51	-25.12	8.09	13.39	113.99	21 52 8	1199.5	-21.66	.64
110.00	10 41 11	4101.95	14.16	156.63	10.87	58.56	11 49 33	3501.9	9.90	150.12

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .8032 TRA-1.8570 TC3 3.0330 BAU .5580 SGT 3945.6 SGR 1437.9 SG3 1644.0 ST 1601.2 SR 576.3 SS 2176.2
RDE .3191 RRA -.4946 RC3 1.5185 FAU .28865 RRT .9575 RRF -.9936 RTF -.9620 CRT .9852 CRS .9843 CST .9995
FDE-3.0194 FRA 7.0618 FC-20.3058 BSP 14593 SGB 4199.5 RZ3 -.2196 R13 -.9698 LSA 2760.5 MSA 98.6 SSA 39.4
BDE .8643 BRA 1.9217 BC3 3.3919 FSP 5425 SG1 4181.2 SG2 391.2 THA 19.41 EL1 1699.2 EL2 93.1 ALF 19.59

LAUNCH DATE OCT 28 1964 FLIGHT TIME 262.00 ARRIVAL DATE JUL 17 1965

HELIOCENTRIC CONIC DISTANCE 612.385 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 32.960 GAL -4.15 AZL 90.07 HCA 194.17 SMA 189.69 ECC .22779 INC .0389 V1 29.982
RP 232.14 LAP .02 LOP 228.77 VP 21.066 GAP 2.50 AZP 89.93 TAL 337.31 TAP 171.47 RCA 146.48 APO 232.89 V2 23.689
RC 218.287 GL -.64 GP 9.96 ZAL 123.63 ZAP 139.33 ETS 166.77 ZAE 168.87 ETE 90.35 ZAC 99.41 ETC 255.71 CLP 140.36

PLANETOCENTRIC CONIC

C3 12.097 VHL 3.478 DLA 7.89 RAL 159.65 RAD 6567.5 VEL 11.554 PTH 2.02 VHP 4.068 DPA 6.52 RAP 193.03 ECC 1.1991

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 32 38	2348.15	-22.57	50.12	15.23	107.57	19 11 46	1748.1	-19.95	42.43
90.00	8 33 29	4498.07	9.51	188.77	12.65	63.20	9 48 27	3898.1	5.83	182.01
100.00	19 57 46	2073.53	-23.51	29.59	14.89	109.01	20 32 20	1473.5	-20.70	21.92
100.00	9 51 1	4247.91	10.39	169.91	12.19	61.81	11 1 49	3647.9	6.54	163.23
110.00	21 14 42	1832.79	-26.02	10.25	13.83	112.99	21 45 15	1232.8	-22.68	2.69
110.00	10 50 35	4061.42	12.71	154.38	10.82	58.00	11 58 16	3461.4	8.39	147.95

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .7584 TRA-1.8021 TC3 3.0082 BAU .5435 SGT 3862.9 SGR 1395.8 SG3 1724.5 ST 1540.5 SR 552.8 SS 2150.2
RDE .3032 RRA -.4708 RC3 1.4979 FAU .30144 RRT .9553 RRF -.9922 RTF -.9614 CRT .9830 CRS .9790 CST .9992
FDE-2.9600 FRA 7.3499 FC-21.5725 BSP 14264 SGB 4107.3 RZ3 -.2174 R13 -.9692 LSA 2699.7 MSA 110.4 SSA 39.1
BDE .8168 BRA 1.8626 BC3 3.3605 FSP 5691 SG1 4088.8 SG2 389.7 THA 19.23 EL1 1633.9 EL2 95.7 ALF 19.50

LAUNCH DATE OCT 28 1964 FLIGHT TIME 264.00 ARRIVAL DATE JUL 19 1965

HELIOCENTRIC CONIC DISTANCE 616.157 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 32.946 GAL -4.11 AZL 89.94 HCA 195.17 SMA 189.42 ECC .22649 INC .0564 V1 29.982
RP 231.76 LAP -.02 LOP 229.78 VP 21.086 GAP 2.14 AZP 90.06 TAL 337.46 TAP 172.64 RCA 146.52 APO 232.32 V2 23.728
RC 220.299 GL .58 GP 9.53 ZAL 123.36 ZAP 138.24 ETS 167.73 ZAE 169.17 ETE 97.51 ZAC 98.94 ETC 255.73 CLP 139.14

PLANETOCENTRIC CONIC

C3 11.913 VHL 3.452 DLA 9.12 RAL 159.85 RAD 6567.5 VEL 11.546 PTH 2.02 VHP 3.979 DPA 6.22 RAP 192.65 ECC 1.1961

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 23 43	2384.71	-23.30	52.56	15.57	106.56	19 3 27	1784.7	-20.81	44.77
90.00	8 44 1	4455.04	8.18	186.31	12.66	62.79	9 58 16	3855.0	4.46	179.59
100.00	19 49 31	2107.98	-24.26	31.88	15.25	108.03	20 24 39	1508.0	-21.57	24.11
100.00	10 0 54	4207.00	9.06	167.59	12.18	61.39	11 11 1	3607.0	5.17	160.97
110.00	21 7 55	1862.65	-26.80	12.22	14.22	112.06	21 38 57	1262.7	-23.57	4.55
110.00	10 59 0	4025.10	11.39	152.40	10.78	57.55	12 6 5	3425.1	7.03	146.02

DIFFERENTIAL CORRECTIONS

TDE .6994 TRA-1.7626 TC3 2.9073 BAU .5190
RDE .2876 RRA -.4539 RC3 1.4718 FAU .31221
FDE-2.8587 FRA 7.6948 FC-22.6883 BSP 14331
BDE .7562 BRA 1.8201 BC3 3.2587 FSP 6073

MID-COURSE EXECUTION ACCURACY

SGT 3762.7 SGR 1357.4 SG3 1802.4
RRT .9505 RRF -.9906 RTF - 9591
SGB 4000.0 R23 -.2208 R13 -.9673
SG1 3980.1 SG2 398.6 THA 19.13

ORBIT DETERMINATION ACCURACY

ST 1463.5 SR 530.3 SS 2113.5
CRT .9787 CRS .9717 CST .9989
LSA 2621.6 MSA 124.6 SSA 39.1
EL1 1553.2 EL2 102.6 ALF 19.62

LAUNCH DATE OCT 28 1964 FLIGHT TIME 266.00 ARRIVAL DATE JUL 21 1965

HELIOCENTRIC CONIC DISTANCE 619.945 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 32.931 GAL -4.06 AZL 89.83 HCA 196.18 SMA 189.17 ECC .22526 INC .1716 V1 29.982
RP 231.38 LAP -.05 LOP 230.79 VP 21.108 GAP 1.79 AZP 90.17 TAL 337.62 TAP 173.80 RCA 146.56 APO 231.78 V2 23.768
RC 222.292 GL 1.67 GP 9.15 ZAL 123.08 ZAP 137.08 ETS 168.60 ZAE 169.23 ETE 105.12 ZAC 98.52 ETC 255.76 CLP 137.88

PLANETOCENTRIC CONIC

C3 11.748 VHL 3.428 DLA 10.23 RAL 160.02 RAD 6567.4 VEL 11.538 PTH 2.01 VHP 3.893 DPA 5.98 RAP 192.27 ECC 1.1933

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 15 28	2418.01	-23.93	54.79	15.88	105.61	18 55 46	1818.0	-21.56	46.93
90.00	8 53 36	4415.89	6.95	184.08	12.67	62.48	10 7 11	3815.9	3.21	177.40
100.00	19 41 53	2139.31	-24.90	33.98	15.57	107.10	20 17 32	1539.3	-22.32	26.13
100.00	10 9 52	4169.83	7.84	165.51	12.18	61.06	11 19 22	3569.8	3.92	158.91
110.00	21 1 38	1889.70	-27.48	14.03	14.57	111.18	21 33 8	1289.7	-24.35	6.26
110.00	11 6 35	3992.20	10.18	150.61	10.77	57.19	12 13 7	3392.2	5.79	144.28

DIFFERENTIAL CORRECTIONS

TDE .6744 TRA-1.6902 TC3 2.8946 BAU .5097
RDE .2798 RRA -.4345 RC3 1.4671 FAU .32676
FDE-2.8413 FRA 7.9601 FC-24.0791 BSP 13638
BDE .7301 BRA 1.7452 BC3 3.2451 FSP 6297

MID-COURSE EXECUTION ACCURACY

SGT 3667.6 SGR 1332.2 SG3 1888.7
RRT .9500 RRF -.9890 RTF -.9595
SGB 3902.1 R23 -.2139 R13 -.9677
SG1 3882.2 SG2 393.1 THA 19.24

ORBIT DETERMINATION ACCURACY

ST 1420.0 SR 518.3 SS 2107.4
CRT .9779 CRS .9651 CST .9978
LSA 2589.3 MSA 142.0 SSA 36.7
EL1 1508.1 EL2 102.0 ALF 19.74

LAUNCH DATE OCT 28 1964 FLIGHT TIME 268.00 ARRIVAL DATE JUL 23 1965

HELIOCENTRIC CONIC DISTANCE 623.743 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 32.918 GAL -4.02 AZL 89.72 HCA 197.20 SMA 188.93 ECC .22409 INC .2734 V1 29.982
RP 231.01 LAP -.08 LOP 231.81 VP 21.132 GAP 1.45 AZP 90.26 TAL 337.76 TAP 174.96 RCA 146.59 APO 231.26 V2 23.807
RC 224.266 GL 2.65 GP 8.82 ZAL 122.81 ZAP 135.86 ETS 169.38 ZAE 169.05 ETE 112.82 ZAC 98.13 ETC 255.78 CLP 136.57

PLANETOCENTRIC CONIC

C3 11.601 VHL 3.406 DLA 11.23 RAL 160.16 RAD 6567.4 VEL 11.532 PTH 2.01 VHP 3.811 DPA 5.80 RAP 191.87 ECC 1.1909

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 7 49	2448.51	-24.47	56.86	16.17	104.71	18 48 38	1848.5	-22.21	48.92
90.00	9 2 22	4380.11	5.82	182.06	12.70	62.24	10 15 22	3780.1	2.06	175.40
100.00	19 34 49	2167.93	-25.46	35.93	15.86	106.22	20 10 57	1567.9	-22.99	28.00
100.00	10 18 3	4135.91	6.72	163.61	12.20	60.80	11 26 59	3535.9	2.78	157.05
110.00	20 55 52	1914.33	-28.07	15.70	14.90	110.36	21 27 46	1314.3	-25.04	7.84
110.00	11 13 30	3962.28	9.07	149.00	10.77	56.90	12 19 32	3362.3	4.65	142.71

DIFFERENTIAL CORRECTIONS

TDE .6382 TRA-1.6298 TC3 2.8205 BAU .4926
RDE .2723 RRA -.4197 RC3 1.4600 FAU .34025
FDE-2.8000 FRA 8.2652 FC-25.3922 BSP 13262
BDE .6939 BRA 1.6829 BC3 3.1760 FSP 6601

MID-COURSE EXECUTION ACCURACY

SGT 3557.7 SGR 1310.3 SG3 1974.6
RRT .9470 RRF -.9872 RTF -.9582
SGB 3791.3 R23 -.2125 R13 -.9668
SG1 3770.4 SG2 397.3 THA 19.45

ORBIT DETERMINATION ACCURACY

ST 1363.5 SR 507.2 SS 2096.4
CRT .9753 CRS .9571 CST .9967
LSA 2546.5 MSA 159.0 SSA 35.6
EL1 1451.0 EL2 105.3 ALF 20.05

LAUNCH DATE OCT 28 1964 FLIGHT TIME 270.00 ARRIVAL DATE JUL 25 1965

HELIOCENTRIC CONIC DISTANCE 627.552 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 32.905 GAL -3.98 AZL 89.63 HCA 198.22 SMA 188.70 ECC .22299 INC .3632 V1 29.982
RP 230.62 LAP -.11 LOP 232.82 VP 21.157 GAP 1.12 AZP 90.35 TAL 337.89 TAP 176.11 RCA 146.62 APO 230.78 V2 23.847
RC 226.222 GL 3.54 GP 8.53 ZAL 122.55 ZAP 134.59 ETS 170.09 ZAE 168.62 ETE 120.25 ZAC 97.78 ETC 255.80 CLP 135.23

PLANETOCENTRIC CONIC

C3 11.468 VHL 3.386 DLA 12.14 RAL 160.28 RAD 6567.4 VEL 11.526 PTH 2.01 VHP 3.732 DPA 5.67 RAP 191.45 ECC 1.1887

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 0 42	2476.61	-24.94	58.79	16.42	103.86	18 41 59	1876.6	-22.79	50.78
90.00	9 10 28	4347.19	4.77	180.21	12.74	62.06	10 22 55	3747.2	1.00	173.56
100.00	19 28 15	2194.27	-25.95	37.73	16.13	105.39	20 4 49	1594.3	-23.58	29.73
100.00	10 25 36	4104.77	5.68	161.88	12.24	60.60	11 34 1	3504.8	1.72	155.33
110.00	20 50 30	1936.89	-28.60	17.25	15.20	109.58	21 22 47	1336.9	-25.66	9.30
110.00	11 19 51	3934.91	8.05	147.54	10.78	56.67	12 25 26	3334.9	3.61	141.27

DIFFERENTIAL CORRECTIONS

TDE .6049 TRA-1.5654 TC3 2.7302 BAU .4744
RDE .2668 RRA -.4066 RC3 1.4568 FAU .35412
FDE-2.7676 FRA 8.5686 FC-26.7343 BSP 12808
BDE .6611 BRA 1.6173 BC3 3.0945 FSP 6897

MID-COURSE EXECUTION ACCURACY

SGT 3436.0 SGR 1293.2 SG3 2062.2
RRT .9436 RRF -.9853 RTF -.9566
SGB 3671.3 R23 -.2116 R13 -.9657
SG1 3649.1 SG2 403.3 THA 19.80

ORBIT DETERMINATION ACCURACY

ST 1308.1 SR 499.1 SS 2090.1
CRT .9728 CRS .9485 CST .9952
LSA 2509.3 MSA 176.3 SSA 34.6
EL1 1395.9 EL2 108.4 ALF 20.49

LAUNCH DATE OCT 28 1964 FLIGHT TIME 272.00 ARRIVAL DATE JUL 27 1965

HELIOCENTRIC CONIC DISTANCE 631.372 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 32.893 GAL -3.94 AZL 89.55 HCA 199.24 SMA 188.48 ECC .22195 INC .4458 V1 29.982
RP 230.24 LAP -.15 LOP 233.84 VP 21.183 GAP .78 AZP 90.42 TAL 338.01 TAP 177.25 RCA 146.65 APO 230.32 V2 23.887
RC 228.159 GL 4.35 GP 8.27 ZAL 122.31 ZAP 133.28 ETS 170.73 ZAE 167.97 ETE 127.13 ZAC 97.44 ETC 255.82 CLP 133.84

PLANETOCENTRIC CONIC

C3 11.347 VHL 3.369 DLA 12.97 RAL 160.39 RAD 6567.4 VEL 11.521 PTH 2.01 VHP 3.657 DPA 5.59 RAP 191.01 ECC 1.1867

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 54 4	2502.65	-25.36	60.58	16.66	103.05	18 35 46	1902.6	-23.31	52.51
90.00	9 17 59	4316.77	3.80	178.50	12.79	61.92	10 29 56	3716.8	.01	171.87
100.00	19 22 8	2218.61	-26.38	39.41	16.38	104.60	19 59 7	1618.6	-24.11	31.34
100.00	10 32 36	4076.04	4.72	160.29	12.28	60.45	11 40 32	3476.0	.75	153.76
110.00	20 45 32	1957.67	-29.06	18.69	15.47	108.84	21 18 9	1357.7	-26.21	10.66
110.00	11 25 42	3909.75	7.11	146.21	10.81	56.48	12 30 52	3309.7	2.65	139.95

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .5717 TRA-1.5006 TC3 2.6166 BAU .4542 SGT 3303.6 SGR 1279.3 SG3 2150.8 ST 1251.4 SR 492.6 SS 2084.4
RDE .2621 RRA -.3959 RC3 1.4547 FAU .36779 RRT .9396 RRF -.9834 RTF -.9543 CRT .9702 CRS .9388 CST .9933
FDE-2.7288 FRA 8.8894 FC-28.0611 BSP 12372 SGB 3542.7 R23 -.2120 R13 -.9643 LSA 2472.7 MSA 194.3 SSA 33.8
BDE .6290 BRA 1.5519 BC3 2.9938 FSP 7224 SG1 3518.7 SG2 411.2 THA 20.28 EL1 1340.2 EL2 111.4 ALF 21.05

LAUNCH DATE OCT 28 1964 FLIGHT TIME 274.00 ARRIVAL DATE JUL 29 1965

HELIOCENTRIC CONIC DISTANCE 635.203 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 32.881 GAL -3.91 AZL 89.48 HCA 200.26 SMA 188.28 ECC .22097 INC .5194 V1 29.982
RP 229.86 LAP -.18 LOP 234.87 VP 21.210 GAP .46 AZP 90.49 TAL 338.13 TAP 178.39 RCA 146.68 APO 229.88 V2 23.927
RC 230.076 GL 5.09 GP 8.03 ZAL 122.07 ZAP 131.91 ETS 171.33 ZAE 167.11 ETE 133.32 ZAC 97.13 ETC 255.85 CLP 132.42

PLANETOCENTRIC CONIC

C3 11.238 VHL 3.352 DLA 13.73 RAL 160.50 RAD 6567.4 VEL 11.516 PTH 2.01 VHP 3.584 DPA 5.54 RAP 190.55 ECC 1.1850

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 47 51	2526.86	-25.72	62.26	16.89	102.28	18 29 58	1926.9	-23.77	54.14
90.00	9 25 1	4288.57	2.89	176.92	12.85	61.82	10 36 29	3688.6	-.90	170.29
100.00	19 16 25	2241.21	-26.75	40.98	16.62	103.85	19 53 46	1641.2	-24.58	32.86
100.00	10 39 7	4049.45	3.83	158.83	12.34	60.33	11 46 37	3449.5	-.15	152.30
110.00	20 40 54	1976.88	-29.48	20.03	15.73	108.15	21 13 51	1376.9	-26.71	11.93
110.00	11 31 8	3886.55	6.24	144.98	10.84	56.32	12 35 54	3286.5	1.77	138.74

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .5406 TRA-1.4327 TC3 2.4875 BAU .4330 SGT 3180.6 SGR 1269.3 SG3 2241.4 ST 1195.1 SR 488.2 SS 2083.2
RDE .2589 RRA -.3864 RC3 1.4560 FAU .38191 RRT .9350 RRF -.9814 RTF -.9514 CRT .9678 CRS .9287 CST .9911
FDE-2.6983 FRA 9.2106 FC-29.4208 BSP 11899 SGB 3406.0 R23 -.2134 R13 -.9627 LSA 2441.4 MSA 211.9 SSA 33.1
BDE .5994 BRA 1.4839 BC3 2.8823 FSP 7550 SG1 3379.8 SG2 421.1 THA 20.92 EL1 1285.9 EL2 114.2 ALF 21.75

LAUNCH DATE OCT 28 1964 FLIGHT TIME 276.00 ARRIVAL DATE JUL 31 1965

HELIOCENTRIC CONIC DISTANCE 639.044 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 32.870 GAL -3.88 AZL 89.41 HCA 201.29 SMA 188.09 ECC .22004 INC .5865 V1 29.982
RP 229.47 LAP -.21 LOP 235.90 VP 21.239 GAP .14 AZP 90.55 TAL 338.23 TAP 179.52 RCA 146.70 APO 229.48 V2 23.968
RC 231.973 GL 5.77 GP 7.82 ZAL 121.85 ZAP 130.49 ETS 171.88 ZAE 166.08 ETE 138.75 ZAC 96.83 ETC 255.87 CLP 130.95

PLANETOCENTRIC CONIC

C3 11.140 VHL 3.338 DLA 14.43 RAL 160.59 RAD 6567.4 VEL 11.512 PTH 2.01 VHP 3.515 DPA 5.53 RAP 190.06 ECC 1.1833

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 42 1	2549.46	-26.04	63.84	17.10	101.55	18 24 31	1949.5	-24.18	55.66
90.00	9 31 36	4262.33	2.05	175.46	12.93	61.75	10 42 38	3662.3	-1.74	168.83
100.00	19 11 5	2262.25	-27.09	42.46	16.84	103.15	19 48 47	1662.2	-25.01	34.28
100.00	10 45 13	4024.78	2.99	157.47	12.40	60.24	11 52 18	3424.8	-.99	150.95
110.00	20 36 35	1994.69	-29.85	21.28	15.98	107.49	21 9 50	1394.7	-27.17	13.12
110.00	11 36 12	3865.10	5.42	143.85	10.89	56.20	12 40 37	3265.1	.95	137.62

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .5114 TRA-1.3622 TC3 2.3403 BAU .4107 SGT 3006.9 SGR 1262.0 SG3 2333.3 ST 1139.1 SR 485.4 SS 2085.0
RDE .2568 RRA -.3782 RC3 1.4593 FAU .39620 RRT .9296 RRF -.9794 RTF -.9477 CRT .9658 CRS .9181 CST .9883
FDE-2.6713 FRA 9.5369 FC-30.7916 BSP 11376 SGB 3261.0 R23 -.2161 R13 -.9606 LSA 2413.8 MSA 229.5 SSA 32.6
BDE .5722 BRA 1.4137 BC3 2.7580 FSP 7879 SG1 3232.2 SG2 432.7 THA 21.72 EL1 1232.8 EL2 116.2 ALF 22.58

LAUNCH DATE OCT 28 1964 FLIGHT TIME 278.00 ARRIVAL DATE AUG 2 1965

HELIOCENTRIC CONIC DISTANCE 642.896 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 32.860 GAL -3.85 AZL 89.35 HCA 202.32 SMA 187.91 ECC .21917 INC .6474 V1 29.982
RP 229.09 LAP -.25 LOP 236.93 VP 21.269 GAP -.18 AZP 90.60 TAL 338.32 TAP 180.64 RCA 146.72 APO 229.09 V2 24.009
RC 233.848 GL 6.40 GP 7.63 ZAL 121.65 ZAP 129.02 ETS 172.39 ZAE 164.89 ETE 143.45 ZAC 96.53 ETC 255.90 CLP 129.44

PLANETOCENTRIC CONIC

C3 11.051 VHL 3.324 DLA 15.07 RAL 160.68 RAD 6567.4 VEL 11.508 PTH 2.00 VHP 3.449 DPA 5.56 RAP 189.55 ECC 1.1819

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 36 33	2570.61	-26.31	65.33	17.30	100.85	18 19 24	1970.6	-24.55	57.10
90.00	9 37 47	4237.89	1.26	174.09	13.01	61.71	10 48 25	3637.9	-2.53	167.47
100.00	19 6 5	2281.90	-27.39	43.84	17.06	102.48	19 44 7	1681.9	-25.39	35.61
100.00	10 50 57	4001.83	2.22	156.21	12.48	60.18	11 57 39	3401.8	-1.77	149.69
110.00	20 32 35	2011.26	-30.18	22.46	16.22	106.87	21 6 6	1411.3	-27.58	14.23
110.00	11 40 57	3845.24	4.67	142.80	10.96	56.10	12 45 2	3245.2	.19	136.59

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .4830 TRA-1.2880 TC3 2.1756 BAU .3875 SGT 2840.9 SGR 1257.4 SG3 2426.3 ST 1081.9 SR 484.1 SS 2089.4
RDE .2556 RRA -.3709 RC3 1.4651 FAU .41088 RRT .9231 RRF -.9773 RTF -.9429 CRT .9641 CRS .9074 CST .9851
FDE-2.6506 FRA 9.8601 FC-32.1886 BSP 10813 SGB 3106.8 R23 -.2203 R13 -.9580 LSA 2389.4 MSA 246.1 SSA 32.3
BDE .5465 BRA 1.3404 BC3 2.6229 FSP 8202 SG1 3074.5 SG2 446.8 THA 22.73 EL1 1179.4 EL2 117.9 ALF 23.58

LAUNCH DATE OCT 28 1964 FLIGHT TIME 280.00 ARRIVAL DATE AUG 4 1965

HELIOCENTRIC CONIC DISTANCE 646.758 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 32.850 GAL -3.82 AZL 89.30 HCA 203.35 SMA 187.74 ECC .21836 INC .7036 V1 29.982
RP 228.70 LAP -.28 LOP 237.96 VP 21.300 GAP -.49 AZP 90.65 TAL 338.40 TAP 181.75 RCA 146.74 APO 228.73 V2 24.049
RC 235.703 GL 6.98 GP 7.46 ZAL 121.47 ZAP 127.51 ETS 172.87 ZAE 163.56 ETE 147.50 ZAC 96.25 ETC 255.93 CLP 127.88

PLANETOCENTRIC CONIC

C3 10.971 VHL 3.312 DLA 15.67 RAL 160.77 RAD 6567.4 VEL 11.505 PTH 2.00 VHP 3.386 DPA 5.61 RAP 189.01 ECC 1.1806

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 31 27	2590.44	-26.56	66.73	17.50	100.19	18 14 37	1990.4	-24.88	58.46
90.00	9 43 38	4215.08	.53	172.82	13.11	61.69	10 53 53	3615.1	-3.26	166.19
100.00	19 1 25	2300.28	-27.65	45.15	17.27	101.84	19 39 45	1700.3	-25.74	36.87
100.00	10 56 21	3980.47	1.49	155.04	12.58	60.14	12 2 41	3380.5	-2.49	148.51
110.00	20 28 51	2026.70	-30.48	23.56	16.45	106.28	21 2 38	1426.7	-27.95	15.28
110.00	11 45 24	3826.82	3.97	141.84	11.03	56.02	12 49 11	3226.8	-.52	135.63

DIFFERENTIAL CORRECTIONS
TDE .4557 TRA-1.2119 TC3 1.9906 BAU .3631
RDE .2549 RRA -.3649 RC3 1.4715 FAU .42542
FDE-2.6280 FRA10.1959 FC-33.5703 BSP 10239
BDE .5222 BRA 1.2657 BC3 2.4754 FSP 8544

MID-COURSE EXECUTION ACCURACY
SGT 2664.8 SGR 1254.7 SG3 2520.1
RRT .9153 RRF -.9752 RTF -.9365
SGB 2945.4 R23 -.2261 R13 -.9549
SG1 2908.8 SG2 463.0 THA 23.96

ORBIT DETERMINATION ACCURACY
ST 1024.6 SR 483.7 SS 2095.6
CRT .9630 CRS .8961 CST .9810
LSA 2367.5 MSA 263.0 SSA 32.0
EL1 1126.8 EL2 118.6 ALF 24.74

LAUNCH DATE OCT 28 1964 FLIGHT TIME 282.00 ARRIVAL DATE AUG 6 1965

HELIOCENTRIC CONIC DISTANCE 650.630 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 32.841 GAL -3.80 AZL 89.24 HCA 204.39 SMA 187.58 ECC .21759 INC .7555 V1 29.982
RP 228.31 LAP -.31 LOP 239.00 VP 21.332 GAP -.79 AZP 90.69 TAL 338.47 TAP 182.86 RCA 146.76 APO 228.39 V2 24.090
RC 237.537 GL 7.52 GP 7.30 ZAL 121.31 ZAP 125.95 ETS 173.33 ZAE 162.13 ETE 150.98 ZAC 95.97 ETC 255.96 CLP 126.29

PLANETOCENTRIC CONIC

C3 10.900 VHL 3.301 DLA 16.21 RAL 160.87 RAD 6567.4 VEL 11.502 PTH 2.00 VHP 3.326 DPA 5.70 RAP 188.43 ECC 1.1794

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 26 40	2609.07	-26.78	68.05	17.70	99.57	18 10 9	2009.1	-25.18	59.74
90.00	9 49 11	4193.79	-.16	171.63	13.23	61.68	10 59 4	3593.8	-3.95	165.00
100.00	18 57 4	2317.51	-27.88	46.37	17.47	101.23	19 35 42	1717.5	-26.05	38.05
100.00	11 1 27	3960.58	.82	153.94	12.68	60.12	12 7 28	3360.6	-3.16	147.42
110.00	20 25 24	2041.12	-30.75	24.60	16.69	105.72	20 59 25	1441.1	-28.29	16.26
110.00	11 49 36	3809.73	3.32	140.94	11.12	55.96	12 53 6	3209.7	-1.17	134.74

DIFFERENTIAL CORRECTIONS
TDE .4296 TRA-1.1322 TC3 1.7869 BAU .3380
RDE .2549 RRA -.3595 RC3 1.4789 FAU .44004
FDE-2.6091 FRA10.5299 FC-34.9510 BSP 9620
BDE .4996 BRA 1.1879 BC3 2.3195 FSP 8882

MID-COURSE EXECUTION ACCURACY
SGT 2476.9 SGR 1253.5 SG3 2613.9
RRT .9055 RRF -.9731 RTF -.9281
SGB 2776.1 R23 -.2340 R13 -.9510
SG1 2733.9 SG2 482.0 THA 25.47

ORBIT DETERMINATION ACCURACY
ST 966.5 SR 484.3 SS 2103.7
CRT .9626 CRS .8847 CST .9761
LSA 2348.4 MSA 279.5 SSA 31.8
EL1 1074.5 EL2 118.1 ALF 26.09

LAUNCH DATE OCT 28 1964 FLIGHT TIME 284.00 ARRIVAL DATE AUG 8 1965

HELIOCENTRIC CONIC DISTANCE 654.512 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 32.832 GAL -3.78 AZL 89.20 HCA 205.43 SMA 187.42 ECC .21688 INC .8038 V1 29.982
RP 227.92 LAP -.35 LOP 240.04 VP 21.365 GAP -1.09 AZP 90.73 TAL 338.53 TAP 183.96 RCA 146.77 APO 228.07 V2 24.132
RC 239.350 GL 8.03 GP 7.15 ZAL 121.16 ZAP 124.34 ETS 173.75 ZAE 160.59 ETE 153.98 ZAC 95.70 ETC 255.99 CLP 124.65

PLANETOCENTRIC CONIC

C3 10.837 VHL 3.292 DLA 16.72 RAL 160.97 RAD 6567.4 VEL 11.499 PTH 2.00 VHP 3.270 DPA 5.81 RAP 187.83 ECC 1.1783

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 22 11	2626.57	-26.97	69.29	17.90	98.97	18 5 58	2026.6	-25.45	60.95
90.00	9 54 26	4173.90	-.80	170.53	13.35	61.69	11 4 0	3573.9	-4.58	163.88
100.00	18 53 1	2333.66	-28.09	47.53	17.68	100.66	19 31 55	1733.7	-26.33	39.17
100.00	11 6 17	3942.04	.19	152.93	12.80	60.11	12 11 59	3342.0	-3.79	146.40
110.00	20 22 13	2054.58	-31.00	25.57	16.92	105.19	20 56 28	1454.6	-28.60	17.19
110.00	11 53 35	3793.89	2.72	140.11	11.22	55.91	12 56 48	3193.9	-1.78	133.91

DIFFERENTIAL CORRECTIONS
TDE .4047 TRA-1.0488 TC3 1.5671 BAU .3130
RDE .2554 RRA -.3548 RC3 1.4873 FAU .45476
FDE-2.5917 FRA10.8653 FC-36.3307 BSP 8958
BDE .4786 BRA 1.1071 BC3 2.1605 FSP 9219

MID-COURSE EXECUTION ACCURACY
SGT 2278.9 SGR 1253.9 SG3 2708.0
RRT .8932 RRF -.9710 RTF -.9169
SGB 2601.1 R23 -.2433 R13 -.9464
SG1 2551.9 SG2 503.4 THA 27.32

ORBIT DETERMINATION ACCURACY
ST 907.8 SR 485.7 SS 2113.2
CRT .9631 CRS .8732 CST .9700
LSA 2331.8 MSA 296.0 SSA 31.5
EL1 1023.0 EL2 115.9 ALF 27.65

LAUNCH DATE OCT 28 1964 FLIGHT TIME 286.00 ARRIVAL DATE AUG 10 1965

HELIOCENTRIC CONIC DISTANCE 658.404 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 32.824 GAL -3.76 AZL 89.15 HCA 206.48 SMA 187.28 ECC .21622 INC .8484 V1 29.982
RP 227.53 LAP -.38 LOP 241.08 VP 21.399 GAP -1.39 AZP 90.76 TAL 338.57 TAP 185.05 RCA 146.79 APO 227.78 V2 24.173
RC 241.142 GL 8.50 GP 7.01 ZAL 121.03 ZAP 122.70 ETS 174.16 ZAE 158.96 ETE 156.56 ZAC 95.42 ETC 256.03 CLP 122.97

PLANETOCENTRIC CONIC

C3 10.781 VHL 3.283 DLA 17.18 RAL 161.07 RAD 6567.4 VEL 11.497 PTH 2.00 VHP 3.216 DPA 5.95 RAP 187.20 ECC 1.1774

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 18 2	2643.03	-27.14	70.47	18.10	98.40	18 2 5	2043.0	-25.70	62.10
90.00	9 59 25	4155.35	-1.40	169.49	13.49	61.71	11 8 40	3555.4	-5.17	162.84
100.00	18 49 16	2348.82	-28.28	48.62	17.89	100.12	19 28 25	1748.8	-26.59	40.22
100.00	11 10 52	3924.79	-.39	151.98	12.93	60.11	12 16 17	3324.8	-4.37	145.45
110.00	20 19 17	2067.17	-31.22	26.48	17.15	104.69	20 53 44	1467.2	-28.88	18.06
110.00	11 57 20	3779.21	2.16	139.35	11.33	55.88	13 0 20	3179.2	-2.34	133.14

DIFFERENTIAL CORRECTIONS
TDE .3811 TRA -.9624 TC3 1.3272 BAU .2883
RDE .2565 RRA -.3506 RC3 1.4961 FAU .46939
FDE-2.5803 FRA11.1993 FC-37.6920 BSP 8271
BDE .4594 BRA 1.0243 BC3 1.9999 FSP 9550

MID-COURSE EXECUTION ACCURACY
SGT 2071.6 SGR 1255.3 SG3 2801.5
RRT .8766 RRF -.9688 RTF -.9010
SGB 2422.2 R23 -.2552 R13 -.9408
SG1 2363.7 SG2 529.4 THA 29.61

ORBIT DETERMINATION ACCURACY
ST 849.1 SR 487.9 SS 2125.1
CRT .9647 CRS .8619 CST .9625
LSA 2318.8 MSA 311.9 SSA 31.3
EL1 972.9 EL2 112.1 ALF 29.43

LAUNCH DATE OCT 28 1964 FLIGHT TIME 288.00 ARRIVAL DATE AUG 12 1965

HELIOCENTRIC CONIC DISTANCE 662.305 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 32.816 GAL -3.75 AZL 89.11 HCA 207.53 SMA 187.15 ECC .21561 INC .8900 V1 29.982
RP 227.14 LAP -.41 LOP 242.13 VP 21.434 GAP -1.68 AZP 90.79 TAL 338.61 TAP 186.13 RCA 146.80 APO 227.50 V2 24.214
RC 242.914 GL 8.93 GP 6.88 ZAL 120.93 ZAP 121.00 ETS 174.54 ZAE 157.25 ETE 158.81 ZAC 95.15 ETC 256.07 CLP 121.25

PLANETOCENTRIC CONIC

C3 10.733 VHL 3.276 DLA 17.61 RAL 161.18 RAD 6567.4 VEL 11.494 PTH 2.00 VHP 3.166 DPA 6.11 RAP 186.54 ECC 1.1766

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 14 11	2658.49	-27.29	71.57	18.31	97.87	17 58 29	2058.5	-25.92	63.18
90.00	10 4 10	4138.07	-1.96	168.53	13.64	61.75	11 13 8	3538.1	-5.72	161.87
100.00	18 45 48	2363.03	-28.44	49.64	18.11	99.60	19 25 11	1763.0	-26.82	41.21
100.00	11 15 13	3908.76	-.94	151.10	13.07	60.12	12 20 22	3308.8	-4.91	144.56
110.00	20 16 36	2078.94	-31.42	27.34	17.38	104.22	20 51 15	1478.9	-29.14	18.87
110.00	12 0 55	3765.62	1.64	138.64	11.46	55.85	13 3 40	3165.6	-2.85	132.43

DIFFERENTIAL CORRECTIONS
TDE .3577 TRA -.8723 TC3 1.0682 BAU .2648
RDE .2578 RRA -.3470 RC3 1.5046 FAU .48375
FDE-2.5665 FRA11.5327 FC-39.0187 BSP 7577
BDE .4409 BRA .9388 BC3 1.8452 FSP 9886

MID-COURSE EXECUTION ACCURACY
SGT 1855.6 SGR 1257.2 SG3 2893.5
RRT .8535 RRF -.9667 RTF -.8782
SGB 2241.3 R23 -.2690 R13 -.9341
SG1 2170.2 SG2 560.1 THA 32.47

ORBIT DETERMINATION ACCURACY
ST 788.9 SR 490.5 SS 2137.1
CRT .9674 CRS .8504 CST .9528
LSA 2306.9 MSA 327.4 SSA 31.1
EL1 922.9 EL2 106.1 ALF 31.49

LAUNCH DATE OCT 28 1964 FLIGHT TIME 290.00 ARRIVAL DATE AUG 14 1965

HELIOCENTRIC CONIC DISTANCE 666.216 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 32.809 GAL -3.74 AZL 89.07 HCA 208.58 SMA 187.02 ECC .21505 INC .9290 V1 29.982
RP 226.75 LAP -.44 LOP 243.19 VP 21.470 GAP -1.97 AZP 90.82 TAL 338.63 TAP 187.21 RCA 146.80 APO 227.24 V2 24.256
RC 244.666 GL 9.34 GP 6.76 ZAL 120.84 ZAP 119.27 ETS 174.91 ZAE 155.47 ETE 160.77 ZAC 94.88 ETC 256.11 CLP 119.49

PLANETOCENTRIC CONIC

C3 10.692 VHL 3.270 DLA 18.01 RAL 161.30 RAD 6567.4 VEL 11.493 PTH 2.00 VHP 3.119 DPA 6.29 RAP 185.85 ECC 1.1760

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 10 37	2673.01	-27.42	72.62	18.52	97.36	17 55 10	2073.0	-26.12	64.19
90.00	10 8 40	4122.00	-2.48	167.63	13.81	61.78	11 17 22	3522.0	-6.23	160.96
100.00	18 42 37	2376.35	-28.59	50.60	18.33	99.12	19 22 14	1776.4	-27.04	42.15
100.00	11 19 22	3893.89	-1.44	150.29	13.23	60.14	12 24 16	3293.9	-5.41	143.74
110.00	20 14 10	2089.93	-31.60	28.15	17.62	103.78	20 49 0	1489.9	-29.38	19.64
110.00	12 4 18	3753.08	1.16	137.98	11.61	55.83	13 6 52	3153.1	-3.33	131.78

DIFFERENTIAL CORRECTIONS
TDE .3351 TRA -.7788 TC3 .7903 BAU .2440
RDE .2595 RRA -.3436 RC3 1.5127 FAU .49778
FDE-2.5558 FRA11.8618 FC-40.3042 BSP 6861
BDE .4238 BRA .8512 BC3 1.7067 FSP 10208

MID-COURSE EXECUTION ACCURACY
SGT 1634.2 SGR 1259.4 SG3 2983.6
RRT .8195 RRF -.9645 RTF -.8437
SGB 2063.2 R23 -.2838 R13 -.9265
SG1 1974.9 SG2 597.3 THA 36.09

ORBIT DETERMINATION ACCURACY
ST 728.2 SR 493.6 SS 2150.2
CRT .9714 CRS .8391 CST .9404
LSA 2297.6 MSA 342.5 SSA 31.0
EL1 874.3 EL2 97.7 ALF 33.84

LAUNCH DATE OCT 28 1964 FLIGHT TIME 292.00 ARRIVAL DATE AUG 16 1965

HELIOCENTRIC CONIC DISTANCE 670.136 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 32.802 GAL -3.73 AZL 89.03 HCA 209.64 SMA 186.91 ECC .21453 INC .9655 V1 29.982
RP 226.36 LAP -.48 LOP 244.24 VP 21.507 GAP -2.25 AZP 90.84 TAL 338.64 TAP 188.28 RCA 146.81 APO 227.01 V2 24.297
RC 246.398 GL 9.73 GP 6.64 ZAL 120.78 ZAP 117.50 ETS 175.26 ZAE 153.63 ETE 162.49 ZAC 94.60 ETC 256.16 CLP 117.70

PLANETOCENTRIC CONIC

C3 10.659 VHL 3.265 DLA 18.38 RAL 161.43 RAD 6567.4 VEL 11.491 PTH 2.00 VHP 3.075 DPA 6.50 RAP 185.13 ECC 1.1754

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 7 22	2686.63	-27.54	73.60	18.74	96.88	17 52 8	2086.6	-26.30	65.15
90.00	10 12 58	4107.09	-2.96	166.80	13.99	61.83	11 21 25	3507.1	-6.70	160.12
100.00	18 39 43	2388.82	-28.72	51.51	18.56	98.66	19 19 32	1788.8	-27.23	43.02
100.00	11 23 18	3880.14	-1.91	149.53	13.41	60.16	12 27 58	3280.1	-5.87	142.98
110.00	20 11 58	2100.19	-31.76	28.90	17.87	103.36	20 46 58	1500.2	-29.60	20.36
110.00	12 7 32	3741.53	.72	137.38	11.77	55.82	13 9 54	3141.5	-3.77	131.17

DIFFERENTIAL CORRECTIONS
TDE .3134 TRA -.6819 TC3 .4953 BAU .2279
RDE .2616 RRA -.3405 RC3 1.5206 FAU .51161
FDE-2.5501 FRA12.1855 FC-41.5550 BSP 6153
BDE .4082 BRA .7622 BC3 1.5992 FSP 10522

MID-COURSE EXECUTION ACCURACY
SGT 1413.2 SGR 1262.2 SG3 3071.8
RRT .7668 RRF -.9623 RTF -.7892
SGB 1894.8 R23 -.2970 R13 -.9189
SG1 1782.6 SG2 642.3 THA 40.80

ORBIT DETERMINATION ACCURACY
ST 667.6 SR 497.3 SS 2164.9
CRT .9766 CRS .8282 CST .9241
LSA 2291.6 MSA 357.0 SSA 30.9
EL1 828.0 EL2 86.2 ALF 36.50

LAUNCH DATE OCT 28 1964 FLIGHT TIME 294.00 ARRIVAL DATE AUG 18 1965

HELIOCENTRIC CONIC DISTANCE 674.065 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 32.796 GAL -3.72 AZL 89.00 HCA 210.70 SMA 186.80 ECC .21406 INC 1.0001 V1 29.982
RP 225.97 LAP -.51 LOP 245.30 VP 21.544 GAP -2.52 AZP 90.86 TAL 338.64 TAP 189.34 RCA 146.81 APO 226.79 V2 24.339
RC 248.110 GL 10.09 GP 6.53 ZAL 120.74 ZAP 115.68 ETS 175.60 ZAE 151.73 ETE 164.02 ZAC 94.33 ETC 256.21 CLP 115.86

PLANETOCENTRIC CONIC

C3 10.632 VHL 3.261 DLA 18.71 RAL 161.57 RAD 6567.4 VEL 11.490 PTH 2.00 VHP 3.035 DPA 6.72 RAP 184.38 ECC 1.1750

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 4 24	2699.37	-27.64	74.52	18.97	96.43	17 49 23	2099.4	-26.46	66.05
90.00	10 17 3	4093.31	-3.40	166.03	14.19	61.87	11 25 17	3493.3	-7.14	159.34
100.00	18 37 6	2400.46	-28.84	52.35	18.79	98.23	19 17 6	1800.5	-27.40	43.85
100.00	11 27 3	3867.46	-2.34	148.83	13.60	60.19	12 31 30	3267.5	-6.29	142.27
110.00	20 10 1	2109.75	-31.91	29.61	18.13	102.96	20 45 10	1509.7	-29.80	21.03
110.00	12 10 37	3730.94	.31	136.83	11.94	55.82	13 12 48	3130.9	-4.18	130.62

DIFFERENTIAL CORRECTIONS
TDE .2919 TRA -.5806 TC3 .1818 BAU .2185
RDE .2637 RRA -.3377 RC3 1.5266 FAU .52459
FDE-2.5372 FRA12.5038 FC-42.7180 BSP 5485
BDE .3934 BRA .6716 BC3 1.5374 FSP 10839

MID-COURSE EXECUTION ACCURACY
SGT 1198.9 SGR 1264.3 SG3 3155.7
RRT .6799 RRF -.9601 RTF -.6983
SGB 1742.3 R23 -.3013 R13 -.9137
SG1 1597.4 SG2 695.8 THA 47.23

ORBIT DETERMINATION ACCURACY
ST 606.3 SR 500.9 SS 2178.0
CRT .9830 CRS .8168 CST .9012
LSA 2285.4 MSA 371.8 SSA 30.8
EL1 783.2 EL2 71.2 ALF 39.47

LAUNCH DATE OCT 28 1964 FLIGHT TIME 296.00 ARRIVAL DATE AUG 20 1965

HELIOCENTRIC CONIC DISTANCE 678.003 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 32.790 GAL -3.72 AZL 88.97 HCA 211.76 SMA 186.70 ECC .21363 INC 1.0323 V1 29.982
RP 225.58 LAP -.54 LOP 246.36 VP 21.583 GAP -2.79 AZP 90.88 TAL 338.63 TAP 190.39 RCA 146.81 APO 226.58 V2 24.381
RC 249.803 GL 10.43 GP 6.42 ZAL 120.72 ZAP 113.84 ETS 175.92 ZAE 149.77 ETE 165.37 ZAC 94.05 ETC 256.26 CLP 114.00

PLANETOCENTRIC CONIC

C3 10.611 VHL 3.257 DLA 19.02 RAL 161.72 RAD 6567.4 VEL 11.489 PTH 2.00 VHP 2.997 DPA 6.95 RAP 183.60 ECC 1.1746

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 1 43	2711.28	-27.72	75.38	19.21	96.01	17 46 54	2111.3	-26.60	66.89
90.00	10 20 57	4080.63	-3.81	165.31	14.40	61.92	11 28 57	3480.6	-7.53	158.62
100.00	18 34 44	2411.32	-28.94	53.14	19.04	97.82	19 14 56	1811.3	-27.56	44.61
100.00	11 30 37	3855.82	-2.73	148.19	13.80	60.22	12 34 52	3255.8	-6.67	141.63
110.00	20 8 17	2118.64	-32.04	30.27	18.39	102.60	20 43 36	1518.6	-29.98	21.66
110.00	12 13 33	3721.26	-.06	136.32	12.13	55.82	13 15 34	3121.3	-4.54	130.11

DIFFERENTIAL CORRECTIONS
TDE .2733 TRA -.4740 TC3 -.1402 BAU .2186
RDE .2670 RRA -.3341 RC3 1.5349 FAU .53827
FDE-2.5569 FRA12.7847 FC-43.9165 BSP 4853
BDE .3821 BRA .5799 BC3 1.5413 FSP 11080

MID-COURSE EXECUTION ACCURACY
SGT 1008.5 SGR 1267.6 SG3 3238.1
RRT .5339 RRF -.9579 RTF -.5430
SGB 1619.8 R23 -.2777 R13 -.9175
SG1 1433.7 SG2 753.9 THA 56.68

ORBIT DETERMINATION ACCURACY
ST 548.7 SR 506.2 SS 2195.6
CRT .9901 CRS .8082 CST .8700
LSA 2286.6 MSA 385.7 SSA 30.5
EL1 744.7 EL2 52.3 ALF 42.67

LAUNCH DATE OCT 28 1964 FLIGHT TIME 298.00 ARRIVAL DATE AUG 22 1965

HELIOCENTRIC CONIC DISTANCE 681.950 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 32.785 GAL -3.71 AZL 88.94 HCA 212.83 SMA 186.61 ECC .21325 INC 1.0630 V1 29.982
RP 225.19 LAP -.58 LOP 247.43 VP 21.622 GAP -3.06 AZP 90.89 TAL 338.60 TAP 191.43 RCA 146.81 APO 226.40 V2 24.423
RC 251.477 GL 10.75 GP 6.31 ZAL 120.72 ZAP 111.96 ETS 176.24 ZAE 147.76 ETE 166.58 ZAC 93.76 ETC 256.32 CLP 112.10

PLANETOCENTRIC CONIC

C3 10.597 VHL 3.255 DLA 19.30 RAL 161.89 RAD 6567.4 VEL 11.489 PTH 2.00 VHP 2.964 DPA 7.21 RAP 182.80 ECC 1.1744

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 59 20	2722.34	-27.80	76.18	19.46	95.62	17 44 43	2122.3	-26.73	67.67
90.00	10 24 38	4069.04	-4.18	164.67	14.62	61.97	11 32 27	3469.0	-7.90	157.96
100.00	18 32 40	2421.40	-29.03	53.88	19.30	97.45	19 13 1	1821.4	-27.70	45.33
100.00	11 34 0	3845.21	-3.09	147.61	14.02	60.25	12 38 5	3245.2	-7.03	141.04
110.00	20 6 48	2126.89	-32.16	30.88	18.66	102.25	20 42 15	1526.9	-30.14	22.25
110.00	12 16 21	3712.49	-.39	135.87	12.34	55.82	13 18 13	3112.5	-4.88	129.65

DIFFERENTIAL CORRECTIONS
TDE .2523 TRA -.3661 TC3 -.4880 BAU .2286
RDE .2696 RRA -.3314 RC3 1.5382 FAU .54993
FDE-2.5477 FRA13.0836 FC-44.9262 BSP 4412
BDE .3692 BRA .4930 BC3 1.6138 FSP 11365

MID-COURSE EXECUTION ACCURACY
SGT 874.3 SGR 1268.9 SG3 3313.7
RRT .2835 RRF -.9555 RTF -.2791
SGB 1540.9 R23 -.1840 R13 -.9377
SG1 1309.3 SG2 812.5 THA 71.68

ORBIT DETERMINATION ACCURACY
ST 489.2 SR 510.3 SS 2209.4
CRT .9952 CRS .7974 CST .8250
LSA 2285.0 MSA 399.0 SSA 30.4
EL1 706.0 EL2 34.7 ALF 46.22

LAUNCH DATE OCT 28 1964 FLIGHT TIME 300.00 ARRIVAL DATE AUG 24 1965

HELIOCENTRIC CONIC DISTANCE 685.906 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 32.780 GAL -3.72 AZL 88.91 HCA 213.90 SMA 186.52 ECC .21291 INC 1.0919 V1 29.982
RP 224.80 LAP -.61 LOP 248.50 VP 21.661 GAP -3.32 AZP 90.91 TAL 338.56 TAP 192.46 RCA 146.81 APO 226.23 V2 24.465
RC 253.132 GL 11.04 GP 6.21 ZAL 120.74 ZAP 110.04 ETS 176.54 ZAE 145.71 ETE 167.67 ZAC 93.48 ETC 256.39 CLP 110.17

PLANETOCENTRIC CONIC

C3 10.590 VHL 3.254 DLA 19.55 RAL 162.07 RAD 6567.4 VEL 11.488 PTH 2.00 VHP 2.933 DPA 7.47 RAP 181.97 ECC 1.1743

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 57 15	2732.60	-27.87	76.92	19.72	95.25	17 42 48	2132.6	-26.85	68.40
90.00	10 28 8	4058.50	-4.51	164.07	14.87	62.02	11 35 47	3458.5	-8.22	157.36
100.00	18 30 52	2430.74	-29.11	54.56	19.57	97.09	19 11 23	1830.7	-27.83	45.99
100.00	11 37 13	3835.59	-3.41	147.08	14.26	60.29	12 41 8	3235.6	-7.35	140.50
110.00	20 5 33	2134.51	-32.27	31.45	18.95	101.93	20 41 7	1534.5	-30.29	22.79
110.00	12 19 1	3704.58	-.70	135.45	12.56	55.82	13 20 46	3104.6	-5.18	129.23

DIFFERENTIAL CORRECTIONS
TDE .2329 TRA -.2534 TC3 -.8460 BAU .2490
RDE .2729 RRA -.3282 RC3 1.5416 FAU .56147
FDE-2.5587 FRA13.3503 FC-45.9008 BSP 4180
BDE .3588 BRA .4146 BC3 1.7585 FSP 11506

MID-COURSE EXECUTION ACCURACY
SGT 833.9 SGR 1270.2 SG3 3385.0
RRT -.0615 RRF -.9531 RTF .0855
SGB 1519.5 R23 .0170 R13 -.9534
SG1 1272.1 SG2 831.2 THA 94.04

ORBIT DETERMINATION ACCURACY
ST 434.3 SR 515.3 SS 2225.2
CRT .9948 CRS .7885 CST .7593
LSA 2288.0 MSA 412.0 SSA 30.2
EL1 673.1 EL2 33.8 ALF 49.90

LAUNCH DATE OCT 28 1964 FLIGHT TIME 302.00 ARRIVAL DATE AUG 26 1965

HELIOCENTRIC CONIC DISTANCE 689.870 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 32.775 GAL -3.72 AZL 88.88 HCA 214.97 SMA 186.44 ECC .21261 INC 1.1194 V1 29.982
RP 224.41 LAP -.64 LOP 249.58 VP 21.702 GAP -3.58 AZP 90.92 TAL 338.51 TAP 193.49 RCA 146.80 APO 226.08 V2 24.506
RC 254.766 GL 11.33 GP 6.11 ZAL 120.78 ZAP 108.10 ETS 176.83 ZAE 143.62 ETE 168.65 ZAC 93.19 ETC 256.45 CLP 108.21

PLANETOCENTRIC CONIC

C3 10.589 VHL 3.254 DLA 19.78 RAL 162.26 RAD 6567.4 VEL 11.488 PTH 2.00 VHP 2.906 DPA 7.75 RAP 181.13 ECC 1.1743

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 55 28	2742.05	-27.92	77.61	19.99	94.91	17 41 10	2142.0	-26.95	69.07
90.00	10 31 27	4049.01	-4.82	163.54	15.13	62.06	11 38 56	3449.0	-8.52	156.82
100.00	18 29 20	2439.35	-29.18	55.19	19.85	96.77	19 10 0	1839.3	-27.94	46.61
100.00	11 40 16	3826.96	-3.71	146.61	14.51	60.32	12 44 2	3227.0	-7.63	140.02
110.00	20 4 31	2141.53	-32.37	31.97	19.25	101.64	20 40 13	1541.5	-30.43	23.29
110.00	12 21 34	3697.52	-.97	135.09	12.80	55.83	13 23 11	3097.5	-5.44	128.86

DIFFERENTIAL CORRECTIONS
TDE .2130 TRA -.1374 TC3-1.2197 BAU .2783
RDE .2761 RRA -.3250 RC3 1.5421 FAU .57167
FDE-2.5613 FRA13.6078 FC-46.7389 BSP 4254
BDE .3487 BRA .3529 BC3 1.9661 FSP 11827

MID-COURSE EXECUTION ACCURACY
SGT 914.7 SGR 1270.2 SG3 3449.4
RRT -.3942 RRF -.9506 RTF .4356
SGB 1565.3 R23 .1846 R13 -.9348
SG1 1351.1 SG2 790.3 THA 114.86

ORBIT DETERMINATION ACCURACY
ST 383.5 SR 520.1 SS 2239.2
CRT .9807 CRS .7791 CST .6603
LSA 2291.4 MSA 424.4 SSA 30.0
EL1 643.4 EL2 60.7 ALF 53.75

LAUNCH DATE OCT 28 1964 FLIGHT TIME 304.00 ARRIVAL DATE AUG 28 1965

HELIOCENTRIC CONIC DISTANCE 693.843 EARTH TO MARS

RL	148.61	LAL	-.00	LOL	34.61	VL	32.771	GAL	-3.73	AZL	88.85	HCA	216.05	SMA	186.37	ECC	.21235	INC	1.1455
RP	224.02	LAP	-.67	LOP	250.65	VP	21.743	GAP	-3.83	AZP	90.93	TAL	338.45	TAP	194.50	RCA	146.79	APO	225.94
RC	256.380	GL	11.59	GP	6.00	ZAL	120.85	ZAP	106.14	ETS	177.12	ZAE	141.50	ETE	169.55	ZAC	92.90	ETC	256.53

V1	29.982	V2	24.548	CLP	106.23														

PLANETOCENTRIC CONIC

C3	10.594	VHL	3.255	DLA	19.98	RAL	162.46	RAD	6567.4	VEL	11.488	PTH	2.00	VHP	2.883	DPA	8.03	RAP	180.26
ECC	1.1744																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 53 58	2750.71	-27.97	78.24	20.29	94.60	17 39 49	2150.7	-27.04	69.69
90.00	10 34 35	4040.55	-5.09	163.07	15.40	62.11	11 41 55	3440.6	-8.78	156.33
100.00	18 28 5	2447.20	-29.25	55.77	20.14	96.47	19 8 52	1847.2	-28.04	47.17
100.00	11 43 9	3819.29	-3.96	146.18	14.78	60.35	12 46 48	3219.3	-7.88	139.59
110.00	20 3 44	2147.96	-32.46	32.45	19.56	101.36	20 39 32	1548.0	-30.55	23.76
110.00	12 23 59	3691.30	-1.20	134.76	13.06	55.84	13 25 31	3091.3	-5.68	128.53

DIFFERENTIAL CORRECTIONS

TDE	.1930	TRA	-.0180	TC3	-1.6058	BAU	.3152
RDE	.2796	RRA	-.3217	RC3	1.5408	FAU	.58097
FDE	-2.5696	FRA	13.8467	FC	-47.4744	BSP	4630
BDE	.3397	BRA	.3222	BC3	2.2254	FSP	12029

MID-COURSE EXECUTION ACCURACY

SGT	1099.7	SGR	1269.4	SG3	3507.7		
RRT	-.6168	RRF	-.9479	RTF	.6696		
SGB	1679.5	R23	.2359	R13	-.9244		
SG1	1514.7	SG2	725.4	THA	128.43		

ORBIT DETERMINATION ACCURACY

ST	341.4	SR	525.1	SS	2253.5
CRT	.9377	CRS	.7704	CST	.5137
LSA	2297.7	MSA	436.0	SSA	29.9
EL1	618.2	EL2	100.7	ALF	57.67

LAUNCH DATE OCT 28 1964 FLIGHT TIME 306.00 ARRIVAL DATE AUG 30 1965

HELIOCENTRIC CONIC DISTANCE 697.824 EARTH TO MARS

RL	148.61	LAL	-.00	LOL	34.61	VL	32.767	GAL	-3.74	AZL	88.85	HCA	217.13	SMA	186.30	ECC	.21213	INC	1.1704
RP	223.63	LAP	-.71	LOP	251.74	VP	21.784	GAP	-4.08	AZP	90.93	TAL	338.37	TAP	195.51	RCA	146.78	APO	225.82
RC	257.974	GL	11.84	GP	5.90	ZAL	120.94	ZAP	104.16	ETS	177.39	ZAE	139.35	ETE	170.36	ZAC	92.61	ETC	256.61

V1	29.982	V2	24.590	CLP	104.23														

PLANETOCENTRIC CONIC

C3	10.606	VHL	3.257	DLA	20.17	RAL	162.68	RAD	6567.4	VEL	11.489	PTH	2.00	VHP	2.863	DPA	8.32	RAP	179.39
ECC	1.1745																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 52 46	2758.60	-28.01	78.81	20.59	94.31	17 38 44	2158.6	-27.12	70.26
90.00	10 37 32	4033.12	-5.32	162.65	15.69	62.15	11 44 45	3433.1	-9.01	155.91
100.00	18 27 7	2454.37	-29.30	56.29	20.46	96.20	19 8 1	1854.4	-28.13	47.68
100.00	11 45 52	3812.58	-4.19	145.81	15.07	60.38	12 49 25	3212.6	-8.10	139.21
110.00	20 3 10	2153.83	-32.54	32.89	19.88	101.11	20 39 4	1553.8	-30.66	24.18
110.00	12 26 18	3685.89	-1.41	134.48	13.34	55.84	13 27 44	3085.9	-5.88	128.25

DIFFERENTIAL CORRECTIONS

TDE	.1732	TRA	.1047	TC3	-2.0033	BAU	.3580
RDE	.2832	RRA	-.3180	RC3	1.5369	FAU	.58900
FDE	-2.5793	FRA	14.0616	FC	-48.0779	BSP	5273
BDE	.3319	BRA	.3348	BC3	2.5250	FSP	12201

MID-COURSE EXECUTION ACCURACY

SGT	1354.2	SGR	1267.1	SG3	3557.9		
RRT	-.7409	RRF	-.9451	RTF	.8007		
SGB	1854.6	R23	.2288	R13	-.9291		
SG1	1731.0	SG2	665.8	THA	137.57		

ORBIT DETERMINATION ACCURACY

ST	312.7	SR	530.2	SS	2266.7
CRT	.8448	CRS	.7621	CST	.3071
LSA	2305.6	MSA	447.3	SSA	29.8
EL1	597.3	EL2	148.5	ALF	61.60

LAUNCH DATE OCT 28 1964 FLIGHT TIME 308.00 ARRIVAL DATE SEP 1 1965

HELIOCENTRIC CONIC DISTANCE 701.811 EARTH TO MARS

RL	148.61	LAL	-.00	LOL	34.61	VL	32.764	GAL	-3.75	AZL	88.81	HCA	218.22	SMA	186.24	ECC	.21195	INC	1.1943
RP	223.24	LAP	-.74	LOP	252.82	VP	21.826	GAP	-4.32	AZP	90.94	TAL	338.28	TAP	196.50	RCA	146.77	APO	225.72
RC	259.547	GL	12.07	GP	5.80	ZAL	121.05	ZAP	102.16	ETS	177.66	ZAE	137.17	ETE	171.10	ZAC	92.31	ETC	256.69

V1	29.982	V2	24.632	CLP	102.22														

PLANETOCENTRIC CONIC

C3	10.624	VHL	3.260	DLA	20.32	RAL	162.92	RAD	6567.4	VEL	11.490	PTH	2.00	VHP	2.846	DPA	8.62	RAP	178.50
ECC	1.1749																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 51 52	2765.68	-28.05	79.32	20.91	94.06	17 37 58	2165.7	-27.19	70.76
90.00	10 40 18	4026.73	-5.53	162.29	16.00	62.18	11 47 25	3426.7	-9.21	155.54
100.00	18 26 25	2460.81	-29.35	56.77	20.78	95.96	19 7 26	1860.8	-28.21	48.15
100.00	11 48 27	3806.84	-4.38	145.50	15.37	60.40	12 51 53	3206.8	-8.29	138.89
110.00	20 2 51	2159.11	-32.60	33.29	20.22	100.89	20 38 50	1559.1	-30.76	24.56
110.00	12 28 30	3681.30	-1.59	134.24	13.63	55.85	13 29 51	3081.3	-6.06	128.01

DIFFERENTIAL CORRECTIONS

TDE	.1506	TRA	.2298	TC3	-2.4198	BAU	.4062
RDE	.2851	RRA	-.3159	RC3	1.5238	FAU	.59276
FDE	-2.5244	FRA	14.3184	FC	-48.3012	BSP	6108
BDE	.3225	BRA	.3906	BC3	2.8596	FSP	12491

MID-COURSE EXECUTION ACCURACY

SGT	1656.5	SGR	1260.4	SG3	3595.3		
RRT	-.6091	RRF	-.9418	RTF	.8713		
SGB	2081.5	R23	.2047	R13	-.9379		
SG1	1987.9	SG2	617.2	THA	144.44		

ORBIT DETERMINATION ACCURACY

ST	298.3	SR	532.6	SS	2272.7
CRT	.6817	CRS	.7481	CST	.0325
LSA	2308.3	MSA	457.0	SSA	30.0
EL1	576.2	EL2	201.8	ALF	65.97

LAUNCH DATE OCT 28 1964 FLIGHT TIME 310.00 ARRIVAL DATE SEP 3 1965

HELIOCENTRIC CONIC DISTANCE 705.809 EARTH TO MARS

RL	148.61	LAL	-.00	LOL	34.61	VL	32.760	GAL	-3.76	AZL	88.78	HCA	219.31	SMA	186.19	ECC	.21180	INC	1.2170
RP	222.85	LAP	-.77	LOP	253.91	VP	21.869	GAP	-4.56	AZP	90.94	TAL	338.18	TAP	197.49	RCA	146.75	APO	225.62
RC	261.100	GL	12.29	GP	5.70	ZAL	121.18	ZAP	100.14	ETS	177.91	ZAE	134.97	ETE	171.78	ZAC	92.02	ETC	256.77

V1	29.982	V2	24.674	CLP	100.19														

PLANETOCENTRIC CONIC

C3	10.649	VHL	3.263	DLA	20.46	RAL	163.17	RAD	6567.4	VEL	11.491	PTH	2.00	VHP	2.833	DPA	8.91	RAP	177.60
ECC	1.1753																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 51 16	2772.04	-28.08	79.79	21.25	93.83	17 37 28	2172.0	-27.25	71.22
90.00	10 42 54	4021.30	-5.70	161.98	16.32	62.22	11 49 55	3421.3	-9.37	155.23
100.00	18 25 59	2466.60	-29.39	57.19	21.12	95.74	19 7 6	1866.6	-28.28	48.56
100.00	11 50 52	3801.97	-4.55	145.23	15.69	60.42	12 54 14	3202.0	-8.45	138.62
110.00	20 2 45	2163.88	-32.67	33.65	20.57	100.68	20 38 48	1563.9	-30.85	24.90
110.00	12 30 35	3677.46	-1.73	134.04	13.94	55.86	13 31 53	3077.5	-6.20	127.80

DIFFERENTIAL CORRECTIONS

TDE	.1319	TRA	.3605	TC3	-2.8253	BAU	.4566
RDE	.2900	RRA	-.3106	RC3	1.5184	FAU	.59976
FDE	-2.5722	FRA	14.4492	FC	-48.7599	BSP	7096
BDE	.3186	BRA	.4758	BC3	3.2075	FSP	12529

MID-COURSE EXECUTION ACCURACY

SGT	1977.4	SGR	1257.0	SG3	3631.2		
RRT	-.8459	RRF	-.9388	RTF	.9136		
SGB	2343.1	R23	.1706	R13	-.9500		
SG1	2269.1	SG2	584.2	THA	149.50		

ORBIT DETERMINATION ACCURACY

ST	312.7	SR	539.1	SS	2287.1
CRT	.4799	CRS	.7438	CST	-.2236
LSA	2323.7	MSA	467.9	SSA	29.5
EL1	565.7	EL2	261.4	ALF	70.00

LAUNCH DATE OCT 28 1964 FLIGHT TIME 312.00 ARRIVAL DATE SEP 5 1965

HELIOCENTRIC CONIC DISTANCE 709.815 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 32.758 GAL -3.78 AZL 88.76 HCA 220.40 SMA 186.14 ECC .21170 INC 1.2388 V1 29.982
RP 222.47 LAP -.80 LOP 255.00 VP 21.912 GAP -4.80 AZP 90.94 TAL 338.07 TAP 198.47 RCA 146.73 APO 225.55 V2 24.716
RC 262.633 GL 12.49 GP 5.60 ZAL 121.33 ZAP 98.12 ETS 178.16 ZAE 132.75 ETE 172.41 ZAC 91.72 ETC 256.86 CLP 98.16

PLANETOCENTRIC CONIC

C3 10.680 VHL 3.268 DLA 20.58 RAL 163.43 RAD 6567.4 VEL 11.492 PTH 2.00 VHP 2.824 DPA 9.21 RAP 176.69 ECC 1.1758

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 50 57	2777.64	-28.10	80.19	21.60	93.62	17 37 15	2177.6	-27.30	71.62
90.00	10 45 19	4016.88	-5.84	161.73	16.66	62.24	11 52 16	3416.9	-9.51	154.98
100.00	18 25 49	2471.71	-29.42	57.57	21.48	95.54	19 7 1	1871.7	-28.34	48.93
100.00	11 53 8	3798.04	-4.68	145.01	16.02	60.44	12 56 26	3198.0	-8.58	138.40
110.00	20 2 52	2168.12	-32.72	33.97	20.94	100.50	20 39 0	1568.1	-30.92	25.21
110.00	12 32 35	3674.40	-1.85	133.88	14.26	55.86	13 33 49	3074.4	-6.32	127.64

DIFFERENTIAL CORRECTIONS

TDE .1117 TRA .4935 TC3-3.2397 BAU .5102
RDE .2945 RRA -.3054 RC3 1.5087 FAU .60457
FDE-2.6039 FRA14.5716 FC-49.0095 BSP 8174
BDE .3150 BRA .5803 BC3 3.5738 FSP 12583

MID-COURSE EXECUTION ACCURACY

SGT 2318.6 SGR 1251.4 SG3 3657.1
RRT -.8669 RRF -.9355 RTF .9390
SGB 2634.8 R23 .1410 R13 -.9598
SG1 2574.2 SG2 561.8 THA 153.57

ORBIT DETERMINATION ACCURACY

ST 345.4 SR 544.9 SS 2298.8
CRT .2746 CRS .7383 CST -.4414
LSA 2339.1 MSA 477.8 SSA 29.2
EL1 557.5 EL2 324.5 ALF 74.90

LAUNCH DATE OCT 28 1964 FLIGHT TIME 314.00 ARRIVAL DATE SEP 7 1965

HELIOCENTRIC CONIC DISTANCE 713.829 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 32.755 GAL -3.80 AZL 88.74 HCA 221.50 SMA 186.10 ECC .21164 INC 1.2597 V1 29.982
RP 222.08 LAP -.83 LOP 256.10 VP 21.955 GAP -5.03 AZP 90.94 TAL 337.94 TAP 199.44 RCA 146.71 APO 225.48 V2 24.758
RC 264.145 GL 12.68 GP 5.50 ZAL 121.51 ZAP 96.09 ETS 178.40 ZAE 130.53 ETE 172.99 ZAC 91.43 ETC 256.95 CLP 96.12

PLANETOCENTRIC CONIC

C3 10.717 VHL 3.274 DLA 20.67 RAL 163.71 RAD 6567.4 VEL 11.494 PTH 2.00 VHP 2.818 DPA 9.51 RAP 175.79 ECC 1.1764

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 50 56	2782.48	-28.12	80.55	21.97	93.45	17 37 19	2182.5	-27.35	71.97
90.00	10 47 34	4013.46	-5.95	161.54	17.01	62.26	11 54 27	3413.5	-9.62	154.78
100.00	18 25 56	2476.14	-29.45	57.89	21.85	95.37	19 7 13	1876.1	-28.39	49.25
100.00	11 55 15	3795.03	-4.78	144.85	16.37	60.46	12 58 30	3195.0	-8.68	138.23
110.00	20 3 13	2171.83	-32.76	34.25	21.32	100.34	20 39 24	1571.8	-30.99	25.48
110.00	12 34 28	3672.11	-1.94	133.76	14.61	55.87	13 35 40	3072.1	-6.40	127.52

DIFFERENTIAL CORRECTIONS

TDE .0906 TRA .6291 TC3-3.6589 BAU .5663
RDE .2987 RRA -.3003 RC3 1.4950 FAU .60738
FDE-2.6232 FRA14.6794 FC-49.0660 BSP 9325
BDE .3121 BRA .6970 BC3 3.9525 FSP 12621

MID-COURSE EXECUTION ACCURACY

SGT 2673.7 SGR 1243.7 SG3 3672.9
RRT -.8790 RRF -.9318 RTF .9550
SGB 2948.8 R23 .1165 R13 -.9675
SG1 2897.6 SG2 547.3 THA 156.89

ORBIT DETERMINATION ACCURACY

ST 393.7 SR 550.0 SS 2307.8
CRT .0985 CRS .7319 CST -.6027
LSA 2354.9 MSA 487.0 SSA 28.9
EL1 552.8 EL2 389.8 ALF 81.94

LAUNCH DATE OCT 28 1964 FLIGHT TIME 316.00 ARRIVAL DATE SEP 9 1965

HELIOCENTRIC CONIC DISTANCE 717.850 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 32.753 GAL -3.83 AZL 88.72 HCA 222.60 SMA 186.06 ECC .21161 INC 1.2797 V1 29.982
RP 221.70 LAP -.87 LOP 257.20 VP 21.999 GAP -5.26 AZP 90.94 TAL 337.80 TAP 200.40 RCA 146.69 APO 225.43 V2 24.799
RC 265.639 GL 12.86 GP 5.40 ZAL 121.71 ZAP 94.07 ETS 178.63 ZAE 128.30 ETE 173.53 ZAC 91.13 ETC 257.05 CLP 94.08

PLANETOCENTRIC CONIC

C3 10.761 VHL 3.280 DLA 20.75 RAL 164.01 RAD 6567.4 VEL 11.496 PTH 2.00 VHP 2.815 DPA 9.80 RAP 174.88 ECC 1.1771

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 51 13	2786.59	-28.14	80.85	22.36	93.30	17 37 40	2186.6	-27.39	72.26
90.00	10 49 38	4011.01	-6.03	161.40	17.39	62.28	11 56 29	3411.0	-9.69	154.64
100.00	18 26 20	2479.92	-29.47	58.17	22.25	95.23	19 7 40	1879.9	-28.44	49.52
100.00	11 57 13	3792.91	-4.85	144.73	16.74	60.47	13 0 26	3192.9	-8.75	138.11
110.00	20 3 47	2175.03	-32.80	34.49	21.72	100.20	20 40 2	1575.0	-31.05	25.71
110.00	12 36 15	3670.57	-2.00	133.68	14.97	55.87	13 37 26	3070.6	-6.46	127.44

DIFFERENTIAL CORRECTIONS

TDE .0690 TRA .7673 TC3-4.0789 BAU .6242
RDE .3031 RRA -.2946 RC3 1.4787 FAU .60868
FDE-2.6461 FRA14.7553 FC-48.9711 BSP 10523
BDE .3108 BRA .8219 BC3 4.3387 FSP 12635

MID-COURSE EXECUTION ACCURACY

SGT 3038.0 SGR 1234.6 SG3 3679.0
RRT -.8854 RRF -.9279 RTF .9656
SGB 3279.3 R23 .0970 R13 -.9735
SG1 3234.7 SG2 538.9 THA 159.62

ORBIT DETERMINATION ACCURACY

ST 453.7 SR 555.3 SS 2315.6
CRT -.0378 CRS .7263 CST -.7119
LSA 2372.7 MSA 495.8 SSA 28.6
EL1 556.1 EL2 452.7 ALF 95.26

LAUNCH DATE OCT 28 1964 FLIGHT TIME 318.00 ARRIVAL DATE SEP 11 1965

HELIOCENTRIC CONIC DISTANCE 721.878 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 32.751 GAL -3.85 AZL 88.70 HCA 223.71 SMA 186.03 ECC .21162 INC 1.2991 V1 29.982
RP 221.32 LAP -.90 LOP 258.31 VP 22.043 GAP -5.48 AZP 90.94 TAL 337.64 TAP 201.35 RCA 146.66 APO 225.40 V2 24.841
RC 267.114 GL 13.02 GP 5.29 ZAL 121.92 ZAP 92.04 ETS 178.85 ZAE 126.07 ETE 174.03 ZAC 90.84 ETC 257.14 CLP 92.05

PLANETOCENTRIC CONIC

C3 10.811 VHL 3.288 DLA 20.81 RAL 164.32 RAD 6567.4 VEL 11.498 PTH 2.00 VHP 2.816 DPA 10.09 RAP 173.99 ECC 1.1779

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 51 48	2789.96	-28.15	81.09	22.76	93.18	17 38 18	2190.0	-27.42	72.50
90.00	10 51 32	4009.55	-6.07	161.32	17.77	62.29	11 58 22	3409.5	-9.74	154.56
100.00	18 26 59	2483.05	-29.49	58.40	22.65	95.11	19 8 22	1883.1	-28.47	49.75
100.00	11 59 3	3791.69	-4.89	144.66	17.13	60.47	13 2 14	3191.7	-8.79	138.04
110.00	20 4 34	2177.73	-32.84	34.68	22.13	100.09	20 40 52	1577.7	-31.10	25.90
110.00	12 37 57	3669.78	-2.03	133.64	15.35	55.87	13 39 6	3069.8	-6.49	127.40

DIFFERENTIAL CORRECTIONS

TDE .0465 TRA .9084 TC3-4.4977 BAU .6834
RDE .3075 RRA -.2887 RC3 1.4595 FAU .60829
FDE-2.6677 FRA14.8083 FC-48.7107 BSP 11755
BDE .3110 BRA .9532 BC3 4.7286 FSP 12620

MID-COURSE EXECUTION ACCURACY

SGT 3409.1 SGR 1223.9 SG3 3675.5
RRT -.8884 RRF -.9237 RTF .9730
SGB 3622.1 R23 .0815 R13 -.9781
SG1 3582.5 SG2 534.7 THA 161.89

ORBIT DETERMINATION ACCURACY

ST 522.0 SR 560.4 SS 2322.3
CRT -.1408 CRS .7208 CST -.7859
LSA 2392.6 MSA 504.1 SSA 28.3
EL1 582.6 EL2 497.1 ALF 121.63

LAUNCH DATE OCT 28 1964 FLIGHT TIME 320.00 ARRIVAL DATE SEP 13 1965

HELIOCENTRIC CONIC DISTANCE 725.914 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 32.750 GAL -3.88 AZL 88.68 HCA 224.81 SMA 186.00 ECC .21166 INC 1.3178 V1 29.982
RP 220.94 LAP -.93 LOP 259.42 VP 22.088 GAP -5.70 AZP 90.93 TAL 337.48 TAP 202.29 RCA 146.63 APO 225.37 V2 24.883
RC 268.570 GL 13.18 GP 5.19 ZAL 122.17 ZAP 90.03 ETS 179.06 ZAE 123.84 ETE 174.49 ZAC 90.55 ETC 257.24 CLP 90.03

PLANETOCENTRIC CONIC

C3 10.868 VHL 3.297 DLA 20.84 RAL 164.64 RAD 6567.4 VEL 11.500 PTH 2.00 VHP 2.820 DPA 10.37 RAP 173.10 ECC 1.1789

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 52 40	2792.62	-28.16	81.29	23.19	93.08	17 39 13	2192.6	-27.44	72.69
90.00	10 53 16	4009.05	-6.09	161.29	18.18	62.29	12 0 6	3409.1	-9.75	154.53
100.00	18 27 54	2485.55	-29.51	58.59	23.08	95.01	19 9 20	1885.6	-28.50	49.93
100.00	12 0 44	3791.35	-4.90	144.64	17.53	60.48	13 3 55	3191.4	-8.80	138.02
110.00	20 5 35	2179.95	-32.86	34.86	22.56	99.99	20 41 55	1579.9	-31.13	26.07
110.00	12 39 32	3669.72	-2.03	133.63	15.74	55.87	13 40 42	3069.7	-6.49	127.39

DIFFERENTIAL CORRECTIONS
TDE .0231 TRA 1.0519 TC3-4.9113 BAU .7436
RDE .3119 RRA -.2825 RC3 1.4378 FAU .60638
FDE-2.6869 FRA14.8335 FC-48.3022 BSP 13017
BDE .3128 BRA 1.0892 BC3 5.1174 FSP 12581

MID-COURSE EXECUTION ACCURACY
SGT 3783.4 SGR 1211.9 SG3 3662.6
RRT -.8889 RRF -.9191 RTF .9783
SGB 3972.8 R23 .0694 R13 -.9818
SG1 3936.8 SG2 533.5 THA 163.80

ORBIT DETERMINATION ACCURACY
ST 596.2 SR 565.3 SS 2327.0
CRT -.2179 CRS .7156 CST -.8363
LSA 2414.0 MSA 511.8 SSA 27.9
EL1 642.7 EL2 511.8 ALF 141.87

LAUNCH DATE OCT 28 1964 FLIGHT TIME 322.00 ARRIVAL DATE SEP 15 1965

HELIOCENTRIC CONIC DISTANCE 729.958 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 32.748 GAL -3.91 AZL 88.66 HCA 225.93 SMA 185.98 ECC .21174 INC 1.3357 V1 29.982
RP 220.56 LAP -.96 LOP 260.53 VP 22.132 GAP -5.92 AZP 90.93 TAL 337.29 TAP 203.22 RCA 146.60 APO 225.36 V2 24.924
RC 270.009 GL 13.32 GP 5.09 ZAL 122.43 ZAP 88.03 ETS 179.26 ZAE 121.62 ETE 174.92 ZAC 90.27 ETC 257.34 CLP 88.02

PLANETOCENTRIC CONIC

C3 10.932 VHL 3.306 DLA 20.86 RAL 164.99 RAD 6567.4 VEL 11.503 PTH 2.00 VHP 2.828 DPA 10.65 RAP 172.23 ECC 1.1799

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 53 50	2794.57	-28.17	81.43	23.63	93.01	17 40 25	2194.6	-27.46	72.84
90.00	10 54 51	4009.50	-6.07	161.32	18.60	62.29	12 1 40	3409.5	-9.74	154.55
100.00	18 29 5	2487.43	-29.52	58.73	23.52	94.94	19 10 33	1887.4	-28.52	50.06
100.00	12 2 17	3791.88	-4.89	144.67	17.95	60.47	13 5 29	3191.9	-8.78	138.05
110.00	20 6 49	2181.70	-32.88	34.99	23.01	99.92	20 43 10	1581.7	-31.16	26.19
110.00	12 41 3	3670.38	-2.00	133.67	16.16	55.87	13 42 13	3070.4	-6.47	127.43

DIFFERENTIAL CORRECTIONS
TDE -.0014 TRA 1.1974 TC3-5.3212 BAU .8047
RDE .3165 RRA -.2758 RC3 1.4140 FAU .60306
FDE-2.7105 FRA14.8253 FC-47.7563 BSP 14282
BDE .3165 BRA 1.2287 BC3 5.5058 FSP 12496

MID-COURSE EXECUTION ACCURACY
SGT 4160.8 SGR 1198.6 SG3 3640.3
RRT -.8877 RRF -.9141 RTF .9822
SGB 4330.0 R23 .0600 R13 -.9846
SG1 4296.9 SG2 534.4 THA 165.43

ORBIT DETERMINATION ACCURACY
ST 674.4 SR 570.3 SS 2330.5
CRT -.2768 CRS .7112 CST -.8713
LSA 2437.5 MSA 518.9 SSA 27.6
EL1 717.4 EL2 515.2 ALF 150.67

LAUNCH DATE OCT 28 1964 FLIGHT TIME 324.00 ARRIVAL DATE SEP 17 1965

HELIOCENTRIC CONIC DISTANCE 734.008 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 32.747 GAL -3.95 AZL 88.65 HCA 227.04 SMA 185.96 ECC .21186 INC 1.3531 V1 29.982
RP 220.18 LAP -.99 LOP 261.64 VP 22.177 GAP -6.13 AZP 90.92 TAL 337.10 TAP 204.14 RCA 146.57 APO 225.36 V2 24.965
RC 271.430 GL 13.45 GP 4.98 ZAL 122.71 ZAP 86.05 ETS 179.46 ZAE 119.42 ETE 175.32 ZAC 89.99 ETC 257.44 CLP 86.03

PLANETOCENTRIC CONIC

C3 11.004 VHL 3.317 DLA 20.86 RAL 165.34 RAD 6567.4 VEL 11.506 PTH 2.00 VHP 2.839 DPA 10.91 RAP 171.38 ECC 1.1811

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 55 17	2795.84	-28.17	81.52	24.09	92.96	17 41 53	2195.8	-27.47	72.93
90.00	10 56 15	4010.90	-6.03	161.40	19.04	62.28	12 3 6	3410.9	-9.69	154.63
100.00	18 30 32	2488.70	-29.53	58.82	23.98	94.89	19 12 0	1888.7	-28.54	50.16
100.00	12 3 41	3793.27	-4.84	144.75	18.39	60.47	13 6 55	3193.3	-8.74	138.13
110.00	20 8 15	2182.98	-32.90	35.09	23.47	99.86	20 44 38	1583.0	-31.19	26.29
110.00	12 42 28	3671.76	-1.95	133.74	16.59	55.87	13 43 39	3071.8	-6.42	127.50

DIFFERENTIAL CORRECTIONS
TDE -.0269 TRA 1.3452 TC3-5.7228 BAU .8663
RDE .3213 RRA -.2687 RC3 1.3882 FAU .59841
FDE-2.7362 FRA14.7895 FC-47.0811 BSP 15555
BDE .3224 BRA 1.3717 BC3 5.8888 FSP 12383

MID-COURSE EXECUTION ACCURACY
SGT 4538.6 SGR 1184.4 SG3 3609.5
RRT -.8850 RRF -.9088 RTF .9851
SGB 4690.6 R23 .0528 R13 -.9869
SG1 4659.8 SG2 537.1 THA 166.82

ORBIT DETERMINATION ACCURACY
ST 756.0 SR 575.2 SS 2333.0
CRT -.3221 CRS .7074 CST -.8961
LSA 2463.3 MSA 525.8 SSA 27.2
EL1 797.4 EL2 516.3 ALF 155.33

LAUNCH DATE OCT 28 1964 FLIGHT TIME 326.00 ARRIVAL DATE SEP 19 1965

HELIOCENTRIC CONIC DISTANCE 738.066 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 32.747 GAL -3.98 AZL 88.63 HCA 228.16 SMA 185.95 ECC .21201 INC 1.3699 V1 29.982
RP 219.81 LAP -1.02 LOP 262.76 VP 22.222 GAP -6.34 AZP 90.91 TAL 336.89 TAP 205.05 RCA 146.53 APO 225.37 V2 25.006
RC 272.833 GL 13.57 GP 4.88 ZAL 123.02 ZAP 84.08 ETS 179.65 ZAE 117.23 ETE 175.70 ZAC 89.72 ETC 257.54 CLP 84.06

PLANETOCENTRIC CONIC

C3 11.082 VHL 3.329 DLA 20.84 RAL 165.72 RAD 6567.4 VEL 11.510 PTH 2.00 VHP 2.853 DPA 11.16 RAP 170.55 ECC 1.1824

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 57 0	2796.43	-28.18	81.56	24.57	92.94	17 43 37	2196.4	-27.47	72.97
90.00	10 57 30	4013.23	-5.96	161.53	19.49	62.27	12 4 24	3413.2	-9.62	154.77
100.00	18 32 14	2489.38	-29.53	58.87	24.46	94.86	19 13 43	1889.4	-28.54	50.21
100.00	12 4 58	3795.51	-4.76	144.87	18.84	60.45	13 8 14	3195.5	-8.66	138.25
110.00	20 9 54	2183.82	-32.91	35.15	23.95	99.82	20 46 18	1583.8	-31.20	26.35
110.00	12 43 47	3673.84	-1.87	133.85	17.04	55.86	13 45 1	3073.8	-6.34	127.61

DIFFERENTIAL CORRECTIONS
TDE -.0538 TRA 1.4946 TC3-6.1139 BAU .9280
RDE .3260 RRA -.2614 RC3 1.3604 FAU .59235
FDE-2.7598 FRA14.7296 FC-46.2740 BSP 16829
BDE .3304 BRA 1.5173 BC3 6.2634 FSP 12247

MID-COURSE EXECUTION ACCURACY
SGT 4914.7 SGR 1169.2 SG3 3570.3
RRT -.8813 RRF -.9030 RTF .9873
SGB 5051.9 R23 .0471 R13 -.9887
SG1 5022.9 SG2 540.7 THA 168.02

ORBIT DETERMINATION ACCURACY
ST 839.8 SR 580.0 SS 2334.0
CRT -.3583 CRS .7039 CST -.9146
LSA 2491.1 MSA 531.8 SSA 26.8
EL1 880.2 EL2 516.7 ALF 158.29

LAUNCH DATE OCT 28 1964 FLIGHT TIME 328.00 ARRIVAL DATE SEP 21 1965

HELIOCENTRIC CONIC DISTANCE 742.131 *EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 32.746 GAL -4.02 AZL 88.61 HCA 229.29 SMA 185.94 ECC .21220 INC 1.3862 V1 29.982
RP 219.44 LAP -1.05 LOP 263.89 VP 22.268 GAP -6.55 AZP 90.90 TAL 336.66 TAP 205.95 RCA 146.49 APO 225.40 V2 25.047
RC 274.220 GL 13.68 GP 4.77 ZAL 123.35 ZAP 82.14 ETS 179.82 ZAE 115.06 ETE 176.05 ZAC 89.45 ETC 257.64 CLP 82.11

PLANETOCENTRIC CONIC

C3 11.168 VHL 3.342 DLA 20.80 RAL 166.10 RAD 6567.4 VEL 11.513 PTH 2.01 VHP 2.871 DPA 11.40 RAP 169.74 ECC 1.1838

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 59 0	2796.38	-28.18	81.56	25.06	92.94	17 45 37	2196.4	-27.47	72.97
90.00	10 58 36	4016.47	-5.85	161.71	19.97	62.25	12 5 33	3416.5	-9.52	154.95
100.00	18 34 11	2489.49	-29.53	58.88	24.96	94.86	19 15 40	1889.5	-28.54	50.21
100.00	12 6 7	3798.58	-4.66	145.04	19.31	60.44	13 9 26	3198.6	-8.56	138.43
110.00	20 11 45	2184.22	-32.91	35.18	24.45	99.81	20 48 9	1584.2	-31.21	26.38
110.00	12 45 2	3676.62	-1.77	134.00	17.51	55.86	13 46 18	3076.6	-6.23	127.76

DIFFERENTIAL CORRECTIONS
TDE -.0816 TRA 1.6461 TC3-6.4925 BAU .9895
RDE .3308 RRA -.2538 RC3 1.3304 FAU .58475
FDE-2.7813 FRA14.6416 FC-45.3289 BSP 18104
BDE .3407 BRA 1.6656 BC3 6.6274 FSP 12087

MID-COURSE EXECUTION ACCURACY
SGT 5288.2 SGR 1152.8 SG3 3522.0
RRT -.8765 RRF -.8968 RTF .9891
SGB 5412.4 R23 .0428 R13 -.9901
SG1 5384.8 SG2 545.1 THA 169.07

ORBIT DETERMINATION ACCURACY
ST 925.7 SR 584.7 SS 2332.9
CRT -.3867 CRS .7008 CST -.9283
LSA 2520.2 MSA 537.7 SSA 26.4
EL1 965.0 EL2 517.2 ALF 160.45

LAUNCH DATE OCT 28 1964 FLIGHT TIME 330.00 ARRIVAL DATE SEP 23 1965

HELIOCENTRIC CONIC DISTANCE 746.202 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 32.746 GAL -4.07 AZL 88.60 HCA 230.42 SMA 185.94 ECC .21242 INC 1.4019 V1 29.982
RP 219.07 LAP -1.08 LOP 265.02 VP 22.313 GAP -6.75 AZP 90.89 TAL 336.43 TAP 206.84 RCA 146.44 APO 225.44 V2 25.088
RC 275.589 GL 13.78 GP 4.67 ZAL 123.69 ZAP 80.23 ETS 179.99 ZAE 112.91 ETE 176.37 ZAC 89.19 ETC 257.74 CLP 80.20

PLANETOCENTRIC CONIC

C3 11.262 VHL 3.356 DLA 20.74 RAL 166.51 RAD 6567.4 VEL 11.517 PTH 2.01 VHP 2.892 DPA 11.62 RAP 168.97 ECC 1.1853

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 1 16	2795.69	-28.17	81.51	25.58	92.97	17 47 52	2195.7	-27.46	72.92
90.00	10 59 33	4020.60	-5.72	161.94	20.45	62.22	12 6 34	3420.6	-9.40	155.19
100.00	18 36 22	2489.05	-29.53	58.85	25.47	94.88	19 17 51	1889.0	-28.54	50.18
100.00	12 7 9	3802.48	-4.53	145.26	19.80	60.42	13 10 31	3202.5	-8.44	138.65
110.00	20 13 49	2184.19	-32.91	35.18	24.96	99.81	20 50 13	1584.2	-31.21	26.37
110.00	12 46 11	3680.09	-1.63	134.18	18.00	55.85	13 47 32	3080.1	-6.10	127.94

DIFFERENTIAL CORRECTIONS
TDE -.1113 TRA 1.7992 TC3-6.8588 BAU 1.0510
RDE .3358 RRA -.2459 RC3 1.2997 FAU .57630
FDE-2.8093 FRA14.5286 FC-44.3032 BSP 19360
BDE .3537 BRA 1.8159 BC3 6.9808 FSP 11892

MID-COURSE EXECUTION ACCURACY
SGT 5658.3 SGR 1136.3 SG3 3467.6
RRT -.8709 RRF -.8902 RTF .9904
SGB 5771.3 R23 .0395 R13 -.9912
SG1 5745.0 SG2 550.1 THA 169.99

ORBIT DETERMINATION ACCURACY
ST 1013.0 SR 589.5 SS 2331.9
CRT -.4107 CRS .6988 CST -.9387
LSA 2552.6 MSA 543.1 SSA 25.9
EL1 1051.5 EL2 517.8 ALF 162.07

LAUNCH DATE OCT 28 1964 FLIGHT TIME 332.00 ARRIVAL DATE SEP 25 1965

HELIOCENTRIC CONIC DISTANCE 750.281 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 32.746 GAL -4.11 AZL 88.58 HCA 231.55 SMA 185.94 ECC .21268 INC 1.4172 V1 29.982
RP 218.70 LAP -1.11 LOP 266.15 VP 22.358 GAP -6.95 AZP 90.88 TAL 336.18 TAP 207.72 RCA 146.39 APO 225.49 V2 25.128
RC 276.940 GL 13.87 GP 4.56 ZAL 124.06 ZAP 78.35 ETS 180.15 ZAE 110.79 ETE 176.68 ZAC 88.94 ETC 257.83 CLP 78.31

PLANETOCENTRIC CONIC

C3 11.363 VHL 3.371 DLA 20.67 RAL 166.93 RAD 6567.4 VEL 11.522 PTH 2.01 VHP 2.915 DPA 11.83 RAP 168.22 ECC 1.1870

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 3 48	2794.38	-28.17	81.41	26.11	93.02	17 50 23	2194.4	-27.45	72.82
90.00	11 0 21	4025.62	-5.56	162.23	20.96	62.19	12 7 27	3425.6	-9.24	155.48
100.00	18 38 48	2488.06	-29.52	58.77	26.01	94.91	19 20 16	1888.1	-28.53	50.11
100.00	12 8 3	3807.18	-4.37	145.52	20.30	60.40	13 11 30	3207.2	-8.28	138.91
110.00	20 16 4	2183.77	-32.91	35.15	25.50	99.83	20 52 28	1583.8	-31.20	26.34
110.00	12 47 16	3684.24	-1.47	134.39	18.50	55.84	13 48 40	3084.2	-5.95	128.16

DIFFERENTIAL CORRECTIONS
TDE -.1425 TRA 1.9539 TC3-7.2095 BAU 1.1120
RDE .3408 RRA -.2379 RC3 1.2673 FAU .56652
FDE-2.8333 FRA14.3976 FC-43.1621 BSP 20604
BDE .3694 BRA 1.9683 BC3 7.3201 FSP 11685

MID-COURSE EXECUTION ACCURACY
SGT 6023.6 SGR 1119.1 SG3 3406.0
RRT -.8645 RRF -.8831 RTF .9915
SGB 6126.6 R23 .0369 R13 -.9922
SG1 6101.4 SG2 555.3 THA 170.80

ORBIT DETERMINATION ACCURACY
ST 1101.8 SR 594.1 SS 2329.5
CRT -.4309 CRS .6969 CST -.9470
LSA 2587.0 MSA 547.9 SSA 25.5
EL1 1139.3 EL2 518.4 ALF 163.38

LAUNCH DATE OCT 28 1964 FLIGHT TIME 334.00 ARRIVAL DATE SEP 27 1965

HELIOCENTRIC CONIC DISTANCE 754.362 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 32.746 GAL -4.16 AZL 88.57 HCA 232.68 SMA 185.94 ECC .21298 INC 1.4322 V1 29.982
RP 218.34 LAP -1.14 LOP 267.28 VP 22.404 GAP -7.15 AZP 90.87 TAL 335.91 TAP 208.59 RCA 146.34 APO 225.54 V2 25.168
RC 278.273 GL 13.95 GP 4.46 ZAL 124.45 ZAP 76.50 ETS 180.30 ZAE 108.71 ETE 176.96 ZAC 88.70 ETC 257.92 CLP 76.46

PLANETOCENTRIC CONIC

C3 11.473 VHL 3.387 DLA 20.58 RAL 167.36 RAD 6567.4 VEL 11.527 PTH 2.01 VHP 2.942 DPA 12.03 RAP 167.51 ECC 1.1888

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 6 36	2792.46	-28.16	81.27	26.67	93.09	17 53 9	2192.5	-27.44	72.68
90.00	11 1 1	4031.54	-5.37	162.56	21.48	62.16	12 8 13	3431.5	-9.06	155.82
100.00	18 41 29	2486.53	-29.51	58.66	26.56	94.97	19 22 56	1886.5	-28.51	50.00
100.00	12 8 50	3812.71	-4.19	145.82	20.83	60.38	13 12 22	3212.7	-8.10	139.22
110.00	20 18 32	2182.92	-32.90	35.09	26.05	99.86	20 54 55	1582.9	-31.19	26.28
110.00	12 48 16	3689.08	-1.29	134.65	19.02	55.84	13 49 45	3089.1	-5.76	128.42

DIFFERENTIAL CORRECTIONS
TDE -.1672 TRA 2.1200 TC3-7.5182 BAU 1.1684
RDE .3438 RRA -.2317 RC3 1.2265 FAU .55155
FDE-2.7694 FRA14.3261 FC-41.6183 BSP 22051
BDE .3823 BRA 2.1326 BC3 7.6176 FSP 11628

MID-COURSE EXECUTION ACCURACY
SGT 6379.1 SGR 1097.1 SG3 3331.6
RRT -.8572 RRF -.8742 RTF .9923
SGB 6472.7 R23 .0331 R13 -.9928
SG1 6448.5 SG2 558.8 THA 171.55

ORBIT DETERMINATION ACCURACY
ST 1193.3 SR 595.4 SS 2315.5
CRT -.4399 CRS .6860 CST -.9548
LSA 2614.3 MSA 552.1 SSA 25.4
EL1 1228.2 EL2 519.5 ALF 164.84

LAUNCH DATE OCT 28 1964 FLIGHT TIME 336.00 ARRIVAL DATE SEP 29 1965

HELIOCENTRIC CONIC DISTANCE 758.455 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 32.747 GAL -4.21 AZL 88.55 HCA 233.82 SMA 185.95 ECC .21331 INC 1.4468 V1 29.982
RP 217.98 LAP -1.17 LOP 268.42 VP 22.450 GAP -7.34 AZP 90.85 TAL 335.63 TAP 209.45 RCA 146.29 APO 225.62 V2 25.208
RC 279.589 GL 14.02 GP 4.35 ZAL 124.86 ZAP 74.68 ETS 180.45 ZAE 106.65 ETE 177.23 ZAC 88.46 ETC 258.01 CLP 74.64

PLANETOCENTRIC CONIC

C3 11.591 VHL 3.405 DLA 20.47 RAL 167.81 RAD 6567.4 VEL 11.532 PTH 2.01 VHP 2.972 DPA 12.20 RAP 166.83 ECC 1.1908

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 9 38	2790.03	-28.15	81.10	27.24	93.17	17 56 8	2190.0	-27.42	72.51
90.00	11 1 33	4038.24	-5.16	162.94	22.02	62.12	12 8 51	3438.2	-8.85	156.20
100.00	18 44 22	2484.54	-29.50	58.51	27.13	95.05	19 25 47	1884.5	-28.49	49.86
100.00	12 9 30	3818.97	-3.98	146.17	21.37	60.35	13 13 9	3219.0	-7.89	139.57
110.00	20 21 9	2181.73	-32.88	35.00	26.61	99.91	20 57 31	1581.7	-31.17	26.19
110.00	12 49 12	3694.54	-1.08	134.93	19.56	55.83	13 50 47	3094.5	-5.56	128.70

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2050 TRA 2.2741 TC3-7.8454 BAU 1.2298 SGT 6733.9 SGR 1081.5 SG3 3261.6 ST 1283.2 SR 601.4 SS 2315.5
RDE .3499 RRA -.2225 RC3 1.1960 FAU .54185 RRT -.8494 RRF -.8667 RTF .9931 CRT -.4586 CRS .6898 CST -.9594
FDE-2.8344 FRA14.1156 FC-40.4698 BSP 23171 SGB 6820.2 R23 .0325 R13 -.9935 LSA 2657.0 MSA 556.3 SSA 24.8
BDE .4055 BRA 2.2850 BC3 7.9360 FSP 11298 SG1 6796.7 SG2 565.5 THA 172.18 EL1 1318.2 EL2 520.3 ALF 165.57

LAUNCH DATE OCT 28 1964 FLIGHT TIME 338.00 ARRIVAL DATE OCT 1 1965

HELIOCENTRIC CONIC DISTANCE 762.553 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 32.747 GAL -4.27 AZL 88.54 HCA 234.96 SMA 185.96 ECC .21368 INC 1.4608 V1 29.982
RP 217.62 LAP -1.20 LOP 269.56 VP 22.495 GAP -7.53 AZP 90.84 TAL 335.34 TAP 210.30 RCA 146.23 APO 225.70 V2 25.248
RC 280.887 GL 14.08 GP 4.25 ZAL 125.28 ZAP 72.90 ETS 180.58 ZAE 104.62 ETE 177.48 ZAC 88.24 ETC 258.10 CLP 72.85

PLANETOCENTRIC CONIC

C3 11.718 VHL 3.423 DLA 20.35 RAL 168.27 RAD 6567.4 VEL 11.537 PTH 2.01 VHP 3.005 DPA 12.37 RAP 166.19 ECC 1.1929

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 12 54	2787.06	-28.14	80.88	27.83	93.28	17 59 21	2187.1	-27.39	72.30
90.00	11 1 57	4045.77	-4.92	163.36	22.58	62.08	12 9 23	3445.8	-8.62	156.63
100.00	18 47 29	2482.07	-29.49	58.33	27.71	95.14	19 28 51	1882.1	-28.46	49.68
100.00	12 10 4	3825.99	-3.74	146.55	21.03	60.32	13 13 50	3226.0	-7.66	139.96
110.00	20 23 58	2180.17	-32.86	34.88	27.19	99.98	21 0 18	1580.2	-31.14	26.08
110.00	12 50 3	3700.65	-.85	135.25	20.12	55.83	13 51 44	3100.7	-5.33	129.03

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2440 TRA 2.4304 TC3-8.1528 BAU 1.2902 SGT 7081.5 SGR 1065.1 SG3 3185.8 ST 1374.4 SR 606.7 SS 2312.4
RDE .3557 RRA -.2135 RC3 1.1638 FAU .53068 RRT -.8411 RRF -.8585 RTF .9937 CRT -.4748 CRS .6924 CST -.9635
FDE-2.8817 FRA13.9008 FC-39.2058 BSP 24280 SGB 7161.1 R23 .0318 R13 -.9941 LSA 2700.1 MSA 559.6 SSA 24.2
BDE .4313 BRA 2.4397 BC3 8.2355 FSP 10980 SG1 7138.3 SG2 571.6 THA 172.74 EL1 1409.2 EL2 520.8 ALF 166.25

LAUNCH DATE OCT 28 1964 FLIGHT TIME 340.00 ARRIVAL DATE OCT 3 1965

HELIOCENTRIC CONIC DISTANCE 766.657 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 32.748 GAL -4.33 AZL 88.53 HCA 236.11 SMA 185.98 ECC .21408 INC 1.4747 V1 29.982
RP 217.27 LAP -1.22 LOP 270.71 VP 22.541 GAP -7.72 AZP 90.82 TAL 335.03 TAP 211.14 RCA 146.16 APO 225.79 V2 25.287
RC 282.167 GL 14.13 GP 4.15 ZAL 125.73 ZAP 71.16 ETS 180.71 ZAE 102.63 ETE 177.71 ZAC 88.02 ETC 258.18 CLP 71.11

PLANETOCENTRIC CONIC

C3 11.855 VHL 3.443 DLA 20.21 RAL 168.74 RAD 6567.5 VEL 11.543 PTH 2.01 VHP 3.040 DPA 12.51 RAP 165.59 ECC 1.1951

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 16 23	2783.57	-28.13	80.63	28.44	93.41	18 2 47	2183.6	-27.36	72.04
90.00	11 2 14	4054.11	-4.65	163.83	23.15	62.04	12 9 49	3454.1	-8.36	157.11
100.00	18 50 48	2479.15	-29.47	58.12	28.32	95.26	19 32 7	1879.2	-28.43	49.47
100.00	12 10 31	3833.76	-3.48	146.98	22.50	60.29	13 14 25	3233.8	-7.41	140.40
110.00	20 26 58	2178.27	-32.84	34.73	27.79	100.06	21 3 16	1578.3	-31.10	25.94
110.00	12 50 50	3707.40	-.59	135.60	20.70	55.82	13 52 38	3107.4	-5.07	129.38

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2836 TRA 2.5898 TC3-8.4354 BAU 1.3488 SGT 7420.0 SGR 1048.2 SG3 3104.9 ST 1466.8 SR 611.5 SS 2307.4
RDE .3613 RRA -.2048 RC3 1.1299 FAU .51813 RRT -.8320 RRF -.8496 RTF .9942 CRT -.4883 CRS .6941 CST -.9669
FDE-2.9152 FRA13.6850 FC-37.8391 BSP 25414 SGB 7493.6 R23 .0313 R13 -.9945 LSA 2744.4 MSA 562.8 SSA 23.7
BDE .4593 BRA 2.5979 BC3 8.5108 FSP 10682 SG1 7471.3 SG2 577.5 THA 173.26 EL1 1501.1 EL2 521.4 ALF 166.88

LAUNCH DATE OCT 28 1964 FLIGHT TIME 342.00 ARRIVAL DATE OCT 5 1965

HELIOCENTRIC CONIC DISTANCE 770.766 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 32.749 GAL -4.39 AZL 88.51 HCA 237.26 SMA 186.00 ECC .21452 INC 1.4881 V1 29.982
RP 216.91 LAP -1.25 LOP 271.86 VP 22.586 GAP -7.90 AZP 90.81 TAL 334.71 TAP 211.97 RCA 146.10 APO 225.90 V2 25.327
RC 283.431 GL 14.17 GP 4.05 ZAL 126.19 ZAP 69.46 ETS 180.83 ZAE 100.68 ETE 177.93 ZAC 87.82 ETC 258.25 CLP 69.41

PLANETOCENTRIC CONIC

C3 12.000 VHL 3.464 DLA 20.06 RAL 169.23 RAD 6567.5 VEL 11.549 PTH 2.02 VHP 3.079 DPA 12.64 RAP 165.03 ECC 1.1975

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 20 6	2779.60	-28.11	80.34	29.06	93.55	18 6 26	2179.6	-27.32	71.76
90.00	11 2 24	4063.22	-4.36	164.34	23.74	61.99	12 10 8	3463.2	-8.08	157.63
100.00	18 54 19	2475.80	-29.45	57.87	28.94	95.38	19 35 35	1875.8	-28.39	49.23
100.00	12 10 53	3842.25	-3.19	147.45	23.09	60.26	13 14 55	3242.3	-7.12	140.87
110.00	20 30 8	2176.03	-32.81	34.57	28.40	100.16	21 6 24	1576.0	-31.07	25.78
110.00	12 51 33	3714.79	-.31	135.99	21.30	55.82	13 53 28	3114.8	-4.79	129.77

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.3252 TRA 2.7511 TC3-8.6985 BAU 1.4066 SGT 7750.8 SGR 1031.5 SG3 3020.8 ST 1560.1 SR 616.0 SS 2301.3
RDE .3669 RRA -.1962 RC3 1.0958 FAU .50490 RRT -.8225 RRF -.8403 RTF .9946 CRT -.5006 CRS .6960 CST -.9698
FDE-2.9442 FRA13.4616 FC-36.4246 BSP 26511 SGB 7819.1 R23 .0309 R13 -.9949 LSA 2790.9 MSA 565.4 SSA 23.2
BDE .4902 BRA 2.7581 BC3 8.7672 FSP 10378 SG1 7797.3 SG2 583.2 THA 173.72 EL1 1594.0 EL2 521.9 ALF 167.45

LAUNCH DATE OCT 28 1964 FLIGHT TIME 344.00 ARRIVAL DATE OCT 7 1965

HELIOCENTRIC CONIC DISTANCE 774.881 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 32.751 GAL -4.45 AZL 88.50 HCA 238.42 SMA 186.02 ECC .21800 INC 1.5013 V1 29.982
RP 216.57 LAP -1.28 LOP 273.02 VP 22.632 GAP -8.09 AZP 90.79 TAL 334.37 TAP 212.79 RCA 146.03 APO 226.01 V2 25.365
RC 284.679 GL 14.20 GP 3.96 ZAL 126.68 ZAP 67.80 ETS 180.94 ZAE 98.77 ETE 178.13 ZAC 87.63 ETC 258.32 CLP 67.74

PLANETOCENTRIC CONIC

C3 12.156 VHL 3.487 DLA 19.89 RAL 169.73 RAD 6567.5 VEL 11.556 PTH 2.02 VHP 3.120 DPA 12.75 RAP 164.51 ECC 1.2001

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 24 2	2775.17	-28.09	80.01	29.70	93.71	18 10 17	2175.2	-27.28	71.44
90.00	11 2 28	4073.10	-4.05	164.89	24.35	61.95	12 10 21	3473.1	-7.77	158.19
100.00	18 58 2	2472.04	-29.42	57.59	29.58	95.53	19 39 14	1872.0	-28.35	48.95
100.00	12 11 9	3851.46	-2.88	147.96	23.71	60.23	13 15 20	3251.5	-6.82	141.38
110.00	20 33 28	2173.48	-32.78	34.37	29.04	100.27	21 9 42	1573.5	-31.02	25.60
110.00	12 52 12	3722.78	-.00	136.40	21.91	55.82	13 54 15	3122.8	-4.49	130.19

DIFFERENTIAL CORRECTIONS
TDE -.3679 TRA 2.9154 TC3-8.9369 BAU 1.4626
RDE .3723 RRA -.1879 RC3 1.0609 FAU .49077
FDE-2.9641 FRA13.2324 FC-34.9513 BSP 27620
BDE .5235 BRA 2.9214 BC3 8.9996 FSP 10082

MID-COURSE EXECUTION ACCURACY
SGT 8072.0 SGR 1014.6 SG3 2933.1
RRT -.8123 RRF -.8304 RTF .9949
SGB 8135.5 R23 .0307 R13 -.9952
SG1 8114.2 SG2 588.7 THA 174.14

ORBIT DETERMINATION ACCURACY
ST 1654.2 SR 620.1 SS 2293.3
CRT -.5114 CRS .6974 CST -.9723
LSA 2838.6 MSA 567.8 SSA 22.7
EL1 1687.7 EL2 522.4 ALF 167.98

LAUNCH DATE OCT 28 1964 FLIGHT TIME 346.00 ARRIVAL DATE OCT 9 1965

HELIOCENTRIC CONIC DISTANCE 779.001 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 32.752 GAL -4.52 AZL 88.49 HCA 239.57 SMA 186.05 ECC .21551 INC 1.5142 V1 29.982
RP 216.22 LAP -1.31 LOP 274.17 VP 22.677 GAP -8.27 AZP 90.77 TAL 334.02 TAP 213.59 RCA 145.95 APO 226.14 V2 25.404
RC 285.910 GL 14.23 GP 3.86 ZAL 127.18 ZAP 66.18 ETS 181.04 ZAE 96.89 ETE 178.32 ZAC 87.45 ETC 258.39 CLP 66.12

PLANETOCENTRIC CONIC

C3 12.323 VHL 3.510 DLA 19.70 RAL 170.24 RAD 6567.5 VEL 11.563 PTH 2.02 VHP 3.163 DPA 12.85 RAP 164.04 ECC 1.2028

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 28 10	2770.33	-28.07	79.66	30.37	93.89	18 14 20	2170.3	-27.24	71.10
90.00	11 2 25	4083.70	-3.71	165.49	24.98	61.91	12 10 29	3483.7	-7.44	158.79
100.00	19 1 57	2467.90	-29.40	57.29	30.24	95.69	19 43 5	1867.9	-28.30	48.66
100.00	12 11 19	3861.36	-2.54	148.50	24.34	60.21	13 15 41	3261.4	-6.49	141.94
110.00	20 36 58	2170.64	-32.75	34.16	29.69	100.39	21 13 8	1570.6	-30.97	25.39
110.00	12 52 48	3731.39	.33	136.85	22.54	55.82	13 54 59	3131.4	-4.16	130.64

DIFFERENTIAL CORRECTIONS
TDE -.4132 TRA 3.0808 TC3-9.1564 BAU 1.5179
RDE .3780 RRA -.1796 RC3 1.0266 FAU .47641
FDE-2.9847 FRA12.9941 FC-33.4706 BSP 28675
BDE .5600 BRA 3.0861 BC3 9.2137 FSP 9774

MID-COURSE EXECUTION ACCURACY
SGT 8385.0 SGR 998.5 SG3 2843.9
RRT -.8017 RRF -.8202 RTF .9952
SGB 8444.2 R23 .0306 R13 -.9954
SG1 8423.3 SG2 594.1 THA 174.52

ORBIT DETERMINATION ACCURACY
ST 1749.1 SR 624.3 SS 2285.2
CRT -.5218 CRS .6996 CST -.9744
LSA 2889.0 MSA 569.7 SSA 22.3
EL1 1782.1 EL2 522.7 ALF 168.44

LAUNCH DATE OCT 28 1964 FLIGHT TIME 348.00 ARRIVAL DATE OCT 11 1965

HELIOCENTRIC CONIC DISTANCE 783.127 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 32.754 GAL -4.59 AZL 88.47 HCA 240.74 SMA 186.08 ECC .21607 INC 1.5268 V1 29.982
RP 215.88 LAP -1.33 LOP 275.33 VP 22.722 GAP -8.45 AZP 90.75 TAL 333.65 TAP 214.39 RCA 145.87 APO 226.28 V2 25.442
RC 287.127 GL 14.24 GP 3.77 ZAL 127.70 ZAP 64.60 ETS 181.14 ZAE 95.06 ETE 178.50 ZAC 87.28 ETC 258.45 CLP 64.54

PLANETOCENTRIC CONIC

C3 12.500 VHL 3.536 DLA 19.50 RAL 170.76 RAD 6567.5 VEL 11.571 PTH 2.02 VHP 3.210 DPA 12.93 RAP 163.61 ECC 1.2057

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 32 29	2765.09	-28.05	79.28	31.05	94.08	18 18 34	2165.1	-27.18	70.72
90.00	11 2 17	4095.02	-3.35	166.12	25.63	61.87	12 10 32	3495.0	-7.08	159.43
100.00	19 6 2	2463.41	-29.37	56.96	30.91	95.86	19 47 5	1863.4	-28.24	48.33
100.00	12 11 25	3871.93	-2.19	149.08	24.98	60.18	13 15 57	3271.9	-6.14	142.52
110.00	20 40 37	2167.52	-32.71	33.92	30.35	100.53	21 16 44	1567.5	-30.91	25.16
110.00	12 53 19	3740.58	.68	137.33	23.19	55.82	13 55 40	3140.6	-3.81	131.12

DIFFERENTIAL CORRECTIONS
TDE -.4608 TRA 3.2486 TC3-9.3539 BAU 1.5719
RDE .3836 RRA -.1714 RC3 .9925 FAU .46168
FDE-3.0019 FRA12.7482 FC-31.9754 BSP 29715
BDE .5996 BRA 3.2531 BC3 9.4064 FSP 9468

MID-COURSE EXECUTION ACCURACY
SGT 8689.0 SGR 982.8 SG3 2752.9
RRT -.7907 RRF -.8096 RTF .9954
SGB 8744.4 R23 .0306 R13 -.9956
SG1 8723.8 SG2 599.3 THA 174.87

ORBIT DETERMINATION ACCURACY
ST 1845.1 SR 628.3 SS 2275.9
CRT -.5318 CRS .7020 CST -.9763
LSA 2941.4 MSA 571.2 SSA 21.8
EL1 1877.7 EL2 522.8 ALF 168.86

LAUNCH DATE OCT 28 1964 FLIGHT TIME 350.00 ARRIVAL DATE OCT 13 1965

HELIOCENTRIC CONIC DISTANCE 787.257 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 32.756 GAL -4.67 AZL 88.46 HCA 241.90 SMA 186.11 ECC .21666 INC 1.5392 V1 29.982
RP 215.54 LAP -1.36 LOP 276.50 VP 22.767 GAP -8.62 AZP 90.73 TAL 333.27 TAP 215.17 RCA 145.79 APO 226.43 V2 25.480
RC 288.329 GL 14.25 GP 3.67 ZAL 128.23 ZAP 63.06 ETS 181.23 ZAE 93.26 ETE 178.67 ZAC 87.11 ETC 258.50 CLP 63.00

PLANETOCENTRIC CONIC

C3 12.689 VHL 3.562 DLA 19.29 RAL 171.30 RAD 6567.5 VEL 11.579 PTH 2.02 VHP 3.258 DPA 12.99 RAP 163.22 ECC 1.2088

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 36 59	2759.49	-28.02	78.87	31.74	94.28	18 22 58	2159.5	-27.13	70.32
90.00	11 2 3	4107.02	-2.96	166.79	26.29	61.83	12 10 30	3507.0	-6.70	160.11
100.00	19 10 1[illegible]	2458.58	-29.33	56.60	31.61	96.04	19 51 16	1858.6	-28.18	47.99
100.00	12 11 25	3883.15	-1.81	149.70	25.65	60.16	13 16 8	3283.2	-5.76	143.15
110.00	20 44 24	2164.14	-32.67	33.67	31.04	100.67	21 20 28	1564.1	-30.85	24.92
110.00	12 53 48	3750.36	1.05	137.84	23.86	55.83	13 56 18	3150.4	-3.44	131.63

DIFFERENTIAL CORRECTIONS
TDE -.5102 TRA 3.4183 TC3-9.5306 BAU 1.6249
RDE .3894 RRA -.1635 RC3 .9590 FAU .44682
FDE-3.0162 FRA12.4978 FC-30.4861 BSP 30729
BDE .6418 BRA 3.4222 BC3 9.5788 FSP 9161

MID-COURSE EXECUTION ACCURACY
SGT 8983.7 SGR 967.8 SG3 2661.4
RRT -.7793 RRF -.7987 RTF .9956
SGB 9035.7 R23 .0308 R13 -.9958
SG1 9015.5 SG2 604.3 THA 175.18

ORBIT DETERMINATION ACCURACY
ST 1941.4 SR 632.1 SS 2265.8
CRT -.5412 CRS .7047 CST -.9779
LSA 2995.7 MSA 572.5 SSA 21.4
EL1 1973.6 EL2 522.9 ALF 169.24

LAUNCH DATE OCT 28 1964 FLIGHT TIME 352.00 ARRIVAL DATE OCT 15 1965

HELIOCENTRIC CONIC DISTANCE 791.390 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 32.758 GAL -4.75 AZL 88.45 HCA 243.07 SMA 186.14 ECC .21729 INC 1.5514 V1 29.982
RP 215.21 LAP -1.38 LOP 277.67 VP 22.812 GAP -8.80 AZP 90.70 TAL 332.88 TAP 215.95 RCA 145.70 APO 226.59 V2 25.517
RC 289.516 GL 14.25 GP 3.58 ZAL 128.79 ZAP 61.57 ETS 181.31 ZAE 91.51 ETE 178.83 ZAC 86.97 ETC 258.55 CLP 61.51

PLANETOCENTRIC CONIC

C3 12.889 VHL 3.590 DLA 19.06 RAL 171.84 RAD 6567.5 VEL 11.588 PTH 2.03 VHP 3.309 DPA 13.03 RAP 162.88 ECC 1.2121

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 41 40	2753.53	-27.99	78.44	32.46	94.50	18 27 33	2153.5	-27.07	69.89
90.00	11 1 44	4119.72	-2.55	167.50	26.97	61.79	12 10 23	3519.7	-6.30	160.83
100.00	19 14 43	2453.44	-29.29	56.22	32.32	96.24	19 55 37	1853.4	-28.12	47.62
100.00	12 11 21	3895.04	-1.40	150.35	26.33	60.14	13 16 16	3295.0	-5.37	143.80
110.00	20 48 21	2160.50	-32.62	33.40	31.74	100.83	21 24 21	1560.5	-30.79	24.66
110.00	12 54 13	3760.74	1.45	138.38	24.55	55.84	13 56 54	3160.7	-3.04	132.18

DIFFERENTIAL CORRECTIONS
TDE -.5502 TRA 3.6035 TC3-9.6506 BAU 1.6706
RDE .3938 RRA -.1569 RC3 .9218 FAU .42908
FDE-2.9706 FRA12.2951 FC-28.8198 BSP 32021
BDE .6767 BRA 3.6069 BC3 9.6945 FSP 8963

MID-COURSE EXECUTION ACCURACY
SGT 9263.2 SGR 950.4 SG3 2565.5
RRT -.7667 RRF -.7858 RTF .9957
SGB 9311.9 R23 .0297 R13 -.9959
SG1 9292.0 SG2 608.3 THA 175.48

ORBIT DETERMINATION ACCURACY
ST 2036.2 SR 633.8 SS 2244.9
CRT -.5432 CRS .7007 CST -.9795
LSA 3042.6 MSA 573.7 SSA 21.3
EL1 2067.1 EL2 524.2 ALF 169.73

LAUNCH DATE OCT 28 1964 FLIGHT TIME 354.00 ARRIVAL DATE OCT 17 1965

HELIOCENTRIC CONIC DISTANCE 795.532 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 32.760 GAL -4.83 AZL 88.44 HCA 244.24 SMA 186.18 ECC .21796 INC 1.5633 V1 29.982
RP 214.88 LAP -1.41 LOP 278.84 VP 22.856 GAP -8.97 AZP 90.68 TAL 332.47 TAP 216.71 RCA 145.60 APO 226.76 V2 25.554
RC 290.691 GL 14.24 GP 3.50 ZAL 129.35 ZAP 60.12 ETS 181.39 ZAE 89.79 ETE 178.97 ZAC 86.83 ETC 258.59 CLP 60.05

PLANETOCENTRIC CONIC

C3 13.102 VHL 3.620 DLA 18.81 RAL 172.40 RAD 6567.5 VEL 11.597 PTH 2.03 VHP 3.363 DPA 13.06 RAP 162.57 ECC 1.2156

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 46 29	2747.31	-27.95	77.99	33.19	94.72	18 32 16	2147.3	-27.00	69.45
90.00	11 1 20	4133.00	-2.12	168.24	27.67	61.76	12 10 13	3533.0	-5.88	161.58
100.00	19 19 17	2448.05	-29.25	55.83	33.04	96.44	20 0 5	1848.1	-28.05	47.23
100.00	12 11 13	3907.49	-.98	151.03	27.04	60.12	13 16 21	3307.5	-4.95	144.49
110.00	20 52 24	2156.68	-32.57	33.11	32.45	100.99	21 28 21	1556.7	-30.72	24.38
110.00	12 54 35	3771.62	1.87	138.95	25.26	55.86	13 57 26	3171.6	-2.63	132.75

DIFFERENTIAL CORRECTIONS
TDE -.6174 TRA 3.7642 TC3-9.8220 BAU 1.7276
RDE .4012 RRA -.1480 RC3 .8940 FAU .41689
FDE-3.0399 FRA11.9834 FC-27.5456 BSP 32662
BDE .7363 BRA 3.7671 BC3 9.8626 FSP 8542

MID-COURSE EXECUTION ACCURACY
SGT 9546.6 SGR 939.9 SG3 2477.7
RRT -.7557 RRF -.7763 RTF .9959
SGB 9592.7 R23 .0314 R13 -.9960
SG1 9573.1 SG2 613.8 THA 175.73

ORBIT DETERMINATION ACCURACY
ST 2136.9 SR 639.6 SS 2243.9
CRT -.5597 CRS .7112 CST -.9805
LSA 3111.5 MSA 573.6 SSA 20.6
EL1 2168.6 EL2 522.3 ALF 169.90

LAUNCH DATE OCT 28 1964 FLIGHT TIME 356.00 ARRIVAL DATE OCT 19 1965

HELIOCENTRIC CONIC DISTANCE 799.676 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 32.762 GAL -4.91 AZL 88.42 HCA 245.42 SMA 186.22 ECC .21867 INC 1.5750 V1 29.982
RP 214.56 LAP -1.43 LOP 280.02 VP 22.900 GAP -9.14 AZP 90.66 TAL 332.04 TAP 217.46 RCA 145.50 APO 226.94 V2 25.590
RC 291.851 GL 14.23 GP 3.41 ZAL 129.94 ZAP 58.70 ETS 181.46 ZAE 88.11 ETE 179.11 ZAC 86.70 ETC 258.62 CLP 58.64

PLANETOCENTRIC CONIC

C3 13.329 VHL 3.651 DLA 18.56 RAL 172.96 RAD 6567.5 VEL 11.607 PTH 2.03 VHP 3.418 DPA 13.08 RAP 162.32 ECC 1.2194

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 51 27	2740.80	-27.92	77.51	33.94	94.95	18 37 8	2140.8	-26.94	68.99
90.00	11 0 52	4146.93	-1.67	169.02	28.39	61.73	12 9 59	3546.9	-5.44	162.37
100.00	19 24 0	2442.39	-29.21	55.41	33.79	96.66	20 4 42	1842.4	-27.98	46.83
100.00	12 11 1	3920.57	-.54	151.75	27.76	60.11	13 16 22	3320.6	-4.51	145.22
110.00	20 56 36	2152.64	-32.52	32.80	33.18	101.16	21 32 29	1552.6	-30.64	24.09
110.00	12 54 54	3783.08	2.30	139.55	25.98	55.89	13 57 57	3183.1	-2.19	133.34

DIFFERENTIAL CORRECTIONS
TDE -.6744 TRA 3.9413 TC3-9.9350 BAU 1.7770
RDE .4072 RRA -.1407 RC3 .8626 FAU .40186
FDE-3.0472 FRA11.7236 FC-26.1016 BSP 33594
BDE .7878 BRA 3.9438 BC3 9.9724 FSP 8238

MID-COURSE EXECUTION ACCURACY
SGT 9814.0 SGR 927.0 SG3 2386.2
RRT -.7436 RRF -.7648 RTF .9959
SGB 9857.7 R23 .0318 R13 -.9961
SG1 9838.2 SG2 618.3 THA 175.97

ORBIT DETERMINATION ACCURACY
ST 2235.8 SR 643.1 SS 2231.7
CRT -.5683 CRS .7148 CST -.9815
LSA 3172.2 MSA 573.8 SSA 20.2
EL1 2267.1 EL2 521.8 ALF 170.19

LAUNCH DATE OCT 28 1964 FLIGHT TIME 358.00 ARRIVAL DATE OCT 21 1965

HELIOCENTRIC CONIC DISTANCE 803.824 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 32.765 GAL -5.00 AZL 88.41 HCA 246.60 SMA 186.27 ECC .21942 INC 1.5866 V1 29.982
RP 214.24 LAP -1.46 LOP 281.20 VP 22.944 GAP -9.31 AZP 90.63 TAL 331.60 TAP 218.20 RCA 145.40 APO 227.14 V2 25.626
RC 292.998 GL 14.20 GP 3.33 ZAL 130.54 ZAP 57.33 ETS 181.53 ZAE 86.47 ETE 179.24 ZAC 86.58 ETC 258.65 CLP 57.27

PLANETOCENTRIC CONIC

C3 13.569 VHL 3.684 DLA 18.29 RAL 173.54 RAD 6567.5 VEL 11.617 PTH 2.04 VHP 3.476 DPA 13.08 RAP 162.10 ECC 1.2233

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 56 35	2734.03	-27.87	77.02	34.70	95.20	18 42 9	2134.0	-26.86	68.50
90.00	11 0 20	4161.47	-1.21	169.83	29.13	61.71	12 9 42	3561.5	-4.98	163.18
100.00	19 28 51	2436.51	-29.16	54.98	34.55	96.88	20 9 27	1836.5	-27.90	46.41
100.00	12 10 45	3934.23	-.07	152.50	28.50	60.11	13 16 20	3334.2	-4.05	145.97
110.00	21 0 55	2148.42	-32.46	32.49	33.93	101.34	21 36 44	1548.4	-30.56	23.79
110.00	12 55 10	3795.08	2.76	140.18	26.73	55.92	13 58 25	3195.1	-1.73	133.97

DIFFERENTIAL CORRECTIONS
TDE -.7341 TRA 4.1213 TC-10.0278 BAU 1.8254
RDE .4133 RRA -.1337 RC3 .8319 FAU .38685
FDE-3.0522 FRA11.4648 FC-24.6816 BSP 34497
BDE .8424 BRA 4.1234 BC310.0623 FSP 7936

MID-COURSE EXECUTION ACCURACY
SGT10072.8 SGR 914.8 SG3 2295.5
RRT -.7314 RRF -.7533 RTF .9960
SGB10114.3 R23 .0322 R13 -.9961
SG110095.1 SG2 622.4 THA 176.18

ORBIT DETERMINATION ACCURACY
ST 2335.5 SR 646.5 SS 2219.0
CRT -.5769 CRS .7186 CST -.9825
LSA 3235.3 MSA 573.6 SSA 19.9
EL1 2366.7 EL2 521.1 ALF 170.46

LAUNCH DATE OCT 28 1964 FLIGHT TIME 360.00 ARRIVAL DATE OCT 23 1965

HELIOCENTRIC CONIC DISTANCE 807.976 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 32.768 GAL -5.09 AZL 88.40 HCA 247.78 SMA 186.31 ECC .22022 INC 1.5980 V1 29.982
RP 213.93 LAP -1.48 LOP 282.38 VP 22.988 GAP -9.48 AZP 90.60 TAL 331.15 TAP 218.93 RCA 145.28 APO 227.34 V2 25.662
RC 294.131 GL 14.17 GP 3.25 ZAL 131.15 ZAP 56.00 ETS 181.59 ZAE 84.87 ETE 179.37 ZAC 86.47 ETC 258.67 CLP 55.94

PLANETOCENTRIC CONIC

C3 13.824 VHL 3.718 DLA 18.00 RAL 174.12 RAD 6567.5 VEL 11.628 PTH 2.04 VHP 3.537 DPA 13.06 RAP 161.93 ECC 1.2275

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 1 50	2727.06	-27.83	76.52	35.48	95.45	18 47 17	2127.1	-26.78	68.01
90.00	10 59 45	4176.58	-.72	170.67	29.88	61.69	12 9 21	3576.6	-4.50	164.03
100.00	19 33 49	2430.42	-29.11	54.54	35.32	97.11	20 14 20	1830.4	-27.82	45.97
100.00	12 10 26	3948.45	.41	153.28	29.26	60.11	13 16 15	3348.5	-3.57	146.75
110.00	21 5 21	2144.04	-32.40	32.16	34.69	101.53	21 41 5	1544.0	-30.48	23.47
110.00	12 55 24	3807.60	3.24	140.83	27.49	55.95	13 58 51	3207.6	-1.25	134.62

DIFFERENTIAL CORRECTIONS
TDE -.7971 TRA 4.3032 TC-10.1041 BAU 1.8733
RDE .4197 RRA -.1268 RC3 .8025 FAU .37225
FDE-3.0573 FRA11.2019 FC-23.3121 BSP 35357
BDE .9008 BRA 4.3050 BC310.1359 FSP 7636

MID-COURSE EXECUTION ACCURACY
SGT10323.7 SGR 903.6 SG3 2206.4
RRT -.7193 RRF -.7419 RTF .9960
SGB10363.2 R23 .0328 R13 -.9962
SG110344.2 SG2 626.5 THA 176.38

ORBIT DETERMINATION ACCURACY
ST 2436.2 SR 649.9 SS 2205.9
CRT -.5857 CRS .7229 CST -.9833
LSA 3300.7 MSA 573.1 SSA 19.5
EL1 2467.1 EL2 520.1 ALF 170.70

LAUNCH DATE OCT 28 1964 FLIGHT TIME 362.00 ARRIVAL DATE OCT 25 1965

HELIOCENTRIC CONIC DISTANCE 812.131 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 32.771 GAL -5.19 AZL 88.39 HCA 248.97 SMA 186.36 ECC .22105 INC 1.6093 V1 29.982
RP 213.62 LAP -1.50 LOP 283.57 VP 23.031 GAP -9.65 AZP 90.58 TAL 330.68 TAP 219.64 RCA 145.17 APO 227.56 V2 25.697
RC 295.251 GL 14.13 GP 3.17 ZAL 131.78 ZAP 54.71 ETS 181.64 ZAE 83.30 ETE 179.48 ZAC 86.38 ETC 258.68 CLP 54.64

PLANETOCENTRIC CONIC

C3 14.094 VHL 3.754 DLA 17.71 RAL 174.71 RAD 6567.6 VEL 11.640 PTH 2.04 VHP 3.599 DPA 13.03 RAP 161.80 ECC 1.2320

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 7 13	2719.89	-27.78	76.00	36.28	95.70	18 52 33	2119.9	-26.70	67.50
90.00	10 59 6	4192.25	-.21	171.55	30.66	61.68	12 8 58	3592.3	-4.00	164.91
100.00	19 38 55	2424.15	-29.06	54.08	36.12	97.34	20 19 19	1824.2	-27.74	45.53
100.00	12 10 4	3963.23	.91	154.09	30.04	60.12	13 16 7	3363.2	-3.07	147.57
110.00	21 9 54	2139.51	-32.34	31.82	35.48	101.72	21 45 33	1539.5	-30.39	23.15
110.00	12 55 35	3820.63	3.74	141.51	28.27	56.00	13 59 15	3220.6	-.75	135.30

DIFFERENTIAL CORRECTIONS
TDE -.8617 TRA 4.4896 TC-10.1568 BAU 1.9194
RDE .4260 RRA -.1203 RC3 .7737 FAU .35756
FDE-3.0563 FRA10.9428 FC-21.9626 BSP 36221
BDE .9612 BRA 4.4912 BC310.1862 FSP 7348

MID-COURSE EXECUTION ACCURACY
SGT10565.1 SGR 893.0 SG3 2118.2
RRT -.7071 RRF -.7305 RTF .9960
SGB10602.8 R23 .0334 R13 -.9962
SG110584.1 SG2 630.3 THA 176.57

ORBIT DETERMINATION ACCURACY
ST 2537.2 SR 653.0 SS 2191.3
CRT -.5938 CRS .7270 CST -.9841
LSA 3367.2 MSA 572.5 SSA 19.2
EL1 2568.0 EL2 519.1 ALF 170.94

LAUNCH DATE OCT 28 1964 FLIGHT TIME 364.00 ARRIVAL DATE OCT 27 1965

HELIOCENTRIC CONIC DISTANCE 816.289 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 32.774 GAL -5.29 AZL 88.38 HCA 250.16 SMA 186.41 ECC .22194 INC 1.6203 V1 29.982
RP 213.31 LAP -1.52 LOP 284.76 VP 23.073 GAP -9.81 AZP 90.55 TAL 330.19 TAP 220.35 RCA 145.04 APO 227.79 V2 25.731
RC 296.356 GL 14.08 GP 3.09 ZAL 132.42 ZAP 53.45 ETS 181.70 ZAE 81.78 ETE 179.59 ZAC 86.29 ETC 258.69 CLP 53.39

PLANETOCENTRIC CONIC

C3 14.381 VHL 3.792 DLA 17.40 RAL 175.31 RAD 6567.6 VEL 11.652 PTH 2.05 VHP 3.663 DPA 12.99 RAP 161.71 ECC 1.2367

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 12 42	2712.56	-27.73	75.47	37.10	95.96	18 57 55	2112.6	-26.62	66.98
90.00	10 58 23	4208.46	.31	172.45	31.46	61.68	12 8 32	3608.5	-3.48	165.82
100.00	19 44 8	2417.73	-29.00	53.61	36.93	97.58	20 24 25	1817.7	-27.65	45.07
100.00	12 9 39	3978.53	1.43	154.93	30.84	60.14	13 15 57	3378.5	-2.56	148.41
110.00	21 14 32	2134.86	-32.28	31.47	36.27	101.92	21 50 7	1534.9	-30.30	22.82
110.00	12 55 44	3834.16	4.25	142.22	29.08	56.05	13 59 38	3234.2	-.24	136.01

DIFFERENTIAL CORRECTIONS
TDE -.9296 TRA 4.6782 TC-10.1947 BAU 1.9652
RDE .4326 RRA -.1140 RC3 .7461 FAU .34328
FDE-3.0549 FRA10.6827 FC-20.6659 BSP 37035
BDE 1.0253 BRA 4.6796 BC310.2219 FSP 7059

MID-COURSE EXECUTION ACCURACY
SGT10799.3 SGR 883.2 SG3 2031.9
RRT -.6952 RRF -.7193 RTF .9960
SGB10835.3 R23 .0340 R13 -.9961
SG110816.8 SG2 633.8 THA 176.73

ORBIT DETERMINATION ACCURACY
ST 2639.0 SR 656.1 SS 2176.3
CRT -.6020 CRS .7315 CST -.9847
LSA 3435.7 MSA 571.5 SSA 18.9
EL1 2669.6 EL2 517.9 ALF 171.15

LAUNCH DATE OCT 28 1964 FLIGHT TIME 366.00 ARRIVAL DATE OCT 29 1965

HELIOCENTRIC CONIC DISTANCE 820.450 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 32.777 GAL -5.39 AZL 88.37 HCA 251.35 SMA 186.47 ECC .22286 INC 1.6313 V1 29.982
RP 213.01 LAP -1.55 LOP 285.95 VP 23.116 GAP -9.98 AZP 90.52 TAL 329.69 TAP 221.04 RCA 144.91 APO 228.02 V2 25.765
RC 297.448 GL 14.03 GP 3.02 ZAL 133.08 ZAP 52.23 ETS 181.74 ZAE 80.28 ETE 179.69 ZAC 86.22 ETC 258.69 CLP 52.17

PLANETOCENTRIC CONIC

C3 14.684 VHL 3.832 DLA 17.08 RAL 175.92 RAD 6567.6 VEL 11.665 PTH 2.05 VHP 3.730 DPA 12.93 RAP 161.65 ECC 1.2417

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 18 18	2705.10	-27.68	74.93	37.93	96.23	19 3 23	2105.1	-26.53	66.45
90.00	10 57 39	4225.20	.85	173.39	32.27	61.69	12 8 4	3625.2	-2.94	166.76
100.00	19 49 26	2411.18	-28.94	53.13	37.75	97.83	20 29 37	1811.2	-27.56	44.60
100.00	12 9 11	3994.35	1.96	155.80	31.65	60.17	13 15 45	3394.3	-2.02	149.28
110.00	21 19 16	2130.11	-32.21	31.12	37.09	102.12	21 54 46	1530.1	-30.21	22.48
110.00	12 55 50	3848.19	4.78	142.96	29.90	56.11	13 59 59	3248.2	.30	136.74

DIFFERENTIAL CORRECTIONS
TDE-1.0000 TRA 4.8718 TC-10.2110 BAU 2.0095
RDE .4393 RRA -.1082 RC3 .7192 FAU .32910
FDE-3.0498 FRA10.4271 FC-19.4025 BSP 37843
BDE 1.0923 BRA 4.8730 BC310.2363 FSP 6782

MID-COURSE EXECUTION ACCURACY
SGT11024.9 SGR 874.0 SG3 1947.2
RRT -.6834 RRF -.7083 RTF .9960
SGB11059.5 R23 .0347 R13 -.9961
SG111041.1 SG2 637.1 THA 176.89

ORBIT DETERMINATION ACCURACY
ST 2741.8 SR 659.0 SS 2160.3
CRT -.6099 CRS .7359 CST -.9853
LSA 3506.1 MSA 570.2 SSA 18.6
EL1 2772.1 EL2 516.5 ALF 171.36

LAUNCH DATE OCT 28 1964 FLIGHT TIME 3[illegible]8.00 ARRIVAL DATE OCT 31 1965

HELIOCENTRIC CONIC DISTANCE [illegible]4 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 32.780 GAL -5.50 AZL [illegible] 252.55 SMA 186.52 ECC .22384 INC 1.6421 V1 29.982
RP 212.72 LAP -1.57 LOP 287.15 VP 23.158 GAP -10.14 AZP 90.[illegible] TAL 329.17 TAP 221.72 RCA 144.77 APO 228.28 V2 25.798
RC 298.526 GL 13.97 GP 2.95 ZAL 133.74 ZAP 51.05 ETS 181.79 ZAE 78.83 ETE 179.79 ZAC 86.15 ETC 258.69 CLP 50.99

PLANETOCENTRIC CONIC

C3 15.006 VHL 3.874 DLA 16.75 RAL 176.54 RAD 6567.6 VEL 11.679 PTH 2.05 VHP 3.799 DPA 12.86 RAP 161.64 ECC 1.2470

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 23 59	2697.53	-27.62	74.38	38.78	96.50	19 8 57	2097.5	-26.43	65.92
90.00	10 56 51	4242.44	1.41	174.35	33.11	61.72	12 7 34	3642.4	-2.38	167.72
100.00	19 54 50	2404.53	-28.88	52.65	38.60	98.07	20 34 55	1804.5	-27.46	44.13
100.00	12 8 41	4010.67	2.52	156.69	32.49	60.20	13 15 32	3410.7	-1.47	150.17
110.00	21 24 6	2125.27	-32.14	30.76	37.91	102.32	21 59 31	1525.3	-30.11	22.13
110.00	12 55 55	3862.69	5.33	143.72	30.74	56.19	14 0 18	3262.7	.86	137.50

DIFFERENTIAL CORRECTIONS
TDE-1.0725 TRA 5.0693 TC-10.2090 BAU 2.0528
RDE .4461 RRA -.1026 RC3 .6932 FAU .31518
FDE-3.0408 FRA10.1732 FC-18.1836 BSP 38635
BDE 1.1616 BRA 5.0704 BC310.2325 FSP 6512

MID-COURSE EXECUTION ACCURACY
SGT11242.2 SGR 865.4 SG3 1864.3
RRT -.6718 RRF -.6975 RTF .9959
SGB11275.4 R23 .0354 R13 -.9961
SG111257.2 SG2 640.2 THA 177.03

ORBIT DETERMINATION ACCURACY
ST 2844.4 SR 661.7 SS 2143.0
CRT -.6175 CRS .7403 CST -.9858
LSA 3577.3 MSA 568.9 SSA 18.4
EL1 2874.6 EL2 515.0 ALF 171.55

LAUNCH DATE OCT 28 1964 FLIGHT TIME 370.00 ARRIVAL DATE NOV 2 1965

HELIOCENTRIC CONIC DISTANCE 828.779 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 32.783 GAL -5.61 AZL 88.35 HCA 253.75 SMA 186.58 ECC .22486 INC 1.6528 V1 29.982
RP 212.43 LAP -1.59 LOP 288.35 VP 23.199 GAP -10.30 AZP 90.46 TAL 328.64 TAP 222.39 RCA 144.63 APO 228.54 V2 25.831
RC 299.592 GL 13.90 GP 2.88 ZAL 134.42 ZAP 49.91 ETS 181.83 ZAE 77.41 ETE 179.88 ZAC 86.09 ETC 258.68 CLP 49.85

PLANETOCENTRIC CONIC

C3 15.346 VHL 3.917 DLA 16.41 RAL 177.16 RAD 6567.6 VEL 11.693 PTH 2.06 VHP 3.870 DPA 12.77 RAP 161.67 ECC 1.2526

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 29 46	2689.87	-27.56	73.83	39.64	96.77	19 14 36	2089.9	-26.34	65.38
90.00	10 56 1	4260.17	1.98	175.34	33.96	61.75	12 7 2	3660.2	-1.81	168.71
100.00	20 0 20	2397.79	-28.81	52.16	39.45	98.32	20 40 18	1797.8	-27.36	43.66
100.00	12 8 8	4027.47	3.08	157.62	33.35	60.25	13 15 16	3427.5	-.90	151.09
110.00	21 29 0	2120.37	-32.07	30.40	38.76	102.52	22 4 20	1520.4	-30.01	21.79
110.00	12 55 58	3877.66	5.90	144.51	31.60	56.27	14 0 35	3277.7	1.43	138.28

DIFFERENTIAL CORRECTIONS
TDE-1.1489 TRA 5.2698 TC-10.1933 BAU 2.0958
RDE .4531 RRA -.0974 RC3 .6684 FAU .30168
FDE-3.0316 FRA 9.9197 FC-17.0187 BSP 39394
BDE 1.2350 BRA 5.2707 BC310.2152 FSP 6246

MID-COURSE EXECUTION ACCURACY
SGT11452.6 SGR 857.6 SG3 1783.7
RRT -.6806 RRF -.6872 RTF .9959
SGB11484.7 R23 .0362 R13 -.9960
SG111466.7 SG2 643.0 THA 177.16

ORBIT DETERMINATION ACCURACY
ST 2948.1 SR 664.4 SS 2125.2
CRT -.6253 CRS .7451 CST -.9863
LSA 3650.7 MSA 567.1 SSA 18.1
EL1 2978.1 EL2 513.3 ALF 171.73

LAUNCH DATE OCT 28 1964 FLIGHT TIME 372.00 ARRIVAL DATE NOV 4 1965

HELIOCENTRIC CONIC DISTANCE 832.946 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 32.787 GAL -5.72 AZL 88.34 HCA 254.95 SMA 186.64 ECC .22593 INC 1.6634 V1 29.982
RP 212.15 LAP -1.61 LOP 289.55 VP 23.240 GAP -10.46 AZP 90.43 TAL 328.09 TAP 223.04 RCA 144.47 APO 228.81 V2 25.863
RC 300.645 GL 13.83 GP 2.82 ZAL 135.11 ZAP 48.80 ETS 181.86 ZAE 76.02 ETE 179.97 ZAC 86.04 ETC 258.67 CLP 48.74

PLANETOCENTRIC CONIC

C3 15.707 VHL 3.963 DLA 16.06 RAL 177.78 RAD 6567.6 VEL 11.709 PTH 2.06 VHP 3.942 DPA 12.67 RAP 161.73 ECC 1.2585

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 35 37	2682.15	-27.50	73.28	40.52	97.04	19 20 19	2082.2	-26.24	64.83
90.00	10 55 10	4278.36	2.57	176.35	34.84	61.79	12 6 28	3678.4	-1.23	169.72
100.00	20 5 54	2391.00	-28.75	51.67	40.33	98.58	20 45 45	1791.0	-27.26	43.18
100.00	12 7 34	4044.74	3.67	158.57	34.23	60.31	13 14 59	3444.7	-.31	152.04
110.00	21 33 59	2115.42	-32.00	30.03	39.62	102.73	22 9 14	1515.4	-29.91	21.44
110.00	12 55 59	3893.08	6.48	145.32	32.49	56.36	14 0 52	3293.1	2.02	139.08

DIFFERENTIAL CORRECTIONS
TDE-1.2269 TRA 5.4759 TC-10.1584 BAU 2.1374
RDE .4602 RRA -.0925 RC3 .6443 FAU .28838
FDE-3.0168 FRA 9.6713 FC-15.8953 BSP 40150
BDE 1.3104 BRA 5.4767 BC310.1788 FSP 5991

MID-COURSE EXECUTION ACCURACY
SGT11655.1 SGR 850.3 SG3 1705.0
RRT -.6497 RRF -.6771 RTF .9958
SGB11686.1 R23 .0370 R13 -.9959
SG111668.3 SG2 645.6 THA 177.28

ORBIT DETERMINATION ACCURACY
ST 3051.6 SR 666.9 SS 2105.7
CRT -.6325 CRS .7495 CST -.9867
LSA 3724.4 MSA 565.3 SSA 17.9
EL1 3081.4 EL2 511.5 ALF 171.91

LAUNCH DATE OCT 28 1964 FLIGHT TIME 374.00 ARRIVAL DATE NOV 6 1965

HELIOCENTRIC CONIC DISTANCE 837.115 EARTH TO MARS

RL 148.61 LAL -.00 LOL 34.61 VL 32.791 GAL -5.84 AZL 88.33 HCA 256.15 SMA 186.71 ECC .22706 INC 1.6739 V1 29.982
RP 211.87 LAP -1.63 LOP 290.76 VP 23.280 GAP -10.63 AZP 90.40 TAL 327.53 TAP 223.68 RCA 144.31 APO 229.10 V2 25.895
RC 301.687 GL 13.74 GP 2.75 ZAL 135.81 ZAP 47.72 ETS 181.90 ZAE 74.66 ETE 180.05 ZAC 86.00 ETC 258.65 CLP 47.66

PLANETOCENTRIC CONIC

C3 16.088 VHL 4.011 DLA 15.69 RAL 178.42 RAD 6567.6 VEL 11.725 PTH 2.07 VHP 4.017 DPA 12.56 RAP 161.82 ECC 1.2648

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 41 33	2674.40	-27.43	72.72	41.42	97.31	19 26 7	2074.4	-26.14	64.29
90.00	10 54 16	4297.00	3.17	177.39	35.74	61.85	12 5 53	3697.0	-.62	170.76
100.00	20 11 33	2384.17	-28.67	51.17	41.22	98.83	20 51 17	1784.2	-27.16	42.70
100.00	12 6 58	4062.46	4.26	159.55	35.13	60.39	13 14 40	3462.5	.29	153.01
110.00	21 39 2	2110.45	-31.92	29.66	40.50	102.94	22 14 12	1510.4	-29.81	21.08
110.00	12 55 58	3908.95	7.08	146.16	33.39	56.47	14 1 7	3309.0	2.62	139.91

DIFFERENTIAL CORRECTIONS
TDE-1.3085 TRA 5.6861 TC-10.1098 BAU 2.1786
RDE .4676 RRA -.0880 RC3 .6213 FAU .27549
FDE-3.0017 FRA 9.4242 FC-14.8247 BSP 40877
BDE 1.3896 BRA 5.6867 BC310.1289 FSP 5740

MID-COURSE EXECUTION ACCURACY
SGT11851.1 SGR 843.6 SG3 1628.7
RRT -.6394 RRF -.6676 RTF .9957
SGB11881.1 R23 .0378 R13 -.9958
SG111863.4 SG2 648.0 THA 177.39

ORBIT DETERMINATION ACCURACY
ST 3155.8 SR 669.3 SS 2085.8
CRT -.6398 CRS .7543 CST -.9871
LSA 3800.0 MSA 563.3 SSA 17.7
EL1 3185.5 EL2 509.6 ALF 172.07

LAUNCH DATE OCT 28 1964 FLIGHT TIME 376.00 ARRIVAL DATE NOV 8 1965

DISTANCE 841.284

HELIOCENTRIC CONIC

RL 148.61 LAL -.00 LOL 34.61 VL 32.795 GAL -5.96 AZL 88.32 HCA 257.36 SMA 186.77 ECC .22824 INC 1.6844 V1 29.982
RP 211.60 LAP -1.64 LOP 291.97 VP 23.320 GAP -10.79 AZP 90.37 TAL 326.95 TAP 224.31 RCA 144.14 APO 229.40 V2 25.926
RC 302.717 GL 13.46 GP 2.69 ZAL 136.52 ZAP 46.68 ETS 181.93 ZAE 73.33 ETE 180.13 ZAC 85.97 ETC 258.62 CLP 46.62

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 16.492 VHL 4.061 DLA 15.32 RAL 179.05 RAD 6567.7 VEL 11.742 PTH 2.07 VHP 4.094 DPA 12.44 RAP 161.95 ECC 1.2714

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 47 33	2666.64	-27.36	72.16	42.33	97.58	19 31 59	2066.6	-26.03	63.75
90.00	10 53 21	4316.08	3.78	178.46	36.65	61.92	12 5 17	3716.1	-.01	171.83
100.00	20 17 15	2377.33	-28.60	50.67	42.13	99.08	20 56 53	1777.3	-27.05	42.21
100.00	12 6 20	4080.63	4.87	160.55	36.05	60.47	13 14 20	3480.6	.91	154.01
110.00	21 44 9	2105.47	-31.84	29.29	41.39	103.14	22 19 14	1505.5	-29.71	20.73
110.00	12 55 56	3925.25	7.69	147.03	34.31	56.59	14 1 21	3325.3	3.25	140.76

DIFFERENTIAL CORRECTIONS

TDE-1.3922 TRA 5.9016 TC-10.0445 BAU 2.2186
RDE .4751 RRA -.0838 RC3 .5990 FAU .26285
FDE-2.9823 FRA 9.1812 FC-13.7979 BSP 41610
BDE 1.4711 BRA 5.9022 BC310.0624 FSP 5501

MID-COURSE EXECUTION ACCURACY

SGT12039.4 SGR 837.3 SG3 1554.4
RRT -.6294 RRF -.6585 RTF .9956
SGB12068.5 R23 .0387 R13 -.9957
SG112051.0 SG2 650.0 THA 177.49

ORBIT DETERMINATION ACCURACY

ST 3259.7 SR 671.5 SS 2064.2
CRT -.6467 CRS .7589 CST -.9874
LSA 3875.9 MSA 561.1 SSA 17.5
EL1 3289.2 EL2 507.6 ALF 172.23

LAUNCH DATE OCT 28 1964 FLIGHT TIME 378.00 ARRIVAL DATE NOV 10 1965

DISTANCE 845.453

HELIOCENTRIC CONIC

RL 148.61 LAL -.00 LOL 34.61 VL 32.798 GAL -6.09 AZL 88.31 HCA 258.58 SMA 186.84 ECC .22947 INC 1.6948 V1 29.982
RP 211.33 LAP -1.66 LOP 293.18 VP 23.359 GAP -10.95 AZP 90.34 TAL 326.36 TAP 224.93 RCA 143.97 APO 229.71 V2 25.956
RC 303.736 GL 13.56 GP 2.63 ZAL 137.24 ZAP 45.66 ETS 181.95 ZAE 72.04 ETE 180.20 ZAC 85.95 ETC 258.59 CLP 45.60

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 16.920 VHL 4.113 DLA 14.94 RAL 179.69 RAD 6567.7 VEL 11.760 PTH 2.08 VHP 4.173 DPA 12.31 RAP 162.12 ECC 1.2785

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 53 36	2658.89	-27.29	71.60	43.26	97.85	19 37 55	2058.9	-25.92	63.20
90.00	10 52 25	4335.58	4.40	179.56	37.59	62.00	12 4 41	3735.6	.62	172.92
100.00	20 23 2	2370.49	-28.53	50.18	43.05	99.33	21 2 32	1770.5	-26.94	41.73
100.00	12 5 40	4099.22	5.50	161.58	36.99	60.57	13 14 0	3499.2	1.54	155.03
110.00	21 49 19	2100.49	-31.77	28.92	42.30	103.35	22 24 19	1500.5	-29.60	20.38
110.00	12 55 52	3941.98	8.32	147.92	35.26	56.72	14 1 34	3342.0	3.88	141.64

DIFFERENTIAL CORRECTIONS

TDE-1.4789 TRA 6.1225 TC3-9.9658 BAU 2.2581
RDE .4828 RRA -.0801 RC3 .5776 FAU .25053
FDE-2.9608 FRA 8.9410 FC-12.8188 BSP 42306
BDE 1.5557 BRA 6.1230 BC3 9.9825 FSP 5266

MID-COURSE EXECUTION ACCURACY

SGT12221.6 SGR 831.5 SG3 1482.4
RRT -.6200 RRF -.6500 RTF .9954
SGB12249.9 R23 .0396 R13 -.9955
SG112232.5 SG2 651.9 THA 177.58

ORBIT DETERMINATION ACCURACY

ST 3363.9 SR 673.6 SS 2041.6
CRT -.6535 CRS .7635 CST -.9877
LSA 3952.8 MSA 558.8 SSA 17.3
EL1 3393.2 EL2 505.5 ALF 172.38

LAUNCH DATE OCT 28 1964 FLIGHT TIME 380.00 ARRIVAL DATE NOV 12 1965

DISTANCE 849.622

HELIOCENTRIC CONIC

RL 148.61 LAL -.00 LOL 34.61 VL 32.802 GAL -6.23 AZL 88.29 HCA 259.79 SMA 186.91 ECC .23076 INC 1.7051 V1 29.982
RP 211.08 LAP -1.68 LOP 294.40 VP 23.398 GAP -11.11 AZP 90.30 TAL 325.74 TAP 225.54 RCA 143.78 APO 230.04 V2 25.986
RC 304.746 GL 13.46 GP 2.57 ZAL 137.97 ZAP 44.68 ETS 181.98 ZAE 70.77 ETE 180.27 ZAC 85.94 ETC 258.56 CLP 44.62

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 17.373 VHL 4.168 DLA 14.55 RAL 180.34 RAD 6567.7 VEL 11.779 PTH 2.08 VHP 4.254 DPA 12.17 RAP 162.32 ECC 1.2859

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 59 42	2651.17	-27.22	71.05	44.20	98.12	19 43 53	2051.2	-25.82	62.66
90.00	10 51 27	4355.49	5.04	180.67	38.55	62.10	12 4 3	3755.5	1.26	174.03
100.00	20 28 51	2363.68	-28.45	49.69	43.99	99.58	21 8 14	1763.7	-26.84	41.26
100.00	12 5 0	4118.22	6.13	162.63	37.95	60.69	13 13 38	3518.2	2.18	156.07
110.00	21 54 32	2095.55	-31.69	28.56	43.22	103.55	22 29 28	1495.5	-29.50	20.04
110.00	12 55 47	3959.11	8.96	148.83	36.23	56.87	14 1 47	3359.1	4.53	142.54

DIFFERENTIAL CORRECTIONS

TDE-1.5692 TRA 6.3484 TC3-9.8746 BAU 2.2971
RDE .4908 RRA -.0767 RC3 .5571 FAU .23864
FDE-2.9380 FRA 8.7033 FC-11.8920 BSP 42996
BDE 1.6442 BRA 6.3489 BC3 9.8903 FSP 5039

MID-COURSE EXECUTION ACCURACY

SGT12397.7 SGR 826.3 SG3 1412.7
RRT -.6111 RRF -.6421 RTF .9953
SGB12425.2 R23 .0406 R13 -.9953
SG112408.0 SG2 653.5 THA 177.66

ORBIT DETERMINATION ACCURACY

ST 3468.4 SR 675.6 SS 2018.2
CRT -.6602 CRS .7683 CST -.9879
LSA 4031.1 MSA 556.3 SSA 17.1
EL1 3497.6 EL2 503.2 ALF 172.52

LAUNCH DATE OCT 28 1964 FLIGHT TIME 382.00 ARRIVAL DATE NOV 14 1965

DISTANCE 853.791

HELIOCENTRIC CONIC

RL 148.61 LAL -.00 LOL 34.61 VL 32.807 GAL -6.36 AZL 88.28 HCA 261.01 SMA 186.98 ECC .23210 INC 1.7153 V1 29.982
RP 210.82 LAP -1.69 LOP 295.61 VP 23.436 GAP -11.28 AZP 90.27 TAL 325.12 TAP 226.13 RCA 143.58 APO 230.38 V2 26.015
RC 305.746 GL 13.36 GP 2.52 ZAL 138.71 ZAP 43.73 ETS 182.00 ZAE 69.54 ETE 180.34 ZAC 85.94 ETC 258.52 CLP 43.67

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 17.852 VHL 4.225 DLA 14.16 RAL 180.99 RAD 6567.7 VEL 11.800 PTH 2.09 VHP 4.337 DPA 12.01 RAP 162.54 ECC 1.2938

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 5 51	2643.50	-27.14	70.50	45.17	98.39	19 49 54	2043.5	-25.70	62.13
90.00	10 50 29	4375.80	5.68	181.82	39.54	62.21	12 3 25	3775.8	1.92	175.16
100.00	20 34 43	2356.91	-28.37	49.20	44.94	99.82	21 14 0	1756.9	-26.73	40.79
100.00	12 4 18	4137.62	6.78	163.71	38.94	60.82	13 13 16	3537.6	2.84	157.14
110.00	21 59 49	2090.65	-31.61	28.20	44.16	103.75	22 34 39	1490.6	-29.40	19.69
110.00	12 55 41	3976.65	9.61	149.78	37.22	57.04	14 1 58	3376.6	5.20	143.46

DIFFERENTIAL CORRECTIONS

TDE-1.6623 TRA 6.5802 TC3-9.7720 BAU 2.3358
RDE .4990 RRA -.0737 RC3 .5375 FAU .22713
FDE-2.9128 FRA 8.4679 FC-11.0146 BSP 43660
BDE 1.7356 BRA 6.5806 BC3 9.7868 FSP 4818

MID-COURSE EXECUTION ACCURACY

SGT12568.1 SGR 821.5 SG3 1345.4
RRT -.6029 RRF -.6349 RTF .9951
SGB12594.9 R23 .0417 R13 -.9952
SG112577.9 SG2 654.9 THA 177.74

ORBIT DETERMINATION ACCURACY

ST 3572.7 SR 677.5 SS 1993.5
CRT -.6668 CRS .7731 CST -.9881
LSA 4109.8 MSA 553.8 SSA 16.9
EL1 3601.7 EL2 500.8 ALF 172.65

LAUNCH DATE OCT 28 1964 FLIGHT TIME 384.00 ARRIVAL DATE NOV 16 1965

HELIOCENTRIC CONIC DISTANCE 857.958 EARTH TO MARS

RL	148.61	LAL	-.00	LOL	34.61	VL	32.811	GAL	-6.50	AZL	88.27	HCA	262.23	SMA	187.06	ECC	.23351	INC	1.7255
RP	210.58	LAP	-1.71	LOP	296.84	VP	23.473	GAP	-11.44	AZP	90.23	TAL	324.47	TAP	226.71	RCA	143.38	APO	230.74
RC	306.737	GL	13.24	GP	2.46	ZAL	139.45	ZAP	42.80	ETS	182.02	ZAE	68.33	ETE	180.41	ZAC	85.94	ETC	258.48

V1	29.982	V2	26.043	CLP	42.75														

PLANETOCENTRIC CONIC

C3	18.359	VHL	4.285	DLA	13.75	RAL	181.64	RAD	6567.7	VEL	11.821	PTH	2.09	VHP	4.422	DPA	11.84	RAP	162.80

ECC	1.3022	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	19 12 2	2635.90	-27.07	69.96	46.14	98.65	19 55 58	2035.9	-25.59	61.60							
		90.00	10 49 29	4396.48	6.34	182.98	40.54	62.34	12 2 46	3796.5	2.59	176.31							
		100.00	20 40 37	2350.21	-28.30	48.72	45.91	100.07	21 19 48	1750.2	-26.61	40.32							
		100.00	12 3 35	4157.40	7.43	164.81	39.95	60.96	13 12 53	3557.4	3.50	158.23							
		110.00	22 5 7	2085.81	-31.53	27.84	45.12	103.94	22 39 53	1485.8	-29.29	19.35							
		110.00	12 55 34	3994.57	10.27	150.74	38.23	57.22	14 2 9	3394.6	5.88	144.40							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.7589	TRA	6.8172	TC3	-9.6581	BAU	2.3740	SGT	12732.2	SGR	817.0	SG3	1280.3	ST	3677.0	SR	679.3	SS	1967.8
RDE	.5074	RRA	-.0711	RC3	.5186	FAU	.21595	RRT	-.5953	RRF	-.6283	RTF	.9949	CRT	-.6733	CRS	.7779	CST	-.9883
FDE	-2.8856	FRA	8.2356	FC3	-10.1830	BSP	44307	SGB	12758.4	R23	.0428	R13	-.9950	LSA	4189.3	MSA	550.9	SSA	16.7
BDE	1.8306	BRA	6.8176	BC3	9.6720	FSP	4604	SG1	12741.5	SG2	656.0	THA	177.81	EL1	3705.8	EL2	498.3	ALF	172.78

LAUNCH DATE OCT 28 1964 FLIGHT TIME 386.00 ARRIVAL DATE NOV 18 1965

HELIOCENTRIC CONIC DISTANCE 862.124 EARTH TO MARS

RL	148.61	LAL	-.00	LOL	34.61	VL	32.815	GAL	-6.65	AZL	88.26	HCA	263.46	SMA	187.13	ECC	.23498	INC	1.7357
RP	210.34	LAP	-1.72	LOP	298.06	VP	23.510	GAP	-11.60	AZP	90.20	TAL	323.81	TAP	227.27	RCA	143.16	APO	231.10
RC	307.719	GL	13.13	GP	2.41	ZAL	140.21	ZAP	41.91	ETS	182.04	ZAE	67.14	ETE	180.47	ZAC	85.95	ETC	258.43

V1	29.982	V2	26.071	CLP	41.85														

PLANETOCENTRIC CONIC

C3	18.897	VHL	4.347	DLA	13.34	RAL	182.29	RAD	6567.8	VEL	11.844	PTH	2.10	VHP	4.509	DPA	11.67	RAP	163.09

ECC	1.3110	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	19 18 15	2628.40	-26.99	69.42	47.13	98.91	20 2 4	2028.4	-25.48	61.08							
		90.00	10 48 29	4417.53	7.00	184.17	41.57	62.49	12 2 7	3817.5	3.26	177.49							
		100.00	20 46 34	2343.60	-28.22	48.24	46.90	100.30	21 25 37	1743.6	-26.50	39.86							
		100.00	12 2 52	4177.56	8.10	165.94	40.98	61.13	13 12 29	3577.6	4.18	159.34							
		110.00	22 10 28	2081.05	-31.45	27.50	46.09	104.14	22 45 9	1481.0	-29.19	19.02							
		110.00	12 55 26	4012.87	10.94	151.73	39.26	57.41	14 2 19	3412.9	6.57	145.37							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.8580	TRA	7.0606	TC3	-9.5339	BAU	2.4119	SGT	12890.9	SGR	812.8	SG3	1217.3	ST	3780.5	SR	680.9	SS	1940.5
RDE	.5161	RRA	-.0689	RC3	.5005	FAU	.20510	RRT	-.5884	RRF	-.6223	RTF	.9946	CRT	-.6796	CRS	.7826	CST	-.9885
FDE	-2.8553	FRA	8.0058	FC3	-9.3966	BSP	44948	SGB	12916.5	R23	.0440	R13	-.9947	LSA	4268.6	MSA	548.0	SSA	16.6
BDE	1.9284	BRA	7.0609	BC3	9.5470	FSP	4397	SG1	12899.8	SG2	656.8	THA	177.87	EL1	3809.2	EL2	495.7	ALF	172.90

LAUNCH DATE OCT 28 1964 FLIGHT TIME 388.00 ARRIVAL DATE NOV 20 1965

HELIOCENTRIC CONIC DISTANCE 866.287 EARTH TO MARS

RL	148.61	LAL	-.00	LOL	34.61	VL	32.820	GAL	-6.80	AZL	88.25	HCA	264.68	SMA	187.21	ECC	.23652	INC	1.7459
RP	210.10	LAP	-1.74	LOP	299.29	VP	23.546	GAP	-11.77	AZP	90.16	TAL	323.14	TAP	227.82	RCA	142.93	APO	231.49
RC	308.691	GL	13.01	GP	2.36	ZAL	140.96	ZAP	41.04	ETS	182.05	ZAE	65.98	ETE	180.53	ZAC	85.97	ETC	258.38

V1	29.982	V2	26.098	CLP	40.98														

PLANETOCENTRIC CONIC

C3	19.465	VHL	4.412	DLA	12.92	RAL	182.95	RAD	6567.8	VEL	11.868	PTH	2.11	VHP	4.599	DPA	11.48	RAP	163.41

ECC	1.3203	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	19 24 30	2621.00	-26.91	68.90	48.14	99.16	20 8 11	2021.0	-25.37	60.57							
		90.00	10 47 28	4438.93	7.67	185.39	42.62	62.66	12 1 27	3838.9	3.95	178.69							
		100.00	20 52 32	2337.08	-28.14	47.77	47.90	100.54	21 31 29	1737.1	-26.39	39.41							
		100.00	12 2 7	4198.08	8.77	167.09	42.03	61.31	13 12 5	3598.1	4.87	160.47							
		110.00	22 15 51	2076.38	-31.37	27.15	47.08	104.32	22 50 28	1476.4	-29.09	18.70							
		110.00	12 55 18	4031.55	11.63	152.75	40.32	57.63	14 2 29	3431.5	7.27	146.36							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-1.9612	TRA	7.3100	TC3	-9.4008	BAU	2.4496	SGT	13044.5	SGR	809.0	SG3	1156.6	ST	3884.1	SR	682.4	SS	1912.6
RDE	.5250	RRA	-.0671	RC3	.4831	FAU	.19466	RRT	-.5821	RRF	-.6171	RTF	.9944	CRT	-.6859	CRS	.7875	CST	-.9886
FDE	-2.8243	FRA	7.7779	FC3	-8.6578	BSP	45561	SGB	13069.5	R23	.0453	R13	-.9945	LSA	4348.9	MSA	545.0	SSA	16.4
BDE	2.0303	BRA	7.3103	BC3	9.4132	FSP	4196	SG1	13053.0	SG2	657.4	THA	177.93	EL1	3912.7	EL2	493.0	ALF	173.02

LAUNCH DATE OCT 28 1964 FLIGHT TIME 390.00 ARRIVAL DATE NOV 22 1965

HELIOCENTRIC CONIC DISTANCE 870.447 EARTH TO MARS

RL	148.61	LAL	-.00	LOL	34.61	VL	32.824	GAL	-6.96	AZL	88.24	HCA	265.91	SMA	187.29	ECC	.23812	INC	1.7560
RP	209.88	LAP	-1.75	LOP	300.52	VP	23.581	GAP	-11.94	AZP	90.13	TAL	322.45	TAP	228.36	RCA	142.69	APO	231.89
RC	309.654	GL	12.88	GP	2.31	ZAL	141.73	ZAP	40.20	ETS	182.06	ZAE	64.85	ETE	180.58	ZAC	86.00	ETC	258.32

V1	29.982	V2	26.124	CLP	40.14														

PLANETOCENTRIC CONIC

C3	20.067	VHL	4.480	DLA	12.49	RAL	183.60	RAD	6567.8	VEL	11.893	PTH	2.11	VHP	4.690	DPA	11.29	RAP	163.75

ECC	1.3303	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	19 30 46	2613.73	-26.83	68.38	49.17	99.41	20 14 20	2013.7	-25.26	60.06							
		90.00	10 46 27	4460.67	8.35	186.63	43.69	62.84	12 0 48	3860.7	4.64	179.91							
		100.00	20 58 32	2330.68	-28.06	47.31	48.92	100.77	21 37 23	1730.7	-26.28	38.96							
		100.00	12 1 22	4218.95	9.45	168.27	43.10	61.51	13 11 41	3618.9	5.57	161.63							
		110.00	22 21 16	2071.82	-31.30	26.82	48.08	104.51	22 55 48	1471.8	-28.99	18.38							
		110.00	12 55 8	4050.57	12.32	153.79	41.40	57.86	14 2 39	3450.6	7.98	147.37							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-2.0680	TRA	7.5651	TC3	-9.2595	BAU	2.4873	SGT	13192.3	SGR	805.6	SG3	1098.0	ST	3987.2	SR	683.9	SS	1883.4
RDE	.5342	RRA	-.0658	RC3	.4664	FAU	.18456	RRT	-.5766	RRF	-.6127	RTF	.9941	CRT	-.6921	CRS	.7925	CST	-.9886
FDE	-2.7913	FRA	7.5519	FC3	-7.9623	BSP	46144	SGB	13216.9	R23	.0466	R13	-.9942	LSA	4429.3	MSA	541.8	SSA	16.3
BDE	2.1359	BRA	7.5654	BC3	9.2713	FSP	3999	SG1	13200.5	SG2	657.8	THA	177.98	EL1	4015.6	EL2	490.1	ALF	173.13

LAUNCH DATE OCT 28 1964 FLIGHT TIME 392.00 ARRIVAL DATE NOV 24 1965

DISTANCE 874.604

HELIOCENTRIC CONIC

RL 148.61 LAL -.00 LOL 34.61 VL 32.829 GAL -7.12 AZL 88.23 HCA 267.14 SMA 187.37 ECC .23980 INC 1.7661 V1 29.982
RP 209.66 LAP -1.76 LOP 301.75 VP 23.616 GAP -12.11 AZP 90.09 TAL 321.74 TAP 228.88 RCA 142.44 APO 232.30 V2 26.149
RC 310.607 GL 12.75 GP 2.27 ZAL 142.50 ZAP 39.38 ETS 182.08 ZAE 63.74 ETE 180.64 ZAC 86.03 ETC 258.26 CLP 39.32

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 20.705 VHL 4.550 DLA 12.06 RAL 184.26 RAD 6567.8 VEL 11.920 PTH 2.12 VHP 4.784 DPA 11.08 RAP 164.12 ECC 1.3408

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 37 4	2606.60	-26.75	67.87	50.21	99.65	20 20 30	2006.6	-25.14	59.57
90.00	10 45 26	4482.75	9.03	187.89	44.79	63.05	12 0 8	3882.7	5.35	181.15
100.00	21 4 33	2324.42	-27.97	46.87	49.95	100.99	21 43 18	1724.4	-26.17	38.53
100.00	12 0 37	4240.16	10.14	169.47	44.20	61.73	13 11 17	3640.2	6.28	162.80
110.00	22 26 42	2067.39	-31.22	26.50	49.10	104.69	23 1 9	1467.4	-28.89	18.07
110.00	12 54 58	4069.95	13.02	154.85	42.50	58.11	14 2 48	3470.0	8.71	148.40

DIFFERENTIAL CORRECTIONS

TDE-2.1782 TRA 7.8274 TC3-9.1122 BAU 2.5254
RDE .5437 RRA -.0648 RC3 .4504 FAU .17483
FDE-2.7566 FRA 7.3281 FC3-7.3100 BSP 46718
BDE 2.2450 BRA 7.8277 BC3 9.1233 FSP 3809

MID-COURSE EXECUTION ACCURACY

SGT13336.7 SGR 802.3 SG3 1041.6
RRT -.5718 RRF -.6090 RTF .9938
SGB13360.8 R23 .0480 R13 -.9939
SG113344.6 SG2 657.9 THA 178.03

ORBIT DETERMINATION ACCURACY

ST 4089.8 SR 685.2 SS 1853.1
CRT -.6982 CRS .7974 CST -.9887
LSA 4509.9 MSA 538.6 SSA 16.1
EL1 4118.1 EL2 487.2 ALF 173.23

LAUNCH DATE OCT 28 1964 FLIGHT TIME 394.00 ARRIVAL DATE NOV 26 1965

DISTANCE 878.756

HELIOCENTRIC CONIC

RL 148.61 LAL -.00 LOL 34.61 VL 32.834 GAL -7.29 AZL 88.22 HCA 268.38 SMA 187.45 ECC .24154 INC 1.7762 V1 29.982
RP 209.44 LAP -1.78 LOP 302.99 VP 23.650 GAP -12.28 AZP 90.05 TAL 321.01 TAP 229.39 RCA 142.17 APO 232.73 V2 26.174
RC 311.551 GL 12.61 GP 2.22 ZAL 143.27 ZAP 38.58 ETS 182.09 ZAE 62.66 ETE 180.69 ZAC 86.07 ETC 258.20 CLP 38.53

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 21.380 VHL 4.624 DLA 11.62 RAL 184.92 RAD 6567.9 VEL 11.948 PTH 2.13 VHP 4.880 DPA 10.86 RAP 164.52 ECC 1.3519

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 43 22	2599.62	-26.67	67.38	51.26	99.89	20 26 41	1999.6	-25.03	59.09
90.00	10 44 24	4505.14	9.72	189.17	45.91	63.27	11 59 29	3905.1	6.06	182.41
100.00	21 10 35	2318.30	-27.89	46.43	51.00	101.21	21 49 14	1718.3	-26.06	38.11
100.00	11 59 51	4261.70	10.83	170.69	45.33	61.97	13 10 53	3661.7	6.99	164.00
110.00	22 32 9	2063.09	-31.15	26.19	50.14	104.86	23 6 32	1463.1	-28.79	17.77
110.00	12 54 47	4089.66	13.72	155.94	43.63	58.38	14 2 57	3489.7	9.44	149.46

DIFFERENTIAL CORRECTIONS

TDE-2.2922 TRA 8.0963 TC3-8.9559 BAU 2.5629
RDE .5535 RRA -.0643 RC3 .4350 FAU .16537
FDE-2.7198 FRA 7.1060 FC3-6.6963 BSP 47270
BDE 2.3581 BRA 8.0965 BC3 8.9665 FSP 3625

MID-COURSE EXECUTION ACCURACY

SGT13474.8 SGR 799.3 SG3 987.1
RRT -.5676 RRF -.6061 RTF .9935
SGB13498.5 R23 .0496 R13 -.9935
SG113482.4 SG2 657.7 THA 178.07

ORBIT DETERMINATION ACCURACY

ST 4191.8 SR 686.4 SS 1821.5
CRT -.7042 CRS .8024 CST -.9887
LSA 4590.6 MSA 535.2 SSA 16.0
EL1 4219.9 EL2 484.1 ALF 173.33

LAUNCH DATE OCT 28 1964 FLIGHT TIME 396.00 ARRIVAL DATE NOV 28 1965

DISTANCE 882.902

HELIOCENTRIC CONIC

RL 148.61 LAL -.00 LOL 34.61 VL 32.839 GAL -7.46 AZL 88.21 HCA 269.62 SMA 187.54 ECC .24337 INC 1.7863 V1 29.982
RP 209.24 LAP -1.79 LOP 304.22 VP 23.683 GAP -12.45 AZP 90.01 TAL 320.27 TAP 229.89 RCA 141.90 APO 233.18 V2 26.198
RC 312.486 GL 12.47 GP 2.18 ZAL 144.05 ZAP 37.81 ETS 182.09 ZAE 61.59 ETE 180.74 ZAC 86.12 ETC 258.14 CLP 37.76

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 22.096 VHL 4.701 DLA 11.18 RAL 185.59 RAD 6567.9 VEL 11.978 PTH 2.13 VHP 4.978 DPA 10.64 RAP 164.94 ECC 1.3636

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 49 40	2592.82	-26.59	66.90	52.33	100.11	20 32 53	1992.8	-24.92	58.62
90.00	10 43 22	4527.83	10.41	190.48	47.05	63.52	11 58 50	3927.8	6.77	183.69
100.00	21 16 38	2312.34	-27.81	46.00	52.07	101.42	21 55 10	1712.3	-25.96	37.70
100.00	11 59 5	4283.54	11.52	171.94	46.48	62.23	13 10 29	3683.5	7.72	165.22
110.00	22 37 37	2058.94	-31.07	25.88	51.19	105.02	23 11 56	1458.9	-28.70	17.49
110.00	12 54 36	4109.71	14.44	157.06	44.78	58.67	14 3 6	3509.7	10.18	150.54

DIFFERENTIAL CORRECTIONS

TDE-2.4097 TRA 8.3726 TC3-8.7941 BAU 2.6007
RDE .5636 RRA -.0643 RC3 .4202 FAU .15629
FDE-2.6811 FRA 6.8856 FC3-6.1238 BSP 47805
BDE 2.4748 BRA 8.3728 BC3 8.8042 FSP 3446

MID-COURSE EXECUTION ACCURACY

SGT13608.8 SGR 796.5 SG3 934.6
RRT -.5642 RRF -.6039 RTF .9931
SGB13632.1 R23 .0512 R13 -.9932
SG113616.3 SG2 657.3 THA 178.10

ORBIT DETERMINATION ACCURACY

ST 4292.8 SR 687.5 SS 1788.7
CRT -.7100 CRS .8074 CST -.9887
LSA 4670.9 MSA 531.7 SSA 15.8
EL1 4320.9 EL2 481.0 ALF 173.43

LAUNCH DATE OCT 28 1964 FLIGHT TIME 398.00 ARRIVAL DATE NOV 30 1965

DISTANCE 887.043

HELIOCENTRIC CONIC

RL 148.61 LAL -.00 LOL 34.61 VL 32.844 GAL -7.64 AZL 88.20 HCA 270.85 SMA 187.62 ECC .24527 INC 1.7965 V1 29.982
RP 209.04 LAP -1.80 LOP 305.46 VP 23.715 GAP -12.62 AZP 89.97 TAL 319.51 TAP 230.37 RCA 141.60 APO 233.64 V2 26.221
RC 313.411 GL 12.33 GP 2.14 ZAL 144.83 ZAP 37.07 ETS 182.10 ZAE 60.55 ETE 180.79 ZAC 86.17 ETC 258.07 CLP 37.01

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 22.854 VHL 4.781 DLA 10.74 RAL 186.25 RAD 6567.9 VEL 12.010 PTH 2.14 VHP 5.078 DPA 10.41 RAP 165.38 ECC 1.3761

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 55 59	2586.20	-26.51	66.43	53.42	100.34	20 39 5	1986.2	-24.81	58.17
90.00	10 42 20	4550.83	11.11	191.81	48.22	63.79	11 58 11	3950.8	7.50	185.00
100.00	21 22 41	2306.56	-27.74	45.59	53.15	101.62	22 1 8	1706.6	-25.85	37.30
100.00	11 58 19	4305.70	12.22	173.21	47.65	62.51	13 10 5	3705.7	8.45	166.46
110.00	22 43 6	2054.96	-31.00	25.60	52.26	105.18	23 17 21	1455.0	-28.61	17.21
110.00	12 54 24	4130.06	15.15	158.20	45.96	58.99	14 3 14	3530.1	10.93	151.64

DIFFERENTIAL CORRECTIONS

TDE-2.5317 TRA 8.6556 TC3-8.6291 BAU 2.6394
RDE .5741 RRA -.0648 RC3 .4061 FAU .14755
FDE-2.6411 FRA 6.6664 FC3-5.5893 BSP 48298
BDE 2.5959 BRA 8.6558 BC3 8.6387 FSP 3271

MID-COURSE EXECUTION ACCURACY

SGT13739.1 SGR 793.9 SG3 884.1
RRT -.5615 RRF -.6025 RTF .9927
SGB13762.0 R23 .0530 R13 -.9928
SG113746.3 SG2 656.6 THA 178.14

ORBIT DETERMINATION ACCURACY

ST 4393.4 SR 688.5 SS 1754.9
CRT -.7159 CRS .8125 CST -.9886
LSA 4751.4 MSA 528.1 SSA 15.7
EL1 4421.3 EL2 477.7 ALF 173.52

LAUNCH DATE OCT 29 1964 FLIGHT TIME 240.00 ARRIVAL DATE JUN 26 1965

HELIOCENTRIC CONIC DISTANCE 570.925 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 33.182 GAL -4.70 AZL 97.17 HCA 182.80 SMA 193.61 ECC .24588 INC 7.1697 V1 29.990
RP 235.94 LAP .35 LOP 218.39 VP 20.964 GAP 6.62 AZP 82.84 TAL 335.85 TAP 158.66 RCA 146.01 APO 241.22 V2 23.297
RC 196.086 GL -48.77 GP 32.21 ZAL 114.30 ZAP 136.63 ETS 136.51 ZAE 145.68 ETE 72.04 ZAC 120.70 ETC 253.57 CLP 149.23

PLANETOCENTRIC CONIC

C3 30.136 VHL 5.490 DLA -38.23 RAL 143.85 RAD 6568.2 VEL 12.309 PTH 2.22 VHP 6.098 DPA 27.15 RAP 201.94 ECC 1.4960

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
63.17	21 17 14	1579.99	22.52	17.94	22.08	121.75	21 43 34	980.0	26.55	10.75
116.83	3 34 59	5693.94	22.53	267.05	22.09	121.74	5 9 53	5093.9	26.56	259.86
63.17	21 17 14	1579.99	22.52	17.94	22.08	121.75	21 43 34	980.0	26.55	10.75
116.83	3 34 59	5693.94	22.53	267.05	22.09	121.74	5 9 53	5093.9	26.56	259.86
63.17	21 17 14	1579.99	22.52	17.94	22.08	121.75	21 43 34	980.0	26.55	10.75
116.83	3 34 59	5693.94	22.53	267.05	22.09	121.74	5 9 53	5093.9	26.56	259.86

DIFFERENTIAL CORRECTIONS
TDE 2.6481 TRA-1.9869 TC3 1.4628 BAU .9451
RDE 2.8104 RRA-1.1949 RC3 1.8337 FAU .14704
FDE-5.7039 FRA 2.3545 FC3-4.2242 BSP 18276
BDE 3.7185 BRA 2.3186 BC3 2.3457 FSP 2148

MID-COURSE EXECUTION ACCURACY
SGT 4145.8 SGR 3741.3 SG3 705.8
RRT .9642 RRF -.9987 RTF -.9496
SGB 5584.3 R23 -.1973 R13 -.9803
SG1 5534.6 SG2 743.4 THA 41.96

ORBIT DETERMINATION ACCURACY
ST 2875.5 SR 2766.5 SS 3176.0
CRT .9944 CRS .9999 CST .9925
LSA 5092.4 MSA 276.6 SSA .9
EL1 3984.7 EL2 211.4 ALF 43.89

LAUNCH DATE OCT 29 1964 FLIGHT TIME 242.00 ARRIVAL DATE JUN 28 1965

HELIOCENTRIC CONIC DISTANCE 574.541 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 33.157 GAL -4.61 AZL 94.86 HCA 183.77 SMA 193.15 ECC .24371 INC 4.8531 V1 29.990
RP 235.59 LAP .32 LOP 219.36 VP 20.965 GAP 6.20 AZP 85.15 TAL 336.11 TAP 159.88 RCA 146.08 APO 240.23 V2 23.333
RC 198.280 GL -37.22 GP 25.85 ZAL 118.55 ZAP 140.77 ETS 142.02 ZAE 151.66 ETE 68.58 ZAC 114.79 ETC 254.44 CLP 149.40

PLANETOCENTRIC CONIC

C3 21.385 VHL 4.624 DLA -27.37 RAL 148.77 RAD 6567.9 VEL 11.948 PTH 2.13 VHP 5.549 DPA 21.03 RAP 199.74 ECC 1.3519

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	23 39 22	1118.32	13.60	338.11	15.95	115.08	23 58 0	518.3	16.87	330.96
90.00	1 52 3	698.51	23.80	311.60	19.96	105.81	2 3 41	98.5	25.74	303.47
100.00	0 26 8	979.89	10.42	326.32	14.32	118.18	0 42 28	379.9	14.11	319.47
100.00	3 51 53	5600.21	27.25	262.05	20.94	102.79	5 25 13	5000.2	28.74	253.56
110.00	0 36 18	947.99	4.99	320.61	11.03	123.86	0 52 6	348.0	9.40	314.30
110.00	5 58 13	5204.88	33.48	233.31	22.22	97.32	7 24 58	4604.9	34.13	224.13

DIFFERENTIAL CORRECTIONS
TDE 2.0081 TRA-2.0577 TC3 2.0185 BAU .8161
RDE 1.5714 RRA-1.0553 RC3 2.0181 FAU .17290
FDE-5.1311 FRA 3.3113 FC3-6.9993 BSP 17219
BDE 2.5498 BRA 2.3125 BC3 2.8543 FSP 2707

MID-COURSE EXECUTION ACCURACY
SGT 4232.7 SGR 3072.8 SG3 879.7
RRT .9653 RRF -.9992 RTF -.9552
SGB 5230.5 R23 -.2083 R13 -.9779
SG1 5189.4 SG2 654.6 THA 35.68

ORBIT DETERMINATION ACCURACY
ST 2633.4 SR 1997.2 SS 3121.1
CRT .9939 CRS 1.0000 CST .9929
LSA 4539.0 MSA 250.1 SSA 2.1
EL1 3300.4 EL2 175.5 ALF 37.13

LAUNCH DATE OCT 29 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUN 30 1965

HELIOCENTRIC CONIC DISTANCE 578.180 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 33.134 GAL -4.54 AZL 93.48 HCA 184.74 SMA 192.72 ECC .24164 INC 3.4808 V1 29.990
RP 235.24 LAP .29 LOP 220.34 VP 20.968 GAP 5.79 AZP 86.53 TAL 336.36 TAP 161.10 RCA 146.15 APO 239.28 V2 23.369
RC 200.460 GL -28.56 GP 21.61 ZAL 121.04 ZAP 142.81 ETS 146.99 ZAE 155.75 ETE 66.54 ZAC 110.79 ETC 254.89 CLP 148.97

PLANETOCENTRIC CONIC

C3 17.601 VHL 4.195 DLA -19.15 RAL 151.88 RAD 6567.7 VEL 11.789 PTH 2.08 VHP 5.230 DPA 17.00 RAP 198.24 ECC 1.2897

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 37 15	1541.52	.43	2.22	11.22	118.31	22 2 57	941.5	4.21	355.58
90.00	4 19 1	5471.20	28.26	252.76	17.91	88.18	5 50 12	4871.2	27.71	244.14
100.00	22 46 46	1317.18	-.84	345.02	10.52	119.88	23 8 44	717.2	3.14	338.50
100.00	5 52 11	5170.77	29.71	230.59	17.84	86.58	7 18 22	4570.8	28.92	221.87
110.00	23 29 26	1183.51	-4.00	332.92	8.55	123.98	23 49 9	583.5	.49	326.71
110.00	7 26 1	4877.20	33.42	207.87	17.41	82.35	8 47 18	4277.2	32.00	198.93

DIFFERENTIAL CORRECTIONS
TDE 1.6443 TRA-2.0674 TC3 2.4284 BAU .7442
RDE 1.0658 RRA -.9302 RC3 2.0263 FAU .19068
FDE-4.5794 FRA 4.0222 FC3-9.3790 BSP 16555
BDE 1.9595 BRA 2.2670 BC3 3.1627 FSP 3176

MID-COURSE EXECUTION ACCURACY
SGT 4257.7 SGR 2611.1 SG3 1003.3
RRT .9672 RRF -.9994 RTF -.9599
SGB 4994.6 R23 -.2124 R13 -.9769
SG1 4962.1 SG2 569.3 THA 31.13

ORBIT DETERMINATION ACCURACY
ST 2418.8 SR 1511.4 SS 2935.6
CRT .9940 CRS 1.0000 CST .9941
LSA 4087.5 MSA 211.9 SSA 3.7
EL1 2848.7 EL2 140.6 ALF 31.93

LAUNCH DATE OCT 29 1964 FLIGHT TIME 246.00 ARRIVAL DATE JUL 2 1965

HELIOCENTRIC CONIC DISTANCE 581.834 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 33.111 GAL -4.46 AZL 92.57 HCA 185.72 SMA 192.30 ECC .23966 INC 2.5729 V1 29.990
RP 234.89 LAP .26 LOP 221.32 VP 20.973 GAP 5.39 AZP 87.44 TAL 336.59 TAP 162.31 RCA 146.21 APO 238.39 V2 23.405
RC 202.623 GL -22.01 GP 18.63 ZAL 122.40 ZAP 143.71 ETS 151.16 ZAE 158.75 ETE 65.60 ZAC 107.95 ETC 255.15 CLP 148.28

PLANETOCENTRIC CONIC

C3 15.634 VHL 3.954 DLA -12.90 RAL 154.00 RAD 6567.6 VEL 11.705 PTH 2.06 VHP 5.007 DPA 14.19 RAP 197.16 ECC 1.2573

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 45 57	1744.83	-6.10	13.60	10.59	117.71	21 15 2	1144.8	-2.34	6.93
90.00	5 27 15	5213.59	26.30	234.21	15.39	79.11	6 54 9	4613.6	24.53	225.98
100.00	22 0 37	1503.94	-7.12	355.33	10.03	119.11	22 25 41	903.9	-3.19	348.76
100.00	6 55 17	4929.71	27.44	213.06	15.12	77.65	8 17 26	4329.7	25.46	204.82
110.00	22 53 49	1337.32	-9.78	341.08	8.41	122.92	23 16 6	737.3	-5.38	334.75
110.00	8 18 34	4669.09	30.45	192.40	14.24	73.66	9 36 23	4069.1	27.91	184.12

DIFFERENTIAL CORRECTIONS
TDE 1.3958 TRA-2.0693 TC3 2.6690 BAU .6920
RDE .7853 RRA -.8278 RC3 1.9592 FAU .20496
FDE-4.1384 FRA 4.5742 FC-11.3493 BSP 16441
BDE 1.6015 BRA 2.2287 BC3 3.3109 FSP 3573

MID-COURSE EXECUTION ACCURACY
SGT 4243.6 SGR 2282.5 SG3 1102.2
RRT .9660 RRF -.9993 RTF -.9603
SGB 4818.5 R23 -.2213 R13 -.9746
SG1 4790.1 SG2 522.4 THA 27.82

ORBIT DETERMINATION ACCURACY
ST 2224.0 SR 1197.3 SS 2742.5
CRT .9934 CRS .9999 CST .9949
LSA 3723.8 MSA 184.8 SSA 6.0
EL1 2522.9 EL2 120.9 ALF 28.21

LAUNCH DATE OCT 29 1964 FLIGHT TIME 248.00 ARRIVAL DATE JUL 4 1965

DISTANCE 585.504

HELIOCENTRIC CONIC

RL 148.57 LAL -.00 LOL 35.61 VL 33.090 GAL -4.39 AZL 91.93 HCA 186.70 SMA 191.90 ECC .23778 INC 1.9268 V1 29.990
RP 234.53 LAP .22 LOP 222.31 VP 20.981 GAP 4.99 AZP 88.09 TAL 336.82 TAP 163.52 RCA 146.27 APO 237.53 V2 23.442
RC 204.770 GL -16.96 GP 16.43 ZAL 123.08 ZAP 143.95 ETS 154.59 ZAE 161.08 ETE 65.65 ZAC 105.85 ETC 255.31 CLP 147.46

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 14.469 VHL 3.804 DLA -8.05 RAL 155.51 RAD 6567.6 VEL 11.656 PTH 2.05 VHP 4.832 DPA 12.14 RAP 196.35 ECC 1.2381

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 12 19	1887.80	-10.53	21.76	10.91	116.44	20 43 46	1287.8	-6.90	14.97
90.00	6 12 57	5035.95	23.44	221.99	13.88	73.64	7 36 53	4436.0	20.97	214.19
100.00	21 29 46	1637.91	-11.47	2.90	10.42	117.79	21 57 4	1037.9	-7.66	356.18
100.00	7 38 10	4761.07	24.45	201.44	13.54	72.24	8 57 31	4161.1	21.79	193.65
110.00	22 29 9	1451.98	-13.95	347.34	8.98	121.53	22 53 21	852.0	-9.68	340.85
110.00	8 55 17	4519.76	27.13	182.05	12.48	68.36	10 10 37	3919.8	23.95	174.33

DIFFERENTIAL CORRECTIONS

TDE 1.2300 TRA-2.0463 TC3 2.8465 BAU .6601
RDE .6188 RRA -.7406 RC3 1.8817 FAU .21868
FDE-3.8186 FRA 5.0031 FC-13.0838 BSP 16123
BDE 1.3769 BRA 2.1762 BC3 3.4122 FSP 3872

MID-COURSE EXECUTION ACCURACY

SGT 4220.4 SGR 2046.4 SG3 1191.2
RRT .9650 RRF -.9990 RTF -.9607
SGB 4690.3 R23 -.2265 R13 -.9731
SG1 4665.1 SG2 485.5 THA 25.37

ORBIT DETERMINATION ACCURACY

ST 2075.7 SR 992.4 SS 2586.7
CRT .9929 CRS .9995 CST .9959
LSA 3458.2 MSA 158.7 SSA 9.1
EL1 2298.3 EL2 106.9 ALF 25.45

LAUNCH DATE OCT 29 1964 FLIGHT TIME 250.00 ARRIVAL DATE JUL 6 1965

DISTANCE 589.191

HELIOCENTRIC CONIC

RL 148.57 LAL -.00 LOL 35.61 VL 33.069 GAL -4.32 AZL 91.44 HCA 187.69 SMA 191.52 ECC .23598 INC 1.4445 V1 29.990
RP 234.17 LAP .19 LOP 223.29 VP 20.990 GAP 4.60 AZP 88.57 TAL 337.04 TAP 164.73 RCA 146.33 APO 236.72 V2 23.479
RC 206.900 GL -12.97 GP 14.76 ZAL 123.36 ZAP 143.78 ETS 157.43 ZAE 162.96 ETE 66.62 ZAC 104.24 ETC 255.43 CLP 146.54

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 13.707 VHL 3.702 DLA -4.19 RAL 156.63 RAD 6567.5 VEL 11.623 PTH 2.04 VHP 4.685 DPA 10.60 RAP 195.69 ECC 1.2256

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 47 17	1997.67	-13.78	28.19	11.53	114.98	20 20 34	1397.7	-10.30	21.24
90.00	6 46 50	4902.24	20.60	213.22	13.05	70.13	8 8 33	4302.2	17.71	205.74
100.00	21 6 39	1741.61	-14.69	8.92	11.08	116.33	21 35 41	1141.6	-11.03	2.03
100.00	8 10 9	4633.53	21.54	193.08	12.67	68.76	9 27 22	4033.5	18.46	185.64
110.00	22 10 23	1542.08	-17.09	352.43	9.74	120.06	22 36 5	942.1	-12.97	345.75
110.00	9 22 54	4405.83	24.05	174.63	11.51	64.94	10 36 20	3805.8	20.47	167.31

DIFFERENTIAL CORRECTIONS

TDE 1.1059 TRA-2.0156 TC3 2.9620 BAU .6351
RDE .5098 RRA -.6715 RC3 1.7995 FAU .23109
FDE-3.5623 FRA 5.3020 FC-14.5959 BSP 15882
BDE 1.2178 BRA 2.1245 BC3 3.4658 FSP 4168

MID-COURSE EXECUTION ACCURACY

SGT 4185.9 SGR 1866.4 SG3 1272.6
RRT .9640 RRF -.9986 RTF -.9612
SGB 4583.1 R23 -.2289 R13 -.9720
SG1 4560.4 SG2 455.4 THA 23.51

ORBIT DETERMINATION ACCURACY

ST 1952.9 SR 849.5 SS 2454.7
CRT .9922 CRS .9988 CST .9970
LSA 3247.0 MSA 133.9 SSA 13.5
EL1 2127.5 EL2 97.1 ALF 23.40

LAUNCH DATE OCT 29 1964 FLIGHT TIME 252.00 ARRIVAL DATE JUL 8 1965

DISTANCE 592.892

HELIOCENTRIC CONIC

RL 148.57 LAL -.00 LOL 35.61 VL 33.050 GAL -4.26 AZL 91.07 HCA 188.68 SMA 191.16 ECC .23427 INC 1.0701 V1 29.990
RP 233.80 LAP .16 LOP 224.28 VP 21.001 GAP 4.21 AZP 88.94 TAL 337.25 TAP 165.93 RCA 146.38 APO 235.95 V2 23.517
RC 209.011 GL -9.76 GP 13.45 ZAL 123.40 ZAP 143.34 ETS 159.78 ZAE 164.53 ETE 68.51 ZAC 102.97 ETC 255.51 CLP 145.57

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 13.167 VHL 3.629 DLA -1.07 RAL 157.46 RAD 6567.5 VEL 11.600 PTH 2.03 VHP 4.555 DPA 9.41 RAP 195.15 ECC 1.2167

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 27 20	2086.09	-16.26	33.51	12.21	113.51	20 2 6	1486.1	-12.94	26.40
90.00	7 13 28	4796.35	18.01	206.53	12.59	67.77	8 33 24	4196.4	14.84	199.29
100.00	20 48 11	1825.30	-17.15	13.91	11.79	114.86	21 18 36	1225.3	-13.66	6.86
100.00	8 35 18	4532.37	18.91	186.72	12.19	66.41	9 50 50	3932.4	15.56	179.53
110.00	21 55 17	1615.25	-19.53	356.70	10.53	118.63	22 22 12	1015.3	-15.56	349.83
110.00	9 44 41	4315.19	21.32	169.01	10.97	62.63	10 56 36	3715.2	17.49	161.98

DIFFERENTIAL CORRECTIONS

TDE 1.0099 TRA-1.9775 TC3 3.0414 BAU .6157
RDE .4358 RRA -.6146 RC3 1.7268 FAU .24334
FDE-3.3628 FRA 5.7205 FC-15.9990 BSP 15602
BDE 1.0999 BRA 2.0708 BC3 3.4975 FSP 4442

MID-COURSE EXECUTION ACCURACY

SGT 4143.5 SGR 1728.0 SG3 1351.3
RRT .9629 RRF -.9980 RTF -.9615
SGB 4489.4 R23 -.2296 R13 -.9712
SG1 4468.5 SG2 432.2 THA 22.10

ORBIT DETERMINATION ACCURACY

ST 1850.7 SR 748.1 SS 2350.2
CRT .9914 CRS .9974 CST .9980
LSA 3081.4 MSA 113.0 SSA 19.4
EL1 1994.1 EL2 91.1 ALF 21.89

LAUNCH DATE OCT 29 1964 FLIGHT TIME 254.00 ARRIVAL DATE JUL 10 1965

DISTANCE 596.607

HELIOCENTRIC CONIC

RL 148.57 LAL -.00 LOL 35.61 VL 33.031 GAL -4.20 AZL 90.77 HCA 189.67 SMA 190.82 ECC .23263 INC .7680 V1 29.990
RP 233.44 LAP .13 LOP 225.27 VP 21.014 GAP 3.83 AZP 89.24 TAL 337.46 TAP 167.13 RCA 146.43 APO 235.22 V2 23.555
RC 211.104 GL -7.12 GP 12.40 ZAL 123.29 ZAP 142.71 ETS 161.75 ZAE 165.85 ETE 71.35 ZAC 101.94 ETC 255.57 CLP 144.54

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 12.761 VHL 3.572 DLA 1.52 RAL 158.10 RAD 6567.5 VEL 11.582 PTH 2.03 VHP 4.437 DPA 8.46 RAP 194.67 ECC 1.2100

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 10 44	2159.46	-18.19	38.02	12.87	112.08	19 46 44	1559.5	-15.04	30.76
90.00	7 35 11	4709.47	15.69	201.21	12.35	66.12	8 53 40	4109.5	12.33	194.14
100.00	20 32 47	1894.81	-19.09	18.16	12.48	113.45	21 4 22	1294.8	-15.75	10.96
100.00	8 55 49	4449.36	16.58	181.66	11.93	64.76	10 9 58	3849.4	13.04	174.65
110.00	21 42 39	1676.14	-21.48	.36	11.27	117.26	22 10 35	1076.1	-17.65	353.31
110.00	10 2 27	4240.80	18.93	164.56	10.66	60.99	11 13 7	3640.8	14.91	157.75

DIFFERENTIAL CORRECTIONS

TDE .9364 TRA-1.9315 TC3 3.1033 BAU .6012
RDE .3853 RRA -.5659 RC3 1.6697 FAU .25628
FDE-3.2217 FRA 6.0174 FC-17.3868 BSP 15238
BDE 1.0126 BRA 2.0127 BC3 3.5240 FSP 4675

MID-COURSE EXECUTION ACCURACY

SGT 4095.8 SGR 1621.5 SG3 1430.8
RRT .9617 RRF -.9972 RTF -.9616
SGB 4405.1 R23 -.2291 R13 -.9706
SG1 4385.5 SG2 415.3 THA 21.04

ORBIT DETERMINATION ACCURACY

ST 1767.6 SR 676.3 SS 2275.4
CRT .9902 CRS .9954 CST .9987
LSA 2957.8 MSA 98.0 SSA 26.4
EL1 1890.5 EL2 88.1 ALF 20.80

LAUNCH DATE OCT 29 1964 FLIGHT TIME 256.00 ARRIVAL DATE JUL 12 1965

HELIOCENTRIC CONIC DISTANCE 600.335 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 33.013 GAL -4.14 AZL 90.53 HCA 190.66 SMA 190.50 ECC .23107 INC .5262 V1 29.990
RP 233.07 LAP .10 LOP 226.27 VP 21.028 GAP 3.46 AZP 89.48 TAL 337.65 TAP 168.32 RCA 146.48 APO 234.52 V2 23.593
RC 213.179 GL -4.92 GP 11.54 ZAL 123.09 ZAP 141.93 ETS 163.42 ZAE 166.97 ETE 75.17 ZAC 101.08 ETC 255.61 CLP 143.47

PLANETOCENTRIC CONIC

C3 12.439 VHL 3.527 DLA 3.70 RAL 158.60 RAD 6567.5 VEL 11.568 PTH 2.02 VHP 4.327 DPA 7.71 RAP 194.24 ECC 1.2047

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 56 30	2221.75	-19.74	41.94	13.48	110.72	19 33 32	1621.7	-16.75	34.54
90.00	7 53 24	4636.26	13.63	196.82	12.23	64.94	9 10 41	4036.3	10.14	189.88
100.00	20 19 34	1953.80	-20.64	21.85	13.10	112.11	20 52 8	1353.8	-17.46	14.50
100.00	9 13 1	4379.44	14.50	177.51	11.80	63.57	10 26 1	3779.4	10.84	170.63
110.00	21 31 47	1727.79	-23.05	3.54	11.94	115.97	22 0 35	1127.8	-19.37	356.33
110.00	10 17 18	4178.22	16.82	160.93	10.50	59.79	11 26 56	3578.2	12.68	154.27

DIFFERENTIAL CORRECTIONS
TDE .8662 TRA-1.8906 TC3 3.1127 BAU .5829
RDE .3455 RRA -.5287 RC3 1.6117 FAU .26758
FDE-3.0732 FRA 6.3385 FC-18.6238 BSP 15079
BDE .9326 BRA 1.9631 BC3 3.5052 FSP 4983

MID-COURSE EXECUTION ACCURACY
SGT 4034.1 SGR 1532.4 SG3 1506.4
RRT .9601 RRF -.9963 RTF -.9615
SGB 4315.3 R23 -.2282 R13 -.9700
SG1 4296.5 SG2 402.5 THA 20.22

ORBIT DETERMINATION ACCURACY
ST 1684.4 SR 618.7 SS 2201.3
CRT .9887 CRS .9923 CST .9993
LSA 2838.4 MSA 88.5 SSA 34.0
EL1 1792.3 EL2 87.0 ALF 20.01

LAUNCH DATE OCT 29 1964 FLIGHT TIME 258.00 ARRIVAL DATE JUL 14 1965

HELIOCENTRIC CONIC DISTANCE 604.080 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 32.996 GAL -4.08 AZL 90.32 HCA 191.66 SMA 190.19 ECC .22959 INC .3195 V1 29.990
RP 232.70 LAP .07 LOP 227.27 VP 21.044 GAP 3.09 AZP 89.68 TAL 337.84 TAP 169.51 RCA 146.53 APO 233.86 V2 23.631
RC 215.236 GL -3.04 GP 10.83 ZAL 122.85 ZAP 141.05 ETS 164.86 ZAE 167.89 ETE 80.01 ZAC 100.36 ETC 255.65 CLP 142.35

PLANETOCENTRIC CONIC

C3 12.173 VHL 3.489 DLA 5.56 RAL 159.00 RAD 6567.5 VEL 11.557 PTH 2.02 VHP 4.224 DPA 7.11 RAP 193.83 ECC 1.2003

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 43 59	2275.64	-21.00	45.39	14.02	109.44	19 21 55	1675.6	-18.16	37.87
90.00	8 9 2	4573.21	11.78	193.12	12.18	64.06	9 25 16	3973.2	8.20	186.27
100.00	20 7 57	2004.80	-21.92	25.11	13.66	110.85	20 41 22	1404.8	-18.88	17.62
100.00	9 27 45	4319.29	12.65	174.00	11.73	62.69	10 39 44	3719.3	8.89	167.23
110.00	21 22 13	1772.37	-24.35	6.35	12.54	114.76	21 51 46	1172.4	-20.81	358.99
110.00	10 29 58	4124.48	14.96	157.89	10.40	58.90	11 38 43	3524.5	10.73	151.34

DIFFERENTIAL CORRECTIONS
TDE .8298 TRA-1.8218 TC3 3.1848 BAU .5786
RDE .3204 RRA -.4923 RC3 1.5799 FAU .28179
FDE-3.0055 FRA 6.5882 FC-20.0405 BSP 14315
BDE .8895 BRA 1.8872 BC3 3.5552 FSP 5169

MID-COURSE EXECUTION ACCURACY
SGT 3978.9 SGR 1467.0 SG3 1588.6
RRT .9609 RRF -.9952 RTF -.9634
SGB 4240.7 R23 -.2196 R13 -.9710
SG1 4223.4 SG2 382.7 THA 19.68

ORBIT DETERMINATION ACCURACY
ST 1635.4 SR 580.9 SS 2164.5
CRT .9885 CRS .9887 CST .9995
LSA 2772.8 MSA 85.0 SSA 39.2
EL1 1733.6 EL2 82.7 ALF 19.39

LAUNCH DATE OCT 29 1964 FLIGHT TIME 260.00 ARRIVAL DATE JUL 16 1965

HELIOCENTRIC CONIC DISTANCE 607.832 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 32.979 GAL -4.03 AZL 90.15 HCA 192.67 SMA 189.90 ECC .22818 INC .1406 V1 29.990
RP 232.32 LAP .03 LOP 228.27 VP 21.062 GAP 2.73 AZP 89.85 TAL 338.02 TAP 170.69 RCA 146.57 APO 233.23 V2 23.670
RC 217.275 GL -1.42 GP 10.22 ZAL 122.58 ZAP 140.08 ETS 166.10 ZAE 168.60 ETE 85.84 ZAC 99.74 ETC 255.68 CLP 141.20

PLANETOCENTRIC CONIC

C3 11.949 VHL 3.457 DLA 7.18 RAL 159.31 RAD 6567.5 VEL 11.547 PTH 2.02 VHP 4.127 DPA 6.63 RAP 193.44 ECC 1.1967

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 32 51	2322.92	-22.04	48.46	14.50	108.24	19 11 34	1722.9	-19.34	40.83
90.00	8 22 42	4518.10	10.12	189.92	12.17	63.41	9 38 0	3918.1	6.47	183.14
100.00	19 57 38	2049.48	-22.97	28.01	14.16	109.67	20 31 47	1449.5	-20.08	20.40
100.00	9 40 36	4266.78	10.99	170.98	11.72	62.03	10 51 43	3666.8	7.16	164.29
110.00	21 13 44	1811.32	-25.44	8.85	13.08	113.64	21 43 55	1211.3	-22.02	1.36
110.00	10 40 59	4077.70	13.29	155.28	10.36	58.21	11 48 57	3477.7	9.00	148.82

DIFFERENTIAL CORRECTIONS
TDE .7642 TRA-1.7866 TC3 3.1176 BAU .5554
RDE .2970 RRA -.4669 RC3 1.5384 FAU .29316
FDE-2.8901 FRA 6.9055 FC-21.2396 BSP 14377
BDE .8199 BRA 1.8466 BC3 3.4765 FSP 5498

MID-COURSE EXECUTION ACCURACY
SGT 3893.4 SGR 1407.8 SG3 1665.7
RRT .9567 RRF -.9939 RTF -.9612
SGB 4140.1 R23 -.2234 R13 -.9691
SG1 4122.0 SG2 386.9 THA 19.26

ORBIT DETERMINATION ACCURACY
ST 1552.5 SR 546.0 SS 2113.0
CRT .9852 CRS .9834 CST .9994
LSA 2676.3 MSA 96.0 SSA 40.2
EL1 1643.4 EL2 88.4 ALF 19.17

LAUNCH DATE OCT 29 1964 FLIGHT TIME 262.00 ARRIVAL DATE JUL 18 1965

HELIOCENTRIC CONIC DISTANCE 611.600 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 32.964 GAL -3.98 AZL 90.00 HCA 193.67 SMA 189.62 ECC .22684 INC .0000 V1 29.990
RP 231.95 LAP .00 LOP 229.28 VP 21.082 GAP 2.37 AZP 90.00 TAL 338.19 TAP 171.86 RCA 146.61 APO 232.64 V2 23.709
RC 219.295 GL -.01 GP 9.71 ZAL 122.29 ZAP 139.03 ETS 167.19 ZAE 169.09 ETE 92.60 ZAC 99.20 ETC 255.71 CLP 140.00

PLANETOCENTRIC CONIC

C3 11.755 VHL 3.429 DLA 8.60 RAL 159.56 RAD 6567.4 VEL 11.539 PTH 2.01 VHP 4.034 DPA 6.24 RAP 193.05 ECC 1.1935

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 22 47	2364.97	-22.91	51.24	14.93	107.11	19 2 12	1765.0	-20.35	43.50
90.00	8 34 47	4469.17	8.61	187.11	12.19	62.92	9 49 16	3869.2	4.92	180.39
100.00	19 48 18	2089.14	-23.85	30.62	14.60	108.57	20 23 7	1489.1	-21.10	22.91
100.00	9 51 57	4220.23	9.49	168.34	11.72	61.52	11 2 17	3620.2	5.61	161.70
110.00	21 6 4	1845.78	-26.36	11.10	13.56	112.59	21 36 50	1245.8	-23.07	3.49
110.00	10 50 41	4036.35	11.80	153.01	10.35	57.68	11 57 57	3436.4	7.45	146.61

DIFFERENTIAL CORRECTIONS
TDE .7196 TRA-1.7333 TC3 3.0871 BAU .5402
RDE .2808 RRA -.4433 RC3 1.5113 FAU .30601
FDE-2.8137 FRA 7.1951 FC-22.5366 BSP 14038
BDE .7725 BRA 1.7891 BC3 3.4372 FSP 5778

MID-COURSE EXECUTION ACCURACY
SGT 3809.1 SGR 1362.2 SG3 1746.9
RRT .9546 RRF -.9924 RTF -.9607
SGB 4045.3 R23 -.2210 R13 -.9685
SG1 4027.1 SG2 383.9 THA 19.03

ORBIT DETERMINATION ACCURACY
ST 1490.8 SR 521.2 SS 2080.6
CRT .9830 CRS .9773 CST .9990
LSA 2609.5 MSA 110.1 SSA 39.1
EL1 1576.7 EL2 90.6 ALF 19.03

LAUNCH DATE OCT 29 1964 FLIGHT TIME 264.00 ARRIVAL DATE JUL 20 1965

HELIOCENTRIC CONIC DISTANCE 615.376 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 32.949 GAL -3.94 AZL 89.87 HCA 194.68 SMA 189.36 ECC .22557 INC .1280 V1 29.990
RP 231.57 LAP -.03 LOP 230.29 VP 21.103 GAP 2.02 AZP 90.12 TAL 338.35 TAP 173.03 RCA 146.65 APO 232.07 V2 23.748
RC 221.297 GL 1.23 GP 9.26 ZAL 122.01 ZAP 137.92 ETS 168.16 ZAE 169.35 ETE 100.05 ZAC 98.71 ETC 255.74 CLP 138.76

PLANETOCENTRIC CONIC

C3 11.585 VHL 3.404 DLA 9.86 RAL 159.77 RAD 6567.4 VEL 11.531 PTH 2.01 VHP 3.946 DPA 5.93 RAP 192.66 ECC 1.1907

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 13 36	2402.72	-23.64	53.76	15.31	106.05	18 53 39	1802.7	-21.22	45.93
90.00	8 45 38	4425.32	7.25	184.62	12.23	62.55	9 59 23	3825.3	3.51	177.93
100.00	19 39 48	2124.69	-24.60	33.00	14.99	107.53	20 15 13	1524.7	-21.97	25.19
100.00	10 2 7	4178.58	8.13	166.00	11.75	61.14	11 11 45	3578.6	4.22	159.40
110.00	20 59 6	1876.56	-27.15	13.15	13.98	111.61	21 30 22	1276.6	-23.97	5.43
110.00	10 59 19	3999.48	10.45	151.01	10.35	57.27	12 5 58	3399.5	6.06	144.66

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .6581 TRA-1.6978 TC3 2.9658 BAU .5133 SGT 3703.8 SGR 1320.5 SG3 1824.7 ST 1410.0 SR 497.8 SS 2037.8
RDE .2650 RRA -.4267 RC3 1.4787 FAU .31660 RRT .9490 RRF -.9907 RTF -.9578 CRT .9779 CRS .9688 CST .9985
FDE-2.6928 FRA 7.5430 FC-23.6595 BSP 14166 SGB 3932.1 R23 -.2262 R13 -.9662 LSA 2524.1 MSA 125.4 SSA 39.1
BDE .7094 BRA 1.7506 BC3 3.3140 FSP 6180 SG1 3912.3 SG2 394.3 THA 18.89 EL1 1492.0 EL2 98.3 ALF 19.13

LAUNCH DATE OCT 29 1964 FLIGHT TIME 266.00 ARRIVAL DATE JUL 22 1965

HELIOCENTRIC CONIC DISTANCE 619.169 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 32.935 GAL -3.89 AZL 89.76 HCA 195.69 SMA 189.11 ECC .22436 INC .2375 V1 29.990
RP 231.20 LAP -.06 LOP 231.30 VP 21.126 GAP 1.67 AZP 90.23 TAL 338.50 TAP 174.19 RCA 146.68 APO 231.54 V2 23.788
RC 223.281 GL 2.34 GP 8.88 ZAL 121.72 ZAP 136.74 ETS 169.02 ZAE 169.35 ETE 107.89 ZAC 98.28 ETC 255.76 CLP 137.48

PLANETOCENTRIC CONIC

C3 11.432 VHL 3.381 DLA 10.98 RAL 159.94 RAD 6567.4 VEL 11.525 PTH 2.01 VHP 3.861 DPA 5.69 RAP 192.26 ECC 1.1881

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 5 7	2436.99	-24.27	56.08	15.64	105.05	18 45 44	1837.0	-21.97	48.16
90.00	8 55 27	4385.54	5.99	182.37	12.28	62.27	10 8 33	3785.5	2.23	175.70
100.00	19 31 58	2156.90	-25.25	35.17	15.34	106.56	20 7 55	1556.9	-22.74	27.28
100.00	10 11 18	4140.86	6.88	163.89	11.79	60.84	11 20 19	3540.9	2.95	157.32
110.00	20 52 41	1904.32	-27.83	15.02	14.36	110.70	21 24 25	1304.3	-24.76	7.20
110.00	11 7 4	3966.20	9.22	149.21	10.37	56.94	12 13 10	3366.2	4.80	142.91

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .6363 TRA-1.6244 TC3 2.9557 BAU .5047 SGT 3608.3 SGR 1294.0 SG3 1912.9 ST 1368.9 SR 486.1 SS 2031.5
RDE .2580 RRA -.4066 RC3 1.4718 FAU .33183 RRT .9485 RRF -.9890 RTF -.9584 CRT .9772 CRS .9614 CST .9971
FDE-2.6749 FRA 7.7920 FC-25.1280 BSP 13396 SGB 3833.3 R23 -.2188 R13 -.9666 LSA 2493.0 MSA 144.8 SSA 36.3
BDE .6866 BRA 1.6745 BC3 3.3019 FSP 6386 SG1 3813.7 SG2 387.7 THA 18.99 EL1 1449.4 EL2 97.5 ALF 19.23

LAUNCH DATE OCT 29 1964 FLIGHT TIME 268.00 ARRIVAL DATE JUL 24 1965

HELIOCENTRIC CONIC DISTANCE 622.972 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 32.922 GAL -3.85 AZL 89.66 HCA 196.71 SMA 188.87 ECC .22322 INC .3396 V1 29.990
RP 230.82 LAP -.10 LOP 232.31 VP 21.150 GAP 1.33 AZP 90.33 TAL 338.64 TAP 175.35 RCA 146.71 APO 231.03 V2 23.827
RC 225.247 GL 3.33 GP 8.54 ZAL 121.44 ZAP 135.51 ETS 169.79 ZAE 169.10 ETE 115.69 ZAC 97.88 ETC 255.78 CLP 136.16

PLANETOCENTRIC CONIC

C3 11.296 VHL 3.361 DLA 11.99 RAL 160.09 RAD 6567.4 VEL 11.519 PTH 2.01 VHP 3.780 DPA 5.51 RAP 191.84 ECC 1.1859

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 57 17	2468.27	-24.81	58.21	15.94	104.11	18 38 25	1868.3	-22.62	50.22
90.00	9 4 26	4349.29	4.84	180.33	12.34	62.07	10 16 55	3749.3	1.06	173.68
100.00	19 24 44	2186.23	-25.80	37.18	15.65	105.64	20 1 10	1586.2	-23.41	29.20
100.00	10 19 40	4106.56	5.74	161.98	11.84	60.61	11 28 7	3506.6	1.78	155.43
110.00	20 46 47	1929.51	-28.43	16.74	14.71	109.84	21 18 56	1329.5	-25.46	8.82
110.00	11 14 7	3936.05	8.10	147.60	10.40	56.68	12 19 43	3336.0	3.66	141.33

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .6009 TRA-1.5650 TC3 2.8717 BAU .4865 SGT 3494.9 SGR 1269.7 SG3 1999.1 ST 1312.3 SR 474.6 SS 2016.4
RDE .2505 RRA -.3920 RC3 1.4601 FAU .34529 RRT .9453 RRF -.9871 RTF -.9570 CRT .9744 CRS .9519 CST .9955
FDE-2.6189 FRA 8.0944 FC-26.4626 BSP 12994 SGB 3718.4 R23 -.2175 R13 -.9656 LSA 2446.5 MSA 163.8 SSA 34.9
BDE .6510 BRA 1.6133 BC3 3.2216 FSP 6696 SG1 3697.8 SG2 391.3 THA 19.18 EL1 1391.9 EL2 100.7 ALF 19.52

LAUNCH DATE OCT 29 1964 FLIGHT TIME 270.00 ARRIVAL DATE JUL 26 1965

HELIOCENTRIC CONIC DISTANCE 626.786 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 32.909 GAL -3.81 AZL 89.57 HCA 197.73 SMA 188.65 ECC .22214 INC .4282 V1 29.990
RP 230.43 LAP -.13 LOP 233.33 VP 21.175 GAP 1.00 AZP 90.41 TAL 338.77 TAP 176.50 RCA 146.74 APO 230.56 V2 23.867
RC 227.193 GL 4.22 GP 8.24 ZAL 121.18 ZAP 134.22 ETS 170.48 ZAE 168.59 ETE 123.11 ZAC 97.52 ETC 255.81 CLP 134.80

PLANETOCENTRIC CONIC

C3 11.173 VHL 3.343 DLA 12.90 RAL 160.21 RAD 6567.4 VEL 11.514 PTH 2.01 VHP 3.702 DPA 5.38 RAP 191.41 ECC 1.1839

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 50 0	2497.02	-25.27	60.19	16.22	103.22	18 31 37	1897.0	-23.20	52.13
90.00	9 12 42	4316.02	3.78	178.46	12.40	61.92	10 24 38	3716.0	-.01	171.82
100.00	19 18 2	2213.14	-26.28	39.03	15.94	104.78	19 54 55	1613.1	-23.99	30.98
100.00	10 27 22	4075.14	4.69	160.25	11.90	60.44	11 35 17	3475.1	.72	153.71
110.00	20 41 19	1952.51	-28.95	18.33	15.02	109.03	21 13 52	1352.5	-26.08	10.32
110.00	11 20 34	3908.54	7.06	146.14	10.44	56.47	12 25 42	3308.5	2.61	139.89

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .5692 TRA-1.5015 TC3 2.7742 BAU .4679 SGT 3370.9 SGR 1250.9 SG3 2087.4 ST 1258.0 SR 466.4 SS 2008.1
RDE .2453 RRA -.3787 RC3 1.4537 FAU .35936 RRT .9417 RRF -.9852 RTF -.9552 CRT .9717 CRS .9418 CST .9936
FDE-2.5774 FRA 8.3897 FC-27.8436 BSP 12533 SGB 3595.5 R23 -.2169 R13 -.9644 LSA 2407.9 MSA 182.6 SSA 33.9
BDE .6198 BRA 1.5485 BC3 3.1320 FSP 6997 SG1 3573.6 SG2 396.9 THA 19.51 EL1 1337.6 EL2 103.7 ALF 19.94

LAUNCH DATE OCT 29 1964 FLIGHT TIME 272.00 ARRIVAL DATE JUL 28 1965

HELIOCENTRIC CONIC DISTANCE 630.610 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 32.897 GAL -3.78 AZL 89.49 HCA 198.75 SMA 188.44 ECC .22112 INC .5076 V1 29.990
RP 230.05 LAP -.16 LOP 234.36 VP 21.201 GAP .67 AZP 90.48 TAL 338.89 TAP 177.64 RCA 146.77 APO 230.11 V2 23.907
RC 229.120 GL 5.03 GP 7.98 ZAL 120.92 ZAP 132.88 ETS 171.12 ZAE 167.87 ETE 129.88 ZAC 97.18 ETC 255.83 CLP 133.40

PLANETOCENTRIC CONIC

C3 11.063 VHL 3.326 DLA 13.73 RAL 160.32 RAD 6567.4 VEL 11.509 PTH 2.00 VHP 3.627 DPA 5.29 RAP 190.95 ECC 1.1821

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 43 13	2523.59	-25.67	62.04	16.47	102.38	18 25 17	1923.6	-23.71	53.92
90.00	9 20 22	4285.35	2.79	176.74	12.48	61.81	10 31 47	3685.3	-1.00	170.11
100.00	19 11 47	2237.94	-26.70	40.76	16.20	103.96	19 49 5	1637.9	-24.52	32.64
100.00	10 34 29	4046.23	3.72	158.65	11.97	60.32	11 41 55	3446.2	-.26	152.12
110.00	20 36 16	1973.61	-29.41	19.80	15.32	108.27	21 9 10	1373.6	-26.63	11.71
110.00	11 26 30	3883.32	6.11	144.81	10.48	56.30	12 31 13	3283.3	1.64	138.57

DIFFERENTIAL CORRECTIONS
TDE .5372 TRA-1.4381 TC3 2.6512 BAU .4469
RDE .2412 RRA -.3677 RC3 1.4497 FAU .37346
FDE-2.5343 FRA 8.6981 FC-29.2257 BSP 12089
BDE .5889 BRA 1.4844 BC3 3.0217 FSP 7317

MID-COURSE EXECUTION ACCURACY
SGT 3235.9 SGR 1236.1 SG3 2177.1
RRT .9371 RRF -.9831 RTF -.9525
SGB 3463.9 R23 -.2182 R13 -.9627
SG1 3440.1 SG2 405.7 THA 19.99

ORBIT DETERMINATION ACCURACY
ST 1201.9 SR 460.2 SS 2002.2
CRT .9686 CRS .9307 CST .9913
LSA 2371.4 MSA 200.8 SSA 33.3
EL1 1282.6 EL2 107.2 ALF 20.50

LAUNCH DATE OCT 29 1964 FLIGHT TIME 274.00 ARRIVAL DATE JUL 30 1965

HELIOCENTRIC CONIC DISTANCE 634.446 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 32.886 GAL -3.74 AZL 89.42 HCA 199.78 SMA 188.24 ECC .22016 INC .5806 V1 29.990
RP 229.67 LAP -.20 LOP 235.38 VP 21.229 GAP .34 AZP 90.55 TAL 339.00 TAP 178.78 RCA 146.79 APO 229.68 V2 23.948
RC 231.027 GL 5.77 GP 7.74 ZAL 120.69 ZAP 131.49 ETS 171.70 ZAE 166.94 ETE 135.89 ZAC 96.85 ETC 255.85 CLP 131.96

PLANETOCENTRIC CONIC

C3 10.963 VHL 3.311 DLA 14.49 RAL 160.42 RAD 6567.4 VEL 11.504 PTH 2.00 VHP 3.556 DPA 5.25 RAP 190.48 ECC 1.1804

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 36 52	2548.25	-26.02	63.76	16.70	101.59	18 19 21	1948.3	-24.16	55.58
90.00	9 27 31	4256.96	1.88	175.16	12.57	61.74	10 38 28	3657.0	-1.92	168.53
100.00	19 5 58	2260.90	-27.07	42.36	16.45	103.19	19 43 39	1660.9	-24.98	34.19
100.00	10 41 6	4019.53	2.82	157.18	12.05	60.23	11 48 5	3419.5	-1.17	150.66
110.00	20 31 34	1993.07	-29.81	21.17	15.59	107.55	21 4 47	1393.1	-27.13	13.01
110.00	11 31 59	3860.13	5.24	143.59	10.54	56.17	12 36 19	3260.1	.76	137.36

DIFFERENTIAL CORRECTIONS
TDE .5067 TRA-1.3721 TC3 2.5081 BAU .4244
RDE .2380 RRA -.3584 RC3 1.4473 FAU .38744
FDE-2.4879 FRA 9.0162 FC-30.5966 BSP 11616
BDE .5599 BRA 1.4182 BC3 2.8957 FSP 7655

MID-COURSE EXECUTION ACCURACY
SGT 3089.0 SGR 1224.1 SG3 2267.5
RRT .9319 RRF -.9809 RTF -.9492
SGB 3322.7 R23 -.2205 R13 -.9607
SG1 3296.6 SG2 416.0 THA 20.61

ORBIT DETERMINATION ACCURACY
ST 1145.7 SR 455.5 SS 1997.7
CRT .9659 CRS .9185 CST .9883
LSA 2337.0 MSA 219.8 SSA 32.7
EL1 1228.0 EL2 110.0 ALF 21.18

LAUNCH DATE OCT 29 1964 FLIGHT TIME 276.00 ARRIVAL DATE AUG 1 1965

HELIOCENTRIC CONIC DISTANCE 638.291 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 32.875 GAL -3.71 AZL 89.35 HCA 200.80 SMA 188.05 ECC .21926 INC .6456 V1 29.990
RP 229.28 LAP -.23 LOP 236.41 VP 21.258 GAP .03 AZP 90.60 TAL 339.10 TAP 179.91 RCA 146.82 APO 229.28 V2 23.988
RC 232.913 GL 6.44 GP 7.53 ZAL 120.47 ZAP 130.06 ETS 172.24 ZAE 165.84 ETE 141.11 ZAC 96.55 ETC 255.88 CLP 130.48

PLANETOCENTRIC CONIC

C3 10.872 VHL 3.297 DLA 15.18 RAL 160.51 RAD 6567.4 VEL 11.500 PTH 2.00 VHP 3.488 DPA 5.24 RAP 189.98 ECC 1.1789

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 30 56	2571.22	-26.32	65.37	16.93	100.83	18 13 47	1971.2	-24.56	57.15
90.00	9 34 12	4230.58	1.03	173.69	12.66	61.70	10 44 42	3630.6	-2.76	167.06
100.00	19 0 33	2282.24	-27.39	43.87	16.68	102.46	19 38 35	1682.2	-25.40	35.63
100.00	10 47 16	3994.80	1.98	155.82	12.13	60.17	11 53 51	3394.8	-2.01	149.30
110.00	20 27 13	2011.07	-30.18	22.44	15.85	106.88	21 0 44	1411.1	-27.57	14.22
110.00	11 37 6	3838.74	4.42	142.46	10.61	56.07	12 41 4	3238.7	-.06	136.25

DIFFERENTIAL CORRECTIONS
TDE .4796 TRA-1.3021 TC3 2.3544 BAU .4018
RDE .2364 RRA -.3499 RC3 1.4492 FAU .40216
FDE-2.4574 FRA 9.3276 FC-32.0240 BSP 11056
BDE .5347 BRA 1.3483 BC3 2.7647 FSP 7972

MID-COURSE EXECUTION ACCURACY
SGT 2932.9 SGR 1216.1 SG3 2360.3
RRT .9261 RRF -.9788 RTF -.9451
SGB 3175.0 R23 -.2236 R13 -.9584
SG1 3146.0 SG2 427.8 THA 21.42

ORBIT DETERMINATION ACCURACY
ST 1091.5 SR 453.1 SS 1999.5
CRT .9637 CRS .9063 CST .9848
LSA 2310.2 MSA 237.9 SSA 32.2
EL1 1176.5 EL2 112.2 ALF 22.01

LAUNCH DATE OCT 29 1964 FLIGHT TIME 278.00 ARRIVAL DATE AUG 3 1965

HELIOCENTRIC CONIC DISTANCE 642.148 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 32.865 GAL -3.69 AZL 89.29 HCA 201.84 SMA 187.87 ECC .21841 INC .7056 V1 29.990
RP 228.89 LAP -.26 LOP 237.44 VP 21.289 GAP -.29 AZP 90.66 TAL 339.19 TAP 181.03 RCA 146.84 APO 228.90 V2 24.029
RC 234.778 GL 7.07 GP 7.33 ZAL 120.27 ZAP 128.57 ETS 172.74 ZAE 164.59 ETE 145.60 ZAC 96.25 ETC 255.91 CLP 128.95

PLANETOCENTRIC CONIC

C3 10.791 VHL 3.285 DLA 15.82 RAL 160.60 RAD 6567.4 VEL 11.497 PTH 2.00 VHP 3.423 DPA 5.27 RAP 189.45 ECC 1.1776

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 25 23	2592.68	-26.59	66.89	17.14	100.12	18 8 36	1992.7	-24.92	58.61
90.00	9 40 29	4206.06	.23	172.32	12.77	61.68	10 50 35	3606.1	-3.55	165.69
100.00	18 55 29	2302.13	-27.68	45.28	16.90	101.77	19 33 51	1702.1	-25.77	36.99
100.00	10 53 4	3971.84	1.20	154.56	12.23	60.13	11 59 16	3371.8	-2.78	148.04
110.00	20 23 10	2027.76	-30.50	23.84	16.09	106.24	20 56 58	1427.8	-27.97	15.35
110.00	11 41 52	3818.97	3.67	141.43	10.69	55.99	12 45 31	3219.0	-.82	135.22

DIFFERENTIAL CORRECTIONS
TDE .4527 TRA-1.2300 TC3 2.1781 BAU .3776
RDE .2352 RRA -.3427 RC3 1.4520 FAU .41674
FDE-2.4218 FRA 9.6492 FC-33.4349 BSP 10498
BDE .5101 BRA 1.2769 BC3 2.6177 FSP 8311

MID-COURSE EXECUTION ACCURACY
SGT 2764.7 SGR 1210.1 SG3 2453.4
RRT .9190 RRF -.9765 RTF -.9397
SGB 3017.9 R23 -.2286 R13 -.9554
SG1 2985.4 SG2 441.9 THA 22.43

ORBIT DETERMINATION ACCURACY
ST 1035.8 SR 451.5 SS 2001.9
CRT .9619 CRS .8932 CST .9805
LSA 2284.2 MSA 256.1 SSA 31.8
EL1 1124.1 EL2 113.7 ALF 23.00

LAUNCH DATE OCT 29 1964 FLIGHT TIME 280.00 ARRIVAL DATE AUG 5 1965

HELIOCENTRIC CONIC DISTANCE 646.015 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 32.855 GAL -3.66 AZL 89.24 HCA 202.87 SMA 187.70 ECC .21762 INC .7605 V1 29.990
RP 228.51 LAP -.30 LOP 238.48 VP 21.320 GAP -.60 AZP 90.70 TAL 339.27 TAP 182.14 RCA 146.86 APO 228.55 V2 24.070
RC 236.623 GL 7.64 GP 7.16 ZAL 120.08 ZAP 127.04 ETS 173.21 ZAE 163.22 ETE 149.44 ZAC 95.96 ETC 255.93 CLP 127.38

PLANETOCENTRIC CONIC

C3 10.718 VHL 3.274 DLA 16.41 RAL 160.70 RAD 6567.4 VEL 11.494 PTH 2.00 VHP 3.361 DPA 5.33 RAP 188.89 ECC 1.1764

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 20 11	2612.76	-26.82	68.31	17.34	99.44	18 3 44	2012.8	-25.24	60.00
90.00	9 46 24	4183.21	-.50	171.04	12.88	61.69	10 56 8	3583.2	-4.28	164.40
100.00	18 50 45	2320.69	-27.93	46.60	17.12	101.12	19 29 26	1720.7	-26.11	38.27
100.00	10 58 31	3950.51	.48	153.39	12.34	60.11	12 4 22	3350.5	-3.50	146.87
110.00	20 19 25	2043.28	-30.79	24.75	16.34	105.64	20 53 28	1443.3	-28.34	16.41
110.00	11 46 21	3800.69	2.98	140.47	10.78	55.93	12 49 42	3200.7	-1.52	134.26

DIFFERENTIAL CORRECTIONS
TDE .4267 TRA-1.1554 TC3 1.9816 BAU .3523
RDE .2347 RRA -.3365 RC3 1.4559 FAU .43129
FDE-2.3885 FRA 9.9750 FC-34.8383 BSP 9913
BDE .4870 BRA 1.2034 BC3 2.4589 FSP 8658

MID-COURSE EXECUTION ACCURACY
SGT 2585.4 SGR 1206.0 SG3 2546.9
RRT .9101 RRF -.9742 RTF -.9326
SGB 2852.9 R23 -.2356 R13 -.9518
SG1 2815.7 SG2 458.8 THA 23.67

ORBIT DETERMINATION ACCURACY
ST 979.4 SR 451.1 SS 2006.7
CRT .9606 CRS .8798 CST .9754
LSA 2261.4 MSA 273.6 SSA 31.6
EL1 1072.2 EL2 114.5 ALF 24.16

LAUNCH DATE OCT 29 1964 FLIGHT TIME 282.00 ARRIVAL DATE AUG 7 1965

HELIOCENTRIC CONIC DISTANCE 649.891 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 32.846 GAL -3.64 AZL 89.19 HCA 203.91 SMA 187.54 ECC .21688 INC .8108 V1 29.990
RP 228.12 LAP -.33 LOP 239.52 VP 21.352 GAP -.90 AZP 90.74 TAL 339.34 TAP 183.25 RCA 146.87 APO 228.22 V2 24.111
RC 238.446 GL 8.17 GP 6.99 ZAL 119.92 ZAP 125.46 ETS 173.64 ZAE 161.73 ETE 152.72 ZAC 95.68 ETC 255.97 CLP 125.77

PLANETOCENTRIC CONIC

C3 10.652 VHL 3.264 DLA 16.94 RAL 160.79 RAD 6567.4 VEL 11.491 PTH 2.00 VHP 3.302 DPA 5.42 RAP 188.31 ECC 1.1753

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 15 20	2631.58	-27.02	69.65	17.55	98.80	17 59 12	2031.6	-25.53	61.30
90.00	9 52 1	4161.91	-1.19	169.86	13.01	61.71	11 1 22	3561.9	-4.96	163.21
100.00	18 46 22	2338.04	-28.15	47.84	17.33	100.50	19 25 20	1738.0	-26.41	39.47
100.00	11 3 40	3930.67	-.19	152.30	12.46	60.11	12 9 11	3330.7	-4.17	145.77
110.00	20 15 57	2057.72	-31.05	25.80	16.57	105.07	20 50 15	1457.7	-28.67	17.40
110.00	11 50 34	3783.76	2.33	139.58	10.88	55.89	12 53 38	3183.8	-2.16	133.38

DIFFERENTIAL CORRECTIONS
TDE .4036 TRA-1.0767 TC3 1.7697 BAU .3269
RDE .2351 RRA -.3309 RC3 1.4619 FAU .44616
FDE-2.3650 FRA10.2968 FC-36.2598 BSP 9254
BDE .4671 BRA 1.1264 BC3 2.2954 FSP 8986

MID-COURSE EXECUTION ACCURACY
SGT 2396.0 SGR 1204.0 SG3 2641.3
RRT .8994 RRF -.9720 RTF -.9232
SGB 2681.5 R23 -.2444 R13 -.9474
SG1 2638.6 SG2 477.9 THA 25.21

ORBIT DETERMINATION ACCURACY
ST 924.4 SR 452.0 SS 2015.1
CRT .9606 CRS .8666 CST .9690
LSA 2243.6 MSA 291.1 SSA 31.3
EL1 1022.7 EL2 113.6 ALF 25.49

LAUNCH DATE OCT 29 1964 FLIGHT TIME 284.00 ARRIVAL DATE AUG 9 1965

HELIOCENTRIC CONIC DISTANCE 653.778 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 32.838 GAL -3.62 AZL 89.14 HCA 204.96 SMA 187.40 ECC .21618 INC .8574 V1 29.990
RP 227.73 LAP -.36 LOP 240.56 VP 21.386 GAP -1.20 AZP 90.78 TAL 339.39 TAP 184.35 RCA 146.88 APO 227.91 V2 24.152
RC 240.248 GL 8.67 GP 6.84 ZAL 119.78 ZAP 123.84 ETS 174.06 ZAE 160.15 ETE 155.55 ZAC 95.40 ETC 256.00 CLP 124.12

PLANETOCENTRIC CONIC

C3 10.595 VHL 3.255 DLA 17.44 RAL 160.89 RAD 6567.4 VEL 11.488 PTH 2.00 VHP 3.247 DPA 5.54 RAP 187.69 ECC 1.1744

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 10 49	2649.23	-27.20	70.91	17.75	98.19	17 54 58	2049.2	-25.79	62.53
90.00	9 57 19	4142.05	-1.83	168.75	13.15	61.74	11 6 21	3542.1	-5.60	162.09
100.00	18 42 17	2354.28	-28.34	49.01	17.54	99.92	19 21 31	1754.3	-26.68	40.60
100.00	11 8 32	3912.24	-.82	151.29	12.59	60.12	12 13 44	3312.2	-4.79	144.76
110.00	20 12 46	2071.18	-31.29	26.78	16.81	104.53	20 47 17	1471.2	-28.97	18.33
110.00	11 54 33	3768.10	1.73	138.77	10.99	55.86	12 57 21	3168.1	-2.76	132.56

DIFFERENTIAL CORRECTIONS
TDE .3804 TRA -.9954 TC3 1.5351 BAU .3009
RDE .2357 RRA -.3261 RC3 1.4681 FAU .46081
FDE-2.3386 FRA10.6216 FC-37.6537 BSP 8593
BDE .4475 BRA 1.0474 BC3 2.1241 FSP 9326

MID-COURSE EXECUTION ACCURACY
SGT 2195.5 SGR 1203.1 SG3 2734.8
RRT .8851 RRF -.9696 RTF -.9101
SGB 2503.5 R23 -.2560 R13 -.9419
SG1 2452.8 SG2 501.2 THA 27.10

ORBIT DETERMINATION ACCURACY
ST 867.6 SR 453.4 SS 2023.9
CRT .9612 CRS .8530 CST .9613
LSA 2226.8 MSA 307.9 SSA 31.2
EL1 972.6 EL2 111.6 ALF 27.06

LAUNCH DATE OCT 29 1964 FLIGHT TIME 286.00 ARRIVAL DATE AUG 11 1965

HELIOCENTRIC CONIC DISTANCE 657.674 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 32.830 GAL -3.61 AZL 89.10 HCA 206.00 SMA 187.26 ECC .21554 INC .9008 V1 29.990
RP 227.34 LAP -.39 LOP 241.61 VP 21.420 GAP -1.49 AZP 90.81 TAL 339.43 TAP 185.44 RCA 146.90 APO 227.62 V2 24.193
RC 242.030 GL 9.13 GP 6.70 ZAL 119.66 ZAP 122.17 ETS 174.45 ZAE 158.48 ETE 157.98 ZAC 95.12 ETC 256.04 CLP 122.42

PLANETOCENTRIC CONIC

C3 10.545 VHL 3.247 DLA 17.90 RAL 160.99 RAD 6567.4 VEL 11.486 PTH 2.00 VHP 3.194 DPA 5.68 RAP 187.05 ECC 1.1735

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 6 37	2665.79	-27.36	72.10	17.95	97.61	17 51 3	2065.8	-26.02	63.69
90.00	10 2 21	4123.56	-2.43	167.72	13.30	61.78	11 11 4	3523.6	-6.18	161.05
100.00	18 38 30	2369.48	-28.52	50.11	17.76	99.37	19 18 0	1769.5	-26.93	41.66
100.00	11 13 9	3895.11	-1.40	150.35	12.73	60.14	12 18 4	3295.1	-5.36	143.81
110.00	20 9 50	2083.73	-31.50	27.69	17.04	104.03	20 44 34	1483.7	-29.25	19.21
110.00	11 58 18	3753.62	1.18	138.01	11.12	55.83	13 0 52	3153.6	-3.31	131.80

DIFFERENTIAL CORRECTIONS
TDE .3587 TRA -.9106 TC3 1.2841 BAU .2757
RDE .2368 RRA -.3218 RC3 1.4748 FAU .47536
FDE-2.3144 FRA10.9482 FC-39.0283 BSP 7888
BDE .4298 BRA .9658 BC3 1.9555 FSP 9661

MID-COURSE EXECUTION ACCURACY
SGT 1986.6 SGR 1203.4 SG3 2827.8
RRT .8662 RRF -.9673 RTF -.8920
SGB 2322.6 R23 -.2696 R13 -.9352
SG1 2261.8 SG2 528.2 THA 29.45

ORBIT DETERMINATION ACCURACY
ST 811.0 SR 455.5 SS 2034.6
CRT .9633 CRS .8394 CST .9514
LSA 2213.2 MSA 324.8 SSA 31.0
EL1 923.9 EL2 107.3 ALF 28.84

LAUNCH DATE OCT 29 1964 FLIGHT TIME 288.00 ARRIVAL DATE AUG 13 1965

HELIOCENTRIC CONIC DISTANCE 661.580 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 32.822 GAL -3.59 AZL 89.06 HCA 207.06 SMA 187.13 ECC .21495 INC .9410 V1 29.990
RP 226.95 LAP -.43 LOP 242.66 VP 21.456 GAP -1.78 AZP 90.84 TAL 339.47 TAP 186.52 RCA 146.90 APO 227.35 V2 24.235
RC 243.792 GL 9.56 GP 6.57 ZAL 119.55 ZAP 120.46 ETS 174.82 ZAE 156.74 ETE 160.09 ZAC 94.84 ETC 256.08 CLP 120.69

PLANETOCENTRIC CONIC

C3 10.501 VHL 3.241 DLA 18.32 RAL 161.11 RAD 6567.4 VEL 11.484 PTH 2.00 VHP 3.145 DPA 5.85 RAP 186.37 ECC 1.1728

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 2 44	2681.32	-27.49	73.22	18.16	97.07	17 47 26	2081.3	-26.23	64.78
90.00	10 7 8	4106.37	-2.98	166.76	13.47	61.83	11 15 34	3506.4	-6.73	160.08
100.00	18 35 2	2383.70	-28.67	51.14	17.97	98.85	19 14 46	1783.7	-27.15	42.66
100.00	11 17 31	3879.23	-1.94	149.48	12.89	60.16	12 22 10	3279.2	-5.90	142.93
110.00	20 7 10	2095.42	-31.69	28.55	17.28	103.55	20 42 6	1495.4	-29.50	20.03
110.00	12 1 52	3740.26	.67	137.31	11.26	55.82	13 4 12	3140.3	-3.82	131.11

DIFFERENTIAL CORRECTIONS
TDE .3373 TRA -.8227 TC3 1.0108 BAU .2518
RDE .2384 RRA -.3180 RC3 1.4814 FAU .48965
FDE-2.2930 FRA11.2707 FC-40.3674 BSP 7174
BDE .4131 BRA .8820 BC3 1.7934 FSP 9990

MID-COURSE EXECUTION ACCURACY
SGT 1769.9 SGR 1204.3 SG3 2919.2
RRT .8388 RRF -.9649 RTF -.8649
SGB 2140.8 R23 -.2863 R13 -.9271
SG1 2065.7 SG2 561.8 THA 32.40

ORBIT DETERMINATION ACCURACY
ST 753.3 SR 458.3 SS 2046.4
CRT .9664 CRS .8259 CST .9393
LSA 2201.9 MSA 340.6 SSA 30.9
EL1 875.9 EL2 101.3 ALF 30.91

LAUNCH DATE OCT 29 1964 FLIGHT TIME 290.00 ARRIVAL DATE AUG 15 1965

HELIOCENTRIC CONIC DISTANCE 665.495 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 32.815 GAL -3.58 AZL 89.02 HCA 208.11 SMA 187.01 ECC .21440 INC .9783 V1 29.990
RP 226.56 LAP -.46 LOP 243.71 VP 21.492 GAP -2.06 AZP 90.86 TAL 339.49 TAP 187.59 RCA 146.91 APO 227.10 V2 24.277
RC 245.534 GL 9.96 GP 6.45 ZAL 119.47 ZAP 118.71 ETS 175.17 ZAE 154.93 ETE 161.93 ZAC 94.56 ETC 256.12 CLP 118.91

PLANETOCENTRIC CONIC

C3 10.465 VHL 3.235 DLA 18.70 RAL 161.23 RAD 6567.4 VEL 11.483 PTH 2.00 VHP 3.099 DPA 6.04 RAP 185.67 ECC 1.1722

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 59 10	2695.87	-27.61	74.26	18.37	96.56	17 44 6	2095.9	-26.41	65.80
90.00	10 11 40	4090.41	-3.49	165.86	13.65	61.88	11 19 50	3490.4	-7.23	159.17
100.00	18 31 51	2396.98	-28.81	52.10	18.20	98.35	19 11 48	1797.0	-27.35	43.60
100.00	11 21 40	3864.53	-2.44	148.67	13.06	60.20	12 26 4	3264.5	-6.39	142.11
110.00	20 4 45	2106.31	-31.86	29.35	17.53	103.11	20 39 52	1506.3	-29.73	20.79
110.00	12 5 15	3727.96	.20	136.67	11.42	55.82	13 7 23	3128.0	-4.29	130.46

DIFFERENTIAL CORRECTIONS
TDE .3174 TRA -.7308 TC3 .7220 BAU .2315
RDE .2404 RRA -.3143 RC3 1.4887 FAU .50393
FDE-2.2805 FRA11.5818 FC-41.6892 BSP 6450
BDE .3981 BRA .7955 BC3 1.6545 FSP 10303

MID-COURSE EXECUTION ACCURACY
SGT 1549.7 SGR 1205.9 SG3 3008.9
RRT .7985 RRF -.9625 RTF -.8239
SGB 1963.6 R23 -.3036 R13 -.9180
SG1 1869.1 SG2 601.9 THA 36.20

ORBIT DETERMINATION ACCURACY
ST 695.8 SR 461.8 SS 2060.0
CRT .9710 CRS .8132 CST .9238
LSA 2194.0 MSA 355.7 SSA 30.9
EL1 830.0 EL2 92.5 ALF 33.26

LAUNCH DATE OCT 29 1964 FLIGHT TIME 292.00 ARRIVAL DATE AUG 17 1965

HELIOCENTRIC CONIC DISTANCE 669.419 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 32.808 GAL -3.57 AZL 88.99 HCA 209.17 SMA 186.89 ECC .21390 INC 1.0135 V1 29.990
RP 226.17 LAP -.49 LOP 244.77 VP 21.529 GAP -2.34 AZP 90.89 TAL 339.49 TAP 188.66 RCA 146.92 APO 226.87 V2 24.318
RC 247.256 GL 10.33 GP 6.33 ZAL 119.42 ZAP 116.93 ETS 175.51 ZAE 153.06 ETE 163.55 ZAC 94.29 ETC 256.17 CLP 117.10

PLANETOCENTRIC CONIC

C3 10.435 VHL 3.230 DLA 19.06 RAL 161.36 RAD 6567.4 VEL 11.481 PTH 2.00 VHP 3.057 DPA 6.24 RAP 184.94 ECC 1.1717

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 55 54	2709.47	-27.71	75.25	18.60	96.07	17 41 4	2109.5	-26.58	66.76
90.00	10 15 59	4075.65	-3.97	165.04	13.84	61.94	11 23 54	3475.6	-7.69	158.33
100.00	18 28 58	2409.38	-28.92	53.00	18.43	97.89	19 9 7	1809.4	-27.53	44.48
100.00	11 25 36	3850.97	-2.90	147.93	13.25	60.24	12 29 47	3251.0	-6.84	141.36
110.00	20 2 36	2116.44	-32.01	30.10	17.78	102.69	20 37 52	1516.4	-29.93	21.51
110.00	12 8 28	3716.67	-.23	136.08	11.58	55.82	13 10 24	3116.7	-4.72	129.87

DIFFERENTIAL CORRECTIONS
TDE .2983 TRA -.6355 TC3 .4149 BAU .2164
RDE .2426 RRA -.3110 RC3 1.4948 FAU .51760
FDE-2.2661 FRA11.8932 FC-42.9435 BSP 5736
BDE .3845 BRA .7075 BC3 1.5514 FSP 10613

MID-COURSE EXECUTION ACCURACY
SGT 1331.9 SGR 1207.7 SG3 3095.9
RRT .7352 RRF -.9601 RTF -.7581
SGB 1797.9 R23 -.3187 R13 -.9089
SG1 1676.0 SG2 650.5 THA 41.20

ORBIT DETERMINATION ACCURACY
ST 638.7 SR 465.5 SS 2074.1
CRT .9772 CRS .8004 CST .9028
LSA 2188.1 MSA 371.0 SSA 30.8
EL1 786.3 EL2 80.3 ALF 35.89

LAUNCH DATE OCT 29 1964 FLIGHT TIME 294.00 ARRIVAL DATE AUG 19 1965

HELIOCENTRIC CONIC DISTANCE 673.353 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 32.802 GAL -3.57 AZL 88.95 HCA 210.23 SMA 186.79 ECC .21344 INC 1.0465 V1 29.990
RP 225.78 LAP -.53 LOP 245.83 VP 21.567 GAP -2.61 AZP 90.90 TAL 339.49 TAP 189.72 RCA 146.92 APO 226.65 V2 24.360
RC 248.959 GL 10.68 GP 6.22 ZAL 119.38 ZAP 115.10 ETS 175.83 ZAE 151.13 ETE 164.98 ZAC 94.01 ETC 256.22 CLP 115.26

PLANETOCENTRIC CONIC

C3 10.411 VHL 3.227 DLA 19.38 RAL 161.50 RAD 6567.4 VEL 11.480 PTH 2.00 VHP 3.017 DPA 6.47 RAP 184.18 ECC 1.1713

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 52 57	2722.16	-27.80	76.16	18.83	95.62	17 38 19	2122.2	-26.73	67.66
90.00	10 20 4	4062.05	-4.40	164.27	14.05	62.00	11 27 46	3462.0	-8.11	157.56
100.00	18 26 22	2420.92	-29.03	53.84	18.67	97.46	19 6 43	1820.9	-27.69	45.30
100.00	11 29 21	3838.51	-3.32	147.24	13.45	60.28	12 33 19	3238.5	-7.25	140.66
110.00	20 0 41	2125.85	-32.15	30.80	18.03	102.30	20 36 7	1525.8	-30.12	22.18
110.00	12 11 31	3706.35	-.63	135.55	11.77	55.82	13 13 17	3106.4	-5.11	129.33

DIFFERENTIAL CORRECTIONS
TDE .2794 TRA -.5369 TC3 .0899 BAU .2092
RDE .2451 RRA -.3079 RC3 1.5001 FAU .53075
FDE-2.2523 FRA12.1970 FC-44.1340 BSP 5074
BDE .3716 BRA .6189 BC3 1.5028 FSP 10914

MID-COURSE EXECUTION ACCURACY
SGT 1127.4 SGR 1209.3 SG3 3179.6
RRT .6292 RRF -.9576 RTF -.6470
SGB 1653.3 R23 -.3221 R13 -.9037
SG1 1493.3 SG2 709.6 THA 48.18

ORBIT DETERMINATION ACCURACY
ST 581.4 SR 469.5 SS 2088.3
CRT .9841 CRS .7877 CST .8747
LSA 2184.0 MSA 385.5 SSA 30.7
EL1 744.5 EL2 65.1 ALF 38.83

LAUNCH DATE OCT 29 1964 FLIGHT TIME 296.00 ARRIVAL DATE AUG 21 1965

HELIOCENTRIC CONIC DISTANCE 677.296 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 32.797 GAL -3.56 AZL 88.92 HCA 211.29 SMA 186.69 ECC .21303 INC 1.0778 V1 29.990
RP 225.38 LAP -.56 LOP 246.90 VP 21.605 GAP -2.88 AZP 90.92 TAL 339.47 TAP 190.77 RCA 146.92 APO 226.46 V2 24.402
RC 250.643 GL 11.01 GP 6.11 ZAL 119.37 ZAP 113.24 ETS 176.14 ZAE 149.15 ETE 166.25 ZAC 93.72 ETC 256.27 CLP 113.38

PLANETOCENTRIC CONIC

C3 10.394 VHL 3.224 DLA 19.68 RAL 161.66 RAD 6567.4 VEL 11.480 PTH 2.00 VHP 2.981 DPA 6.71 RAP 183.39 ECC 1.1711

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 50 18	2733.97	-27.87	77.02	19.07	95.20	17 35 52	2134.0	-26.86	68.50
90.00	10 23 58	4049.56	-4.80	163.57	14.27	62.06	11 31 27	3449.6	-8.50	156.85
100.00	18 24 3	2431.64	-29.12	54.63	18.91	97.06	19 4 35	1831.6	-27.84	46.06
100.00	11 32 53	3827.12	-3.70	146.62	13.66	60.32	12 36 41	3227.1	-7.63	140.03
110.00	19 59 1	2134.56	-32.27	31.45	18.30	101.93	20 34 35	1534.6	-30.29	22.80
110.00	12 14 25	3696.96	-.99	135.06	11.97	55.83	13 16 2	3097.0	-5.46	128.83

DIFFERENTIAL CORRECTIONS
TDE .2632 TRA -.4326 TC3 -.2450 BAU .2120
RDE .2483 RRA -.3043 RC3 1.5059 FAU .54391
FDE-2.2597 FRA12.4707 FC-45.3039 BSP 4476
BDE .3618 BRA .5209 BC3 1.5257 FSP 11161

MID-COURSE EXECUTION ACCURACY
SGT 954.1 SGR 1211.4 SG3 3259.7
RRT .4516 RRF -.9552 RTF -.4578
SGB 1542.0 R23 -.2854 R13 -.9120
SG1 1334.4 SG2 772.9 THA 59.04

ORBIT DETERMINATION ACCURACY
ST 528.0 SR 474.6 SS 2104.5
CRT .9915 CRS .7773 CST .8354
LSA 2184.5 MSA 400.2 SSA 30.4
EL1 708.5 EL2 46.1 ALF 41.93

LAUNCH DATE OCT 29 1964 FLIGHT TIME 298.00 ARRIVAL DATE AUG 23 1965

HELIOCENTRIC CONIC DISTANCE 681.247 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 32.791 GAL -3.56 AZL 88.89 HCA 212.36 SMA 186.60 ECC .21266 INC 1.1071 V1 29.990
RP 224.99 LAP -.59 LOP 247.97 VP 21.645 GAP -3.15 AZP 90.94 TAL 339.44 TAP 191.81 RCA 146.92 APO 226.28 V2 24.444
RC 252.307 GL 11.32 GP 6.00 ZAL 119.37 ZAP 111.34 ETS 176.44 ZAE 147.12 ETE 167.39 ZAC 93.44 ETC 256.33 CLP 111.47

PLANETOCENTRIC CONIC

C3 10.383 VHL 3.222 DLA 19.94 RAL 161.83 RAD 6567.4 VEL 11.479 PTH 2.00 VHP 2.949 DPA 6.96 RAP 182.58 ECC 1.1709

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 47 58	2744.90	-27.94	77.81	19.32	94.81	17 33 43	2144.9	-26.98	69.28
90.00	10 27 38	4038.20	-5.16	162.93	14.50	62.12	11 34 57	3438.2	-8.85	156.20
100.00	18 22 2	2441.55	-29.20	55.35	19.17	96.69	19 2 44	1841.6	-27.97	46.77
100.00	11 36 15	3816.78	-4.05	146.05	13.89	60.36	12 39 52	3216.8	-7.97	139.45
110.00	19 57 35	2142.60	-32.39	32.05	18.58	101.59	20 33 18	1542.6	-30.45	23.37
110.00	12 17 11	3688.50	-1.31	134.61	12.19	55.84	13 18 40	3088.5	-5.79	128.39

DIFFERENTIAL CORRECTIONS
TDE .2444 TRA -.3275 TC3 -.6063 BAU .2256
RDE .2511 RRA -.3014 RC3 1.5082 FAU .55547
FDE-2.2470 FRA12.7549 FC-46.3162 BSP 4103
BDE .3504 BRA .4451 BC3 1.6255 FSP 11440

MID-COURSE EXECUTION ACCURACY
SGT 851.6 SGR 1212.1 SG3 3334.0
RRT .1622 RRF -.9525 RTF -.1528
SGB 1481.3 R23 -.1388 R13 -.9424
SG1 1226.8 SG2 830.2 THA 77.88

ORBIT DETERMINATION ACCURACY
ST 472.8 SR 479.0 SS 2118.6
CRT .9956 CRS .7652 CST .7810
LSA 2184.0 MSA 413.1 SSA 30.4
EL1 672.3 EL2 31.6 ALF 45.37

LAUNCH DATE OCT 29 1964 FLIGHT TIME 300.00 ARRIVAL DATE AUG 25 1965

HELIOCENTRIC CONIC DISTANCE 685.207 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 32.787 GAL -3.57 AZL 88.86 HCA 213.44 SMA 186.51 ECC .21233 INC 1.1350 V1 29.990
RP 224.60 LAP -.63 LOP 249.04 VP 21.685 GAP -3.40 AZP 90.95 TAL 339.40 TAP 192.84 RCA 146.91 APO 226.12 V2 24.485
RC 253.951 GL 11.61 GP 5.90 ZAL 119.40 ZAP 109.42 ETS 176.73 ZAE 145.05 ETE 168.41 ZAC 93.15 ETC 256.40 CLP 109.53

PLANETOCENTRIC CONIC

C3 10.378 VHL 3.221 DLA 20.18 RAL 162.01 RAD 6567.4 VEL 11.479 PTH 2.00 VHP 2.919 DPA 7.23 RAP 181.75 ECC 1.1708

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 45 56	2754.98	-27.99	78.55	19.58	94.44	17 31 51	2155.0	-27.08	70.00
90.00	10 31 7	4027.93	-5.49	162.36	14.76	62.18	11 38 15	3427.9	-9.17	155.61
100.00	18 20 18	2450.68	-29.27	56.02	19.45	96.34	19 1 8	1850.7	-28.09	47.42
100.00	11 39 26	3807.46	-4.36	145.53	14.14	60.40	12 42 54	3207.5	-8.27	138.93
110.00	19 56 24	2150.00	-32.49	32.61	18.87	101.28	20 32 14	1550.0	-30.59	23.90
110.00	12 19 49	3680.90	-1.60	134.22	12.42	55.85	13 21 10	3080.9	-6.07	127.99

DIFFERENTIAL CORRECTIONS
TDE .2278 TRA -.2174 TC3 -.9774 BAU .2495
RDE .2544 RRA -.2981 RC3 1.5096 FAU .56648
FDE-2.2488 FRA13.0138 FC-47.2573 BSP 3976
BDE .3415 BRA .3690 BC3 1.7984 FSP 11674

MID-COURSE EXECUTION ACCURACY
SGT 854.7 SGR 1212.4 SG3 3402.9
RRT -.1895 RRF -.9498 RTF .2196
SGB 1483.4 R23 .1165 R13 -.9435
SG1 1232.4 SG2 825.6 THA 103.98

ORBIT DETERMINATION ACCURACY
ST 424.1 SR 484.1 SS 2133.8
CRT .9926 CRS .7546 CST .7019
LSA 2187.3 MSA 426.7 SSA 30.2
EL1 642.4 EL2 38.9 ALF 48.81

LAUNCH DATE OCT 29 1964 FLIGHT TIME 302.00 ARRIVAL DATE AUG 27 1965

HELIOCENTRIC CONIC DISTANCE 689.176 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 32.782 GAL -3.57 AZL 88.84 HCA 214.51 SMA 186.44 ECC .21204 INC 1.1612 V1 29.990
RP 224.21 LAP -.66 LOP 250.11 VP 21.725 GAP -3.66 AZP 90.96 TAL 339.35 TAP 193.86 RCA 146.90 APO 225.97 V2 24.527
RC 255.576 GL 11.88 GP 5.79 ZAL 119.46 ZAP 107.47 ETS 177.01 ZAE 142.94 ETE 169.33 ZAC 92.86 ETC 256.47 CLP 107.56

PLANETOCENTRIC CONIC

C3 10.379 VHL 3.222 DLA 20.40 RAL 162.20 RAD 6567.4 VEL 11.479 PTH 2.00 VHP 2.894 DPA 7.51 RAP 180.90 ECC 1.1708

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 44 12	2764.22	-28.04	79.22	19.86	94.11	17 30 16	2164.2	-27.18	70.66
90.00	10 34 25	4018.73	-5.78	161.84	15.02	62.23	11 41 23	3418.7	-9.45	155.08
100.00	18 18 51	2459.04	-29.33	56.64	19.73	96.02	18 59 50	1859.0	-28.19	48.02
100.00	11 42 27	3799.15	-4.64	145.07	14.40	60.44	12 45 46	3199.1	-8.54	138.46
110.00	19 55 28	2156.77	-32.57	33.11	19.17	100.99	20 31 24	1556.8	-30.72	24.39
110.00	12 22 20	3674.18	-1.86	133.87	12.67	55.86	13 23 34	3074.2	-6.33	127.63

DIFFERENTIAL CORRECTIONS
TDE .2103 TRA -.1044 TC3-1.3636 BAU .2822
RDE .2578 RRA -.2949 RC3 1.5092 FAU .57653
FDE-2.2492 FRA13.2591 FC-48.0897 BSP 4173
BDE .3328 BRA .3128 BC3 2.0340 FSP 11890

MID-COURSE EXECUTION ACCURACY
SGT 975.3 SGR 1212.0 SG3 3465.8
RRT -.4839 RRF -.9470 RTF .5303
SGB 1555.7 R23 .2459 R13 -.9182
SG1 1355.7 SG2 763.0 THA 122.82

ORBIT DETERMINATION ACCURACY
ST 379.7 SR 489.2 SS 2148.2
CRT .9731 CRS .7442 CST .5886
LSA 2192.0 MSA 438.7 SSA 30.1
EL1 615.3 EL2 69.5 ALF 52.37

LAUNCH DATE OCT 29 1964 FLIGHT TIME 304.00 ARRIVAL DATE AUG 29 1965

HELIOCENTRIC CONIC DISTANCE 693.153 EARTH TO MARS

RL	148.57	LAL	-.00	LOL	35.61	VL	32.778	GAL	-3.58	AZL	88.81	HCA	215.59	SMA	186.37	ECC	.21180	INC	1.1863
RP	223.82	LAP	-.69	LOP	251.19	VP	21.766	GAP	-3.91	AZP	90.96	TAL	339.28	TAP	194.87	RCA	146.89	APO	225.84
RC	257.180	GL	12.13	GP	5.69	ZAL	119.53	ZAP	105.50	ETS	177.28	ZAE	140.80	ETE	170.17	ZAC	92.57	ETC	256.54

V1	29.990	V2	24.569	CLP	105.57														

PLANETOCENTRIC CONIC

C3	10.386	VHL	3.223	DLA	20.59	RAL	162.41	RAD	6567.4	VEL	11.479	PTH	2.00	VHP	2.871	DPA	7.80	RAP	180.03
ECC	1.1709																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 42 47	2772.63	-28.08	79.83	20.15	93.81	17 29 0	2172.6	-27.26	71.26
90.00	10 37 30	4010.60	-6.04	161.38	15.31	62.28	11 44 21	3410.6	-9.70	154.62
100.00	18 17 41	2466.64	-29.39	57.20	20.03	95.73	18 58 48	1866.6	-28.28	48.57
100.00	11 45 18	3791.82	-4.89	144.67	14.67	60.47	12 48 29	3191.8	-8.78	138.05
110.00	19 54 45	2162.94	-32.65	33.58	19.48	100.72	20 30 48	1562.9	-30.83	24.83
110.00	12 24 42	3668.29	-2.08	133.56	12.93	55.87	13 25 51	3068.3	-6.55	127.32

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1935	TRA	.0125	TC3	-1.7616	BAU	.3218	SGT	1186.7	SGR	1210.4	SG3	3521.1	ST	345.8	SR	494.3
RDE	.2614	RRA	-.2914	RC3	1.5064	FAU	.58532	RRT	-.6654	RRF	-.9441	RTF	.7224	CRT	.9226	CRS	.7343
FDE	-2.2515	FRA	13.4845	FC	-48.7896	BSP	4678	SGB	1695.0	R23	.2608	R13	-.9161	LSA	2198.5	MSA	450.9
BDE	.3252	BRA	.2917	BC3	2.3179	FSP	12089	SG1	1546.8	SG2	693.1	THA	134.15	EL1	592.9	EL2	111.2

SS	2161.9	CST	.4282	ALF	55.80

LAUNCH DATE OCT 29 1964 FLIGHT TIME 306.00 ARRIVAL DATE AUG 31 1965

HELIOCENTRIC CONIC DISTANCE 697.139 EARTH TO MARS

RL	148.57	LAL	-.00	LOL	35.61	VL	32.774	GAL	-3.59	AZL	88.79	HCA	216.68	SMA	186.30	ECC	.21159	INC	1.2101
RP	223.44	LAP	-.72	LOP	252.28	VP	21.808	GAP	-4.16	AZP	90.97	TAL	339.20	TAP	195.88	RCA	146.88	APO	225.72
RC	258.763	GL	12.37	GP	5.59	ZAL	119.63	ZAP	103.50	ETS	177.54	ZAE	138.63	ETE	170.93	ZAC	92.28	ETC	256.62

V1	29.990	V2	24.611	CLP	103.57														

PLANETOCENTRIC CONIC

C3	10.399	VHL	3.225	DLA	20.76	RAL	162.64	RAD	6567.4	VEL	11.480	PTH	2.00	VHP	2.852	DPA	8.09	RAP	179.14
ECC	1.1711																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 41 41	2780.22	-28.11	80.38	20.46	93.53	17 28 1	2180.2	-27.33	71.80
90.00	10 40 24	4003.52	-6.26	160.98	15.60	62.33	11 47 8	3403.5	-9.92	154.21
100.00	18 16 48	2473.50	-29.43	57.70	20.34	95.47	18 58 2	1873.5	-28.36	49.06
100.00	11 47 58	3785.48	-5.10	144.32	14.97	60.51	12 51 4	3185.5	-8.99	137.69
110.00	19 54 17	2168.51	-32.72	34.00	19.81	100.49	20 30 26	1568.5	-30.93	25.24
110.00	12 26 58	3663.24	-2.28	133.30	13.21	55.88	13 28 2	3063.2	-6.74	127.05

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1760	TRA	.1320	TC3	-2.1713	BAU	.3670	SGT	1456.7	SGR	1207.6	SG3	3568.9	ST	324.4	SR	499.5
RDE	.2651	RRA	-.2878	RC3	1.5012	FAU	.59284	RRT	-.7650	RRF	-.9409	RTF	.8285	CRT	.8252	CRS	.7246
FDE	-2.2540	FRA	13.6930	FC	-49.3533	BSP	5418	SGB	1892.1	R23	.2363	R13	-.9262	LSA	2207.0	MSA	461.8
BDE	.3182	BRA	.3166	BC3	2.6397	FSP	12258	SG1	1782.2	SG2	635.6	THA	141.93	EL1	573.9	EL2	159.5

SSA	29.9	CST	.2183	ALF	59.17

LAUNCH DATE OCT 29 1964 FLIGHT TIME 308.00 ARRIVAL DATE SEP 2 1965

HELIOCENTRIC CONIC DISTANCE 701.130 EARTH TO MARS

RL	148.57	LAL	-.00	LOL	35.61	VL	32.771	GAL	-3.60	AZL	88.77	HCA	217.77	SMA	186.25	ECC	.21142	INC	1.2327
RP	223.05	LAP	-.75	LOP	253.37	VP	21.850	GAP	-4.40	AZP	90.97	TAL	339.10	TAP	196.87	RCA	146.87	APO	225.62
RC	260.326	GL	12.59	GP	5.49	ZAL	119.75	ZAP	101.50	ETS	177.79	ZAE	136.44	ETE	171.63	ZAC	91.98	ETC	256.70

V1	29.990	V2	24.653	CLP	101.55														

PLANETOCENTRIC CONIC

C3	10.419	VHL	3.228	DLA	20.91	RAL	162.88	RAD	6567.4	VEL	11.481	PTH	2.00	VHP	2.837	DPA	8.38	RAP	178.25
ECC	1.1715																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 40 54	2786.97	-28.14	80.87	20.79	93.28	17 27 21	2187.0	-27.39	72.29
90.00	10 43 7	3997.53	-6.45	160.64	15.92	62.37	11 49 44	3397.5	-10.10	153.86
100.00	18 16 14	2479.61	-29.47	58.15	20.67	95.24	18 57 33	1879.6	-28.43	49.50
100.00	11 50 29	3780.13	-5.28	144.02	15.28	60.54	12 53 29	3180.1	-9.17	137.39
110.00	19 54 4	2173.48	-32.78	34.37	20.15	100.27	20 30 18	1573.5	-31.02	25.60
110.00	12 29 7	3659.01	-2.44	133.08	13.51	55.89	13 30 6	3059.0	-6.90	126.83

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1568	TRA	.2540	TC3	-2.5983	BAU	.4171	SGT	1767.5	SGR	1201.0	SG3	3604.2	ST	317.8	SR	502.8
RDE	.2676	RRA	-.2853	RC3	1.4882	FAU	.59656	RRT	-.8201	RRF	-.9372	RTF	.8865	CRT	.6708	CRS	.7101
FDE	-2.2079	FRA	13.9312	FC	-49.5702	BSP	6328	SGB	2136.9	R23	.2037	R13	-.9377	LSA	2213.3	MSA	471.2
BDE	.3101	BRA	.3820	BC3	2.9943	FSP	12514	SG1	2053.5	SG2	591.5	THA	147.89	EL1	555.2	EL2	213.4

SS	2183.6	CST	-.0380	ALF	62.66

LAUNCH DATE OCT 29 1964 FLIGHT TIME 310.00 ARRIVAL DATE SEP 4 1965

HELIOCENTRIC CONIC DISTANCE 705.133 EARTH TO MARS

RL	148.57	LAL	-.00	LOL	35.61	VL	32.768	GAL	-3.62	AZL	88.75	HCA	218.86	SMA	186.19	ECC	.21129	INC	1.2545
RP	222.66	LAP	-.79	LOP	254.46	VP	21.893	GAP	-4.64	AZP	90.98	TAL	339.00	TAP	197.85	RCA	146.85	APO	225.53
RC	261.869	GL	12.80	GP	5.39	ZAL	119.90	ZAP	99.48	ETS	178.04	ZAE	134.23	ETE	172.27	ZAC	91.69	ETC	256.79

V1	29.990	V2	24.695	CLP	99.52

PLANETOCENTRIC CONIC

C3	10.444	VHL	3.232	DLA	21.03	RAL	163.14	RAD	6567.4	VEL	11.482	PTH	2.00	VHP	2.825	DPA	8.68	RAP	177.35
ECC	1.1719																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 40 25	2792.96	-28.16	81.31	21.13	93.07	17 26 58	2193.0	-27.44	72.72
90.00	10 45 39	3992.52	-6.61	160.36	16.25	62.40	11 52 11	3392.5	-10.26	153.57
100.00	18 15 55	2485.03	-29.50	58.55	21.02	95.03	18 57 20	1885.0	-28.50	49.89
100.00	11 52 50	3775.68	-5.43	143.77	15.60	60.56	12 55 46	3175.7	-9.31	137.14
110.00	19 54 4	2177.93	-32.84	34.71	20.50	100.08	20 30 22	1577.9	-31.10	25.92
110.00	12 31 9	3655.55	-2.57	132.89	13.83	55.90	13 32 5	3055.5	-7.03	126.64

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1406	TRA	.3813	TC3	-3.0145	BAU	.4690	SGT	2093.6	SGR	1197.2	SG3	3637.2	ST	335.8	SR	509.4
RDE	.2724	RRA	-.2802	RC3	1.4815	FAU	.60292	RRT	-.8501	RRF	-.9339	RTF	.9223	CRT	.4910	CRS	.7050
FDE	-2.2489	FRA	14.0561	FC	-49.9776	BSP	7372	SGB	2411.8	R23	.1672	R13	-.9506	LSA	2228.3	MSA	481.9
BDE	.3065	BRA	.4732	BC3	3.3589	FSP	12557	SG1	2345.2	SG2	562.8	THA	152.34	EL1	545.6	EL2	273.1

SSA	29.7	CST	-.2658	ALF	65.57

LAUNCH DATE OCT 29 1964 FLIGHT TIME 312.00 ARRIVAL DATE SEP 6 1965

HELIOCENTRIC CONIC DISTANCE 709.144 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 32.765 GAL -3.64 AZL 88.72 HCA 219.95 SMA 186.15 ECC .21120 INC 1.2752 V1 29.990
RP 222.28 LAP -.82 LOP 255.55 VP 21.936 GAP -4.87 AZP 90.98 TAL 338.88 TAP 198.83 RCA 146.83 APO 225.46 V2 24.737
RC 263.392 GL 12.99 GP 5.29 ZAL 120.06 ZAP 97.45 ETS 178.27 ZAE 132.01 ETE 172.86 ZAC 91.40 ETC 256.87 CLP 97.49

PLANETOCENTRIC CONIC

C3 10.476 VHL 3.237 DLA 21.14 RAL 163.41 RAD 6567.4 VEL 11.483 PTH 2.00 VHP 2.817 DPA 8.98 RAP 176.45 ECC 1.1724

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 40 15	2798.15	-28.18	81.69	21.48	92.88	17 26 53	2198.1	-27.49	73.09
90.00	10 47 59	3988.55	-6.73	160.13	16.59	62.43	11 54 28	3388.5	-10.38	153.35
100.00	18 15 53	2489.75	-29.53	58.90	21.38	94.85	18 57 23	1889.7	-28.55	50.23
100.00	11 55 1	3772.18	-5.55	143.58	15.95	60.58	12 57 54	3172.2	-9.42	136.94
110.00	19 54 19	2181.81	-32.88	35.00	20.87	99.91	20 30 41	1581.8	-31.17	26.20
110.00	12 33 5	3652.88	-2.67	132.75	14.16	55.91	13 33 58	3052.9	-7.13	126.50

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1233 TRA .5111 TC3-3.4389 BAU .5238 SGT 2438.0 SGR 1191.5 SG3 3660.5 ST 369.8 SR 515.5 SS 2208.1
RDE .2769 RRA -.2751 RC3 1.4710 FAU .60728 RRT -.8672 RRF -.9302 RTF .9442 CRT .3120 CRS .6991 CST -.4569
FDE-2.2786 FRA14.1696 FC-50.1878 BSP 8496 SGB 2713.6 R23 .1368 R13 -.9606 LSA 2244.0 MSA 491.9 SSA 29.4
BDE .3031 BRA .5805 BC3 3.7403 FSP 12598 SG1 2658.5 SG2 544.1 THA 155.96 EL1 537.5 EL2 336.9 ALF 68.66

LAUNCH DATE OCT 29 1964 FLIGHT TIME 314.00 ARRIVAL DATE SEP 8 1965

HELIOCENTRIC CONIC DISTANCE 713.162 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 32.763 GAL -3.66 AZL 88.70 HCA 221.05 SMA 186.11 ECC .21114 INC 1.2951 V1 29.990
RP 221.89 LAP -.85 LOP 256.65 VP 21.980 GAP -5.10 AZP 90.98 TAL 338.75 TAP 199.80 RCA 146.81 APO 225.40 V2 24.779
RC 264.895 GL 13.18 GP 5.19 ZAL 120.25 ZAP 95.43 ETS 178.50 ZAE 129.78 ETE 173.41 ZAC 91.10 ETC 256.97 CLP 95.45

PLANETOCENTRIC CONIC

C3 10.513 VHL 3.242 DLA 21.22 RAL 163.70 RAD 6567.4 VEL 11.485 PTH 2.00 VHP 2.812 DPA 9.28 RAP 175.55 ECC 1.1730

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 40 23	2802.54	-28.20	82.01	21.86	92.72	17 27 6	2202.5	-27.52	73.41
90.00	10 50 8	3985.61	-6.83	159.97	16.96	62.45	11 56 34	3385.6	-10.46	153.18
100.00	18 16 9	2493.76	-29.56	59.19	21.76	94.70	18 57 42	1893.8	-28.59	50.52
100.00	11 57 4	3769.62	-5.63	143.44	16.30	60.59	12 59 53	3169.6	-9.51	136.80
110.00	19 54 47	2185.16	-32.92	35.26	21.26	99.77	20 31 12	1585.2	-31.22	26.44
110.00	12 34 55	3650.98	-2.74	132.66	14.51	55.91	13 35 46	3051.0	-7.20	126.40

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1051 TRA .6435 TC3-3.8675 BAU .5809 SGT 2795.1 SGR 1184.0 SG3 3673.4 ST 417.2 SR 521.1 SS 2217.2
RDE .2814 RRA -.2700 RC3 1.4569 FAU .60963 RRT -.8768 RRF -.9261 RTF .9583 CRT .1565 CRS .6925 CST -.6008
FDE-2.2993 FRA14.2662 FC-50.2013 BSP 9676 SGB 3035.5 R23 .1126 R13 -.9683 LSA 2260.4 MSA 501.1 SSA 29.1
BDE .3004 BRA .6979 BC3 4.1328 FSP 12631 SG1 2988.5 SG2 532.5 THA 158.92 EL1 531.3 EL2 404.2 ALF 72.53

LAUNCH DATE OCT 29 1964 FLIGHT TIME 316.00 ARRIVAL DATE SEP 10 1965

HELIOCENTRIC CONIC DISTANCE 717.187 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 32.761 GAL -3.68 AZL 88.69 HCA 222.15 SMA 186.07 ECC .21112 INC 1.3142 V1 29.990
RP 221.51 LAP -.88 LOP 257.75 VP 22.023 GAP -5.33 AZP 90.97 TAL 338.60 TAP 200.75 RCA 146.79 APO 225.36 V2 24.820
RC 266.379 GL 13.34 GP 5.09 ZAL 120.46 ZAP 93.40 ETS 178.71 ZAE 127.55 ETE 173.91 ZAC 90.81 ETC 257.06 CLP 93.41

PLANETOCENTRIC CONIC

C3 10.557 VHL 3.249 DLA 21.28 RAL 164.00 RAD 6567.4 VEL 11.487 PTH 2.00 VHP 2.811 DPA 9.57 RAP 174.65 ECC 1.1737

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 40 50	2806.16	-28.21	82.27	22.25	92.59	17 27 36	2206.2	-27.55	73.67
90.00	10 52 7	3983.68	-6.89	159.86	17.33	62.47	11 58 31	3383.7	-10.52	153.06
100.00	18 16 41	2497.08	-29.57	59.44	22.15	94.57	18 58 18	1897.1	-28.63	50.76
100.00	11 58 57	3767.99	-5.69	143.35	16.68	60.60	13 1 45	3168.0	-9.56	136.70
110.00	19 55 29	2187.98	-32.95	35.47	21.66	99.64	20 31 57	1588.0	-31.27	26.65
110.00	12 36 38	3649.86	-2.79	132.60	14.88	55.92	13 37 28	3049.9	-7.24	126.34

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .0858 TRA .7780 TC3-4.2971 BAU .6397 SGT 3160.5 SGR 1175.1 SG3 3676.7 ST 474.4 SR 526.8 SS 2225.3
RDE .2859 RRA -.2645 RC3 1.4402 FAU .61045 RRT -.8817 RRF -.9218 RTF .9678 CRT .0304 CRS .6868 CST -.7031
FDE-2.3239 FRA14.3349 FC-50.0591 BSP 10888 SGB 3371.8 R23 .0935 R13 -.9741 LSA 2279.1 MSA 509.3 SSA 28.9
BDE .2985 BRA .8218 BC3 4.5321 FSP 12634 SG1 3330.5 SG2 526.1 THA 161.37 EL1 527.9 EL2 473.2 ALF 81.92

LAUNCH DATE OCT 29 1964 FLIGHT TIME 318.00 ARRIVAL DATE SEP 12 1965

HELIOCENTRIC CONIC DISTANCE 721.220 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 32.759 GAL -3.71 AZL 88.67 HCA 223.26 SMA 186.04 ECC .21114 INC 1.3326 V1 29.990
RP 221.13 LAP -.91 LOP 258.86 VP 22.068 GAP -5.55 AZP 90.97 TAL 338.44 TAP 201.70 RCA 146.76 APO 225.32 V2 24.862
RC 267.844 GL 13.50 GP 4.99 ZAL 120.70 ZAP 91.38 ETS 178.92 ZAE 125.32 ETE 174.38 ZAC 90.52 ETC 257.16 CLP 91.39

PLANETOCENTRIC CONIC

C3 10.608 VHL 3.257 DLA 21.32 RAL 164.32 RAD 6567.4 VEL 11.489 PTH 2.00 VHP 2.813 DPA 9.86 RAP 173.76 ECC 1.1746

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 41 35	2809.01	-28.22	82.48	22.66	92.48	17 28 24	2209.0	-27.57	73.88
90.00	10 53 55	3982.76	-6.92	159.81	17.73	62.47	12 0 18	3382.8	-10.55	153.01
100.00	18 17 30	2499.74	-29.59	59.63	22.56	94.46	18 59 10	1899.7	-28.65	50.96
100.00	12 0 41	3767.27	-5.71	143.31	17.07	60.61	13 3 28	3167.3	-9.58	136.66
110.00	19 56 25	2190.29	-32.98	35.65	22.08	99.54	20 32 55	1590.3	-31.31	26.82
110.00	12 38 16	3649.48	-2.80	132.58	15.27	55.92	13 39 5	3049.5	-7.26	126.32

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .0661 TRA .9156 TC3-4.7233 BAU .6995 SGT 3531.2 SGR 1164.7 SG3 3670.3 ST 539.5 SR 532.4 SS 2231.9
RDE .2905 RRA -.2588 RC3 1.4208 FAU .60957 RRT -.8834 RRF -.9171 RTF .9745 CRT -.0670 CRS .6813 CST -.7741
FDE-2.3466 FRA14.3795 FC-49.7499 BSP 12140 SGB 3718.4 R23 .0786 R13 -.9787 LSA 2299.5 MSA 517.4 SSA 28.6
BDE .2979 BRA .9515 BC3 4.9324 FSP 12606 SG1 3681.3 SG2 523.6 THA 163.41 EL1 554.0 EL2 517.3 ALF 140.65

LAUNCH DATE OCT 29 1964 FLIGHT TIME 320.00 ARRIVAL DATE SEP 14 1965

HELIOCENTRIC CONIC DISTANCE 725.261 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 32.758 GAL -3.74 AZL 88.65 HCA 224.37 SMA 186.02 ECC .21119 INC 1.3503 V1 29.990
RP 220.75 LAP -.94 LOP 259.97 VP 22.112 GAP -5.77 AZP 90.97 TAL 338.26 TAP 202.64 RCA 146.73 APO 225.30 V2 24.903
RC 269.292 GL 13.64 GP 4.89 ZAL 120.95 ZAP 89.37 ETS 179.12 ZAE 123.09 ETE 174.82 ZAC 90.24 ETC 257.26 CLP 89.37

PLANETOCENTRIC CONIC

C3 10.665 VHL 3.266 DLA 21.35 RAL 164.66 RAD 6567.4 VEL 11.491 PTH 2.00 VHP 2.818 DPA 10.14 RAP 172.88 ECC 1.1755

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 42 39	2811.12	-28.22	82.64	23.09	92.41	17 29 30	2211.1	-27.59	74.03
90.00	10 55 32	3982.83	-6.91	159.81	18.14	62.47	12 1 55	3382.8	-10.55	153.02
100.00	18 18 36	2501.73	-29.60	59.78	23.00	94.39	19 0 18	1901.7	-28.68	51.10
100.00	12 2 16	3767.45	-5.70	143.32	17.48	60.61	13 5 4	3167.5	-9.58	136.67
110.00	19 57 34	2192.10	-33.00	35.78	22.51	99.46	20 34 6	1592.1	-31.34	26.95
110.00	12 39 47	3649.84	-2.79	132.60	15.67	55.92	13 40 37	3049.8	-7.24	126.34

DIFFERENTIAL CORRECTIONS
TDE .0455 TRA 1.0555 TC3-5.1452 BAU .7602
RDE .2952 RRA -.2528 RC3 1.3991 FAU .60719
FDE-2.3730 FRA14.3976 FC-49.2910 BSP 13409
BDE .2987 BRA 1.0854 BC3 5.3320 FSP 12547

MID-COURSE EXECUTION ACCURACY
SGT 3905.4 SGR 1153.3 SG3 3654.7
RRT -.8828 RRF -.9120 RTF .9793
SGB 4072.2 R23 .0672 R13 -.9822
SG1 4038.3 SG2 523.9 THA 165.13

ORBIT DETERMINATION ACCURACY
ST 610.2 SR 538.0 SS 2237.7
CRT -.1422 CRS .6766 CST -.8236
LSA 2322.2 MSA 525.1 SSA 28.2
EL1 627.1 EL2 518.1 ALF 155.81

LAUNCH DATE OCT 29 1964 FLIGHT TIME 322.00 ARRIVAL DATE SEP 16 1965

HELIOCENTRIC CONIC DISTANCE 729.309 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 32.756 GAL -3.77 AZL 88.63 HCA 225.49 SMA 186.00 ECC .21128 INC 1.3673 V1 29.990
RP 220.37 LAP -.97 LOP 261.09 VP 22.157 GAP -5.98 AZP 90.96 TAL 338.08 TAP 203.56 RCA 146.70 APO 225.29 V2 24.945
RC 270.721 GL 13.78 GP 4.79 ZAL 121.23 ZAP 87.37 ETS 179.31 ZAE 120.88 ETE 175.22 ZAC 89.96 ETC 257.35 CLP 87.37

PLANETOCENTRIC CONIC

C3 10.728 VHL 3.275 DLA 21.35 RAL 165.01 RAD 6567.4 VEL 11.494 PTH 2.00 VHP 2.827 DPA 10.41 RAP 172.02 ECC 1.1766

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 44 1	2812.48	-28.23	82.74	23.54	92.36	17 30 53	2212.5	-27.60	74.13
90.00	10 56 59	3983.89	-6.88	159.87	18.57	62.46	12 3 23	3383.9	-10.52	153.08
100.00	18 19 58	2503.08	-29.61	59.88	23.44	94.34	19 1 41	1903.1	-28.69	51.20
100.00	12 3 43	3768.52	-5.67	143.38	17.91	60.60	13 6 31	3168.5	-9.54	136.73
110.00	19 58 57	2193.42	-33.02	35.88	22.96	99.41	20 35 30	1593.4	-31.37	27.05
110.00	12 41 13	3650.94	-2.75	132.65	16.09	55.91	13 42 4	3050.9	-7.20	126.40

DIFFERENTIAL CORRECTIONS
TDE .0235 TRA 1.1976 TC3-5.5618 BAU .8217
RDE .2999 RRA -.2464 RC3 1.3753 FAU .60340
FDE-2.3959 FRA14.3880 FC-48.6932 BSP 14684
BDE .3008 BRA 1.2227 BC3 5.7293 FSP 12461

MID-COURSE EXECUTION ACCURACY
SGT 4202.0 SGR 1140.7 SG3 3630.1
RRT -.8808 RRF -.9065 RTF .9829
SGB 4431.3 R23 .0582 R13 -.9849
SG1 4400.0 SG2 525.6 THA 166.60

ORBIT DETERMINATION ACCURACY
ST 684.8 SR 543.3 SS 2241.2
CRT -.2018 CRS .6720 CST -.8598
LSA 2346.0 MSA 531.7 SSA 27.9
EL1 704.9 EL2 517.0 ALF 159.58

LAUNCH DATE OCT 29 1964 FLIGHT TIME 324.00 ARRIVAL DATE SEP 18 1965

HELIOCENTRIC CONIC DISTANCE 733.364 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 32.756 GAL -3.81 AZL 88.62 HCA 226.60 SMA 185.98 ECC .21140 INC 1.3838 V1 29.990
RP 220.00 LAP -1.01 LOP 262.20 VP 22.202 GAP -6.19 AZP 90.95 TAL 337.88 TAP 204.48 RCA 146.67 APO 225.30 V2 24.986
RC 272.134 GL 13.90 GP 4.69 ZAL 121.53 ZAP 85.40 ETS 179.50 ZAE 118.67 ETE 175.60 ZAC 89.68 ETC 257.45 CLP 85.38

PLANETOCENTRIC CONIC

C3 10.799 VHL 3.286 DLA 21.33 RAL 165.38 RAD 6567.4 VEL 11.497 PTH 2.00 VHP 2.839 DPA 10.68 RAP 171.17 ECC 1.1777

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 45 40	2813.13	-28.23	82.78	24.00	92.33	17 32 33	2213.1	-27.61	74.17
90.00	10 58 16	3985.91	-6.82	159.98	19.01	62.45	12 4 42	3385.9	-10.46	153.19
100.00	18 21 36	2503.80	-29.61	59.94	23.91	94.31	19 3 20	1903.8	-28.70	51.25
100.00	12 5 1	3770.47	-5.60	143.49	18.35	60.59	13 7 51	3170.5	-9.48	136.84
110.00	20 0 32	2194.27	-33.03	35.95	23.43	99.37	20 37 7	1594.3	-31.38	27.11
110.00	12 42 34	3652.77	-2.68	132.75	16.53	55.91	13 43 27	3052.8	-7.13	126.50

DIFFERENTIAL CORRECTIONS
TDE .0005 TRA 1.3414 TC3-5.9685 BAU .8834
RDE .3048 RRA -.2397 RC3 1.3495 FAU .59813
FDE-2.4267 FRA14.3506 FC-47.9523 BSP 15960
BDE .3048 BRA 1.3627 BC3 6.1191 FSP 12340

MID-COURSE EXECUTION ACCURACY
SGT 4657.4 SGR 1127.2 SG3 3596.5
RRT -.8773 RRF -.9006 RTF .9856
SGB 4791.9 R23 .0515 R13 -.9871
SG1 4762.6 SG2 529.1 THA 167.86

ORBIT DETERMINATION ACCURACY
ST 762.4 SR 548.9 SS 2244.5
CRT -.2486 CRS .6687 CST -.8855
LSA 2372.8 MSA 538.3 SSA 27.5
EL1 784.7 EL2 516.6 ALF 161.69

LAUNCH DATE OCT 29 1964 FLIGHT TIME 326.00 ARRIVAL DATE SEP 20 1965

HELIOCENTRIC CONIC DISTANCE 737.427 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 32.755 GAL -3.85 AZL 88.60 HCA 227.73 SMA 185.97 ECC .21156 INC 1.3998 V1 29.990
RP 219.62 LAP -1.04 LOP 263.33 VP 22.247 GAP -6.40 AZP 90.94 TAL 337.66 TAP 205.39 RCA 146.63 APO 225.32 V2 25.027
RC 273.529 GL 14.01 GP 4.58 ZAL 121.85 ZAP 83.44 ETS 179.67 ZAE 116.49 ETE 175.95 ZAC 89.41 ETC 257.55 CLP 83.42

PLANETOCENTRIC CONIC

C3 10.876 VHL 3.298 DLA 21.30 RAL 165.76 RAD 6567.4 VEL 11.501 PTH 2.00 VHP 2.854 DPA 10.93 RAP 170.36 ECC 1.1790

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 47 37	2813.08	-28.23	82.78	24.49	92.33	17 34 30	2213.1	-27.61	74.17
90.00	10 59 23	3988.88	-6.72	160.15	19.47	62.43	12 5 51	3388.9	-10.37	153.36
100.00	18 23 30	2503.91	-29.61	59.94	24.39	94.30	19 5 14	1903.9	-28.70	51.26
100.00	12 6 11	3773.28	-5.51	143.64	18.81	60.57	13 9 4	3173.3	-9.39	137.00
110.00	20 2 21	2194.66	-33.03	35.98	23.91	99.35	20 38 56	1594.7	-31.39	27.14
110.00	12 43 49	3655.30	-2.58	132.88	16.99	55.90	13 44 45	3055.3	-7.04	126.63

DIFFERENTIAL CORRECTIONS
TDE -.0240 TRA 1.4873 TC3-6.3650 BAU .9432
RDE .3098 RRA -.2328 RC3 1.3222 FAU .59164
FDE-2.4549 FRA14.2862 FC-47.0947 BSP 17233
BDE .3107 BRA 1.5054 BC3 6.5009 FSP 12194

MID-COURSE EXECUTION ACCURACY
SGT 5031.7 SGR 1112.9 SG3 3554.8
RRT -.8728 RRF -.8943 RTF .9877
SGB 5153.3 R23 .0460 R13 -.9888
SG1 5125.7 SG2 533.3 THA 168.95

ORBIT DETERMINATION ACCURACY
ST 842.5 SR 554.3 SS 2245.8
CRT -.2871 CRS .6657 CST -.9051
LSA 2400.8 MSA 544.0 SSA 27.1
EL1 866.3 EL2 516.4 ALF 163.17

LAUNCH DATE OCT 29 1964 FLIGHT TIME 328.00 ARRIVAL DATE SEP 22 1965

HELIOCENTRIC CONIC DISTANCE 741.496 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 32.755 GAL -3.89 AZL 88.58 HCA 228.85 SMA 185.97 ECC .21175 INC 1.4152 V1 29.990
RP 219.25 LAP -1.07 LOP 264.45 VP 22.292 GAP -6.60 AZP 90.93 TAL 337.43 TAP 206.29 RCA 146.59 APO 225.34 V2 25.067
RC 274.906 GL 14.11 GP 4.48 ZAL 122.19 ZAP 81.51 ETS 179.84 ZAE 114.33 ETE 176.28 ZAC 89.15 ETC 257.65 CLP 81.48

PLANETOCENTRIC CONIC

C3 10.961 VHL 3.311 DLA 21.25 RAL 166.16 RAD 6567.4 VEL 11.504 PTH 2.00 VHP 2.873 DPA 11.16 RAP 169.56 ECC 1.1804

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 49 51	2812.36	-28.23	82.73	24.99	92.36	17 36 43	2212.4	-27.60	74.12
90.00	11 0 20	3992.78	-6.60	160.37	19.95	62.40	12 6 53	3392.8	-10.25	153.59
100.00	18 25 39	2503.43	-29.61	59.91	24.90	94.32	19 7 23	1903.4	-28.69	51.22
100.00	12 7 13	3776.94	-5.39	143.84	19.28	60.55	13 10 10	3176.9	-9.27	137.21
110.00	20 4 22	2194.60	-33.03	35.97	24.42	99.35	20 40 57	1594.6	-31.39	27.13
110.00	12 44 59	3658.54	-2.46	133.05	17.46	55.89	13 45 58	3058.5	-6.92	126.80

DIFFERENTIAL CORRECTIONS
TDE -.0500 TRA 1.6348 TC3-6.7502 BAU 1.0071
RDE .3148 RRA -.2256 RC3 1.2933 FAU .58388
FDE-2.4872 FRA14.1998 FC-46.1178 BSP 18492
BDE .3188 BRA 1.6503 BC3 6.8730 FSP 12018

MID-COURSE EXECUTION ACCURACY
SGT 5403.7 SGR 1098.0 SG3 3505.6
RRT -.8673 RRF -.8875 RTF .9893
SGB 5514.1 R23 .0419 R13 -.9902
SG1 5487.8 SG2 538.1 THA 169.91

ORBIT DETERMINATION ACCURACY
ST 924.6 SR 559.8 SS 2246.8
CRT -.3189 CRS .6637 CST -.9199
LSA 2431.8 MSA 549.3 SSA 26.7
EL1 949.3 EL2 516.7 ALF 164.32

LAUNCH DATE OCT 29 1964 FLIGHT TIME 330.00 ARRIVAL DATE SEP 24 1965

HELIOCENTRIC CONIC DISTANCE 745.572 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 32.754 GAL -3.93 AZL 88.57 HCA 229.98 SMA 185.96 ECC .21198 INC 1.4301 V1 29.990
RP 218.89 LAP -1.10 LOP 265.58 VP 22.338 GAP -6.80 AZP 90.92 TAL 337.19 TAP 207.17 RCA 146.54 APO 225.38 V2 25.108
RC 276.266 GL 14.20 GP 4.38 ZAL 122.55 ZAP 79.61 ETS 179.99 ZAE 112.19 ETE 176.58 ZAC 88.90 ETC 257.74 CLP 79.58

PLANETOCENTRIC CONIC

C3 11.053 VHL 3.325 DLA 21.18 RAL 166.57 RAD 6567.4 VEL 11.508 PTH 2.00 VHP 2.895 DPA 11.38 RAP 168.80 ECC 1.1819

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 52 21	2810.98	-28.22	82.63	25.51	92.41	17 39 12	2211.0	-27.59	74.02
90.00	11 1 8	3997.60	-6.45	160.64	20.44	62.37	12 7 46	3397.6	-10.10	153.87
100.00	18 28 4	2502.38	-29.60	59.83	25.42	94.36	19 9 46	1902.4	-28.68	51.15
100.00	12 8 7	3781.43	-5.24	144.09	19.78	60.53	13 11 8	3181.4	-9.12	137.46
110.00	20 6 36	2194.11	-33.02	35.93	24.93	99.38	20 43 10	1594.1	-31.38	27.10
110.00	12 46 4	3662.47	-2.31	133.26	17.96	55.89	13 47 7	3062.5	-6.77	127.01

DIFFERENTIAL CORRECTIONS
TDE -.0774 TRA 1.7842 TC3-7.1202 BAU 1.0686
RDE .3199 RRA -.2182 RC3 1.2630 FAU .57488
FDE-2.5174 FRA14.0894 FC-45.0276 BSP 19747
BDE .3292 BRA 1.7975 BC3 7.2314 FSP 11822

MID-COURSE EXECUTION ACCURACY
SGT 5771.2 SGR 1082.5 SG3 3448.8
RRT -.8610 RRF -.8802 RTF .9906
SGB 5871.8 R23 .0387 R13 -.9913
SG1 5846.6 SG2 543.5 THA 170.75

ORBIT DETERMINATION ACCURACY
ST 1008.3 SR 565.1 SS 2246.0
CRT -.3454 CRS .6621 CST -.9314
LSA 2464.3 MSA 554.2 SSA 26.3
EL1 1033.6 EL2 517.3 ALF 165.28

LAUNCH DATE OCT 29 1964 FLIGHT TIME 332.00 ARRIVAL DATE SEP 26 1965

HELIOCENTRIC CONIC DISTANCE 749.655 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 32.755 GAL -3.98 AZL 88.56 HCA 231.12 SMA 185.97 ECC .21225 INC 1.4447 V1 29.990
RP 218.52 LAP -1.12 LOP 266.71 VP 22.383 GAP -7.00 AZP 90.91 TAL 336.93 TAP 208.05 RCA 146.49 APO 225.44 V2 25.148
RC 277.609 GL 14.28 GP 4.28 ZAL 122.94 ZAP 77.74 ETS 180.14 ZAE 110.08 ETE 176.87 ZAC 88.66 ETC 257.84 CLP 77.70

PLANETOCENTRIC CONIC

C3 11.153 VHL 3.340 DLA 21.09 RAL 167.00 RAD 6567.4 VEL 11.513 PTH 2.01 VHP 2.919 DPA 11.59 RAP 168.07 ECC 1.1835

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 55 8	2808.97	-28.22	82.48	26.05	92.48	17 41 57	2209.0	-27.57	73.87
90.00	11 1 47	4003.31	-6.27	160.97	20.95	62.33	12 8 31	3403.3	-9.93	154.20
100.00	18 30 43	2500.78	-29.59	59.71	25.96	94.42	19 12 23	1900.8	-28.67	51.03
100.00	12 8 54	3786.74	-5.06	144.39	20.29	60.50	13 12 0	3186.7	-8.95	137.76
110.00	20 9 1	2193.20	-33.01	35.87	25.47	99.42	20 45 35	1593.2	-31.36	27.03
110.00	12 47 4	3667.08	-2.13	133.50	18.47	55.88	13 48 11	3067.1	-6.59	127.25

DIFFERENTIAL CORRECTIONS
TDE -.1061 TRA 1.9357 TC3-7.4731 BAU 1.1293
RDE .3251 RRA -.2106 RC3 1.2313 FAU .56469
FDE-2.5460 FRA13.9592 FC-43.8337 BSP 20989
BDE .3420 BRA 1.9471 BC3 7.5738 FSP 11606

MID-COURSE EXECUTION ACCURACY
SGT 6133.2 SGR 1066.5 SG3 3385.2
RRT -.8539 RRF -.8724 RTF .9916
SGB 6225.3 R23 .0363 R13 -.9922
SG1 6201.0 SG2 549.1 THA 171.49

ORBIT DETERMINATION ACCURACY
ST 1093.5 SR 570.2 SS 2244.0
CRT -.3678 CRS .6609 CST -.9405
LSA 2498.7 MSA 558.8 SSA 25.9
EL1 1119.2 EL2 518.1 ALF 166.11

LAUNCH DATE OCT 29 1964 FLIGHT TIME 334.00 ARRIVAL DATE SEP 28 1965

HELIOCENTRIC CONIC DISTANCE 753.741 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 32.755 GAL -4.03 AZL 88.54 HCA 232.25 SMA 185.97 ECC .21255 INC 1.4587 V1 29.990
RP 218.16 LAP -1.15 LOP 267.85 VP 22.429 GAP -7.20 AZP 90.89 TAL 336.66 TAP 208.91 RCA 146.44 APO 225.50 V2 25.188
RC 278.933 GL 14.35 GP 4.18 ZAL 123.34 ZAP 75.90 ETS 180.28 ZAE 108.00 ETE 177.13 ZAC 88.42 ETC 257.93 CLP 75.86

PLANETOCENTRIC CONIC

C3 11.261 VHL 3.356 DLA 20.99 RAL 167.45 RAD 6567.4 VEL 11.517 PTH 2.01 VHP 2.947 DPA 11.78 RAP 167.37 ECC 1.1853

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 58 11	2806.33	-28.21	82.29	26.61	92.58	17 44 57	2206.3	-27.55	73.68
90.00	11 2 18	4009.94	-6.06	161.34	21.48	62.29	12 9 8	3409.9	-9.72	154.58
100.00	18 33 37	2498.61	-29.58	59.55	26.51	94.51	19 15 15	1898.6	-28.64	50.87
100.00	12 9 33	3792.89	-4.85	144.73	20.82	60.47	13 12 46	3192.9	-8.75	138.11
110.00	20 11 40	2191.87	-33.00	35.76	26.02	99.47	20 48 11	1591.9	-31.34	26.93
110.00	12 48 0	3672.40	-1.93	133.77	19.00	55.86	13 49 12	3072.4	-6.39	127.54

DIFFERENTIAL CORRECTIONS
TDE -.1289 TRA 2.0982 TC3-7.7849 BAU 1.1857
RDE .3285 RRA -.2049 RC3 1.1920 FAU .54954
FDE-2.4924 FRA13.8929 FC-42.2477 BSP 22433
BDE .3529 BRA 2.1082 BC3 7.8756 FSP 11542

MID-COURSE EXECUTION ACCURACY
SGT 6486.1 SGR 1046.4 SG3 3309.9
RRT -.8459 RRF -.8629 RTF .9923
SGB 6570.0 R23 .0325 R13 -.9928
SG1 6546.6 SG2 553.0 THA 172.17

ORBIT DETERMINATION ACCURACY
ST 1182.4 SR 572.5 SS 2233.2
CRT -.3790 CRS .6500 CST -.9492
LSA 2529.1 MSA 562.3 SSA 25.8
EL1 1206.8 EL2 519.1 ALF 167.19

LAUNCH DATE OCT 29 1964 FLIGHT TIME 336.00 ARRIVAL DATE SEP 30 1965

HELIOCENTRIC CONIC DISTANCE 757.838 EARTH TO MARS

RL	148.57	LAL	-.00	LOL	35.61	VL	32.755	GAL	-4.08	AZL	88.53	HCA	233.39	SMA	185.98	ECC	.21288	INC	1.4725
RP	217.80	LAP	-1.18	LOP	268.99	VP	22.474	GAP	-7.39	AZP	90.88	TAL	336.38	TAP	209.77	RCA	146.39	APO	225.57
RC	280.240	GL	14.41	GP	4.08	ZAL	123.76	ZAP	74.10	ETS	180.42	ZAE	105.95	ETE	177.38	ZAC	88.19	ETC	258.01

V1 29.990 V2 25.228 CLP 74.06

PLANETOCENTRIC CONIC

C3	11.377	VHL	3.373	DLA	20.87	RAL	167.91	RAD	6567.4	VEL	11.522	PTH	2.01	VHP	2.978	DPA	11.96	RAP	166.71

ECC 1.1872

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 1 28	2803.16	-28.20	82.06	27.19	92.70	17 48 11	2203.2	-27.53	73.45
90.00	11 2 40	4017.36	-5.82	161.76	22.02	62.24	12 9 38	3417.4	-9.50	155.00
100.00	18 36 43	2495.98	-29.57	59.36	27.09	94.61	19 18 19	1896.0	-28.61	50.68
100.00	12 10 6	3799.77	-4.62	145.11	21.36	60.43	13 13 25	3199.8	-8.52	138.49
110.00	20 14 28	2190.18	-32.98	35.64	26.59	99.55	20 50 58	1590.2	-31.31	26.81
110.00	12 48 50	3678.33	-1.70	134.08	19.55	55.85	13 50 9	3078.3	-6.17	127.85

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1647	TRA	2.2483	TC3	-8.1150	BAU	1.2469	SGT	6837.6	SGR	1032.1	SG3	3238.6	ST	1268.3	SR	578.9	SS	2233.0
RDE	.3347	RRA	-.1962	RC3	1.1624	FAU	.53955	RRT	-.8374	RRF	-.8547	RTF	.9931	CRT	-.4006	CRS	.6551	CST	-.9543
FDE	-2.5615	FRA	13.6858	FC	-41.0561	BSP	23536	SGB	6915.0	R23	.0320	R13	-.9935	LSA	2570.8	MSA	566.1	SSA	25.2
BDE	.3730	BRA	2.2568	BC3	8.1978	FSP	11207	SG1	6892.3	SG2	559.7	THA	172.75	EL1	1293.6	EL2	520.1	ALF	167.60

LAUNCH DATE OCT 29 1964 FLIGHT TIME 338.00 ARRIVAL DATE OCT 2 1965

HELIOCENTRIC CONIC DISTANCE 761.941 EARTH TO MARS

RL	148.57	LAL	-.00	LOL	35.61	VL	32.756	GAL	-4.14	AZL	88.51	HCA	234.54	SMA	185.99	ECC	.21325	INC	1.4858
RP	217.44	LAP	-1.21	LOP	270.14	VP	22.520	GAP	-7.58	AZP	90.86	TAL	336.08	TAP	210.62	RCA	146.33	APO	225.66
RC	281.529	GL	14.47	GP	3.99	ZAL	124.21	ZAP	72.33	ETS	180.54	ZAE	103.94	ETE	177.62	ZAC	87.98	ETC	258.10

V1 29.990 V2 25.268 CLP 72.29

PLANETOCENTRIC CONIC

C3	11.502	VHL	3.391	DLA	20.73	RAL	168.38	RAD	6567.4	VEL	11.528	PTH	2.01	VHP	3.011	DPA	12.12	RAP	166.09

ECC 1.1893

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 4 59	2799.45	-28.19	81.78	27.79	92.83	17 51 38	2199.4	-27.50	73.19
90.00	11 2 55	4025.60	-5.56	162.22	22.59	62.19	12 10 1	3425.6	-9.24	155.48
100.00	18 40 3	2492.87	-29.55	59.13	27.68	94.73	19 21 36	1892.9	-28.58	50.46
100.00	12 10 32	3807.42	-4.36	145.53	21.93	60.40	13 13 59	3207.4	-8.27	138.92
110.00	20 17 28	2188.13	-32.96	35.48	27.18	99.64	20 53 56	1588.1	-31.28	26.66
110.00	12 49 37	3684.92	-1.45	134.43	20.11	55.84	13 51 2	3084.9	-5.92	128.20

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2018	TRA	2.4015	TC3	-8.4224	BAU	1.3067	SGT	7181.3	SGR	1017.3	SG3	3161.4	ST	1356.2	SR	584.9	SS	2231.3
RDE	.3406	RRA	-.1878	RC3	1.1310	FAU	.52799	RRT	-.8283	RRF	-.8458	RTF	.9937	CRT	-.4193	CRS	.6592	CST	-.9587
FDE	-2.6173	FRA	13.4779	FC	-39.7406	BSP	24646	SGB	7253.0	R23	.0315	R13	-.9940	LSA	2614.4	MSA	569.5	SSA	24.6
BDE	.3959	BRA	2.4088	BC3	8.4980	FSP	10889	SG1	7230.8	SG2	566.1	THA	173.27	EL1	1381.9	EL2	521.1	ALF	168.02

LAUNCH DATE OCT 29 1964 FLIGHT TIME 340.00 ARRIVAL DATE OCT 4 1965

HELIOCENTRIC CONIC DISTANCE 766.050 EARTH TO MARS

RL	148.57	LAL	-.00	LOL	35.61	VL	32.757	GAL	-4.20	AZL	88.50	HCA	235.69	SMA	186.01	ECC	.21366	INC	1.4989
RP	217.09	LAP	-1.24	LOP	271.29	VP	22.566	GAP	-7.76	AZP	90.85	TAL	335.76	TAP	211.45	RCA	146.27	APO	225.75
RC	282.801	GL	14.51	GP	3.89	ZAL	124.67	ZAP	70.61	ETS	180.66	ZAE	101.96	ETE	177.83	ZAC	87.77	ETC	258.17

V1 29.990 V2 25.307 CLP 70.56

PLANETOCENTRIC CONIC

C3	11.636	VHL	3.411	DLA	20.58	RAL	168.87	RAD	6567.4	VEL	11.534	PTH	2.01	VHP	3.048	DPA	12.26	RAP	165.50

ECC 1.1915

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 8 44	2795.21	-28.17	81.48	28.40	92.99	17 55 19	2195.2	-27.46	72.88
90.00	11 3 3	4034.66	-5.27	162.73	23.17	62.14	12 10 17	3434.7	-8.96	156.00
100.00	18 43 36	2489.29	-29.53	58.86	28.29	94.87	19 25 6	1889.3	-28.54	50.20
100.00	12 10 52	3815.82	-4.08	145.99	22.51	60.36	13 14 27	3215.8	-8.00	139.39
110.00	20 20 38	2185.72	-32.93	35.30	27.78	99.74	20 57 4	1585.7	-31.23	26.49
110.00	12 50 19	3692.15	-1.17	134.81	20.70	55.83	13 51 51	3092.2	-5.65	128.58

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2401	TRA	2.5574	TC3	-8.7077	BAU	1.3653	SGT	7517.1	SGR	1002.2	SG3	3080.4	ST	1445.4	SR	590.3	SS	2227.7
RDE	.3464	RRA	-.1797	RC3	1.0987	FAU	.51543	RRT	-.8186	RRF	-.8364	RTF	.9942	CRT	-.4358	CRS	.6624	CST	-.9627
FDE	-2.6599	FRA	13.2684	FC	-38.3491	BSP	25754	SGB	7583.6	R23	.0310	R13	-.9945	LSA	2659.4	MSA	572.2	SSA	24.1
BDE	.4215	BRA	2.5637	BC3	8.7767	FSP	10583	SG1	7562.0	SG2	572.2	THA	173.74	EL1	1471.5	EL2	521.9	ALF	168.43

LAUNCH DATE OCT 29 1964 FLIGHT TIME 342.00 ARRIVAL DATE OCT 6 1965

HELIOCENTRIC CONIC DISTANCE 770.164 EARTH TO MARS

RL	148.57	LAL	-.00	LOL	35.61	VL	32.758	GAL	-4.26	AZL	88.49	HCA	236.84	SMA	186.03	ECC	.21410	INC	1.5115
RP	216.74	LAP	-1.27	LOP	272.44	VP	22.611	GAP	-7.95	AZP	90.83	TAL	335.44	TAP	212.28	RCA	146.20	APO	225.86
RC	284.057	GL	14.54	GP	3.79	ZAL	125.15	ZAP	68.92	ETS	180.77	ZAE	100.02	ETE	178.04	ZAC	87.57	ETC	258.25

V1 29.990 V2 25.346 CLP 68.87

PLANETOCENTRIC CONIC

C3	11.779	VHL	3.432	DLA	20.41	RAL	169.37	RAD	6567.4	VEL	11.540	PTH	2.01	VHP	3.087	DPA	12.39	RAP	164.96

ECC 1.1939

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 12 43	2790.49	-28.15	81.13	29.03	93.16	17 59 13	2190.5	-27.42	72.54
90.00	11 3 3	4044.50	-4.96	163.29	23.76	62.09	12 10 28	3444.5	-8.66	156.56
100.00	18 47 22	2485.28	-29.51	58.57	28.92	95.02	19 28 47	1885.3	-28.50	49.91
100.00	12 11 5	3824.95	-3.77	146.50	23.11	60.32	13 14 50	3224.9	-7.70	139.90
110.00	20 23 59	2182.97	-32.90	35.09	28.41	99.86	21 0 22	1583.0	-31.19	26.29
110.00	12 50 57	3700.02	-.87	135.22	21.30	55.83	13 52 37	3100.0	-5.35	128.99

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2801	TRA	2.7157	TC3	-8.9716	BAU	1.4227	SGT	7844.8	SGR	987.1	SG3	2995.5	ST	1535.8	SR	595.4	SS	2222.9
RDE	.3522	RRA	-.1718	RC3	1.0656	FAU	.50194	RRT	-.8084	RRF	-.8265	RTF	.9946	CRT	-.4507	CRS	.6655	CST	-.9660
FDE	-2.6960	FRA	13.0520	FC	-36.8911	BSP	26850	SGB	7906.7	R23	.0307	R13	-.9948	LSA	2706.3	MSA	574.5	SSA	23.6
BDE	.4500	BRA	2.7211	BC3	9.0346	FSP	10283	SG1	7885.5	SG2	578.1	THA	174.16	EL1	1562.1	EL2	522.6	ALF	168.82

LAUNCH DATE OCT 29 1964 FLIGHT TIME 344.00 ARRIVAL DATE OCT 8 1965

HELIOCENTRIC CONIC DISTANCE 774.283 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 32.760 GAL -4.33 AZL 88.48 HCA 238.00 SMA 186.06 ECC .21458 INC 1.5240 V1 29.990
RP 216.39 LAP -1.29 LOP 273.59 VP 22.656 GAP -8.13 AZP 90.81 TAL 335.09 TAP 213.09 RCA 146.13 APO 225.98 V2 25.385
RC 285.296 GL 14.57 GP 3.70 ZAL 125.65 ZAP 67.27 ETS 180.87 ZAE 98.12 ETE 178.23 ZAC 87.39 ETC 258.31 CLP 67.22

PLANETOCENTRIC CONIC

C3 11.932 VHL 3.454 DLA 20.22 RAL 169.88 RAD 6567.5 VEL 11.546 PTH 2.02 VHP 3.128 DPA 12.50 RAP 164.46 ECC 1.1964

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 16 54	2785.31	-28.13	80.75	29.68	93.35	18 3 19	2185.3	-27.37	72.17
90.00	11 2 57	4055.10	-4.62	163.88	24.38	62.03	12 10 33	3455.1	-8.33	157.16
100.00	18 51 19	2480.86	-29.48	58.24	29.57	95.19	19 32 40	1880.9	-28.45	49.59
100.00	12 11 14	3834.79	-3.44	147.04	23.72	60.29	13 15 8	3234.8	-7.37	140.45
110.00	20 27 31	2179.91	-32.86	34.86	29.04	99.99	21 3 51	1579.9	-31.13	26.06
110.00	12 51 31	3708.50	-.55	135.66	21.92	55.82	13 53 20	3108.5	-5.03	129.44

DIFFERENTIAL CORRECTIONS
TDE -.3213 TRA 2.8768 TC3-9.2112 BAU 1.4786
RDE .3578 RRA -.1640 RC3 1.0323 FAU .48773
FDE-2.7245 FRA12.8328 FC-35.3869 BSP 27938
BDE .4809 BRA 2.8814 BC3 9.2688 FSP 9982

MID-COURSE EXECUTION ACCURACY
SGT 8163.2 SGR 972.1 SG3 2907.8
RRT -.7976 RRF -.8160 RTF .9949
SGB 8220.9 R23 .0304 R13 -.9951
SG1 8200.1 SG2 583.7 THA 174.55

ORBIT DETERMINATION ACCURACY
ST 1627.2 SR 600.2 SS 2216.8
CRT -.4639 CRS .6682 CST -.9688
LSA 2754.9 MSA 576.5 SSA 23.1
EL1 1653.6 EL2 523.2 ALF 169.19

LAUNCH DATE OCT 29 1964 FLIGHT TIME 346.00 ARRIVAL DATE OCT 10 1965

HELIOCENTRIC CONIC DISTANCE 778.408 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 32.761 GAL -4.39 AZL 88.46 HCA 239.16 SMA 186.08 ECC .21509 INC 1.5362 V1 29.990
RP 216.05 LAP -1.32 LOP 274.75 VP 22.701 GAP -8.31 AZP 90.79 TAL 334.74 TAP 213.89 RCA 146.06 APO 226.11 V2 25.423
RC 286.520 GL 14.58 GP 3.61 ZAL 126.17 ZAP 65.67 ETS 180.97 ZAE 96.26 ETE 178.41 ZAC 87.22 ETC 258.38 CLP 65.62

PLANETOCENTRIC CONIC

C3 12.095 VHL 3.478 DLA 20.02 RAL 170.40 RAD 6567.5 VEL 11.553 PTH 2.02 VHP 3.173 DPA 12.59 RAP 164.01 ECC 1.1991

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 21 17	2779.72	-28.11	80.35	30.35	93.55	18 7 37	2179.7	-27.32	71.77
90.00	11 2 45	4066.43	-4.26	164.52	25.01	61.98	12 10 32	3466.4	-7.98	157.81
100.00	18 55 28	2476.06	-29.45	57.89	30.23	95.37	19 36 44	1876.1	-28.39	49.24
100.00	12 11 16	3845.31	-3.09	147.62	24.36	60.25	13 15 22	3245.3	-7.02	141.04
110.00	20 31 11	2176.56	-32.82	34.61	29.70	100.14	21 7 28	1576.6	-31.07	25.82
110.00	12 52 2	3717.59	-.20	136.13	22.56	55.82	13 54 0	3117.6	-4.68	129.92

DIFFERENTIAL CORRECTIONS
TDE -.3652 TRA 3.0395 TC3-9.4289 BAU 1.5332
RDE .3636 RRA -.1564 RC3 .9991 FAU .47315
FDE-2.7514 FRA12.6048 FC-33.8661 BSP 28990
BDE .5153 BRA 3.0436 BC3 9.4817 FSP 9674

MID-COURSE EXECUTION ACCURACY
SGT 8472.3 SGR 957.6 SG3 2818.2
RRT -.7864 RRF -.8051 RTF .9952
SGB 8526.3 R23 .0303 R13 -.9954
SG1 8505.9 SG2 589.2 THA 174.90

ORBIT DETERMINATION ACCURACY
ST 1719.6 SR 605.0 SS 2210.0
CRT -.4768 CRS .6715 CST -.9713
LSA 2805.9 MSA 577.9 SSA 22.7
EL1 1746.1 EL2 523.7 ALF 169.53

LAUNCH DATE OCT 29 1964 FLIGHT TIME 348.00 ARRIVAL DATE OCT 12 1965

HELIOCENTRIC CONIC DISTANCE 782.538 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 32.763 GAL -4.47 AZL 88.45 HCA 240.32 SMA 186.11 ECC .21565 INC 1.5481 V1 29.990
RP 215.71 LAP -1.34 LOP 275.92 VP 22.746 GAP -8.48 AZP 90.77 TAL 334.36 TAP 214.68 RCA 145.98 APO 226.25 V2 25.461
RC 287.729 GL 14.59 GP 3.52 ZAL 126.71 ZAP 64.10 ETS 181.06 ZAE 94.44 ETE 178.58 ZAC 87.05 ETC 258.43 CLP 64.05

PLANETOCENTRIC CONIC

C3 12.269 VHL 3.503 DLA 19.81 RAL 170.94 RAD 6567.5 VEL 11.561 PTH 2.02 VHP 3.219 DPA 12.67 RAP 163.60 ECC 1.2019

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 25 52	2773.73	-28.09	79.91	31.04	93.77	18 12 6	2173.7	-27.27	71.34
90.00	11 2 28	4078.46	-3.88	165.19	25.66	61.93	12 10 26	3478.5	-7.60	158.49
100.00	18 59 47	2470.91	-29.42	57.51	30.92	95.57	19 40 58	1870.9	-28.33	48.87
100.00	12 11 14	3856.51	-2.71	148.23	25.01	60.22	13 15 31	3256.5	-6.65	141.67
110.00	20 35 1	2172.92	-32.78	34.33	30.37	100.30	21 11 14	1572.9	-31.01	25.56
110.00	12 52 29	3727.27	.17	136.64	23.22	55.82	13 54 36	3127.3	-4.32	130.42

DIFFERENTIAL CORRECTIONS
TDE -.4116 TRA 3.2042 TC3-9.6270 BAU 1.5871
RDE .3694 RRA -.1488 RC3 .9666 FAU .45845
FDE-2.7776 FRA12.3685 FC-32.3482 BSP 30021
BDE .5530 BRA 3.2077 BC3 9.6754 FSP 9367

MID-COURSE EXECUTION ACCURACY
SGT 8773.3 SGR 943.7 SG3 2727.6
RRT -.7748 RRF -.7940 RTF .9954
SGB 8823.9 R23 .0304 R13 -.9956
SG1 8803.9 SG2 594.6 THA 175.21

ORBIT DETERMINATION ACCURACY
ST 1813.0 SR 609.6 SS 2202.8
CRT -.4892 CRS .6753 CST -.9734
LSA 2859.2 MSA 579.1 SSA 22.2
EL1 1839.6 EL2 524.0 ALF 169.83

LAUNCH DATE OCT 29 1964 FLIGHT TIME 350.00 ARRIVAL DATE OCT 14 1965

HELIOCENTRIC CONIC DISTANCE 786.674 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 32.765 GAL -4.54 AZL 88.44 HCA 241.49 SMA 186.15 ECC .21624 INC 1.5598 V1 29.990
RP 215.38 LAP -1.37 LOP 277.08 VP 22.791 GAP -8.66 AZP 90.74 TAL 333.98 TAP 215.46 RCA 145.90 APO 226.40 V2 25.498
RC 288.924 GL 14.59 GP 3.43 ZAL 127.27 ZAP 62.58 ETS 181.14 ZAE 92.66 ETE 178.73 ZAC 86.90 ETC 258.48 CLP 62.53

PLANETOCENTRIC CONIC

C3 12.455 VHL 3.529 DLA 19.58 RAL 171.49 RAD 6567.5 VEL 11.569 PTH 2.02 VHP 3.268 DPA 12.73 RAP 163.23 ECC 1.2050

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 30 38	2767.38	-28.06	79.45	31.74	94.00	18 16 45	2167.4	-27.21	70.88
90.00	11 2 5	4091.18	-3.47	165.91	26.33	61.88	12 10 16	3491.2	-7.20	159.22
100.00	19 4 16	2465.43	-29.38	57.11	31.61	95.78	19 45 21	1865.4	-28.27	48.48
100.00	12 11 7	3868.36	-2.31	148.88	25.69	60.19	13 15 36	3268.4	-6.26	142.32
110.00	20 39 0	2169.03	-32.73	34.04	31.06	100.46	21 15 9	1569.0	-30.94	25.27
110.00	12 52 53	3737.53	.56	137.17	23.89	55.82	13 55 10	3137.5	-3.92	130.96

DIFFERENTIAL CORRECTIONS
TDE -.4596 TRA 3.3717 TC3-9.8010 BAU 1.6393
RDE .3753 RRA -.1415 RC3 .9344 FAU .44346
FDE-2.7983 FRA12.1296 FC-30.8248 BSP 31034
BDE .5934 BRA 3.3747 BC3 9.8454 FSP 9063

MID-COURSE EXECUTION ACCURACY
SGT 9064.6 SGR 930.4 SG3 2636.0
RRT -.7628 RRF -.7825 RTF .9956
SGB 9112.2 R23 .0305 R13 -.9957
SG1 9092.4 SG2 599.7 THA 175.50

ORBIT DETERMINATION ACCURACY
ST 1907.3 SR 614.0 SS 2194.3
CRT -.5006 CRS .6790 CST -.9753
LSA 2914.3 MSA 580.0 SSA 21.8
EL1 1933.9 EL2 524.2 ALF 170.11

LAUNCH DATE OCT 29 1964 FLIGHT TIME 352.00 ARRIVAL DATE OCT 16 1965

HELIOCENTRIC CONIC DISTANCE 790.812 EARTH TO MARS

RL	148.57	LAL	-.00	LOL	35.61	VL	32.767	GAL	-4.62	AZL	88.43	HCA	242.66	SMA	186.19	ECC	.21687	INC	1.5712	V1	29.990
RP	215.05	LAP	-1.40	LOP	278.25	VP	22.836	GAP	-8.83	AZP	90.72	TAL	333.57	TAP	216.23	RCA	145.81	APO	226.56	V2	25.535
RC	290.105	GL	14.58	GP	3.35	ZAL	127.84	ZAP	61.10	ETS	181.22	ZAE	90.92	ETE	178.88	ZAC	86.76	ETC	258.52	CLP	61.05

PLANETOCENTRIC CONIC

C3	12.652	VHL	3.557	DLA	19.33	RAL	172.05	RAD	6567.5	VEL	11.578	PTH	2.02	VHP	3.320	DPA	12.77	RAP	162.90	ECC	1.2082

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 35 34	2760.70	-28.02	78.96	32.47	94.24	18 21 34	2160.7	-27.14	70.41
90.00	11 1 37	4104.57	-3.04	166.65	27.02	61.83	12 10 1	3504.6	-6.78	159.98
100.00	19 8 55	2459.64	-29.34	56.68	32.33	96.00	19 49 55	1859.6	-28.20	48.06
100.00	12 10 56	3880.86	-1.88	149.57	26.38	60.16	13 15 37	3280.9	-5.84	143.02
110.00	20 43 8	2164.89	-32.68	33.73	31.76	100.64	21 19 13	1564.9	-30.87	24.97
110.00	12 53 13	3748.37	.98	137.74	24.59	55.83	13 55 41	3148.4	-3.51	131.53

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.5016	TRA	3.5511	TC3	-9.9271	BAU	1.6860	SGT	9342.0	SGR	915.6	SG3	2541.2	ST	2001.2	SR	616.9	SS	2178.5
RDE	.3804	RRA	-.1352	RC3	.8997	FAU	.42638	RRT	-.7499	RRF	-.7695	RTF	.9957	CRT	-.5063	CRS	.6777	CST	-.9771
FDE	-2.7765	FRA	11.9238	FC	-29.1760	BSP	32237	SGB	9386.7	R23	.0298	R13	-.[illegible]	LSA	2965.3	MSA	580.8	SSA	21.6
BDE	.6295	BRA	3.5537	BC3	9.9678	FSP	8839	SG1	9367.3	SG2	604.1	THA	175.[illegible]	EL1	2027.2	EL2	525.2	ALF	170.49

LAUNCH DATE OCT 29 1964 FLIGHT TIME 354.00 ARRIVAL DATE OCT 18 1965

HELIOCENTRIC CONIC DISTANCE 794.958 EARTH TO MARS

RL	148.57	LAL	-.00	LOL	35.61	VL	32.770	GAL	-4.70	AZL	88.42	HCA	243.83	SMA	186.23	ECC	.21753	INC	1.5824	V1	29.990
RP	214.72	LAP	-1.42	LOP	279.43	VP	22.880	GAP	-9.00	AZP	90.70	TAL	333.16	TAP	216.99	RCA	145.71	APO	226.74	V2	25.572
RC	291.272	GL	14.57	GP	3.27	ZAL	128.42	ZAP	59.66	ETS	181.29	ZAE	89.21	ETE	179.02	ZAC	86.63	ETC	258.56	CLP	59.61

PLANETOCENTRIC CONIC

C3	12.861	VHL	3.586	DLA	19.07	RAL	172.62	RAD	6567.5	VEL	11.587	PTH	2.03	VHP	3.374	DPA	12.80	RAP	162.62	ECC	1.2117

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 40 38	2753.75	-27.99	78.46	33.20	94.49	18 26 32	2153.7	-27.07	69.91
90.00	11 1 5	4118.55	-2.59	167.44	27.72	61.79	12 9 43	3518.6	-6.34	160.77
100.00	19 13 43	2453.60	-29.29	56.24	33.06	96.23	19 54 37	1853.6	-28.12	47.63
100.00	12 10 41	3893.94	-1.44	150.29	27.09	60.14	13 15 35	3293.9	-5.40	143.74
110.00	20 47 23	2160.55	-32.62	33.40	32.48	100.83	21 23 23	1560.6	-30.79	24.66
110.00	12 53 30	3759.75	1.41	138.33	25.30	55.84	13 56 10	3159.7	-3.08	132.13

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.5647	TRA	3.7126	TC	-10.0889	BAU	1.7412	SGT	9621.1	SGR	905.9	SG3	2452.9	ST	2099.0	SR	622.6	SS	2176.3
RDE	.3874	RRA	-.1273	RC3	.8721	FAU	.41345	RRT	-.7384	RRF	-.7592	RTF	.9958	CRT	-.5234	CRS	.6880	CST	-.9783
FDE	-2.8375	FRA	11.6373	FC	-27.8308	BSP	32943	SGB	9663.7	R23	.0311	R13	-.9959	LSA	3031.9	MSA	580.5	SSA	21.0
BDE	.6848	BRA	3.7148	BC3	10.1266	FSP	8447	SG1	9644.4	SG2	609.5	THA	176.01	EL1	2125.8	EL2	523.8	ALF	170.60

LAUNCH DATE OCT 29 1964 FLIGHT TIME 356.00 ARRIVAL DATE OCT 20 1965

HELIOCENTRIC CONIC DISTANCE 799.107 EARTH TO MARS

RL	148.57	LAL	-.00	LOL	35.61	VL	32.772	GAL	-4.79	AZL	88.41	HCA	245.01	SMA	186.27	ECC	.21824	INC	1.5935	V1	29.990
RP	214.40	LAP	-1.44	LOP	280.61	VP	22.924	GAP	-9.17	AZP	90.67	TAL	332.73	TAP	217.74	RCA	145.62	APO	226.92	V2	25.608
RC	292.426	GL	14.54	GP	3.19	ZAL	129.03	ZAP	58.27	ETS	181.35	ZAE	87.55	ETE	179.15	ZAC	86.51	ETC	258.59	CLP	58.21

PLANETOCENTRIC CONIC

C3	13.084	VHL	3.617	DLA	18.80	RAL	173.20	RAD	6567.5	VEL	11.596	PTH	2.03	VHP	3.430	DPA	12.81	RAP	162.38	ECC	1.2153

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 45 52	2746.51	-27.95	77.93	33.96	94.75	18 31 39	2146.5	-27.00	69.39
90.00	11 0 28	4133.17	-2.12	168.25	28.45	61.76	12 9 21	3533.2	-5.88	161.59
100.00	19 18 39	2447.30	-29.25	55.77	33.81	96.47	19 59 27	1847.3	-28.04	47.18
100.00	12 10 22	3907.62	-.98	151.04	27.82	60.12	13 15 30	3307.6	-4.95	144.50
110.00	20 51 46	2156.00	-32.56	33.06	33.22	101.02	21 27 42	1556.0	-30.70	24.33
110.00	12 53 45	3771.68	1.87	138.95	26.04	55.86	13 56 37	3171.7	-2.62	132.75

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.6210	TRA	3.8872	TC	-10.2013	BAU	1.7904	SGT	9886.2	SGR	894.8	SG3	2362.2	ST	2196.4	SR	626.7	SS	2166.7
RDE	.3936	RRA	-.1206	RC3	.8422	FAU	.39849	RRT	-.7259	RRF	-.7474	RTF	.9959	CRT	-.5343	CRS	.6930	CST	-.9795
FDE	-2.8542	FRA	11.3889	FC	-26.3679	BSP	33858	SGB	9926.6	R23	.0315	R13	-.9960	LSA	3094.2	MSA	580.4	SSA	20.6
BDE	.7353	BRA	3.8890	BC3	10.2360	FSP	8144	SG1	9907.6	SG2	614.1	THA	176.23	EL1	2223.3	EL2	523.3	ALF	170.82

LAUNCH DATE OCT 29 1964 FLIGHT TIME 358.00 ARRIVAL DATE OCT 22 1965

HELIOCENTRIC CONIC DISTANCE 803.260 EARTH TO MARS

RL	148.57	LAL	-.00	LOL	35.61	VL	32.775	GAL	-4.88	AZL	88.40	HCA	246.19	SMA	186.31	ECC	.21899	INC	1.6043	V1	29.990
RP	214.08	LAP	-1.47	LOP	281.79	VP	22.968	GAP	-9.34	AZP	90.65	TAL	332.28	TAP	218.47	RCA	145.51	APO	227.11	V2	25.644
RC	293.566	GL	14.51	GP	3.11	ZAL	129.65	ZAP	56.91	ETS	181.41	ZAE	85.92	ETE	179.27	ZAC	86.40	ETC	258.62	CLP	56.85

PLANETOCENTRIC CONIC

C3	13.320	VHL	3.650	DLA	18.52	RAL	173.79	RAD	6567.5	VEL	11.606	PTH	2.03	VHP	3.488	DPA	12.81	RAP	162.18	ECC	1.2192

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 51 14	2739.05	-27.91	77.39	34.73	95.02	18 36 53	2139.0	-26.92	68.86
90.00	10 59 48	4148.38	-1.63	169.10	29.19	61.73	12 8 56	3548.4	-5.40	162.45
100.00	19 23 44	2440.78	-29.20	55.30	34.58	96.72	20 4 25	1840.8	-27.96	46.71
100.00	12 9 59	3921.88	-.49	151.82	28.56	60.11	13 15 21	3321.9	-4.47	145.29
110.00	20 56 16	2151.28	-32.50	32.70	33.97	101.22	21 32 7	1551.3	-30.61	23.99
110.00	12 53 57	3784.15	2.34	139.60	26.79	55.89	13 57 1	3184.1	-2.15	133.40

DIFFERENTIAL CORRECTIONS								MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.6802	TRA	4.0649	TC	-10.2929	BAU	1.8386	SGT	10142.8	SGR	884.4	SG3	2272.3	ST	2295.1	SR	630.7	SS	2156.3
RDE	.4000	RRA	-.1141	RC3	.8130	FAU	.38363	RRT	-.7135	RRF	-.7357	RTF	.9959	CRT	-.5450	CRS	.6982	CST	-.9807
FDE	-2.8680	FRA	11.1400	FC	-24.9346	BSP	34744	SGB	10181.3	R23	.0320	R13	-.9961	LSA	3158.8	MSA	579.8	SSA	20.3
BDE	.7891	BRA	4.0665	BC3	10.3250	FSP	7842	SG1	10162.5	SG2	618.4	THA	176.43	EL1	2322.1	EL2	522.6	ALF	171.02

LAUNCH DATE OCT 29 1964 FLIGHT TIME 360.00 ARRIVAL DATE OCT 24 1965

HELIOCENTRIC CONIC DISTANCE 807.416 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 32.778 GAL -4.97 AZL 88.38 HCA 247.37 SMA 186.36 ECC .21979 INC 1.6151 V1 29.990
RP 213.77 LAP -1.49 LOP 282.97 VP 23.011 GAP -9.50 AZP 90.62 TAL 331.82 TAP 219.19 RCA 145.40 APO 227.32 V2 25.679
RC 294.693 GL 14.47 GP 3.03 ZAL 130.28 ZAP 55.59 ETS 181.47 ZAE 84.33 ETE 179.39 ZAC 86.30 ETC 258.64 CLP 55.54

PLANETOCENTRIC CONIC

C3 13.570 VHL 3.684 DLA 18.22 RAL 174.38 RAD 6567.5 VEL 11.617 PTH 2.04 VHP 3.549 DPA 12.79 RAP 162.02 ECC 1.2233

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 56 44	2731.37	-27.86	76.83	35.52	95.29	18 42 15	2131.4	-26.83	68.32
90.00	10 59 4	4164.16	-1.12	169.98	29.96	61.70	12 8 29	3564.2	-4.89	163.34
100.00	19 28 56	2434.06	-29.14	54.80	35.37	96.97	20 9 30	1834.1	-27.87	46.23
100.00	12 9 34	3936.70	.01	152.63	29.33	60.11	13 15 10	3336.7	-3.97	146.11
110.00	21 0 53	2146.39	-32.44	32.34	34.74	101.43	21 36 39	1546.4	-30.52	23.64
110.00	12 54 6	3797.14	2.84	140.28	27.56	55.92	13 57 23	3197.1	-1.65	134.08

DIFFERENTIAL CORRECTIONS
TDE -.7415 TRA 4.2455 TC-10.3633 BAU 1.8855
RDE .4063 RRA -.1078 RC3 .7847 FAU .36888
FDE-2.8766 FRA10.8905 FC-23.5336 BSP 35619
BDE .8456 BRA 4.2468 BC310.3929 FSP 7550

MID-COURSE EXECUTION ACCURACY
SGT10390.0 SGR 874.5 SG3 2183.4
RRT -.7010 RRF -.7239 RTF .9960
SGB10426.7 R23 .0325 R13 -.9961
SG110408.1 SG2 622.6 THA 176.61

ORBIT DETERMINATION ACCURACY
ST 2394.2 SR 634.5 SS 2144.3
CRT -.5552 CRS .7032 CST -.9817
LSA 3224.5 MSA 579.0 SSA 19.9
EL1 2421.2 EL2 521.8 ALF 171.22

LAUNCH DATE OCT 29 1964 FLIGHT TIME 362.00 ARRIVAL DATE OCT 26 1965

HELIOCENTRIC CONIC DISTANCE 811.576 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 32.781 GAL -5.07 AZL 88.37 HCA 248.56 SMA 186.41 ECC .22062 INC 1.6256 V1 29.990
RP 213.46 LAP -1.51 LOP 284.16 VP 23.054 GAP -9.67 AZP 90.59 TAL 331.34 TAP 219.91 RCA 145.29 APO 227.54 V2 25.714
RC 295.805 GL 14.42 GP 2.96 ZAL 130.93 ZAP 54.31 ETS 181.52 ZAE 82.78 ETE 179.49 ZAC 86.21 ETC 258.65 CLP 54.26

PLANETOCENTRIC CONIC

C3 13.836 VHL 3.720 DLA 17.91 RAL 174.99 RAD 6567.5 VEL 11.628 PTH 2.04 VHP 3.612 DPA 12.76 RAP 161.91 ECC 1.2277

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 2 21	2723.53	-27.81	76.26	36.33	95.57	18 47 44	2123.5	-26.74	67.76
90.00	10 58 18	4180.48	-.59	170.89	30.74	61.69	12 7 58	3580.5	-4.37	164.25
100.00	19 34 15	2427.18	-29.08	54.30	36.17	97.23	20 14 42	1827.2	-27.78	45.74
100.00	12 9 5	3952.06	.53	153.48	30.12	60.11	13 14 57	3352.1	-3.45	146.95
110.00	21 5 36	2141.37	-32.37	31.96	35.53	101.64	21 41 17	1541.4	-30.43	23.28
110.00	12 54 13	3810.63	3.36	140.99	28.35	55.96	13 57 44	3210.6	-1.14	134.78

DIFFERENTIAL CORRECTIONS
TDE -.8062 TRA 4.4291 TC-10.4165 BAU 1.9318
RDE .4129 RRA -.1018 RC3 .7574 FAU .35445
FDE-2.8849 FRA10.6404 FC-22.1788 BSP 36444
BDE .9058 BRA 4.4303 BC310.4440 FSP 7259

MID-COURSE EXECUTION ACCURACY
SGT10630.0 SGR 865.5 SG3 2096.3
RRT -.6888 RRF -.7124 RTF .9960
SGB10665.1 R23 .0331 R13 -.9961
SG110646.7 SG2 626.5 THA 176.78

ORBIT DETERMINATION ACCURACY
ST 2494.5 SR 638.2 SS 2132.2
CRT -.5654 CRS .7086 CST -.9825
LSA 3292.7 MSA 577.9 SSA 19.6
EL1 2521.6 EL2 520.7 ALF 171.40

LAUNCH DATE OCT 29 1964 FLIGHT TIME 364.00 ARRIVAL DATE OCT 28 1965

HELIOCENTRIC CONIC DISTANCE 815.740 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 32.784 GAL -5.17 AZL 88.36 HCA 249.75 SMA 186.46 ECC .22150 INC 1.6360 V1 29.990
RP 213.16 LAP -1.53 LOP 285.35 VP 23.097 GAP -9.83 AZP 90.57 TAL 330.85 TAP 220.61 RCA 145.16 APO 227.77 V2 25.748
RC 296.904 GL 14.37 GP 2.89 ZAL 131.59 ZAP 53.07 ETS 181.57 ZAE 81.26 ETE 179.60 ZAC 86.13 ETC 258.66 CLP 53.02

PLANETOCENTRIC CONIC

C3 14.117 VHL 3.757 DLA 17.58 RAL 175.60 RAD 6567.6 VEL 11.641 PTH 2.04 VHP 3.676 DPA 12.71 RAP 161.83 ECC 1.2323

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 8 4	2715.53	-27.75	75.68	37.15	95.86	18 53 20	2115.5	-26.65	67.19
90.00	10 57 28	4197.33	-.05	171.83	31.54	61.68	12 7 25	3597.3	-3.83	165.20
100.00	19 39 40	2420.16	-29.02	53.79	36.98	97.49	20 20 0	1820.2	-27.68	45.24
100.00	12 8 33	3967.94	1.07	154.35	30.92	60.12	13 14 41	3367.9	-2.91	147.83
110.00	21 10 25	2136.23	-32.30	31.58	36.33	101.86	21 46 1	1536.2	-30.33	22.92
110.00	12 54 18	3824.63	3.89	141.72	29.16	56.01	13 58 3	3224.6	-.60	135.51

DIFFERENTIAL CORRECTIONS
TDE -.8733 TRA 4.6162 TC-10.4490 BAU 1.9769
RDE .4196 RRA -.0961 RC3 .7309 FAU .34015
FDE-2.8901 FRA10.3925 FC-20.8596 BSP 37258
BDE .9689 BRA 4.6172 BC310.4745 FSP 6976

MID-COURSE EXECUTION ACCURACY
SGT10860.7 SGR 857.1 SG3 2010.6
RRT -.6767 RRF -.7011 RTF .9960
SGB10894.5 R23 .0338 R13 -.9961
SG110876.2 SG2 630.2 THA 176.93

ORBIT DETERMINATION ACCURACY
ST 2595.5 SR 641.7 SS 2119.3
CRT -.5753 CRS .7141 CST -.9833
LSA 3362.6 MSA 576.6 SSA 19.3
EL1 2622.7 EL2 519.5 ALF 171.57

LAUNCH DATE OCT 29 1964 FLIGHT TIME 366.00 ARRIVAL DATE OCT 30 1965

HELIOCENTRIC CONIC DISTANCE 819.905 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 32.787 GAL -5.27 AZL 88.35 HCA 250.95 SMA 186.52 ECC .22242 INC 1.6463 V1 29.990
RP 212.87 LAP -1.56 LOP 286.55 VP 23.139 GAP -9.99 AZP 90.54 TAL 330.34 TAP 221.29 RCA 145.03 APO 228.01 V2 25.782
RC 297.989 GL 14.30 GP 2.82 ZAL 132.26 ZAP 51.87 ETS 181.61 ZAE 79.78 ETE 179.69 ZAC 86.06 ETC 258.66 CLP 51.81

PLANETOCENTRIC CONIC

C3 14.416 VHL 3.797 DLA 17.25 RAL 176.23 RAD 6567.6 VEL 11.653 PTH 2.05 VHP 3.743 DPA 12.65 RAP 161.80 ECC 1.2372

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 13 54	2707.41	-27.70	75.10	37.99	96.15	18 59 1	2107.4	-26.55	66.62
90.00	10 56 36	4214.69	.51	172.80	32.37	61.69	12 6 51	3614.7	-3.28	166.17
100.00	19 45 11	2413.01	-28.96	53.27	37.81	97.76	20 25 24	1813.0	-27.58	44.73
100.00	12 8 0	3984.32	1.62	155.25	31.75	60.15	13 14 24	3384.3	-2.36	148.73
110.00	21 15 20	2130.99	-32.22	31.19	37.15	102.08	21 50 50	1531.0	-30.22	22.54
110.00	12 54 21	3839.11	4.44	142.48	29.99	56.07	13 58 20	3239.1	-.05	136.27

DIFFERENTIAL CORRECTIONS
TDE -.9428 TRA 4.8082 TC-10.4613 BAU 2.0207
RDE .4264 RRA -.0907 RC3 .7051 FAU .32602
FDE-2.8912 FRA10.1477 FC-19.5789 BSP 38069
BDE 1.0348 BRA 4.8090 BC310.4850 FSP 6703

MID-COURSE EXECUTION ACCURACY
SGT11083.8 SGR 849.3 SG3 1926.5
RRT -.6648 RRF -.6900 RTF .9959
SGB11116.3 R23 .0345 R13 -.9960
SG111098.2 SG2 633.6 THA 177.07

ORBIT DETERMINATION ACCURACY
ST 2697.4 SR 645.1 SS 2105.3
CRT -.5847 CRS .7195 CST -.9840
LSA 3434.1 MSA 575.2 SSA 19.0
EL1 2724.7 EL2 518.1 ALF 171.74

LAUNCH DATE OCT 29 1964 FLIGHT TIME 368.00 ARRIVAL DATE NOV 1 1965

HELIOCENTRIC CONIC DISTANCE 824.074 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 32.790 GAL -5.38 AZL 88.34 HCA 252.15 SMA 186.58 ECC .22339 INC 1.6565 V1 29.990
RP 212.57 LAP -1.58 LOP 287.75 VP 23.180 GAP -10.16 AZP 90.51 TAL 329.82 TAP 221.97 RCA 144.90 APO 228.26 V2 25.815
RC 299.061 GL 14.23 GP 2.75 ZAL 132.95 ZAP 50.70 ETS 181.65 ZAE 78.34 ETE 179.78 ZAC 86.00 ETC 258.65 CLP 50.64

PLANETOCENTRIC CONIC

C3 14.732 VHL 3.838 DLA 16.90 RAL 176.85 RAD 6567.6 VEL 11.667 PTH 2.05 VHP 3.812 DPA 12.58 RAP 161.80 ECC 1.2425

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 19 49	2699.20	-27.63	74.50	38.84	96.44	19 4 48	2099.2	-26.45	66.04
90.00	10 55 42	4232.54	1.09	173.80	33.21	61.70	12 6 14	3632.5	-2.70	167.17
100.00	19 50 48	2405.78	-28.89	52.74	38.66	98.03	20 30 54	1805.8	-27.48	44.22
100.00	12 7 23	4001.20	2.20	156.17	32.59	60.18	13 14 5	3401.2	-1.79	149.65
110.00	21 20 19	2125.68	-32.15	30.79	37.99	102.30	21 55 45	1525.7	-30.12	22.16
110.00	12 54 21	3854.06	5.01	143.27	30.85	56.14	13 58 35	3254.1	.53	137.05

DIFFERENTIAL CORRECTIONS
TDE-1.0152 TRA 5.0038 TC-10.4566 BAU 2.0638
RDE .4333 RRA -.0857 RC3 .6804 FAU .31226
FDE-2.8892 FRA 9.9044 FC-18.3500 BSP 38850
BDE 1.1038 BRA 5.0045 BC310.4787 FSP 6434

MID-COURSE EXECUTION ACCURACY
SGT11299.3 SGR 842.1 SG3 1844.6
RRT -.6533 RRF -.6793 RTF .9959
SGB11330.7 R23 .0352 R13 -.9960
SG111312.8 SG2 636.8 THA 177.20

ORBIT DETERMINATION ACCURACY
ST 2799.9 SR 648.3 SS 2090.1
CRT -.5939 CRS .7249 CST -.9846
LSA 3507.0 MSA 573.5 SSA 18.7
EL1 2827.2 EL2 516.6 ALF 171.90

LAUNCH DATE OCT 29 1964 FLIGHT TIME 370.00 ARRIVAL DATE NOV 3 1965

HELIOCENTRIC CONIC DISTANCE 828.244 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 32.794 GAL -5.49 AZL 88.33 HCA 253.35 SMA 186.64 ECC .22441 INC 1.6666 V1 29.990
RP 212.29 LAP -1.60 LOP 288.95 VP 23.222 GAP -10.32 AZP 90.48 TAL 329.28 TAP 222.63 RCA 144.75 APO 228.52 V2 25.847
RC 300.120 GL 14.16 GP 2.69 ZAL 133.65 ZAP 49.57 ETS 181.68 ZAE 76.93 ETE 179.87 ZAC 85.95 ETC 258.64 CLP 49.51

PLANETOCENTRIC CONIC

C3 15.067 VHL 3.882 DLA 16.55 RAL 177.49 RAD 6567.6 VEL 11.681 PTH 2.05 VHP 3.883 DPA 12.49 RAP 161.84 ECC 1.2480

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 25 48	2690.92	-27.57	73.91	39.72	96.73	19 10 39	2090.9	-26.35	65.45
90.00	10 54 45	4250.85	1.68	174.82	34.07	61.73	12 5 36	3650.9	-2.11	168.19
100.00	19 56 29	2398.47	-28.82	52.21	39.53	98.30	20 36 28	1798.5	-27.37	43.70
100.00	12 6 45	4018.55	2.78	157.13	33.46	60.23	13 13 44	3418.5	-1.20	150.60
110.00	21 25 24	2120.30	-32.07	30.39	38.84	102.53	22 0 44	1520.3	-30.01	21.78
110.00	12 54 20	3869.48	5.59	144.08	31.72	56.22	13 58 50	3269.5	1.12	137.85

DIFFERENTIAL CORRECTIONS
TDE-1.0909 TRA 5.2033 TC-10.4357 BAU 2.1062
RDE .4405 RRA -.0809 RC3 .6566 FAU .29882
FDE-2.8854 FRA 9.6632 FC-17.1698 BSP 39599
BDE 1.1765 BRA 5.2040 BC310.4563 FSP 6171

MID-COURSE EXECUTION ACCURACY
SGT11507.6 SGR 835.5 SG3 1764.8
RRT -.6422 RRF -.6690 RTF .9958
SGB11537.9 R23 .0359 R13 -.9959
SG111520.1 SG2 639.7 THA 177.32

ORBIT DETERMINATION ACCURACY
ST 2903.4 SR 651.4 SS 2074.3
CRT -.6030 CRS .7305 CST -.9852
LSA 3581.9 MSA 571.4 SSA 18.4
EL1 2930.7 EL2 514.8 ALF 172.05

LAUNCH DATE OCT 29 1964 FLIGHT TIME 372.00 ARRIVAL DATE NOV 5 1965

HELIOCENTRIC CONIC DISTANCE 832.416 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 32.797 GAL -5.60 AZL 88.32 HCA 254.55 SMA 186.70 ECC .22548 INC 1.6765 V1 29.990
RP 212.01 LAP -1.62 LOP 290.15 VP 23.262 GAP -10.48 AZP 90.45 TAL 328.73 TAP 223.28 RCA 144.60 APO 228.80 V2 25.879
RC 301.167 GL 14.07 GP 2.63 ZAL 134.35 ZAP 48.47 ETS 181.72 ZAE 75.55 ETE 179.95 ZAC 85.91 ETC 258.62 CLP 48.41

PLANETOCENTRIC CONIC

C3 15.422 VHL 3.927 DLA 16.18 RAL 178.13 RAD 6567.6 VEL 11.696 PTH 2.06 VHP 3.956 DPA 12.39 RAP 161.91 ECC 1.2538

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 31 53	2682.59	-27.50	73.31	40.60	97.03	19 16 35	2082.6	-26.24	64.87
90.00	10 53 47	4269.65	2.29	175.87	34.96	61.77	12 4 57	3669.6	-1.51	169.24
100.00	20 2 16	2391.12	-28.75	51.67	40.41	98.57	20 42 7	1791.1	-27.26	43.19
100.00	12 6 5	4036.35	3.38	158.11	34.35	60.28	13 13 22	3436.4	-.60	151.58
110.00	21 30 33	2114.89	-31.99	29.99	39.70	102.75	22 5 48	1514.9	-29.90	21.40
110.00	12 54 18	3885.35	6.19	144.91	32.61	56.31	13 59 3	3285.3	1.72	138.68

DIFFERENTIAL CORRECTIONS
TDE-1.1688 TRA 5.4078 TC-10.3968 BAU 2.1475
RDE .4478 RRA -.0765 RC3 .6335 FAU .28560
FDE-2.8780 FRA 9.4246 FC-16.0329 BSP 40347
BDE 1.2517 BRA 5.4084 BC310.4161 FSP 5918

MID-COURSE EXECUTION ACCURACY
SGT11708.2 SGR 829.4 SG3 1686.9
RRT -.6315 RRF -.6591 RTF .9957
SGB11737.6 R23 .0367 R13 -.9958
SG111720.0 SG2 642.4 THA 177.43

ORBIT DETERMINATION ACCURACY
ST 3007.1 SR 654.4 SS 2057.2
CRT -.6117 CRS .7360 CST -.9857
LSA 3657.6 MSA 569.4 SSA 18.2
EL1 3034.4 EL2 513.0 ALF 172.19

LAUNCH DATE OCT 29 1964 FLIGHT TIME 374.00 ARRIVAL DATE NOV 7 1965

HELIOCENTRIC CONIC DISTANCE 836.589 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 32.801 GAL -5.72 AZL 88.31 HCA 255.76 SMA 186.77 ECC .22660 INC 1.6864 V1 29.990
RP 211.73 LAP -1.63 LOP 291.36 VP 23.302 GAP -10.64 AZP 90.42 TAL 328.16 TAP 223.92 RCA 144.44 APO 229.09 V2 25.911
RC 302.203 GL 13.98 GP 2.57 ZAL 135.07 ZAP 47.40 ETS 181.74 ZAE 74.20 ETE 180.03 ZAC 85.88 ETC 258.60 CLP 47.35

PLANETOCENTRIC CONIC

C3 15.797 VHL 3.975 DLA 15.80 RAL 178.77 RAD 6567.6 VEL 11.712 PTH 2.06 VHP 4.031 DPA 12.28 RAP 162.02 ECC 1.2600

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 38 1	2674.25	-27.43	72.71	41.51	97.32	19 22 35	2074.3	-26.13	64.28
90.00	10 52 48	4288.86	2.90	176.94	35.86	61.82	12 4 17	3688.9	-.89	170.31
100.00	20 8 6	2383.74	-28.67	51.14	41.31	98.84	20 47 50	1783.7	-27.15	42.67
100.00	12 5 24	4054.60	4.00	159.11	35.28	60.35	13 12 58	3454.6	.02	152.58
110.00	21 35 45	2109.46	-31.91	29.59	40.58	102.98	22 10 55	1509.5	-29.79	21.01
110.00	12 54 13	3901.65	6.81	145.78	33.52	56.42	13 59 15	3301.6	2.34	139.53

DIFFERENTIAL CORRECTIONS
TDE-1.2501 TRA 5.6163 TC-10.3441 BAU 2.1884
RDE .4552 RRA -.0724 RC3 .6115 FAU .27282
FDE-2.8684 FRA 9.1876 FC-14.9514 BSP 41065
BDE 1.3304 BRA 5.6167 BC310.3621 FSP 5672

MID-COURSE EXECUTION ACCURACY
SGT11902.1 SGR 823.8 SG3 1611.4
RRT -.6213 RRF -.6498 RTF .9956
SGB11930.5 R23 .0375 R13 -.9957
SG111913.1 SG2 644.9 THA 177.53

ORBIT DETERMINATION ACCURACY
ST 3111.3 SR 657.2 SS 2039.0
CRT -.6203 CRS .7415 CST -.9861
LSA 3734.7 MSA 567.0 SSA 18.0
EL1 3138.7 EL2 511.0 ALF 172.33

LAUNCH DATE OCT 29 1964 FLIGHT TIME 376.00 ARRIVAL DATE NOV 9 1965

HELIOCENTRIC CONIC DISTANCE 840.763 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 32.805 GAL -5.85 AZL 88.30 HCA 256.97 SMA 186.83 ECC .22777 INC 1.6962 V1 29.990
RP 211.47 LAP -1.65 LOP 292.57 VP 23.342 GAP -10.80 AZP 90.38 TAL 327.58 TAP 224.55 RCA 144.28 APO 229.39 V2 25.941
RC 303.228 GL 13.89 GP 2.51 ZAL 135.80 ZAP 46.37 ETS 181.77 ZAE 72.89 ETE 180.10 ZAC 85.85 ETC 258.58 CLP 46.32

PLANETOCENTRIC CONIC

C3 16.195 VHL 4.024 DLA 15.42 RAL 179.42 RAD 6567.6 VEL 11.729 PTH 2.07 VHP 4.108 DPA 12.16 RAP 162.17 ECC 1.2665

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 44 13	2665.91	-27.36	72.11	42.43	97.61	19 28 39	2065.9	-26.02	63.69
90.00	10 51 47	4308.51	3.53	178.04	36.79	61.89	12 3 35	3708.5	-.25	171.41
100.00	20 14 0	2376.36	-28.59	50.60	42.22	99.11	20 53 36	1776.4	-27.04	42.15
100.00	12 4 41	4073.28	4.63	160.14	36.19	60.44	13 12 34	3473.3	.66	153.61
110.00	21 41 2	2104.03	-31.82	29.19	41.48	103.20	22 16 6	1504.0	-29.68	20.63
110.00	12 54 8	3918.38	7.43	146.66	34.46	56.54	13 59 26	3318.4	2.98	140.40

DIFFERENTIAL CORRECTIONS
TDE-1.3336 TRA 5.8310 TC-10.2733 BAU 2.2280
RDE .4629 RRA -.0687 RC3 .5901 FAU .26026
FDE-2.8548 FRA 8.9547 FC-13.9125 BSP 41782
BDE 1.4116 BRA 5.8314 BC310.2902 FSP 5434

MID-COURSE EXECUTION ACCURACY
SGT12088.7 SGR 818.6 SG3 1537.8
RRT -.6116 RRF -.6409 RTF .9955
SGB12116.3 R23 .0384 R13 -.9956
SG112099.0 SG2 647.1 THA 177.62

ORBIT DETERMINATION ACCURACY
ST 3215.7 SR 659.9 SS 2019.4
CRT -.6284 CRS .7469 CST -.9865
LSA 3812.5 MSA 564.6 SSA 17.8
EL1 3243.1 EL2 509.0 ALF 172.47

LAUNCH DATE OCT 29 1964 FLIGHT TIME 378.00 ARRIVAL DATE NOV 11 1965

HELIOCENTRIC CONIC DISTANCE 844.938 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 32.809 GAL -5.98 AZL 88.29 HCA 258.18 SMA 186.90 ECC .22900 INC 1.7059 V1 29.990
RP 211.20 LAP -1.67 LOP 293.79 VP 23.381 GAP -10.96 AZP 90.35 TAL 326.97 TAP 225.16 RCA 144.10 APO 229.70 V2 25.971
RC 304.242 GL 13.79 GP 2.45 ZAL 136.54 ZAP 45.37 ETS 181.79 ZAE 71.60 ETE 180.17 ZAC 85.84 ETC 258.54 CLP 45.31

PLANETOCENTRIC CONIC

C3 16.616 VHL 4.076 DLA 15.02 RAL 180.08 RAD 6567.7 VEL 11.747 PTH 2.07 VHP 4.187 DPA 12.02 RAP 162.35 ECC 1.2735

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 50 28	2657.60	-27.28	71.51	43.36	97.90	19 34 45	2057.6	-25.91	63.11
90.00	10 50 45	4328.55	4.18	179.16	37.74	61.97	12 2 53	3728.6	.40	172.52
100.00	20 19 57	2369.01	-28.51	50.07	43.15	99.38	20 59 26	1769.0	-26.92	41.63
100.00	12 3 57	4092.38	5.27	161.20	37.14	60.53	13 12 9	3492.4	1.30	154.65
110.00	21 46 22	2098.62	-31.74	28.79	42.40	103.42	22 21 20	1498.6	-29.57	20.25
110.00	12 54 1	3935.53	8.08	147.58	35.41	56.67	13 59 37	3335.5	3.64	141.30

DIFFERENTIAL CORRECTIONS
TDE-1.4209 TRA 6.0502 TC-10.1915 BAU 2.2675
RDE .4708 RRA -.0653 RC3 .5697 FAU .24816
FDE-2.8407 FRA 8.7234 FC-12.9295 BSP 42473
BDE 1.4969 BRA 6.0506 BC310.2074 FSP 5201

MID-COURSE EXECUTION ACCURACY
SGT12269.9 SGR 814.0 SG3 1466.8
RRT -.6025 RRF -.6328 RTF .9953
SGB12296.9 R23 .0394 R13 -.9954
SG112279.8 SG2 649.1 THA 177.70

ORBIT DETERMINATION ACCURACY
ST 3320.9 SR 662.4 SS 1999.4
CRT -.6365 CRS .7525 CST -.9869
LSA 3892.1 MSA 562.0 SSA 17.5
EL1 3348.2 EL2 506.7 ALF 172.59

LAUNCH DATE OCT 29 1964 FLIGHT TIME 380.00 ARRIVAL DATE NOV 13 1965

HELIOCENTRIC CONIC DISTANCE 849.112 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 32.813 GAL -6.11 AZL 88.28 HCA 259.40 SMA 186.97 ECC .23028 INC 1.7155 V1 29.990
RP 210.95 LAP -1.69 LOP 295.00 VP 23.419 GAP -11.12 AZP 90.32 TAL 326.36 TAP 225.76 RCA 143.92 APO 230.03 V2 26.001
RC 305.247 GL 13.68 GP 2.40 ZAL 137.29 ZAP 44.39 ETS 181.81 ZAE 70.35 ETE 180.24 ZAC 85.83 ETC 258.51 CLP 44.34

PLANETOCENTRIC CONIC

C3 17.062 VHL 4.131 DLA 14.62 RAL 180.73 RAD 6567.7 VEL 11.766 PTH 2.08 VHP 4.268 DPA 11.88 RAP 162.56 ECC 1.2808

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 56 45	2649.33	-27.20	70.92	44.31	98.19	19 40 55	2049.3	-25.79	62.54
90.00	10 49 42	4349.00	4.83	180.31	38.71	62.06	12 2 11	3749.0	1.06	173.66
100.00	20 25 57	2361.69	-28.43	49.54	44.09	99.65	21 5 18	1761.7	-26.80	41.12
100.00	12 3 11	4111.87	5.92	162.28	38.11	60.65	13 11 43	3511.9	1.96	155.72
110.00	21 51 44	2093.24	-31.65	28.39	43.33	103.64	22 26 38	1493.2	-29.45	19.87
110.00	12 53 53	3953.08	8.73	148.51	36.39	56.82	13 59 46	3353.1	4.30	142.22

DIFFERENTIAL CORRECTIONS
TDE-1.5100 TRA 6.2755 TC-10.0945 BAU 2.3060
RDE .4788 RRA -.0624 RC3 .5499 FAU .23633
FDE-2.8216 FRA 8.4958 FC-11.9913 BSP 43165
BDE 1.5841 BRA 6.2758 BC310.1094 FSP 4979

MID-COURSE EXECUTION ACCURACY
SGT12444.2 SGR 809.6 SG3 1397.9
RRT -.5939 RRF -.6251 RTF .9952
SGB12470.5 R23 .0403 R13 -.9953
SG112453.5 SG2 650.8 THA 177.78

ORBIT DETERMINATION ACCURACY
ST 3425.3 SR 664.8 SS 1977.3
CRT -.6441 CRS .7577 CST -.9872
LSA 3971.3 MSA 559.4 SSA 17.3
EL1 3452.6 EL2 504.5 ALF 172.72

LAUNCH DATE OCT 29 1964 FLIGHT TIME 382.00 ARRIVAL DATE NOV 15 1965

HELIOCENTRIC CONIC DISTANCE 853.286 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 32.817 GAL -6.25 AZL 88.27 HCA 260.62 SMA 187.05 ECC .23162 INC 1.7251 V1 29.990
RP 210.70 LAP -1.70 LOP 296.22 VP 23.457 GAP -11.28 AZP 90.28 TAL 325.72 TAP 226.35 RCA 143.72 APO 230.37 V2 26.029
RC 306.243 GL 13.56 GP 2.35 ZAL 138.05 ZAP 43.45 ETS 181.83 ZAE 69.12 ETE 180.30 ZAC 85.83 ETC 258.47 CLP 43.40

PLANETOCENTRIC CONIC

C3 17.535 VHL 4.187 DLA 14.21 RAL 181.39 RAD 6567.7 VEL 11.786 PTH 2.08 VHP 4.351 DPA 11.72 RAP 162.80 ECC 1.2886

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 3 5	2641.13	-27.12	70.33	45.28	98.47	19 47 6	2041.1	-25.67	61.96
90.00	10 48 38	4369.82	5.49	181.48	39.70	62.18	12 1 28	3769.8	1.73	174.82
100.00	20 31 59	2354.43	-28.35	49.02	45.06	99.91	21 11 14	1754.4	-26.68	40.61
100.00	12 2 25	4131.76	6.58	163.38	39.10	60.78	13 11 17	3531.8	2.64	156.82
110.00	21 57 10	2087.93	-31.56	28.00	44.27	103.86	22 31 58	1487.9	-29.34	19.50
110.00	12 53 44	3971.03	9.40	149.47	37.39	56.98	13 59 55	3371.0	4.99	143.16

DIFFERENTIAL CORRECTIONS
TDE-1.6026 TRA 6.5064 TC3-9.9858 BAU 2.3442
RDE .4871 RRA -.0597 RC3 .5310 FAU .22488
FDE-2.8007 FRA 8.2700 FC-11.1029 BSP 43830
BDE 1.6750 BRA 6.5066 BC3 9.9999 FSP 4761

MID-COURSE EXECUTION ACCURACY
SGT12612.8 SGR 805.6 SG3 1331.2
RRT -.5860 RRF -.6182 RTF .9950
SGB12638.5 R23 .0414 R13 -.9951
SG112621.6 SG2 652.3 THA 177.85

ORBIT DETERMINATION ACCURACY
ST 3530.1 SR 667.1 SS 1954.3
CRT -.6516 CRS .7631 CST -.9874
LSA 4051.6 MSA 556.6 SSA 17.2
EL1 3557.3 EL2 502.1 ALF 172.84

LAUNCH DATE OCT 29 1964 FLIGHT TIME 384.00 ARRIVAL DATE NOV 17 1965

HELIOCENTRIC CONIC DISTANCE 857.458 EARTH TO MARS

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RL  148.57 LAL   -.00 LOL  35.61 VL  32.822 GAL  -6.39 AZL  88.27 HCA 261.84 SMA 187.12 ECC .23302 INC 1.7347 V1  29.990
RP  210.46 LAP  -1.72 LOP 297.45 VP  23.494 GAP -11.44 AZP  90.25 TAL 325.08 TAP 226.92 RCA 143.52 APO 230.72 V2  26.057
RC 307.229 GL   13.45 GP    2.30 ZAL 138.81 ZAP  42.54 ETS 181.85 ZAE  67.92 ETE 180.36 ZAC  85.94 ETC 258.42 CLP  42.49
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PLANETOCENTRIC CONIC

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C3  18.035 VHL  4.247 DLA  13.79 RAL 182.06 RAD 6567.7 VEL 11.807 PTH   2.09 VHP  4.436 DPA  11.55 RAP 163.07 ECC 1.2968
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LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 9 27	2633.02	-27.04	69.75	46.26	98.75	19 53 20	2033.0	-25.55	61.40
90.00	10 47 34	4391.01	6.16	182.68	40.71	62.31	12 0 45	3791.0	2.41	176.01
100.00	20 38 4	2347.25	-28.26	48.50	46.03	100.17	21 17 11	1747.3	-26.57	40.11
100.00	12 1 38	4152.02	7.25	164.51	40.12	60.92	13 10 50	3552.0	3.32	157.93
110.00	22 2 37	2082.68	-31.48	27.62	45.24	104.07	22 37 20	1482.7	-29.23	19.13
110.00	12 53 34	3989.35	10.08	150.46	38.41	57.16	14 0 3	3389.4	5.68	144.13

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

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TDE-1.6992 TRA 6.7418 TC3-9.8676 BAU 2.3823   SGT12775.5 SGR  802.0 SG3 1266.9   ST  3635.0 SR   669.2 SS  1930.4
RDE  .4956 RRA -.0575 RC3  .5129 FAU .21384   RRT -.5789 RRF -.6120 RTF  .9948   CRT -.6592 CRS  .7686 CST -.9876
FDE-2.7787 FRA 8.0460 FC-10.2654 BSP 44460   SGB12800.6 R23  .0424 R13 -.9949   LSA 4132.9 MSA  553.5 SSA   17.0
BDE 1.7700 BRA 6.7420 BC3 9.8809 FSP  4549   SG112783.9 SG2  653.5 THA 177.91   EL1 3662.2 EL2  499.5 ALF 172.95
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LAUNCH DATE OCT 29 1964 FLIGHT TIME 386.00 ARRIVAL DATE NOV 19 1965

HELIOCENTRIC CONIC DISTANCE 861.629 EARTH TO MARS

```
RL  148.57 LAL   -.00 LOL  35.61 VL  32.826 GAL  -6.54 AZL  88.26 HCA 263.07 SMA 187.20 ECC .23448 INC 1.7442 V1  29.990
RP  210.22 LAP  -1.73 LOP 298.67 VP  23.530 GAP -11.61 AZP  90.21 TAL 324.41 TAP 227.48 RCA 143.30 APO 231.09 V2  26.085
RC 308.206 GL   13.32 GP    2.25 ZAL 139.58 ZAP  41.65 ETS 181.86 ZAE  66.74 ETE 180.42 ZAC  85.86 ETC 258.37 CLP  41.60
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PLANETOCENTRIC CONIC

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C3  18.564 VHL  4.309 DLA  13.36 RAL 182.72 RAD 6567.8 VEL 11.830 PTH   2.10 VHP  4.523 DPA  11.38 RAP 163.37 ECC 1.3055
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LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 15 51	2625.02	-26.95	69.18	47.26	99.02	19 59 36	2025.0	-25.43	60.85
90.00	10 46 29	4412.56	6.84	183.89	41.75	62.46	12 0 1	3812.6	3.10	177.21
100.00	20 44 10	2340.17	-28.17	48.00	47.03	100.43	21 23 10	1740.2	-26.45	39.62
100.00	12 0 50	4172.64	7.93	165.66	41.16	61.09	13 10 23	3572.6	4.02	159.07
110.00	22 8 7	2077.52	-31.39	27.24	46.21	104.28	22 42 44	1477.5	-29.11	18.77
110.00	12 53 23	4008.05	10.77	151.47	39.45	57.36	14 0 11	3408.1	6.39	145.12

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

```
TDE-1.7988 TRA 6.9845 TC3-9.7374 BAU 2.4198   SGT12933.0 SGR  798.7 SG3 1204.7   ST  3740.0 SR   671.3 SS  1905.2
RDE  .5044 RRA -.0556 RC3  .4954 FAU .20310   RRT -.5724 RRF -.6065 RTF  .9945   CRT -.6664 CRS  .7740 CST -.9878
FDE-2.7542 FRA 7.8251 FC3-9.4714 BSP 45096   SGB12957.6 R23  .0436 R13 -.9946   LSA 4214.8 MSA  550.4 SSA   16.8
BDE 1.8682 BRA 6.9847 BC3 9.7500 FSP  4345   SG112941.1 SG2  654.5 THA 177.97   EL1 3767.1 EL2  496.9 ALF 173.06
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LAUNCH DATE OCT 29 1964 FLIGHT TIME 388.00 ARRIVAL DATE NOV 21 1965

HELIOCENTRIC CONIC DISTANCE 865.797 EARTH TO MARS

```
RL  148.57 LAL   -.00 LOL  35.61 VL  32.831 GAL  -6.69 AZL  88.25 HCA 264.30 SMA 187.28 ECC .23601 INC 1.7537 V1  29.990
RP  209.99 LAP  -1.75 LOP 299.90 VP  23.566 GAP -11.77 AZP  90.17 TAL 323.73 TAP 228.03 RCA 143.08 APO 231.47 V2  26.111
RC 309.174 GL   13.19 GP    2.20 ZAL 140.35 ZAP  40.79 ETS 181.88 ZAE  65.59 ETE 180.48 ZAC  85.88 ETC 258.32 CLP  40.74
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PLANETOCENTRIC CONIC

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C3  19.125 VHL  4.373 DLA  12.93 RAL 183.39 RAD 6567.8 VEL 11.854 PTH   2.10 VHP  4.612 DPA  11.19 RAP 163.69 ECC 1.3147
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LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 22 16	2617.14	-26.87	68.62	48.28	99.29	20 5 53	2017.1	-25.31	60.30
90.00	10 45 23	4434.44	7.53	185.13	42.81	62.62	11 59 18	3834.4	3.80	178.44
100.00	20 50 19	2333.20	-28.09	47.49	48.03	100.68	21 29 12	1733.2	-26.33	39.14
100.00	12 0 2	4193.61	8.62	166.84	42.22	61.27	13 9 56	3593.6	4.72	160.22
110.00	22 13 38	2072.46	-31.31	26.87	47.21	104.48	22 48 11	1472.5	-29.00	18.42
110.00	12 53 12	4027.11	11.46	152.51	40.52	57.57	14 0 19	3427.1	7.10	146.12

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

```
TDE-1.9007 TRA 7.2335 TC3-9.5976 BAU 2.4569   SGT13084.9 SGR  795.6 SG3 1144.6   ST  3843.7 SR   673.1 SS  1878.4
RDE  .5134 RRA -.0542 RC3  .4785 FAU .19271   RRT -.5664 RRF -.6016 RTF  .9943   CRT -.6733 CRS  .7793 CST -.9880
FDE-2.7263 FRA 7.6056 FC3-8.7236 BSP 45712   SGB13109.1 R23  .0449 R13 -.9944   LSA 4296.0 MSA  547.4 SSA   16.6
BDE 1.9688 BRA 7.2337 BC3 9.6095 FSP  4146   SG113092.7 SG2  655.2 THA 178.02   EL1 3870.8 EL2  494.2 ALF 173.16
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LAUNCH DATE OCT 29 1964 FLIGHT TIME 390.00 ARRIVAL DATE NOV 23 1965

HELIOCENTRIC CONIC DISTANCE 869.963 EARTH TO MARS

```
RL  148.57 LAL   -.00 LOL  35.61 VL  32.835 GAL  -6.85 AZL  88.24 HCA 265.53 SMA 187.36 ECC .23760 INC 1.7632 V1  29.990
RP  209.77 LAP  -1.76 LOP 301.13 VP  23.601 GAP -11.93 AZP  90.14 TAL 323.03 TAP 228.56 RCA 142.84 APO 231.87 V2  26.137
RC 310.132 GL   13.06 GP    2.16 ZAL 141.14 ZAP  39.96 ETS 181.89 ZAE  64.47 ETE 180.53 ZAC  85.91 ETC 258.27 CLP  39.91
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PLANETOCENTRIC CONIC

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C3  19.718 VHL  4.441 DLA  12.49 RAL 184.06 RAD 6567.8 VEL 11.879 PTH   2.11 VHP  4.704 DPA  10.99 RAP 164.05 ECC 1.3245
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LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 28 42	2609.40	-26.78	68.07	49.31	99.55	20 12 11	2009.4	-25.19	59.77
90.00	10 44 18	4456.65	8.23	186.40	43.89	62.81	11 58 35	3856.7	4.52	179.68
100.00	20 56 28	2326.37	-28.00	47.01	49.06	100.92	21 35 14	1726.4	-26.21	38.66
100.00	11 59 13	4214.92	9.32	168.04	43.31	61.47	13 9 28	3614.9	5.44	161.40
110.00	22 19 11	2067.53	-31.22	26.51	48.22	104.68	22 53 38	1467.5	-28.89	18.08
110.00	12 53 0	4046.53	12.17	153.57	41.61	57.81	14 0 26	3446.5	7.83	147.16

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

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TDE-2.0075 TRA 7.4883 TC3-9.4513 BAU 2.4945   SGT13232.5 SGR  792.8 SG3 1086.7   ST  3948.0 SR   674.9 SS  1850.9
RDE  .5227 RRA -.0531 RC3  .4624 FAU .18270   RRT -.5614 RRF -.5976 RTF  .9940   CRT -.6803 CRS  .7848 CST -.9881
FDE-2.6980 FRA 7.3880 FC3-8.0216 BSP 46293   SGB13256.3 R23  .0462 R13 -.9941   LSA 4378.6 MSA  544.0 SSA   16.5
BDE 2.0745 BRA 7.4885 BC3 9.4626 FSP  3953   SG113240.0 SG2  655.7 THA 178.07   EL1 3975.1 EL2  491.3 ALF 173.26
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LAUNCH DATE OCT 29 1964 FLIGHT TIME 392.00 ARRIVAL DATE NOV 25 1965

HELIOCENTRIC CONIC DISTANCE 874.124 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 32.840 GAL -7.01 AZL 88.23 HCA 266.76 SMA 187.44 ECC .23926 INC 1.7726 V1 29.990
RP 209.55 LAP -1.77 LOP 302.37 VP 23.635 GAP -12.10 AZP 90.10 TAL 322.32 TAP 229.08 RCA 142.59 APO 232.29 V2 26.162
RC 311.080 GL 12.92 GP 2.11 ZAL 141.92 ZAP 39.15 ETS 181.90 ZAE 63.37 ETE 180.58 ZAC 85.95 ETC 258.21 CLP 39.10

PLANETOCENTRIC CONIC

C3 20.347 VHL 4.511 DLA 12.04 RAL 184.73 RAD 6567.8 VEL 11.905 PTH 2.12 VHP 4.797 DPA 10.78 RAP 164.42 ECC 1.3349

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 35 9	2601.82	-26.70	67.53	50.35	99.81	20 18 30	2001.8	-25.07	59.24
90.00	10 43 12	4479.18	8.92	187.69	45.00	63.01	11 57 52	3879.2	5.23	180.95
100.00	21 2 38	2319.68	-27.91	46.53	50.10	101.16	21 41 17	1719.7	-26.09	38.20
100.00	11 58 24	4236.56	10.02	169.26	44.42	61.69	13 9 1	3636.6	6.16	162.60
110.00	22 24 45	2062.73	-31.14	26.16	49.24	104.87	22 59 7	1462.7	-28.78	17.75
110.00	12 52 47	4066.28	12.88	154.65	42.72	58.06	14 0 33	3466.3	8.57	148.21

DIFFERENTIAL CORRECTIONS
TDE-2.1177 TRA 7.7499 TC3-9.2974 BAU 2.5320
RDE .5324 RRA -.0525 RC3 .4469 FAU .17306
FDE-2.6675 FRA 7.1721 FC3-7.3634 BSP 46864
BDE 2.1835 BRA 7.7500 BC3 9.3081 FSP 3766

MID-COURSE EXECUTION ACCURACY
SGT13375.4 SGR 790.2 SG3 1030.9
RRT -.5570 RRF -.5944 RTF .9937
SGB13398.7 R23 .0477 R13 -.9938
SG113382.6 SG2 655.9 THA 178.11

ORBIT DETERMINATION ACCURACY
ST 4051.7 SR 676.6 SS 1822.2
CRT -.6871 CRS .7902 CST -.9881
LSA 4461.2 MSA 540.7 SSA 16.3
EL1 4078.7 EL2 488.3 ALF 173.36

LAUNCH DATE OCT 29 1964 FLIGHT TIME 394.00 ARRIVAL DATE NOV 27 1965

HELIOCENTRIC CONIC DISTANCE 878.282 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 32.845 GAL -7.18 AZL 88.22 HCA 268.00 SMA 187.52 ECC .24100 INC 1.7821 V1 29.990
RP 209.34 LAP -1.78 LOP 303.60 VP 23.669 GAP -12.27 AZP 90.06 TAL 321.58 TAP 229.58 RCA 142.33 APO 232.71 V2 26.186
RC 312.019 GL 12.77 GP 2.07 ZAL 142.71 ZAP 38.36 ETS 181.90 ZAE 62.29 ETE 180.63 ZAC 86.00 ETC 258.15 CLP 38.31

PLANETOCENTRIC CONIC

C3 21.014 VHL 4.584 DLA 11.59 RAL 185.40 RAD 6567.9 VEL 11.933 PTH 2.12 VHP 4.893 DPA 10.57 RAP 164.83 ECC 1.3458

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 41 36	2594.42	-26.61	67.01	51.41	100.06	20 24 50	1994.4	-24.95	58.73
90.00	10 42 7	4502.02	9.63	188.99	46.13	63.24	11 57 9	3902.0	5.96	182.24
100.00	21 8 48	2313.15	-27.83	46.06	51.16	101.39	21 47 22	1713.2	-25.97	37.75
100.00	11 57 35	4258.52	10.73	170.51	45.55	61.93	13 8 34	3658.5	6.89	163.82
110.00	22 30 19	2058.08	-31.06	25.82	50.28	105.06	23 4 38	1458.1	-28.68	17.43
110.00	12 52 34	4086.36	13.60	155.76	43.86	58.33	14 0 40	3486.4	9.32	149.28

DIFFERENTIAL CORRECTIONS
TDE-2.2314 TRA 8.0178 TC3-9.1357 BAU 2.5694
RDE .5422 RRA -.0523 RC3 .4320 FAU .16369
FDE-2.6346 FRA 6.9575 FC3-6.7439 BSP 47408
BDE 2.2964 BRA 8.0180 BC3 9.1460 FSP 3584

MID-COURSE EXECUTION ACCURACY
SGT13512.5 SGR 787.8 SG3 977.0
RRT -.5533 RRF -.5919 RTF .9933
SGB13535.4 R23 .0492 R13 -.9934
SG113519.5 SG2 655.9 THA 178.15

ORBIT DETERMINATION ACCURACY
ST 4154.6 SR 678.2 SS 1792.0
CRT -.6938 CRS .7956 CST -.9882
LSA 4543.5 MSA 537.1 SSA 16.2
EL1 4181.5 EL2 485.3 ALF 173.45

LAUNCH DATE OCT 29 1964 FLIGHT TIME 396.00 ARRIVAL DATE NOV 29 1965

HELIOCENTRIC CONIC DISTANCE 882.434 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 32.850 GAL -7.35 AZL 88.21 HCA 269.24 SMA 187.61 ECC .24281 INC 1.7915 V1 29.990
RP 209.14 LAP -1.79 LOP 304.84 VP 23.701 GAP -12.44 AZP 90.02 TAL 320.84 TAP 230.07 RCA 142.05 APO 233.16 V2 26.209
RC 312.950 GL 12.62 GP 2.03 ZAL 143.51 ZAP 37.60 ETS 181.91 ZAE 61.23 ETE 180.68 ZAC 86.05 ETC 258.08 CLP 37.55

PLANETOCENTRIC CONIC

C3 21.719 VHL 4.660 DLA 11.14 RAL 186.08 RAD 6567.9 VEL 11.962 PTH 2.13 VHP 4.991 DPA 10.34 RAP 165.26 ECC 1.3574

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 48 3	2587.20	-26.52	66.50	52.49	100.30	20 31 11	1987.2	-24.83	58.24
90.00	10 41 1	4525.15	10.33	190.33	47.29	63.49	11 56 26	3925.2	6.69	183.54
100.00	21 15 0	2306.80	-27.74	45.61	52.23	101.61	21 53 26	1706.8	-25.86	37.31
100.00	11 56 46	4280.78	11.44	171.78	46.71	62.19	13 8 7	3680.8	7.63	165.07
110.00	22 35 55	2053.58	-30.98	25.50	51.34	105.23	23 10 9	1453.6	-28.58	17.12
110.00	12 52 20	4106.76	14.33	156.89	45.02	58.63	14 0 47	3506.8	10.07	150.38

DIFFERENTIAL CORRECTIONS
TDE-2.3497 TRA 8.2923 TC3-8.9702 BAU 2.6075
RDE .5525 RRA -.0525 RC3 .4177 FAU .15473
FDE-2.6008 FRA 6.7435 FC3-6.1676 BSP 47918
BDE 2.4138 BRA 8.2924 BC3 8.9799 FSP 3405

MID-COURSE EXECUTION ACCURACY
SGT13645.9 SGR 785.6 SG3 925.2
RRT -.5504 RRF -.5902 RTF .9930
SGB13668.5 R23 .0509 R13 -.9930
SG113652.7 SG2 655.6 THA 178.18

ORBIT DETERMINATION ACCURACY
ST 4257.3 SR 679.6 SS 1761.0
CRT -.7004 CRS .8012 CST -.9882
LSA 4626.3 MSA 533.4 SSA 16.0
EL1 4284.2 EL2 482.0 ALF 173.54

LAUNCH DATE OCT 29 1964 FLIGHT TIME 398.00 ARRIVAL DATE DEC 1 1965

HELIOCENTRIC CONIC DISTANCE 886.580 EARTH TO MARS

RL 148.57 LAL -.00 LOL 35.61 VL 32.855 GAL -7.53 AZL 88.20 HCA 270.48 SMA 187.69 ECC .24471 INC 1.8010 V1 29.990
RP 208.94 LAP -1.80 LOP 306.08 VP 23.733 GAP -12.61 AZP 89.99 TAL 320.07 TAP 230.55 RCA 141.76 APO 233.62 V2 26.232
RC 313.871 GL 12.47 GP 1.99 ZAL 144.31 ZAP 36.86 ETS 181.92 ZAE 60.20 ETE 180.73 ZAC 86.11 ETC 258.02 CLP 36.81

PLANETOCENTRIC CONIC

C3 22.468 VHL 4.740 DLA 10.68 RAL 186.75 RAD 6567.9 VEL 11.994 PTH 2.14 VHP 5.091 DPA 10.11 RAP 165.71 ECC 1.3698

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 54 31	2580.17	-26.44	66.00	53.59	100.54	20 37 31	1980.2	-24.71	57.76
90.00	10 39 56	4548.57	11.04	191.68	48.47	63.76	11 55 44	3948.6	7.43	184.87
100.00	21 21 11	2300.64	-27.65	45.17	53.32	101.83	21 59 32	1700.6	-25.74	36.89
100.00	11 55 57	4303.33	12.15	173.08	47.89	62.48	13 7 40	3703.3	8.37	166.33
110.00	22 41 31	2049.27	-30.90	25.18	52.41	105.40	23 15 40	1449.3	-28.48	16.82
110.00	12 52 6	4127.47	15.06	158.06	46.21	58.95	14 0 54	3527.5	10.84	151.50

DIFFERENTIAL CORRECTIONS
TDE-2.4707 TRA 8.5756 TC3-8.7973 BAU 2.6452
RDE .5630 RRA -.0532 RC3 .4038 FAU .14603
FDE-2.5637 FRA 6.5320 FC3-5.6270 BSP 48430
BDE 2.5341 BRA 8.5758 BC3 8.8065 FSP 3234

MID-COURSE EXECUTION ACCURACY
SGT13774.8 SGR 783.5 SG3 875.2
RRT -.5481 RRF -.5892 RTF .9925
SGB13797.1 R23 .0526 R13 -.9926
SG113781.6 SG2 655.1 THA 178.21

ORBIT DETERMINATION ACCURACY
ST 4358.5 SR 680.9 SS 1728.3
CRT -.7067 CRS .8066 CST -.9882
LSA 4708.1 MSA 529.8 SSA 15.9
EL1 4385.3 EL2 478.8 ALF 173.62

LAUNCH DATE OCT 30 1964 FLIGHT TIME 184.00 ARRIVAL DATE MAY 2 1965

HELIOCENTRIC CONIC DISTANCE 478.722 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 34.512 GAL -8.06 AZL 87.29 HCA 155.94 SMA 222.72 ECC .35836 INC 2.7139 V1 29.997
RP 244.11 LAP 1.11 LOP 192.57 VP 22.169 GAP 20.29 AZP 92.48 TAL 328.91 TAP 124.85 RCA 142.91 APO 302.54 V2 22.475
RC 133.550 GL 15.02 GP -2.25 ZAL 134.61 ZAP 169.47 ETS 190.94 ZAE 157.16 ETE 352.65 ZAC 86.00 ETC 256.16 CLP 169.71

PLANETOCENTRIC CONIC

C3 38.969 VHL 6.243 DLA 16.44 RAL 179.94 RAD 6568.5 VEL 12.662 PTH 2.30 VHP 9.210 DPA -1.71 RAP 181.69 ECC 1.6413

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 32 42	2917.72	-28.28	90.43	59.90	88.50	19 21 20	2317.7	-28.19	81.77
90.00	10 59 32	4485.86	9.13	188.07	50.49	63.08	12 14 18	3885.9	5.45	181.32
100.00	20 3 18	2625.57	-29.89	68.97	59.93	89.56	20 47 4	2025.6	-29.63	60.18
100.00	12 11 37	4253.43	10.56	170.21	49.73	61.87	13 22 31	3653.4	6.71	163.53
110.00	21 32 1	2347.99	-34.11	47.80	59.85	92.44	22 11 9	1748.0	-33.39	38.64
110.00	12 59 24	4103.58	14.22	156.72	47.59	58.58	14 7 47	3503.6	9.96	150.21

DIFFERENTIAL CORRECTIONS
TDE 1.4068 TRA-3.2510 TC3 .7219 BAU .3833
RDE -.3598 RRA .0911 RC3 -.1415 FAU .07968
FDE -.7683 FRA 2.7683 FC3-1.7702 BSP 11903
BDE 1.4521 BRA 3.2523 BC3 .7357 FSP 871

MID-COURSE EXECUTION ACCURACY
SGT 3486.9 SGR 384.5 SG3 304.2
RRT -.6390 RRF .6309 RTF -.9076
SGB 3508.0 R23 -.0607 R13 .9080
SG1 3495.6 SG2 295.0 THA 175.94

ORBIT DETERMINATION ACCURACY
ST 1593.4 SR 331.3 SS 847.1
CRT -.8542 CRS -.7202 CST .9751
LSA 1818.0 MSA 246.5 SSA 24.1
EL1 1618.6 EL2 169.6 ALF 169.82

LAUNCH DATE OCT 30 1964 FLIGHT TIME 186.00 ARRIVAL DATE MAY 4 1965

HELIOCENTRIC CONIC DISTANCE 481.410 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 34.434 GAL -7.88 AZL 87.25 HCA 156.85 SMA 220.73 ECC .35179 INC 2.7541 V1 29.997
RP 243.87 LAP 1.08 LOP 193.48 VP 22.071 GAP 19.73 AZP 92.53 TAL 329.18 TAP 126.03 RCA 143.08 APO 298.38 V2 22.498
RC 135.719 GL 15.52 GP -2.38 ZAL 134.17 ZAP 168.97 ETS 191.04 ZAE 157.03 ETE 352.55 ZAC 85.96 ETC 256.14 CLP 169.23

PLANETOCENTRIC CONIC

C3 37.505 VHL 6.124 DLA 17.02 RAL 179.85 RAD 6568.5 VEL 12.605 PTH 2.29 VHP 9.014 DPA -2.00 RAP 182.02 ECC 1.6172

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 26 39	2929.95	-28.26	91.32	59.33	88.05	19 15 29	2329.9	-28.23	82.66
90.00	11 4 54	4454.27	8.15	186.26	49.90	62.79	12 19 8	3854.3	4.44	179.55
100.00	19 57 45	2636.19	-29.88	69.76	59.38	89.15	20 41 41	2036.2	-29.68	60.96
100.00	12 16 29	4223.26	9.59	168.51	49.13	61.55	13 26 53	3623.3	5.72	161.87
110.00	21 27 29	2355.43	-34.13	48.38	59.32	92.10	22 6 44	1755.4	-33.46	39.21
110.00	13 3 15	4076.79	13.26	155.23	46.95	58.20	14 11 11	3476.8	8.96	148.77

DIFFERENTIAL CORRECTIONS
TDE 1.3860 TRA-3.2211 TC3 .7732 BAU .3951
RDE -.3457 RRA .1057 RC3 -.1517 FAU .08201
FDE -.7712 FRA 2.8383 FC3-1.8932 BSP 12089
BDE 1.4284 BRA 3.2228 BC3 .7880 FSP 917

MID-COURSE EXECUTION ACCURACY
SGT 3537.2 SGR 387.1 SG3 318.7
RRT -.6729 RRF .6663 RTF -.9107
SGB 3558.3 R23 -.0668 R13 .9112
SG1 3546.8 SG2 285.5 THA 175.76

ORBIT DETERMINATION ACCURACY
ST 1605.0 SR 325.0 SS 860.0
CRT -.8606 CRS -.7234 CST .9734
LSA 1832.9 MSA 247.6 SSA 23.5
EL1 1629.5 EL2 163.0 ALF 170.02

LAUNCH DATE OCT 30 1964 FLIGHT TIME 188.00 ARRIVAL DATE MAY 6 1965

HELIOCENTRIC CONIC DISTANCE 484.166 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 34.359 GAL -7.71 AZL 87.20 HCA 157.76 SMA 218.85 ECC .34547 INC 2.7976 V1 29.997
RP 243.63 LAP 1.06 LOP 194.39 VP 21.979 GAP 19.18 AZP 92.59 TAL 329.45 TAP 127.21 RCA 143.24 APO 294.45 V2 22.522
RC 137.915 GL 16.05 GP -2.52 ZAL 133.71 ZAP 168.46 ETS 191.19 ZAE 156.94 ETE 352.41 ZAC 85.91 ETC 256.11 CLP 168.73

PLANETOCENTRIC CONIC

C3 36.128 VHL 6.011 DLA 17.64 RAL 179.77 RAD 6568.4 VEL 12.550 PTH 2.27 VHP 8.821 DPA -2.31 RAP 182.34 ECC 1.5946

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 20 13	2943.83	-28.22	92.34	58.79	87.54	19 9 16	2343.8	-28.26	83.67
90.00	11 10 42	4421.48	7.13	184.40	49.35	62.52	12 24 23	3821.5	3.39	177.71
100.00	19 51 51	2648.30	-29.87	70.66	58.85	88.67	20 36 0	2048.3	-29.73	61.86
100.00	12 21 44	4192.25	8.58	166.76	48.57	61.26	13 31 37	3592.2	4.68	160.15
110.00	21 22 42	2364.06	-34.15	49.06	58.83	91.70	22 2 6	1764.1	-33.53	39.87
110.00	13 7 23	4049.25	12.27	153.71	46.36	57.84	14 14 52	3449.3	7.94	147.30

DIFFERENTIAL CORRECTIONS
TDE 1.3648 TRA-3.1903 TC3 .8265 BAU .4068
RDE -.3321 RRA .1208 RC3 -.1628 FAU .08443
FDE -.7723 FRA 2.9105 FC3-2.0233 BSP 12260
BDE 1.4046 BRA 3.1926 BC3 .8423 FSP 966

MID-COURSE EXECUTION ACCURACY
SGT 3586.5 SGR 391.3 SG3 333.9
RRT -.7067 RRF .7014 RTF -.9138
SGB 3607.8 R23 -.0733 R13 .9142
SG1 3597.2 SG2 276.0 THA 175.57

ORBIT DETERMINATION ACCURACY
ST 1615.5 SR 318.7 SS 872.3
CRT -.8676 CRS -.7268 CST .9713
LSA 1846.5 MSA 249.7 SSA 22.8
EL1 1639.2 EL2 156.2 ALF 170.20

LAUNCH DATE OCT 30 1964 FLIGHT TIME 190.00 ARRIVAL DATE MAY 8 1965

HELIOCENTRIC CONIC DISTANCE 486.987 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 34.287 GAL -7.54 AZL 87.16 HCA 158.67 SMA 217.07 ECC .33938 INC 2.8446 V1 29.997
RP 243.38 LAP 1.03 LOP 195.30 VP 21.891 GAP 18.62 AZP 92.65 TAL 329.73 TAP 128.40 RCA 143.40 APO 290.75 V2 22.547
RC 140.134 GL 16.61 GP -2.68 ZAL 133.24 ZAP 167.93 ETS 191.37 ZAE 156.90 ETE 352.21 ZAC 85.85 ETC 256.09 CLP 168.23

PLANETOCENTRIC CONIC

C3 34.834 VHL 5.902 DLA 18.28 RAL 179.70 RAD 6568.4 VEL 12.498 PTH 2.26 VHP 8.633 DPA -2.63 RAP 182.65 ECC 1.5733

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 13 19	2959.61	-28.17	93.49	58.27	86.97	19 2 38	2359.6	-28.29	84.83
90.00	11 17 0	4387.28	6.05	182.46	48.85	62.28	12 30 7	3787.3	2.29	175.80
100.00	19 45 34	2662.09	-29.84	71.69	58.36	88.14	20 29 56	2062.1	-29.78	62.88
100.00	12 27 26	4160.03	7.52	164.96	48.05	60.98	13 36 46	3560.0	3.59	158.37
110.00	21 17 39	2374.02	-34.16	49.84	58.38	91.24	21 57 13	1774.0	-33.61	40.64
110.00	13 11 51	4020.87	11.24	152.17	45.81	57.50	14 18 51	3420.9	6.87	145.79

DIFFERENTIAL CORRECTIONS
TDE 1.3534 TRA-3.1485 TC3 .8934 BAU .4240
RDE -.3195 RRA .1360 RC3 -.1754 FAU .08690
FDE -.7705 FRA 2.9865 FC3-2.1598 BSP 12183
BDE 1.3906 BRA 3.1514 BC3 .9105 FSP 1020

MID-COURSE EXECUTION ACCURACY
SGT 3633.2 SGR 398.0 SG3 349.7
RRT -.7423 RRF .7353 RTF -.9180
SGB 3654.9 R23 -.0748 R13 .9185
SG1 3645.3 SG2 265.8 THA 175.33

ORBIT DETERMINATION ACCURACY
ST 1630.9 SR 313.0 SS 883.9
CRT -.8776 CRS -.7297 CST .9674
LSA 1863.7 MSA 255.8 SSA 21.4
EL1 1654.1 EL2 148.0 ALF 170.36

LAUNCH DATE OCT 30 1964 FLIGHT TIME 192.00 ARRIVAL DATE MAY 10 1965

HELIOCENTRIC CONIC DISTANCE 489.865 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 34.218 GAL -7.37 AZL 87.10 HCA 159.59 SMA 215.41 ECC .33353 INC 2.8957 V1 29.997
RP 243.12 LAP 1.01 LOP 196.22 VP 21.809 GAP 18.08 AZP 92.71 TAL 330.01 TAP 129.59 RCA 143.56 APO 287.25 V2 22.572
RC 142.373 GL 17.20 GP -2.86 ZAL 132.75 ZAP 167.39 ETS 191.59 ZAE 156.90 ETE 351.96 ZAC 85.76 ETC 256.07 CLP 167.71

PLANETOCENTRIC CONIC

C3 33.625 VHL 5.799 DLA 18.96 RAL 179.63 RAD 6568.3 VEL 12.450 PTH 2.25 VHP 8.449 DPA -2.95 RAP 182.94 ECC 1.5534

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 5 55	2977.50	-28.10	94.79	57.80	86.32	18 55 33	2377.5	-28.31	86.13
90.00	11 23 53	4351.56	4.91	180.45	48.42	62.08	12 36 25	3751.6	1.14	173.81
100.00	19 38 53	2677.75	-29.80	72.85	57.91	87.53	20 23 30	2077.7	-29.82	64.04
100.00	12 33 37	4126.54	6.41	163.09	47.60	60.74	13 42 23	3526.5	2.46	156.53
110.00	21 12 18	2385.44	-34.18	50.73	57.98	90.71	21 52 4	1785.4	-33.70	41.52
110.00	13 16 41	3991.61	10.16	150.58	45.32	57.19	14 23 12	3391.6	5.77	144.25

DIFFERENTIAL CORRECTIONS
TDE 1.3214 TRA-3.1267 TC3 .9382 BAU .4301
RDE -.3066 RRA .1526 RC3 -.1884 FAU .08963
FDE -.7703 FRA 3.0618 FC3-2.3076 BSP 12593
BDE 1.3565 BRA 3.1304 BC3 .9569 FSP 1071

MID-COURSE EXECUTION ACCURACY
SGT 3682.3 SGR 406.1 SG3 366.3
RRT -.7718 RRF .7697 RTF -.9195
SGB 3704.6 R23 -.0890 R13 .9201
SG1 3695.7 SG2 257.3 THA 175.11

ORBIT DETERMINATION ACCURACY
ST 1632.9 SR 306.8 SS 896.0
CRT -.8837 CRS -.7356 CST .9663
LSA 1870.0 MSA 256.3 SSA 21.1
EL1 1655.4 EL2 141.7 ALF 170.50

LAUNCH DATE OCT 30 1964 FLIGHT TIME 194.00 ARRIVAL DATE MAY 12 1965

HELIOCENTRIC CONIC DISTANCE 492.799 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 34.151 GAL -7.21 AZL 87.05 HCA 160.51 SMA 213.83 ECC .32790 INC 2.9517 V1 29.997
RP 242.87 LAP .98 LOP 197.14 VP 21.731 GAP 17.53 AZP 92.78 TAL 330.29 TAP 130.79 RCA 143.71 APO 283.94 V2 22.598
RC 144.629 GL 17.82 GP -3.05 ZAL 132.24 ZAP 166.84 ETS 191.86 ZAE 156.94 ETE 351.65 ZAC 85.66 ETC 256.05 CLP 167.19

PLANETOCENTRIC CONIC

C3 32.493 VHL 5.700 DLA 19.67 RAL 179.58 RAD 6568.3 VEL 12.404 PTH 2.24 VHP 8.269 DPA -3.29 RAP 183.22 ECC 1.5348

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 57 55	2997.88	-28.00	96.28	57.36	85.58	18 47 53	2397.9	-28.32	87.63
90.00	11 31 28	4313.92	3.71	178.34	48.05	61.91	12 43 22	3713.9	-.08	171.71
100.00	19 31 40	2695.58	-29.74	74.17	57.50	86.83	20 16 36	2095.6	-29.86	65.37
100.00	12 40 24	4091.45	5.24	161.15	47.21	60.53	13 48 35	3491.5	1.27	154.60
110.00	21 6 37	2398.53	-34.18	51.75	57.64	90.10	21 46 35	1798.5	-33.79	42.53
110.00	13 21 57	3961.26	9.04	148.95	44.88	56.89	14 27 58	3361.3	4.62	142.65

DIFFERENTIAL CORRECTIONS
TDE 1.2966 TRA-3.0969 TC3 .9929 BAU .4402
RDE -.2945 RRA .1699 RC3 -.2029 FAU .09237
FDE -.7661 FRA 3.1419 FC3-2.4610 BSP 12818
BDE 1.3296 BRA 3.1016 BC3 1.0134 FSP 1128

MID-COURSE EXECUTION ACCURACY
SGT 3729.3 SGR 417.2 SG3 383.6
RRT -.8016 RRF .8019 RTF -.9220
SGB 3752.5 R23 -.0995 R13 .9226
SG1 3744.3 SG2 248.4 THA 174.85

ORBIT DETERMINATION ACCURACY
ST 1638.0 SR 301.0 SS 907.2
CRT -.8922 CRS -.7410 CST .9636
LSA 1878.4 MSA 260.6 SSA 20.2
EL1 1660.0 EL2 134.2 ALF 170.63

LAUNCH DATE OCT 30 1964 FLIGHT TIME 196.00 ARRIVAL DATE MAY 14 1965

HELIOCENTRIC CONIC DISTANCE 495.786 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 34.088 GAL -7.05 AZL 86.99 HCA 161.43 SMA 212.34 ECC .32249 INC 3.0129 V1 29.997
RP 242.60 LAP .96 LOP 198.06 VP 21.658 GAP 16.99 AZP 92.86 TAL 330.57 TAP 132.00 RCA 143.86 APO 280.81 V2 22.624
RC 146.900 GL 18.49 GP -3.26 ZAL 131.71 ZAP 166.27 ETS 192.18 ZAE 157.02 ETE 351.27 ZAC 85.54 ETC 256.03 CLP 166.66

PLANETOCENTRIC CONIC

C3 31.438 VHL 5.607 DLA 20.42 RAL 179.54 RAD 6568.3 VEL 12.362 PTH 2.23 VHP 8.093 DPA -3.65 RAP 183.48 ECC 1.5174

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 49 12	3021.20	-27.86	97.97	56.97	84.74	18 39 34	2421.2	-28.30	89.33
90.00	11 39 53	4273.99	2.43	176.11	47.76	61.78	12 51 7	3674.0	-1.37	169.48
100.00	19 23 52	2715.93	-29.65	75.68	57.13	86.04	20 9 8	2115.9	-29.89	66.88
100.00	12 47 54	4054.49	4.00	159.11	46.89	60.35	13 55 28	3454.5	.02	152.58
110.00	21 0 32	2413.51	-34.18	52.92	57.35	89.41	21 40 46	1813.5	-33.88	43.69
110.00	13 27 43	3929.67	7.86	147.26	44.51	56.62	14 33 13	3329.7	3.41	141.00

DIFFERENTIAL CORRECTIONS
TDE 1.2754 TRA-3.0624 TC3 1.0539 BAU .4524
RDE -.2831 RRA .1878 RC3 -.2194 FAU .09533
FDE -.7615 FRA 3.2226 FC3-2.6251 BSP 12949
BDE 1.3064 BRA 3.0682 BC3 1.0765 FSP 1185

MID-COURSE EXECUTION ACCURACY
SGT 3774.4 SGR 431.5 SG3 401.7
RRT -.8300 RRF .8320 RTF -.9246
SGB 3799.0 R23 -.1101 R13 .9253
SG1 3791.4 SG2 239.6 THA 174.56

ORBIT DETERMINATION ACCURACY
ST 1644.2 SR 295.8 SS 918.3
CRT -.9022 CRS -.7478 CST .9602
LSA 1887.6 MSA 266.5 SSA 19.2
EL1 1665.8 EL2 125.9 ALF 170.73

LAUNCH DATE OCT 30 1964 FLIGHT TIME 198.00 ARRIVAL DATE MAY 16 1965

HELIOCENTRIC CONIC DISTANCE 498.821 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 34.026 GAL -6.90 AZL 86.92 HCA 162.35 SMA 210.93 ECC .31727 INC 3.0805 V1 29.997
RP 242.34 LAP .93 LOP 198.98 VP 21.589 GAP 16.46 AZP 92.94 TAL 330.86 TAP 133.21 RCA 144.01 APO 277.85 V2 22.651
RC 149.184 GL 19.20 GP -3.50 ZAL 131.16 ZAP 165.68 ETS 192.55 ZAE 157.13 ETE 350.81 ZAC 85.39 ETC 256.01 CLP 166.11

PLANETOCENTRIC CONIC

C3 30.457 VHL 5.519 DLA 21.22 RAL 179.52 RAD 6568.2 VEL 12.322 PTH 2.22 VHP 7.922 DPA -4.02 RAP 183.72 ECC 1.5013

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 39 36	3048.06	-27.68	99.91	56.62	83.79	18 30 24	2448.1	-28.25	91.29
90.00	11 49 20	4231.20	1.05	173.72	47.56	61.70	12 59 51	3631.2	-2.74	167.09
100.00	19 15 22	2739.27	-29.53	77.40	56.82	85.14	20 1 1	2139.3	-29.89	68.62
100.00	12 56 15	4015.22	2.67	156.94	46.86	60.22	14 3 10	3415.2	-1.31	150.42
110.00	20 54 0	2430.69	-34.16	54.26	57.12	88.62	21 34 30	1830.7	-33.97	45.02
110.00	13 34 7	3896.57	6.61	145.51	44.22	56.39	14 39 3	3296.6	2.15	139.27

DIFFERENTIAL CORRECTIONS
TDE 1.2658 TRA-3.0155 TC3 1.1311 BAU .4707
RDE -.2727 RRA .2066 RC3 -.2383 FAU .09832
FDE -.7529 FRA 3.3079 FC3-2.7948 BSP 12791
BDE 1.2949 BRA 3.0225 BC3 1.1559 FSP 1249

MID-COURSE EXECUTION ACCURACY
SGT 3816.2 SGR 449.7 SG3 420.6
RRT -.8582 RRF .8588 RTF -.9285
SGB 3842.6 R23 -.1149 R13 .9293
SG1 3835.8 SG2 229.6 THA 174.20

ORBIT DETERMINATION ACCURACY
ST 1656.3 SR 291.5 SS 928.7
CRT -.9152 CRS -.7542 CST .9541
LSA 1900.7 MSA 278.7 SSA 17.5
EL1 1677.8 EL2 116.0 ALF 170.81

LAUNCH DATE OCT 30 1964 FLIGHT TIME 200.00 ARRIVAL DATE MAY 18 1965

HELIOCENTRIC CONIC DISTANCE 501.900 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 33.967 GAL -6.75 AZL 86.84 HCA 163.27 SMA 209.60 ECC .31226 INC 3.1557 V1 29.997
RP 242.06 LAP .91 LOP 199.90 VP 21.525 GAP 15.93 AZP 93.02 TAL 331.15 TAP 134.42 RCA 144.15 APO 275.05 V2 22.678
RC 151.478 GL 19.97 GP -3.77 ZAL 130.59 ZAP 165.08 ETS 192.98 ZAE 157.28 ETE 350.25 ZAC 85.21 ETC 255.99 CLP 165.56

PLANETOCENTRIC CONIC

C3 29.555 VHL 5.436 DLA 22.06 RAL 179.53 RAD 6568.2 VEL 12.285 PTH 2.21 VHP 7.754 DPA -4.42 RAP 183.94 ECC 1.4864

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 28 55	3079.18	-27.43	102.16	56.31	82.69	18 20 15	2479.2	-28.16	93.57
90.00	12 0 3	4185.01	-.45	171.14	47.48	61.69	13 9 48	3585.0	-4.23	164.51
100.00	19 6 0	2766.14	-29.36	79.38	56.57	84.12	19 52 7	2166.1	-29.87	70.61
100.00	13 5 39	3973.28	1.25	154.64	46.54	60.13	14 11 52	3373.3	-2.73	148.12
110.00	20 46 57	2450.35	-34.12	55.80	56.97	87.71	21 27 47	1850.3	-34.06	46.55
110.00	13 41 12	3861.83	5.30	143.67	44.02	56.18	14 45 34	3261.8	.82	137.45

DIFFERENTIAL CORRECTIONS
TDE 1.2269 TRA-2.9974 TC3 1.1703 BAU .4735
RDE -.2615 RRA .2281 RC3 -.2575 FAU .10149
FDE -.7424 FRA 3.3961 FC3-2.9730 BSP 13323
BDE 1.2544 BRA 3.0061 BC3 1.1983 FSP 1314

MID-COURSE EXECUTION ACCURACY
SGT 3861.3 SGR 470.8 SG3 440.4
RRT -.8784 RRF .8846 RTF -.9293
SGB 3889.9 R23 -.1371 R13 .9302
SG1 3883.5 SG2 223.7 THA 173.87

ORBIT DETERMINATION ACCURACY
ST 1648.9 SR 286.5 SS 938.9
CRT -.9234 CRS -.7637 CST .9521
LSA 1898.1 MSA 281.8 SSA 17.0
EL1 1670.1 EL2 108.5 ALF 170.85

LAUNCH DATE OCT 30 1964 FLIGHT TIME 202.00 ARRIVAL DATE MAY 20 1965

HELIOCENTRIC CONIC DISTANCE 505.022 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 33.911 GAL -6.60 AZL 86.76 HCA 164.20 SMA 208.34 ECC .30744 INC 3.2394 V1 29.997
RP 241.79 LAP .88 LOP 200.83 VP 21.465 GAP 15.40 AZP 93.12 TAL 331.44 TAP 135.64 RCA 144.29 APO 272.39 V2 22.706
RC 153.781 GL 20.80 GP -4.07 ZAL 129.99 ZAP 164.46 ETS 193.47 ZAE 157.46 ETE 349.58 ZAC 85.00 ETC 255.97 CLP 164.99

PLANETOCENTRIC CONIC

C3 28.727 VHL 5.360 DLA 22.96 RAL 179.56 RAD 6568.2 VEL 12.252 PTH 2.20 VHP 7.590 DPA -4.84 RAP 184.14 ECC 1.4728

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 16 48	3115.84	-27.09	104.78	56.05	81.41	18 8 43	2515.8	-28.00	96.24
90.00	12 12 27	4134.12	-2.09	168.31	47.54	61.75	13 21 21	3534.1	-5.85	161.64
100.00	18 55 33	2797.43	-29.12	81.68	56.37	82.93	19 42 10	2197.4	-29.79	72.94
100.00	13 16 23	3927.76	-.29	152.14	46.54	60.11	14 21 51	3327.8	-4.27	145.61
110.00	20 39 14	2473.03	-34.04	57.56	56.90	86.67	21 20 27	1873.0	-34.13	48.32
110.00	13 49 11	3824.93	3.90	141.74	43.93	56.01	14 52 56	3224.9	-.59	135.53

DIFFERENTIAL CORRECTIONS
TDE 1.2042 TRA-2.9623 TC3 1.2309 BAU .4848
RDE -.2516 RRA .2506 RC3 -.2802 FAU .10484
FDE -.7298 FRA 3.4860 FC3-3.1597 BSP 13464
BDE 1.2302 BRA 2.9729 BC3 1.2624 FSP 1380

MID-COURSE EXECUTION ACCURACY
SGT 3902.2 SGR 497.2 SG3 460.9
RRT -.8985 RRF .9066 RTF -.9316
SGB 3933.7 R23 -.1527 R13 .9326
SG1 3927.8 SG2 216.9 THA 173.45

ORBIT DETERMINATION ACCURACY
ST 1650.3 SR 282.9 SS 948.8
CRT -.9353 CRS -.7738 CST .9470
LSA 1902.2 MSA 291.8 SSA 15.8
EL1 1671.4 EL2 98.8 ALF 170.86

LAUNCH DATE OCT 30 1964 FLIGHT TIME 204.00 ARRIVAL DATE MAY 22 1965

HELIOCENTRIC CONIC DISTANCE 508.185 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 33.857 GAL -6.46 AZL 86.67 HCA 165.13 SMA 207.14 ECC .30280 INC 3.3335 V1 29.997
RP 241.51 LAP .86 LOP 201.76 VP 21.409 GAP 14.88 AZP 93.22 TAL 331.73 TAP 136.86 RCA 144.42 APO 269.86 V2 22.734
RC 156.092 GL 21.71 GP -4.41 ZAL 129.36 ZAP 163.81 ETS 194.05 ZAE 157.67 ETE 348.78 ZAC 84.74 ETC 255.95 CLP 164.41

PLANETOCENTRIC CONIC

C3 27.976 VHL 5.289 DLA 23.93 RAL 179.63 RAD 6568.1 VEL 12.221 PTH 2.20 VHP 7.431 DPA -5.29 RAP 184.32 ECC 1.4604

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 2 42	3159.83	-26.60	107.91	55.83	79.92	17 55 22	2559.8	-27.72	99.43
90.00	12 27 6	4076.92	-3.93	165.11	47.77	61.93	13 35 3	3476.9	-7.65	158.41
100.00	18 43 39	2834.34	-28.78	84.37	56.23	81.55	19 30 53	2234.3	-29.65	75.67
100.00	13 28 50	3877.64	-1.99	149.39	46.70	60.17	14 33 28	3277.6	-5.95	142.84
110.00	20 30 44	2499.33	-33.92	59.61	56.92	85.46	21 12 23	1899.3	-34.17	50.37
110.00	13 58 15	3785.42	2.39	139.67	43.96	55.80	15 1 20	3185.4	-2.10	133.47

DIFFERENTIAL CORRECTIONS
TDE 1.1810 TRA-2.9274 TC3 1.2903 BAU .4960
RDE -.2421 RRA .2754 RC3 -.3057 FAU .10831
FDE -.7132 FRA 3.5802 FC3-3.3517 BSP 13608
BDE 1.2056 BRA 2.9403 BC3 1.3260 FSP 1451

MID-COURSE EXECUTION ACCURACY
SGT 3941.7 SGR 529.0 SG3 482.4
RRT -.9156 RRF .9256 RTF -.9337
SGB 3977.0 R23 -.1697 R13 .9349
SG1 3971.4 SG2 211.1 THA 172.97

ORBIT DETERMINATION ACCURACY
ST 1649.8 SR 280.1 SS 958.4
CRT -.9475 CRS -.7851 CST .9411
LSA 1904.2 MSA 303.8 SSA 14.6
EL1 1671.0 EL2 88.5 ALF 170.84

LAUNCH DATE OCT 30 1964 FLIGHT TIME 206.00 ARRIVAL DATE MAY 24 1965

HELIOCENTRIC CONIC DISTANCE 511.385 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 33.805 GAL -6.32 AZL 86.56 HCA 166.06 SMA 206.01 ECC .29834 INC 3.4399 V1 29.997
RP 241.22 LAP .83 LOP 202.69 VP 21.357 GAP 14.37 AZP 93.34 TAL 332.02 TAP 138.08 RCA 144.55 APO 267.47 V2 22.762
RC 158.408 GL 22.69 GP -4.80 ZAL 128.70 ZAP 163.13 ETS 194.71 ZAE 157.91 ETE 347.82 ZAC 84.43 ETC 255.93 CLP 163.81

PLANETOCENTRIC CONIC

C3 27.306 VHL 5.226 DLA 24.98 RAL 179.75 RAD 6568.1 VEL 12.194 PTH 2.19 VHP 7.275 DPA -5.79 RAP 184.46 ECC 1.4494

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 45 42	3214.28	-25.89	111.74	55.63	78.12	17 39 16	2614.3	-27.27	103.35
90.00	12 45 1	4010.40	-6.04	161.37	48.24	62.28	13 51 51	3410.4	-9.71	154.60
100.00	18 29 47	2878.73	-28.29	87.58	56.15	79.93	19 17 46	2278.7	-29.39	78.95
100.00	13 43 38	3821.18	-3.90	146.29	47.07	60.34	14 47 19	3221.2	-7.82	139.69
110.00	20 21 13	2530.10	-33.73	61.99	57.04	84.07	21 3 23	1930.1	-34.18	52.78
110.00	14 8 41	3742.57	.76	137.43	44.17	55.82	15 11 4	3142.6	-3.73	131.23

DIFFERENTIAL CORRECTIONS
TDE 1.1663 TRA-2.8839 TC3 1.3597 BAU .5112
RDE -.2338 RRA .3022 RC3 -.3353 FAU .11208
FDE -.6967 FRA 3.6739 FC3-3.5535 BSP 13573
BDE 1.1895 BRA 2.8997 BC3 1.4004 FSP 1518

MID-COURSE EXECUTION ACCURACY
SGT 3977.8 SGR 567.6 SG3 504.7
RRT -.9306 RRF .9416 RTF -.9363
SGB 4018.1 R23 -.1856 R13 .9376
SG1 4012.8 SG2 206.0 THA 172.42

ORBIT DETERMINATION ACCURACY
ST 1652.9 SR 279.0 SS 968.3
CRT -.9606 CRS -.7985 CST .9334
LSA 1909.3 MSA 319.6 SSA 13.2
EL1 1674.6 EL2 76.5 ALF 170.77

LAUNCH DATE OCT 30 1964 FLIGHT TIME 208.00 ARRIVAL DATE MAY 26 1965

HELIOCENTRIC CONIC DISTANCE 514.620 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 33.755 GAL -6.19 AZL 86.44 HCA 166.99 SMA 204.93 ECC .29405 INC 3.5619 V1 29.997
RP 240.93 LAP .80 LOP 203.62 VP 21.309 GAP 13.86 AZP 93.47 TAL 332.32 TAP 139.31 RCA 144.67 APO 265.19 V2 22.791
RC 160.729 GL 23.78 GP -5.24 ZAL 128.00 ZAP 162.42 ETS 195.48 ZAE 158.16 ETE 346.66 ZAC 84.07 ETC 255.91 CLP 163.20

PLANETOCENTRIC CONIC

C3 26.724 VHL 5.170 DLA 26.11 RAL 179.92 RAD 6568.1 VEL 12.170 PTH 2.18 VHP 7.124 DPA -6.33 RAP 184.56 ECC 1.4398

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 23 56	3285.37	-24.81	116.66	55.39	75.89	17 18 42	2685.4	-26.50	108.41
90.00	13 8 10	3928.60	-8.61	156.72	49.06	62.92	14 13 39	3328.6	-12.17	149.86
100.00	18 13 2	2933.65	-27.58	91.50	56.11	77.98	19 1 56	2333.7	-28.96	82.97
100.00	14 1 45	3755.54	-6.10	142.66	47.71	60.68	15 4 21	3155.5	-9.96	136.00
110.00	20 10 23	2566.50	-33.43	64.79	57.28	82.45	20 53 9	1966.5	-34.12	55.62
110.00	14 20 54	3695.46	-1.05	134.98	44.58	55.83	15 22 30	3095.5	-5.52	128.75

DIFFERENTIAL CORRECTIONS
TDE 1.1359 TRA-2.8558 TC3 1.4032 BAU .5182
RDE -.2248 RRA .3337 RC3 -.3672 FAU .11577
FDE -.6706 FRA 3.7769 FC3-3.7503 BSP 13907
BDE 1.1580 BRA 2.8753 BC3 1.4504 FSP 1599

MID-COURSE EXECUTION ACCURACY
SGT 4014.4 SGR 613.1 SG3 527.8
RRT -.9412 RRF .9552 RTF -.9376
SGB 4060.9 R23 -.2083 R13 .9392
SG1 4055.8 SG2 205.1 THA 171.80

ORBIT DETERMINATION ACCURACY
ST 1644.8 SR 278.4 SS 977.5
CRT -.9717 CRS -.8128 CST .9264
LSA 1904.5 MSA 333.2 SSA 12.1
EL1 1666.9 EL2 64.9 ALF 170.65

LAUNCH DATE OCT 30 1964 FLIGHT TIME 210.00 ARRIVAL DATE MAY 28 1965

HELIOCENTRIC CONIC DISTANCE 517.890 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 33.707 GAL -6.05 AZL 86.30 HCA 167.92 SMA 203.91 ECC .28993 INC 3.7026 V1 29.997
RP 240.64 LAP .77 LOP 204.56 VP 21.265 GAP 13.36 AZP 93.62 TAL 332.61 TAP 140.54 RCA 144.79 APO 263.04 V2 22.821
RC 163.052 GL 25.00 GP -5.76 ZAL 127.26 ZAP 161.67 ETS 196.37 ZAE 158.43 ETE 345.26 ZAC 83.63 ETC 255.89 CLP 162.57

PLANETOCENTRIC CONIC

C3 26.237 VHL 5.122 DLA 27.35 RAL 180.17 RAD 6568.1 VEL 12.150 PTH 2.18 VHP 6.977 DPA -6.93 RAP 184.62 ECC 1.4318

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 51 48	3391.23	-22.86	123.81	54.92	72.82	16 48 19	2791.2	-25.00	115.79
90.00	13 42 16	3813.61	-12.10	150.08	50.49	64.20	14 45 50	3213.6	-15.47	143.03
100.00	17 51 29	3005.39	-26.46	96.54	56.04	75.56	18 41 34	2405.4	-28.18	88.16
100.00	14 25 16	3674.68	-8.77	138.14	48.75	61.31	15 26 31	3074.7	-12.54	131.37
110.00	19 57 43	2610.38	-32.99	68.14	57.64	80.50	20 41 13	2010.4	-33.95	59.03
110.00	14 35 32	3642.46	-3.07	132.21	45.25	55.94	15 36 14	3042.5	-7.52	125.95

DIFFERENTIAL CORRECTIONS
TDE 1.1146 TRA-2.8191 TC3 1.4554 BAU .5298
RDE -.2170 RRA .3688 RC3 -.4045 FAU .11972
FDE -.6425 FRA 3.8811 FC3-3.9505 BSP 14045
BDE 1.1355 BRA 2.8431 BC3 1.5105 FSP 1678

MID-COURSE EXECUTION ACCURACY
SGT 4047.5 SGR 668.1 SG3 551.8
RRT -.9502 RRF .9660 RTF -.9394
SGB 4102.3 R23 -.2279 R13 .9413
SG1 4097.1 SG2 205.8 THA 171.06

ORBIT DETERMINATION ACCURACY
ST 1640.4 SR 280.2 SS 987.1
CRT -.9826 CRS -.8289 CST .9170
LSA 1902.6 MSA 351.7 SSA 10.9
EL1 1663.4 EL2 51.3 ALF 170.46

LAUNCH DATE OCT 30 1964 FLIGHT TIME 212.00 ARRIVAL DATE MAY 30 1965

HELIOCENTRIC CONIC DISTANCE 521.191 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 33.661 GAL -5.93 AZL 86.13 HCA 168.86 SMA 202.95 ECC .28596 INC 3.8668 V1 29.997
RP 240.34 LAP .75 LOP 205.49 VP 21.224 GAP 12.86 AZP 93.79 TAL 332.91 TAP 141.77 RCA 144.91 APO 260.98 V2 22.851
RC 165.375 GL 26.36 GP -6.37 ZAL 126.45 ZAP 160.87 ETS 197.41 ZAE 158.69 ETE 343.57 ZAC 83.10 ETC 255.86 CLP 161.93

PLANETOCENTRIC CONIC

C3 25.859 VHL 5.085 DLA 28.73 RAL 180.51 RAD 6568.0 VEL 12.134 PTH 2.17 VHP 6.835 DPA -7.60 RAP 184.63 ECC 1.4256

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
84.96	14 6 27	3734.62	-18.33	147.20	53.34	67.49	15 8 41	3134.6	-21.22	139.69
95.04	15 30 20	3463.05	-18.31	127.30	53.34	67.48	16 28 3	2863.0	-21.21	119.80
100.00	17 19 47	3111.10	-24.46	103.76	55.75	72.26	18 11 38	2511.1	-26.66	95.64
100.00	14 59 41	3561.80	-12.39	131.71	50.48	62.58	15 59 3	2961.8	-15.97	124.75
110.00	19 42 23	2664.64	-32.31	72.22	58.11	78.17	20 26 47	2064.6	-33.60	63.23
110.00	14 53 34	3581.02	-5.41	128.99	46.30	56.20	15 53 15	2981.0	-9.81	122.67

DIFFERENTIAL CORRECTIONS
TDE 1.0937 TRA-2.7833 TC3 1.4991 BAU .5408
RDE -.2098 RRA .4095 RC3 -.4470 FAU .12378
FDE -.6093 FRA 3.9896 FC3-4.1440 BSP 14231
BDE 1.1136 BRA 2.8133 BC3 1.5643 FSP 1761

MID-COURSE EXECUTION ACCURACY
SGT 4078.2 SGR 734.5 SG3 576.4
RRT -.9569 RRF .9746 RTF -.9410
SGB 4143.8 R23 -.2471 R13 .9432
SG1 4138.5 SG2 210.3 THA 170.20

ORBIT DETERMINATION ACCURACY
ST 1634.5 SR 284.6 SS 997.3
CRT -.9917 CRS -.8464 CST .9062
LSA 1899.5 MSA 372.6 SSA 9.7
EL1 1658.7 EL2 36.1 ALF 170.20

LAUNCH DATE OCT 30 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUN 1 1965

HELIOCENTRIC CONIC DISTANCE 524.522 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 33.616 GAL -5.80 AZL 85.94 HCA 169.80 SMA 202.03 ECC .28215 INC 4.0612 V1 29.997
RP 240.04 LAP .72 LOP 206.43 VP 21.187 GAP 12.36 AZP 94.00 TAL 333.20 TAP 143.00 RCA 145.03 APO 259.03 V2 22.881
RC 167.697 GL 27.91 GP -7.10 ZAL 125.57 ZAP 160.01 ETS 198.64 ZAE 158.94 ETE 341.50 ZAC 82.45 ETC 255.83 CLP 161.27

PLANETOCENTRIC CONIC

C3 25.612 VHL 5.061 DLA 30.26 RAL 180.97 RAD 6568.0 VEL 12.124 PTH 2.17 VHP 6.698 DPA -8.38 RAP 184.57 ECC 1.4215

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
78.87	13 20 28	3885.66	-19.31	158.82	54.06	66.25	14 25 14	3285.7	-22.36	151.32
101.13	16 19 59	3307.25	-19.30	116.23	54.06	66.24	17 15 7	2707.2	-22.35	108.73
78.87	13 20 28	3885.66	-19.31	158.82	54.06	66.25	14 25 14	3285.7	-22.36	151.32
101.13	16 19 59	3307.25	-19.30	116.23	54.06	66.24	17 15 7	2707.2	-22.35	108.73
110.00	19 22 44	2734.73	-31.21	77.39	58.64	75.29	20 8 18	2134.7	-32.91	68.58
110.00	15 16 55	3506.18	-8.22	125.02	47.87	56.70	16 15 21	2906.2	-12.55	118.60

DIFFERENTIAL CORRECTIONS
TDE 1.0849 TRA-2.7363 TC3 1.5520 BAU .5581
RDE -.2044 RRA .4561 RC3 -.4978 FAU .12828
FDE -.5768 FRA 4.0942 FC3-4.3361 BSP 14161
BDE 1.1040 BRA 2.7740 BC3 1.6299 FSP 1831

MID-COURSE EXECUTION ACCURACY
SGT 4103.5 SGR 815.4 SG3 601.6
RRT -.9623 RRF .9812 RTF -.9429
SGB 4183.7 R23 -.2619 R13 .9456
SG1 4178.0 SG2 217.7 THA 169.14

ORBIT DETERMINATION ACCURACY
ST 1633.6 SR 293.1 SS 1008.3
CRT -.9979 CRS -.8651 CST .8926
LSA 1900.5 MSA 398.7 SSA 8.4
EL1 1659.5 EL2 18.5 ALF 169.85

LAUNCH DATE OCT 30 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUN 3 1965

HELIOCENTRIC CONIC DISTANCE 527.881 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 33.574 GAL -5.68 AZL 85.70 HCA 170.74 SMA 201.16 ECC .27849 INC 4.2954 V1 29.997
RP 239.73 LAP .69 LOP 207.37 VP 21.153 GAP 11.87 AZP 94.24 TAL 333.50 TAP 144.24 RCA 145.14 APO 257.18 V2 22.912
RC 170.016 GL 29.69 GP -7.98 ZAL 124.61 ZAP 159.06 ETS 200.09 ZAE 159.16 ETE 338.95 ZAC 81.65 ETC 255.80 CLP 160.58

PLANETOCENTRIC CONIC

C3 25.529 VHL 5.053 DLA 31.98 RAL 181.60 RAD 6568.0 VEL 12.120 PTH 2.17 VHP 6.568 DPA -9.28 RAP 184.43 ECC 1.4201

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
74.48	12 51 44	3983.37	-20.37	166.69	55.14	64.79	13 58 8	3383.4	-23.59	159.21
105.52	16 53 44	3207.93	-20.35	109.26	55.13	64.78	17 47 11	2607.9	-23.58	101.78
74.48	12 51 44	3983.37	-20.37	166.69	55.14	64.79	13 58 8	3383.4	-23.59	159.21
105.52	16 53 44	3207.93	-20.35	109.26	55.13	64.78	17 47 11	2607.9	-23.58	101.78
110.00	18 54 44	2833.29	-29.29	84.43	59.07	71.54	19 41 58	2233.3	-31.53	75.94
110.00	15 49 54	3406.01	-11.92	119.62	50.32	57.72	16 46 40	2806.0	-16.10	113.00

DIFFERENTIAL CORRECTIONS
TDE 1.0689 TRA-2.7005 TC3 1.5755 BAU .5700
RDE -.1989 RRA .5133 RC3 -.5545 FAU .13263
FDE -.5349 FRA 4.2076 FC3-4.4978 BSP 14389
BDE 1.0872 BRA 2.7489 BC3 1.6702 FSP 1914

MID-COURSE EXECUTION ACCURACY
SGT 4127.7 SGR 914.2 SG3 627.0
RRT -.9654 RRF .9863 RTF -.9440
SGB 4227.7 R23 -.2761 R13 .9474
SG1 4221.3 SG2 233.1 THA 167.89

ORBIT DETERMINATION ACCURACY
ST 1626.2 SR 305.9 SS 1020.5
CRT -.9996 CRS -.8845 CST .8786
LSA 1897.1 MSA 424.8 SSA 7.3
EL1 1654.7 EL2 8.3 ALF 169.35

LAUNCH DATE OCT 30 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUN 5 1965

HELIOCENTRIC CONIC DISTANCE 531.270 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 33.533 GAL -5.56 AZL 85.42 HCA 171.69 SMA 200.33 ECC .27497 INC 4.5837 V1 29.997
RP 239.42 LAP .66 LOP 208.32 VP 21.122 GAP 11.39 AZP 94.54 TAL 333.79 TAP 145.48 RCA 145.24 APO 255.41 V2 22.943
RC 172.331 GL 31.77 GP -9.06 ZAL 123.51 ZAP 158.00 ETS 201.82 ZAE 159.29 ETE 335.80 ZAC 80.65 ETC 255.75 CLP 159.86

PLANETOCENTRIC CONIC

C3 25.660 VHL 5.066 DLA 33.95 RAL 182.45 RAD 6568.0 VEL 12.126 PTH 2.17 VHP 6.446 DPA -10.35 RAP 184.18 ECC 1.4223

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
70.43	12 29 13	4064.78	-21.49	173.54	56.68	63.06	13 36 58	3464.8	-24.93	166.09
109.57	17 23 3	3129.06	-21.48	103.78	56.67	63.05	18 15 12	2529.1	-24.91	96.34
70.43	12 29 13	4064.78	-21.49	173.54	56.68	63.06	13 36 58	3464.8	-24.93	166.09
109.57	17 23 3	3129.06	-21.48	103.78	56.67	63.05	18 15 12	2529.1	-24.91	96.34
110.00	17 55 40	3029.52	-24.34	97.53	58.18	65.23	18 46 10	2429.5	-27.47	89.76
110.00	16 55 46	3212.32	-18.68	108.68	55.09	60.84	17 49 18	2612.3	-22.42	101.55

DIFFERENTIAL CORRECTIONS
TDE 1.0745 TRA-2.6482 TC3 1.6099 BAU .5919
RDE -.1953 RRA .5830 RC3 -.6207 FAU .13671
FDE -.4812 FRA 4.3295 FC3-4.6124 BSP 14280
BDE 1.0921 BRA 2.7116 BC3 1.7254 FSP 2012

MID-COURSE EXECUTION ACCURACY
SGT 4144.6 SGR 1037.4 SG3 652.2
RRT -.9687 RRF .9899 RTF -.9461
SGB 4272.4 R23 -.2819 R13 .9503
SG1 4265.1 SG2 250.4 THA 166.32

ORBIT DETERMINATION ACCURACY
ST 1628.8 SR 325.6 SS 1034.8
CRT -.9951 CRS -.9012 CST .8548
LSA 1900.3 MSA 467.5 SSA 6.0
EL1 1660.7 EL2 31.7 ALF 168.75

LAUNCH DATE OCT 30 1964 FLIGHT TIME 220.00 ARRIVAL DATE JUN 7 1965

HELIOCENTRIC CONIC DISTANCE 534.679 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 33.494 GAL -5.45 AZL 85.05 HCA 172.63 SMA 199.54 ECC .27160 INC 4.9453 V1 29.997
RP 239.11 LAP .63 LOP 209.26 VP 21.095 GAP 10.92 AZP 94.90 TAL 334.08 TAP 146.71 RCA 145.35 APO 253.73 V2 22.975
RC 174.639 GL 34.24 GP -10.41 ZAL 122.26 ZAP 156.77 ETS 203.92 ZAE 159.29 ETE 331.88 ZAC 79.38 ETC 255.69 CLP 159.12

PLANETOCENTRIC CONIC

C3 26.098 VHL 5.109 DLA 36.24 RAL 183.62 RAD 6568.1 VEL 12.144 PTH 2.18 VHP 6.335 DPA -11.66 RAP 183.78 ECC 1.4295

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
66.38	12 10 38	4139.09	-22.68	180.09	58.88	60.94	13 19 37	3539.1	-26.37	172.70
113.62	17 51 0	3063.12	-22.66	99.25	58.88	60.93	18 42 3	2463.1	-26.36	91.87
66.38	12 10 38	4139.09	-22.68	180.09	58.88	60.94	13 19 37	3539.1	-26.37	172.70
113.62	17 51 0	3063.12	-22.66	99.25	58.88	60.93	18 42 3	2463.1	-26.36	91.87
66.38	12 10 38	4139.09	-22.68	180.09	58.88	60.94	13 19 37	3539.1	-26.37	172.70
113.62	17 51 0	3063.12	-22.66	99.25	58.88	60.93	18 42 3	2463.1	-26.36	91.87

DIFFERENTIAL CORRECTIONS
TDE 1.0625 TRA-2.6234 TC3 1.5783 BAU .6015
RDE -.1926 RRA .6725 RC3 -.6938 FAU .14087
FDE -.4312 FRA 4.4472 FC3-4.6728 BSP 14891
BDE 1.0798 BRA 2.7082 BC3 1.7241 FSP 2099

MID-COURSE EXECUTION ACCURACY
SGT 4162.7 SGR 1193.2 SG3 676.3
RRT -.9688 RRF .9927 RTF -.9463
SGB 4330.4 R23 -.2890 R13 .9518
SG1 4321.0 SG2 284.9 THA 164.41

ORBIT DETERMINATION ACCURACY
ST 1618.7 SR 354.7 SS 1052.2
CRT -.9848 CRS -.9209 CST .8398
LSA 1899.3 MSA 495.5 SSA 5.2
EL1 1656.0 EL2 60.1 ALF 167.81

LAUNCH DATE OCT 30 1964 FLIGHT TIME 222.00 ARRIVAL DATE JUN 9 1965

HELIOCENTRIC CONIC DISTANCE 538.115 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 33.457 GAL -5.34 AZL 84.59 HCA 173.58 SMA 198.79 ECC .26835 INC 5.4139 V1 29.997
RP 238.79 LAP .60 LOP 210.21 VP 21.070 GAP 10.44 AZP 95.38 TAL 334.37 TAP 147.95 RCA 145.44 APO 252.14 V2 23.007
RC 176.939 GL 37.23 GP -12.15 ZAL 120.78 ZAP 155.29 ETS 206.46 ZAE 159.03 ETE 327.00 ZAC 77.72 ETC 255.60 CLP 158.32

PLANETOCENTRIC CONIC

C3 26.994 VHL 5.196 DLA 38.93 RAL 185.27 RAD 6568.1 VEL 12.181 PTH 2.19 VHP 6.239 DPA -13.30 RAP 183.16 ECC 1.4443

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
62.08	11 55 19	4211.38	-23.90	186.77	62.03	58.30	13 5 30	3611.4	-27.90	179.49
117.92	18 19 27	3007.58	-23.88	95.49	62.02	58.29	19 9 35	2407.6	-27.89	88.21
62.08	11 55 19	4211.38	-23.90	186.77	62.03	58.30	13 5 30	3611.4	-27.90	179.49
117.92	18 19 27	3007.58	-23.88	95.49	62.02	58.29	19 9 35	2407.6	-27.89	88.21
62.08	11 55 19	4211.38	-23.90	186.77	62.03	58.30	13 5 30	3611.4	-27.90	179.49
117.92	18 19 27	3007.58	-23.88	95.49	62.02	58.29	19 9 35	2407.6	-27.89	88.21

DIFFERENTIAL CORRECTIONS
TDE 1.0929 TRA-2.5738 TC3 1.5544 BAU .6280
RDE -.1985 RRA .7850 RC3 -.7823 FAU .14529
FDE -.4007 FRA 4.5455 FC3-4.6597 BSP 15011
BDE 1.1108 BRA 2.6908 BC3 1.7402 FSP 2155

MID-COURSE EXECUTION ACCURACY
SGT 4168.3 SGR 1395.4 SG3 697.5
RRT -.9692 RRF .9946 RTF -.9470
SGB 4395.7 R23 -.2887 R13 .9543
SG1 4383.5 SG2 326.8 THA 161.92

ORBIT DETERMINATION ACCURACY
ST 1628.9 SR 400.0 SS 1071.9
CRT -.9677 CRS -.9376 CST .8200
LSA 1917.6 MSA 533.8 SSA 4.2
EL1 1674.4 EL2 98.1 ALF 166.59

LAUNCH DATE OCT 30 1964 FLIGHT TIME 224.00 ARRIVAL DATE JUN 11 1965

HELIOCENTRIC CONIC DISTANCE 541.574 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 33.421 GAL -5.23 AZL 83.95 HCA 174.53 SMA 198.08 ECC .26524 INC 6.0471 V1 29.997
RP 238.47 LAP .58 LOP 211.17 VP 21.049 GAP 9.98 AZP 96.02 TAL 334.66 TAP 149.19 RCA 145.54 APO 250.62 V2 23.040
RC 179.231 GL 40.93 GP -14.46 ZAL 118.98 ZAP 153.42 ETS 209.58 ZAE 158.35 ETE 320.92 ZAC 75.48 ETC 255.46 CLP 157.45

PLANETOCENTRIC CONIC

C3 28.643 VHL 5.352 DLA 42.16 RAL 187.65 RAD 6568.2 VEL 12.248 PTH 2.20 VHP 6.169 DPA -15.42 RAP 182.21 ECC 1.4714

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
57.36	11 43 38	4285.53	-25.06	193.94	66.58	54.92	12 55 4	3685.5	-29.47	186.84
122.64	18 50 11	2962.98	-25.04	92.53	66.57	54.91	19 39 34	2363.0	-29.45	85.43
57.36	11 43 38	4285.53	-25.06	193.94	66.58	54.92	12 55 4	3685.5	-29.47	186.84
122.64	18 50 11	2962.98	-25.04	92.53	66.57	54.91	19 39 34	2363.0	-29.45	85.43
57.36	11 43 38	4285.53	-25.06	193.94	66.58	54.92	12 55 4	3685.5	-29.47	186.84
122.64	18 50 11	2962.98	-25.04	92.53	66.57	54.91	19 39 34	2363.0	-29.45	85.43

DIFFERENTIAL CORRECTIONS
TDE 1.1537 TRA-2.5262 TC3 1.4822 BAU .6592
RDE -.2145 RRA .9404 RC3 -.8754 FAU .14815
FDE -.3793 FRA 4.6434 FC3-4.4777 BSP 15411
BDE 1.1735 BRA 2.6956 BC3 1.7214 FSP 2233

MID-COURSE EXECUTION ACCURACY
SGT 4165.7 SGR 1665.9 SG3 713.0
RRT -.9691 RRF .9959 RTF -.9474
SGB 4486.5 R23 -.2832 R13 .9575
SG1 4470.1 SG2 383.0 THA 158.65

ORBIT DETERMINATION ACCURACY
ST 1651.0 SR 468.5 SS 1096.6
CRT -.9449 CRS -.9513 CST .7979
LSA 1952.4 MSA 579.5 SSA 3.3
EL1 1709.8 EL2 148.2 ALF 164.87

LAUNCH DATE OCT 30 1964 FLIGHT TIME 226.00 ARRIVAL DATE JUN 13 1965

HELIOCENTRIC CONIC DISTANCE 545.055 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 33.387 GAL -5.13 AZL 83.05 HCA 175.48 SMA 197.40 ECC .26225 INC 6.9464 V1 29.997
RP 238.14 LAP .55 LOP 212.12 VP 21.030 GAP 9.52 AZP 96.93 TAL 334.95 TAP 150.43 RCA 145.63 APO 249.17 V2 23.073
RC 181.513 GL 45.62 GP -17.66 ZAL 116.71 ZAP 150.88 ETS 213.40 ZAE 156.90 ETE 313.49 ZAC 72.35 ETC 255.23 CLP 156.46

PLANETOCENTRIC CONIC

C3 31.665 VHL 5.627 DLA 46.07 RAL 191.28 RAD 6568.3 VEL 12.371 PTH 2.23 VHP 6.145 DPA -18.30 RAP 180.72 ECC 1.5211

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
52.00	11 37 7	4366.17	-25.95	202.00	73.34	50.49	12 49 53	3766.2	-30.86	195.23
128.00	19 25 36	2932.64	-25.94	90.54	73.33	50.48	20 14 28	2332.6	-30.85	83.77
52.00	11 37 7	4366.17	-25.95	202.00	73.34	50.49	12 49 53	3766.2	-30.86	195.23
128.00	19 25 36	2932.64	-25.94	90.54	73.33	50.48	20 14 28	2332.6	-30.85	83.77
52.00	11 37 7	4366.17	-25.95	202.00	73.34	50.49	12 49 53	3766.2	-30.86	195.23
128.00	19 25 36	2932.64	-25.94	90.54	73.33	50.48	20 14 28	2332.6	-30.85	83.77

DIFFERENTIAL CORRECTIONS
TDE 1.3147 TRA-2.4454 TC3 1.3874 BAU .7202
RDE -.2769 RRA 1.1496 RC3 -.9845 FAU .15140
FDE -.4809 FRA 4.6484 FC3-4.1394 BSP 15377
BDE 1.3435 BRA 2.7022 BC3 1.7012 FSP 2188

MID-COURSE EXECUTION ACCURACY
SGT 4136.6 SGR 2038.2 SG3 715.0
RRT -.9682 RRF .9967 RTF -.9469
SGB 4611.5 R23 -.2732 R13 .9612
SG1 4588.5 SG2 459.3 THA 154.22

ORBIT DETERMINATION ACCURACY
ST 1718.5 SR 580.4 SS 1119.9
CRT -.9264 CRS -.9630 CST .7907
LSA 2042.1 MSA 611.6 SSA 2.5
EL1 1801.9 EL2 208.4 ALF 162.38

LAUNCH DATE OCT 30 1964 FLIGHT TIME 228.00 ARRIVAL DATE JUN 15 1965

HELIOCENTRIC CONIC DISTANCE 548.553 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 33.354 GAL -5.03 AZL 81.67 HCA 176.43 SMA 196.76 ECC .25937 INC 8.3291 V1 29.997
RP 237.81 LAP .52 LOP 213.08 VP 21.015 GAP 9.06 AZP 98.31 TAL 335.24 TAP 151.67 RCA 145.72 APO 247.79 V2 23.106
RC 183.786 GL 51.76 GP -22.34 ZAL 113.74 ZAP 147.12 ETS 217.98 ZAE 154.07 ETE 304.62 ZAC 67.75 ETC 254.79 CLP 155.23

PLANETOCENTRIC CONIC

C3 37.562 VHL 6.129 DLA 50.82 RAL 197.18 RAD 6568.5 VEL 12.607 PTH 2.29 VHP 6.217 DPA -22.37 RAP 178.26 ECC 1.6182

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
45.85	11 39 49	4460.22	-26.03	211.33	83.74	44.67	12 54 9	3860.2	-31.57	205.15
134.15	20 9 57	2924.76	-26.02	89.84	83.73	44.66	20 58 42	2324.8	-31.56	83.67
45.85	11 39 49	4460.22	-26.03	211.33	83.74	44.67	12 54 9	3860.2	-31.57	205.15
134.15	20 9 57	2924.76	-26.02	89.84	83.73	44.66	20 58 42	2324.8	-31.56	83.67
45.85	11 39 49	4460.22	-26.03	211.33	83.74	44.67	12 54 9	3860.2	-31.57	205.15
134.15	20 9 57	2924.76	-26.02	89.84	83.73	44.66	20 58 42	2324.8	-31.56	83.67

DIFFERENTIAL CORRECTIONS
TDE 1.6473 TRA-2.3438 TC3 1.2102 BAU .8146
RDE -.4603 RRA 1.4650 RC3-1.0803 FAU .15114
FDE -.7931 FRA 4.5340 FC3-3.4835 BSP 15655
BDE 1.7104 BRA 2.7640 BC3 1.6222 FSP 2063

MID-COURSE EXECUTION ACCURACY
SGT 4074.8 SGR 2576.7 SG3 690.1
RRT -.9665 RRF .9970 RTF -.9447
SGB 4821.1 R23 -.2571 R13 .9661
SG1 4788.1 SG2 563.0 THA 148.08

ORBIT DETERMINATION ACCURACY
ST 1859.2 SR 780.9 SS 1154.4
CRT -.9239 CRS -.9733 CST .8115
LSA 2239.5 MSA 619.5 SSA 1.8
EL1 1997.2 EL2 278.2 ALF 158.35

LAUNCH DATE OCT 30 1964 FLIGHT TIME 240.00 ARRIVAL DATE JUN 27 1965

HELIOCENTRIC CONIC DISTANCE 570.082 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 33.183 GAL -4.51 AZL 98.38 HCA 182.29 SMA 193.50 ECC .24462 INC 8.3832 V1 29.997
RP 235.77 LAP .33 LOP 218.88 VP 20.974 GAP 6.47 AZP 81.62 TAL 336.73 TAP 159.03 RCA 146.16 APO 240.83 V2 23.315
RC 197.185 GL -54.19 GP 35.56 ZAL 111.25 ZAP 133.77 ETS 135.05 ZAE 142.63 ETE 74.80 ZAC 123.83 ETC 252.99 CLP 148.26

PLANETOCENTRIC CONIC

C3 35.384 VHL 5.948 DLA -43.10 RAL 140.68 RAD 6568.4 VEL 12.520 PTH 2.27 VHP 6.344 DPA 30.29 RAP 203.35 ECC 1.5823

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
10.14	13 2 32	2613.13	-10.61	85.37	330.81	170.93	13 46 5	2013.1	-2.71	84.53
10.14	23 53 13	1254.64	77.87	42.50	85.37	132.49	24 14 8	654.6	81.08	1.47
20.14	13 57 57	2566.04	-8.28	81.52	340.65	162.16	14 40 43	1966.0	-.66	79.50
20.14	23 37 51	1267.73	69.65	25.26	64.33	119.37	23 58 58	667.7	72.21	2.29
30.14	15 0 29	2479.64	-4.38	75.86	350.30	153.68	15 41 48	1879.6	2.79	72.74
30.14	23 19 26	1293.23	60.45	18.30	52.86	116.34	23 40 59	693.2	63.11	2.71

DIFFERENTIAL CORRECTIONS
TDE 2.9871 TRA-1.8260 TC3 1.2640 BAU 1.0310
RDE 3.3070 RRA-1.1602 RC3 1.7755 FAU .13705
FDE-5.9515 FRA 1.8043 FC3-3.3[illegible] BSP 18787
BDE 4.4563 BRA 2.1634 BC3 2.1795 FSP 1934

MID-COURSE EXECUTION ACCURACY
SGT 4042.5 SGR 4117.1 SG3 637.5
RRT .9630 RRF -.9984 RTF -.9463
SGB 5770.0 R23 -.1890 R13 -.9820
SG1 5716.4 SG2 784.5 THA 45.54

ORBIT DETERMINATION ACCURACY
ST 2966.9 SR 3218.9 SS 3167.2
CRT .9947 CRS .9998 CST .9925
LSA 5395.9 MSA 282.0 SSA .7
EL1 4371.9 EL2 224.6 ALF 47.35

LAUNCH DATE OCT 30 1964 FLIGHT TIME 242.00 ARRIVAL DATE JUN 29 1965

HELIOCENTRIC CONIC DISTANCE 573.700 EARTH TO MARS

RL	148.54	LAL	-.00	LOL	36.61	VL	33.158	GAL	-4.43	AZL	95.34	HCA	183.26	SMA	193.04	ECC	.24248	INC	5.3400
RP	235.42	LAP	.30	LOP	219.85	VP	20.976	GAP	6.06	AZP	84.67	TAL	336.99	TAP	160.25	RCA	146.23	APO	239.85
RC	199.372	GL	-40.51	GP	27.61	ZAL	116.40	ZAP	139.36	ETS	140.84	ZAE	150.12	ETE	70.55	ZAC	116.50	ETC	254.20

V1	29.997	V2	23.351	CLP	148.92

PLANETOCENTRIC CONIC

C3	22.450	VHL	4.738	DLA	-30.30	RAL	147.07	RAD	6567.9	VEL	11.993	PTH	2.14	VHP	5.607	DPA	22.61	RAP	200.59
ECC	1.3695																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
78.75	23 2 12	1212.88	20.20	348.13	18.03	113.08	23 22 25	612.9	23.15	340.54
101.25	2 7 51	627.45	20.21	305.02	18.04	113.06	2 18 19	27.5	23.16	297.43
78.75	23 2 12	1212.88	20.20	348.13	18.03	113.08	23 22 25	612.9	23.15	340.54
101.25	2 7 51	627.45	20.21	305.02	18.04	113.06	2 18 19	27.5	23.16	297.43
110.00	1 4 20	827.72	9.50	314.23	12.16	122.99	1 18 7	227.7	13.78	307.74
110.00	5 8 50	5348.65	31.71	244.14	22.25	103.49	6 37 59	4748.7	33.24	235.25

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	2.1228	TRA	-1.9570	TC3	1.9221	BAU	.8480	SGT	4173.6	SGR	3277.3	SG3	852.4	ST	2696.0	SR	2217.6	SS	3198.6
RDE	1.7964	RRA	-1.0521	RC3	2.0706	FAU	.16893	RRT	.9642	RRF	-.9992	RTF	-.9534	CRT	.9940	CRS	.9999	CST	.9928
FDE	-5.3596	FRA	2.9637	FC3	-6.5141	BSP	17658	SGB	5306.6	R23	-.2034	R13	-.9790	LSA	4727.6	MSA	259.5	SSA	1.5
BDE	2.7810	BRA	2.2219	BC3	2.8252	FSP	2651	SG1	5261.7	SG2	688.9	THA	37.90	EL1	3485.9	EL2	187.2	ALF	39.41

LAUNCH DATE OCT 30 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUL 1 1965

HELIOCENTRIC CONIC DISTANCE 577.344 EARTH TO MARS

RL	148.54	LAL	-.00	LOL	36.61	VL	33.135	GAL	-4.35	AZL	93.69	HCA	184.23	SMA	192.61	ECC	.24045	INC	3.6872
RP	235.06	LAP	.27	LOP	220.83	VP	20.979	GAP	5.65	AZP	86.32	TAL	337.25	TAP	161.48	RCA	146.30	APO	238.92
RC	201.544	GL	-30.41	GP	22.53	ZAL	119.40	ZAP	142.05	ETS	146.31	ZAE	155.01	ETE	68.08	ZAC	111.72	ETC	254.78

V1	29.997	V2	23.387	CLP	148.62

PLANETOCENTRIC CONIC

C3	17.627	VHL	4.198	DLA	-20.75	RAL	150.88	RAD	6567.7	VEL	11.790	PTH	2.08	VHP	5.229	DPA	17.78	RAP	198.78
ECC	1.2901																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 47 30	1474.69	2.58	358.49	10.77	118.21	22 12 5	874.7	6.34	351.82
90.00	3 52 54	5538.72	28.31	257.70	17.57	90.66	5 25 13	4938.7	28.10	249.04
100.00	22 55 5	1256.60	1.21	341.70	10.01	119.87	23 16 1	656.6	5.18	335.16
100.00	5 28 1	5232.03	29.88	235.13	17.57	88.97	6 55 13	4632.0	29.41	226.36
110.00	23 34 6	1134.30	-2.12	330.35	7.92	124.13	23 53 0	534.3	2.37	324.14
110.00	7 5 29	4927.10	33.80	211.71	17.31	84.59	8 27 36	4327.1	32.69	202.66

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.6756	TRA	-1.9826	TC3	2.4228	BAU	.7587	SGT	4211.8	SGR	2723.6	SG3	997.0	ST	2446.6	SR	1612.7	SS	3001.7
RDE	1.1434	RRA	-.9226	RC3	2.1204	FAU	.18998	RRT	.9664	RRF	-.9994	RTF	-.9588	CRT	.9940	CRS	1.0000	CST	.9938
FDE	-4.7123	FRA	3.7787	FC3	-9.3307	BSP	16759	SGB	5015.7	R23	-.2100	R13	-.9775	LSA	4189.1	MSA	220.6	SSA	3.0
BDE	2.0285	BRA	2.1868	BC3	3.2197	FSP	3182	SG1	4980.7	SG2	591.7	THA	32.52	EL1	2926.6	EL2	147.7	ALF	33.33

LAUNCH DATE OCT 30 1964 FLIGHT TIME 246.00 ARRIVAL DATE JUL 3 1965

HELIOCENTRIC CONIC DISTANCE 581.004 EARTH TO MARS

RL	148.54	LAL	-.00	LOL	36.61	VL	33.113	GAL	-4.28	AZL	92.65	HCA	185.21	SMA	192.19	ECC	.23850	INC	2.6498
RP	234.71	LAP	.24	LOP	221.81	VP	20.985	GAP	5.25	AZP	87.36	TAL	337.48	TAP	162.70	RCA	146.36	APO	238.03
RC	203.699	GL	-22.93	GP	19.09	ZAL	120.99	ZAP	143.24	ETS	150.89	ZAE	158.44	ETE	66.89	ZAC	108.44	ETC	255.10

V1	29.997	V2	23.424	CLP	147.97

PLANETOCENTRIC CONIC

C3	15.347	VHL	3.918	DLA	-13.64	RAL	153.37	RAD	6567.6	VEL	11.693	PTH	2.06	VHP	4.984	DPA	14.53	RAP	197.53
ECC	1.2526																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 45 54	1715.17	-5.16	11.93	9.77	117.88	21 14 30	1115.2	-1.38	5.28
90.00	5 14 21	5234.89	26.57	235.71	14.73	79.82	6 41 36	4634.9	24.89	227.44
100.00	22 0 5	1475.85	-6.19	353.77	9.20	119.30	22 24 41	875.9	-2.24	347.21
100.00	6 42 52	4949.44	27.72	214.46	14.48	78.34	8 5 21	4349.4	25.83	206.17
110.00	22 52 14	1312.52	-8.86	339.74	7.57	123.15	23 14 7	712.5	-4.44	333.45
110.00	8 7 12	4685.54	30.76	193.58	13.63	74.29	9 25 18	4085.5	28.30	185.24

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.3929	TRA	-1.9874	TC3	2.7242	BAU	.7003	SGT	4201.4	SGR	2342.1	SG3	1106.9	ST	2226.9	SR	1237.4	SS	2778.8
RDE	.8074	RRA	-.8124	RC3	2.0563	FAU	.20619	RRT	.9656	RRF	-.9994	RTF	-.9598	CRT	.9935	CRS	.9999	CST	.9946
FDE	-4.1958	FRA	4.3786	FC3	-11.6313	BSP	16426	SGB	4810.1	R23	-.2200	R13	-.9751	LSA	3765.1	MSA	190.2	SSA	5.2
BDE	1.6100	BRA	2.1470	BC3	3.4132	FSP	3600	SG1	4780.2	SG2	535.1	THA	28.69	EL1	2544.7	EL2	123.3	ALF	28.98

LAUNCH DATE OCT 30 1964 FLIGHT TIME 248.00 ARRIVAL DATE JUL 5 1965

HELIOCENTRIC CONIC DISTANCE 584.679 EARTH TO MARS

RL	148.54	LAL	-.00	LOL	36.61	VL	33.091	GAL	-4.21	AZL	91.94	HCA	186.20	SMA	191.80	ECC	.23665	INC	1.9371
RP	234.35	LAP	.21	LOP	222.80	VP	20.993	GAP	4.85	AZP	88.07	TAL	337.71	TAP	163.91	RCA	146.41	APO	237.19
RC	205.837	GL	-17.29	GP	16.62	ZAL	121.77	ZAP	143.61	ETS	154.60	ZAE	161.01	ETE	66.80	ZAC	106.08	ETC	255.29

V1	29.997	V2	23.461	CLP	147.15

PLANETOCENTRIC CONIC

C3	14.085	VHL	3.753	DLA	-8.24	RAL	155.09	RAD	6567.6	VEL	11.639	PTH	2.04	VHP	4.801	DPA	12.24	RAP	196.60
ECC	1.2318																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 8 10	1875.74	-10.17	21.06	10.11	116.57	20 39 26	1275.7	-6.52	14.28
90.00	6 5 49	5036.12	23.44	222.00	13.09	73.65	7 29 45	4436.1	20.98	214.20
100.00	21 25 32	1626.18	-11.10	2.23	9.62	117.93	21 52 38	1026.2	-7.28	355.52
100.00	7 31 9	4760.91	24.44	201.43	12.76	72.24	8 50 30	4160.9	21.78	193.64
110.00	22 24 41	1440.95	-13.55	346.73	8.18	121.69	22 48 42	840.9	-9.27	340.26
110.00	8 48 29	4518.90	27.11	181.99	11.70	68.33	10 3 48	3918.9	23.92	174.27

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	1.2088	TRA	-1.9683	TC3	2.9303	BAU	.6644	SGT	4178.8	SGR	2073.2	SG3	1202.0	ST	2059.1	SR	999.5	SS	2592.9
RDE	.6165	RRA	-.7205	RC3	1.9657	FAU	.22095	RRT	.9646	RRF	-.9992	RTF	-.9603	CRT	.9930	CRS	.9996	CST	.9956
FDE	-3.8181	FRA	4.8357	FC3	-13.5808	BSP	16031	SGB	4664.8	R23	-.2264	R13	-.9733	LSA	3454.8	MSA	161.4	SSA	8.2
BDE	1.3569	BRA	2.0960	BC3	3.5285	FSP	3917	SG1	4638.7	SG2	492.5	THA	25.89	EL1	2286.3	EL2	106.5	ALF	25.79

LAUNCH DATE OCT 30 1964 FLIGHT TIME 250.00 ARRIVAL DATE JUL 7 1965

HELIOCENTRIC CONIC DISTANCE 588.371 EARTH TO MARS

RL	148.54	LAL	-.00	LOL	36.61	VL	33.071	GAL	-4.14	AZL	91.42	HCA	187.18	SMA	191.43	ECC	.23488	INC	1.4174	V1	29.997
RP	233.98	LAP	.18	LOP	223.79	VP	21.003	GAP	4.46	AZP	88.59	TAL	337.93	TAP	165.12	RCA	146.47	APO	236.39	V2	23.498
RC	207.958	GL	-12.94	GP	14.78	ZAL	122.07	ZAP	143.50	ETS	157.62	ZAE	163.05	ETE	67.72	ZAC	104.31	ETC	255.42	CLP	146.24

PLANETOCENTRIC CONIC

C3	13.300	VHL	3.647	DLA	-4.03	RAL	156.33	RAD	6567.5	VEL	11.605	PTH	2.03	VHP	4.650	DPA	10.54	RAP	195.87	ECC	1.2189

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 40 56	1996.19	-13.74	28.11	10.83	115.00	20 14 12	1396.2	-10.26	21.16
90.00	6 42 56	4890.59	20.33	212.47	12.26	69.86	8 4 27	4290.6	17.41	205.02
100.00	21 0 23	1739.88	-14.64	8.82	10.39	116.36	21 29 23	1139.9	-10.98	1.93
100.00	8 6 10	4622.13	21.26	192.35	11.88	68.48	9 23 12	4022.1	18.15	184.94
110.00	22 4 18	1539.79	-17.01	352.30	9.06	120.11	22 29 58	939.8	-12.89	345.63
110.00	9 18 45	4394.98	23.74	173.94	10.72	64.65	10 32 0	3795.0	20.12	166.66

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY			ORBIT DETERMINATION ACCURACY		
TDE	1.0768	TRA-1.9391	TC3 3.0606	BAU	.6377	SGT 4143.9	SGR 1873.5	SG3 1288.0	ST 1925.0	SR 840.0	SS 2441.9
RDE	.4973	RRA -.6471	RC3 1.8701	FAU	.23441	RRT .9634	RRF -.9988	RTF -.9605	CRT .9923	CRS .9989	CST .9968
FDE	-3.5296	FRA 5.2206	FC-15.2591	BSP	15707	SGB 4547.7	R23 -.2305	R13 -.9718	LSA 3218.1	MSA 135.3	SSA 12.6
BDE	1.1861	BRA 2.0442	BC3 5.3867	FSP	4205	SG1 4524.4	SG2 459.9	THA 23.80	EL1 2098.2	EL2 95.3	ALF 23.47

LAUNCH DATE OCT 30 1964 FLIGHT TIME 252.00 ARRIVAL DATE JUL 9 1965

HELIOCENTRIC CONIC DISTANCE 592.077 EARTH TO MARS

RL	148.54	LAL	-.00	LOL	36.61	VL	33.052	GAL	-4.08	AZL	91.02	HCA	188.17	SMA	191.08	ECC	.23320	INC	1.0205	V1	29.997
RP	233.62	LAP	.15	LOP	224.78	VP	21.014	GAP	4.08	AZP	88.99	TAL	338.15	TAP	166.32	RCA	146.52	APO	235.64	V2	23.536
RC	210.060	GL	-9.48	GP	13.37	ZAL	122.10	ZAP	143.08	ETS	160.08	ZAE	164.72	ETE	69.65	ZAC	102.93	ETC	255.50	CLP	145.26

PLANETOCENTRIC CONIC

C3	12.764	VHL	3.573	DLA	-.68	RAL	157.24	RAD	6567.5	VEL	11.582	PTH	2.03	VHP	4.518	DPA	9.25	RAP	195.27	ECC	1.2101

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 19 37	2091.56	-16.41	33.84	11.62	113.41	19 54 29	1491.6	-13.10	26.72
90.00	7 11 34	4777.49	17.52	205.36	11.85	67.39	8 31 11	4177.5	14.31	198.16
100.00	20 40 39	1830.18	-17.29	14.21	11.21	114.77	21 11 9	1230.2	-13.81	7.15
100.00	8 33 13	4514.10	18.41	185.59	11.45	66.03	9 48 27	3914.1	15.02	178.44
110.00	21 48 10	1618.82	-19.65	356.91	9.96	118.55	22 15 9	1018.8	-15.69	350.04
110.00	9 42 11	4298.22	20.79	167.98	10.23	62.23	10 53 49	3698.2	16.91	161.00

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY			ORBIT DETERMINATION ACCURACY		
TDE	.9790	TRA-1.8996	TC3 3.1539	BAU	.6185	SGT 4102.0	SGR 1722.4	SG3 1370.4	ST 1818.0	SR 730.1	SS 2325.4
RDE	.4192	RRA -.5869	RC3 1.7860	FAU	.24767	RRT .9624	RRF -.9982	RTF -.9609	CRT .9915	CRS .9976	CST .9979
FDE	-3.3120	FRA 5.5526	FC-16.7982	BSP	15337	SGB 4448.9	R23 -.2317	R13 -.9710	LSA 3038.5	MSA 112.3	SSA 18.7
BDE	1.0650	BRA 1.9882	BC3 3.6245	FSP	4463	SG1 4427.7	SG2 433.6	THA 22.23	EL1 1957.2	EL2 88.1	ALF 21.76

LAUNCH DATE OCT 30 1964 FLIGHT TIME 254.00 ARRIVAL DATE JUL 11 1965

HELIOCENTRIC CONIC DISTANCE 595.798 EARTH TO MARS

RL	148.54	LAL	-.00	LOL	36.61	VL	33.033	GAL	-4.02	AZL	90.71	HCA	189.17	SMA	190.74	ECC	.23159	INC	.7109	V1	29.997
RP	233.25	LAP	.11	LOP	225.77	VP	21.028	GAP	3.70	AZP	89.30	TAL	338.35	TAP	167.52	RCA	146.57	APO	234.91	V2	23.574
RC	212.144	GL	-6.68	GP	12.24	ZAL	121.98	ZAP	142.45	ETS	162.13	ZAE	166.10	ETE	72.60	ZAC	101.82	ETC	255.57	CLP	144.22

PLANETOCENTRIC CONIC

C3	12.371	VHL	3.517	DLA	2.06	RAL	157.94	RAD	6567.5	VEL	11.565	PTH	2.02	VHP	4.400	DPA	8.25	RAP	194.76	ECC	1.2036

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 2 6	2169.72	-18.46	38.66	12.37	111.86	19 38 15	1569.7	-15.33	31.38
90.00	7 34 37	4685.98	15.04	199.79	11.68	65.72	8 52 43	4086.0	11.64	192.77
100.00	20 24 24	1904.25	-19.34	18.75	11.98	113.24	20 56 8	1304.3	-16.03	11.52
100.00	8 55 0	4426.68	15.91	180.30	11.26	64.36	10 8 47	3826.7	12.33	173.34
110.00	21 34 50	1683.76	-21.71	.82	10.80	117.07	22 2 54	1083.8	-17.91	353.76
110.00	10 1 3	4219.94	18.23	163.34	9.99	60.57	11 11 23	3619.9	14.18	156.58

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY			ORBIT DETERMINATION ACCURACY		
TDE	.8936	TRA-1.8629	TC3 3.1883	BAU	.5980	SGT 4046.0	SGR 1601.2	SG3 1448.1	ST 1718.6	SR 648.0	SS 2221.3
RDE	.3625	RRA -.5405	RC3 1.7053	FAU	.25946	RRT .9609	RRF -.9975	RTF -.9609	CRT .9903	CRS .9954	CST .9987
FDE	-3.1127	FRA 5.8859	FC-18.1569	BSP	15150	SGB 4351.4	R23 -.2322	R13 -.9701	LSA 2880.6	MSA 94.3	SSA 26.7
BDE	.9644	BRA 1.9398	BC3 3.6157	FSP	4770	SG1 4331.6	SG2 414.1	THA 21.02	EL1 1834.7	EL2 84.2	ALF 20.52

LAUNCH DATE OCT 30 1964 FLIGHT TIME 256.00 ARRIVAL DATE JUL 13 1965

HELIOCENTRIC CONIC DISTANCE 599.532 EARTH TO MARS

RL	148.54	LAL	-.00	LOL	36.61	VL	33.015	GAL	-3.96	AZL	90.46	HCA	190.16	SMA	190.42	ECC	.23007	INC	.4568	V1	29.997
RP	232.88	LAP	.08	LOP	226.77	VP	21.043	GAP	3.33	AZP	89.55	TAL	338.55	TAP	168.71	RCA	146.61	APO	234.23	V2	23.612
RC	214.210	GL	-4.37	GP	11.34	ZAL	121.76	ZAP	141.67	ETS	163.85	ZAE	167.25	ETE	76.63	ZAC	100.92	ETC	255.62	CLP	143.13

PLANETOCENTRIC CONIC

C3	12.066	VHL	3.474	DLA	4.34	RAL	158.47	RAD	6567.5	VEL	11.552	PTH	2.02	VHP	4.291	DPA	7.46	RAP	194.30	ECC	1.1986

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 47 11	2235.46	-20.07	42.81	13.06	110.41	19 24 26	1635.5	-17.11	35.38
90.00	7 53 47	4609.66	12.85	195.25	11.63	64.55	9 10 36	4009.7	9.32	188.35
100.00	20 10 34	1966.52	-20.97	22.66	12.69	111.81	20 43 20	1366.5	-17.82	15.28
100.00	9 13 5	4353.83	13.72	176.01	11.19	63.18	10 25 39	3753.8	10.01	169.18
110.00	21 23 29	1738.31	-23.36	4.20	11.55	115.69	21 52 27	1138.3	-19.71	356.96
110.00	10 16 39	4154.81	16.02	159.60	9.89	59.39	11 25 54	3554.8	11.83	152.99

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY			ORBIT DETERMINATION ACCURACY		
TDE	.8296	TRA-1.8163	TC3 3.2179	BAU	.5830	SGT 3987.1	SGR 1508.4	SG3 1528.0	ST 1639.9	SR 590.4	SS 2149.1
RDE	.3241	RRA -.4999	RC3 1.6448	FAU	.27236	RRT .9595	RRF -.9965	RTF -.9610	CRT .9889	CRS .9922	CST .9993
FDE	-2.9728	FRA 6.1774	FC-19.8416	BSP	14804	SGB 4262.9	R23 -.2311	R13 -.9695	LSA 2765.5	MSA 83.8	SSA 35.1
BDE	.8906	BRA 1.8838	BC3 3.6139	FSP	5026	SG1 4244.2	SG2 399.3	THA 20.14	EL1 1741.0	EL2 82.5	ALF 19.64

LAUNCH DATE OCT 30 1964 FLIGHT TIME 258.00 ARRIVAL DATE JUL 15 1965

HELIOCENTRIC CONIC DISTANCE 603.281 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.999 GAL -3.91 AZL 90.25 HCA 191.16 SMA 190.12 ECC .22861 INC .2487 V1 29.997
RP 232.51 LAP .05 LOP 227.77 VP 21.060 GAP 2.96 AZP 89.75 TAL 338.74 TAP 169.90 RCA 146.65 APO 233.58 V2 23.650
RC 216.258 GL -2.42 GP 10.59 ZAL 121.50 ZAP 140.77 ETS 165.31 ZAE 168.17 ETE 81.75 ZAC 100.16 ETC 255.66 CLP 142.00

PLANETOCENTRIC CONIC

C3 11.818 VHL 3.438 DLA 6.28 RAL 158.88 RAD 6567.5 VEL 11.541 PTH 2.01 VHP 4.188 DPA 6.83 RAP 193.86 ECC 1.1945

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 34 10	2291.89	-21.37	46.44	13.66	109.04	19 12 22	1691.9	-18.57	38.88
90.00	8 10 5	4544.48	10.92	191.45	11.63	63.71	9 25 50	3944.5	7.30	184.64
100.00	19 58 29	2019.91	-22.28	26.08	13.31	110.46	20 32 9	1419.9	-19.29	18.56
100.00	9 28 27	4291.70	11.78	172.41	11.19	62.33	10 39 59	3691.7	7.99	165.68
110.00	21 13 33	1784.98	-24.71	7.15	12.21	114.41	21 43 18	1185.0	-21.21	359.76
110.00	10 29 52	4099.39	14.07	156.48	9.85	58.52	11 38 12	3499.4	9.80	149.98

DIFFERENTIAL CORRECTIONS
TDE .7855 TRA-1.7560 TC3 3.2617 BAU .5739
RDE .2970 RRA -.4649 RC3 1.5986 FAU .28592
FDE-2.8696 FRA 6.4457 FC-20.9453 BSP 14183
BDE .8397 BRA 1.8165 BC3 3.6323 FSP 5255

MID-COURSE EXECUTION ACCURACY
SGT 3925.9 SGR 1435.5 SG3 1609.6
RRT .9596 RRF -.9954 RTF -.9623
SGB 4180.1 R23 -.2246 R13 -.9701
SG1 4162.7 SG2 380.8 THA 19.51

ORBIT DETERMINATION ACCURACY
ST 1580.7 SR 548.4 SS 2096.8
CRT .9883 CRS .9881 CST .9995
LSA 2681.0 MSA 82.1 SSA 40.4
EL1 1671.3 EL2 79.0 ALF 18.97

LAUNCH DATE OCT 30 1964 FLIGHT TIME 260.00 ARRIVAL DATE JUL 17 1965

HELIOCENTRIC CONIC DISTANCE 607.039 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.982 GAL -3.86 AZL 90.08 HCA 192.17 SMA 189.83 ECC .22723 INC .0706 V1 29.997
RP 232.14 LAP .02 LOP 228.77 VP 21.078 GAP 2.60 AZP 89.92 TAL 338.91 TAP 171.08 RCA 146.69 APO 232.96 V2 23.689
RC 218.287 GL -.75 GP 9.96 ZAL 121.21 ZAP 139.78 ETS 166.56 ZAE 168.87 ETE 87.92 ZAC 99.51 ETC 255.69 CLP 140.83

PLANETOCENTRIC CONIC

C3 11.610 VHL 3.407 DLA 7.94 RAL 159.21 RAD 6567.4 VEL 11.532 PTH 2.01 VHP 4.092 DPA 6.33 RAP 193.45 ECC 1.1911

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 22 38	2341.09	-22.42	49.66	14.19	107.76	19 1 39	1741.1	-19.79	41.98
90.00	8 24 15	4487.86	9.19	188.18	11.68	63.10	9 39 3	3887.9	5.51	181.44
100.00	19 47 48	2066.39	-23.35	29.12	13.86	109.21	20 22 14	1466.4	-20.52	21.47
100.00	9 41 46	4237.79	10.06	169.33	11.22	61.70	10 52 23	3637.8	6.20	162.67
110.00	21 4 47	1825.48	-25.82	9.77	12.80	113.22	21 35 12	1225.5	-22.46	2.23
110.00	10 41 16	4051.47	12.35	153.84	9.86	57.87	11 48 47	3451.5	8.02	147.42

DIFFERENTIAL CORRECTIONS
TDE .7234 TRA-1.7177 TC3 3.2005 BAU .5520
RDE .2737 RRA -.4390 RC3 1.5503 FAU .29762
FDE-2.7405 FRA 6.7569 FC-22.1923 BSP 14145
BDE .7735 BRA 1.7729 BC3 3.5562 FSP 5585

MID-COURSE EXECUTION ACCURACY
SGT 3839.5 SGR 1372.4 SG3 1687.7
RRT .9560 RRF -.9941 RTF -.9606
SGB 4077.4 R23 -.2268 R13 -.9685
SG1 4059.6 SG2 380.7 THA 19.04

ORBIT DETERMINATION ACCURACY
ST 1499.8 SR 512.7 SS 2039.6
CRT .9852 CRS .9821 CST .9992
LSA 2581.0 MSA 94.7 SSA 40.5
EL1 1582.8 EL2 83.2 ALF 18.67

LAUNCH DATE OCT 30 1964 FLIGHT TIME 262.00 ARRIVAL DATE JUL 19 1965

HELIOCENTRIC CONIC DISTANCE 610.810 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.967 GAL -3.81 AZL 89.93 HCA 193.18 SMA 189.56 ECC .22592 INC .0685 V1 29.997
RP 231.76 LAP -.02 LOP 229.78 VP 21.098 GAP 2.25 AZP 90.07 TAL 339.08 TAP 172.26 RCA 146.73 APO 232.38 V2 23.728
RC 220.299 GL .69 GP 9.43 ZAL 120.91 ZAP 138.72 ETS 167.65 ZAE 169.33 ETE 95.02 ZAC 98.95 ETC 255.72 CLP 139.62

PLANETOCENTRIC CONIC

C3 11.431 VHL 3.381 DLA 9.39 RAL 159.47 RAD 6567.4 VEL 11.525 PTH 2.01 VHP 4.000 DPA 5.93 RAP 193.04 ECC 1.1881

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 12 14	2384.61	-23.30	52.55	14.66	106.57	18 51 59	1784.6	-20.81	44.76
90.00	8 36 44	4437.88	7.64	185.33	11.75	62.65	9 50 41	3837.9	3.91	178.63
100.00	19 38 11	2107.42	-24.25	31.84	14.34	108.04	20 13 18	1507.4	-21.55	24.08
100.00	9 53 28	4190.30	8.51	166.65	11.28	61.24	11 3 18	3590.3	4.61	160.04
110.00	20 56 54	1861.09	-26.76	12.12	13.32	112.11	21 27 55	1261.1	-23.52	4.45
110.00	10 51 14	4009.39	10.82	151.54	9.89	57.37	11 58 4	3409.4	6.44	145.19

DIFFERENTIAL CORRECTIONS
TDE .6718 TRA-1.6731 TC3 3.1352 BAU .5320
RDE .2565 RRA -.4166 RC3 1.5127 FAU .30978
FDE-2.6323 FRA 7.0618 FC-23.4607 BSP 13974
BDE .7191 BRA 1.7242 BC3 3.4810 FSP 5909

MID-COURSE EXECUTION ACCURACY
SGT 3748.2 SGR 1321.8 SG3 1767.9
RRT .9526 RRF -.9925 RTF -.9592
SGB 3974.4 R23 -.2275 R13 -.9672
SG1 3956.1 SG2 381.0 THA 18.75

ORBIT DETERMINATION ACCURACY
ST 1429.5 SR 485.8 SS 1996.3
CRT .9820 CRS .9746 CST .9986
LSA 2500.2 MSA 111.1 SSA 39.2
EL1 1507.2 EL2 87.1 ALF 18.52

LAUNCH DATE OCT 30 1964 FLIGHT TIME 264.00 ARRIVAL DATE JUL 21 1965

HELIOCENTRIC CONIC DISTANCE 614.591 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.953 GAL -3.77 AZL 89.80 HCA 194.19 SMA 189.30 ECC .22467 INC .1981 V1 29.997
RP 231.38 LAP -.05 LOP 230.79 VP 21.120 GAP 1.90 AZP 90.19 TAL 339.24 TAP 173.42 RCA 146.77 APO 231.83 V2 23.768
RC 222.292 GL 1.95 GP 8.97 ZAL 120.61 ZAP 137.59 ETS 168.61 ZAE 169.53 ETE 102.79 ZAC 98.45 ETC 255.74 CLP 138.37

PLANETOCENTRIC CONIC

C3 11.275 VHL 3.358 DLA 10.66 RAL 159.68 RAD 6567.4 VEL 11.518 PTH 2.01 VHP 3.913 DPA 5.62 RAP 192.64 ECC 1.1856

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 2 47	2423.53	-24.03	55.17	15.07	105.45	18 43 11	1823.5	-21.68	47.28
90.00	8 47 53	4393.24	6.24	182.80	11.83	62.32	10 1 6	3793.2	2.48	176.13
100.00	19 29 27	2144.04	-25.00	34.30	14.76	106.95	20 5 11	1544.0	-22.44	26.44
100.00	10 3 54	4147.97	7.12	164.29	11.35	60.89	11 13 2	3548.0	3.19	157.71
110.00	20 49 45	1892.74	-27.55	14.24	13.78	111.08	21 21 18	1292.7	-24.43	6.46
110.00	11 0 5	3972.03	9.44	149.53	9.94	56.99	12 6 17	3372.0	5.02	143.22

DIFFERENTIAL CORRECTIONS
TDE .6167 TRA-1.6334 TC3 3.0252 BAU .5076
RDE .2424 RRA -.3985 RC3 1.4794 FAU .32145
FDE-2.5183 FRA 7.3850 FC-24.6829 BSP 13964
BDE .6627 BRA 1.6813 BC3 3.3675 FSP 6279

MID-COURSE EXECUTION ACCURACY
SGT 3643.9 SGR 1279.4 SG3 1848.3
RRT .9472 RRF -.9908 RTF -.9565
SGB 3862.0 R23 -.2317 R13 -.9650
SG1 3842.3 SG2 389.0 THA 18.59

ORBIT DETERMINATION ACCURACY
ST 1354.6 SR 463.8 SS 1956.8
CRT .9769 CRS .9650 CST .9979
LSA 2421.1 MSA 127.5 SSA 38.9
EL1 1428.8 EL2 94.0 ALF 18.58

LAUNCH DATE OCT 30 1964 FLIGHT TIME 266.00 ARRIVAL DATE JUL 23 1965

HELIOCENTRIC CONIC DISTANCE 618.390 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.939 GAL -3.72 AZL 89.69 HCA 195.20 SMA 189.05 ECC .22349 INC .3105 V1 29.997
RP 231.01 LAP -.08 LOP 231.81 VP 21.143 GAP 1.55 AZP 90.30 TAL 339.39 TAP 174.59 RCA 146.80 APO 231.30 V2 23.807
RC 224.266 GL 3.06 GP 8.58 ZAL 120.32 ZAP 136.39 ETS 169.46 ZAE 169.47 ETE 110.84 ZAC 98.01 ETC 255.77 CLP 137.07

PLANETOCENTRIC CONIC

C3 11.135 VHL 3.337 DLA 11.79 RAL 159.85 RAD 6567.4 VEL 11.512 PTH 2.01 VHP 3.829 DPA 5.38 RAP 192.22 ECC 1.1833

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 54 4	2458.73	-24.65	57.56	15.43	104.40	18 35 3	1858.7	-22.43	49.59
90.00	8 57 56	4352.89	4.95	180.53	11.91	62.08	10 10 29	3752.9	1.18	173.88
100.00	19 21 24	2177.07	-25.63	36.55	15.14	105.93	19 57 41	1577.1	-23.20	28.60
100.00	10 13 18	4109.77	5.85	162.16	11.42	60.63	11 21 47	3509.8	1.89	155.61
110.00	20 43 11	1921.16	-28.23	16.17	14.19	110.12	21 15 12	1321.2	-25.23	8.28
110.00	11 8 0	3938.45	8.19	147.73	9.99	56.70	12 13 39	3338.4	3.75	141.45

DIFFERENTIAL CORRECTIONS
TDE .5966 TRA-1.5605 TC3 3.0098 BAU .4984
RDE .2355 RRA -.3787 RC3 1.4673 FAU .33673
FDE-2.4863 FRA 7.6313 FC-26.1806 BSP 13173
BDE .6414 BRA 1.6058 BC3 3.3484 FSP 6495

MID-COURSE EXECUTION ACCURACY
SGT 3546.4 SGR 1250.5 SG3 1937.2
RRT .9470 RRF -.9890 RTF -.9572
SGB 3760.4 R23 -.2238 R13 -.9655
SG1 3741.1 SG2 380.9 THA 18.66

ORBIT DETERMINATION ACCURACY
ST 1314.3 SR 451.8 SS 1946.5
CRT .9763 CRS .9562 CST .9959
LSA 2386.8 MSA 150.2 SSA 35.4
EL1 1386.7 EL2 92.7 ALF 18.64

LAUNCH DATE OCT 30 1964 FLIGHT TIME 268.00 ARRIVAL DATE JUL 25 1965

HELIOCENTRIC CONIC DISTANCE 622.197 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.926 GAL -3.68 AZL 89.59 HCA 196.22 SMA 188.82 ECC .22237 INC .4087 V1 29.997
RP 230.62 LAP -.11 LOP 232.82 VP 21.167 GAP 1.21 AZP 90.39 TAL 339.53 TAP 175.75 RCA 146.83 APO 230.81 V2 23.847
RC 226.222 GL 4.05 GP 8.23 ZAL 120.03 ZAP 135.14 ETS 170.22 ZAE 169.13 ETE 118.73 ZAC 97.60 ETC 255.79 CLP 135.74

PLANETOCENTRIC CONIC

C3 11.010 VHL 3.318 DLA 12.81 RAL 160.00 RAD 6567.4 VEL 11.506 PTH 2.00 VHP 3.748 DPA 5.19 RAP 191.79 ECC 1.1812

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 46 3	2490.75	-25.17	59.76	15.75	103.42	18 27 34	1890.8	-23.08	51.72
90.00	9 7 7	4316.22	3.78	178.47	12.00	61.92	10 19 3	3716.2	-.00	171.84
100.00	19 14 1	2207.06	-26.18	38.61	15.47	104.98	19 50 48	1607.1	-23.86	30.58
100.00	10 21 50	4075.15	4.69	160.25	11.50	60.44	11 29 45	3475.1	.72	153.71
110.00	20 37 10	1946.84	-28.82	17.93	14.55	109.23	21 9 37	1346.8	-25.93	9.95
110.00	11 15 10	3908.13	7.05	146.12	10.05	56.46	12 20 18	3308.1	2.59	139.87

DIFFERENTIAL CORRECTIONS
TDE .5629 TRA-1.5012 TC3 2.9181 BAU .4798
RDE .2287 RRA -.3636 RC3 1.4527 FAU .35058
FDE-2.4244 FRA 7.9195 FC-27.5667 BSP 12740
BDE .6076 BRA 1.5446 BC3 3.2597 FSP 6797

MID-COURSE EXECUTION ACCURACY
SGT 3429.6 SGR 1224.7 SG3 2024.2
RRT .9434 RRF -.9870 RTF -.9556
SGB 3641.7 R23 -.2231 R13 -.9643
SG1 3621.3 SG2 384.7 THA 18.84

ORBIT DETERMINATION ACCURACY
ST 1258.6 SR 440.6 SS 1930.4
CRT .9731 CRS .9451 CST .9939
LSA 2339.7 MSA 170.5 SSA 34.1
EL1 1330.1 EL2 96.1 ALF 18.91

LAUNCH DATE OCT 30 1964 FLIGHT TIME 270.00 ARRIVAL DATE JUL 27 1965

HELIOCENTRIC CONIC DISTANCE 626.016 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.913 GAL -3.65 AZL 89.50 HCA 197.24 SMA 188.60 ECC .22132 INC .4954 V1 29.997
RP 230.24 LAP -.15 LOP 233.84 VP 21.193 GAP .88 AZP 90.47 TAL 339.66 TAP 176.90 RCA 146.86 APO 230.34 V2 23.887
RC 228.159 GL 4.95 GP 7.93 ZAL 119.76 ZAP 133.83 ETS 170.90 ZAE 168.55 ETE 126.10 ZAC 97.23 ETC 255.81 CLP 134.36

PLANETOCENTRIC CONIC

C3 10.898 VHL 3.301 DLA 13.72 RAL 160.12 RAD 6567.4 VEL 11.502 PTH 2.00 VHP 3.672 DPA 5.06 RAP 191.34 ECC 1.1793

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 38 36	2520.11	-25.62	61.79	16.04	102.49	18 20 36	1920.1	-23.64	53.68
90.00	9 15 33	4282.66	2.70	176.59	12.10	61.80	10 26 56	3682.7	-1.09	169.96
100.00	19 7 10	2234.48	-26.64	40.52	15.77	104.08	19 44 24	1634.5	-24.45	32.41
100.00	10 29 40	4043.52	3.63	158.50	11.59	60.31	11 37 4	3443.5	-.35	151.97
110.00	20 31 37	1970.21	-29.33	19.56	14.88	108.39	21 4 28	1370.2	-26.54	11.49
110.00	11 21 42	3880.56	6.01	144.66	10.11	56.29	12 26 22	3280.6	1.54	138.43

DIFFERENTIAL CORRECTIONS
TDE .5317 TRA-1.4395 TC3 2.8074 BAU .4598
RDE .2238 RRA -.3505 RC3 1.4426 FAU .36474
FDE-2.3707 FRA 8.2086 FC-28.9758 BSP 12273
BDE .5769 BRA 1.4815 BC3 3.1563 FSP 7100

MID-COURSE EXECUTION ACCURACY
SGT 3301.7 SGR 1204.2 SG3 2112.8
RRT .9392 RRF -.9849 RTF -.9534
SGB 3514.5 R23 -.2234 R13 -.9628
SG1 3492.7 SG2 390.9 THA 19.16

ORBIT DETERMINATION ACCURACY
ST 1204.1 SR 432.4 SS 1919.6
CRT .9698 CRS .9329 CST .9914
LSA 2298.8 MSA 190.4 SSA 33.2
EL1 1275.5 EL2 99.5 ALF 19.32

LAUNCH DATE OCT 30 1964 FLIGHT TIME 272.00 ARRIVAL DATE JUL 29 1965

HELIOCENTRIC CONIC DISTANCE 629.845 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.901 GAL -3.61 AZL 89.43 HCA 198.26 SMA 188.39 ECC .22032 INC .5749 V1 29.997
RP 229.86 LAP -.18 LOP 234.87 VP 21.220 GAP .55 AZP 90.55 TAL 339.78 TAP 178.04 RCA 146.88 APO 229.90 V2 23.927
RC 230.076 GL 5.75 GP 7.66 ZAL 119.50 ZAP 132.47 ETS 171.52 ZAE 167.75 ETE 132.72 ZAC 96.88 ETC 255.84 CLP 132.95

PLANETOCENTRIC CONIC

C3 10.796 VHL 3.286 DLA 14.55 RAL 160.23 RAD 6567.4 VEL 11.497 PTH 2.00 VHP 3.598 DPA 4.98 RAP 190.87 ECC 1.1777

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 31 40	2547.18	-26.00	63.68	16.30	101.62	18 14 7	1947.2	-24.14	55.51
90.00	9 23 21	4251.76	1.71	174.87	12.20	61.73	10 34 13	3651.8	-2.08	168.24
100.00	19 0 48	2259.70	-27.05	42.28	16.05	103.23	19 38 28	1659.7	-24.96	34.10
100.00	10 36 53	4014.48	2.65	156.90	11.68	60.21	11 43 48	3414.5	-1.34	150.38
110.00	20 26 30	1991.59	-29.78	21.06	15.19	107.61	20 59 41	1391.6	-27.09	12.91
110.00	11 27 42	3855.36	5.06	143.33	10.18	56.15	12 31 57	3255.4	.58	137.11

DIFFERENTIAL CORRECTIONS
TDE .5019 TRA-1.3771 TC3 2.6756 BAU .4382
RDE .2198 RRA -.3397 RC3 1.4345 FAU .37870
FDE-2.3118 FRA 8.5160 FC-30.3676 BSP 11810
BDE .5479 BRA 1.4184 BC3 3.0358 FSP 7436

MID-COURSE EXECUTION ACCURACY
SGT 3164.2 SGR 1187.5 SG3 2202.6
RRT .9345 RRF -.9826 RTF -.9506
SGB 3379.7 R23 -.2246 R13 -.9609
SG1 3356.1 SG2 398.6 THA 19.61

ORBIT DETERMINATION ACCURACY
ST 1150.1 SR 426.0 SS 1911.2
CRT .9668 CRS .9193 CST .9880
LSA 2260.8 MSA 211.4 SSA 32.3
EL1 1222.1 EL2 102.5 ALF 19.85

LAUNCH DATE OCT 30 1964 FLIGHT TIME 274.00 ARRIVAL DATE JUL 31 1965

HELIOCENTRIC CONIC DISTANCE 633.686 EARTH TO MARS

RL	148.54	LAL	-.00	LOL	36.61	VL	32.890	GAL	-3.58	AZL	89.36	HCA	199.29	SMA	188.19	ECC	.21939	INC	.6451
RP	229.47	LAP	-.21	LOP	235.90	VP	21.248	GAP	.23	AZP	90.61	TAL	339.89	TAP	179.18	RCA	146.91	APO	229.48
RC	231.973	GL	6.48	GP	7.42	ZAL	119.27	ZAP	131.07	ETS	172.09	ZAE	166.75	ETE	138.52	ZAC	96.55	ETC	255.86

PLANETOCENTRIC CONIC

C3	10.704	VHL	3.272	DLA	15.30	RAL	160.33	RAD	6567.4	VEL	11.493	PTH	2.00	VHP	3.528	DPA	4.94	RAP	190.38

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 25 11	2572.25	-26.34	65.44	16.55	100.80	18 8 4	1972.2	-24.58	57.21
90.00	.9 30 36	4223.22	.79	173.28	12.31	61.69	10 41 0	3623.2	-3.00	166.65
100.00	18 54 53	2282.98	-27.40	43.92	16.30	102.44	19 32 56	1683.0	-25.41	35.68
100.00	10 43 36	3987.72	1.74	155.43	11.78	60.15	11 50 3	3387.7	-2.24	148.91
110.00	20 21 44	2011.23	-30.18	22.45	15.47	106.87	20 55 16	1411.2	-27.58	14.23
110.00	11 33 14	3832.24	4.18	142.12	10.26	56.04	12 37 6	3232.2	-.31	135.91

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4741	TRA	-1.3123	TC3	2.5255	BAU	.4154	SGT	3016.1	SGR	1174.9	SG3	2294.2	ST	1096.7	SR	422.0	SS	1908.4
RDE	.2174	RRA	-.3301	RC3	1.4305	FAU	.39314	RRT	.9287	RRF	-.9803	RTF	-.9469	CRT	.9638	CRS	.9051	CST	.9842
FDE	-2.2646	FRA	8.8206	FC	-31.7954	BSP	11296	SGB	3236.9	R23	-.2276	R13	-.9586	LSA	2229.0	MSA	230.9	SSA	31.8
BDE	.5216	BRA	1.3532	BC3	2.9025	FSP	7761	SG1	3210.9	SG2	409.2	THA	20.23	EL1	1170.3	EL2	105.5	ALF	20.52

LAUNCH DATE OCT 30 1964 FLIGHT TIME 276.00 ARRIVAL DATE AUG 2 1965

HELIOCENTRIC CONIC DISTANCE 637.536 EARTH TO MARS

RL	148.54	LAL	-.00	LOL	36.61	VL	32.880	GAL	-3.55	AZL	89.29	HCA	200.32	SMA	188.01	ECC	.21850	INC	.7088
RP	229.09	LAP	-.25	LOP	236.93	VP	21.278	GAP	-.09	AZP	90.66	TAL	339.98	TAP	180.30	RCA	146.93	APO	229.09
RC	233.848	GL	7.15	GP	7.21	ZAL	119.04	ZAP	129.61	ETS	172.61	ZAE	165.58	ETE	143.50	ZAC	96.24	ETC	255.89

PLANETOCENTRIC CONIC

C3	10.622	VHL	3.259	DLA	15.99	RAL	160.42	RAD	6567.4	VEL	11.490	PTH	2.00	VHP	3.461	DPA	4.94	RAP	189.87

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 19 9	2595.55	-26.62	67.09	16.77	100.02	18 2 24	1995.5	-24.97	58.81
90.00	9 37 23	4196.77	-.07	171.80	12.42	61.68	10 47 20	3596.8	-3.85	165.16
100.00	18 49 22	2304.57	-27.71	45.45	16.54	101.69	19 27 47	1704.6	-25.82	37.16
100.00	10 49 51	3962.98	.90	154.08	11.88	60.12	11 55 54	3363.0	-3.08	147.55
110.00	20 17 20	2029.35	-30.53	23.75	15.74	106.18	20 51 10	1429.3	-28.01	15.46
110.00	11 38 22	3810.96	3.37	141.01	10.34	55.96	12 41 53	3211.0	-1.12	134.80

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4472	TRA	-1.2440	TC3	2.3578	BAU	.3915	SGT	2855.8	SGR	1165.2	SG3	2386.6	ST	1042.1	SR	419.3	SS	1907.2
RDE	.2157	RRA	-.3217	RC3	1.4291	FAU	.40772	RRT	.9221	RRF	-.9779	RTF	-.9422	CRT	.9611	CRS	.8900	CST	.9796
FDE	-2.2164	FRA	9.1276	FC	-33.2316	BSP	10759	SGB	3084.4	R23	-.2317	R13	-.9558	LSA	2199.0	MSA	250.1	SSA	31.5
BDE	.4965	BRA	1.2850	BC3	2.7570	FSP	8096	SG1	3055.4	SG2	421.5	THA	21.04	EL1	1118.1	EL2	107.9	ALF	21.35

LAUNCH DATE OCT 30 1964 FLIGHT TIME 278.00 ARRIVAL DATE AUG 4 1965

HELIOCENTRIC CONIC DISTANCE 641.397 EARTH TO MARS

RL	148.54	LAL	-.00	LOL	36.61	VL	32.870	GAL	-3.52	AZL	89.23	HCA	201.36	SMA	187.83	ECC	.21768	INC	.7665
RP	228.70	LAP	-.28	LOP	237.96	VP	21.308	GAP	-.40	AZP	90.71	TAL	340.07	TAP	181.43	RCA	146.95	APO	228.72
RC	235.703	GL	7.77	GP	7.01	ZAL	118.84	ZAP	128.11	ETS	173.10	ZAE	164.27	ETE	147.76	ZAC	95.94	ETC	255.91

PLANETOCENTRIC CONIC

C3	10.547	VHL	3.248	DLA	16.62	RAL	160.51	RAD	6567.4	VEL	11.486	PTH	2.00	VHP	3.397	DPA	4.97	RAP	189.32

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 13 30	2617.27	-26.87	68.63	16.99	99.29	17 57 7	2017.3	-25.31	60.31
90.00	9 43 45	4172.19	-.86	170.43	12.54	61.69	10 53 18	3572.2	-4.64	163.79
100.00	18 44 14	2324.64	-27.98	46.88	16.77	100.98	19 22 59	1724.6	-26.18	38.54
100.00	10 55 42	3940.05	.12	152.82	12.00	60.11	12 1 22	3340.1	-3.85	146.29
110.00	20 13 16	2046.11	-30.84	24.96	15.99	105.53	20 47 22	1446.1	-28.41	16.60
110.00	11 43 10	3791.35	2.62	139.98	10.44	55.91	12 46 21	3191.3	-1.87	133.78

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4230	TRA	-1.1729	TC3	2.1723	BAU	.3667	SGT	2685.2	SGR	1158.4	SG3	2480.2	ST	989.1	SR	418.3	SS	1910.5
RDE	.2151	RRA	-.3143	RC3	1.4302	FAU	.42258	RRT	.9141	RRF	-.9755	RTF	-.9362	CRT	.9592	CRS	.8747	CST	.9741
FDE	-2.1779	FRA	9.4346	FC	-34.6858	BSP	10159	SGB	2924.5	R23	-.2377	R13	-.9524	LSA	2174.9	MSA	268.8	SSA	31.2
BDE	.4745	BRA	1.2143	BC3	2.6008	FSP	8423	SG1	2891.8	SG2	436.1	THA	22.05	EL1	1068.3	EL2	109.4	ALF	22.33

LAUNCH DATE OCT 30 1964 FLIGHT TIME 280.00 ARRIVAL DATE AUG 6 1965

HELIOCENTRIC CONIC DISTANCE 645.268 EARTH TO MARS

RL	148.54	LAL	-.00	LOL	36.61	VL	32.860	GAL	-3.50	AZL	89.18	HCA	202.39	SMA	187.67	ECC	.21690	INC	.8198
RP	228.31	LAP	-.31	LOP	239.00	VP	21.340	GAP	-.70	AZP	90.76	TAL	340.14	TAP	182.54	RCA	146.96	APO	228.37
RC	237.537	GL	8.33	GP	6.83	ZAL	118.66	ZAP	126.55	ETS	173.55	ZAE	162.84	ETE	151.38	ZAC	95.64	ETC	255.94

PLANETOCENTRIC CONIC

C3	10.481	VHL	3.237	DLA	17.19	RAL	160.60	RAD	6567.4	VEL	11.483	PTH	2.00	VHP	3.336	DPA	5.04	RAP	188.76

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 8 13	2637.56	-27.09	70.08	17.20	98.59	17 52 11	2037.6	-25.62	61.72
90.00	9 49 45	4149.34	-1.60	169.16	12.68	61.72	10 58 54	3549.3	-5.36	162.50
100.00	18 39 28	2343.33	-28.21	48.22	16.99	100.31	19 18 31	1743.3	-26.50	39.84
100.00	11 1 12	3918.80	-.60	151.65	12.12	60.11	12 6 31	3318.8	-4.57	145.12
110.00	20 9 30	2061.65	-31.12	26.08	16.24	104.91	20 43 51	1461.6	-28.76	17.67
110.00	11 47 39	3773.25	1.93	139.03	10.54	55.86	12 50 33	3173.2	-2.56	132.83

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3989	TRA	-1.1001	TC3	1.9628	BAU	.3404	SGT	2503.4	SGR	1153.2	SG3	2573.7	ST	934.7	SR	418.0	SS	1914.9
RDE	.2148	RRA	-.3082	RC3	1.4318	FAU	.43713	RRT	.9041	RRF	-.9730	RTF	-.9280	CRT	.9579	CRS	.8584	CST	.9673
FDE	-2.1331	FRA	9.7540	FC	-36.1080	BSP	9567	SGB	2756.2	R23	-.2462	R13	-.9481	LSA	2152.1	MSA	287.4	SSA	31.0
BDE	.4531	BRA	1.1424	BC3	2.4296	FSP	8774	SG1	2718.6	SG2	453.8	THA	23.30	EL1	1017.9	EL2	110.2	ALF	23.48

LAUNCH DATE OCT 30 1964 FLIGHT TIME 282.00 ARRIVAL DATE AUG 8 1965

HELIOCENTRIC CONIC DISTANCE 649.150 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.851 GAL -3.48 AZL 89.13 HCA 203.44 SMA 187.51 ECC .21618 INC .8682 V1 29.997
RP 227.92 LAP -.35 LOP 240.04 VP 21.373 GAP -1.00 AZP 90.80 TAL 340.21 TAP 183.64 RCA 146.98 APO 228.05 V2 24.132
RC 239.350 GL 8.85 GP 6.67 ZAL 118.50 ZAP 124.96 ETS 173.97 ZAE 161.31 ETE 154.47 ZAC 95.36 ETC 255.97 CLP 125.23

PLANETOCENTRIC CONIC

C3 10.422 VHL 3.228 DLA 17.72 RAL 160.69 RAD 6567.4 VEL 11.481 PTH 2.00 VHP 3.279 DPA 5.13 RAP 188.16 ECC 1.1715

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 3 18	2656.55	-27.27	71.44	17.41	97.94	17 47 35	2056.5	-25.89	63.04
90.00	9 55 25	4128.06	-2.28	167.97	12.82	61.77	11 4 13	3528.1	-6.04	161.30
100.00	18 35 2	2360.77	-28.42	49.48	17.20	99.68	19 14 22	1760.8	-26.79	41.06
100.00	11 6 23	3899.07	-1.27	150.57	12.25	60.13	12 11 22	3299.1	-5.23	144.03
110.00	20 6 1	2076.07	-31.37	27.13	16.48	104.34	20 40 37	1476.1	-29.08	18.67
110.00	11 51 52	3756.53	1.29	138.16	10.66	55.84	12 54 29	3156.5	-3.20	131.96

DIFFERENTIAL CORRECTIONS
TDE .3774 TRA-1.0230 TC3 1.7386 BAU .3142
RDE .2155 RRA -.3024 RC3 1.4359 FAU .45209
FDE-2.1004 FRA10.0639 FC-37.5560 BSP 8901
BDE .4345 BRA 1.0667 BC3 2.2549 FSP 9104

MID-COURSE EXECUTION ACCURACY
SGT 2311.2 SGR 1150.3 SG3 2667.9
RRT .8917 RRF -.9705 RTF -.9172
SGB 2581.6 R23 -.2568 R13 -.9429
SG1 2537.7 SG2 474.1 THA 24.86

ORBIT DETERMINATION ACCURACY
ST 881.3 SR 419.0 SS 1922.7
CRT .9578 CRS .8427 CST .9592
LSA 2134.2 MSA 305.2 SSA 30.9
EL1 969.7 EL2 109.4 ALF 24.82

LAUNCH DATE OCT 30 1964 FLIGHT TIME 284.00 ARRIVAL DATE AUG 10 1965

HELIOCENTRIC CONIC DISTANCE 653.041 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.843 GAL -3.46 AZL 89.09 HCA 204.48 SMA 187.37 ECC .21551 INC .9132 V1 29.997
RP 227.53 LAP -.38 LOP 241.08 VP 21.407 GAP -1.30 AZP 90.83 TAL 340.26 TAP 184.74 RCA 146.99 APO 227.75 V2 24.173
RC 241.142 GL 9.34 GP 6.52 ZAL 118.36 ZAP 123.32 ETS 174.37 ZAE 159.69 ETE 157.12 ZAC 95.07 ETC 256.01 CLP 123.56

PLANETOCENTRIC CONIC

C3 10.369 VHL 3.220 DLA 18.20 RAL 160.79 RAD 6567.4 VEL 11.479 PTH 2.00 VHP 3.224 DPA 5.26 RAP 187.53 ECC 1.1707

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 58 44	2674.32	-27.43	72.71	17.61	97.32	17 43 18	2074.3	-26.13	64.28
90.00	10 0 46	4108.26	-2.92	166.86	12.97	61.82	11 9 14	3508.3	-6.67	160.18
100.00	18 30 55	2377.05	-28.60	50.65	17.42	99.09	19 10 32	1777.1	-27.05	42.20
100.00	11 11 16	3880.76	-1.89	149.57	12.40	60.16	12 15 57	3280.8	-5.84	143.01
110.00	20 2 50	2089.47	-31.59	28.11	16.72	103.80	20 37 40	1489.5	-29.37	19.61
110.00	11 55 51	3741.10	.70	137.36	10.78	55.82	12 58 12	3141.1	-3.79	131.15

DIFFERENTIAL CORRECTIONS
TDE .3571 TRA -.9432 TC3 1.4956 BAU .2879
RDE .2165 RRA -.2974 RC3 1.4406 FAU .46688
FDE-2.0676 FRA10.3782 FC-38.9797 BSP 8204
BDE .4176 BRA .9890 BC3 2.0765 FSP 9437

MID-COURSE EXECUTION ACCURACY
SGT 2110.0 SGR 1148.7 SG3 2761.6
RRT .8757 RRF -.9679 RTF -.9024
SGB 2402.4 R23 -.2700 R13 -.9364
SG1 2350.3 SG2 498.0 THA 26.79

ORBIT DETERMINATION ACCURACY
ST 827.9 SR 420.8 SS 1932.1
CRT .9591 CRS .8266 CST .9491
LSA 2119.0 MSA 323.1 SSA 30.7
EL1 922.5 EL2 106.9 ALF 26.37

LAUNCH DATE OCT 30 1964 FLIGHT TIME 286.00 ARRIVAL DATE AUG 12 1965

HELIOCENTRIC CONIC DISTANCE 656.941 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.835 GAL -3.45 AZL 89.05 HCA 205.53 SMA 187.23 ECC .21488 INC .9547 V1 29.997
RP 227.14 LAP -.41 LOP 242.13 VP 21.441 GAP -1.59 AZP 90.86 TAL 340.30 TAP 185.83 RCA 147.00 APO 227.46 V2 24.214
RC 242.914 GL 9.79 GP 6.38 ZAL 118.24 ZAP 121.63 ETS 174.74 ZAE 157.98 ETE 159.39 ZAC 94.79 ETC 256.05 CLP 121.85

PLANETOCENTRIC CONIC

C3 10.324 VHL 3.213 DLA 18.65 RAL 160.90 RAD 6567.4 VEL 11.477 PTH 1.99 VHP 3.173 DPA 5.40 RAP 186.87 ECC 1.1699

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 54 30	2690.95	-27.57	73.91	17.82	96.73	17 39 21	2091.0	-26.35	65.45
90.00	10 5 50	4089.86	-3.51	165.83	13.14	61.88	11 14 0	3489.9	-7.24	159.14
100.00	18 27 8	2392.25	-28.76	51.76	17.64	98.53	19 7 0	1792.3	-27.28	43.27
100.00	11 15 54	3863.79	-2.46	148.63	12.56	60.20	12 20 17	3263.8	-6.41	142.07
110.00	19 59 56	2101.93	-31.79	29.03	16.96	103.29	20 34 57	1501.9	-29.63	20.48
110.00	11 59 35	3726.88	.16	136.62	10.92	55.82	13 1 42	3126.9	-4.33	130.40

DIFFERENTIAL CORRECTIONS
TDE .3372 TRA -.8605 TC3 1.2301 BAU .2620
RDE .2179 RRA -.2930 RC3 1.4457 FAU .48148
FDE-2.0376 FRA10.6908 FC-40.3756 BSP 7498
BDE .4015 BRA .9090 BC3 1.8982 FSP 9769

MID-COURSE EXECUTION ACCURACY
SGT 1899.7 SGR 1148.1 SG3 2854.1
RRT .8532 RRF -.9653 RTF -.8808
SGB 2219.7 R23 -.2868 R13 -.9282
SG1 2156.1 SG2 527.6 THA 29.19

ORBIT DETERMINATION ACCURACY
ST 773.4 SR 423.2 SS 1943.1
CRT .9613 CRS .8107 CST .9368
LSA 2106.3 MSA 339.7 SSA 30.7
EL1 875.6 EL2 102.9 ALF 28.17

LAUNCH DATE OCT 30 1964 FLIGHT TIME 288.00 ARRIVAL DATE AUG 14 1965

HELIOCENTRIC CONIC DISTANCE 660.852 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.828 GAL -3.44 AZL 89.01 HCA 206.58 SMA 187.10 ECC .21431 INC .9934 V1 29.997
RP 226.75 LAP -.44 LOP 243.19 VP 21.477 GAP -1.88 AZP 90.89 TAL 340.33 TAP 186.91 RCA 147.01 APO 227.20 V2 24.256
RC 244.666 GL 10.21 GP 6.24 ZAL 118.15 ZAP 119.91 ETS 175.10 ZAE 156.21 ETE 161.37 ZAC 94.51 ETC 256.09 CLP 120.10

PLANETOCENTRIC CONIC

C3 10.285 VHL 3.207 DLA 19.06 RAL 161.01 RAD 6567.4 VEL 11.475 PTH 1.99 VHP 3.125 DPA 5.58 RAP 186.18 ECC 1.1693

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 50 36	2706.51	-27.69	75.03	18.02	96.18	17 35 42	2106.5	-26.54	66.55
90.00	10 10 39	4072.78	-4.06	164.87	13.31	61.95	11 18 32	3472.8	-7.78	158.17
100.00	18 23 39	2406.43	-28.90	52.79	17.85	98.00	19 3 46	1806.4	-27.49	44.27
100.00	11 20 16	3848.09	-2.99	147.77	12.73	60.24	12 24 25	3248.1	-6.93	141.20
110.00	19 57 17	2113.50	-31.97	29.89	17.20	102.81	20 32 31	1513.5	-29.87	21.30
110.00	12 3 8	3713.79	-.34	135.93	11.07	55.82	13 5 2	3113.8	-4.83	129.72

DIFFERENTIAL CORRECTIONS
TDE .3185 TRA -.7743 TC3 .9464 BAU .2382
RDE .2196 RRA -.2890 RC3 1.4507 FAU .49575
FDE-2.0086 FRA11.0027 FC-41.7302 BSP 6772
BDE .3869 BRA .8265 BC3 1.7322 FSP 10097

MID-COURSE EXECUTION ACCURACY
SGT 1683.6 SGR 1148.2 SG3 2945.0
RRT .8214 RRF -.9627 RTF -.8492
SGB 2037.8 R23 -.3061 R13 -.9185
SG1 1958.5 SG2 563.0 THA 32.24

ORBIT DETERMINATION ACCURACY
ST 718.9 SR 426.1 SS 1955.2
CRT .9652 CRS .7948 CST .9211
LSA 2096.1 MSA 356.1 SSA 30.6
EL1 830.1 EL2 96.4 ALF 30.23

LAUNCH DATE OCT 30 1964 FLIGHT TIME 290.00 ARRIVAL DATE AUG 16 1965

HELIOCENTRIC CONIC DISTANCE 664.771 EARTH TO MARS

RL	148.54	LAL	-.00	LOL	36.61	VL	32.821	GAL	-3.43	AZL	88.97	HCA	207.64	SMA	186.99	ECC	.21378	INC	1.0295	V1	29.997
RP	226.36	LAP	-.48	LOP	244.24	VP	21.514	GAP	-2.16	AZP	90.91	TAL	340.34	TAP	187.98	RCA	147.01	APO	226.96	V2	24.297
RC	246.398	GL	10.59	GP	6.12	ZAL	118.07	ZAP	118.14	ETS	175.43	ZAE	154.36	ETE	163.09	ZAC	94.23	ETC	256.13	CLP	118.32

PLANETOCENTRIC CONIC

C3	10.252	VHL	3.202	DLA	19.43	RAL	161.13	RAD	6567.4	VEL	11.473	PTH	1.99	VHP	3.080	DPA	5.77	RAP	185.47	ECC	1.1687

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 47 1	2721.05	-27.79	76.08	18.24	95.66	17 32 22	2121.1	-26.72	67.58
90.00	10 15 13	4056.96	-4.56	163.99	13.50	62.02	11 22 49	3457.0	-8.27	157.27
100.00	18 20 29	2419.64	-29.02	53.75	18.08	97.51	19 0 49	1819.6	-27.68	45.20
100.00	11 24 25	3833.60	-3.48	146.97	12.91	60.29	12 28 19	3233.6	-7.41	140.39
110.00	19 54 54	2124.24	-32.13	30.68	17.45	102.36	20 30 19	1524.2	-30.09	22.06
110.00	12 6 30	3701.77	-.80	135.31	11.24	55.83	13 8 11	3101.8	-5.28	129.08

DIFFERENTIAL CORRECTIONS

TDE	.3012	TRA	-.6843	TC3	.6455	BAU	.2183
RDE	.2218	RRA	-.2853	RC3	1.4560	FAU	.50982
FDE	-1.9849	FRA	11.3058	FC	-43.0512	BSP	6028
BDE	.3741	BRA	.7414	BC3	1.5927	FSP	10411

MID-COURSE EXECUTION ACCURACY

SGT	1465.4	SGR	1148.9	SG3	3033.7		
RRT	.7735	RRF	-.9600	RTF	-.8000		
SGB	1862.1	R23	-.3267	R13	-.9073		
SG1	1760.7	SG2	606.1	THA	36.19		

ORBIT DETERMINATION ACCURACY

ST	665.2	SR	429.7	SS	1968.5		
CRT	.9709	CRS	.7795	CST	.9007		
LSA	2088.6	MSA	372.3	SSA	30.6		
EL1	787.1	EL2	86.9	ALF	32.54		

LAUNCH DATE OCT 30 1964 FLIGHT TIME 292.00 ARRIVAL DATE AUG 18 1965

HELIOCENTRIC CONIC DISTANCE 668.700 EARTH TO MARS

RL	148.54	LAL	-.00	LOL	36.61	VL	32.815	GAL	-3.42	AZL	88.94	HCA	208.70	SMA	186.87	ECC	.21329	INC	1.0634	V1	29.997
RP	225.97	LAP	-.51	LOP	245.30	VP	21.551	GAP	-2.43	AZP	90.93	TAL	340.35	TAP	189.05	RCA	147.02	APO	226.73	V2	24.339
RC	248.110	GL	10.96	GP	6.00	ZAL	118.02	ZAP	116.34	ETS	175.76	ZAE	152.46	ETE	164.60	ZAC	93.95	ETC	256.18	CLP	116.49

PLANETOCENTRIC CONIC

C3	10.226	VHL	3.198	DLA	19.77	RAL	161.27	RAD	6567.4	VEL	11.472	PTH	1.99	VHP	3.039	DPA	5.98	RAP	184.72	ECC	1.1683

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 43 46	2734.61	-27.88	77.07	18.46	95.18	17 29 20	2134.6	-26.87	68.54
90.00	10 19 32	4042.37	-5.03	163.17	13.71	62.10	11 26 54	3442.4	-8.72	156.44
100.00	18 17 37	2431.92	-29.12	54.65	18.31	97.05	18 58 9	1831.9	-27.84	46.08
100.00	11 28 21	3820.28	-3.93	146.24	13.10	60.34	12 32 1	3220.3	-7.85	139.64
110.00	19 52 47	2134.19	-32.27	31.42	17.70	101.95	20 28 22	1534.2	-30.29	22.77
110.00	12 9 41	3690.78	-1.22	134.73	11.42	55.84	13 11 11	3090.8	-5.70	128.51

DIFFERENTIAL CORRECTIONS

TDE	.2840	TRA	-.5915	TC3	.3243	BAU	.2045
RDE	.2241	RRA	-.2819	RC3	1.4602	FAU	.52320
FDE	-1.9593	FRA	11.6077	FC	-44.2946	BSP	5324
BDE	.3618	BRA	.6553	BC3	1.4958	FSP	10723

MID-COURSE EXECUTION ACCURACY

SGT	1253.2	SGR	1149.5	SG3	3119.1		
RRT	.6959	RRF	-.9573	RTF	-.7196		
SGB	1700.5	R23	-.3449	R13	-.8961		
SG1	1567.2	SG2	660.1	THA	41.46		

ORBIT DETERMINATION ACCURACY

ST	610.9	SR	433.5	SS	1982.1		
CRT	.9777	CRS	.7641	CST	.8742		
LSA	2083.0	MSA	387.6	SSA	30.5		
EL1	745.3	EL2	74.6	ALF	35.16		

LAUNCH DATE OCT 30 1964 FLIGHT TIME 294.00 ARRIVAL DATE AUG 20 1965

HELIOCENTRIC CONIC DISTANCE 672.638 EARTH TO MARS

RL	148.54	LAL	-.00	LOL	36.61	VL	32.809	GAL	-3.41	AZL	88.91	HCA	209.76	SMA	186.77	ECC	.21285	INC	1.0949	V1	29.997
RP	225.58	LAP	-.54	LOP	246.36	VP	21.589	GAP	-2.70	AZP	90.95	TAL	340.34	TAP	190.10	RCA	147.02	APO	226.53	V2	24.381
RC	249.803	GL	11.30	GP	5.89	ZAL	117.99	ZAP	114.49	ETS	176.07	ZAE	150.51	ETE	165.94	ZAC	93.67	ETC	256.23	CLP	114.63

PLANETOCENTRIC CONIC

C3	10.205	VHL	3.195	DLA	20.08	RAL	161.41	RAD	6567.4	VEL	11.471	PTH	1.99	VHP	3.000	DPA	6.21	RAP	183.95	ECC	1.1680

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 40 49	2747.21	-27.95	77.98	18.69	94.72	17 26 37	2147.2	-27.00	69.44
90.00	10 23 38	4028.96	-5.46	162.41	13.93	62.17	11 30 47	3429.0	-9.14	155.67
100.00	18 15 4	2443.32	-29.22	55.48	18.55	96.62	18 55 47	1843.3	-27.99	46.89
100.00	11 32 4	3808.08	-4.34	145.57	13.31	60.40	12 35 33	3208.1	-8.25	138.96
110.00	19 50 56	2143.39	-32.40	32.11	17.96	101.56	20 26 39	1543.4	-30.46	23.43
110.00	12 12 42	3680.77	-1.61	134.21	11.61	55.85	13 14 3	3080.8	-6.08	127.98

DIFFERENTIAL CORRECTIONS

TDE	.2679	TRA	-.4947	TC3	-.0130	BAU	.1998
RDE	.2268	RRA	-.2786	RC3	1.4642	FAU	.53624
FDE	-1.9413	FRA	11.8961	FC	-45.4902	BSP	4674
BDE	.3510	BRA	.5677	BC3	1.4643	FSP	11018

MID-COURSE EXECUTION ACCURACY

SGT	1059.8	SGR	1150.5	SG3	3201.4		
RRT	.5660	RRF	-.9546	RTF	-.5829		
SGB	1564.3	R23	-.3467	R13	-.8909		
SG1	1386.0	SG2	725.3	THA	49.13		

ORBIT DETERMINATION ACCURACY

ST	557.8	SR	437.8	SS	1996.7		
CRT	.9853	CRS	.7497	CST	.8388		
LSA	2080.1	MSA	402.2	SSA	30.5		
EL1	706.6	EL2	59.0	ALF	38.03		

LAUNCH DATE OCT 30 1964 FLIGHT TIME 296.00 ARRIVAL DATE AUG 22 1965

HELIOCENTRIC CONIC DISTANCE 676.586 EARTH TO MARS

RL	148.54	LAL	-.00	LOL	36.61	VL	32.803	GAL	-3.41	AZL	88.88	HCA	210.83	SMA	186.68	ECC	.21245	INC	1.1247	V1	29.997
RP	225.19	LAP	-.58	LOP	247.43	VP	21.628	GAP	-2.97	AZP	90.97	TAL	340.32	TAP	191.15	RCA	147.02	APO	226.34	V2	24.423
RC	251.477	GL	11.61	GP	5.78	ZAL	117.99	ZAP	112.62	ETS	176.36	ZAE	148.50	ETE	167.12	ZAC	93.38	ETC	256.29	CLP	112.74

PLANETOCENTRIC CONIC

C3	10.191	VHL	3.192	DLA	20.36	RAL	161.57	RAD	6567.4	VEL	11.471	PTH	1.99	VHP	2.965	DPA	6.45	RAP	183.16	ECC	1.1677

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 38 12	2758.89	-28.01	78.83	18.93	94.30	17 24 11	2158.9	-27.12	70.28
90.00	10 27 30	4016.71	-5.84	161.72	14.16	62.24	11 34 27	3416.7	-9.52	154.97
100.00	18 12 48	2453.86	-29.30	56.26	18.80	96.22	18 53 42	1853.9	-28.13	47.65
100.00	11 35 36	3796.97	-4.72	144.95	13.54	60.45	12 38 53	3197.0	-8.62	138.34
110.00	19 49 19	2151.89	-32.51	32.75	18.23	101.20	20 25 11	1551.9	-30.63	24.04
110.00	12 15 34	3671.71	-1.95	133.74	11.82	55.87	13 16 46	3071.7	-6.42	127.50

DIFFERENTIAL CORRECTIONS

TDE	.2541	TRA	-.3933	TC3	-.3616	BAU	.2061
RDE	.2302	RRA	-.2750	RC3	1.4687	FAU	.54926
FDE	-1.9434	FRA	12.1594	FC	-46.6609	BSP	4114
BDE	.3429	BRA	.4799	BC3	1.5126	FSP	11253

MID-COURSE EXECUTION ACCURACY

SGT	910.2	SGR	1152.0	SG3	3280.4		
RRT	.3513	RRF	-.9518	RTF	-.3543		
SGB	1468.2	R23	-.2880	R13	-.9074		
SG1	1233.9	SG2	795.6	THA	62.05		

ORBIT DETERMINATION ACCURACY

ST	509.1	SR	443.2	SS	2013.2		
CRT	.9926	CRS	.7378	CST	.7907		
LSA	2081.7	MSA	416.8	SSA	30.3		
EL1	673.7	EL2	40.8	ALF	41.01		

LAUNCH DATE OCT 30 1964 FLIGHT TIME 298.00 ARRIVAL DATE AUG 24 1965

HELIOCENTRIC CONIC DISTANCE 680.542 EARTH TO MARS

```
RL  148.54 LAL   -.00 LOL  36.61 VL  32.798 GAL  -3.41 AZL  88.85 HCA 211.90 SMA 186.59 ECC .21210 INC 1.1525 V1  29.997
RP  224.80 LAP   -.61 LOP 248.50 VP  21.667 GAP  -3.23 AZP  90.98 TAL 340.29 TAP 192.19 RCA 147.01 APO 226.16 V2  24.465
RC 253.132 GL   11.91 GP    5.67 ZAL 118.01 ZAP 110.71 ETS 176.65 ZAE 146.45 ETE 168.19 ZAC  93.10 ETC 256.35 CLP 110.82
```

PLANETOCENTRIC CONIC

```
C3  10.182 VHL  3.191 DLA  20.62 RAL 161.74 RAD 6567.4 VEL 11.470 PTH   1.99 VHP  2.934 DPA   6.71 RAP 182.34 ECC 1.1676
```

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 35 55	2769.65	-28.07	79.61	19.19	93.91	17 22 4	2169.6	-27.23	71.05
90.00	10 31 10	4005.61	-6.20	161.10	14.40	62.31	11 37 56	3405.6	-9.86	154.33
100.00	18 10 50	2463.56	-29.37	56.97	19.06	95.85	18 51 54	1863.6	-28.25	48.34
100.00	11 38 56	3786.94	-5.05	144.40	13.77	60.50	12 42 3	3186.9	-8.94	137.77
110.00	19 47 58	2159.68	-32.61	33.33	18.50	100.86	20 23 58	1559.7	-30.77	24.60
110.00	12 18 17	3663.58	-2.26	133.31	12.04	55.88	13 19 21	3063.6	-6.73	127.07

DIFFERENTIAL CORRECTIONS

```
TDE  .2391 TRA -.2899 TC3 -.7320 BAU  .2236
RDE  .2333 RRA -.2718 RC3 1.4703 FAU .56082
FDE-1.9323 FRA12.4257 FC-47.6834 BSP   3814
BDE  .3341 BRA  .3974 BC3 1.6425 FSP  11513
```

MID-COURSE EXECUTION ACCURACY

```
SGT  843.8 SGR 1152.3 SG3 3353.3
RRT  .0325 RRF -.9489 RTF -.0163
SGB 1428.2 R23 -.0499 R13 -.9477
SG1 1153.0 SG2  842.8 THA  87.08
```

ORBIT DETERMINATION ACCURACY

```
ST   460.8 SR   448.1 SS 2028.2
CRT  .9956 CRS  .7246 CST  .7242
LSA 2083.4 MSA  430.4 SSA   30.3
EL1  642.1 EL2   30.3 ALF  44.19
```

LAUNCH DATE OCT 30 1964 FLIGHT TIME 300.00 ARRIVAL DATE AUG 26 1965

HELIOCENTRIC CONIC DISTANCE 684.507 EARTH TO MARS

```
RL  148.54 LAL   -.00 LOL  36.61 VL  32.793 GAL  -3.42 AZL  88.82 HCA 212.97 SMA 186.51 ECC .21178 INC 1.1790 V1  29.997
RP  224.41 LAP   -.64 LOP 249.58 VP  21.708 GAP  -3.49 AZP  90.99 TAL 340.24 TAP 193.22 RCA 147.01 APO 226.01 V2  24.506
RC 254.766 GL   12.19 GP    5.57 ZAL 118.05 ZAP 108.78 ETS 176.92 ZAE 144.36 ETE 169.14 ZAC  92.81 ETC 256.41 CLP 108.87
```

PLANETOCENTRIC CONIC

```
C3  10.179 VHL  3.191 DLA  20.84 RAL 161.93 RAD 6567.4 VEL 11.470 PTH   1.99 VHP  2.906 DPA   6.99 RAP 181.50 ECC 1.1675
```

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 33 56	2779.52	-28.11	80.33	19.45	93.56	17 20 16	2179.5	-27.32	71.75
90.00	10 34 38	3995.63	-6.51	160.53	14.66	62.38	11 41 13	3395.6	-10.16	153.75
100.00	18 9 10	2472.43	-29.43	57.62	19.33	95.51	18 50 23	1872.4	-28.35	48.98
100.00	11 42 5	3777.95	-5.35	143.90	14.03	60.55	12 45 3	3177.9	-9.24	137.27
110.00	19 46 52	2166.81	-32.70	33.87	18.79	100.56	20 22 58	1566.8	-30.90	25.11
110.00	12 20 53	3656.34	-2.54	132.94	12.28	55.90	13 21 49	3056.3	-7.00	126.69

DIFFERENTIAL CORRECTIONS

```
TDE  .2246 TRA -.1831 TC3-1.1176 BAU  .2514
RDE  .2368 RRA -.2684 RC3 1.4708 FAU .57164
FDE-1.9285 FRA12.6727 FC-48.6162 BSP   3810
BDE  .3264 BRA  .3250 BC3 1.8472 FSP  11742
```

MID-COURSE EXECUTION ACCURACY

```
SGT  891.7 SGR 1152.3 SG3 3420.6
RRT -.3078 RRF -.9459 RTF  .3444
SGB 1457.0 R23  .2253 R13 -.9203
SG1 1214.4 SG2  804.9 THA 114.95
```

ORBIT DETERMINATION ACCURACY

```
ST   417.5 SR   453.4 SS 2043.4
CRT  .9893 CRS  .7126 CST  .6323
LSA 2087.6 MSA  443.2 SSA   30.2
EL1  614.7 EL2   45.0 ALF  47.30
```

LAUNCH DATE OCT 30 1964 FLIGHT TIME 302.00 ARRIVAL DATE AUG 28 1965

HELIOCENTRIC CONIC DISTANCE 688.480 EARTH TO MARS

```
RL  148.54 LAL   -.00 LOL  36.61 VL  32.789 GAL  -3.42 AZL  88.80 HCA 214.05 SMA 186.43 ECC .21151 INC 1.2041 V1  29.997
RP  224.02 LAP   -.67 LOP 250.65 VP  21.748 GAP  -3.74 AZP  91.00 TAL 340.18 TAP 194.24 RCA 147.00 APO 225.86 V2  24.548
RC 256.380 GL   12.45 GP    5.47 ZAL 118.11 ZAP 106.82 ETS 177.19 ZAE 142.24 ETE 170.00 ZAC  92.52 ETC 256.48 CLP 106.90
```

PLANETOCENTRIC CONIC

```
C3  10.182 VHL  3.191 DLA  21.05 RAL 162.13 RAD 6567.4 VEL 11.470 PTH   1.99 VHP  2.881 DPA   7.27 RAP 180.64 ECC 1.1676
```

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 32 17	2788.50	-28.15	80.99	19.73	93.23	17 18 46	2188.5	-27.40	72.40
90.00	10 37 52	3986.76	-6.79	160.03	14.94	62.44	11 44 19	3386.8	-10.43	153.24
100.00	18 7 48	2480.51	-29.48	58.22	19.62	95.20	18 49 9	1880.5	-28.44	49.56
100.00	11 45 2	3769.99	-5.62	143.46	14.30	60.59	12 47 52	3170.0	-9.50	136.82
110.00	19 46 0	2173.29	-32.78	34.36	19.10	100.28	20 22 14	1573.3	-31.02	25.58
110.00	12 23 20	3649.98	-2.78	132.60	12.54	55.92	13 24 10	3050.0	-7.24	126.35

DIFFERENTIAL CORRECTIONS

```
TDE  .2102 TRA -.0727 TC3-1.5155 BAU  .2873
RDE  .2403 RRA -.2651 RC3 1.4689 FAU .58118
FDE-1.9237 FRA12.9064 FC-49.4131 BSP   4146
BDE  .3193 BRA  .2749 BC3 2.1105 FSP  11956
```

MID-COURSE EXECUTION ACCURACY

```
SGT 1047.6 SGR 1151.1 SG3 3480.7
RRT -.5577 RRF -.9427 RTF  .6095
SGB 1556.4 R23  .2923 R13 -.9019
SG1 1376.0 SG2  727.5 THA 130.20
```

ORBIT DETERMINATION ACCURACY

```
ST   380.8 SR   458.7 SS 2057.8
CRT  .9644 CRS  .7008 CST  .5048
LSA 2093.2 MSA  455.5 SSA   30.1
EL1  591.0 EL2   78.2 ALF  50.50
```

LAUNCH DATE OCT 30 1964 FLIGHT TIME 304.00 ARRIVAL DATE AUG 30 1965

HELIOCENTRIC CONIC DISTANCE 692.461 EARTH TO MARS

```
RL  148.54 LAL   -.00 LOL  36.61 VL  32.785 GAL  -3.43 AZL  88.77 HCA 215.14 SMA 186.36 ECC .21127 INC 1.2278 V1  29.997
RP  223.63 LAP   -.71 LOP 251.74 VP  21.790 GAP  -3.99 AZP  91.00 TAL 340.11 TAP 195.25 RCA 146.99 APO 225.74 V2  24.590
RC 257.974 GL   12.69 GP    5.37 ZAL 118.20 ZAP 104.84 ETS 177.44 ZAE 140.08 ETE 170.79 ZAC  92.23 ETC 256.56 CLP 104.90
```

PLANETOCENTRIC CONIC

```
C3  10.191 VHL  3.192 DLA  21.23 RAL 162.34 RAD 6567.4 VEL 11.471 PTH   1.99 VHP  2.860 DPA   7.56 RAP 179.77 ECC 1.1677
```

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 30 58	2796.62	-28.18	81.58	20.03	92.93	17 17 35	2196.6	-27.47	72.98
90.00	10 40 55	3978.99	-7.04	159.59	15.23	62.50	11 47 14	3379.0	-10.67	152.79
100.00	18 6 45	2487.79	-29.52	58.75	19.92	94.92	18 48 12	1887.8	-28.53	50.09
100.00	11 47 50	3763.05	-5.85	143.07	14.58	60.63	12 50 33	3163.0	-9.72	136.42
110.00	19 45 24	2179.14	-32.85	34.80	19.41	100.03	20 21 43	1579.1	-31.12	26.01
110.00	12 25 40	3644.47	-2.99	132.32	12.81	55.93	13 26 24	3044.5	-7.44	126.06

DIFFERENTIAL CORRECTIONS

```
TDE  .1957 TRA  .0409 TC3-1.9267 BAU  .3298
RDE  .2441 RRA -.2615 RC3 1.4653 FAU .58969
FDE-1.9236 FRA13.1176 FC-50.0942 BSP   4770
BDE  .3129 BRA  .2647 BC3 2.4206 FSP  12138
```

MID-COURSE EXECUTION ACCURACY

```
SGT 1281.8 SGR 1149.2 SG3 3533.7
RRT -.7038 RRF -.9393 RTF  .7654
SGB 1721.5 R23  .2762 R13 -.9098
SG1 1590.9 SG2  657.8 THA 139.42
```

ORBIT DETERMINATION ACCURACY

```
ST   354.0 SR   464.2 SS 2071.4
CRT  .9084 CRS  .6897 CST  .3364
LSA 2100.6 MSA  466.9 SSA   30.1
EL1  571.3 EL2  120.3 ALF  53.41
```

LAUNCH DATE OCT 30 1964 FLIGHT TIME 306.00 ARRIVAL DATE SEP 1 1965

HELIOCENTRIC CONIC DISTANCE 696.451 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.781 GAL -3.44 AZL 88.75 HCA 216.22 SMA 186.30 ECC .21108 INC 1.2505 V1 29.997
RP 223.24 LAP -.74 LOP 252.82 VP 21.832 GAP -4.24 AZP 91.01 TAL 340.02 TAP 196.25 RCA 146.98 APO 225.63 V2 24.632
RC 259.547 GL 12.92 GP 5.27 ZAL 118.30 ZAP 102.84 ETS 177.69 ZAE 137.90 ETE 171.50 ZAC 91.93 ETC 256.63 CLP 102.89

PLANETOCENTRIC CONIC

C3 10.206 VHL 3.195 DLA 21.38 RAL 162.58 RAD 6567.4 VEL 11.471 PTH 1.99 VHP 2.843 DPA 7.85 RAP 178.89 ECC 1.1680

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 29 58	2803.87	-28.20	82.11	20.34	92.67	17 16 42	2203.9	-27.53	73.50
90.00	10 43 45	3972.31	-7.25	159.21	15.53	62.55	11 49 58	3372.3	-10.87	152.41
100.00	18 5 59	2494.31	-29.56	59.23	20.24	94.67	18 47 33	1894.3	-28.60	50.56
100.00	11 50 26	3757.11	-6.05	142.75	14.88	60.67	12 53 3	3157.1	-9.91	136.09
110.00	19 45 3	2184.38	-32.91	35.20	19.74	99.80	20 21 27	1584.4	-31.21	26.39
110.00	12 27 52	3639.80	-3.17	132.07	13.10	55.95	13 28 32	3039.8	-7.62	125.81

DIFFERENTIAL CORRECTIONS
TDE .1816 TRA .1578 TC3-2.3460 BAU .3770
RDE .2481 RRA -.2578 RC3 1.4593 FAU .59684
FDE-1.9297 FRA13.3125 FC-50.6295 BSP 5614
BDE .3074 BRA .3023 BC3 2.7628 FSP 12290

MID-COURSE EXECUTION ACCURACY
SGT 1563.7 SGR 1146.2 SG3 3578.9
RRT -.7831 RRF -.9358 RTF .8515
SGB 1938.8 R23 .2380 R13 -.9250
SG1 1841.9 SG2 605.2 THA 145.98

ORBIT DETERMINATION ACCURACY
ST 341.2 SR 470.0 SS 2085.4
CRT .8110 CRS .6798 CST .1320
LSA 2111.1 MSA 478.1 SSA 30.0
EL1 555.7 EL2 168.8 ALF 55.94

LAUNCH DATE OCT 30 1964 FLIGHT TIME 308.00 ARRIVAL DATE SEP 3 1965

HELIOCENTRIC CONIC DISTANCE 700.448 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.778 GAL -3.46 AZL 88.73 HCA 217.31 SMA 186.25 ECC .21092 INC 1.2721 V1 29.997
RP 222.85 LAP -.77 LOP 253.91 VP 21.874 GAP -4.48 AZP 91.01 TAL 339.93 TAP 197.24 RCA 146.96 APO 225.53 V2 24.674
RC 261.100 GL 13.13 GP 5.17 ZAL 118.44 ZAP 100.83 ETS 177.93 ZAE 135.70 ETE 172.15 ZAC 91.64 ETC 256.72 CLP 100.87

PLANETOCENTRIC CONIC

C3 10.226 VHL 3.198 DLA 21.51 RAL 162.83 RAD 6567.4 VEL 11.472 PTH 1.99 VHP 2.829 DPA 8.15 RAP 177.99 ECC 1.1683

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 29 19	2810.23	-28.22	82.57	20.66	92.44	17 16 10	2210.2	-27.58	73.96
90.00	10 46 24	3966.75	-7.42	158.90	15.86	62.59	11 52 30	3366.8	-11.03	152.08
100.00	18 5 31	2500.03	-29.59	59.66	20.57	94.45	18 47 12	1900.0	-28.66	50.98
100.00	11 52 53	3752.19	-6.21	142.47	15.20	60.70	12 55 25	3152.2	-10.07	135.81
110.00	19 44 56	2189.00	-32.97	35.55	20.08	99.60	20 21 25	1589.0	-31.29	26.72
110.00	12 29 57	3635.98	-3.32	131.87	13.41	55.96	13 30 33	3036.0	-7.76	125.61

DIFFERENTIAL CORRECTIONS
TDE .1652 TRA .2768 TC3-2.7833 BAU .4288
RDE .2506 RRA -.2554 RC3 1.4456 FAU .60001
FDE-1.8752 FRA13.5456 FC-50.7965 BSP 6583
BDE .3002 BRA .3766 BC3 3.1364 FSP 12554

MID-COURSE EXECUTION ACCURACY
SGT 1881.7 SGR 1139.5 SG3 3611.6
RRT -.8279 RRF -.9317 RTF .8994
SGB 2199.8 R23 .1995 R13 -.9383
SG1 2125.8 SG2 565.8 THA 151.14

ORBIT DETERMINATION ACCURACY
ST 340.7 SR 473.5 SS 2095.1
CRT .6687 CRS .6629 CST -.1058
LSA 2119.3 MSA 487.1 SSA 30.3
EL1 539.3 EL2 222.4 ALF 58.31

LAUNCH DATE OCT 30 1964 FLIGHT TIME 310.00 ARRIVAL DATE SEP 5 1965

HELIOCENTRIC CONIC DISTANCE 704.455 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.775 GAL -3.47 AZL 88.71 HCA 218.40 SMA 186.20 ECC .21080 INC 1.2926 V1 29.997
RP 222.47 LAP -.80 LOP 255.00 VP 21.917 GAP -4.71 AZP 91.01 TAL 339.81 TAP 198.22 RCA 146.95 APO 225.45 V2 24.716
RC 262.633 GL 13.33 GP 5.07 ZAL 118.59 ZAP 98.80 ETS 178.16 ZAE 133.48 ETE 172.75 ZAC 91.35 ETC 256.80 CLP 98.84

PLANETOCENTRIC CONIC

C3 10.252 VHL 3.202 DLA 21.62 RAL 163.09 RAD 6567.4 VEL 11.473 PTH 1.99 VHP 2.818 DPA 8.45 RAP 177.09 ECC 1.1687

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 28 58	2815.79	-28.24	82.98	21.01	92.23	17 15 54	2215.8	-27.63	74.36
90.00	10 48 50	3962.21	-7.56	158.64	16.19	62.63	11 54 53	3362.2	-11.17	151.82
100.00	18 5 21	2505.04	-29.62	60.03	20.92	94.26	18 47 6	1905.0	-28.71	51.34
100.00	11 55 9	3748.20	-6.35	142.25	15.53	60.73	12 57 37	3148.2	-10.20	135.58
110.00	19 45 4	2193.08	-33.01	35.86	20.44	99.42	20 21 37	1593.1	-31.36	27.02
110.00	12 31 56	3632.92	-3.43	131.71	13.73	55.97	13 32 28	3032.9	-7.88	125.44

DIFFERENTIAL CORRECTIONS
TDE .1519 TRA .4009 TC3-3.2102 BAU .4822
RDE .2557 RRA -.2503 RC3 1.4387 FAU .60618
FDE-1.9191 FRA13.6545 FC-51.1884 BSP 7682
BDE .2974 BRA .4726 BC3 3.5178 FSP 12574

MID-COURSE EXECUTION ACCURACY
SGT 2212.6 SGR 1135.9 SG3 3642.3
RRT -.8521 RRF -.9279 RTF .9299
SGB 2487.1 R23 .1616 R13 -.9517
SG1 2427.3 SG2 541.9 THA 155.05

ORBIT DETERMINATION ACCURACY
ST 362.3 SR 480.6 SS 2107.6
CRT .5122 CRS .6581 CST -.3038
LSA 2134.4 MSA 497.8 SSA 29.9
EL1 532.2 EL2 281.0 ALF 59.60

LAUNCH DATE OCT 30 1964 FLIGHT TIME 312.00 ARRIVAL DATE SEP 7 1965

HELIOCENTRIC CONIC DISTANCE 708.470 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.773 GAL -3.49 AZL 88.69 HCA 219.50 SMA 186.15 ECC .21071 INC 1.3124 V1 29.997
RP 222.08 LAP -.83 LOP 256.10 VP 21.960 GAP -4.94 AZP 91.01 TAL 339.69 TAP 199.19 RCA 146.93 APO 225.38 V2 24.758
RC 264.145 GL 13.51 GP 4.97 ZAL 118.77 ZAP 96.78 ETS 178.38 ZAE 131.26 ETE 173.31 ZAC 91.06 ETC 256.89 CLP 96.80

PLANETOCENTRIC CONIC

C3 10.284 VHL 3.207 DLA 21.71 RAL 163.37 RAD 6567.4 VEL 11.475 PTH 1.99 VHP 2.811 DPA 8.75 RAP 176.19 ECC 1.1692

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 28 57	2820.51	-28.25	83.32	21.37	92.06	17 15 58	2220.5	-27.66	74.70
90.00	10 51 5	3958.75	-7.67	158.44	16.54	62.66	11 57 4	3358.7	-11.28	151.62
100.00	18 5 28	2509.30	-29.64	60.34	21.28	94.10	18 47 18	1909.3	-28.75	51.65
100.00	11 57 15	3745.18	-6.45	142.08	15.88	60.75	12 59 41	3145.2	-10.30	135.41
110.00	19 45 26	2196.58	-33.05	36.12	20.81	99.27	20 22 2	1596.6	-31.42	27.28
110.00	12 33 47	3630.67	-3.52	131.59	14.07	55.98	13 34 18	3030.7	-7.96	125.32

DIFFERENTIAL CORRECTIONS
TDE .1372 TRA .5273 TC3-3.6451 BAU .5382
RDE .2603 RRA -.2455 RC3 1.4269 FAU .60968
FDE-1.9455 FRA13.7645 FC-51.3248 BSP 8841
BDE .2943 BRA .5816 BC3 3.9145 FSP 12615

MID-COURSE EXECUTION ACCURACY
SGT 2560.1 SGR 1129.9 SG3 3662.0
RRT -.8657 RRF -.9238 RTF .9488
SGB 2798.4 R23 .1316 R13 -.9616
SG1 2748.3 SG2 526.8 THA 158.25

ORBIT DETERMINATION ACCURACY
ST 397.0 SR 486.9 SS 2118.8
CRT .3570 CRS .6516 CST -.4715
LSA 2150.8 MSA 507.4 SSA 29.6
EL1 526.3 EL2 343.1 ALF 59.97

LAUNCH DATE OCT 30 1964 FLIGHT TIME 314.00 ARRIVAL DATE SEP 9 1965

HELIOCENTRIC CONIC DISTANCE 712.493 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.770 GAL -3.52 AZL 88.67 HCA 220.60 SMA 186.12 ECC .21067 INC 1.3312 V1 29.997
RP 221.70 LAP -.87 LOP 257.20 VP 22.004 GAP -5.17 AZP 91.01 TAL 339.55 TAP 200.16 RCA 146.91 APO 225.32 V2 24.799
RC 265.639 GL 13.68 GP 4.88 ZAL 118.97 ZAP 94.75 ETS 178.59 ZAE 129.02 ETE 173.82 ZAC 90.76 ETC 256.98 CLP 94.76

PLANETOCENTRIC CONIC

C3 10.322 VHL 3.213 DLA 21.78 RAL 163.66 RAD 6567.4 VEL 11.477 PTH 1.99 VHP 2.807 DPA 9.05 RAP 175.29 ECC 1.1699

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 29 16	2824.39	-28.26	83.61	21.74	91.92	17 16 20	2224.4	-27.69	74.99
90.00	10 53 8	3956.34	-7.75	158.31	16.91	62.68	11 59 5	3356.3	-11.35	151.48
100.00	18 5 53	2512.84	-29.65	60.60	21.66	93.96	18 47 46	1912.8	-28.79	51.91
100.00	11 59 12	3743.13	-6.51	141.97	16.24	60.76	13 1 35	3143.1	-10.36	135.29
110.00	19 46 2	2199.52	-33.08	36.35	21.20	99.14	20 22 42	1599.5	-31.47	27.49
110.00	12 35 33	3629.21	-3.57	131.52	14.43	55.98	13 36 2	3029.2	-8.02	125.24

DIFFERENTIAL CORRECTIONS
TDE .1216 TRA .6559 TC3-4.0834 BAU .5963
RDE .2650 RRA -.2403 RC3 1.4130 FAU .61181
FDE-1.9735 FRA13.8448 FC-51.3149 BSP 10038
BDE .2916 BRA .6985 BC3 4.3210 FSP 12624

MID-COURSE EXECUTION ACCURACY
SGT 2918.6 SGR 1122.8 SG3 3672.3
RRT -.8731 RRF -.9193 RTF .9612
SGB 3127.1 R23 .1080 R13 -.9692
SG1 3083.9 SG2 518.1 THA 160.87

ORBIT DETERMINATION ACCURACY
ST 442.7 SR 493.2 SS 2128.1
CRT .2200 CRS .6457 CST -.5994
LSA 2168.2 MSA 516.1 SSA 29.3
EL1 522.7 EL2 407.6 ALF 58.10

LAUNCH DATE OCT 30 1964 FLIGHT TIME 316.00 ARRIVAL DATE SEP 11 1965

HELIOCENTRIC CONIC DISTANCE 716.523 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.768 GAL -3.54 AZL 88.65 HCA 221.71 SMA 186.08 ECC .21066 INC 1.3493 V1 29.997
RP 221.32 LAP -.90 LOP 258.31 VP 22.048 GAP -5.39 AZP 91.01 TAL 339.40 TAP 201.11 RCA 146.88 APO 225.28 V2 24.841
RC 267.114 GL 13.84 GP 4.78 ZAL 119.20 ZAP 92.72 ETS 178.79 ZAE 126.79 ETE 174.29 ZAC 90.48 ETC 257.08 CLP 92.73

PLANETOCENTRIC CONIC

C3 10.366 VHL 3.220 DLA 21.83 RAL 163.98 RAD 6567.4 VEL 11.478 PTH 2.00 VHP 2.807 DPA 9.34 RAP 174.40 ECC 1.1706

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 29 54	2827.46	-28.26	83.83	22.14	91.81	17 17 2	2227.5	-27.71	75.21
90.00	10 55 0	3954.99	-7.79	158.23	17.30	62.69	12 0 55	3355.0	-11.39	151.40
100.00	18 6 36	2515.65	-29.67	60.81	22.06	93.85	18 48 32	1915.7	-28.82	52.11
100.00	12 0 59	3742.02	-6.55	141.91	16.63	60.77	13 3 21	3142.0	-10.40	135.23
110.00	19 46 53	2201.93	-33.11	36.53	21.60	99.03	20 23 35	1601.9	-31.51	27.67
110.00	12 37 12	3628.52	-3.60	131.48	14.80	55.98	13 37 40	3028.5	-8.04	125.21

DIFFERENTIAL CORRECTIONS
TDE .1053 TRA .7873 TC3-4.5205 BAU .6556
RDE .2696 RRA -.2352 RC3 1.3958 FAU .61189
FDE-1.9947 FRA13.9146 FC-51.1033 BSP 11282
BDE .2895 BRA .8217 BC3 4.7311 FSP 12619

MID-COURSE EXECUTION ACCURACY
SGT 3284.3 SGR 1114.1 SG3 3672.8
RRT -.8764 RRF -.9144 RTF .9697
SGB 3468.1 R23 .0897 R13 -.9748
SG1 3429.8 SG2 513.8 THA 163.05

ORBIT DETERMINATION ACCURACY
ST 497.8 SR 499.2 SS 2136.5
CRT .1060 CRS .6394 CST -.6942
LSA 2187.7 MSA 524.3 SSA 29.1
EL1 524.3 EL2 471.3 ALF 45.79

LAUNCH DATE OCT 30 1964 FLIGHT TIME 318.00 ARRIVAL DATE SEP 13 1965

HELIOCENTRIC CONIC DISTANCE 720.560 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.767 GAL -3.57 AZL 88.63 HCA 222.82 SMA 186.06 ECC .21068 INC 1.3667 V1 29.997
RP 220.94 LAP -.93 LOP 259.42 VP 22.092 GAP -5.61 AZP 91.00 TAL 339.24 TAP 202.05 RCA 146.86 APO 225.25 V2 24.883
RC 268.570 GL 13.99 GP 4.68 ZAL 119.45 ZAP 90.70 ETS 178.99 ZAE 124.55 ETE 174.73 ZAC 90.19 ETC 257.17 CLP 90.71

PLANETOCENTRIC CONIC

C3 10.416 VHL 3.227 DLA 21.86 RAL 164.31 RAD 6567.4 VEL 11.481 PTH 2.00 VHP 2.810 DPA 9.63 RAP 173.51 ECC 1.1714

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 30 51	2829.72	-28.27	84.00	22.55	91.73	17 18 1	2229.7	-27.73	75.37
90.00	10 56 40	3954.67	-7.80	158.21	17.70	62.69	12 2 35	3354.7	-11.40	151.38
100.00	18 7 36	2517.77	-29.68	60.97	22.48	93.77	18 49 34	1917.8	-28.84	52.26
100.00	12 2 37	3741.85	-6.56	141.90	17.02	60.77	13 4 59	3141.9	-10.40	135.22
110.00	19 47 58	2203.80	-33.13	36.67	22.03	98.95	20 24 41	1603.8	-31.54	27.81
110.00	12 38 45	3628.59	-3.60	131.48	15.19	55.98	13 39 13	3028.6	-8.04	125.21

DIFFERENTIAL CORRECTIONS
TDE .0880 TRA .9211 TC3-4.9553 BAU .7162
RDE .2744 RRA -.2297 RC3 1.3764 FAU .61051
FDE-2.0204 FRA13.9530 FC-50.7426 BSP 12536
BDE .2881 BRA .9494 BC3 5.1429 FSP 12584

MID-COURSE EXECUTION ACCURACY
SGT 3655.1 SGR 1104.4 SG3 3663.6
RRT -.8769 RRF -.9091 RTF .9758
SGB 3818.3 R23 .0755 R13 -.9792
SG1 3783.7 SG2 512.8 THA 164.88

ORBIT DETERMINATION ACCURACY
ST 559.5 SR 505.3 SS 2143.4
CRT .0137 CRS .6341 CST -.7625
LSA 2208.8 MSA 531.7 SSA 28.8
EL1 559.7 EL2 505.1 ALF 3.83

LAUNCH DATE OCT 30 1964 FLIGHT TIME 320.00 ARRIVAL DATE SEP 15 1965

HELIOCENTRIC CONIC DISTANCE 724.606 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.766 GAL -3.60 AZL 88.62 HCA 223.93 SMA 186.03 ECC .21074 INC 1.3833 V1 29.997
RP 220.56 LAP -.96 LOP 260.53 VP 22.137 GAP -5.83 AZP 91.00 TAL 339.06 TAP 202.99 RCA 146.83 APO 225.24 V2 24.924
RC 270.009 GL 14.12 GP 4.58 ZAL 119.71 ZAP 88.70 ETS 179.18 ZAE 122.33 ETE 175.13 ZAC 89.91 ETC 257.27 CLP 88.70

PLANETOCENTRIC CONIC

C3 10.472 VHL 3.236 DLA 21.87 RAL 164.65 RAD 6567.4 VEL 11.483 PTH 2.00 VHP 2.817 DPA 9.91 RAP 172.64 ECC 1.1724

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 32 8	2831.20	-28.27	84.10	22.99	91.67	17 19 19	2231.2	-27.74	75.48
90.00	10 58 10	3955.38	-7.78	158.25	18.11	62.69	12 4 5	3355.4	-11.38	151.42
100.00	18 8 53	2519.21	-29.68	61.07	22.91	93.71	18 50 53	1919.2	-28.85	52.37
100.00	12 4 5	3742.60	-6.53	141.94	17.44	60.77	13 6 28	3142.6	-10.38	135.26
110.00	19 49 16	2205.16	-33.14	36.78	22.46	98.89	20 26 1	1605.2	-31.56	27.91
110.00	12 40 12	3629.41	-3.57	131.53	15.60	55.98	13 40 41	3029.4	-8.01	125.26

DIFFERENTIAL CORRECTIONS
TDE .0699 TRA 1.0572 TC3-5.3857 BAU .7775
RDE .2792 RRA -.2239 RC3 1.3550 FAU .60770
FDE-2.0487 FRA13.9639 FC-50.2369 BSP 13807
BDE .2879 BRA 1.0807 BC3 5.5536 FSP 12516

MID-COURSE EXECUTION ACCURACY
SGT 4029.2 SGR 1093.6 SG3 3645.2
RRT -.8754 RRF -.9035 RTF .9802
SGB 4174.9 R23 .0646 R13 -.9825
SG1 4143.2 SG2 514.1 THA 166.42

ORBIT DETERMINATION ACCURACY
ST 626.4 SR 511.4 SS 2148.9
CRT -.0596 CRS .6296 CST -.8115
LSA 2231.7 MSA 538.8 SSA 28.6
EL1 628.6 EL2 508.7 ALF 171.87

LAUNCH DATE OCT 30 1964 FLIGHT TIME 322.00 ARRIVAL DATE SEP 17 1965

HELIOCENTRIC CONIC DISTANCE 728.658 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.764 GAL -3.64 AZL 88.60 HCA 225.05 SMA 186.01 ECC .21083 INC 1.3994 V1 29.997
RP 220.18 LAP -.99 LOP 261.64 VP 22.182 GAP -6.04 AZP 90.99 TAL 338.86 TAP 203.91 RCA 146.80 APO 225.23 V2 24.965
RC 271.430 GL 14.24 GP 4.48 ZAL 120.01 ZAP 86.71 ETS 179.35 ZAE 120.12 ETE 175.51 ZAC 89.64 ETC 257.37 CLP 86.70

PLANETOCENTRIC CONIC

C3 10.535 VHL 3.246 DLA 21.85 RAL 165.01 RAD 6567.4 VEL 11.486 PTH 2.00 VHP 2.826 DPA 10.18 RAP 171.79 ECC 1.1734

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 33 43	2831.91	-28.27	84.15	23.44	91.65	17 20 55	2231.9	-27.75	75.53
90.00	10 59 28	3957.09	-7.72	158.35	18.54	62.67	12 5 25	3357.1	-11.32	151.52
100.00	18 10 27	2519.97	-29.69	61.13	23.36	93.68	18 52 27	1920.0	-28.86	52.42
100.00	12 5 25	3744.26	-6.48	142.03	17.87	60.75	13 7 49	3144.3	-10.33	135.36
110.00	19 50 48	2206.02	-33.15	36.84	22.92	98.85	20 27 34	1606.0	-31.57	27.97
110.00	12 41 33	3630.97	-3.51	131.61	16.03	55.98	13 42 4	3031.0	-7.95	125.34

DIFFERENTIAL CORRECTIONS
TDE .0504 TRA 1.1955 TC3-5.8080 BAU .8393
RDE .2843 RRA -.2178 RC3 1.3319 FAU .60358
FDE-2.0828 FRA13.9494 FC-49.5985 BSP 15085
BDE .2887 BRA 1.2151 BC3 5.9587 FSP 12413

MID-COURSE EXECUTION ACCURACY
SGT 4403.7 SGR 1082.1 SG3 3618.6
RRT -.8724 RRF -.8975 RTF .9835
SGB 4534.7 R23 .0563 R13 -.9852
SG1 4505.2 SG2 517.1 THA 167.74

ORBIT DETERMINATION ACCURACY
ST 697.1 SR 517.6 SS 2153.9
CRT -.1194 CRS .6263 CST -.8475
LSA 2257.3 MSA 545.2 SSA 28.2
EL1 703.0 EL2 509.6 ALF 169.22

LAUNCH DATE OCT 30 1964 FLIGHT TIME 324.00 ARRIVAL DATE SEP 19 1965

HELIOCENTRIC CONIC DISTANCE 732.718 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.764 GAL -3.67 AZL 88.58 HCA 226.17 SMA 186.00 ECC .21096 INC 1.4150 V1 29.997
RP 219.81 LAP -1.02 LOP 262.76 VP 22.227 GAP -6.25 AZP 90.98 TAL 338.66 TAP 204.82 RCA 146.76 APO 225.24 V2 25.006
RC 272.833 GL 14.36 GP 4.38 ZAL 120.32 ZAP 84.74 ETS 179.53 ZAE 117.92 ETE 175.86 ZAC 89.37 ETC 257.46 CLP 84.72

PLANETOCENTRIC CONIC

C3 10.605 VHL 3.257 DLA 21.83 RAL 165.39 RAD 6567.4 VEL 11.489 PTH 2.00 VHP 2.840 DPA 10.44 RAP 170.96 ECC 1.1745

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 35 36	2831.87	-28.27	84.15	23.91	91.65	17 22 48	2231.9	-27.75	75.53
90.00	11 0 36	3959.80	-7.64	158.50	18.99	62.65	12 6 35	3359.8	-11.24	151.68
100.00	18 12 18	2520.09	-29.69	61.14	23.84	93.68	18 54 18	1920.1	-28.86	52.43
100.00	12 6 35	3746.81	-6.39	142.17	18.32	60.74	13 9 2	3146.8	-10.24	135.50
110.00	19 52 34	2206.40	-33.16	36.87	23.39	98.84	20 29 20	1606.4	-31.58	28.00
110.00	12 42 49	3633.27	-3.42	131.73	16.48	55.97	13 43 22	3033.3	-7.86	125.46

DIFFERENTIAL CORRECTIONS
TDE .0302 TRA 1.3360 TC3-6.2204 BAU .9012
RDE .2892 RRA -.2115 RC3 1.3064 FAU .59777
FDE-2.1119 FRA13.9111 FC-48.7990 BSP 16365
BDE .2908 BRA 1.3526 BC3 6.3561 FSP 12287

MID-COURSE EXECUTION ACCURACY
SGT 4777.8 SGR 1069.4 SG3 3582.3
RRT -.8681 RRF -.8909 RTF .9860
SGB 4896.0 R23 .0498 R13 -.9873
SG1 4868.2 SG2 521.1 THA 168.88

ORBIT DETERMINATION ACCURACY
ST 771.1 SR 523.5 SS 2156.7
CRT -.1671 CRS .6229 CST -.8743
LSA 2283.7 MSA 551.4 SSA 27.9
EL1 779.9 EL2 510.3 ALF 168.59

LAUNCH DATE OCT 30 1964 FLIGHT TIME 326.00 ARRIVAL DATE SEP 21 1965

HELIOCENTRIC CONIC DISTANCE 736.785 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.763 GAL -3.71 AZL 88.57 HCA 227.29 SMA 185.99 ECC .21113 INC 1.4300 V1 29.997
RP 219.44 LAP -1.05 LOP 263.89 VP 22.272 GAP -6.46 AZP 90.97 TAL 338.44 TAP 205.73 RCA 146.72 APO 225.26 V2 25.047
RC 274.220 GL 14.46 GP 4.29 ZAL 120.66 ZAP 82.79 ETS 179.69 ZAE 115.74 ETE 176.19 ZAC 89.11 ETC 257.56 CLP 82.77

PLANETOCENTRIC CONIC

C3 10.681 VHL 3.268 DLA 21.78 RAL 165.79 RAD 6567.4 VEL 11.492 PTH 2.00 VHP 2.856 DPA 10.69 RAP 170.15 ECC 1.1758

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 37 48	2831.11	-28.27	84.10	24.40	91.67	17 24 59	2231.1	-27.74	75.47
90.00	11 1 33	3963.48	-7.52	158.71	19.46	62.62	12 7 37	3363.5	-11.13	151.89
100.00	18 14 25	2519.57	-29.68	61.10	24.32	93.70	18 56 24	1919.6	-28.85	52.40
100.00	12 7 37	3750.24	-6.28	142.36	18.78	60.71	13 10 8	3150.2	-10.13	135.70
110.00	19 54 33	2206.30	-33.15	36.86	23.88	98.84	20 31 19	1606.3	-31.58	27.99
110.00	12 43 59	3636.28	-3.31	131.89	16.94	55.96	13 44 35	3036.3	-7.75	125.62

DIFFERENTIAL CORRECTIONS
TDE .0081 TRA 1.4782 TC3-6.6221 BAU .9631
RDE .2944 RRA -.2049 RC3 1.2797 FAU .59079
FDE-2.1489 FRA13.8459 FC-47.8847 BSP 17638
BDE .2945 BRA 1.4924 BC3 6.7447 FSP 12130

MID-COURSE EXECUTION ACCURACY
SGT 5150.2 SGR 1056.3 SG3 3538.3
RRT -.8627 RRF -.8840 RTF .9880
SGB 5257.4 R23 .0449 R13 -.9889
SG1 5231.0 SG2 525.9 THA 169.86

ORBIT DETERMINATION ACCURACY
ST 847.3 SR 529.6 SS 2159.1
CRT -.2075 CRS .6211 CST -.8947
LSA 2312.9 MSA 556.9 SSA 27.5
EL1 858.5 EL2 511.4 ALF 168.47

LAUNCH DATE OCT 30 1964 FLIGHT TIME 328.00 ARRIVAL DATE SEP 23 1965

HELIOCENTRIC CONIC DISTANCE 740.859 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.763 GAL -3.75 AZL 88.56 HCA 228.42 SMA 185.99 ECC .21133 INC 1.4446 V1 29.997
RP 219.07 LAP -1.08 LOP 265.02 VP 22.317 GAP -6.66 AZP 90.96 TAL 338.20 TAP 206.62 RCA 146.68 APO 225.29 V2 25.088
RC 275.589 GL 14.55 GP 4.19 ZAL 121.01 ZAP 80.87 ETS 179.84 ZAE 113.59 ETE 176.50 ZAC 88.85 ETC 257.66 CLP 80.85

PLANETOCENTRIC CONIC

C3 10.765 VHL 3.281 DLA 21.71 RAL 166.20 RAD 6567.4 VEL 11.496 PTH 2.00 VHP 2.875 DPA 10.92 RAP 169.37 ECC 1.1772

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 40 17	2829.64	-28.27	83.99	24.91	91.73	17 27 26	2229.6	-27.73	75.36
90.00	11 2 21	3968.11	-7.38	158.97	19.94	62.58	12 8 29	3368.1	-10.99	152.16
100.00	18 16 47	2518.45	-29.68	61.02	24.83	93.74	18 58 46	1918.4	-28.84	52.31
100.00	12 8 31	3754.54	-6.13	142.60	19.26	60.69	13 11 6	3154.5	-10.00	135.94
110.00	19 56 44	2205.75	-33.15	36.82	24.38	98.87	20 33 30	1605.7	-31.57	27.95
110.00	12 45 4	3640.00	-3.16	132.08	17.42	55.95	13 45 44	3040.0	-7.61	125.82

DIFFERENTIAL CORRECTIONS
TDE -.0154 TRA 1.6226 TC3-7.0098 BAU 1.0247
RDE .2996 RRA -.1983 RC3 1.2513 FAU .58245
FDE-2.1839 FRA13.7623 FC-46.8433 BSP 18908
BDE .3000 BRA 1.6347 BC3 7.1206 FSP 11956

MID-COURSE EXECUTION ACCURACY
SGT 5519.1 SGR 1042.5 SG3 3486.7
RRT -.8564 RRF -.8765 RTF .9895
SGB 5616.7 R23 .0410 R13 -.9903
SG1 5591.5 SG2 531.3 THA 170.73

ORBIT DETERMINATION ACCURACY
ST 925.7 SR 535.6 SS 2160.5
CRT -.2415 CRS .6196 CST -.9106
LSA 2344.1 MSA 561.9 SSA 27.1
EL1 938.7 EL2 512.5 ALF 168.61

LAUNCH DATE OCT 30 1964 FLIGHT TIME 330.00 ARRIVAL DATE SEP 25 1965

HELIOCENTRIC CONIC DISTANCE 744.940 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.763 GAL -3.80 AZL 88.54 HCA 229.55 SMA 185.99 ECC .21156 INC 1.4586 V1 29.997
RP 218.70 LAP -1.11 LOP 266.15 VP 22.363 GAP -6.86 AZP 90.95 TAL 337.95 TAP 207.50 RCA 146.64 APO 225.34 V2 25.128
RC 276.940 GL 14.63 GP 4.09 ZAL 121.39 ZAP 78.98 ETS 179.99 ZAE 111.46 ETE 176.78 ZAC 88.60 ETC 257.75 CLP 78.95

PLANETOCENTRIC CONIC

C3 10.855 VHL 3.295 DLA 21.63 RAL 166.62 RAD 6567.4 VEL 11.500 PTH 2.00 VHP 2.898 DPA 11.14 RAP 168.62 ECC 1.1786

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 43 3	2827.50	-28.26	83.83	25.44	91.81	17 30 10	2227.5	-27.71	75.21
90.00	11 2 59	3973.67	-7.20	159.29	20.44	62.54	12 9 13	3373.7	-10.83	152.48
100.00	18 19 26	2516.74	-29.67	60.89	25.36	93.81	19 1 22	1916.7	-28.83	52.19
100.00	12 9 17	3759.67	-5.96	142.89	19.76	60.65	13 11 57	3159.7	-9.83	136.23
110.00	19 59 9	2204.75	-33.14	36.74	24.91	98.91	20 35 54	1604.8	-31.55	27.88
110.00	12 46 3	3644.42	-3.00	132.31	17.92	55.93	13 46 48	3044.4	-7.45	126.05

DIFFERENTIAL CORRECTIONS
TDE -.0409 TRA 1.7682 TC3-7.3849 BAU 1.0863
RDE .3050 RRA -.1913 RC3 1.2223 FAU .57322
FDE-2.2244 FRA13.6510 FC-45.7162 BSP 20146
BDE .3077 BRA 1.7785 BC3 7.4854 FSP 11745

MID-COURSE EXECUTION ACCURACY
SGT 5884.5 SGR 1028.6 SG3 3428.4
RRT -.8493 RRF -.8686 RTF .9907
SGB 5973.7 R23 .0380 R13 -.9913
SG1 5949.5 SG2 537.0 THA 171.49

ORBIT DETERMINATION ACCURACY
ST 1005.5 SR 541.6 SS 2160.9
CRT -.2713 CRS .6195 CST -.9230
LSA 2377.4 MSA 566.5 SSA 26.7
EL1 1020.0 EL2 513.9 ALF 168.81

LAUNCH DATE OCT 30 1964 FLIGHT TIME 332.00 ARRIVAL DATE SEP 27 1965

HELIOCENTRIC CONIC DISTANCE 749.027 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.763 GAL -3.85 AZL 88.53 HCA 230.68 SMA 185.99 ECC .21183 INC 1.4723 V1 29.997
RP 218.34 LAP -1.14 LOP 267.28 VP 22.408 GAP -7.05 AZP 90.93 TAL 337.69 TAP 208.38 RCA 146.59 APO 225.39 V2 25.168
RC 278.273 GL 14.70 GP 3.99 ZAL 121.79 ZAP 77.12 ETS 180.13 ZAE 109.36 ETE 177.05 ZAC 88.37 ETC 257.84 CLP 77.09

PLANETOCENTRIC CONIC

C3 10.953 VHL 3.310 DLA 21.53 RAL 167.07 RAD 6567.4 VEL 11.504 PTH 2.00 VHP 2.924 DPA 11.35 RAP 167.91 ECC 1.1803

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 46 5	2824.72	-28.26	83.63	25.99	91.91	17 33 10	2224.7	-27.69	75.01
90.00	11 3 28	3980.14	-7.00	159.66	20.95	62.49	12 9 48	3380.1	-10.63	152.86
100.00	18 22 19	2514.46	-29.66	60.72	25.90	93.90	19 4 13	1914.5	-28.80	52.02
100.00	12 9 56	3765.63	-5.76	143.22	20.28	60.62	13 12 41	3165.6	-9.64	136.57
110.00	20 1 45	2203.33	-33.12	36.64	25.45	98.97	20 38 29	1603.3	-31.53	27.77
110.00	12 46 58	3649.53	-2.80	132.58	18.44	55.92	13 47 48	3049.5	-7.25	126.32

DIFFERENTIAL CORRECTIONS
TDE -.0679 TRA 1.9156 TC3-7.7430 BAU 1.1472
RDE .3103 RRA -.1842 RC3 1.1919 FAU .56279
FDE-2.2612 FRA13.5246 FC-44.4819 BSP 21381
BDE .3176 BRA 1.9244 BC3 7.8342 FSP 11523

MID-COURSE EXECUTION ACCURACY
SGT 6244.3 SGR 1014.2 SG3 3363.8
RRT -.8415 RRF -.8601 RTF .9917
SGB 6326.1 R23 .0356 R13 -.9922
SG1 6302.7 SG2 542.9 THA 172.16

ORBIT DETERMINATION ACCURACY
ST 1086.9 SR 547.5 SS 2160.1
CRT -.2971 CRS .6196 CST -.9330
LSA 2412.7 MSA 570.3 SSA 26.3
EL1 1102.4 EL2 515.3 ALF 169.07

LAUNCH DATE OCT 30 1964 FLIGHT TIME 334.00 ARRIVAL DATE SEP 29 1965

HELIOCENTRIC CONIC DISTANCE 753.118 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.764 GAL -3.90 AZL 88.51 HCA 231.82 SMA 186.00 ECC .21213 INC 1.4855 V1 29.997
RP 217.98 LAP -1.17 LOP 268.42 VP 22.454 GAP -7.25 AZP 90.92 TAL 337.41 TAP 209.24 RCA 146.54 APO 225.45 V2 25.208
RC 279.589 GL 14.76 GP 3.90 ZAL 122.22 ZAP 75.30 ETS 180.26 ZAE 107.29 ETE 177.30 ZAC 88.14 ETC 257.93 CLP 75.26

PLANETOCENTRIC CONIC

C3 11.060 VHL 3.326 DLA 21.41 RAL 167.52 RAD 6567.4 VEL 11.509 PTH 2.00 VHP 2.952 DPA 11.54 RAP 167.23 ECC 1.1820

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 49 25	2821.28	-28.25	83.38	26.55	92.03	17 36 26	2221.3	-27.67	74.76
90.00	11 3 48	3987.54	-6.77	160.08	21.48	62.44	12 10 16	3387.5	-10.41	153.29
100.00	18 25 27	2511.61	-29.65	60.51	26.47	94.01	19 7 19	1911.6	-28.78	51.82
100.00	12 10 27	3772.45	-5.54	143.60	20.81	60.58	13 13 19	3172.4	-9.42	136.96
110.00	20 4 35	2201.48	-33.10	36.49	26.01	99.05	20 41 16	1601.5	-31.50	27.64
110.00	12 47 48	3655.34	-2.58	132.88	18.98	55.90	13 48 44	3055.3	-7.04	126.63

DIFFERENTIAL CORRECTIONS
TDE -.0878 TRA 2.0755 TC3-8.0537 BAU 1.2029
RDE .3139 RRA -.1789 RC3 1.1537 FAU .54708
FDE-2.2093 FRA13.4645 FC-42.8256 BSP 22832
BDE .3259 BRA 2.0832 BC3 8.1359 FSP 11466

MID-COURSE EXECUTION ACCURACY
SGT 6593.1 SGR 995.4 SG3 3286.2
RRT -.8325 RRF -.8496 RTF .9924
SGB 6667.8 R23 .0318 R13 -.9928
SG1 6645.3 SG2 547.1 THA 172.79

ORBIT DETERMINATION ACCURACY
ST 1173.2 SR 550.3 SS 2150.8
CRT -.3097 CRS .6079 CST -.9428
LSA 2444.6 MSA 573.2 SSA 26.2
EL1 1188.4 EL2 516.5 ALF 169.79

LAUNCH DATE OCT 30 1964 FLIGHT TIME 336.00 ARRIVAL DATE OCT 1 1965

HELIOCENTRIC CONIC DISTANCE 757.220 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.764 GAL -3.95 AZL 88.50 HCA 232.97 SMA 186.01 ECC .21247 INC 1.4985 V1 29.997
RP 217.62 LAP -1.20 LOP 269.56 VP 22.499 GAP -7.44 AZP 90.90 TAL 337.12 TAP 210.09 RCA 146.49 APO 225.53 V2 25.248
RC 280.887 GL 14.82 GP 3.81 ZAL 122.66 ZAP 73.51 ETS 180.38 ZAE 105.25 ETE 177.53 ZAC 87.92 ETC 258.01 CLP 73.47

PLANETOCENTRIC CONIC

C3 11.173 VHL 3.343 DLA 21.27 RAL 168.00 RAD 6567.4 VEL 11.514 PTH 2.01 VHP 2.984 DPA 11.71 RAP 166.58 ECC 1.1839

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 52 58	2817.32	-28.24	83.09	27.14	92.18	17 39 55	2217.3	-27.64	74.47
90.00	11 4 0	3995.72	-6.51	160.54	22.03	62.38	12 10 36	3395.7	-10.16	153.76
100.00	18 28 48	2508.29	-29.63	60.27	27.05	94.13	19 10 36	1908.3	-28.74	51.58
100.00	12 10 51	3779.99	-5.28	144.01	21.36	60.54	13 13 51	3180.0	-9.17	137.38
110.00	20 7 35	2199.27	-33.08	36.33	26.58	99.15	20 44 14	1599.3	-31.46	27.47
110.00	12 48 34	3661.77	-2.33	133.22	19.53	55.89	13 49 36	3061.8	-6.79	126.97

DIFFERENTIAL CORRECTIONS
TDE -.1221 TRA 2.2222 TC3-8.3867 BAU 1.2640
RDE .3203 RRA -.1708 RC3 1.1254 FAU .53690
FDE-2.2905 FRA13.2619 FC-41.5997 BSP 23923
BDE .3428 BRA 2.2288 BC3 8.4618 FSP 11121

MID-COURSE EXECUTION ACCURACY
SGT 6941.7 SGR 982.9 SG3 3214.2
RRT -.8233 RRF -.8408 RTF .9931
SGB 7011.0 R23 .0315 R13 -.9935
SG1 6989.0 SG2 554.1 THA 173.31

ORBIT DETERMINATION ACCURACY
ST 1255.3 SR 557.4 SS 2151.8
CRT -.3348 CRS .6155 CST -.9483
LSA 2486.6 MSA 577.1 SSA 25.6
EL1 1271.9 EL2 518.4 ALF 169.84

LAUNCH DATE OCT 30 1964 FLIGHT TIME 338.00 ARRIVAL DATE OCT 3 1965

HELIOCENTRIC CONIC DISTANCE 761.327 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.765 GAL -4.01 AZL 88.49 HCA 234.11 SMA 186.03 ECC .21284 INC 1.5111 V1 29.997
RP 217.27 LAP -1.22 LOP 270.71 VP 22.545 GAP -7.62 AZP 90.89 TAL 336.82 TAP 210.93 RCA 146.43 APO 225.62 V2 25.287
RC 282.167 GL 14.86 GP 3.71 ZAL 123.12 ZAP 71.76 ETS 180.50 ZAE 103.25 ETE 177.75 ZAC 87.71 ETC 258.09 CLP 71.72

PLANETOCENTRIC CONIC

C3 11.296 VHL 3.361 DLA 21.12 RAL 168.48 RAD 6567.4 VEL 11.519 PTH 2.01 VHP 3.018 DPA 11.87 RAP 165.98 ECC 1.1859

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 56 46	2812.80	-28.23	82.76	27.74	92.34	17 43 39	2212.8	-27.60	74.15
90.00	11 4 5	4004.75	-6.22	161.05	22.60	62.32	12 10 49	3404.7	-9.88	154.28
100.00	18 32 23	2504.48	-29.61	59.99	27.65	94.28	19 14 7	1904.5	-28.70	51.30
100.00	12 11 9	3788.30	-5.01	144.47	21.93	60.49	13 14 17	3188.3	-8.90	137.85
110.00	20 10 46	2196.69	-33.05	36.13	27.17	99.26	20 47 22	1596.7	-31.42	27.29
110.00	12 49 15	3668.86	-2.06	133.59	20.10	55.87	13 50 24	3068.9	-6.53	127.35

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.1575 TRA 2.3720 TC3-8.6953 BAU 1.3235 SGT 7281.9 SGR 969.7 SG3 3136.0 ST 1339.4 SR 563.9 SS 2150.6
RDE .3263 RRA -.1631 RC3 1.0952 FAU .52505 RRT -.8135 RRF -.8313 RTF .9937 CRT -.3569 CRS .6212 CST -.9534
FDE-2.3522 FRA13.0602 FC-40.2409 BSP 25022 SGB 7346.1 R23 .0311 R13 -.9940 LSA 2529.8 MSA 579.9 SSA 25.0
BDE .3624 BRA 2.3776 BC3 8.7640 FSP 10800 SG1 7324.7 SG2 560.6 THA 173.78 EL1 1357.1 EL2 519.9 ALF 169.97

LAUNCH DATE OCT 30 1964 FLIGHT TIME 340.00 ARRIVAL DATE OCT 5 1965

HELIOCENTRIC CONIC DISTANCE 765.440 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.766 GAL -4.07 AZL 88.48 HCA 235.26 SMA 186.04 ECC .21325 INC 1.5233 V1 29.997
RP 216.91 LAP -1.25 LOP 271.86 VP 22.590 GAP -7.81 AZP 90.87 TAL 336.50 TAP 211.76 RCA 146.37 APO 225.72 V2 25.327
RC 283.431 GL 14.89 GP 3.62 ZAL 123.60 ZAP 70.05 ETS 180.60 ZAE 101.29 ETE 177.95 ZAC 87.51 ETC 258.17 CLP 70.00

PLANETOCENTRIC CONIC

C3 11.427 VHL 3.380 DLA 20.95 RAL 168.98 RAD 6567.4 VEL 11.525 PTH 2.01 VHP 3.055 DPA 12.01 RAP 165.41 ECC 1.1881

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 0 48	2807.75	-28.21	82.39	28.36	92.53	17 47 36	2207.8	-27.56	73.78
90.00	11 4 2	4014.59	-5.91	161.60	23.18	62.26	12 10 56	3414.6	-9.58	154.85
100.00	18 36 11	2500.20	-29.59	59.67	28.27	94.45	19 17 51	1900.2	-28.66	50.99
100.00	12 11 20	3797.37	-4.70	144.97	22.52	60.45	13 14 37	3197.4	-8.60	138.36
110.00	20 14 8	2193.74	-33.02	35.91	27.78	99.39	20 50 42	1593.7	-31.37	27.07
110.00	12 49 52	3676.59	-1.77	133.99	20.69	55.86	13 51 9	3076.6	-6.24	127.76

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.1942 TRA 2.5248 TC3-8.9825 BAU 1.3819 SGT 7614.9 SGR 956.4 SG3 3054.5 ST 1425.3 SR 569.9 SS 2148.3
RDE .3323 RRA -.1556 RC3 1.0643 FAU .51231 RRT -.8032 RRF -.8212 RTF .9942 CRT -.3765 CRS .6261 CST -.9578
FDE-2.4031 FRA12.8591 FC-38.8132 BSP 26119 SGB 7674.7 R23 .0307 R13 -.9944 LSA 2575.2 MSA 582.3 SSA 24.5
BDE .3849 BRA 2.5296 BC3 9.0453 FSP 10488 SG1 7653.7 SG2 566.9 THA 174.21 EL1 1443.8 EL2 521.2 ALF 170.14

LAUNCH DATE OCT 30 1964 FLIGHT TIME 342.00 ARRIVAL DATE OCT 7 1965

HELIOCENTRIC CONIC DISTANCE 769.559 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.768 GAL -4.13 AZL 88.46 HCA 236.42 SMA 186.07 ECC .21369 INC 1.5352 V1 29.997
RP 216.57 LAP -1.28 LOP 273.02 VP 22.636 GAP -7.99 AZP 90.85 TAL 336.16 TAP 212.58 RCA 146.31 APO 225.83 V2 25.365
RC 284.679 GL 14.92 GP 3.53 ZAL 124.10 ZAP 68.37 ETS 180.70 ZAE 99.36 ETE 178.14 ZAC 87.33 ETC 258.24 CLP 68.33

PLANETOCENTRIC CONIC

C3 11.568 VHL 3.401 DLA 20.77 RAL 169.49 RAD 6567.4 VEL 11.531 PTH 2.01 VHP 3.095 DPA 12.13 RAP 164.89 ECC 1.1904

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 5 3	2802.22	-28.20	81.99	29.00	92.73	17 51 46	2202.2	-27.52	73.39
90.00	11 3 52	4025.20	-5.58	162.20	23.78	62.19	12 10 57	3425.2	-9.25	155.45
100.00	18 40 11	2495.48	-29.56	59.32	28.90	94.63	19 21 46	1895.5	-28.61	50.65
100.00	12 11 25	3807.17	-4.37	145.52	23.12	60.40	13 14 53	3207.2	-8.28	138.91
110.00	20 17 41	2190.46	-32.98	35.66	28.41	99.54	20 54 11	1590.5	-31.32	26.83
110.00	12 50 25	3684.96	-1.45	134.43	21.30	55.84	13 51 50	3085.0	-5.92	128.20

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2325 TRA 2.6800 TC3-9.2457 BAU 1.4387 SGT 7938.6 SGR 942.9 SG3 2968.8 ST 1512.3 SR 575.6 SS 2144.4
RDE .3381 RRA -.1482 RC3 1.0326 FAU .49858 RRT -.7922 RRF -.8105 RTF .9946 CRT -.3941 CRS .6306 CST -.9616
FDE-2.4458 FRA12.6502 FC-37.3144 BSP 27210 SGB 7994.4 R23 .0304 R13 -.9948 LSA 2622.0 MSA 584.3 SSA 24.0
BDE .4103 BRA 2.6841 BC3 9.3032 FSP 10187 SG1 7973.8 SG2 572.9 THA 174.60 EL1 1531.5 EL2 522.4 ALF 170.33

LAUNCH DATE OCT 30 1964 FLIGHT TIME 344.00 ARRIVAL DATE OCT 9 1965

HELIOCENTRIC CONIC DISTANCE 773.684 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.769 GAL -4.20 AZL 88.45 HCA 237.58 SMA 186.09 ECC .21417 INC 1.5469 V1 29.997
RP 216.22 LAP -1.31 LOP 274.17 VP 22.681 GAP -8.17 AZP 90.83 TAL 335.82 TAP 213.39 RCA 146.24 APO 225.95 V2 25.404
RC 285.910 GL 14.94 GP 3.44 ZAL 124.62 ZAP 66.74 ETS 180.80 ZAE 97.47 ETE 178.32 ZAC 87.15 ETC 258.30 CLP 66.70

PLANETOCENTRIC CONIC

C3 11.718 VHL 3.423 DLA 20.57 RAL 170.02 RAD 6567.4 VEL 11.537 PTH 2.01 VHP 3.137 DPA 12.24 RAP 164.41 ECC 1.1928

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 9 31	2796.24	-28.18	81.55	29.66	92.95	17 56 8	2196.2	-27.47	72.96
90.00	11 3 36	4036.57	-5.21	162.84	24.40	62.13	12 10 52	3436.6	-8.90	156.11
100.00	18 44 23	2490.36	-29.54	58.94	29.56	94.83	19 25 53	1890.4	-28.55	50.28
100.00	12 11 25	3817.68	-4.02	146.10	23.75	60.35	13 15 3	3217.7	-7.94	139.50
110.00	20 21 23	2186.86	-32.94	35.39	29.05	99.69	20 57 50	1586.9	-31.25	26.57
110.00	12 50 54	3693.94	-1.10	134.90	21.93	55.83	13 52 28	3093.9	-5.58	128.67

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2725 TRA 2.8379 TC3-9.4859 BAU 1.4943 SGT 8253.7 SGR 929.9 SG3 2881.4 ST 1600.8 SR 581.1 SS 2140.5
RDE .3440 RRA -.1411 RC3 1.0010 FAU .48439 RRT -.7808 RRF -.7995 RTF .9949 CRT -.4105 CRS .6353 CST -.9648
FDE-2.4851 FRA12.4398 FC-35.7881 BSP 28284 SGB 8305.9 R23 .0302 R13 -.9951 LSA 2671.7 MSA 586.0 SSA 23.5
BDE .4389 BRA 2.8415 BC3 9.5386 FSP 9882 SG1 8285.8 SG2 578.8 THA 174.95 EL1 1620.6 EL2 523.4 ALF 170.53

LAUNCH DATE OCT 30 1964 FLIGHT TIME 346.00 ARRIVAL DATE OCT 11 1965

HELIOCENTRIC CONIC DISTANCE 777.813 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.771 GAL -4.27 AZL 88.44 HCA 238.74 SMA 186.12 ECC .21469 INC 1.5583 V1 29.997
RP 215.88 LAP -1.33 LOP 275.33 VP 22.726 GAP -8.35 AZP 90.81 TAL 335.45 TAP 214.19 RCA 146.16 APO 226.08 V2 25.442
RC 287.127 GL 14.94 GP 3.36 ZAL 125.16 ZAP 65.15 ETS 180.89 ZAE 95.63 ETE 178.49 ZAC 86.98 ETC 258.36 CLP 65.11

PLANETOCENTRIC CONIC

C3 11.878 VHL 3.446 DLA 20.35 RAL 170.56 RAD 6567.5 VEL 11.544 PTH 2.01 VHP 3.182 DPA 12.33 RAP 163.97 ECC 1.1955

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 14 11	2789.83	-28.15	81.08	30.34	93.18	18 0 41	2189.8	-27.41	72.49
90.00	11 3 13	4048.67	-4.83	163.52	25.04	62.06	12 10 42	3448.7	-8.53	156.80
100.00	18 48 46	2484.86	-29.50	58.54	30.23	95.04	19 30 11	1884.9	-28.49	49.88
100.00	12 11 20	3828.88	-3.64	146.71	24.39	60.31	13 15 9	3228.9	-7.57	140.12
110.00	20 25 16	2182.97	-32.90	35.09	29.71	99.86	21 1 39	1583.0	-31.19	26.28
110.00	12 51 19	3703.53	-.74	135.40	22.58	55.82	13 53 3	3103.5	-5.22	129.18

DIFFERENTIAL CORRECTIONS
TDE -.3150 TRA 2.9979 TC3-9.7039 BAU 1.5486
RDE .3499 RRA -.1340 RC3 .9694 FAU .46971
FDE-2.5186 FRA12.2207 FC-34.2352 BSP 29328
BDE .4708 BRA 3.0009 BC3 9.7522 FSP 9579

MID-COURSE EXECUTION ACCURACY
SGT 8559.8 SGR 917.2 SG3 2791.6
RRT -.7690 RRF -.7880 RTF .9951
SGB 8608.8 R23 .0301 R13 -.9953
SG1 8589.0 SG2 584.4 THA 175.27

ORBIT DETERMINATION ACCURACY
ST 1690.4 SR 586.3 SS 2134.9
CRT -.4260 CRS .6398 CST -.9677
LSA 2722.9 MSA 587.0 SSA 23.1
EL1 1710.7 EL2 524.2 ALF 170.71

LAUNCH DATE OCT 30 1964 FLIGHT TIME 348.00 ARRIVAL DATE OCT 13 1965

HELIOCENTRIC CONIC DISTANCE 781.948 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.773 GAL -4.34 AZL 88.43 HCA 239.90 SMA 186.15 ECC .21524 INC 1.5694 V1 29.997
RP 215.54 LAP -1.36 LOP 276.50 VP 22.771 GAP -8.52 AZP 90.79 TAL 335.07 TAP 214.98 RCA 146.09 APO 226.22 V2 25.480
RC 288.329 GL 14.94 GP 3.27 ZAL 125.71 ZAP 63.61 ETS 180.97 ZAE 93.82 ETE 178.64 ZAC 86.83 ETC 258.42 CLP 63.56

PLANETOCENTRIC CONIC

C3 12.049 VHL 3.471 DLA 20.12 RAL 171.11 RAD 6567.5 VEL 11.551 PTH 2.02 VHP 3.230 DPA 12.40 RAP 163.58 ECC 1.1983

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 19 3	2783.05	-28.13	80.59	31.03	93.43	18 5 26	2183.0	-27.35	72.01
90.00	11 2 46	4061.46	-4.42	164.24	25.70	62.00	12 10 27	3461.5	-8.13	157.53
100.00	18 53 20	2479.01	-29.47	58.11	30.92	95.26	19 34 39	1879.0	-28.43	49.46
100.00	12 11 9	3840.74	-3.24	147.37	25.05	60.27	13 15 10	3240.7	-7.18	140.79
110.00	20 29 18	2178.79	-32.85	34.77	30.39	100.04	21 5 36	1578.8	-31.11	25.98
110.00	12 51 41	3713.71	-.35	135.93	23.24	55.82	13 53 35	3113.7	-4.83	129.71

DIFFERENTIAL CORRECTIONS
TDE -.3604 TRA 3.1594 TC3-9.9020 BAU 1.6022
RDE .3559 RRA -.1270 RC3 .9385 FAU .45499
FDE-2.5551 FRA11.9938 FC-32.6925 BSP 30339
BDE .5065 BRA 3.1620 BC3 9.9463 FSP 9269

MID-COURSE EXECUTION ACCURACY
SGT 8857.5 SGR 905.3 SG3 2701.2
RRT -.7568 RRF -.7764 RTF .9953
SGB 8903.7 R23 .0302 R13 -.9955
SG1 8884.1 SG2 589.9 THA 175.56

ORBIT DETERMINATION ACCURACY
ST 1781.2 SR 591.6 SS 2129.8
CRT -.4414 CRS .6455 CST -.9701
LSA 2777.2 MSA 587.8 SSA 22.7
EL1 1802.1 EL2 524.7 ALF 170.88

LAUNCH DATE OCT 30 1964 FLIGHT TIME 350.00 ARRIVAL DATE OCT 15 1965

HELIOCENTRIC CONIC DISTANCE 786.088 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.775 GAL -4.42 AZL 88.42 HCA 241.07 SMA 186.19 ECC .21583 INC 1.5803 V1 29.997
RP 215.21 LAP -1.38 LOP 277.67 VP 22.816 GAP -8.69 AZP 90.76 TAL 334.68 TAP 215.75 RCA 146.00 APO 226.38 V2 25.517
RC 289.516 GL 14.93 GP 3.19 ZAL 126.28 ZAP 62.10 ETS 181.04 ZAE 92.05 ETE 178.79 ZAC 86.68 ETC 258.46 CLP 62.05

PLANETOCENTRIC CONIC

C3 12.230 VHL 3.497 DLA 19.87 RAL 171.67 RAD 6567.5 VEL 11.559 PTH 2.02 VHP 3.279 DPA 12.46 RAP 163.23 ECC 1.2013

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 24 5	2775.91	-28.10	80.07	31.74	93.69	18 10 21	2175.9	-27.29	71.50
90.00	11 2 13	4074.92	-3.99	165.00	26.37	61.94	12 10 8	3474.9	-7.71	158.29
100.00	18 58 4	2472.83	-29.43	57.65	31.62	95.50	19 39 17	1872.8	-28.36	49.01
100.00	12 10 55	3853.24	-2.82	148.05	25.72	60.23	13 15 8	3253.2	-6.76	141.48
110.00	20 33 28	2174.36	-32.79	34.44	31.08	100.23	21 9 42	1574.4	-31.04	25.66
110.00	12 52 0	3724.47	.06	136.49	23.92	55.82	13 54 5	3124.5	-4.42	130.28

DIFFERENTIAL CORRECTIONS
TDE -.4079 TRA 3.3241 TC-10.0766 BAU 1.6543
RDE .3619 RRA -.1203 RC3 .9080 FAU .44002
FDE-2.5844 FRA11.7650 FC-31.1472 BSP 31329
BDE .5454 BRA 3.3263 BC310.1174 FSP 8962

MID-COURSE EXECUTION ACCURACY
SGT 9146.3 SGR 893.8 SG3 2610.1
RRT -.7444 RRF -.7645 RTF .9955
SGB 9189.9 R23 .0303 R13 -.9957
SG1 9170.6 SG2 595.2 THA 175.82

ORBIT DETERMINATION ACCURACY
ST 1873.4 SR 596.6 SS 2123.3
CRT -.4559 CRS .6508 CST -.9723
LSA 2833.3 MSA 588.0 SSA 22.2
EL1 1894.7 EL2 525.0 ALF 171.05

LAUNCH DATE OCT 30 1964 FLIGHT TIME 352.00 ARRIVAL DATE OCT 17 1965

HELIOCENTRIC CONIC DISTANCE 790.231 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.777 GAL -4.50 AZL 88.41 HCA 242.24 SMA 186.23 ECC .21646 INC 1.5911 V1 29.997
RP 214.88 LAP -1.41 LOP 278.84 VP 22.860 GAP -8.86 AZP 90.74 TAL 334.27 TAP 216.52 RCA 145.92 APO 226.54 V2 25.554
RC 290.691 GL 14.92 GP 3.11 ZAL 126.88 ZAP 60.63 ETS 181.11 ZAE 90.32 ETE 178.93 ZAC 86.55 ETC 258.50 CLP 60.59

PLANETOCENTRIC CONIC

C3 12.424 VHL 3.525 DLA 19.61 RAL 172.25 RAD 6567.5 VEL 11.568 PTH 2.02 VHP 3.331 DPA 12.50 RAP 162.92 ECC 1.2045

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 29 17	2768.45	-28.06	79.52	32.47	93.96	18 15 25	2168.4	-27.22	70.96
90.00	11 1 36	4089.05	-3.54	165.79	27.07	61.89	12 9 45	3489.1	-7.27	159.10
100.00	19 2 58	2466.35	-29.39	57.17	32.35	95.75	19 44 4	1866.4	-28.28	48.54
100.00	12 10 36	3866.38	-2.37	148.78	26.42	60.19	13 15 2	3266.4	-6.32	142.21
110.00	20 37 47	2169.69	-32.74	34.09	31.79	100.43	21 13 57	1569.7	-30.95	25.32
110.00	12 52 16	3735.81	.50	137.08	24.63	55.82	13 54 31	3135.8	-3.99	130.87

DIFFERENTIAL CORRECTIONS
TDE -.4506 TRA 3.4988 TC-10.2068 BAU 1.7015
RDE .3674 RRA -.1143 RC3 .8757 FAU .42336
FDE-2.5798 FRA11.5610 FC-29.5015 BSP 32470
BDE .5814 BRA 3.5007 BC310.2443 FSP 8719

MID-COURSE EXECUTION ACCURACY
SGT 9421.4 SGR 881.3 SG3 2516.2
RRT -.7311 RRF -.7511 RTF .9956
SGB 9462.6 R23 .0298 R13 -.9957
SG1 9443.5 SG2 599.9 THA 176.07

ORBIT DETERMINATION ACCURACY
ST 1965.7 SR 600.4 SS 2111.0
CRT -.4649 CRS .6517 CST -.9743
LSA 2887.0 MSA 588.4 SSA 22.0
EL1 1987.0 EL2 525.9 ALF 171.30

LAUNCH DATE OCT 30 1964 FLIGHT TIME 354.00 ARRIVAL DATE OCT 19 1965

HELIOCENTRIC CONIC DISTANCE 794.382 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.779 GAL -4.58 AZL 88.40 HCA 243.42 SMA 186.27 ECC .21713 INC 1.6016 V1 29.997
RP 214.56 LAP -1.43 LOP 280.02 VP 22.904 GAP -9.03 AZP 90.72 TAL 333.85 TAP 217.27 RCA 145.82 APO 226.71 V2 25.590
RC 291.851 GL 14.89 GP 3.04 ZAL 127.48 ZAP 59.21 ETS 181.18 ZAE 88.63 ETE 179.06 ZAC 86.43 ETC 258.54 CLP 59.16

PLANETOCENTRIC CONIC

C3 12.629 VHL 3.554 DLA 19.34 RAL 172.83 RAD 6567.5 VEL 11.577 PTH 2.02 VHP 3.386 DPA 12.53 RAP 162.66 ECC 1.2078

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 34 38	2760.73	-28.02	78.96	33.22	94.24	18 20 38	2160.7	-27.14	70.41
90.00	11 0 54	4103.77	-3.06	166.61	27.78	61.84	12 9 18	3503.8	-6.81	159.93
100.00	19 8 0	2459.63	-29.34	56.68	33.09	96.00	19 49 0	1859.6	-28.20	48.06
100.00	12 10 13	3880.10	-1.91	149.53	27.14	60.16	13 14 53	3280.1	-5.87	142.98
110.00	20 42 14	2164.81	-32.68	33.72	32.52	100.64	21 18 19	1564.8	-30.86	24.97
110.00	12 52 28	3747.68	.95	137.70	25.35	55.83	13 54 56	3147.7	-3.54	131.49

DIFFERENTIAL CORRECTIONS
TDE -.5103 TRA 3.6608 TC-10.3588 BAU 1.7548
RDE .3743 RRA -.1073 RC3 .8487 FAU .40991
FDE-2.6378 FRA11.2967 FC-28.0991 BSP 33237
BDE .6329 BRA 3.6624 BC310.3935 FSP 8352

MID-COURSE EXECUTION ACCURACY
SGT 9696.0 SGR 872.7 SG3 2427.7
RRT -.7191 RRF -.7403 RTF .9957
SGB 9735.2 R23 .0309 R13 -.9959
SG1 9716.3 SG2 605.2 THA 176.28

ORBIT DETERMINATION ACCURACY
ST 2060.9 SR 606.2 SS 2108.9
CRT -.4832 CRS .6625 CST -.9758
LSA 2952.3 MSA 588.0 SSA 21.4
EL1 2083.0 EL2 525.1 ALF 171.36

LAUNCH DATE OCT 30 1964 FLIGHT TIME 356.00 ARRIVAL DATE OCT 21 1965

HELIOCENTRIC CONIC DISTANCE 798.536 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.782 GAL -4.66 AZL 88.39 HCA 244.60 SMA 186.31 ECC .21784 INC 1.6120 V1 29.997
RP 214.24 LAP -1.46 LOP 281.20 VP 22.948 GAP -9.20 AZP 90.69 TAL 333.41 TAP 218.01 RCA 145.73 APO 226.90 V2 25.626
RC 292.998 GL 14.86 GP 2.96 ZAL 128.10 ZAP 57.83 ETS 181.24 ZAE 86.98 ETE 179.18 ZAC 86.31 ETC 258.57 CLP 57.78

PLANETOCENTRIC CONIC

C3 12.848 VHL 3.584 DLA 19.05 RAL 173.42 RAD 6567.5 VEL 11.586 PTH 2.03 VHP 3.442 DPA 12.54 RAP 162.44 ECC 1.2114

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 40 7	2752.74	-27.98	78.38	33.98	94.52	18 26 0	2152.7	-27.06	69.84
90.00	11 0 9	4119.11	-2.57	167.47	28.51	61.79	12 8 48	3519.1	-6.32	160.80
100.00	19 13 11	2452.66	-29.29	56.17	33.84	96.27	19 54 3	1852.7	-28.11	47.56
100.00	12 9 46	3894.42	-1.42	150.32	27.87	60.14	13 14 41	3294.4	-5.39	143.77
110.00	20 46 48	2159.74	-32.61	33.34	33.26	100.86	21 22 48	1559.7	-30.77	24.60
110.00	12 52 38	3760.10	1.43	138.35	26.09	55.84	13 55 18	3160.1	-3.06	132.14

DIFFERENTIAL CORRECTIONS
TDE -.5653 TRA 3.8335 TC-10.4679 BAU 1.8035
RDE .3806 RRA -.1011 RC3 .8201 FAU .39488
FDE-2.6590 FRA11.0599 FC-26.6092 BSP 34144
BDE .6815 BRA 3.8349 BC310.5000 FSP 8052

MID-COURSE EXECUTION ACCURACY
SGT 9957.8 SGR 863.1 SG3 2337.2
RRT -.7063 RRF -.7281 RTF .9958
SGB 9995.2 R23 .0312 R13 -.9959
SG1 9976.5 SG2 609.9 THA 176.48

ORBIT DETERMINATION ACCURACY
ST 2156.4 SR 610.8 SS 2100.4
CRT -.4962 CRS .6685 CST -.9773
LSA 3014.8 MSA 587.4 SSA 21.0
EL1 2178.9 EL2 524.8 ALF 171.50

LAUNCH DATE OCT 30 1964 FLIGHT TIME 358.00 ARRIVAL DATE OCT 23 1965

HELIOCENTRIC CONIC DISTANCE 802.694 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.785 GAL -4.75 AZL 88.38 HCA 245.78 SMA 186.36 ECC .21859 INC 1.6221 V1 29.997
RP 213.93 LAP -1.48 LOP 282.38 VP 22.991 GAP -9.36 AZP 90.67 TAL 332.96 TAP 218.74 RCA 145.62 APO 227.10 V2 25.662
RC 294.131 GL 14.82 GP 2.89 ZAL 128.74 ZAP 56.48 ETS 181.29 ZAE 85.37 ETE 179.29 ZAC 86.21 ETC 258.59 CLP 56.44

PLANETOCENTRIC CONIC

C3 13.079 VHL 3.617 DLA 18.75 RAL 174.03 RAD 6567.5 VEL 11.596 PTH 2.03 VHP 3.501 DPA 12.53 RAP 162.25 ECC 1.2153

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 45 45	2744.53	-27.94	77.79	34.76	94.82	18 31 29	2144.5	-26.98	69.25
90.00	10 59 20	4135.02	-2.06	168.36	29.26	61.75	12 8 15	3535.0	-5.82	161.69
100.00	19 18 29	2445.47	-29.23	55.64	34.62	96.54	19 59 15	1845.5	-28.02	47.05
100.00	12 9 16	3909.30	-.92	151.13	28.63	60.12	13 14 26	3309.3	-4.89	144.59
110.00	20 51 30	2154.48	-32.54	32.94	34.02	101.09	21 27 24	1554.5	-30.67	24.22
110.00	12 52 45	3773.06	1.92	139.02	26.85	55.86	13 55 38	3173.1	-2.57	132.82

DIFFERENTIAL CORRECTIONS
TDE -.6242 TRA 4.0083 TC-10.5591 BAU 1.8515
RDE .3871 RRA -.0951 RC3 .7926 FAU .38019
FDE-2.6827 FRA10.8198 FC-25.1655 BSP 35007
BDE .7344 BRA 4.0094 BC310.5888 FSP 7752

MID-COURSE EXECUTION ACCURACY
SGT10211.8 SGR 854.4 SG3 2248.2
RRT -.6936 RRF -.7162 RTF .9959
SGB10247.5 R23 .0318 R13 -.9960
SG110229.1 SG2 614.4 THA 176.67

ORBIT DETERMINATION ACCURACY
ST 2253.4 SR 615.3 SS 2092.4
CRT -.5094 CRS .6754 CST -.9785
LSA 3080.6 MSA 586.6 SSA 20.6
EL1 2276.3 EL2 524.2 ALF 171.63

LAUNCH DATE OCT 30 1964 FLIGHT TIME 360.00 ARRIVAL DATE OCT 25 1965

HELIOCENTRIC CONIC DISTANCE 806.855 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.787 GAL -4.85 AZL 88.37 HCA 246.97 SMA 186.41 ECC .21938 INC 1.6322 V1 29.997
RP 213.62 LAP -1.50 LOP 283.57 VP 23.035 GAP -9.53 AZP 90.64 TAL 332.49 TAP 219.46 RCA 145.52 APO 227.30 V2 25.697
RC 295.251 GL 14.77 GP 2.82 ZAL 129.39 ZAP 55.18 ETS 181.34 ZAE 83.79 ETE 179.40 ZAC 86.12 ETC 258.61 CLP 55.13

PLANETOCENTRIC CONIC

C3 13.325 VHL 3.650 DLA 18.44 RAL 174.64 RAD 6567.5 VEL 11.607 PTH 2.03 VHP 3.562 DPA 12.51 RAP 162.12 ECC 1.2193

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 51 30	2736.13	-27.89	77.18	35.56	95.12	18 37 6	2136.1	-26.89	68.65
90.00	10 58 28	4151.48	-1.53	169.27	30.03	61.72	12 7 39	3551.5	-5.30	162.62
100.00	19 23 55	2438.11	-29.17	55.10	35.41	96.82	20 4 33	1838.1	-27.92	46.52
100.00	12 8 44	3924.74	-.40	151.98	29.40	60.11	13 14 8	3324.7	-4.37	145.45
110.00	20 56 18	2149.08	-32.47	32.54	34.79	101.32	21 32 7	1549.1	-30.57	23.84
110.00	12 52 50	3786.53	2.44	139.73	27.63	55.89	13 55 57	3186.5	-2.06	133.52

DIFFERENTIAL CORRECTIONS
TDE -.6852 TRA 4.1868 TC-10.6275 BAU 1.8982
RDE .3936 RRA -.0894 RC3 .7657 FAU .36552
FDE-2.6996 FRA10.5822 FC-23.7478 BSP 35862
BDE .7902 BRA 4.1877 BC310.6550 FSP 7459

MID-COURSE EXECUTION ACCURACY
SGT10456.7 SGR 846.2 SG3 2160.2
RRT -.6811 RRF -.7043 RTF .9959
SGB10490.9 R23 .0322 R13 -.9960
SG110472.6 SG2 618.7 THA 176.83

ORBIT DETERMINATION ACCURACY
ST 2351.5 SR 619.6 SS 2082.9
CRT -.5220 CRS .6818 CST -.9797
LSA 3147.9 MSA 585.3 SSA 20.3
EL1 2374.8 EL2 523.3 ALF 171.77

LAUNCH DATE OCT 30 1964 FLIGHT TIME 362.00 ARRIVAL DATE OCT 27 1965

HELIOCENTRIC CONIC DISTANCE 811.020 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.791 GAL -4.94 AZL 88.36 HCA 248.16 SMA 186.46 ECC .22021 INC 1.6421 V1 29.997
RP 213.31 LAP -1.52 LOP 284.76 VP 23.077 GAP -9.69 AZP 90.61 TAL 332.01 TAP 220.17 RCA 145.40 APO 227.52 V2 25.731
RC 296.356 GL 14.71 GP 2.75 ZAL 130.06 ZAP 53.92 ETS 181.39 ZAE 82.25 ETE 179.50 ZAC 86.04 ETC 258.62 CLP 53.87

PLANETOCENTRIC CONIC

C3 13.586 VHL 3.686 DLA 18.11 RAL 175.26 RAD 6567.5 VEL 11.618 PTH 2.04 VHP 3.625 DPA 12.48 RAP 162.02 ECC 1.2236

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 57 22	2727.57	-27.83	76.56	36.37	95.43	18 42 49	2127.6	-26.79	68.04
90.00	10 57 33	4168.48	-.98	170.22	30.82	61.70	12 7 1	3568.5	-4.76	163.58
100.00	19 29 27	2430.58	-29.11	54.55	36.21	97.10	20 9 58	1830.6	-27.82	45.98
100.00	12 8 8	3940.70	.15	152.85	30.19	60.11	13 13 49	3340.7	-3.83	146.33
110.00	21 1 12	2143.54	-32.40	32.12	35.59	101.55	21 36 55	1543.5	-30.47	23.44
110.00	12 52 53	3800.50	2.97	140.46	28.43	55.93	13 56 13	3200.5	-1.52	134.25

DIFFERENTIAL CORRECTIONS
TDE -.7487 TRA 4.3690 TC-10.6753 BAU 1.9437
RDE .4003 RRA -.0840 RC3 .7396 FAU .35106
FDE-2.7144 FRA10.3440 FC-22.3699 BSP 36701
BDE .8490 BRA 4.3698 BC310.7009 FSP 7173

MID-COURSE EXECUTION ACCURACY
SGT10693.2 SGR 838.6 SG3 2073.5
RRT -.6687 RRF -.6926 RTF .9959
SGB10726.0 R23 .0329 R13 -.9960
SG110707.9 SG2 622.7 THA 176.99

ORBIT DETERMINATION ACCURACY
ST 2450.6 SR 623.8 SS 2072.8
CRT -.5340 CRS .6885 CST -.9807
LSA 3217.1 MSA 584.1 SSA 20.0
EL1 2474.2 EL2 522.4 ALF 171.90

LAUNCH DATE OCT 30 1964 FLIGHT TIME 364.00 ARRIVAL DATE OCT 29 1965

HELIOCENTRIC CONIC DISTANCE 815.188 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.794 GAL -5.05 AZL 88.35 HCA 249.35 SMA 186.52 ECC .22108 INC 1.6518 V1 29.997
RP 213.01 LAP -1.55 LOP 285.95 VP 23.120 GAP -9.85 AZP 90.58 TAL 331.51 TAP 220.87 RCA 145.28 APO 227.75 V2 25.765
RC 297.448 GL 14.65 GP 2.68 ZAL 130.74 ZAP 52.69 ETS 181.43 ZAE 80.75 ETE 179.60 ZAC 85.97 ETC 258.62 CLP 52.64

PLANETOCENTRIC CONIC

C3 13.863 VHL 3.723 DLA 17.78 RAL 175.89 RAD 6567.5 VEL 11.630 PTH 2.04 VHP 3.690 DPA 12.43 RAP 161.96 ECC 1.2281

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 3 19	2718.87	-27.78	75.93	37.20	95.74	18 48 38	2118.9	-26.69	67.43
90.00	10 56 35	4185.99	-.41	171.20	31.63	61.69	12 6 21	3586.0	-4.20	164.56
100.00	19 35 6	2422.93	-29.05	53.99	37.04	97.39	20 15 29	1822.9	-27.72	45.44
100.00	12 7 30	3957.17	.70	153.76	31.01	60.12	13 13 27	3357.2	-3.28	147.23
110.00	21 6 12	2137.89	-32.32	31.70	36.39	101.79	21 41 50	1537.9	-30.36	23.03
110.00	12 52 53	3814.97	3.52	141.22	29.25	55.98	13 56 28	3215.0	-.97	135.01

DIFFERENTIAL CORRECTIONS
TDE -.8157 TRA 4.5543 TC-10.7042 BAU 1.9883
RDE .4071 RRA -.0788 RC3 .7144 FAU .33685
FDE-2.7270 FRA10.1068 FC-21.0361 BSP 37501
BDE .9116 BRA 4.5550 BC310.7280 FSP 6893

MID-COURSE EXECUTION ACCURACY
SGT10921.4 SGR 831.7 SG3 1988.6
RRT -.6566 RRF -.6813 RTF .9959
SGB10953.1 R23 .0335 R13 -.9960
SG110935.1 SG2 626.5 THA 177.13

ORBIT DETERMINATION ACCURACY
ST 2551.0 SR 627.8 SS 2062.0
CRT -.5460 CRS .6953 CST -.9817
LSA 3288.5 MSA 582.3 SSA 19.6
EL1 2574.9 EL2 521.1 ALF 172.02

LAUNCH DATE OCT 30 1964 FLIGHT TIME 366.00 ARRIVAL DATE OCT 31 1965

HELIOCENTRIC CONIC DISTANCE 819.358 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.797 GAL -5.15 AZL 88.34 HCA 250.55 SMA 186.57 ECC .22200 INC 1.6614 V1 29.997
RP 212.72 LAP -1.57 LOP 287.15 VP 23.162 GAP -10.01 AZP 90.55 TAL 331.00 TAP 221.55 RCA 145.15 APO 227.99 V2 25.798
RC 298.526 GL 14.58 GP 2.62 ZAL 131.43 ZAP 51.50 ETS 181.47 ZAE 79.28 ETE 179.69 ZAC 85.91 ETC 258.62 CLP 51.45

PLANETOCENTRIC CONIC

C3 14.156 VHL 3.762 DLA 17.43 RAL 176.52 RAD 6567.6 VEL 11.642 PTH 2.04 VHP 3.757 DPA 12.37 RAP 161.94 ECC 1.2330

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 9 23	2710.07	-27.71	75.29	38.05	96.05	18 54 33	2110.1	-26.59	66.80
90.00	10 55 36	4204.00	.17	172.20	32.46	61.68	12 5 40	3604.0	-3.62	165.57
100.00	19 40 50	2415.17	-28.98	53.42	37.88	97.68	20 21 5	1815.2	-27.61	44.89
100.00	12 6 50	3974.14	1.28	154.69	31.84	60.13	13 13 4	3374.1	-2.70	148.17
110.00	21 11 17	2132.15	-32.24	31.27	37.22	102.03	21 46 50	1532.2	-30.25	22.62
110.00	12 52 52	3829.92	4.09	142.00	30.09	56.03	13 56 42	3229.9	-.40	135.79

DIFFERENTIAL CORRECTIONS
TDE -.8845 TRA 4.7442 TC-10.7147 BAU 2.0320
RDE .4140 RRA -.0739 RC3 .6901 FAU .32291
FDE-2.7340 FRA 9.8718 FC-19.7480 BSP 38293
BDE .9766 BRA 4.7447 BC310.7370 FSP 6619

MID-COURSE EXECUTION ACCURACY
SGT11142.7 SGR 825.3 SG3 1905.5
RRT -.6448 RRF -.6703 RTF .9958
SGB11173.2 R23 .0342 R13 -.9959
SG111155.4 SG2 630.1 THA 177.26

ORBIT DETERMINATION ACCURACY
ST 2652.0 SR 631.6 SS 2049.7
CRT -.5572 CRS .7017 CST -.9825
LSA 3360.9 MSA 580.5 SSA 19.3
EL1 2676.2 EL2 519.8 ALF 172.14

LAUNCH DATE OCT 30 1964 FLIGHT TIME 368.00 ARRIVAL DATE NOV 2 1965

HELIOCENTRIC CONIC DISTANCE 823.532 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.800 GAL -5.26 AZL 88.33 HCA 251.75 SMA 186.63 ECC .22297 INC 1.6708 V1 29.997
RP 212.43 LAP -1.59 LOP 288.35 VP 23.203 GAP -10.17 AZP 90.52 TAL 330.47 TAP 222.22 RCA 145.02 APO 228.24 V2 25.831
RC 299.592 GL 14.50 GP 2.55 ZAL 132.14 ZAP 50.34 ETS 181.50 ZAE 77.85 ETE 179.77 ZAC 85.85 ETC 258.61 CLP 50.29

PLANETOCENTRIC CONIC

C3 14.467 VHL 3.804 DLA 17.06 RAL 177.16 RAD 6567.6 VEL 11.656 PTH 2.05 VHP 3.826 DPA 12.29 RAP 161.96 ECC 1.2381

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 15 32	2701.20	-27.65	74.65	38.91	96.37	19 0 33	2101.2	-26.48	66.18
90.00	10 54 34	4222.48	.76	173.23	33.31	61.69	12 4 57	3622.5	-3.03	166.60
100.00	19 46 39	2407.33	-28.91	52.85	38.73	97.97	20 26 47	1807.3	-27.50	44.33
100.00	12 6 7	3991.58	1.87	155.65	32.69	60.16	13 12 39	3391.6	-2.11	149.12
110.00	21 16 28	2126.34	-32.16	30.84	38.06	102.27	21 51 54	1526.3	-30.13	22.21
110.00	12 52 48	3845.33	4.68	142.81	30.95	56.10	13 56 54	3245.3	.19	136.59

DIFFERENTIAL CORRECTIONS
TDE -.9572 TRA 4.9377 TC-10.7071 BAU 2.0749
RDE .4211 RRA -.0693 RC3 .6666 FAU .30927
FDE-2.7406 FRA 9.6384 FC-18.5075 BSP 39060
BDE 1.0458 BRA 4.9382 BC310.7279 FSP 6354

MID-COURSE EXECUTION ACCURACY
SGT11356.0 SGR 819.4 SG3 1824.5
RRT -.6334 RRF -.6597 RTF .9958
SGB11385.5 R23 .0349 R13 -.9959
SG111367.9 SG2 633.4 THA 177.37

ORBIT DETERMINATION ACCURACY
ST 2754.5 SR 635.4 SS 2037.2
CRT -.5684 CRS .7085 CST -.9832
LSA 3436.0 MSA 578.4 SSA 19.0
EL1 2778.9 EL2 518.1 ALF 172.26

LAUNCH DATE OCT 30 1964 FLIGHT TIME 370.00 ARRIVAL DATE NOV 4 1965

HELIOCENTRIC CONIC DISTANCE 827.707 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.804 GAL -5.37 AZL 88.32 HCA 252.95 SMA 186.69 ECC .22398 INC 1.6802 V1 29.997
RP 212.15 LAP -1.61 LOP 289.55 VP 23.244 GAP -10.33 AZP 90.49 TAL 329.93 TAP 222.88 RCA 144.88 APO 228.51 V2 25.863
RC 300.645 GL 14.42 GP 2.49 ZAL 132.86 ZAP 49.22 ETS 181.54 ZAE 76.45 ETE 179.85 ZAC 85.81 ETC 258.60 CLP 49.17

PLANETOCENTRIC CONIC

C3 14.796 VHL 3.847 DLA 16.69 RAL 177.81 RAD 6567.6 VEL 11.670 PTH 2.05 VHP 3.897 DPA 12.21 RAP 162.01 ECC 1.2435

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 21 45	2692.27	-27.58	74.00	39.79	96.68	19 6 37	2092.3	-26.37	65.55
90.00	10 53 31	4241.42	1.38	174.29	34.18	61.71	12 4 12	3641.4	-2.42	167.66
100.00	19 52 34	2399.43	-28.83	52.28	39.60	98.26	20 32 33	1799.4	-27.39	43.77
100.00	12 5 23	4009.49	2.48	156.63	33.57	60.20	13 12 13	3409.5	-1.51	150.11
110.00	21 21 43	2120.48	-32.07	30.40	38.91	102.52	21 57 3	1520.5	-30.02	21.79
110.00	12 52 44	3861.21	5.28	143.64	31.83	56.18	13 57 5	3261.2	.80	137.42

DIFFERENTIAL CORRECTIONS
TDE-1.0322 TRA 5.1359 TC-10.6813 BAU 2.1168
RDE .4283 RRA -.0650 RC3 .6439 FAU .29588
FDE-2.7423 FRA 9.4078 FC-17.3117 BSP 39808
BDE 1.1175 BRA 5.1363 BC310.7007 FSP 6096

MID-COURSE EXECUTION ACCURACY
SGT11561.8 SGR 814.0 SG3 1745.4
RRT -.6225 RRF -.6496 RTF .9957
SGB11590.4 R23 .0356 R13 -.9958
SG111572.9 SG2 636.5 THA 177.48

ORBIT DETERMINATION ACCURACY
ST 2857.5 SR 638.9 SS 2023.2
CRT -.5791 CRS .7150 CST -.9839
LSA 3512.0 MSA 576.1 SSA 18.8
EL1 2882.1 EL2 516.4 ALF 172.38

LAUNCH DATE OCT 30 1964 FLIGHT TIME 372.00 ARRIVAL DATE NOV 6 1965

HELIOCENTRIC CONIC DISTANCE 831.884 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.808 GAL -5.49 AZL 88.31 HCA 254.16 SMA 186.76 ECC .22505 INC 1.6895 V1 29.997
RP 211.87 LAP -1.63 LOP 290.76 VP 23.284 GAP -10.49 AZP 90.46 TAL 329.37 TAP 223.52 RCA 144.73 APO 228.79 V2 25.895
RC 301.687 GL 14.32 GP 2.44 ZAL 133.59 ZAP 48.14 ETS 181.56 ZAE 75.08 ETE 179.93 ZAC 85.77 ETC 258.58 CLP 48.09

PLANETOCENTRIC CONIC

C3 15.145 VHL 3.892 DLA 16.31 RAL 178.46 RAD 6567.6 VEL 11.685 PTH 2.06 VHP 3.970 DPA 12.11 RAP 162.10 ECC 1.2493

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 28 3	2683.31	-27.51	73.36	40.68	97.00	19 12 46	2083.3	-26.25	64.92
90.00	10 52 26	4260.80	2.00	175.37	35.07	61.75	12 3 27	3660.8	-1.79	168.74
100.00	19 58 32	2391.50	-28.75	51.70	40.49	98.56	20 38 23	1791.5	-27.27	43.21
100.00	12 4 38	4027.85	3.10	157.64	34.46	60.25	13 11 46	3427.8	-.88	151.12
110.00	21 27 2	2114.59	-31.98	29.97	39.78	102.76	22 2 17	1514.6	-29.90	21.38
110.00	12 52 37	3877.52	5.89	144.50	32.73	56.27	13 57 15	3277.5	1.42	138.27

DIFFERENTIAL CORRECTIONS
TDE-1.1095 TRA 5.3395 TC-10.6386 BAU 2.1578
RDE .4357 RRA -.0610 RC3 .6220 FAU .28281
FDE-2.7398 FRA 9.1809 FC-16.1657 BSP 40552
BDE 1.1920 BRA 5.3398 BC310.6568 FSP 5847

MID-COURSE EXECUTION ACCURACY
SGT11761.0 SGR 809.1 SG3 1668.5
RRT -.6120 RRF -.6399 RTF .9956
SGB11788.8 R23 .0363 R13 -.9957
SG111771.5 SG2 639.3 THA 177.58

ORBIT DETERMINATION ACCURACY
ST 2961.0 SR 642.2 SS 2007.8
CRT -.5892 CRS .7213 CST -.9845
LSA 3589.2 MSA 573.7 SSA 18.5
EL1 2985.9 EL2 514.6 ALF 172.49

LAUNCH DATE OCT 30 1964 FLIGHT TIME 374.00 ARRIVAL DATE NOV 8 1965

HELIOCENTRIC CONIC DISTANCE 836.062 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.812 GAL -5.61 AZL 88.30 HCA 255.37 SMA 186.82 ECC .22616 INC 1.6988 V1 29.997
RP 211.60 LAP -1.64 LOP 291.97 VP 23.324 GAP -10.65 AZP 90.43 TAL 328.79 TAP 224.16 RCA 144.57 APO 229.07 V2 25.926
RC 302.717 GL 14.23 GP 2.38 ZAL 134.33 ZAP 47.08 ETS 181.59 ZAE 73.75 ETE 180.00 ZAC 85.75 ETC 258.56 CLP 47.04

PLANETOCENTRIC CONIC

C3 15.515 VHL 3.939 DLA 15.92 RAL 179.12 RAD 6567.6 VEL 11.700 PTH 2.06 VHP 4.045 DPA 11.99 RAP 162.23 ECC 1.2553

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 34 24	2674.36	-27.43	72.71	41.59	97.31	19 18 58	2074.4	-26.13	64.29
90.00	10 51 20	4280.61	2.64	176.48	35.99	61.80	12 2 41	3680.6	-1.15	169.85
100.00	20 4 34	2383.56	-28.67	51.12	41.39	98.85	20 44 18	1783.6	-27.15	42.65
100.00	12 3 51	4046.64	3.73	158.67	35.38	60.32	13 11 18	3446.6	-.25	152.15
110.00	21 32 25	2108.69	-31.89	29.53	40.67	103.01	22 7 34	1508.7	-29.78	20.96
110.00	12 52 29	3894.27	6.53	145.39	33.65	56.37	13 57 24	3294.3	2.06	139.14

DIFFERENTIAL CORRECTIONS
TDE-1.1898 TRA 5.5479 TC-10.5782 BAU 2.1977
RDE .4433 RRA -.0574 RC3 .6009 FAU .27003
FDE-2.7356 FRA 8.9552 FC-15.0678 BSP 41282
BDE 1.2697 BRA 5.5482 BC310.5952 FSP 5605

MID-COURSE EXECUTION ACCURACY
SGT11952.5 SGR 804.6 SG3 1593.7
RRT -.6020 RRF -.6307 RTF .9955
SGB11979.6 R23 .0372 R13 -.9956
SG111962.4 SG2 641.9 THA 177.67

ORBIT DETERMINATION ACCURACY
ST 3065.3 SR 645.4 SS 1991.7
CRT -.5990 CRS .7277 CST -.9850
LSA 3667.8 MSA 571.3 SSA 18.3
EL1 3090.3 EL2 512.7 ALF 172.61

LAUNCH DATE OCT 30 1964 FLIGHT TIME 376.00 ARRIVAL DATE NOV 10 1965

HELIOCENTRIC CONIC DISTANCE 840.241 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.815 GAL -5.73 AZL 88.29 HCA 256.58 SMA 186.89 ECC .22732 INC 1.7078 V1 29.997
RP 211.33 LAP -1.66 LOP 293.18 VP 23.364 GAP -10.81 AZP 90.40 TAL 328.20 TAP 224.78 RCA 144.41 APO 229.38 V2 25.956
RC 303.736 GL 14.12 GP 2.33 ZAL 135.07 ZAP 46.06 ETS 181.61 ZAE 72.44 ETE 180.07 ZAC 85.73 ETC 258.53 CLP 46.01

PLANETOCENTRIC CONIC

C3 15.907 VHL 3.988 DLA 15.52 RAL 179.78 RAD 6567.6 VEL 11.717 PTH 2.06 VHP 4.122 DPA 11.87 RAP 162.38 ECC 1.2618

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 40 48	2665.42	-27.35	72.07	42.52	97.63	19 25 13	2065.4	-26.01	63.66
90.00	10 50 13	4300.82	3.29	177.61	36.92	61.86	12 1 54	3700.8	-.50	170.98
100.00	20 10 39	2375.63	-28.58	50.55	42.31	99.14	20 50 15	1775.6	-27.02	42.10
100.00	12 3 3	4065.84	4.38	159.73	36.32	60.40	13 10 49	3465.8	.40	153.20
110.00	21 37 51	2102.80	-31.80	29.09	41.58	103.25	22 12 54	1502.8	-29.65	20.54
110.00	12 52 20	3911.44	7.17	146.30	34.59	56.49	13 57 32	3311.4	2.72	140.04

DIFFERENTIAL CORRECTIONS
TDE-1.2744 TRA 5.7595 TC-10.5069 BAU 2.2378
RDE .4511 RRA -.0540 RC3 .5807 FAU .25772
FDE-2.7304 FRA 8.7297 FC-14.0265 BSP 41957
BDE 1.3519 BRA 5.7598 BC310.5229 FSP 5366

MID-COURSE EXECUTION ACCURACY
SGT12138.0 SGR 800.6 SG3 1521.1
RRT -.5927 RRF -.6224 RTF .9954
SGB12164.4 R23 .0381 R13 -.9955
SG112147.3 SG2 644.3 THA 177.75

ORBIT DETERMINATION ACCURACY
ST 3170.4 SR 648.6 SS 1974.8
CRT -.6089 CRS .7343 CST -.9855
LSA 3748.1 MSA 568.5 SSA 18.0
EL1 3195.6 EL2 510.4 ALF 172.71

LAUNCH DATE OCT 30 1964 FLIGHT TIME 378.00 ARRIVAL DATE NOV 12 1965

HELIOCENTRIC CONIC DISTANCE 844.420 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.820 GAL -5.86 AZL 88.28 HCA 257.79 SMA 186.96 ECC .22854 INC 1.7169 V1 29.997
RP 211.08 LAP -1.68 LOP 294.40 VP 23.402 GAP -10.97 AZP 90.36 TAL 327.59 TAP 225.39 RCA 144.23 APO 229.69 V2 25.986
RC 304.746 GL 14.01 GP 2.27 ZAL 135.83 ZAP 45.07 ETS 181.63 ZAE 71.17 ETE 180.14 ZAC 85.72 ETC 258.50 CLP 45.02

PLANETOCENTRIC CONIC

C3 16.321 VHL 4.040 DLA 15.11 RAL 180.45 RAD 6567.7 VEL 11.735 PTH 2.07 VHP 4.201 DPA 11.73 RAP 162.57 ECC 1.2686

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 47 15	2656.53	-27.27	71.43	43.46	97.94	19 31 31	2056.5	-25.89	63.04
90.00	10 49 5	4321.43	3.95	178.76	37.88	61.94	12 1 7	3721.4	.17	172.13
100.00	20 16 48	2367.73	-28.50	49.98	43.25	99.43	20 56 16	1767.7	-26.90	41.54
100.00	12 2 13	4085.45	5.04	160.82	37.28	60.50	13 10 19	3485.5	1.07	154.27
110.00	21 43 21	2096.93	-31.71	28.66	42.50	103.49	22 18 18	1496.9	-29.53	20.13
110.00	12 52 10	3929.02	7.83	147.23	35.56	56.62	13 57 39	3329.0	3.39	140.96

DIFFERENTIAL CORRECTIONS
TDE-1.3603 TRA 5.9789 TC-10.4176 BAU 2.2764
RDE .4590 RRA -.0511 RC3 .5610 FAU .24564
FDE-2.7190 FRA 8.5098 FC-13.0294 BSP 42668
BDE 1.4356 BRA 5.9791 BC310.4327 FSP 5140

MID-COURSE EXECUTION ACCURACY
SGT12317.3 SGR 796.8 SG3 1450.8
RRT -.5839 RRF -.6144 RTF .9952
SGB12343.0 R23 .0390 R13 -.9953
SG112326.1 SG2 646.4 THA 177.83

ORBIT DETERMINATION ACCURACY
ST 3275.4 SR 651.5 SS 1955.9
CRT -.6179 CRS .7403 CST -.9859
LSA 3828.6 MSA 565.7 SSA 17.8
EL1 3300.7 EL2 508.3 ALF 172.82

LAUNCH DATE OCT 30 1964 FLIGHT TIME 380.00 ARRIVAL DATE NOV 14 1965

HELIOCENTRIC CONIC DISTANCE 848.600 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.824 GAL -6.00 AZL 88.27 HCA 259.01 SMA 187.03 ECC .22982 INC 1.7259 V1 29.997
RP 210.82 LAP -1.69 LOP 295.61 VP 23.440 GAP -11.13 AZP 90.33 TAL 326.97 TAP 225.98 RCA 144.05 APO 230.02 V2 26.015
RC 305.746 GL 13.90 GP 2.22 ZAL 136.60 ZAP 44.11 ETS 181.65 ZAE 69.92 ETE 180.20 ZAC 85.72 ETC 258.46 CLP 44.06

PLANETOCENTRIC CONIC

C3 16.760 VHL 4.094 DLA 14.69 RAL 181.12 RAD 6567.7 VEL 11.753 PTH 2.07 VHP 4.282 DPA 11.59 RAP 162.80 ECC 1.2758

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 53 44	2647.70	-27.19	70.80	44.42	98.24	19 37 52	2047.7	-25.77	62.42
90.00	10 47 57	4342.41	4.62	179.94	38.86	62.03	12 0 19	3742.4	.84	173.30
100.00	20 22 59	2359.89	-28.41	49.41	44.20	99.72	21 2 19	1759.9	-26.77	40.99
100.00	12 1 23	4105.45	5.71	161.92	38.26	60.61	13 9 49	3505.5	1.75	155.37
110.00	21 48 53	2091.12	-31.62	28.23	43.43	103.73	22 23 44	1491.1	-29.41	19.72
110.00	12 51 59	3946.99	8.51	148.19	36.54	56.77	13 57 46	3347.0	4.07	141.90

DIFFERENTIAL CORRECTIONS
TDE-1.4501 TRA 6.2022 TC-10.3164 BAU 2.3148
RDE .4672 RRA -.0484 RC3 .5422 FAU .23393
FDE-2.7068 FRA 8.2903 FC-12.0832 BSP 43336
BDE 1.5235 BRA 6.2024 BC310.3306 FSP 4918

MID-COURSE EXECUTION ACCURACY
SGT12489.6 SGR 793.4 SG3 1382.7
RRT -.5758 RRF -.6072 RTF .9951
SGB12514.8 R23 .0400 R13 -.9952
SG112498.0 SG2 648.2 THA 177.90

ORBIT DETERMINATION ACCURACY
ST 3380.8 SR 654.3 SS 1936.2
CRT -.6270 CRS .7466 CST -.9863
LSA 3910.2 MSA 562.7 SSA 17.6
EL1 3406.2 EL2 505.9 ALF 172.93

LAUNCH DATE OCT 30 1964 FLIGHT TIME 382.00 ARRIVAL DATE NOV 16 1965

HELIOCENTRIC CONIC DISTANCE 852.778 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.828 GAL -6.13 AZL 88.27 HCA 260.23 SMA 187.11 ECC .23115 INC 1.7349 V1 29.997
RP 210.58 LAP -1.71 LOP 296.84 VP 23.478 GAP -11.29 AZP 90.29 TAL 326.33 TAP 226.56 RCA 143.86 APO 230.36 V2 26.043
RC 306.737 GL 13.77 GP 2.17 ZAL 137.37 ZAP 43.17 ETS 181.66 ZAE 68.70 ETE 180.26 ZAC 85.73 ETC 258.42 CLP 43.13

PLANETOCENTRIC CONIC

C3 17.226 VHL 4.150 DLA 14.26 RAL 181.79 RAD 6567.7 VEL 11.773 PTH 2.08 VHP 4.365 DPA 11.43 RAP 163.05 ECC 1.2835

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 0 16	2638.96	-27.10	70.18	45.39	98.54	19 44 15	2039.0	-25.64	61.81
90.00	10 46 48	4363.77	5.30	181.14	39.86	62.14	11 59 32	3763.8	1.53	174.49
100.00	20 29 12	2352.13	-28.32	48.85	45.17	100.00	21 8 24	1752.1	-26.65	40.45
100.00	12 0 33	4125.83	6.39	163.05	39.26	60.74	13 9 18	3525.8	2.44	156.49
110.00	21 54 27	2085.37	-31.52	27.81	44.38	103.96	22 29 13	1485.4	-29.28	19.32
110.00	12 51 47	3965.35	9.19	149.17	37.55	56.93	13 57 52	3365.4	4.77	142.87

DIFFERENTIAL CORRECTIONS
TDE-1.5429 TRA 6.4322 TC-10.2029 BAU 2.3527
RDE .4755 RRA -.0462 RC3 .5241 FAU .22260
FDE-2.6910 FRA 8.0739 FC-11.1878 BSP 43993
BDE 1.6145 BRA 6.4323 BC310.2164 FSP 4703

MID-COURSE EXECUTION ACCURACY
SGT12657.2 SGR 790.3 SG3 1316.9
RRT -.5684 RRF -.6007 RTF .9949
SGB12681.9 R23 .0410 R13 -.9950
SG112665.2 SG2 649.8 THA 177.96

ORBIT DETERMINATION ACCURACY
ST 3486.5 SR 656.9 SS 1915.0
CRT -.6356 CRS .7527 CST -.9866
LSA 3992.7 MSA 559.6 SSA 17.4
EL1 3512.0 EL2 503.4 ALF 173.03

LAUNCH DATE OCT 30 1964 FLIGHT TIME 384.00 ARRIVAL DATE NOV 18 1965

HELIOCENTRIC CONIC DISTANCE 856.956 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.832 GAL -6.28 AZL 88.26 HCA 261.46 SMA 187.18 ECC .23254 INC 1.7437 V1 29.997
RP 210.34 LAP -1.72 LOP 298.06 VP 23.514 GAP -11.45 AZP 90.26 TAL 325.68 TAP 227.13 RCA 143.66 APO 230.71 V2 26.071
RC 307.719 GL 13.65 GP 2.13 ZAL 138.16 ZAP 42.27 ETS 181.68 ZAE 67.51 ETE 180.32 ZAC 85.74 ETC 258.37 CLP 42.23

PLANETOCENTRIC CONIC

C3 17.718 VHL 4.209 DLA 13.83 RAL 182.47 RAD 6567.7 VEL 11.794 PTH 2.09 VHP 4.450 DPA 11.26 RAP 163.33 ECC 1.2916

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 6 49	2630.32	-27.01	69.56	46.38	98.84	19 50 39	2030.3	-25.51	61.21
90.00	10 45 38	4385.47	5.99	182.36	40.88	62.27	11 58 44	3785.5	2.23	175.70
100.00	20 35 27	2344.46	-28.23	48.30	46.15	100.27	21 14 32	1744.5	-26.52	39.92
100.00	11 59 41	4146.57	7.07	164.21	40.29	60.88	13 8 48	3546.6	3.14	157.63
110.00	22 0 4	2079.70	-31.43	27.40	45.35	104.19	22 34 44	1479.7	-29.16	18.93
110.00	12 51 34	3984.09	9.88	150.18	38.58	57.11	13 57 58	3384.1	5.48	143.85

DIFFERENTIAL CORRECTIONS
TDE-1.6390 TRA 6.6672 TC-10.0783 BAU 2.3903
RDE .4842 RRA -.0443 RC3 .5066 FAU .21164
FDE-2.6737 FRA 7.8587 FC-10.3408 BSP 44620
BDE 1.7090 BRA 6.6673 BC310.0911 FSP 4493

MID-COURSE EXECUTION ACCURACY
SGT12818.5 SGR 787.5 SG3 1253.2
RRT -.5616 RRF -.5949 RTF .9947
SGB12842.6 R23 .0421 R13 -.9948
SG112826.1 SG2 651.2 THA 178.02

ORBIT DETERMINATION ACCURACY
ST 3592.1 SR 659.4 SS 1892.8
CRT -.6441 CRS .7588 CST -.9869
LSA 4075.7 MSA 556.4 SSA 17.2
EL1 3617.6 EL2 500.9 ALF 173.12

LAUNCH DATE OCT 30 1964 FLIGHT TIME 386.00 ARRIVAL DATE NOV 20 1965

HELIOCENTRIC CONIC DISTANCE 861.132 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.837 GAL -6.43 AZL 88.25 HCA 262.68 SMA 187.26 ECC .23399 INC 1.7526 V1 29.997
RP 210.10 LAP -1.74 LOP 299.29 VP 23.550 GAP -11.61 AZP 90.22 TAL 325.00 TAP 227.69 RCA 143.44 APO 231.08 V2 26.098
RC 308.691 GL 13.51 GP 2.08 ZAL 138.94 ZAP 41.39 ETS 181.69 ZAE 66.34 ETE 180.38 ZAC 85.77 ETC 258.32 CLP 41.35

PLANETOCENTRIC CONIC

C3 18.240 VHL 4.271 DLA 13.39 RAL 183.15 RAD 6567.7 VEL 11.816 PTH 2.09 VHP 4.537 DPA 11.08 RAP 163.64 ECC 1.3002

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 13 23	2621.81	-26.92	68.95	47.39	99.13	19 57 5	2021.8	-25.38	60.62
90.00	10 44 29	4407.52	6.69	183.61	41.93	62.42	11 57 56	3807.5	2.94	176.93
100.00	20 41 44	2336.90	-28.13	47.76	47.15	100.54	21 20 41	1736.9	-26.39	39.39
100.00	11 58 49	4167.66	7.77	165.39	41.34	61.04	13 8 17	3567.7	3.85	158.79
110.00	22 5 42	2074.13	-31.34	26.99	46.33	104.42	22 40 17	1474.1	-29.04	18.54
110.00	12 51 20	4003.19	10.59	151.21	39.64	57.31	13 58 3	3403.2	6.20	144.86

DIFFERENTIAL CORRECTIONS
TDE-1.7381 TRA 6.9089 TC3-9.9436 BAU 2.4277
RDE .4930 RRA -.0428 RC3 .4898 FAU .20101
FDE-2.6534 FRA 7.6463 FC3-9.5406 BSP 45256
BDE 1.8067 BRA 6.9091 BC3 9.9556 FSP 4292

MID-COURSE EXECUTION ACCURACY
SGT12975.0 SGR 784.9 SG3 1191.8
RRT -.5556 RRF -.5898 RTF .9944
SGB12998.8 R23 .0433 R13 -.9945
SG112982.4 SG2 652.3 THA 178.07

ORBIT DETERMINATION ACCURACY
ST 3697.5 SR 661.8 SS 1869.3
CRT -.6523 CRS .7648 CST -.9871
LSA 4159.1 MSA 553.2 SSA 17.1
EL1 3723.1 EL2 498.2 ALF 173.22

LAUNCH DATE OCT 30 1964 FLIGHT TIME 388.00 ARRIVAL DATE NOV 22 1965

HELIOCENTRIC CONIC DISTANCE 865.305 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.841 GAL -6.58 AZL 88.24 HCA 263.91 SMA 187.34 ECC .23551 INC 1.7614 V1 29.997
RP 209.88 LAP -1.75 LOP 300.52 VP 23.586 GAP -11.77 AZP 90.19 TAL 324.32 TAP 228.23 RCA 143.22 APO 231.46 V2 26.124
RC 309.654 GL 13.38 GP 2.04 ZAL 139.74 ZAP 40.54 ETS 181.70 ZAE 65.20 ETE 180.43 ZAC 85.80 ETC 258.27 CLP 40.50

PLANETOCENTRIC CONIC

C3 18.793 VHL 4.335 DLA 12.94 RAL 183.83 RAD 6567.8 VEL 11.840 PTH 2.10 VHP 4.626 DPA 10.89 RAP 163.98 ECC 1.3093

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 19 59	2613.44	-26.83	68.36	48.41	99.42	20 3 32	2013.4	-25.25	60.04
90.00	10 43 19	4429.90	7.39	184.88	43.00	62.59	11 57 9	3829.9	3.66	178.18
100.00	20 48 2	2329.47	-28.04	47.23	48.17	100.81	21 26 51	1729.5	-26.26	38.88
100.00	11 57 57	4189.09	8.48	166.59	42.41	61.23	13 7 46	3589.1	4.57	159.98
110.00	22 11 22	2068.68	-31.24	26.59	47.33	104.63	22 45 51	1468.7	-28.92	18.16
110.00	12 51 6	4022.65	11.30	152.26	40.71	57.52	13 58 8	3422.7	6.94	145.89

DIFFERENTIAL CORRECTIONS
TDE-1.8408 TRA 7.1566 TC3-9.7983 BAU 2.4646
RDE .5022 RRA -.0416 RC3 .4736 FAU .19072
FDE-2.6305 FRA 7.4353 FC3-8.7858 BSP 45864
BDE 1.9081 BRA 7.1568 BC3 9.8097 FSP 4098

MID-COURSE EXECUTION ACCURACY
SGT13125.6 SGR 782.5 SG3 1132.4
RRT -.5502 RRF -.5855 RTF .9942
SGB13148.9 R23 .0444 R13 -.9943
SG113132.6 SG2 653.1 THA 178.12

ORBIT DETERMINATION ACCURACY
ST 3802.9 SR 664.0 SS 1844.3
CRT -.6602 CRS .7708 CST -.9873
LSA 4242.8 MSA 549.7 SSA 16.9
EL1 3828.5 EL2 495.4 ALF 173.31

LAUNCH DATE OCT 30 1964 FLIGHT TIME 390.00 ARRIVAL DATE NOV 24 1965

HELIOCENTRIC CONIC DISTANCE 869.476 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.846 GAL -6.74 AZL 88.23 HCA 265.15 SMA 187.42 ECC .23710 INC 1.7702 V1 29.997
RP 209.66 LAP -1.76 LOP 301.75 VP 23.620 GAP -11.93 AZP 90.15 TAL 323.61 TAP 228.76 RCA 142.99 APO 231.86 V2 26.149
RC 310.607 GL 13.23 GP 2.00 ZAL 140.54 ZAP 39.72 ETS 181.71 ZAE 64.09 ETE 180.48 ZAC 85.83 ETC 258.21 CLP 39.67

PLANETOCENTRIC CONIC

C3 19.378 VHL 4.402 DLA 12.49 RAL 184.51 RAD 6567.8 VEL 11.864 PTH 2.10 VHP 4.717 DPA 10.69 RAP 164.34 ECC 1.3189

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 26 35	2605.22	-26.74	67.77	49.45	99.70	20 10 0	2005.2	-25.12	59.48
90.00	10 42 9	4452.59	8.10	186.17	44.09	62.77	11 56 22	3852.6	4.39	179.45
100.00	20 54 20	2322.19	-27.95	46.71	49.20	101.07	21 33 2	1722.2	-26.13	38.37
100.00	11 57 5	4210.85	9.19	167.81	43.51	61.43	13 7 15	3610.9	5.30	161.18
110.00	22 17 3	2063.36	-31.15	26.21	48.35	104.85	22 51 27	1463.4	-28.80	17.79
110.00	12 50 51	4042.45	12.02	153.34	41.82	57.76	13 58 13	3442.4	7.68	146.94

DIFFERENTIAL CORRECTIONS
TDE-1.9467 TRA 7.4112 TC3-9.6460 BAU 2.5018
RDE .5116 RRA -.0409 RC3 .4581 FAU .18081
FDE-2.6056 FRA 7.2254 FC3-8.0779 BSP 46445
BDE 2.0128 BRA 7.4113 BC3 9.6568 FSP 3907

MID-COURSE EXECUTION ACCURACY
SGT13272.2 SGR 780.4 SG3 1075.2
RRT -.5456 RRF -.5819 RTF .9939
SGB13295.2 R23 .0458 R13 -.9940
SG113279.1 SG2 653.7 THA 178.16

ORBIT DETERMINATION ACCURACY
ST 3907.6 SR 666.2 SS 1818.1
CRT -.6679 CRS .7767 CST -.9875
LSA 4326.7 MSA 546.3 SSA 16.7
EL1 3933.3 EL2 492.6 ALF 173.40

LAUNCH DATE OCT 30 1964 FLIGHT TIME 392.00 ARRIVAL DATE NOV 26 1965

HELIOCENTRIC CONIC DISTANCE 873.643 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.851 GAL -6.90 AZL 88.22 HCA 266.38 SMA 187.51 ECC .23875 INC 1.7791 V1 29.997
RP 209.44 LAP -1.78 LOP 302.99 VP 23.654 GAP -12.10 AZP 90.11 TAL 322.89 TAP 229.27 RCA 142.74 APO 232.27 V2 26.174
RC 311.551 GL 13.09 GP 1.96 ZAL 141.34 ZAP 38.91 ETS 181.71 ZAE 62.99 ETE 180.53 ZAC 85.88 ETC 258.15 CLP 38.87

PLANETOCENTRIC CONIC

C3 19.999 VHL 4.472 DLA 12.03 RAL 185.19 RAD 6567.8 VEL 11.890 PTH 2.11 VHP 4.811 DPA 10.49 RAP 164.73 ECC 1.3291

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 33 11	2597.18	-26.64	67.20	50.50	99.97	20 16 28	1997.2	-24.99	58.92
90.00	10 40 59	4475.58	8.81	187.48	45.21	62.98	11 55 35	3875.6	5.12	180.75
100.00	21 0 40	2315.07	-27.85	46.20	50.24	101.32	21 39 15	1715.1	-26.01	37.88
100.00	11 56 12	4232.93	9.90	169.06	44.63	61.65	13 6 45	3632.9	6.04	162.40
110.00	22 22 45	2058.18	-31.06	25.83	49.38	105.05	22 57 3	1458.2	-28.68	17.44
110.00	12 50 36	4062.58	12.75	154.45	42.94	58.01	13 58 18	3462.6	8.43	148.01

DIFFERENTIAL CORRECTIONS
TDE-2.0563 TRA 7.6724 TC3-9.4849 BAU 2.5387
RDE .5213 RRA -.0405 RC3 .4431 FAU .17121
FDE-2.5789 FRA 7.0173 FC3-7.4118 BSP 47016
BDE 2.1214 BRA 7.6725 BC3 9.4952 FSP 3723

MID-COURSE EXECUTION ACCURACY
SGT13413.6 SGR 778.4 SG3 1020.0
RRT -.5416 RRF -.5791 RTF .9936
SGB13436.1 R23 .0473 R13 -.9936
SG113420.2 SG2 654.0 THA 178.20

ORBIT DETERMINATION ACCURACY
ST 4012.2 SR 668.1 SS 1790.7
CRT -.6754 CRS .7826 CST -.9876
LSA 4410.9 MSA 542.8 SSA 16.5
EL1 4037.9 EL2 489.6 ALF 173.49

LAUNCH DATE OCT 30 1964 FLIGHT TIME 394.00 ARRIVAL DATE NOV 28 1965

HELIOCENTRIC CONIC DISTANCE 877.805 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.856 GAL -7.07 AZL 88.21 HCA 267.62 SMA 187.59 ECC .24048 INC 1.7878 V1 29.997
RP 209.24 LAP -1.79 LOP 304.22 VP 23.687 GAP -12.26 AZP 90.07 TAL 322.16 TAP 229.77 RCA 142.48 APO 232.70 V2 26.198
RC 312.486 GL 12.93 GP 1.92 ZAL 142.15 ZAP 38.14 ETS 181.72 ZAE 61.92 ETE 180.58 ZAC 85.93 ETC 258.09 CLP 38.10

PLANETOCENTRIC CONIC

C3 20.656 VHL 4.545 DLA 11.56 RAL 185.88 RAD 6567.8 VEL 11.918 PTH 2.12 VHP 4.906 DPA 10.27 RAP 165.14 ECC 1.3399

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 39 48	2589.33	-26.55	66.65	51.57	100.23	20 22 57	1989.3	-24.87	58.38
90.00	10 39 50	4498.87	9.53	188.81	46.35	63.21	11 54 49	3898.9	5.86	182.06
100.00	21 6 59	2308.13	-27.76	45.70	51.31	101.56	21 45 27	1708.1	-25.88	37.41
100.00	11 55 19	4255.33	10.62	170.33	45.77	61.89	13 6 15	3655.3	6.78	163.65
110.00	22 28 28	2053.17	-30.97	25.47	50.43	105.25	23 2 41	1453.2	-28.57	17.09
110.00	12 50 20	4083.03	13.49	155.58	44.09	58.29	13 58 23	3483.0	9.20	149.11

DIFFERENTIAL CORRECTIONS
TDE-2.1700 TRA 7.9399 TC3-9.3184 BAU 2.5760
RDE .5313 RRA -.0406 RC3 .4287 FAU .16200
FDE-2.5503 FRA 6.8103 FC3-6.7899 BSP 47552
BDE 2.2341 BRA 7.9400 BC3 9.3282 FSP 3541

MID-COURSE EXECUTION ACCURACY
SGT13550.4 SGR 776.6 SG3 966.9
RRT -.5385 RRF -.5772 RTF .9932
SGB13572.7 R23 .0488 R13 -.9933
SG113556.9 SG2 654.1 THA 178.23

ORBIT DETERMINATION ACCURACY
ST 4116.2 SR 670.0 SS 1762.2
CRT -.6828 CRS .7886 CST -.9876
LSA 4495.2 MSA 539.2 SSA 16.4
EL1 4141.9 EL2 486.5 ALF 173.57

LAUNCH DATE OCT 30 1964 FLIGHT TIME 396.00 ARRIVAL DATE NOV 30 1965

HELIOCENTRIC CONIC DISTANCE 881.962 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.861 GAL -7.24 AZL 88.20 HCA 268.86 SMA 187.68 ECC .24228 INC 1.7966 V1 29.997
RP 209.04 LAP -1.80 LOP 305.46 VP 23.720 GAP -12.43 AZP 90.04 TAL 321.40 TAP 230.26 RCA 142.21 APO 233.15 V2 26.221
RC 313.411 GL 12.78 GP 1.88 ZAL 142.96 ZAP 37.38 ETS 181.72 ZAE 60.87 ETE 180.62 ZAC 85.99 ETC 258.03 CLP 37.34

PLANETOCENTRIC CONIC

C3 21.352 VHL 4.621 DLA 11.10 RAL 186.56 RAD 6567.9 VEL 11.947 PTH 2.13 VHP 5.004 DPA 10.04 RAP 165.58 ECC 1.3514

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 46 24	2581.69	-26.45	66.11	52.65	100.49	20 29 26	1981.7	-24.74	57.86
90.00	10 38 41	4522.44	10.25	190.17	47.52	63.46	11 54 3	3922.4	6.60	183.39
100.00	21 13 19	2301.37	-27.66	45.22	52.38	101.80	21 51 40	1701.4	-25.76	36.94
100.00	11 54 27	4277.99	11.35	171.62	46.94	62.16	13 5 45	3678.0	7.53	164.91
110.00	22 34 11	2048.33	-30.88	25.12	51.49	105.44	23 8 19	1448.3	-28.46	16.76
110.00	12 50 4	4103.80	14.23	156.73	45.26	58.59	13 58 28	3503.8	9.96	150.22

DIFFERENTIAL CORRECTIONS
TDE-2.2876 TRA 8.2140 TC3-9.1465 BAU 2.6136
RDE .5416 RRA -.0411 RC3 .4148 FAU .15311
FDE-2.5195 FRA 6.6037 FC3-6.2078 BSP 48059
BDE 2.3508 BRA 8.2141 BC3 9.1559 FSP 3367

MID-COURSE EXECUTION ACCURACY
SGT13682.8 SGR 775.0 SG3 915.6
RRT -.5360 RRF -.5760 RTF .9928
SGB13704.8 R23 .0504 R13 -.9929
SG113689.2 SG2 653.9 THA 178.26

ORBIT DETERMINATION ACCURACY
ST 4219.6 SR 671.8 SS 1732.3
CRT -.6901 CRS .7945 CST -.9877
LSA 4579.3 MSA 535.4 SSA 16.2
EL1 4245.3 EL2 483.2 ALF 173.65

LAUNCH DATE OCT 30 1964 FLIGHT TIME 398.00 ARRIVAL DATE DEC 2 1965

HELIOCENTRIC CONIC DISTANCE 886.114 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.866 GAL -7.42 AZL 88.19 HCA 270.10 SMA 187.77 ECC .24416 INC 1.8054 V1 29.997
RP 208.85 LAP -1.81 LOP 306.71 VP 23.751 GAP -12.60 AZP 90.00 TAL 320.63 TAP 230.73 RCA 141.92 APO 233.61 V2 26.243
RC 314.329 GL 12.62 GP 1.84 ZAL 143.78 ZAP 36.65 ETS 181.73 ZAE 59.85 ETE 180.67 ZAC 86.05 ETC 257.96 CLP 36.61

PLANETOCENTRIC CONIC

C3 22.091 VHL 4.700 DLA 10.63 RAL 187.24 RAD 6567.9 VEL 11.978 PTH 2.13 VHP 5.104 DPA 9.80 RAP 166.04 ECC 1.3636

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 53 1	2574.25	-26.36	65.58	53.75	100.73	20 35 55	1974.3	-24.61	57.35
90.00	10 37 32	4546.29	10.97	191.55	48.71	63.73	11 53 18	3946.3	7.35	184.74
100.00	21 19 39	2294.82	-27.57	44.76	53.48	102.03	21 57 54	1694.8	-25.64	36.49
100.00	11 53 34	4300.95	12.07	172.94	48.14	62.45	13 5 15	3700.9	8.29	166.20
110.00	22 39 55	2043.67	-30.80	24.78	52.57	105.62	23 13 58	1443.7	-28.35	16.44
110.00	12 49 48	4124.87	14.97	157.91	46.46	58.90	13 58 33	3524.9	10.74	151.36

DIFFERENTIAL CORRECTIONS
TDE-2.4091 TRA 8.4961 TC3-8.9691 BAU 2.6515
RDE .5522 RRA -.0420 RC3 .4014 FAU .14450
FDE-2.4865 FRA 6.3986 FC3-5.6629 BSP 48544
BDE 2.4716 BRA 8.4962 BC3 8.9781 FSP 3196

MID-COURSE EXECUTION ACCURACY
SGT13811.3 SGR 773.4 SG3 866.2
RRT -.5343 RRF -.5755 RTF .9924
SGB13833.0 R23 .0522 R13 -.9925
SG113817.5 SG2 653.5 THA 178.28

ORBIT DETERMINATION ACCURACY
ST 4322.4 SR 673.4 SS 1701.1
CRT -.6971 CRS .8004 CST -.9877
LSA 4663.4 MSA 531.5 SSA 16.1
EL1 4348.1 EL2 479.9 ALF 173.72

LAUNCH DATE OCT 30 1964 FLIGHT TIME 400.00 ARRIVAL DATE DEC 4 1965

HELIOCENTRIC CONIC DISTANCE 890.259 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.871 GAL -7.61 AZL 88.19 HCA 271.34 SMA 187.86 ECC .24612 INC 1.8142 V1 29.997
RP 208.67 LAP -1.81 LOP 307.95 VP 23.782 GAP -12.78 AZP 89.96 TAL 319.84 TAP 231.19 RCA 141.62 APO 234.09 V2 26.264
RC 315.238 GL 12.46 GP 1.81 ZAL 144.60 ZAP 35.94 ETS 181.73 ZAE 58.84 ETE 180.71 ZAC 86.12 ETC 257.89 CLP 35.90

PLANETOCENTRIC CONIC

C3 22.873 VHL 4.783 DLA 10.15 RAL 187.93 RAD 6567.9 VEL 12.010 PTH 2.14 VHP 5.206 DPA 9.56 RAP 166.52 ECC 1.3764

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 59 36	2567.05	-26.27	65.08	54.87	100.97	20 42 23	1967.0	-24.49	56.86
90.00	10 36 23	4570.39	11.69	192.95	49.92	64.03	11 52 34	3970.4	8.11	186.11
100.00	21 25 58	2288.49	-27.48	44.31	54.59	102.25	22 4 7	1688.5	-25.52	36.06
100.00	11 52 42	4324.18	12.80	174.28	49.36	62.76	13 4 46	3724.2	9.05	167.50
110.00	22 45 38	2039.21	-30.72	24.46	53.66	105.80	23 19 37	1439.2	-28.24	16.13
110.00	12 49 32	4146.23	15.72	159.11	47.69	59.25	13 58 38	3546.2	11.52	152.52

DIFFERENTIAL CORRECTIONS
TDE-2.5343 TRA 8.7860 TC3-8.7865 BAU 2.6895
RDE .5631 RRA -.0434 RC3 .3884 FAU .13619
FDE-2.4515 FRA 6.1944 FC3-5.1548 BSP 49029
BDE 2.5961 BRA 8.7861 BC3 8.7951 FSP 3032

MID-COURSE EXECUTION ACCURACY
SGT13935.4 SGR 772.0 SG3 818.6
RRT -.5332 RRF -.5758 RTF .9919
SGB13956.7 R23 .0541 R13 -.9920
SG113941.5 SG2 652.8 THA 178.30

ORBIT DETERMINATION ACCURACY
ST 4424.0 SR 674.9 SS 1668.7
CRT -.7040 CRS .8063 CST -.9876
LSA 4746.9 MSA 527.7 SSA 15.9
EL1 4449.8 EL2 476.6 ALF 173.80

LAUNCH DATE OCT 30 1964 FLIGHT TIME 402.00 ARRIVAL DATE DEC 6 1965

HELIOCENTRIC CONIC DISTANCE 894.396 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.876 GAL -7.80 AZL 88.18 HCA 272.59 SMA 187.95 ECC .24816 INC 1.8231 V1 29.997
RP 208.49 LAP -1.82 LOP 309.20 VP 23.811 GAP -12.95 AZP 89.92 TAL 319.04 TAP 231.63 RCA 141.31 APO 234.59 V2 26.285
RC 316.140 GL 12.29 GP 1.78 ZAL 145.42 ZAP 35.25 ETS 181.73 ZAE 57.85 ETE 180.75 ZAC 86.20 ETC 257.82 CLP 35.21

PLANETOCENTRIC CONIC

C3 23.703 VHL 4.869 DLA 9.67 RAL 188.61 RAD 6568.0 VEL 12.045 PTH 2.15 VHP 5.311 DPA 9.31 RAP 167.02 ECC 1.3901

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 6 11	2560.08	-26.18	64.59	56.00	101.20	20 48 51	1960.1	-24.37	56.39
90.00	10 35 15	4594.75	12.42	194.38	51.17	64.35	11 51 50	3994.8	8.86	187.50
100.00	21 32 17	2282.38	-27.39	43.88	55.71	102.46	22 10 20	1682.4	-25.40	35.64
100.00	11 51 50	4347.68	13.53	175.65	50.60	63.09	13 4 18	3747.7	9.81	168.83
110.00	22 51 21	2034.96	-30.64	24.15	54.78	105.96	23 25 16	1435.0	-28.14	15.84
110.00	12 49 16	4167.87	16.47	160.34	48.94	59.61	13 58 43	3567.9	12.31	153.70

DIFFERENTIAL CORRECTIONS
TDE-2.6641 TRA 9.0833 TC3-8.6025 BAU 2.7286
RDE .5744 RRA -.0452 RC3 .3760 FAU .12822
FDE-2.4151 FRA 5.9902 FC3-4.6833 BSP 49472
BDE 2.7253 BRA 9.0834 BC3 8.6107 FSP 2871

MID-COURSE EXECUTION ACCURACY
SGT14056.3 SGR 770.7 SG3 772.8
RRT -.5328 RRF -.5769 RTF .9914
SGB14077.4 R23 .0562 R13 -.9915
SG114062.3 SG2 651.9 THA 178.32

ORBIT DETERMINATION ACCURACY
ST 4525.0 SR 676.3 SS 1635.1
CRT -.7107 CRS .8123 CST -.9875
LSA 4830.4 MSA 523.7 SSA 15.7
EL1 4550.8 EL2 473.1 ALF 173.87

LAUNCH DATE OCT 30 1964 FLIGHT TIME 404.00 ARRIVAL DATE DEC 8 1965

HELIOCENTRIC CONIC DISTANCE 898.524 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.882 GAL -8.00 AZL 88.17 HCA 273.84 SMA 188.04 ECC .25030 INC 1.8319 V1 29.997
RP 208.32 LAP -1.83 LOP 310.45 VP 23.840 GAP -13.13 AZP 89.88 TAL 318.22 TAP 232.06 RCA 140.97 APO 235.11 V2 26.304
RC 317.035 GL 12.12 GP 1.74 ZAL 146.24 ZAP 34.58 ETS 181.73 ZAE 56.89 ETE 180.79 ZAC 86.28 ETC 257.75 CLP 34.54

PLANETOCENTRIC CONIC

C3 24.583 VHL 4.958 DLA 9.19 RAL 189.29 RAD 6568.0 VEL 12.081 PTH 2.16 VHP 5.418 DPA 9.04 RAP 167.55 ECC 1.4046

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 12 46	2553.35	-26.09	64.12	57.15	101.42	20 55 19	1953.4	-24.25	55.93
90.00	10 34 8	4619.35	13.14	195.82	52.43	64.69	11 51 7	4019.4	9.62	188.91
100.00	21 38 36	2276.51	-27.31	43.46	56.86	102.66	22 16 32	1676.5	-25.29	35.24
100.00	11 50 59	4371.43	14.26	177.04	51.87	63.45	13 3 50	3771.4	10.58	170.18
110.00	22 57 5	2030.93	-30.56	23.86	55.90	106.12	23 30 55	1430.9	-28.05	15.57
110.00	12 48 59	4189.78	17.22	161.60	50.22	60.00	13 58 49	3589.8	13.10	154.91

DIFFERENTIAL CORRECTIONS
TDE-2.7986 TRA 9.3878 TC3-8.4155 BAU 2.7684
RDE .5861 RRA -.0476 RC3 .3640 FAU .12054
FDE-2.3767 FRA 5.7865 FC3-4.2451 BSP 49863
BDE 2.8593 BRA 9.3879 BC3 8.4234 FSP 2714

MID-COURSE EXECUTION ACCURACY
SGT14172.8 SGR 769.4 SG3 728.8
RRT -.5332 RRF -.5788 RTF .9908
SGB14193.6 R23 .0584 R13 -.9909
SG114178.7 SG2 650.7 THA 178.34

ORBIT DETERMINATION ACCURACY
ST 4625.0 SR 677.5 SS 1600.4
CRT -.7174 CRS .8182 CST -.9874
LSA 4913.3 MSA 519.6 SSA 15.6
EL1 4650.8 EL2 469.4 ALF 173.94

LAUNCH DATE OCT 30 1964 FLIGHT TIME 406.00 ARRIVAL DATE DEC 10 1965

HELIOCENTRIC CONIC DISTANCE 902.642 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.887 GAL -8.21 AZL 88.16 HCA 275.09 SMA 188.14 ECC .25253 INC 1.8409 V1 29.997
RP 208.16 LAP -1.83 LOP 311.70 VP 23.868 GAP -13.32 AZP 89.84 TAL 317.38 TAP 232.47 RCA 140.63 APO 235.64 V2 26.323
RC 317.924 GL 11.95 GP 1.71 ZAL 147.06 ZAP 33.93 ETS 181.73 ZAE 55.94 ETE 180.83 ZAC 86.37 ETC 257.67 CLP 33.89

PLANETOCENTRIC CONIC

C3 25.517 VHL 5.051 DLA 8.71 RAL 189.98 RAD 6568.0 VEL 12.120 PTH 2.17 VHP 5.527 DPA 8.77 RAP 168.09 ECC 1.4199

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 19 19	2546.89	-26.00	63.66	58.31	101.63	21 1 46	1946.9	-24.13	55.49
90.00	10 33 1	4644.19	13.86	197.30	53.73	65.06	11 50 25	4044.2	10.38	190.34
100.00	21 44 54	2270.88	-27.22	43.07	58.01	102.85	22 22 44	1670.9	-25.18	34.86
100.00	11 50 7	4395.43	14.98	178.45	53.17	63.83	13 3 23	3795.4	11.35	171.55
110.00	23 2 47	2027.12	-30.49	23.59	57.05	106.26	23 36 34	1427.1	-27.96	15.31
110.00	12 48 43	4211.95	17.97	162.88	51.53	60.42	13 58 55	3612.0	13.89	156.14

DIFFERENTIAL CORRECTIONS
TDE-2.9372 TRA 9.7013 TC3-8.2264 BAU 2.8089
RDE .5981 RRA -.0504 RC3 .3524 FAU .11312
FDE-2.3360 FRA 5.5830 FC3-3.8379 BSP 50238
BDE 2.9975 BRA 9.7014 BC3 8.2339 FSP 2562

MID-COURSE EXECUTION ACCURACY
SGT14286.1 SGR 768.3 SG3 686.3
RRT -.5342 RRF -.5814 RTF .9902
SGB14306.8 R23 .0608 R13 -.9903
SG114292.0 SG2 649.2 THA 178.35

ORBIT DETERMINATION ACCURACY
ST 4723.8 SR 678.7 SS 1564.2
CRT -.7239 CRS .8242 CST -.9873
LSA 4995.6 MSA 515.5 SSA 15.4
EL1 4749.5 EL2 465.7 ALF 174.01

LAUNCH DATE OCT 30 1964 FLIGHT TIME 408.00 ARRIVAL DATE DEC 12 1965

HELIOCENTRIC CONIC DISTANCE 906.750 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.892 GAL -8.42 AZL 88.15 HCA 276.34 SMA 188.23 ECC .25485 INC 1.8498 V1 29.997
RP 208.01 LAP -1.84 LOP 312.95 VP 23.896 GAP -13.50 AZP 89.80 TAL 316.53 TAP 232.87 RCA 140.26 APO 236.20 V2 26.341
RC 318.808 GL 11.77 GP 1.68 ZAL 147.89 ZAP 33.30 ETS 181.73 ZAE 55.01 ETE 180.87 ZAC 86.46 ETC 257.60 CLP 33.26

PLANETOCENTRIC CONIC

C3 26.507 VHL 5.149 DLA 8.22 RAL 190.66 RAD 6568.1 VEL 12.161 PTH 2.18 VHP 5.640 DPA 8.50 RAP 168.66 ECC 1.4362

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 25 51	2540.68	-25.91	63.23	59.49	101.83	21 8 12	1940.7	-24.02	55.07
90.00	10 31 55	4669.24	14.57	198.79	55.05	65.45	11 49 44	4069.2	11.14	191.79
100.00	21 51 10	2265.50	-27.14	42.69	59.19	103.04	22 28 56	1665.5	-25.07	34.50
100.00	11 49 17	4419.66	15.71	179.88	54.50	64.23	13 2 56	3819.7	12.11	172.94
110.00	23 8 29	2023.54	-30.42	23.33	58.20	106.40	23 42 13	1423.5	-27.87	15.06
110.00	12 48 27	4234.38	18.72	164.19	52.86	60.86	13 59 1	3634.4	14.69	157.39

DIFFERENTIAL CORRECTIONS
TDE-3.0799 TRA10.0236 TC3-8.0350 BAU 2.8500
RDE .6104 RRA -.0538 RC3 .3412 FAU .10594
FDE-2.2928 FRA 5.3800 FC3-3.4599 BSP 50599
BDE 3.1398 BRA10.0237 BC3 8.0422 FSP 2415

MID-COURSE EXECUTION ACCURACY
SGT14395.5 SGR 767.2 SG3 645.4
RRT -.5357 RRF -.5847 RTF .9895
SGB14415.9 R23 .0634 R13 -.9896
SG114401.3 SG2 647.5 THA 178.36

ORBIT DETERMINATION ACCURACY
ST 4821.0 SR 679.6 SS 1526.6
CRT -.7301 CRS .8300 CST -.9870
LSA 5076.7 MSA 511.2 SSA 15.2
EL1 4846.7 EL2 461.9 ALF 174.07

LAUNCH DATE OCT 30 1964 FLIGHT TIME 410.00 ARRIVAL DATE DEC 14 1965

HELIOCENTRIC CONIC DISTANCE 910.846 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.898 GAL -8.64 AZL 88.14 HCA 277.59 SMA 188.33 ECC .25727 INC 1.8588 V1 29.997
RP 207.86 LAP -1.84 LOP 314.20 VP 23.922 GAP -13.69 AZP 89.75 TAL 315.65 TAP 233.25 RCA 139.88 APO 236.78 V2 26.357
RC 319.685 GL 11.59 GP 1.66 ZAL 148.71 ZAP 32.69 ETS 181.72 ZAE 54.10 ETE 180.91 ZAC 86.57 ETC 257.52 CLP 32.65

PLANETOCENTRIC CONIC

C3 27.559 VHL 5.250 DLA 7.73 RAL 191.34 RAD 6568.1 VEL 12.204 PTH 2.19 VHP 5.755 DPA 8.21 RAP 169.24 ECC 1.4535

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 32 22	2534.74	-25.83	62.81	60.68	102.03	21 14 37	1934.7	-23.91	54.67
90.00	10 30 49	4694.52	15.28	200.31	56.40	65.87	11 49 4	4094.5	11.89	193.27
100.00	21 57 26	2260.37	-27.06	42.33	60.38	103.21	22 35 6	1660.4	-24.97	34.15
100.00	11 48 26	4444.11	16.42	181.35	55.85	64.67	13 2 30	3844.1	12.88	174.35
110.00	23 14 11	2020.20	-30.36	23.09	59.38	106.53	23 47 51	1420.2	-27.79	14.84
110.00	12 48 11	4257.05	19.46	165.52	54.22	61.33	13 59 8	3657.1	15.48	158.66

DIFFERENTIAL CORRECTIONS
TDE-3.2289 TRA10.3534 TC3-7.8446 BAU 2.8928
RDE .6232 RRA -.0576 RC3 .3304 FAU .09904
FDE-2.2490 FRA 5.1764 FC3-3.1114 BSP 50883
BDE 3.2885 BRA10.3536 BC3 7.8515 FSP 2270

MID-COURSE EXECUTION ACCURACY
SGT14501.7 SGR 766.2 SG3 606.1
RRT -.5380 RRF -.5889 RTF .9887
SGB14521.9 R23 .0662 R13 -.9888
SG114507.6 SG2 645.6 THA 178.37

ORBIT DETERMINATION ACCURACY
ST 4917.8 SR 680.5 SS 1488.3
CRT -.7365 CRS .8361 CST -.9868
LSA 5158.1 MSA 506.8 SSA 15.0
EL1 4943.5 EL2 458.0 ALF 174.13

LAUNCH DATE OCT 30 1964 FLIGHT TIME 412.00 ARRIVAL DATE DEC 16 1965

HELIOCENTRIC CONIC DISTANCE 914.928 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.904 GAL -8.86 AZL 88.13 HCA 278.85 SMA 188.43 ECC .25980 INC 1.8679 V1 29.997
RP 207.73 LAP -1.85 LOP 315.46 VP 23.947 GAP -13.89 AZP 89.71 TAL 314.76 TAP 233.61 RCA 139.47 APO 237.38 V2 26.373
RC 320.558 GL 11.41 GP 1.63 ZAL 149.54 ZAP 32.09 ETS 181.72 ZAE 53.21 ETE 180.94 ZAC 86.67 ETC 257.45 CLP 32.06

PLANETOCENTRIC CONIC

C3 28.675 VHL 5.355 DLA 7.25 RAL 192.02 RAD 6568.2 VEL 12.249 PTH 2.20 VHP 5.873 DPA 7.92 RAP 169.84 ECC 1.4719

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 38 52	2529.07	-25.75	62.42	61.89	102.21	21 21 1	1929.1	-23.81	54.28
90.00	10 29 44	4719.99	15.98	201.85	57.78	66.31	11 48 24	4120.0	12.64	194.76
100.00	22 3 41	2255.51	-26.98	41.99	61.58	103.38	22 41 16	1655.5	-24.87	33.82
100.00	11 47 37	4468.78	17.14	182.83	57.23	65.13	13 2 5	3868.8	13.64	175.78
110.00	23 19 51	2017.11	-30.30	22.87	60.57	106.65	23 53 29	1417.1	-27.72	14.63
110.00	12 47 55	4279.95	20.20	166.88	55.62	61.82	13 59 15	3679.9	16.28	159.96

DIFFERENTIAL CORRECTIONS
TDE-3.3816 TRA10.6931 TC3-7.6535 BAU 2.9366
RDE .6364 RRA -.0621 RC3 .3199 FAU .09238
FDE-2.2021 FRA 4.9727 FC3-2.7892 BSP 51153
BDE 3.4410 BRA10.6933 BC3 7.6602 FSP 2130

MID-COURSE EXECUTION ACCURACY
SGT14604.7 SGR 765.2 SG3 568.1
RRT -.5409 RRF -.5936 RTF .9878
SGB14624.8 R23 .0693 R13 -.9879
SG114610.6 SG2 643.3 THA 178.37

ORBIT DETERMINATION ACCURACY
ST 5012.4 SR 681.3 SS 1448.3
CRT -.7426 CRS .8420 CST -.9865
LSA 5237.6 MSA 502.4 SSA 14.9
EL1 5038.0 EL2 454.0 ALF 174.19

LAUNCH DATE OCT 30 1964 FLIGHT TIME 414.00 ARRIVAL DATE DEC 18 1965

HELIOCENTRIC CONIC DISTANCE 918.995 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.909 GAL -9.10 AZL 88.12 HCA 280.11 SMA 188.53 ECC .26244 INC 1.8771 V1 29.997
RP 207.60 LAP -1.85 LOP 316.72 VP 23.971 GAP -14.09 AZP 89.67 TAL 313.85 TAP 233.96 RCA 139.05 APO 238.01 V2 26.388
RC 321.425 GL 11.23 GP 1.60 ZAL 150.36 ZAP 31.52 ETS 181.72 ZAE 52.33 ETE 180.98 ZAC 86.78 ETC 257.37 CLP 31.48

PLANETOCENTRIC CONIC

C3 29.861 VHL 5.464 DLA 6.76 RAL 192.69 RAD 6568.2 VEL 12.298 PTH 2.22 VHP 5.993 DPA 7.61 RAP 170.46 ECC 1.4914

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 45 20	2523.68	-25.67	62.04	63.12	102.38	21 27 24	1923.7	-23.71	53.92
90.00	10 28 40	4745.66	16.68	203.41	59.18	66.78	11 47 46	4145.7	13.39	196.27
100.00	22 9 54	2250.92	-26.91	41.66	62.80	103.53	22 47 25	1650.9	-24.78	33.51
100.00	11 46 48	4493.65	17.84	184.34	58.64	65.61	13 1 41	3893.7	14.40	177.24
110.00	23 25 31	2014.27	-30.24	22.67	61.77	106.76	23 59 6	1414.3	-27.65	14.44
110.00	12 47 40	4303.06	20.94	168.27	57.04	62.34	13 59 23	3703.1	17.07	161.28

DIFFERENTIAL CORRECTIONS
TDE-3.5398 TRA11.0415 TC3-7.4628 BAU 2.9818
RDE .6499 RRA -.0671 RC3 .3098 FAU .08594
FDE-2.1537 FRA 4.7682 FC3-2.4917 BSP 51383
BDE 3.5990 BRA11.0417 BC3 7.4692 FSP 1994

MID-COURSE EXECUTION ACCURACY
SGT14704.0 SGR 764.3 SG3 531.6
RRT -.5443 RRF -.5992 RTF .9868
SGB14723.9 R23 .0727 R13 -.9869
SG114709.9 SG2 640.9 THA 178.38

ORBIT DETERMINATION ACCURACY
ST 5105.6 SR 681.9 SS 1407.4
CRT -.7486 CRS .8481 CST -.9861
LSA 5316.5 MSA 497.9 SSA 14.7
EL1 5131.3 EL2 449.9 ALF 174.25

LAUNCH DATE OCT 30 1964 FLIGHT TIME 416.00 ARRIVAL DATE DEC 20 1965

HELIOCENTRIC CONIC DISTANCE 923.047 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.915 GAL -9.34 AZL 88.11 HCA 281.37 SMA 188.63 ECC .26519 INC 1.8863 V1 29.997
RP 207.48 LAP -1.85 LOP 317.98 VP 23.995 GAP -14.29 AZP 89.63 TAL 312.93 TAP 234.29 RCA 138.61 APO 238.65 V2 26.402
RC 322.286 GL 11.05 GP 1.58 ZAL 151.18 ZAP 30.96 ETS 181.71 ZAE 51.47 ETE 181.01 ZAC 86.90 ETC 257.29 CLP 30.92

PLANETOCENTRIC CONIC

C3 31.120 VHL 5.579 DLA 6.27 RAL 193.37 RAD 6568.2 VEL 12.349 PTH 2.23 VHP 6.117 DPA 7.30 RAP 171.09 ECC 1.5122

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 51 47	2518.56	-25.60	61.69	64.36	102.54	21 33 46	1918.6	-23.61	53.58
90.00	10 27 37	4771.52	17.36	205.00	60.61	67.28	11 47 9	4171.5	14.14	197.81
100.00	22 16 6	2246.59	-26.84	41.36	64.03	103.67	22 53 33	1646.6	-24.69	33.22
100.00	11 45 59	4518.72	18.54	185.87	60.08	66.12	13 1 18	3918.7	15.16	178.72
110.00	23 31 10	2011.68	-30.19	22.49	62.99	106.85	24 4 42	1411.7	-27.59	14.26
110.00	12 47 25	4326.40	21.67	169.69	58.49	62.89	13 59 31	3726.4	17.86	162.63

DIFFERENTIAL CORRECTIONS
TDE-3.7034 TRA11.3995 TC3-7.2737 BAU 3.0288
RDE .6639 RRA -.0727 RC3 .3001 FAU .07974
FDE-2.1032 FRA 4.5631 FC3-2.2182 BSP 51568
BDE 3.7624 BRA11.3998 BC3 7.2798 FSP 1863

MID-COURSE EXECUTION ACCURACY
SGT14800.7 SGR 763.4 SG3 496.5
RRT -.5483 RRF -.6054 RTF .9857
SGB14820.4 R23 .0764 R13 -.9858
SG114806.6 SG2 638.1 THA 178.38

ORBIT DETERMINATION ACCURACY
ST 5197.4 SR 682.4 SS 1365.2
CRT -.7545 CRS .8542 CST -.9856
LSA 5394.3 MSA 493.3 SSA 14.5
EL1 5223.0 EL2 445.6 ALF 174.30

LAUNCH DATE OCT 30 1964 FLIGHT TIME 418.00 ARRIVAL DATE DEC 22 1965

HELIOCENTRIC CONIC DISTANCE 927.080 EARTH TO MARS

RL 148.54 LAL -.00 LOL 36.61 VL 32.921 GAL -9.59 AZL 88.10 HCA 282.63 SMA 188.73 ECC .26807 INC 1.8957 V1 29.997
RP 207.36 LAP -1.85 LOP 319.24 VP 24.017 GAP -14.50 AZP 89.59 TAL 311.98 TAP 234.61 RCA 138.14 APO 239.33 V2 26.416
RC 323.141 GL 10.86 GP 1.55 ZAL 152.00 ZAP 30.42 ETS 181.71 ZAE 50.63 ETE 181.05 ZAC 87.03 ETC 257.21 CLP 30.38

PLANETOCENTRIC CONIC

C3 32.459 VHL 5.697 DLA 5.78 RAL 194.04 RAD 6568.3 VEL 12.403 PTH 2.24 VHP 6.244 DPA 6.99 RAP 171.74 ECC 1.5342

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 58 13	2513.72	-25.52	61.35	65.61	102.70	21 40 6	1913.7	-23.52	53.25
90.00	10 26 35	4797.55	18.04	206.61	62.07	67.80	11 46 33	4197.5	14.87	199.36
100.00	22 22 17	2242.53	-26.78	41.08	65.28	103.81	22 59 40	1642.5	-24.61	32.95
100.00	11 45 11	4543.97	19.23	187.43	61.54	66.66	13 0 55	3944.0	15.91	180.22
110.00	23 36 48	2009.34	-30.14	22.32	64.23	106.94	24 10 17	1409.3	-27.53	14.10
110.00	12 47 10	4349.93	22.39	171.13	59.97	63.47	13 59 40	3749.9	18.65	164.00

DIFFERENTIAL CORRECTIONS
TDE-3.8712 TRA11.7687 TC3-7.0833 BAU 3.0764
RDE .6783 RRA -.0789 RC3 .2906 FAU .07368
FDE-2.0502 FRA 4.3577 FC3-1.9651 BSP 51733
BDE 3.9302 BRA11.7690 BC3 7.0892 FSP 1735

MID-COURSE EXECUTION ACCURACY
SGT14893.4 SGR 762.5 SG3 462.6
RRT -.5528 RRF -.6122 RTF .9844
SGB14912.9 R23 .0805 R13 -.9845
SG114899.4 SG2 635.2 THA 178.38

ORBIT DETERMINATION ACCURACY
ST 5286.9 SR 682.7 SS 1321.6
CRT -.7602 CRS .8603 CST -.9851
LSA 5470.4 MSA 488.8 SSA 14.3
EL1 5312.5 EL2 441.4 ALF 174.35

LAUNCH DATE OCT 31 1964 FLIGHT TIME 182.00 ARRIVAL DATE MAY 1 1965

HELIOCENTRIC CONIC DISTANCE 474.940 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 34.582 GAL -8.01 AZL 87.40 HCA 154.48 SMA 224.36 ECC .36264 INC 2.5959 V1 30.005
RP 244.23 LAP 1.12 LOP 192.11 VP 22.255 GAP 20.67 AZP 92.34 TAL 329.40 TAP 123.88 RCA 143.00 APO 305.72 V2 22.463
RC 132.477 GL 14.35 GP -1.94 ZAL 134.24 ZAP 169.94 ETS 189.72 ZAE 157.10 ETE 353.31 ZAC 86.29 ETC 256.17 CLP 170.13

PLANETOCENTRIC CONIC

C3 39.182 VHL 6.260 DLA 15.65 RAL 180.03 RAD 6568.5 VEL 12.671 PTH 2.30 VHP 9.352 DPA -1.41 RAP 181.78 ECC 1.6448

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 36 36	2890.40	-28.31	88.43	59.75	89.50	19 24 46	2290.4	-28.08	79.77
90.00	10 48 34	4515.93	10.05	189.80	50.58	63.39	12 3 49	3915.9	6.40	183.02
100.00	20 6 34	2600.27	-29.89	67.09	59.75	90.55	20 49 54	2000.3	-29.49	58.31
100.00	12 1 17	4281.29	11.45	171.81	49.84	62.20	13 12 38	3681.3	7.64	165.10
110.00	21 33 59	2326.75	-34.03	46.15	59.58	93.42	22 12 45	1726.7	-33.19	37.01
110.00	12 50 21	4127.57	15.07	158.06	47.75	58.95	13 59 9	3527.6	10.84	151.51

DIFFERENTIAL CORRECTIONS
TDE 1.3833 TRA-3.2106 TC3 .7084 BAU .3773
RDE -.3689 RRA .0599 RC3 -.1305 FAU .07789
FDE -.7458 FRA 2.6638 FC3-1.7210 BSP 11648
BDE 1.4316 BRA 3.2112 BC3 .7203 FSP 836

MID-COURSE EXECUTION ACCURACY
SGT 3421.2 SGR 379.4 SG3 293.3
RRT -.5749 RRF .5643 RTF -.9045
SGB 3442.1 R23 -.0489 R13 .9048
SG1 3428.2 SG2 309.8 THA 176.32

ORBIT DETERMINATION ACCURACY
ST 1562.7 SR 338.1 SS 826.9
CRT -.8389 CRS -.7046 CST .9765
LSA 1782.5 MSA 249.5 SSA 24.9
EL1 1588.6 EL2 181.0 ALF 169.57

LAUNCH DATE OCT 31 1964 FLIGHT TIME 184.00 ARRIVAL DATE MAY 3 1965

HELIOCENTRIC CONIC DISTANCE 477.576 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 34.501 GAL -7.83 AZL 87.37 HCA 155.39 SMA 222.26 ECC .35587 INC 2.6289 V1 30.005
RP 243.99 LAP 1.09 LOP 193.02 VP 22.153 GAP 20.11 AZP 92.39 TAL 329.67 TAP 125.06 RCA 143.16 APO 301.35 V2 22.486
RC 134.631 GL 14.80 GP -2.04 ZAL 133.81 ZAP 169.45 ETS 189.77 ZAE 156.95 ETE 353.28 ZAC 86.28 ETC 256.14 CLP 169.64

PLANETOCENTRIC CONIC

C3 37.662 VHL 6.137 DLA 16.20 RAL 179.92 RAD 6568.5 VEL 12.611 PTH 2.29 VHP 9.152 DPA -1.68 RAP 182.13 ECC 1.6198

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 30 58	2900.43	-28.30	89.17	59.11	89.13	19 19 18	2300.4	-28.13	80.51
90.00	10 53 17	4485.91	9.13	188.07	49.91	63.08	12 8 3	3885.9	5.45	181.33
100.00	20 1 22	2608.90	-29.89	67.73	59.13	90.22	20 44 51	2008.9	-29.54	58.95
100.00	12 5 34	4252.60	10.54	170.18	49.17	61.86	13 16 27	3652.6	6.70	163.50
110.00	21 29 41	2332.56	-34.06	46.60	58.98	93.15	22 8 34	1732.6	-33.24	37.46
110.00	12 53 44	4101.77	14.15	156.62	47.05	58.56	14 2 6	3501.8	9.89	150.11

DIFFERENTIAL CORRECTIONS
TDE 1.3613 TRA-3.1820 TC3 .7590 BAU .3886
RDE -.3541 RRA .0732 RC3 -.1394 FAU .08014
FDE -.7489 FRA 2.7301 FC3-1.8423 BSP 11848
BDE 1.4066 BRA 3.1829 BC3 .7717 FSP 880

MID-COURSE EXECUTION ACCURACY
SGT 3471.9 SGR 379.0 SG3 307.3
RRT -.6078 RRF .5988 RTF -.9076
SGB 3492.5 R23 -.0541 R13 .9080
SG1 3479.6 SG2 300.3 THA 176.18

ORBIT DETERMINATION ACCURACY
ST 1573.9 SR 331.3 SS 839.6
CRT -.8439 CRS -.7063 CST .9750
LSA 1797.0 MSA 249.7 SSA 24.5
EL1 1598.9 EL2 175.0 ALF 169.80

LAUNCH DATE OCT 31 1964 FLIGHT TIME 186.00 ARRIVAL DATE MAY 5 1965

DISTANCE 480.283

HELIOCENTRIC CONIC

RL 148.50 LAL -.00 LOL 37.61 VL 34.423 GAL -7.65 AZL 87.34 HCA 156.30 SMA 220.29 ECC .34935 INC 2.6645 V1 30.005
RP 243.75 LAP 1.07 LOP 193.93 VP 22.056 GAP 19.55 AZP 92.44 TAL 329.94 TAP 126.25 RCA 143.33 APO 297.24 V2 22.510
RC 136.814 GL 15.28 GP -2.16 ZAL 133.37 ZAP 168.94 ETS 189.86 ZAE 156.84 ETE 353.20 ZAC 86.26 ETC 256.12 CLP 169.15

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 36.232 VHL 6.019 DLA 16.77 RAL 179.81 RAD 6568.4 VEL 12.554 PTH 2.28 VHP 8.955 DPA -1.97 RAP 182.46 ECC 1.5963

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 25 0	2911.83	-28.29	90.00	58.50	88.72	19 13 32	2311.8	-28.17	81.34
90.00	10 58 21	4454.93	8.17	186.30	49.28	62.79	12 12 36	3854.9	4.46	179.59
100.00	19 55 53	2618.77	-29.89	68.47	58.53	89.83	20 39 32	2018.8	-29.60	59.67
100.00	12 10 9	4223.23	9.59	168.51	48.52	61.55	13 20 32	3623.2	5.71	161.86
110.00	21 25 11	2339.38	-34.08	47.13	58.41	92.83	22 4 10	1739.4	-33.31	37.98
110.00	12 57 21	4075.38	13.21	155.15	46.38	58.18	14 5 16	3475.4	8.91	148.70

DIFFERENTIAL CORRECTIONS

TDE 1.3401 TRA-3.1517 TC3 .8128 BAU .4003
RDE -.3399 RRA .0867 RC3 -.1492 FAU .08250
FDE -.7508 FRA 2.7985 FC3-1.9714 BSP 12030
BDE 1.3825 BRA 3.1529 BC3 .8264 FSP 926

MID-COURSE EXECUTION ACCURACY

SGT 3521.7 SGR 380.0 SG3 321.9
RRT -.6416 RRF .6339 RTF -.9108
SGB 3542.1 R23 -.0593 R13 .9111
SG1 3530.1 SG2 290.7 THA 176.01

ORBIT DETERMINATION ACCURACY

ST 1584.8 SR 324.6 SS 852.0
CRT -.8498 CRS -.7084 CST .9732
LSA 1810.9 MSA 250.7 SSA 23.9
EL1 1608.9 EL2 168.5 ALF 170.02

LAUNCH DATE OCT 31 1964 FLIGHT TIME 188.00 ARRIVAL DATE MAY 7 1965

DISTANCE 483.058

HELIOCENTRIC CONIC

RL 148.50 LAL -.00 LOL 37.61 VL 34.349 GAL -7.48 AZL 87.30 HCA 157.22 SMA 218.43 ECC .34309 INC 2.7029 V1 30.005
RP 243.50 LAP 1.05 LOP 194.85 VP 21.965 GAP 18.99 AZP 92.49 TAL 330.22 TAP 127.44 RCA 143.49 APO 293.37 V2 22.535
RC 139.022 GL 15.78 GP -2.29 ZAL 132.91 ZAP 168.43 ETS 189.98 ZAE 156.78 ETE 353.08 ZAC 86.22 ETC 256.10 CLP 168.65

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 34.886 VHL 5.906 DLA 17.37 RAL 179.70 RAD 6568.4 VEL 12.500 PTH 2.26 VHP 8.764 DPA -2.26 RAP 182.78 ECC 1.5741

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 18 41	2924.75	-28.27	90.94	57.92	88.24	19 7 26	2324.8	-28.21	82.28
90.00	11 3 48	4422.89	7.17	184.48	48.69	62.53	12 17 31	3822.9	3.43	177.79
100.00	19 50 5	2630.01	-29.89	69.30	57.96	89.39	20 33 55	2030.0	-29.65	60.51
100.00	12 15 5	4192.87	8.60	166.80	47.92	61.26	13 24 58	3592.9	4.70	160.18
110.00	21 20 27	2347.31	-34.10	47.75	57.88	92.47	21 59 34	1747.3	-33.39	38.58
110.00	13 1 13	4048.33	12.24	153.66	45.75	57.83	14 8 41	3448.3	7.90	147.25

DIFFERENTIAL CORRECTIONS

TDE 1.3182 TRA-3.1211 TC3 .8681 BAU .4117
RDE -.3261 RRA .1006 RC3 -.1598 FAU .08496
FDE -.7513 FRA 2.8692 FC3-2.1085 BSP 12208
BDE 1.3580 BRA 3.1227 BC3 .8827 FSP 976

MID-COURSE EXECUTION ACCURACY

SGT 3570.7 SGR 382.4 SG3 337.3
RRT -.6757 RRF .6693 RTF -.9138
SGB 3591.2 R23 -.0651 R13 .9142
SG1 3580.1 SG2 281.1 THA 175.84

ORBIT DETERMINATION ACCURACY

ST 1594.3 SR 317.9 SS 864.0
CRT -.8561 CRS -.7107 CST .9712
LSA 1823.5 MSA 252.5 SSA 23.3
EL1 1617.6 EL2 161.9 ALF 170.21

LAUNCH DATE OCT 31 1964 FLIGHT TIME 190.00 ARRIVAL DATE MAY 9 1965

DISTANCE 485.896

HELIOCENTRIC CONIC

RL 148.50 LAL -.00 LOL 37.61 VL 34.277 GAL -7.31 AZL 87.26 HCA 158.13 SMA 216.68 ECC .33705 INC 2.7443 V1 30.005
RP 243.25 LAP 1.02 LOP 195.76 VP 21.879 GAP 18.44 AZP 92.55 TAL 330.50 TAP 128.63 RCA 143.65 APO 289.71 V2 22.560
RC 141.251 GL 16.31 GP -2.43 ZAL 132.43 ZAP 167.90 ETS 190.14 ZAE 156.76 ETE 352.92 ZAC 86.17 ETC 256.08 CLP 168.15

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 33.621 VHL 5.798 DLA 17.99 RAL 179.60 RAD 6568.3 VEL 12.450 PTH 2.25 VHP 8.576 DPA -2.56 RAP 183.09 ECC 1.5533

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 11 58	2939.39	-28.23	92.01	57.36	87.71	19 0 57	2339.4	-28.25	83.35
90.00	11 9 41	4389.60	6.12	182.60	48.15	62.30	12 22 51	3789.6	2.36	175.93
100.00	19 43 57	2642.78	-29.87	70.25	57.42	88.89	20 27 59	2042.8	-29.71	61.45
100.00	12 20 24	4161.44	7.57	165.04	47.36	60.99	13 29 45	3561.4	3.64	158.45
110.00	21 15 28	2356.45	-34.13	48.46	57.38	92.05	21 54 44	1756.5	-33.47	39.28
110.00	13 5 22	4020.54	11.22	152.15	45.15	57.50	14 12 23	3420.5	6.86	145.78

DIFFERENTIAL CORRECTIONS

TDE 1.3032 TRA-3.0820 TC3 .9347 BAU .4272
RDE -.3131 RRA .1146 RC3 -.1718 FAU .08748
FDE -.7487 FRA 2.9431 FC3-2.2525 BSP 12196
BDE 1.3403 BRA 3.0841 BC3 .9504 FSP 1031

MID-COURSE EXECUTION ACCURACY

SGT 3617.5 SGR 386.8 SG3 353.3
RRT -.7117 RRF .7040 RTF -.9177
SGB 3638.1 R23 -.0672 R13 .9181
SG1 3628.0 SG2 271.0 THA 175.62

ORBIT DETERMINATION ACCURACY

ST 1606.9 SR 311.5 SS 875.1
CRT -.8649 CRS -.7125 CST .9676
LSA 1838.0 MSA 257.5 SSA 22.1
EL1 1629.6 EL2 154.2 ALF 170.39

LAUNCH DATE OCT 31 1964 FLIGHT TIME 192.00 ARRIVAL DATE MAY 11 1965

DISTANCE 488.791

HELIOCENTRIC CONIC

RL 148.50 LAL -.00 LOL 37.61 VL 34.209 GAL -7.15 AZL 87.21 HCA 159.05 SMA 215.03 ECC .33126 INC 2.7893 V1 30.005
RP 243.00 LAP 1.00 LOP 196.68 VP 21.797 GAP 17.89 AZP 92.61 TAL 330.79 TAP 129.84 RCA 143.80 APO 286.26 V2 22.585
RC 143.499 GL 16.86 GP -2.59 ZAL 131.94 ZAP 167.36 ETS 190.33 ZAE 156.78 ETE 352.71 ZAC 86.11 ETC 256.06 CLP 167.63

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 32.435 VHL 5.695 DLA 18.65 RAL 179.50 RAD 6568.3 VEL 12.402 PTH 2.24 VHP 8.393 DPA -2.86 RAP 183.39 ECC 1.5338

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 4 47	2955.94	-28.18	93.22	56.84	87.10	18 54 3	2355.9	-28.28	84.56
90.00	11 16 6	4354.96	5.02	180.64	47.66	62.10	12 28 41	3755.0	1.25	174.00
100.00	19 37 25	2657.24	-29.85	71.33	56.92	88.32	20 21 42	2057.2	-29.76	62.52
100.00	12 26 9	4128.89	6.49	163.22	46.85	60.76	13 34 58	3528.9	2.54	156.66
110.00	21 10 13	2366.93	-34.15	49.28	56.92	91.56	21 49 39	1766.9	-33.56	40.09
110.00	13 9 51	3991.97	10.17	150.60	44.61	57.19	14 16 23	3392.0	5.78	144.27

DIFFERENTIAL CORRECTIONS

TDE 1.2720 TRA-3.0588 TC3 .9839 BAU .4341
RDE -.3001 RRA .1298 RC3 -.1842 FAU .09022
FDE -.7469 FRA 3.0174 FC3-2.4080 BSP 12571
BDE 1.3070 BRA 3.0615 BC3 1.0010 FSP 1084

MID-COURSE EXECUTION ACCURACY

SGT 3666.2 SGR 392.6 SG3 370.1
RRT -.7427 RRF .7395 RTF -.9194
SGB 3687.2 R23 -.0794 R13 .9199
SG1 3677.8 SG2 262.1 THA 175.43

ORBIT DETERMINATION ACCURACY

ST 1608.7 SR 304.8 SS 886.7
CRT -.8705 CRS -.7168 CST .9663
LSA 1843.9 MSA 258.4 SSA 21.7
EL1 1630.7 EL2 148.0 ALF 170.56

LAUNCH DATE OCT 31 1964 FLIGHT TIME 194.00 ARRIVAL DATE MAY 13 1965

HELIOCENTRIC CONIC DISTANCE 491.741 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 34.143 GAL -6.99 AZL 87.16 HCA 159.97 SMA 213.47 ECC .32568 INC 2.8385 V1 30.005
RP 242.74 LAP .97 LOP 197.60 VP 21.721 GAP 17.35 AZP 92.67 TAL 331.08 TAP 131.04 RCA 143.95 APO 282.99 V2 22.611
RC 145.763 GL 17.45 GP -2.76 ZAL 131.43 ZAP 166.81 ETS 190.56 ZAE 156.85 ETE 352.44 ZAC 86.03 ETC 256.04 CLP 167.10

PLANETOCENTRIC CONIC

C3 31.324 VHL 5.597 DLA 19.33 RAL 179.41 RAD 6568.2 VEL 12.357 PTH 2.23 VHP 8.213 DPA -3.18 RAP 183.67 ECC 1.5155

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 57 4	2974.74	-28.11	94.59	56.35	86.42	18 46 39	2374.7	-28.31	85.93
90.00	11 23 7	4318.62	3.86	178.60	47.22	61.93	12 35 6	3718.6	.07	171.97
100.00	19 30 26	2673.68	-29.81	72.55	56.45	87.68	20 14 59	2073.7	-29.81	63.74
100.00	12 32 26	4094.91	5.35	161.34	46.40	60.55	13 40 41	3494.9	1.39	154.79
110.00	21 4 38	2378.93	-34.17	50.22	56.51	91.01	21 44 17	1778.9	-33.65	41.01
110.00	13 14 43	3962.42	9.08	149.01	44.12	56.90	14 20 46	3362.4	4.66	142.71

DIFFERENTIAL CORRECTIONS
TDE 1.2556 TRA-3.0198 TC3 1.0533 BAU .4489
RDE -.2880 RRA .1451 RC3 -.1985 FAU .09297
FDE -.7411 FRA 3.0963 FC3-2.5696 BSP 12581
BDE 1.2883 BRA 3.0233 BC3 1.0718 FSP 1144

MID-COURSE EXECUTION ACCURACY
SGT 3711.6 SGR 401.3 SG3 387.7
RRT -.7765 RRF .7727 RTF -.9230
SGB 3733.2 R23 -.0836 R13 .9235
SG1 3724.7 SG2 252.0 THA 175.18

ORBIT DETERMINATION ACCURACY
ST 1618.5 SR 298.7 SS 897.2
CRT -.8805 CRS -.7199 CST .9621
LSA 1855.5 MSA 265.4 SSA 20.4
EL1 1639.9 EL2 139.7 ALF 170.70

LAUNCH DATE OCT 31 1964 FLIGHT TIME 196.00 ARRIVAL DATE MAY 15 1965

HELIOCENTRIC CONIC DISTANCE 494.741 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 34.079 GAL -6.83 AZL 87.11 HCA 160.89 SMA 212.00 ECC .32031 INC 2.8922 V1 30.005
RP 242.47 LAP .95 LOP 198.52 VP 21.649 GAP 16.81 AZP 92.73 TAL 331.37 TAP 132.25 RCA 144.09 APO 279.90 V2 22.638
RC 148.041 GL 18.07 GP -2.95 ZAL 130.91 ZAP 166.25 ETS 190.83 ZAE 156.95 ETE 352.11 ZAC 85.93 ETC 256.02 CLP 166.56

PLANETOCENTRIC CONIC

C3 30.288 VHL 5.503 DLA 20.05 RAL 179.34 RAD 6568.2 VEL 12.315 PTH 2.22 VHP 8.038 DPA -3.51 RAP 183.94 ECC 1.4985

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 48 44	2996.09	-28.01	96.15	55.91	85.65	18 38 40	2396.1	-28.32	87.49
90.00	11 30 51	4280.36	2.63	176.46	46.86	61.80	12 42 12	3680.4	-1.16	169.84
100.00	19 22 56	2692.32	-29.75	73.93	56.04	86.96	20 7 48	2092.3	-29.86	65.13
100.00	12 39 20	4059.36	4.16	159.37	46.02	60.37	13 47 0	3459.4	.18	152.84
110.00	20 58 44	2392.61	-34.18	51.29	56.16	90.38	21 38 36	1792.6	-33.75	42.07
110.00	13 20 2	3931.84	7.94	147.38	43.69	56.64	14 25 34	3331.8	3.50	141.11

DIFFERENTIAL CORRECTIONS
TDE 1.2252 TRA-2.9937 TC3 1.1064 BAU .4563
RDE -.2759 RRA .1616 RC3 -.2136 FAU .09595
FDE -.7351 FRA 3.1756 FC3-2.7428 BSP 12899
BDE 1.2559 BRA 2.9980 BC3 1.1269 FSP 1203

MID-COURSE EXECUTION ACCURACY
SGT 3757.4 SGR 412.2 SG3 406.0
RRT -.8053 RRF .8054 RTF -.9248
SGB 3779.9 R23 -.0972 R13 .9253
SG1 3772.1 SG2 243.5 THA 174.93

ORBIT DETERMINATION ACCURACY
ST 1618.4 SR 292.3 SS 907.8
CRT -.8881 CRS -.7255 CST .9598
LSA 1859.1 MSA 268.6 SSA 19.8
EL1 1639.2 EL2 132.6 ALF 170.83

LAUNCH DATE OCT 31 1964 FLIGHT TIME 198.00 ARRIVAL DATE MAY 17 1965

HELIOCENTRIC CONIC DISTANCE 497.789 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 34.019 GAL -6.68 AZL 87.05 HCA 161.81 SMA 210.60 ECC .31515 INC 2.9511 V1 30.005
RP 242.20 LAP .92 LOP 199.44 VP 21.581 GAP 16.28 AZP 92.80 TAL 331.66 TAP 133.47 RCA 144.23 APO 276.98 V2 22.664
RC 150.330 GL 18.74 GP -3.16 ZAL 130.36 ZAP 165.67 ETS 191.14 ZAE 157.09 ETE 351.71 ZAC 85.80 ETC 256.00 CLP 166.01

PLANETOCENTRIC CONIC

C3 29.322 VHL 5.415 DLA 20.81 RAL 179.28 RAD 6568.2 VEL 12.276 PTH 2.21 VHP 7.867 DPA -3.86 RAP 184.19 ECC 1.4826

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 39 38	3020.52	-27.87	97.92	55.50	84.77	18 29 58	2420.5	-28.30	89.28
90.00	11 39 29	4239.70	1.32	174.19	46.59	61.71	12 50 8	3639.7	-2.47	167.57
100.00	19 14 49	2713.59	-29.66	75.50	55.67	86.13	20 0 2	2113.6	-29.88	66.71
100.00	12 46 59	4021.86	2.90	157.31	45.71	60.24	13 54 0	3421.9	-1.09	150.79
110.00	20 52 25	2408.23	-34.18	52.51	55.86	89.66	21 32 33	1808.2	-33.85	43.28
110.00	13 25 52	3899.98	6.74	145.69	43.33	56.41	14 30 52	3300.0	2.28	139.44

DIFFERENTIAL CORRECTIONS
TDE 1.2002 TRA-2.9616 TC3 1.1674 BAU .4665
RDE -.2646 RRA .1790 RC3 -.2307 FAU .09907
FDE -.7272 FRA 3.2575 FC3-2.9252 BSP 13089
BDE 1.2290 BRA 2.9670 BC3 1.1900 FSP 1264

MID-COURSE EXECUTION ACCURACY
SGT 3801.2 SGR 426.4 SG3 425.2
RRT -.8332 RRF .8357 RTF -.9270
SGB 3825.1 R23 -.1092 R13 .9277
SG1 3817.9 SG2 234.8 THA 174.64

ORBIT DETERMINATION ACCURACY
ST 1620.3 SR 286.5 SS 918.1
CRT -.8979 CRS -.7319 CST .9563
LSA 1864.1 MSA 274.5 SSA 18.8
EL1 1640.7 EL2 124.6 ALF 170.93

LAUNCH DATE OCT 31 1964 FLIGHT TIME 200.00 ARRIVAL DATE MAY 19 1965

HELIOCENTRIC CONIC DISTANCE 500.882 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 33.960 GAL -6.53 AZL 86.98 HCA 162.74 SMA 209.29 ECC .31019 INC 3.0165 V1 30.005
RP 241.93 LAP .89 LOP 200.37 VP 21.518 GAP 15.75 AZP 92.88 TAL 331.95 TAP 134.69 RCA 144.37 APO 274.21 V2 22.692
RC 152.629 GL 19.45 GP -3.40 ZAL 129.80 ZAP 165.07 ETS 191.51 ZAE 157.26 ETE 351.23 ZAC 85.65 ETC 255.98 CLP 165.45

PLANETOCENTRIC CONIC

C3 28.427 VHL 5.332 DLA 21.61 RAL 179.24 RAD 6568.1 VEL 12.239 PTH 2.20 VHP 7.699 DPA -4.23 RAP 184.43 ECC 1.4678

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 29 36	3048.65	-27.68	99.96	55.14	83.76	18 20 24	2448.7	-28.25	91.34
90.00	11 49 11	4196.07	-.09	171.76	46.40	61.68	12 59 7	3596.1	-3.87	165.13
100.00	19 5 57	2737.95	-29.54	77.30	55.35	85.19	19 51 35	2138.0	-29.89	68.52
100.00	12 55 31	3982.00	1.55	155.12	45.49	60.14	14 1 53	3382.0	-2.44	148.60
110.00	20 45 38	2426.08	-34.17	53.90	55.63	88.83	21 26 4	1826.1	-33.95	44.66
110.00	13 32 19	3866.63	5.48	143.93	43.05	56.21	14 36 46	3266.6	1.01	137.70

DIFFERENTIAL CORRECTIONS
TDE 1.1753 TRA-2.9284 TC3 1.2300 BAU .4770
RDE -.2536 RRA .1975 RC3 -.2497 FAU .10226
FDE -.7148 FRA 3.3441 FC3-3.1144 BSP 13257
BDE 1.2023 BRA 2.9351 BC3 1.2551 FSP 1332

MID-COURSE EXECUTION ACCURACY
SGT 3843.6 SGR 444.1 SG3 445.3
RRT -.8588 RRF .8633 RTF -.9294
SGB 3869.2 R23 -.1216 R13 .9301
SG1 3862.6 SG2 226.4 THA 174.31

ORBIT DETERMINATION ACCURACY
ST 1621.1 SR 281.1 SS 927.7
CRT -.9086 CRS -.7387 CST .9518
LSA 1867.4 MSA 282.7 SSA 17.7
EL1 1641.2 EL2 115.9 ALF 171.00

LAUNCH DATE OCT 31 1964 FLIGHT TIME 202.00 ARRIVAL DATE MAY 21 1965

DISTANCE 504.017

HELIOCENTRIC CONIC

RL 148.50 LAL -.00 LOL 37.61 VL 33.904 GAL -6.39 AZL 86.91 HCA 163.66 SMA 208.04 ECC .30541 INC 3.0890 V1 30.005
RP 241.65 LAP .87 LOP 201.29 VP 21.459 GAP 15.23 AZP 92.96 TAL 332.25 TAP 135.91 RCA 144.50 APO 271.58 V2 22.720
RC 154.936 GL 20.22 GP -3.66 ZAL 129.21 ZAP 164.45 ETS 191.94 ZAE 157.47 ETE 350.64 ZAC 85.47 ETC 255.97 CLP 164.88

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 27.602 VHL 5.254 DLA 22.47 RAL 179.22 RAD 6568.1 VEL 12.206 PTH 2.19 VHP 7.536 DPA -4.62 RAP 184.64 ECC 1.4543

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 18 22	3081.40	-27.41	102.32	54.82	82.61	18 9 44	2481.4	-28.15	93.73
90.00	12 0 16	4148.64	-1.62	169.12	46.34	61.73	13 9 25	3548.6	-5.39	162.46
100.00	18 56 10	2766.07	-29.36	79.38	55.08	84.12	19 42 16	2166.1	-29.87	70.61
100.00	13 5 10	3939.20	.09	152.77	45.39	60.11	14 10 49	3339.2	-3.88	146.24
110.00	20 38 18	2446.55	-34.13	55.50	55.47	87.89	21 19 4	1846.5	-34.04	46.26
110.00	13 39 31	3831.49	4.15	142.08	42.86	56.04	14 43 23	3231.5	-.34	135.87

DIFFERENTIAL CORRECTIONS

TDE 1.1524 TRA-2.8925 TC3 1.2960 BAU .4886
RDE -.2433 RRA .2173 RC3 -.2712 FAU .10574
FDE -.7026 FRA 3.4308 FC3-3.3165 BSP 13375
BDE 1.1778 BRA 2.9006 BC3 1.3241 FSP 1397

MID-COURSE EXECUTION ACCURACY

SGT 3884.1 SGR 466.2 SG3 466.3
RRT -.8818 RRF .8882 RTF -.9317
SGB 3912.0 R23 -.1357 R13 .9325
SG1 3905.9 SG2 218.6 THA 173.94

ORBIT DETERMINATION ACCURACY

ST 1621.7 SR 276.3 SS 937.5
CRT -.9205 CRS -.7479 CST .9469
LSA 1870.7 MSA 291.9 SSA 16.6
EL1 1641.6 EL2 106.7 ALF 171.05

LAUNCH DATE OCT 31 1964 FLIGHT TIME 204.00 ARRIVAL DATE MAY 23 1965

DISTANCE 507.191

HELIOCENTRIC CONIC

RL 148.50 LAL -.00 LOL 37.61 VL 33.851 GAL -6.25 AZL 86.83 HCA 164.59 SMA 206.86 ECC .30082 INC 3.1702 V1 30.005
RP 241.36 LAP .84 LOP 202.22 VP 21.404 GAP 14.71 AZP 93.06 TAL 332.55 TAP 137.14 RCA 144.63 APO 269.09 V2 22.748
RC 157.250 GL 21.05 GP -3.96 ZAL 128.60 ZAP 163.82 ETS 192.44 ZAE 157.71 ETE 349.94 ZAC 85.26 ETC 255.95 CLP 164.30

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 26.849 VHL 5.182 DLA 23.38 RAL 179.23 RAD 6568.1 VEL 12.175 PTH 2.18 VHP 7.376 DPA -5.03 RAP 184.83 ECC 1.4419

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 5 34	3120.09	-27.04	105.09	54.55	81.27	17 57 34	2520.1	-27.97	96.55
90.00	12 13 10	4096.18	-3.31	166.19	46.42	61.86	13 21 26	3496.2	-7.05	159.50
100.00	18 45 12	2798.86	-29.11	81.78	54.87	82.88	19 31 51	2198.9	-29.79	73.04
100.00	13 16 13	3892.64	-1.48	150.22	45.41	60.14	14 21 6	3292.6	-5.45	143.67
110.00	20 30 17	2470.12	-34.05	57.34	55.40	86.80	21 11 27	1870.1	-34.12	48.09
110.00	13 47 38	3794.15	2.73	140.13	42.78	55.91	14 50 52	3194.1	-1.77	133.92

DIFFERENTIAL CORRECTIONS

TDE 1.1291 TRA-2.8568 TC3 1.3608 BAU .4998
RDE -.2333 RRA .2389 RC3 -.2953 FAU .10931
FDE -.6859 FRA 3.5220 FC3-3.5248 BSP 13494
BDE 1.1529 BRA 2.8668 BC3 1.3925 FSP 1468

MID-COURSE EXECUTION ACCURACY

SGT 3923.2 SGR 493.0 SG3 488.1
RRT -.9018 RRF .9100 RTF -.9339
SGB 3954.0 R23 -.1512 R13 .9348
SG1 3948.4 SG2 211.7 THA 173.52

ORBIT DETERMINATION ACCURACY

ST 1620.6 SR 272.2 SS 946.8
CRT -.9331 CRS -.7581 CST .9410
LSA 1872.1 MSA 303.3 SSA 15.3
EL1 1640.5 EL2 96.7 ALF 171.06

LAUNCH DATE OCT 31 1964 FLIGHT TIME 206.00 ARRIVAL DATE MAY 25 1965

DISTANCE 510.403

HELIOCENTRIC CONIC

RL 148.50 LAL -.00 LOL 37.61 VL 33.799 GAL -6.11 AZL 86.74 HCA 165.52 SMA 205.74 ECC .29641 INC 3.2618 V1 30.005
RP 241.08 LAP .82 LOP 203.15 VP 21.353 GAP 14.19 AZP 93.16 TAL 332.85 TAP 138.37 RCA 144.76 APO 266.72 V2 22.777
RC 159.568 GL 21.95 GP -4.30 ZAL 127.96 ZAP 163.15 ETS 193.01 ZAE 157.98 ETE 349.10 ZAC 85.00 ETC 255.93 CLP 163.70

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 26.167 VHL 5.115 DLA 24.36 RAL 179.28 RAD 6568.1 VEL 12.147 PTH 2.18 VHP 7.220 DPA -5.48 RAP 184.99 ECC 1.4306

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 50 34	3166.89	-26.52	108.41	54.31	79.68	17 43 21	2566.9	-27.67	99.94
90.00	12 28 34	4036.63	-5.21	162.85	46.69	62.13	13 35 51	3436.6	-8.90	156.11
100.00	18 32 40	2837.70	-28.75	84.61	54.73	81.43	19 19 58	2237.7	-29.63	75.92
100.00	13 29 9	3841.05	-3.23	147.38	45.60	60.27	14 33 10	3241.1	-7.16	140.80
110.00	20 21 25	2497.48	-33.93	59.46	55.42	85.55	21 3 2	1897.5	-34.17	50.23
110.00	13 56 54	3754.04	1.19	138.03	42.84	55.84	14 59 28	3154.0	-3.30	131.83

DIFFERENTIAL CORRECTIONS

TDE 1.1110 TRA-2.8154 TC3 1.4327 BAU .5138
RDE -.2241 RRA .2625 RC3 -.3229 FAU .11306
FDE -.6661 FRA 3.6160 FC3-3.7404 BSP 13485
BDE 1.1334 BRA 2.8276 BC3 1.4686 FSP 1541

MID-COURSE EXECUTION ACCURACY

SGT 3959.7 SGR 525.6 SG3 510.9
RRT -.9195 RRF .9286 RTF -.9365
SGB 3994.4 R23 -.1659 R13 .9375
SG1 3989.1 SG2 205.1 THA 173.02

ORBIT DETERMINATION ACCURACY

ST 1621.4 SR 269.2 SS 956.0
CRT -.9469 CRS -.7696 CST .9331
LSA 1874.5 MSA 318.7 SSA 13.9
EL1 1641.4 EL2 85.5 ALF 171.04

LAUNCH DATE OCT 31 1964 FLIGHT TIME 208.00 ARRIVAL DATE MAY 27 1965

DISTANCE 513.649

HELIOCENTRIC CONIC

RL 148.50 LAL -.00 LOL 37.61 VL 33.749 GAL -5.98 AZL 86.63 HCA 166.46 SMA 204.68 ECC .29217 INC 3.3660 V1 30.005
RP 240.79 LAP .79 LOP 204.09 VP 21.306 GAP 13.69 AZP 93.27 TAL 333.15 TAP 139.61 RCA 144.88 APO 264.48 V2 22.806
RC 161.890 GL 22.94 GP -4.69 ZAL 127.29 ZAP 162.46 ETS 193.67 ZAE 158.26 ETE 348.09 ZAC 84.69 ETC 255.91 CLP 163.08

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 25.564 VHL 5.056 DLA 25.41 RAL 179.38 RAD 6568.0 VEL 12.122 PTH 2.17 VHP 7.068 DPA -5.97 RAP 185.12 ECC 1.4207

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 32 14	3225.54	-25.73	112.53	54.07	77.76	17 26 0	2625.5	-27.17	104.15
90.00	12 47 41	3966.44	-7.43	158.88	47.23	62.60	13 53 47	3366.4	-11.04	152.07
100.00	18 17 58	2884.67	-28.22	88.00	54.63	79.72	19 6 3	2284.7	-29.35	79.38
100.00	13 44 38	3782.55	-5.20	144.16	46.01	60.52	14 47 41	3182.5	-9.09	137.53
110.00	20 11 29	2529.50	-33.73	61.94	55.54	84.09	20 53 39	1929.5	-34.18	52.73
110.00	14 7 36	3710.48	-.47	135.76	43.07	55.82	15 9 27	3110.5	-4.95	129.54

DIFFERENTIAL CORRECTIONS

TDE 1.0779 TRA-2.7884 TC3 1.4795 BAU .5198
RDE -.2145 RRA .2896 RC3 -.3528 FAU .11692
FDE -.6406 FRA 3.7153 FC3-3.9595 BSP 13837
BDE 1.0990 BRA 2.8034 BC3 1.5210 FSP 1620

MID-COURSE EXECUTION ACCURACY

SGT 3996.1 SGR 564.2 SG3 534.6
RRT -.9321 RRF .9448 RTF -.9376
SGB 4035.7 R23 -.1893 R13 .9389
SG1 4030.6 SG2 202.6 THA 172.48

ORBIT DETERMINATION ACCURACY

ST 1611.0 SR 266.6 SS 965.0
CRT -.9587 CRS -.7837 CST .9269
LSA 1867.8 MSA 330.1 SSA 12.9
EL1 1631.2 EL2 74.9 ALF 170.97

LAUNCH DATE OCT 31 1964 FLIGHT TIME 210.00 ARRIVAL DATE MAY 29 1965

HELIOCENTRIC CONIC DISTANCE 516.928 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 33.702 GAL -5.85 AZL 86.51 HCA 167.39 SMA 203.67 ECC .28809 INC 3.4860 V1 30.005
RP 240.49 LAP .76 LOP 205.02 VP 21.262 GAP 13.18 AZP 93.40 TAL 333.45 TAP 140.84 RCA 145.00 APO 262.35 V2 22.836
RC 164.213 GL 24.04 GP -5.14 ZAL 126.58 ZAP 161.74 ETS 194.43 ZAE 158.57 ETE 346.87 ZAC 84.32 ETC 255.89 CLP 162.45

PLANETOCENTRIC CONIC

C3 25.042 VHL 5.004 DLA 26.56 RAL 179.54 RAD 6568.0 VEL 12.100 PTH 2.17 VHP 6.921 DPA -6.51 RAP 185.21 ECC 1.4121

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 7 58	3304.56	-24.48	117.98	53.77	75.31	17 3 3	2704.6	-26.26	109.76
90.00	13 13 12	3877.26	-10.19	153.78	48.15	63.44	14 17 49	3277.3	-13.67	146.83
100.00	17 59 56	2943.63	-27.43	92.21	54.56	77.64	18 48 59	2343.6	-28.86	83.70
100.00	14 3 56	3713.42	-7.50	140.31	46.72	60.98	15 5 49	3113.4	-11.31	133.60
110.00	20 0 7	2567.57	-33.42	64.87	55.78	82.38	20 42 54	1967.6	-34.12	55.70
110.00	14 20 14	3662.24	-2.32	133.24	43.52	55.89	15 21 16	3062.2	-6.78	127.00

DIFFERENTIAL CORRECTIONS
TDE 1.0513 TRA-2.7547 TC3 1.5319 BAU .5290
RDE -.2053 RRA .3200 RC3 -.3870 FAU .12077
FDE -.6070 FRA 3.8215 FC3-4.1753 BSP 14037
BDE 1.0711 BRA 2.7732 BC3 1.5801 FSP 1710

MID-COURSE EXECUTION ACCURACY
SGT 4029.1 SGR 610.8 SG3 559.1
RRT -.9432 RRF .9578 RTF -.9394
SGB 4075.1 R23 -.2093 R13 .9409
SG1 4070.1 SG2 200.9 THA 171.84

ORBIT DETERMINATION ACCURACY
ST 1603.1 SR 265.5 SS 973.8
CRT -.9714 CRS -.7983 CST .9172
LSA 1862.1 MSA 348.3 SSA 11.7
EL1 1623.7 EL2 62.2 ALF 170.85

LAUNCH DATE OCT 31 1964 FLIGHT TIME 212.00 ARRIVAL DATE MAY 31 1965

HELIOCENTRIC CONIC DISTANCE 520.240 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 33.656 GAL -5.72 AZL 86.38 HCA 168.33 SMA 202.71 ECC .28417 INC 3.6246 V1 30.005
RP 240.19 LAP .73 LOP 205.96 VP 21.223 GAP 12.69 AZP 93.55 TAL 333.75 TAP 142.08 RCA 145.11 APO 260.32 V2 22.866
RC 166.536 GL 25.26 GP -5.66 ZAL 125.83 ZAP 160.98 ETS 195.33 ZAE 158.89 ETE 345.39 ZAC 83.87 ETC 255.87 CLP 161.81

PLANETOCENTRIC CONIC

C3 24.613 VHL 4.961 DLA 27.82 RAL 179.77 RAD 6568.0 VEL 12.083 PTH 2.16 VHP 6.777 DPA -7.11 RAP 185.25 ECC 1.4051

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 27 59	3435.52	-21.94	126.73	53.05	71.63	16 25 15	2835.5	-24.25	118.82
90.00	13 55 2	3737.77	-14.30	145.60	49.88	65.30	14 57 20	3137.8	-17.52	138.40
100.00	17 36 3	3022.71	-26.16	97.74	54.43	74.99	18 26 26	2422.7	-27.96	89.40
100.00	14 29 40	3625.82	-10.36	135.38	47.87	61.80	15 30 6	3025.8	-14.05	128.53
110.00	19 46 43	2613.73	-32.95	68.39	56.14	80.35	20 30 17	2013.7	-33.93	59.29
110.00	14 35 29	3607.56	-4.40	130.38	44.25	56.07	15 35 36	3007.6	-8.82	124.09

DIFFERENTIAL CORRECTIONS
TDE 1.0325 TRA-2.7138 TC3 1.5915 BAU .5423
RDE -.1975 RRA .3539 RC3 -.4279 FAU .12521
FDE -.5772 FRA 3.9227 FC3-4.4043 BSP 14068
BDE 1.0512 BRA 2.7367 BC3 1.6480 FSP 1783

MID-COURSE EXECUTION ACCURACY
SGT 4058.8 SGR 667.7 SG3 584.6
RRT -.9520 RRF .9683 RTF -.9412
SGB 4113.3 R23 -.2287 R13 .9430
SG1 4108.4 SG2 201.9 THA 171.08

ORBIT DETERMINATION ACCURACY
ST 1598.2 SR 267.2 SS 983.9
CRT -.9834 CRS -.8169 CST .9067
LSA 1859.6 MSA 368.0 SSA 10.4
EL1 1619.7 EL2 47.9 ALF 170.66

LAUNCH DATE OCT 31 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUN 2 1965

HELIOCENTRIC CONIC DISTANCE 523.581 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 33.612 GAL -5.60 AZL 86.21 HCA 169.27 SMA 201.81 ECC .28040 INC 3.7881 V1 30.005
RP 239.88 LAP .70 LOP 206.90 VP 21.186 GAP 12.19 AZP 93.72 TAL 334.05 TAP 143.32 RCA 145.22 APO 258.39 V2 22.897
RC 168.857 GL 26.64 GP -6.29 ZAL 125.01 ZAP 160.16 ETS 196.38 ZAE 159.20 ETE 343.57 ZAC 83.32 ETC 255.85 CLP 161.14

PLANETOCENTRIC CONIC

C3 24.289 VHL 4.928 DLA 29.22 RAL 180.10 RAD 6568.0 VEL 12.069 PTH 2.16 VHP 6.639 DPA -7.78 RAP 185.24 ECC 1.3997

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
82.48	13 40 55	3783.56	-19.03	151.11	52.04	67.40	14 43 59	3183.6	-21.93	143.57
97.52	15 44 46	3383.24	-19.02	121.74	52.04	67.39	16 41 9	2783.2	-21.92	114.19
100.00	16 57 29	3150.08	-23.63	106.35	53.91	71.14	17 49 59	2550.1	-25.98	98.35
100.00	15 10 53	3491.95	-14.54	127.65	49.91	63.59	16 9 5	2891.9	-17.97	120.53
110.00	19 30 19	2671.43	-32.21	72.73	56.60	77.89	20 14 50	2071.4	-33.54	63.75
110.00	14 54 33	3543.36	-6.83	127.00	45.38	56.42	15 53 36	2943.4	-11.19	120.63

DIFFERENTIAL CORRECTIONS
TDE 1.0138 TRA-2.6734 TC3 1.6426 BAU .5552
RDE -.1896 RRA .3939 RC3 -.4740 FAU .12950
FDE -.5351 FRA 4.0344 FC3-4.6158 BSP 14131
BDE 1.0314 BRA 2.7022 BC3 1.7096 FSP 1873

MID-COURSE EXECUTION ACCURACY
SGT 4085.5 SGR 736.3 SG3 610.7
RRT -.9589 RRF .9765 RTF -.9431
SGB 4151.4 R23 -.2461 R13 .9453
SG1 4146.2 SG2 205.9 THA 170.17

ORBIT DETERMINATION ACCURACY
ST 1591.5 SR 271.2 SS 994.3
CRT -.9930 CRS -.8355 CST .8925
LSA 1854.7 MSA 393.9 SSA 9.1
EL1 1614.1 EL2 31.5 ALF 170.39

LAUNCH DATE OCT 31 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUN 4 1965

HELIOCENTRIC CONIC DISTANCE 526.949 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 33.570 GAL -5.48 AZL 86.02 HCA 170.22 SMA 200.94 ECC .27679 INC 3.9828 V1 30.005
RP 239.58 LAP .68 LOP 207.85 VP 21.153 GAP 11.71 AZP 93.93 TAL 334.35 TAP 144.56 RCA 145.32 APO 256.56 V2 22.928
RC 171.174 GL 28.22 GP -7.03 ZAL 124.13 ZAP 159.28 ETS 197.63 ZAE 159.50 ETE 341.35 ZAC 82.65 ETC 255.82 CLP 160.46

PLANETOCENTRIC CONIC

C3 24.095 VHL 4.909 DLA 30.78 RAL 180.57 RAD 6568.0 VEL 12.061 PTH 2.16 VHP 6.506 DPA -8.57 RAP 185.16 ECC 1.3965

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
77.40	13 4 7	3904.97	-20.04	160.61	52.81	66.14	14 9 12	3305.0	-23.10	153.07
102.60	16 25 16	3257.89	-20.03	112.88	52.81	66.13	17 19 34	2657.9	-23.09	105.34
77.40	13 4 7	3904.97	-20.04	160.61	52.81	66.14	14 9 12	3305.0	-23.10	153.07
102.60	16 25 16	3257.89	-20.03	112.88	52.81	66.13	17 19 34	2657.9	-23.09	105.34
110.00	19 8 49	2747.34	-30.99	78.31	57.11	74.79	19 54 37	2147.3	-32.76	69.54
110.00	15 19 44	3463.53	-9.81	122.74	47.10	57.09	16 17 28	2863.5	-14.08	116.24

DIFFERENTIAL CORRECTIONS
TDE .9910 TRA-2.6400 TC3 1.6730 BAU .5650
RDE -.1821 RRA .4415 RC3 -.5271 FAU .13407
FDE -.4904 FRA 4.1472 FC3-4.8172 BSP 14381
BDE 1.0076 BRA 2.6766 BC3 1.7541 FSP 1959

MID-COURSE EXECUTION ACCURACY
SGT 4111.0 SGR 820.2 SG3 637.5
RRT -.9630 RRF .9829 RTF -.9442
SGB 4192.0 R23 -.2641 R13 .9469
SG1 4186.4 SG2 217.0 THA 169.09

ORBIT DETERMINATION ACCURACY
ST 1580.6 SR 278.9 SS 1006.3
CRT -.9986 CRS -.8572 CST .8792
LSA 1847.8 MSA 417.6 SSA 8.1
EL1 1604.9 EL2 14.5 ALF 170.01

LAUNCH DATE OCT 31 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUN 6 1965

HELIOCENTRIC CONIC DISTANCE 530.344 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 33.530 GAL -5.36 AZL 85.78 HCA 171.16 SMA 200.12 ECC .27331 INC 4.2193 V1 30.005
RP 239.26 LAP .65 LOP 208.79 VP 21.123 GAP 11.23 AZP 94.17 TAL 334.64 TAP 145.80 RCA 145.43 APO 254.82 V2 22.959
RC 173.485 GL 30.05 GP -7.94 ZAL 123.16 ZAP 158.31 ETS 199.11 ZAE 159.75 ETE 338.59 ZAC 81.82 ETC 255.78 CLP 159.75

PLANETOCENTRIC CONIC
C3 24.065 VHL 4.906 DLA 32.55 RAL 181.21 RAD 6568.0 VEL 12.060 PTH 2.16 VHP 6.380 DPA -9.49 RAP 184.99 ECC 1.3961

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
73.23	12 37 57	3994.71	-21.13	167.94	53.96	64.64	13 44 32	3394.7	-24.37	160.42
106.77	16 56 33	3167.54	-21.12	106.56	53.96	64.63	17 49 21	2567.5	-24.36	99.05
73.23	12 37 57	3994.71	-21.13	167.94	53.96	64.64	13 44 32	3394.7	-24.37	160.42
106.77	16 56 33	3167.54	-21.12	106.56	53.96	64.63	17 49 21	2567.5	-24.36	99.05
110.00	18 36 28	2859.50	-28.71	86.25	57.40	70.60	19 24 7	2259.5	-31.08	77.85
110.00	15 57 13	3350.76	-13.91	116.58	49.86	58.45	16 53 4	2750.8	-17.98	109.83

DIFFERENTIAL CORRECTIONS
TDE .9762 TRA-2.6010 TC3 1.6993 BAU .5786
RDE -.1754 RRA .4988 RC3 -.5891 FAU .13873
FDE -.4385 FRA 4.2636 FC3-4.9907 BSP 14514
BDE .9918 BRA 2.6484 BC3 1.7985 FSP 2046

MID-COURSE EXECUTION ACCURACY
SGT 4131.5 SGR 924.0 SG3 664.4
RRT -.9661 RRF .9877 RTF -.9455
SGB 4233.5 R23 -.2765 R13 .9488
SG1 4227.1 SG2 233.0 THA 167.77

ORBIT DETERMINATION ACCURACY
ST 1572.1 SR 292.0 SS 1020.1
CRT -.9991 CRS -.8790 CST .8619
LSA 1843.0 MSA 448.0 SSA 6.9
EL1 1598.9 EL2 12.3 ALF 169.49

LAUNCH DATE OCT 31 1964 FLIGHT TIME 220.00 ARRIVAL DATE JUN 8 1965

HELIOCENTRIC CONIC DISTANCE 533.765 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 33.492 GAL -5.25 AZL 85.49 HCA 172.11 SMA 199.35 ECC .26998 INC 4.5139 V1 30.005
RP 238.95 LAP .62 LOP 209.74 VP 21.097 GAP 10.75 AZP 94.47 TAL 334.94 TAP 147.05 RCA 145.53 APO 253.16 V2 22.991
RC 175.790 GL 32.20 GP -9.06 ZAL 122.05 ZAP 157.22 ETS 200.91 ZAE 159.90 ETE 335.15 ZAC 80.77 ETC 255.74 CLP 159.01

PLANETOCENTRIC CONIC
C3 24.257 VHL 4.925 DLA 34.59 RAL 182.10 RAD 6568.0 VEL 12.068 PTH 2.16 VHP 6.261 DPA -10.60 RAP 184.70 ECC 1.3992

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
69.24	12 16 48	4072.50	-22.30	174.58	55.63	62.84	13 24 40	3472.5	-25.75	167.10
110.76	17 24 48	3093.65	-22.28	101.45	55.62	62.83	18 16 22	2493.6	-25.74	93.97
69.24	12 16 48	4072.50	-22.30	174.58	55.63	62.84	13 24 40	3472.5	-25.75	167.10
110.76	17 24 48	3093.65	-22.28	101.45	55.62	62.83	18 16 22	2493.6	-25.74	93.97
69.24	12 16 48	4072.50	-22.30	174.58	55.63	62.84	13 24 40	3472.5	-25.75	167.10
110.76	17 24 48	3093.65	-22.28	101.45	55.62	62.83	18 16 22	2493.6	-25.74	93.97

DIFFERENTIAL CORRECTIONS
TDE .9632 TRA-2.5657 TC3 1.7004 BAU .5913
RDE -.1678 RRA .5716 RC3 -.6583 FAU .14271
FDE -.3662 FRA 4.3974 FC3-5.0932 BSP 14799
BDE .9777 BRA 2.6286 BC3 1.8233 FSP 2165

MID-COURSE EXECUTION ACCURACY
SGT 4148.2 SGR 1054.1 SG3 691.0
RRT -.9683 RRF .9912 RTF -.9468
SGB 4280.0 R23 -.2837 R13 .9511
SG1 4272.4 SG2 255.8 THA 166.13

ORBIT DETERMINATION ACCURACY
ST 1562.4 SR 311.8 SS 1037.8
CRT -.9921 CRS -.8993 CST .8384
LSA 1837.7 MSA 488.1 SSA 5.8
EL1 1592.8 EL2 38.3 ALF 168.79

LAUNCH DATE OCT 31 1964 FLIGHT TIME 222.00 ARRIVAL DATE JUN 10 1965

HELIOCENTRIC CONIC DISTANCE 537.210 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 33.454 GAL -5.14 AZL 85.11 HCA 173.06 SMA 198.61 ECC .26678 INC 4.8874 V1 30.005
RP 238.63 LAP .59 LOP 210.69 VP 21.073 GAP 10.28 AZP 94.85 TAL 335.23 TAP 148.29 RCA 145.62 APO 251.59 V2 23.024
RC 178.086 GL 34.78 GP -10.49 ZAL 120.78 ZAP 155.95 ETS 203.09 ZAE 159.88 ETE 330.83 ZAC 79.41 ETC 255.67 CLP 158.24

PLANETOCENTRIC CONIC
C3 24.769 VHL 4.977 DLA 36.98 RAL 183.34 RAD 6568.0 VEL 12.089 PTH 2.16 VHP 6.155 DPA -11.97 RAP 184.24 ECC 1.4076

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
65.15	11 59 4	4145.48	-23.53	181.12	58.03	60.61	13 8 9	3545.5	-27.26	173.70
114.85	17 52 28	3030.93	-23.52	97.18	58.02	60.60	18 42 59	2430.9	-27.25	89.76
65.15	11 59 4	4145.48	-23.53	181.12	58.03	60.61	13 8 9	3545.5	-27.26	173.70
114.85	17 52 28	3030.93	-23.52	97.18	58.02	60.60	18 42 59	2430.9	-27.25	89.76
65.15	11 59 4	4145.48	-23.53	181.12	58.03	60.61	13 8 9	3545.5	-27.26	173.70
114.85	17 52 28	3030.93	-23.52	97.18	58.02	60.60	18 42 59	2430.9	-27.25	89.76

DIFFERENTIAL CORRECTIONS
TDE .9787 TRA-2.5128 TC3 1.7049 BAU .6162
RDE -.1669 RRA .6595 RC3 -.7461 FAU .14809
FDE -.3260 FRA 4.4961 FC3-5.1761 BSP 14705
BDE .9928 BRA 2.5979 BC3 1.8610 FSP 2210

MID-COURSE EXECUTION ACCURACY
SGT 4154.9 SGR 1221.4 SG3 716.0
RRT -.9692 RRF .9936 RTF -.9477
SGB 4330.8 R23 -.2868 R13 .9534
SG1 4321.1 SG2 289.1 THA 164.02

ORBIT DETERMINATION ACCURACY
ST 1566.0 SR 344.6 SS 1056.0
CRT -.9774 CRS -.9205 CST .8176
LSA 1846.8 MSA 524.9 SSA 4.8
EL1 1601.9 EL2 71.2 ALF 167.84

LAUNCH DATE OCT 31 1964 FLIGHT TIME 224.00 ARRIVAL DATE JUN 12 1965

HELIOCENTRIC CONIC DISTANCE 540.677 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 33.419 GAL -5.03 AZL 84.62 HCA 174.01 SMA 197.90 ECC .26370 INC 5.3814 V1 30.005
RP 238.31 LAP .56 LOP 211.64 VP 21.053 GAP 9.82 AZP 95.35 TAL 335.53 TAP 149.54 RCA 145.71 APO 250.09 V2 23.056
RC 180.373 GL 37.95 GP -12.36 ZAL 119.27 ZAP 154.40 ETS 205.79 ZAE 159.57 ETE 325.42 ZAC 77.62 ETC 255.58 CLP 157.41

PLANETOCENTRIC CONIC
C3 25.780 VHL 5.077 DLA 39.83 RAL 185.13 RAD 6568.0 VEL 12.131 PTH 2.17 VHP 6.065 DPA -13.71 RAP 183.53 ECC 1.4243

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
60.74	11 44 30	4217.97	-24.80	187.94	61.50	57.78	12 54 48	3618.0	-28.86	180.63
119.26	18 21 17	2978.18	-24.78	93.64	61.49	57.77	19 10 55	2378.2	-28.85	86.34
60.74	11 44 30	4217.97	-24.80	187.94	61.50	57.78	12 54 48	3618.0	-28.86	180.63
119.26	18 21 17	2978.18	-24.78	93.64	61.49	57.77	19 10 55	2378.2	-28.85	86.34
60.74	11 44 30	4217.97	-24.80	187.94	61.50	57.78	12 54 48	3618.0	-28.86	180.63
119.26	18 21 17	2978.18	-24.78	93.64	61.49	57.77	19 10 55	2378.2	-28.85	86.34

DIFFERENTIAL CORRECTIONS
TDE 1.0002 TRA-2.4725 TC3 1.6513 BAU .6385
RDE -.1671 RRA .7805 RC3 -.8397 FAU .15194
FDE -.2689 FRA 4.6132 FC3-5.1025 BSP 15059
BDE 1.0141 BRA 2.5928 BC3 1.8525 FSP 2299

MID-COURSE EXECUTION ACCURACY
SGT 4157.4 SGR 1441.5 SG3 737.6
RRT -.9693 RRF .9953 RTF -.9483
SGB 4400.2 R23 -.2853 R13 .9560
SG1 4387.4 SG2 335.7 THA 161.31

ORBIT DETERMINATION ACCURACY
ST 1569.8 SR 393.2 SS 1080.5
CRT -.9545 CRS -.9385 CST .7930
LSA 1860.6 MSA 569.7 SSA 3.9
EL1 1614.3 EL2 114.1 ALF 166.49

LAUNCH DATE OCT 31 1964 FLIGHT TIME 226.00 ARRIVAL DATE JUN 14 1965

HELIOCENTRIC CONIC DISTANCE 544.165 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 33.385 GAL -4.93 AZL 83.94 HCA 174.96 SMA 197.23 ECC .26076 INC 6.0622 V1 30.005
RP 237.98 LAP .53 LOP 212.60 VP 21.035 GAP 9.36 AZP 96.04 TAL 335.82 TAP 150.78 RCA 145.80 APO 248.66 V2 23.089
RC 182.651 GL 41.93 GP -14.91 ZAL 117.40 ZAP 152.40 ETS 209.16 ZAE 158.72 ETE 318.67 ZAC 75.15 ETC 255.42 CLP 156.50

PLANETOCENTRIC CONIC

C3 27.646 VHL 5.258 DLA 43.28 RAL 187.79 RAD 6568.1 VEL 12.207 PTH 2.19 VHP 6.005 DPA -16.03 RAP 182.45 ECC 1.4550

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
55.79	11 33 47	4294.10	-25.99	195.43	66.63	54.09	12 45 21	3694.1	-30.48	188.34
124.21	18 53 12	2936.72	-25.97	90.94	66.61	54.08	19 42 9	2336.7	-30.47	83.84
55.79	11 33 47	4294.10	-25.99	195.43	66.63	54.09	12 45 21	3694.1	-30.48	188.34
124.21	18 53 12	2936.72	-25.97	90.94	66.61	54.08	19 42 9	2336.7	-30.47	83.84
55.79	11 33 47	4294.10	-25.99	195.43	66.63	54.09	12 45 21	3694.1	-30.48	188.34
124.21	18 53 12	2936.72	-25.97	90.94	66.61	54.08	19 42 9	2336.7	-30.47	83.84

DIFFERENTIAL CORRECTIONS

TDE 1.0839 TRA-2.4084 TC3 1.5804 BAU .6821
RDE -.1880 RRA .9406 RC3 -.9531 FAU .15643
FDE -.2813 FRA 4.6721 FC3-4.8987 BSP 15025
BDE 1.1001 BRA 2.5855 BC3 1.8455 FSP 2294

MID-COURSE EXECUTION ACCURACY

SGT 4141.5 SGR 1740.2 SG3 750.9
RRT -.9688 RRF .9964 RTF -.9483
SGB 4492.2 R23 -.2789 R13 .9591
SG1 4474.5 SG2 398.9 THA 157.66

ORBIT DETERMINATION ACCURACY

ST 1602.3 SR 470.4 SS 1102.9
CRT -.9291 CRS -.9535 CST .7747
LSA 1906.1 MSA 609.8 SSA 3.0
EL1 1661.4 EL2 167.7 ALF 164.58

LAUNCH DATE OCT 31 1964 FLIGHT TIME 228.00 ARRIVAL DATE JUN 16 1965

HELIOCENTRIC CONIC DISTANCE 547.674 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 33.352 GAL -4.83 AZL 82.93 HCA 175.92 SMA 196.59 ECC .25793 INC 7.0649 V1 30.005
RP 237.65 LAP .50 LOP 213.56 VP 21.020 GAP 8.91 AZP 97.05 TAL 336.10 TAP 152.02 RCA 145.89 APO 247.30 V2 23.123
RC 184.919 GL 47.09 GP -18.52 ZAL 115.00 ZAP 149.60 ETS 213.34 ZAE 156.90 ETE 310.42 ZAC 71.61 ETC 255.15 CLP 155.45

PLANETOCENTRIC CONIC

C3 31.156 VHL 5.582 DLA 47.52 RAL 191.97 RAD 6568.2 VEL 12.350 PTH 2.23 VHP 6.001 DPA -19.24 RAP 180.71 ECC 1.5127

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.09	11 29 8	4379.26	-26.80	204.05	74.43	49.16	12 42 7	3779.3	-31.86	197.35
129.91	19 31 13	2911.39	-26.79	89.32	74.42	49.16	20 19 45	2311.4	-31.84	82.62
50.09	11 29 8	4379.26	-26.80	204.05	74.43	49.16	12 42 7	3779.3	-31.86	197.35
129.91	19 31 13	2911.39	-26.79	89.32	74.42	49.16	20 19 45	2311.4	-31.84	82.62
50.09	11 29 8	4379.26	-26.80	204.05	74.43	49.16	12 42 7	3779.3	-31.86	197.35
129.91	19 31 13	2911.39	-26.79	89.32	74.42	49.16	20 19 45	2311.4	-31.84	82.62

DIFFERENTIAL CORRECTIONS

TDE 1.2521 TRA-2.3423 TC3 1.4286 BAU .7413
RDE -.2499 RRA 1.1809 RC3-1.0613 FAU .15768
FDE -.3762 FRA 4.6948 FC3-4.3816 BSP 15457
BDE 1.2768 BRA 2.6232 BC3 1.7796 FSP 2296

MID-COURSE EXECUTION ACCURACY

SGT 4107.7 SGR 2166.1 SG3 748.3
RRT -.9678 RRF .9971 RTF -.9475
SGB 4643.8 R23 -.2663 R13 .9634
SG1 4618.4 SG2 485.2 THA 152.64

ORBIT DETERMINATION ACCURACY

ST 1671.9 SR 597.6 SS 1130.5
CRT -.9075 CRS -.9649 CST .7654
LSA 2002.4 MSA 648.7 SSA 2.2
EL1 1759.4 EL2 238.5 ALF 161.68

LAUNCH DATE OCT 31 1964 FLIGHT TIME 230.00 ARRIVAL DATE JUN 18 1965

HELIOCENTRIC CONIC DISTANCE 551.199 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 33.321 GAL -4.74 AZL 81.32 HCA 176.87 SMA 195.99 ECC .25521 INC 8.6843 V1 30.005
RP 237.31 LAP .47 LOP 214.52 VP 21.008 GAP 8.46 AZP 98.67 TAL 336.39 TAP 153.27 RCA 145.97 APO 246.01 V2 23.157
RC 187.176 GL 54.00 GP -24.00 ZAL 111.79 ZAP 145.25 ETS 218.39 ZAE 153.29 ETE 300.70 ZAC 66.20 ETC 254.61 CLP 154.07

PLANETOCENTRIC CONIC

C3 38.412 VHL 6.198 DLA 52.73 RAL 199.12 RAD 6568.5 VEL 12.640 PTH 2.29 VHP 6.124 DPA -23.96 RAP 177.70 ECC 1.6322

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
43.46	11 36 20	4482.56	-26.49	214.23	86.85	42.58	12 51 2	3882.6	-32.24	208.26
136.54	20 21 7	2913.74	-26.48	89.22	86.83	42.58	21 9 40	2313.7	-32.23	83.24
43.46	11 36 20	4482.56	-26.49	214.23	86.85	42.58	12 51 2	3882.6	-32.24	208.26
136.54	20 21 7	2913.74	-26.48	89.22	86.83	42.58	21 9 40	2313.7	-32.23	83.24
43.46	11 36 20	4482.56	-26.49	214.23	86.85	42.58	12 51 2	3882.6	-32.24	208.26
136.54	20 21 7	2913.74	-26.48	89.22	86.83	42.58	21 9 40	2313.7	-32.23	83.24

DIFFERENTIAL CORRECTIONS

TDE 1.6462 TRA-2.2520 TC3 1.1785 BAU .8420
RDE -.4749 RRA 1.5633 RC3-1.1398 FAU .15358
FDE -.7646 FRA 4.5632 FC3-3.4613 BSP 16443
BDE 1.7133 BRA 2.7414 BC3 1.6395 FSP 2203

MID-COURSE EXECUTION ACCURACY

SGT 4033.3 SGR 2807.8 SG3 709.5
RRT -.9656 RRF .9973 RTF -.9447
SGB 4914.4 R23 -.2461 R13 .9691
SG1 4877.2 SG2 603.4 THA 145.49

ORBIT DETERMINATION ACCURACY

ST 1838.9 SR 840.9 SS 1169.2
CRT -.9108 CRS -.9751 CST .7965
LSA 2242.5 MSA 653.1 SSA 1.4
EL1 1996.5 EL2 319.8 ALF 156.76

LAUNCH DATE OCT 31 1964 FLIGHT TIME 242.00 ARRIVAL DATE JUN 30 1965

HELIOCENTRIC CONIC DISTANCE 572.858 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 33.159 GAL -4.25 AZL 98.01 HCA 182.75 SMA 192.92 ECC .24128 INC 6.0080 V1 30.005
RP 235.24 LAP .29 LOP 220.34 VP 20.986 GAP 5.91 AZP 84.00 TAL 337.89 TAP 160.64 RCA 146.38 APO 239.47 V2 23.369
RC 200.460 GL -44.58 GP 29.88 ZAL 113.98 ZAP 137.55 ETS 139.45 ZAE 148.10 ETE 72.75 ZAC 118.67 ETC 253.88 CLP 148.32

PLANETOCENTRIC CONIC

C3 24.318 VHL 4.931 DLA -33.93 RAL 144.92 RAD 6568.0 VEL 12.070 PTH 2.16 VHP 5.707 DPA 24.67 RAP 201.63 ECC 1.4002

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
23.05	14 5 5	2601.86	-10.91	81.23	343.28	159.45	14 48 27	2001.9	-3.41	78.85
23.05	0 12 55	1029.79	69.16	338.44	25.31	75.66	0 30 5	429.8	65.95	319.54
33.05	14 57 7	2522.30	-7.54	75.92	350.68	151.03	15 39 9	1922.3	-.53	72.47
33.05	0 6 41	1039.34	61.22	343.07	28.41	85.71	0 24 0	439.3	59.64	327.54
43.05	15 59 4	2398.21	-3.06	67.84	357.61	143.00	16 39 2	1798.2	3.34	63.44
43.05	23 54 38	1055.63	52.99	345.17	28.55	93.22	24 12 14	455.6	52.70	332.34

DIFFERENTIAL CORRECTIONS

TDE 2.2828 TRA-1.8550 TC3 1.7585 BAU .8830
RDE 2.1152 RRA-1.0576 RC3 2.0698 FAU .16118
FDE-5.5939 FRA 2.5878 FC3-5.7382 BSP 18592
BDE 3.1121 BRA 2.1353 BC3 2.7160 FSP 2631

MID-COURSE EXECUTION ACCURACY

SGT 4097.6 SGR 3521.5 SG3 807.7
RRT .9637 RRF -.9991 RTF -.9519
SGB 5402.9 R23 -.1956 R13 -.9806
SG1 5354.8 SG2 719.3 THA 40.52

ORBIT DETERMINATION ACCURACY

ST 2764.9 SR 2498.2 SS 3250.5
CRT .9943 CRS .9999 CST .9928
LSA 4937.7 MSA 265.4 SSA 1.1
EL1 3721.1 EL2 198.3 ALF 42.08

LAUNCH DATE OCT 31 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUL 2 1965

DISTANCE 576.505 EARTH TO MARS

HELIOCENTRIC CONIC
RL 148.50 LAL -.00 LOL 37.61 VL 33.136 GAL -4.17 AZL 93.95 HCA 183.72 SMA 192.50 ECC .23927 INC 3.9484 V1 30.005
RP 234.89 LAP .26 LOP 221.32 VP 20.990 GAP 5.51 AZP 86.06 TAL 338.14 TAP 161.86 RCA 146.44 APO 238.56 V2 23.405
RC 202.623 GL -32.62 GP 23.65 ZAL 117.64 ZAP 141.15 ETS 145.49 ZAE 154.06 ETE 69.75 ZAC 112.83 ETC 254.66 CLP 148.23

PLANETOCENTRIC CONIC
C3 17.829 VHL 4.222 DLA -22.69 RAL 149.68 RAD 6567.7 VEL 11.799 PTH 2.09 VHP 5.239 DPA 18.74 RAP 199.39 ECC 1.2934

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	22 3 29	1388.31	5.35	353.65	10.55	117.85	22 26 37	788.3	9.04	346.91
90.00	3 19 32	5630.40	28.06	264.39	17.27	94.00	4 53 23	5030.4	28.32	255.74
100.00	23 7 57	1180.18	3.80	337.50	9.70	119.67	23 27 38	580.2	7.72	330.91
100.00	4 57 44	5313.76	29.82	241.21	17.38	92.16	6 26 18	4713.8	29.80	232.40
110.00	23 41 39	1074.57	.16	327.23	7.43	124.18	23 59 33	474.6	4.64	321.02
110.00	6 40 33	4992.13	34.11	216.77	17.36	87.57	8 3 45	4392.1	33.39	207.60

DIFFERENTIAL CORRECTIONS
TDE 1.7323 TRA-1.8858 TC3 2.4120 BAU .7826
RDE 1.2546 RRA -.9083 RC3 2.2277 FAU .18977
FDE-4.9031 FRA 3.4789 FC3-9.2144 BSP 16740
BDE 2.1389 BRA 2.0931 BC3 3.2833 FSP 3120

MID-COURSE EXECUTION ACCURACY
SGT 4167.3 SGR 2867.3 SG3 988.9
RRT .9656 RRF -.9995 RTF -.9577
SGB 5058.5 R23 -.2063 R13 -.9783
SG1 5020.5 SG2 618.6 THA 34.19

ORBIT DETERMINATION ACCURACY
ST 2494.3 SR 1749.8 SS 3092.2
CRT .9940 CRS 1.0000 CST .9935
LSA 4335.0 MSA 230.0 SSA 2.4
EL1 3042.8 EL2 156.4 ALF 35.00

LAUNCH DATE OCT 31 1964 FLIGHT TIME 246.00 ARRIVAL DATE JUL 4 1965

DISTANCE 580.170 EARTH TO MARS

HELIOCENTRIC CONIC
RL 148.50 LAL -.00 LOL 37.61 VL 33.114 GAL -4.10 AZL 92.74 HCA 184.70 SMA 192.09 ECC .23737 INC 2.7415 V1 30.005
RP 234.53 LAP .22 LOP 222.31 VP 20.997 GAP 5.11 AZP 87.27 TAL 338.38 TAP 163.08 RCA 146.49 APO 237.69 V2 23.442
RC 204.770 GL -23.99 GP 19.61 ZAL 119.53 ZAP 142.72 ETS 150.56 ZAE 158.05 ETE 68.25 ZAC 108.99 ETC 255.05 CLP 147.64

PLANETOCENTRIC CONIC
C3 15.108 VHL 3.887 DLA -14.49 RAL 152.64 RAD 6567.6 VEL 11.683 PTH 2.05 VHP 4.964 DPA 14.94 RAP 197.91 ECC 1.2486

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 46 41	1681.78	-4.09	10.05	8.93	118.04	21 14 43	1081.8	-.31	3.42
90.00	4 59 57	5261.23	26.87	237.58	14.08	80.71	6 27 38	4661.2	25.31	229.26
100.00	22 0 16	1444.37	-5.13	352.02	8.36	119.49	22 24 20	844.4	-1.17	345.48
100.00	6 29 3	4973.87	28.04	216.21	13.85	79.20	7 51 57	4373.9	26.27	207.86
110.00	22 51 9	1284.97	-7.83	338.27	6.70	123.38	23 12 34	685.0	-3.39	332.01
110.00	7 54 39	4706.03	31.13	195.06	13.04	75.10	9 13 5	4106.0	28.77	186.65

DIFFERENTIAL CORRECTIONS
TDE 1.3995 TRA-1.9009 TC3 2.7854 BAU .7132
RDE .8401 RRA -.7929 RC3 2.1700 FAU .20833
FDE-4.2893 FRA 4.1488 FC-11.9380 BSP 16270
BDE 1.6323 BRA 2.0597 BC3 3.5310 FSP 3576

MID-COURSE EXECUTION ACCURACY
SGT 4161.8 SGR 2416.0 SG3 1113.2
RRT .9649 RRF -.9995 RTF -.9589
SGB 4812.2 R23 -.2188 R13 -.9754
SG1 4780.4 SG2 552.6 THA 29.69

ORBIT DETERMINATION ACCURACY
ST 2239.2 SR 1291.3 SS 2833.3
CRT .9935 CRS 1.0000 CST .9942
LSA 3830.1 MSA 198.2 SSA 4.3
EL1 2581.7 EL2 127.7 ALF 29.89

LAUNCH DATE OCT 31 1964 FLIGHT TIME 248.00 ARRIVAL DATE JUL 6 1965

DISTANCE 583.851 EARTH TO MARS

HELIOCENTRIC CONIC
RL 148.50 LAL -.00 LOL 37.61 VL 33.093 GAL -4.03 AZL 91.95 HCA 185.69 SMA 191.70 ECC .23555 INC 1.9487 V1 30.005
RP 234.17 LAP .19 LOP 223.29 VP 21.005 GAP 4.71 AZP 88.06 TAL 338.61 TAP 164.30 RCA 146.55 APO 236.86 V2 23.479
RC 206.900 GL -17.65 GP 16.82 ZAL 120.42 ZAP 143.26 ETS 154.61 ZAE 160.94 ETE 67.98 ZAC 106.31 ETC 255.27 CLP 146.84

PLANETOCENTRIC CONIC
C3 13.720 VHL 3.704 DLA -8.43 RAL 154.62 RAD 6567.5 VEL 11.623 PTH 2.04 VHP 4.769 DPA 12.34 RAP 196.84 ECC 1.2258

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 3 53	1863.82	-9.80	20.38	9.29	116.70	20 34 57	1263.8	-6.14	13.61
90.00	5 58 32	5036.50	23.45	222.03	12.28	73.66	7 22 28	4436.5	20.99	214.22
100.00	21 21 8	1614.59	-10.73	1.56	8.80	118.07	21 48 3	1014.6	-6.89	354.88
100.00	7 23 57	4760.97	24.45	201.43	11.94	72.24	8 43 18	4161.0	21.79	193.64
110.00	22 20 4	1430.06	-13.16	346.13	7.37	121.83	22 43 54	830.1	-8.86	339.67
110.00	8 41 31	4518.26	27.09	181.95	10.89	68.31	9 56 49	3918.3	23.90	174.23

DIFFERENTIAL CORRECTIONS
TDE 1.1892 TRA-1.8901 TC3 3.0143 BAU .6691
RDE .6157 RRA -.6990 RC3 2.0550 FAU .22349
FDE-3.8252 FRA 4.6585 FC-14.1026 BSP 15920
BDE 1.3392 BRA 2.0153 BC3 3.6482 FSP 3952

MID-COURSE EXECUTION ACCURACY
SGT 4136.0 SGR 2102.2 SG3 1213.4
RRT .9640 RRF -.9993 RTF -.9597
SGB 4639.6 R23 -.2266 R13 -.9734
SG1 4612.5 SG2 500.9 THA 26.44

ORBIT DETERMINATION ACCURACY
ST 2043.2 SR 1008.3 SS 2602.3
CRT .9930 CRS .9997 CST .9953
LSA 3454.9 MSA 165.2 SSA 7.3
EL1 2276.0 EL2 106.7 ALF 26.17

LAUNCH DATE OCT 31 1964 FLIGHT TIME 250.00 ARRIVAL DATE JUL 8 1965

DISTANCE 587.548 EARTH TO MARS

HELIOCENTRIC CONIC
RL 148.50 LAL -.00 LOL 37.61 VL 33.073 GAL -3.97 AZL 91.39 HCA 186.68 SMA 191.34 ECC .23381 INC 1.3871 V1 30.005
RP 233.80 LAP .16 LOP 224.28 VP 21.015 GAP 4.32 AZP 88.62 TAL 338.83 TAP 165.51 RCA 146.60 APO 236.07 V2 23.517
RC 209.011 GL -12.85 GP 14.79 ZAL 120.74 ZAP 143.22 ETS 157.83 ZAE 163.16 ETE 68.85 ZAC 104.35 ETC 255.41 CLP 145.93

PLANETOCENTRIC CONIC
C3 12.906 VHL 3.592 DLA -3.81 RAL 156.01 RAD 6567.5 VEL 11.588 PTH 2.03 VHP 4.614 DPA 10.47 RAP 196.03 ECC 1.2124

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 34 6	1996.49	-13.75	28.12	10.12	115.00	20 7 23	1396.5	-10.27	21.18
90.00	6 39 22	4877.30	20.02	211.62	11.45	69.54	8 0 40	4277.3	17.05	204.20
100.00	20 53 40	1739.85	-14.63	8.81	9.68	116.36	21 22 39	1139.8	-10.98	1.93
100.00	8 2 30	4609.18	20.93	191.53	11.07	68.16	9 19 19	4009.2	17.79	184.15
110.00	21 57 49	1539.02	-16.99	352.26	8.37	120.12	22 23 28	939.0	-12.86	345.58
110.00	9 14 50	4382.77	23.38	173.18	9.91	64.32	10 27 53	3782.8	19.73	165.94

DIFFERENTIAL CORRECTIONS
TDE 1.0450 TRA-1.8644 TC3 3.1573 BAU .6392
RDE .4828 RRA -.6228 RC3 1.9382 FAU .23754
FDE-3.4834 FRA 5.0650 FC-15.9344 BSP 15568
BDE 1.1512 BRA 1.9657 BC3 3.7047 FSP 4262

MID-COURSE EXECUTION ACCURACY
SGT 4099.5 SGR 1877.0 SG3 1303.1
RRT .9629 RRF -.9990 RTF -.9600
SGB 4508.7 R23 -.2317 R13 -.9717
SG1 4484.9 SG2 463.1 THA 24.06

ORBIT DETERMINATION ACCURACY
ST 1892.6 SR 826.9 SS 2421.0
CRT .9924 CRS .9991 CST .9966
LSA 3179.3 MSA 135.7 SSA 11.8
EL1 2063.3 EL2 93.1 ALF 23.49

LAUNCH DATE OCT 31 1964 FLIGHT TIME 252.00 ARRIVAL DATE JUL 10 1965

HELIOCENTRIC CONIC DISTANCE 591.260 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 33.054 GAL -3.90 AZL 90.97 HCA 187.67 SMA 190.99 ECC .23216 INC .9690 V1 30.005
RP 233.44 LAP .13 LOP 225.27 VP 21.028 GAP 3.94 AZP 89.04 TAL 339.05 TAP 166.72 RCA 146.65 APO 235.33 V2 23.555
RC 211.104 GL -9.13 GP 13.25 ZAL 120.77 ZAP 142.82 ETS 160.43 ZAE 164.93 ETE 70.82 ZAC 102.85 ETC 255.51 CLP 144.93

PLANETOCENTRIC CONIC

C3 12.375 VHL 3.518 DLA -.20 RAL 157.01 RAD 6567.5 VEL 11.566 PTH 2.02 VHP 4.481 DPA 9.07 RAP 195.38 ECC 1.2037

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 11 16	2099.59	-16.62	34.33	11.04	113.26	19 46 16	1499.6	-13.33	27.20
90.00	7 10 13	4756.23	16.96	204.06	11.11	66.98	8 29 30	4156.2	13.70	196.90
100.00	20 32 31	1837.51	-17.30	14.65	10.63	114.63	21 3 9	1237.5	-14.03	7.58
100.00	8 31 40	4493.54	17.84	184.33	10.70	65.61	9 46 33	3893.5	14.40	177.23
110.00	21 40 33	1624.57	-19.84	357.25	9.40	118.43	22 7 38	1024.6	-15.89	350.36
110.00	9 40 7	4279.25	20.18	166.84	9.48	61.81	10 51 27	3679.2	16.25	159.92

DIFFERENTIAL CORRECTIONS
TDE .9378 TRA-1.8311 TC3 3.2417 BAU .6159
RDE .3972 RRA -.5622 RC3 1.8309 FAU .25062
FDE-3.2157 FRA 5.4214 FC-17.5333 BSP 15265
BDE 1.0184 BRA 1.9154 BC3 3.7230 FSP 4560

MID-COURSE EXECUTION ACCURACY
SGT 4053.3 SGR 1707.7 SG3 1386.6
RRT .9617 RRF -.9984 RTF -.9603
SGB 4398.3 R23 -.2341 R13 -.9706
SG1 4376.9 SG2 433.4 THA 22.29

ORBIT DETERMINATION ACCURACY
ST 1771.5 SR 703.9 SS 2277.0
CRT .9917 CRS .9978 CST .9978
LSA 2967.5 MSA 109.5 SSA 18.3
EL1 1904.3 EL2 84.4 ALF 21.55

LAUNCH DATE OCT 31 1964 FLIGHT TIME 254.00 ARRIVAL DATE JUL 12 1965

HELIOCENTRIC CONIC DISTANCE 594.985 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 33.035 GAL -3.84 AZL 90.65 HCA 188.66 SMA 190.65 ECC .23058 INC .6434 V1 30.005
RP 233.07 LAP .10 LOP 226.27 VP 21.042 GAP 3.57 AZP 89.36 TAL 339.25 TAP 167.92 RCA 146.69 APO 234.62 V2 23.593
RC 213.179 GL -6.16 GP 12.05 ZAL 120.63 ZAP 142.19 ETS 162.56 ZAE 166.38 ETE 73.92 ZAC 101.67 ETC 255.57 CLP 143.89

PLANETOCENTRIC CONIC

C3 11.997 VHL 3.464 DLA 2.70 RAL 157.76 RAD 6567.5 VEL 11.549 PTH 2.02 VHP 4.362 DPA 8.01 RAP 194.82 ECC 1.1974

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 52 45	2182.95	-18.79	39.49	11.90	111.58	19 29 8	1583.0	-15.69	32.18
90.00	7 34 43	4659.76	14.30	198.22	11.01	65.30	8 52 23	4059.8	10.85	191.24
100.00	20 15 21	1916.52	-19.67	19.51	11.52	112.97	20 47 17	1316.5	-16.39	12.25
100.00	8 54 48	4401.42	15.16	178.80	10.59	63.93	10 8 10	3801.4	11.54	171.89
110.00	21 26 29	1693.90	-22.03	1.44	10.35	116.83	21 54 42	1093.9	-18.25	354.35
110.00	10 0 10	4196.81	17.46	162.00	9.32	60.13	11 10 7	3596.8	13.35	155.30

DIFFERENTIAL CORRECTIONS
TDE .8551 TRA-1.7907 TC3 3.2909 BAU .5972
RDE .3404 RRA -.5121 RC3 1.7423 FAU .26381
FDE-3.0124 FRA 5.7344 FC-19.0366 BSP 14934
BDE .9203 BRA 1.8625 BC3 3.7236 FSP 4828

MID-COURSE EXECUTION ACCURACY
SGT 3998.9 SGR 1578.9 SG3 1468.6
RRT .9602 RRF -.9977 RTF -.9603
SGB 4299.3 R23 -.2352 R13 -.9696
SG1 4279.6 SG2 412.0 THA 20.97

ORBIT DETERMINATION ACCURACY
ST 1672.3 SR 618.9 SS 2168.6
CRT .9905 CRS .9955 CST .9987
LSA 2806.0 MSA 90.3 SSA 27.0
EL1 1781.4 EL2 79.9 ALF 20.17

LAUNCH DATE OCT 31 1964 FLIGHT TIME 256.00 ARRIVAL DATE JUL 14 1965

HELIOCENTRIC CONIC DISTANCE 598.725 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 33.018 GAL -3.79 AZL 90.39 HCA 189.66 SMA 190.34 ECC .22908 INC .3840 V1 30.005
RP 232.70 LAP .07 LOP 227.27 VP 21.057 GAP 3.20 AZP 89.62 TAL 339.45 TAP 169.11 RCA 146.74 APO 233.94 V2 23.631
RC 215.236 GL -3.73 GP 11.09 ZAL 120.39 ZAP 141.40 ETS 164.32 ZAE 167.56 ETE 78.18 ZAC 100.71 ETC 255.62 CLP 142.79

PLANETOCENTRIC CONIC

C3 11.711 VHL 3.422 DLA 5.08 RAL 158.33 RAD 6567.4 VEL 11.537 PTH 2.01 VHP 4.254 DPA 7.18 RAP 194.33 ECC 1.1927

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 37 8	2252.31	-20.47	43.88	12.67	110.01	19 14 40	1652.3	-17.56	36.42
90.00	7 54 51	4580.25	11.99	193.53	11.03	64.15	9 11 12	3980.2	8.41	186.67
100.00	20 0 52	1982.22	-21.36	23.66	12.31	111.42	20 33 54	1382.2	-18.26	16.24
100.00	9 13 48	4325.57	12.84	174.36	10.59	62.77	10 25 54	3725.6	9.10	167.58
110.00	21 14 36	1751.47	-23.75	5.02	11.19	115.34	21 43 47	1151.5	-20.14	357.74
110.00	10 16 34	4129.08	15.12	158.15	9.29	58.97	11 25 23	3529.1	10.90	151.59

DIFFERENTIAL CORRECTIONS
TDE .7882 TRA-1.7464 TC3 3.3098 BAU .5802
RDE .3003 RRA -.4715 RC3 1.6669 FAU .27661
FDE-2.8439 FRA 6.0327 FC-20.4491 BSP 14603
BDE .8435 BRA 1.8090 BC3 3.7059 FSP 5105

MID-COURSE EXECUTION ACCURACY
SGT 3935.9 SGR 1477.3 SG3 1548.9
RRT .9587 RRF -.9967 RTF -.9603
SGB 4204.0 R23 -.2345 R13 -.9689
SG1 4185.4 SG2 395.0 THA 19.98

ORBIT DETERMINATION ACCURACY
ST 1588.0 SR 557.2 SS 2082.3
CRT .9891 CRS .9919 CST .9993
LSA 2675.9 MSA 78.3 SSA 36.9
EL1 1681.2 EL2 77.5 ALF 19.18

LAUNCH DATE OCT 31 1964 FLIGHT TIME 258.00 ARRIVAL DATE JUL 16 1965

HELIOCENTRIC CONIC DISTANCE 602.479 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 33.001 GAL -3.74 AZL 90.18 HCA 190.67 SMA 190.04 ECC .22765 INC .1736 V1 30.005
RP 232.32 LAP .03 LOP 228.27 VP 21.075 GAP 2.83 AZP 89.83 TAL 339.63 TAP 170.30 RCA 146.78 APO 233.30 V2 23.670
RC 217.275 GL -1.72 GP 10.31 ZAL 120.11 ZAP 140.49 ETS 165.80 ZAE 168.49 ETE 83.62 ZAC 99.92 ETC 255.67 CLP 141.64

PLANETOCENTRIC CONIC

C3 11.480 VHL 3.388 DLA 7.08 RAL 158.76 RAD 6567.4 VEL 11.527 PTH 2.01 VHP 4.152 DPA 6.52 RAP 193.87 ECC 1.1889

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 23 35	2311.34	-21.79	47.71	13.34	108.54	19 2 6	1711.3	-19.06	40.10
90.00	8 11 52	4512.94	9.96	189.62	11.11	63.36	9 27 5	3912.9	6.30	182.85
100.00	19 48 18	2038.06	-22.71	27.26	13.00	109.98	20 22 17	1438.1	-19.78	19.69
100.00	9 29 49	4261.45	10.82	170.58	10.66	61.96	10 40 50	3661.5	6.99	163.99
110.00	21 4 18	1800.26	-25.14	8.13	11.92	113.97	21 34 18	1200.3	-21.68	.69
110.00	10 30 19	4072.01	13.09	154.97	9.32	58.14	11 38 11	3472.0	8.78	148.51

DIFFERENTIAL CORRECTIONS
TDE .7428 TRA-1.6879 TC3 3.3481 BAU .5702
RDE .2727 RRA -.4364 RC3 1.6104 FAU .29038
FDE-2.7208 FRA 6.3008 FC-21.8977 BSP 13979
BDE .7913 BRA 1.7435 BC3 3.7152 FSP 5342

MID-COURSE EXECUTION ACCURACY
SGT 3872.7 SGR 1398.8 SG3 1631.7
RRT .9588 RRF -.9956 RTF -.9616
SGB 4117.6 R23 -.2283 R13 -.9694
SG1 4100.5 SG2 375.1 THA 19.27

ORBIT DETERMINATION ACCURACY
ST 1525.4 SR 513.4 SS 2021.0
CRT .9884 CRS .9871 CST .9994
LSA 2582.0 MSA 79.7 SSA 41.2
EL1 1607.7 EL2 73.9 ALF 18.44

LAUNCH DATE OCT 31 1964 FLIGHT TIME 260.00 ARRIVAL DATE JUL 18 1965

HELIOCENTRIC CONIC DISTANCE 606.245 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.985 GAL -3.69 AZL 90.00 HCA 191.67 SMA 189.76 ECC .22630 INC .0000 V1 30.005
RP 231.95 LAP .00 LOP 229.28 VP 21.094 GAP 2.47 AZP 90.00 TAL 339.81 TAP 171.48 RCA 146.81 APO 232.70 V2 23.709
RC 219.295 GL -.01 GP 9.66 ZAL 119.80 ZAP 139.48 ETS 167.06 ZAE 169.17 ETE 90.17 ZAC 99.25 ETC 255.70 CLP 140.46

PLANETOCENTRIC CONIC

C3 11.289 VHL 3.360 DLA 8.78 RAL 159.10 RAD 6567.4 VEL 11.519 PTH 2.01 VHP 4.056 DPA 6.01 RAP 193.44 ECC 1.1858

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 11 37	2362.49	-22.86	51.07	13.92	107.18	18 50 59	1762.5	-20.29	43.34
90.00	8 26 32	4454.82	8.17	186.29	11.21	62.79	9 40 46	3854.8	4.46	179.58
100.00	19 37 14	2086.34	-23.79	30.44	13.60	108.65	20 12 0	1486.3	-21.03	22.73
100.00	9 43 36	4206.19	9.03	167.55	10.75	61.38	10 53 42	3606.2	5.14	160.92
110.00	20 55 13	1842.30	-26.27	10.88	12.57	112.70	21 25 55	1242.3	-22.96	3.28
110.00	10 42 6	4023.01	11.31	152.28	9.38	57.53	11 49 9	3423.0	6.95	145.91

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .6984 TRA-1.6344 TC3 3.3370 BAU .5562 SGT 3794.8 SGR 1335.3 SG3 1714.5 ST 1462.4 SR 480.4 SS 1972.6
RDE .2525 RRA -.4075 RC3 1.5631 FAU .30402 RRT .9573 RRF -.9942 RTF -.9615 CRT .9867 CRS .9809 CST .9987
FDE-2.6165 FRA 6.5669 FC-23.3145 BSP 13537 SGB 4022.9 R23 -.2253 R13 -.9690 LSA 2500.0 MSA 96.9 SSA 38.5
BDE .7426 BRA 1.6845 BC3 3.6850 FSP 5595 SG1 4006.2 SG2 365.5 THA 18.78 EL1 1537.5 EL2 74.2 ALF 18.00

LAUNCH DATE OCT 31 1964 FLIGHT TIME 262.00 ARRIVAL DATE JUL 20 1965

HELIOCENTRIC CONIC DISTANCE 610.019 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.970 GAL -3.64 AZL 89.85 HCA 192.68 SMA 189.49 ECC .22502 INC .1480 V1 30.005
RP 231.57 LAP -.03 LOP 230.29 VP 21.114 GAP 2.12 AZP 90.14 TAL 339.98 TAP 172.66 RCA 146.85 APO 232.12 V2 23.748
RC 221.297 GL 1.46 GP 9.11 ZAL 119.49 ZAP 138.40 ETS 168.15 ZAE 169.58 ETE 97.67 ZAC 98.67 ETC 255.73 CLP 139.23

PLANETOCENTRIC CONIC

C3 11.126 VHL 3.336 DLA 10.25 RAL 159.37 RAD 6567.4 VEL 11.511 PTH 2.01 VHP 3.965 DPA 5.60 RAP 193.01 ECC 1.1831

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 0 54	2407.44	-23.73	54.08	14.43	105.92	18 41 2	1807.4	-21.32	46.24
90.00	8 39 24	4403.86	6.57	183.40	11.33	62.39	9 52 47	3803.9	2.82	176.73
100.00	19 27 20	2128.69	-24.69	33.27	14.12	107.41	20 2 49	1528.7	-22.07	25.45
100.00	9 55 39	4157.84	7.45	164.84	10.86	60.97	11 4 57	3557.8	3.52	158.25
110.00	20 47 7	1878.99	-27.21	13.31	13.13	111.54	21 18 26	1279.0	-24.04	5.58
110.00	10 52 21	3980.30	9.74	149.97	9.46	57.07	11 58 41	3380.3	5.34	143.65

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .6338 TRA-1.6042 TC3 3.2139 BAU .5283 SGT 3691.0 SGR 1278.6 SG3 1792.3 ST 1376.7 SR 450.6 SS 1913.9
RDE .2336 RRA -.3872 RC3 1.5116 FAU .31498 RRT .9518 RRF -.9926 RTF -.9585 CRT .9820 CRS .9716 CST .9979
FDE-2.4636 FRA 6.8997 FC-24.5091 BSP 13670 SGB 3906.2 R23 -.2311 R13 -.9664 LSA 2397.2 MSA 114.9 SSA 37.9
BDE .6755 BRA 1.6503 BC3 3.5516 FSP 5990 SG1 3888.4 SG2 372.4 THA 18.42 EL1 1446.3 EL2 81.1 ALF 17.88

LAUNCH DATE OCT 31 1964 FLIGHT TIME 264.00 ARRIVAL DATE JUL 22 1965

HELIOCENTRIC CONIC DISTANCE 613.808 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.956 GAL -3.59 AZL 89.73 HCA 193.69 SMA 189.23 ECC .22380 INC .2741 V1 30.005
RP 231.20 LAP -.06 LOP 231.30 VP 21.136 GAP 1.77 AZP 90.27 TAL 340.14 TAP 173.83 RCA 146.88 APO 231.58 V2 23.788
RC 223.281 GL 2.73 GP 8.65 ZAL 119.18 ZAP 137.24 ETS 169.10 ZAE 169.72 ETE 105.77 ZAC 98.16 ETC 255.75 CLP 137.96

PLANETOCENTRIC CONIC

C3 10.983 VHL 3.314 DLA 11.54 RAL 159.58 RAD 6567.4 VEL 11.505 PTH 2.00 VHP 3.879 DPA 5.28 RAP 192.59 ECC 1.1808

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 51 10	2447.49	-24.45	56.79	14.87	104.74	18 31 57	1847.5	-22.19	48.85
90.00	8 50 50	4358.48	5.13	180.84	11.45	62.11	10 3 29	3758.5	1.36	174.19
100.00	19 18 21	2166.33	-25.43	35.82	14.57	106.27	19 54 27	1566.3	-22.95	27.89
100.00	10 6 21	4114.88	6.02	162.45	10.97	60.67	11 14 55	3514.9	2.07	155.89
110.00	20 39 48	1911.46	-28.00	15.51	13.62	110.46	21 11 39	1311.5	-24.96	7.65
110.00	11 1 23	3942.51	8.34	147.95	9.55	56.73	12 7 5	3342.5	3.90	141.67

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .5945 TRA-1.5504 TC3 3.1477 BAU .5107 SGT 3590.7 SGR 1236.5 SG3 1876.6 ST 1316.8 SR 431.3 SS 1882.3
RDE .2221 RRA -.3668 RC3 1.4803 FAU .32852 RRT .9487 RRF -.9908 RTF -.9574 CRT .9788 CRS .9614 CST .9964
FDE-2.3746 FRA 7.1753 FC-25.8950 BSP 13279 SGB 3797.7 R23 -.2299 R13 -.9653 LSA 2333.1 MSA 136.0 SSA 35.8
BDE .6347 BRA 1.5932 BC3 3.4784 FSP 6278 SG1 3779.5 SG2 371.5 THA 18.27 EL1 1383.1 EL2 84.2 ALF 17.84

LAUNCH DATE OCT 31 1964 FLIGHT TIME 266.00 ARRIVAL DATE JUL 24 1965

HELIOCENTRIC CONIC DISTANCE 617.608 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.942 GAL -3.55 AZL 89.61 HCA 194.71 SMA 188.99 ECC .22264 INC .3854 V1 30.005
RP 230.82 LAP -.10 LOP 232.31 VP 21.160 GAP 1.43 AZP 90.37 TAL 340.29 TAP 174.99 RCA 146.91 APO 231.07 V2 23.827
RC 225.247 GL 3.85 GP 8.24 ZAL 118.87 ZAP 136.03 ETS 169.93 ZAE 169.58 ETE 114.01 ZAC 97.70 ETC 255.78 CLP 136.65

PLANETOCENTRIC CONIC

C3 10.856 VHL 3.295 DLA 12.68 RAL 159.76 RAD 6567.4 VEL 11.500 PTH 2.00 VHP 3.796 DPA 5.04 RAP 192.16 ECC 1.1787

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 42 15	2483.54	-25.06	59.26	15.26	103.64	18 23 38	1883.5	-22.93	51.24
90.00	9 1 8	4317.67	3.83	178.55	11.58	61.92	10 13 6	3717.7	.04	171.92
100.00	19 10 8	2200.11	-26.05	38.13	14.97	105.20	19 46 48	1600.1	-23.71	30.12
100.00	10 15 56	4076.34	4.73	160.31	11.08	60.45	11 23 53	3476.3	.76	153.77
110.00	20 33 7	1940.44	-28.68	17.49	14.05	109.46	21 5 27	1340.4	-25.76	9.53
110.00	11 9 27	3908.77	7.07	146.15	9.63	56.47	12 14 35	3308.8	2.62	139.90

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .5585 TRA-1.4956 TC3 3.0627 BAU .4921 SGT 3481.8 SGR 1202.3 SG3 1962.4 ST 1259.6 SR 416.5 SS 1857.3
RDE .2134 RRA -.3497 RC3 1.4551 FAU .34211 RRT .9453 RRF -.9889 RTF -.9560 CRT .9753 CRS .9494 CST .9942
FDE-2.2905 FRA 7.4599 FC-27.2816 BSP 12884 SGB 3683.5 R23 -.2290 R13 -.9642 LSA 2276.7 MSA 158.3 SSA 34.0
BDE .5979 BRA 1.5359 BC3 3.3908 FSP 6587 SG1 3664.6 SG2 372.7 THA 18.27 EL1 1323.8 EL2 87.5 ALF 17.95

LAUNCH DATE OCT 31 1964 FLIGHT TIME 268.00 ARRIVAL DATE JUL 26 1965

HELIOCENTRIC CONIC DISTANCE 621.420 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.929 GAL -3.51 AZL 89.52 HCA 195.73 SMA 188.76 ECC .22155 INC .4830 V1 30.005
RP 230.43 LAP -.13 LOP 233.33 VP 21.185 GAP 1.09 AZP 90.46 TAL 340.42 TAP 176.15 RCA 146.94 APO 230.58 V2 23.867
RC 227.193 GL 4.84 GP 7.89 ZAL 118.58 ZAP 134.76 ETS 170.68 ZAE 169.16 ETE 121.95 ZAC 97.29 ETC 255.80 CLP 135.30

PLANETOCENTRIC CONIC

C3 10.743 VHL 3.278 DLA 13.69 RAL 159.90 RAD 6567.4 VEL 11.495 PTH 2.00 VHP 3.717 DPA 4.86 RAP 191.71 ECC 1.1768

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 34 1	2516.25	-25.56	61.53	15.60	102.62	18 15 58	1916.3	-23.57	53.42
90.00	9 10 30	4280.66	2.64	176.48	11.70	61.80	10 21 51	3680.7	-1.15	169.85
100.00	19 2 34	2230.68	-26.58	40.25	15.32	104.20	19 39 45	1630.7	-24.37	32.15
100.00	10 24 38	4041.46	3.56	158.39	11.19	60.30	11 32 0	3441.5	-.42	151.86
110.00	20 26 59	1966.53	-29.25	19.30	14.44	108.53	20 59 46	1366.5	-26.45	11.25
110.00	11 16 42	3878.38	5.93	144.55	9.72	56.27	12 21 21	3278.4	1.46	138.32

DIFFERENTIAL CORRECTIONS
TDE .5251 TRA-1.4394 TC3 2.9568 BAU .4720
RDE .2067 RRA -.3351 RC3 1.4352 FAU .35581
FDE-2.2107 FRA 7.7506 FC-28.6745 BSP 12479
BDE .5643 BRA 1.4779 BC3 3.2867 FSP 6910

MID-COURSE EXECUTION ACCURACY
SGT 3362.5 SGR 1174.4 SG3 2049.6
RRT .9412 RRF -.9867 RTF -.9540
SGB 3561.7 R23 -.2289 R13 -.9627
SG1 3541.8 SG2 376.7 THA 18.41

ORBIT DETERMINATION ACCURACY
ST 1204.0 SR 405.1 SS 1838.0
CRT .9716 CRS .9356 CST .9913
LSA 2226.7 MSA 180.8 SSA 32.8
EL1 1267.0 EL2 91.1 ALF 18.20

LAUNCH DATE OCT 31 1964 FLIGHT TIME 270.00 ARRIVAL DATE JUL 28 1965

HELIOCENTRIC CONIC DISTANCE 625.244 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.917 GAL -3.48 AZL 89.43 HCA 196.75 SMA 188.54 ECC .22052 INC .5673 V1 30.005
RP 230.05 LAP -.16 LOP 234.36 VP 21.211 GAP .76 AZP 90.54 TAL 340.55 TAP 177.30 RCA 146.97 APO 230.12 V2 23.907
RC 229.120 GL 5.73 GP 7.59 ZAL 118.31 ZAP 133.43 ETS 171.34 ZAE 168.49 ETE 129.22 ZAC 96.91 ETC 255.82 CLP 133.91

PLANETOCENTRIC CONIC

C3 10.640 VHL 3.262 DLA 14.60 RAL 160.02 RAD 6567.4 VEL 11.490 PTH 2.00 VHP 3.641 DPA 4.73 RAP 191.25 ECC 1.1751

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 26 24	2546.17	-25.99	63.61	15.90	101.66	18 8 50	1946.2	-24.12	55.44
90.00	9 19 5	4246.85	1.55	174.59	11.82	61.72	10 29 52	3646.9	-2.24	167.97
100.00	18 55 35	2258.56	-27.03	42.20	15.64	103.27	19 33 14	1658.6	-24.94	34.03
100.00	10 32 35	4009.70	2.48	156.64	11.30	60.20	11 39 25	3409.7	-1.50	150.12
110.00	20 21 21	1990.19	-29.75	20.96	14.78	107.66	20 54 32	1390.2	-27.05	12.82
110.00	11 23 18	3850.83	4.88	143.10	9.81	56.13	12 27 29	3250.8	.40	136.88

DIFFERENTIAL CORRECTIONS
TDE .4955 TRA-1.3790 TC3 2.8398 BAU .4518
RDE .2025 RRA -.3219 RC3 1.4226 FAU .37040
FDE-2.1507 FRA 8.0295 FC-30.1369 BSP 11978
BDE .5353 BRA 1.4161 BC3 3.1763 FSP 7205

MID-COURSE EXECUTION ACCURACY
SGT 3233.5 SGR 1153.0 SG3 2139.6
RRT .9366 RRF -.9844 RTF -.9516
SGB 3432.9 R23 -.2296 R13 -.9610
SG1 3411.5 SG2 382.9 THA 18.71

ORBIT DETERMINATION ACCURACY
ST 1150.9 SR 397.5 SS 1827.4
CRT .9678 CRS .9210 CST .9879
LSA 2186.4 MSA 201.7 SSA 32.0
EL1 1213.9 EL2 94.9 ALF 18.60

LAUNCH DATE OCT 31 1964 FLIGHT TIME 272.00 ARRIVAL DATE JUL 30 1965

HELIOCENTRIC CONIC DISTANCE 629.078 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.906 GAL -3.45 AZL 89.36 HCA 197.78 SMA 188.34 ECC .21955 INC .6434 V1 30.005
RP 229.67 LAP -.20 LOP 235.38 VP 21.238 GAP .44 AZP 90.61 TAL 340.67 TAP 178.44 RCA 146.99 APO 229.69 V2 23.948
RC 231.027 GL 6.53 GP 7.32 ZAL 118.05 ZAP 132.05 ETS 171.95 ZAE 167.60 ETE 135.65 ZAC 96.55 ETC 255.85 CLP 132.48

PLANETOCENTRIC CONIC

C3 10.548 VHL 3.248 DLA 15.42 RAL 160.13 RAD 6567.4 VEL 11.486 PTH 2.00 VHP 3.569 DPA 4.65 RAP 190.77 ECC 1.1736

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 19 19	2573.68	-26.35	65.54	16.17	100.75	18 2 13	1973.7	-24.60	57.31
90.00	9 27 1	4215.80	.55	172.86	11.95	61.69	10 37 17	3615.8	-3.24	166.23
100.00	18 49 7	2284.12	-27.42	44.00	15.92	102.40	19 27 11	1684.1	-25.43	35.76
100.00	10 39 55	3980.60	1.50	155.04	11.42	60.14	11 46 15	3380.6	-2.49	148.52
110.00	20 16 10	2011.75	-30.19	22.49	15.10	106.85	20 49 41	1411.8	-27.59	14.27
110.00	11 29 21	3825.73	3.93	141.78	9.90	56.02	12 33 7	3225.7	-.56	135.57

DIFFERENTIAL CORRECTIONS
TDE .4686 TRA-1.3159 TC3 2.7014 BAU .4299
RDE .1995 RRA -.3107 RC3 1.4129 FAU .38489
FDE-2.0914 FRA 8.3158 FC-31.5903 BSP 11467
BDE .5093 BRA 1.3521 BC3 3.0486 FSP 7523

MID-COURSE EXECUTION ACCURACY
SGT 3092.3 SGR 1135.5 SG3 2230.2
RRT .9314 RRF -.9820 RTF -.9485
SGB 3294.2 R23 -.2313 R13 -.9589
SG1 3270.9 SG2 390.6 THA 19.17

ORBIT DETERMINATION ACCURACY
ST 1099.2 SR 392.0 SS 1820.0
CRT .9645 CRS .9050 CST .9836
LSA 2150.2 MSA 223.4 SSA 31.3
EL1 1162.9 EL2 97.9 ALF 19.12

LAUNCH DATE OCT 31 1964 FLIGHT TIME 274.00 ARRIVAL DATE AUG 1 1965

HELIOCENTRIC CONIC DISTANCE 632.923 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.895 GAL -3.42 AZL 89.29 HCA 198.81 SMA 188.15 ECC .21863 INC .7121 V1 30.005
RP 229.28 LAP -.23 LOP 236.41 VP 21.267 GAP .12 AZP 90.67 TAL 340.77 TAP 179.58 RCA 147.01 APO 229.28 V2 23.988
RC 232.913 GL 7.25 GP 7.07 ZAL 117.81 ZAP 130.62 ETS 172.50 ZAE 166.53 ETE 141.20 ZAC 96.22 ETC 255.87 CLP 131.00

PLANETOCENTRIC CONIC

C3 10.465 VHL 3.235 DLA 16.17 RAL 160.22 RAD 6567.4 VEL 11.483 PTH 2.00 VHP 3.500 DPA 4.62 RAP 190.26 ECC 1.1722

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 12 43	2599.11	-26.66	67.34	16.42	99.90	17 56 3	1999.1	-25.02	59.06
90.00	9 34 23	4187.16	-.38	171.26	12.08	61.69	10 44 10	3587.2	-4.16	164.63
100.00	18 43 6	2307.67	-27.75	45.67	16.19	101.58	19 21 34	1707.7	-25.87	37.37
100.00	10 46 41	3953.84	.59	153.57	11.54	60.11	11 52 35	3353.8	-3.39	147.05
110.00	20 11 22	2031.51	-30.57	23.90	15.39	106.09	20 45 13	1431.5	-28.06	15.61
110.00	11 34 55	3802.75	3.05	140.58	10.00	55.94	12 38 18	3202.8	-1.44	134.37

DIFFERENTIAL CORRECTIONS
TDE .4417 TRA-1.2527 TC3 2.5395 BAU .4061
RDE .1973 RRA -.3013 RC3 1.4058 FAU .39934
FDE-2.0296 FRA 8.6148 FC-33.0379 BSP 10953
BDE .4837 BRA 1.2885 BC3 2.9027 FSP 7857

MID-COURSE EXECUTION ACCURACY
SGT 2940.8 SGR 1121.6 SG3 2321.9
RRT .9250 RRF -.9795 RTF -.9443
SGB 3147.4 R23 -.2350 R13 -.9562
SG1 3121.7 SG2 401.4 THA 19.77

ORBIT DETERMINATION ACCURACY
ST 1046.3 SR 388.1 SS 1815.5
CRT .9610 CRS .8875 CST .9785
LSA 2116.8 MSA 244.2 SSA 30.9
EL1 1111.3 EL2 101.1 ALF 19.79

LAUNCH DATE OCT 31 1964 FLIGHT TIME 276.00 ARRIVAL DATE AUG 3 1965

HELIOCENTRIC CONIC DISTANCE 636.778 EARTH TO MARS

RL	148.50	LAL	-.00	LOL	37.61	VL	32.884	GAL	-3.39	AZL	89.23	HCA	199.84	SMA	187.96	ECC	.21777	INC	.7736
RP	228.89	LAP	-.26	LOP	237.44	VP	21.297	GAP	-.20	AZP	90.73	TAL	340.87	TAP	180.71	RCA	147.03	APO	228.90
RC	234.778	GL	7.91	GP	6.86	ZAL	117.59	ZAP	129.15	ETS	173.00	ZAE	165.29	ETE	145.93	ZAC	95.90	ETC	255.90

V1	30.005	V2	24.029	CLP	129.48														

PLANETOCENTRIC CONIC

C3	10.389	VHL	3.223	DLA	16.84	RAL	160.31	RAD	6567.4	VEL	11.479	PTH	2.00	VHP	3.434	DPA	4.62	RAP	189.73

ECC	1.1710	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG	
		90.00	17 6 34	2622.70	-26.93	69.02	16.65	99.10	17 50 17	2022.7	-25.40	60.69	
		90.00	9 41 15	4160.66	-1.23	169.79	12.21	61.71	10 50 36	3560.7	-5.00	183.14	
		100.00	18 37 30	2329.45	-28.04	47.23	16.43	100.81	19 16 20	1729.4	-26.26	38.88	
		100.00	10 53 0	3929.14	-.25	152.22	11.66	60.11	11 58 29	3329.1	-4.22	145.69	
		110.00	20 6 55	2049.68	-30.91	25.21	15.66	105.39	20 41 5	1449.7	-28.49	16.85	
		110.00	11 40 4	3781.67	2.25	139.47	10.10	55.88	12 43 6	3181.7	-2.24	133.27	

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4172	TRA	-1.1864	TC3	2.3606	BAU	.3814	SGT	2778.6	SGR	1111.1	SG3	2414.9	ST	994.5	SR	385.9	SS	1815.2
RDE	.1961	RRA	-.2929	RC3	1.4021	FAU	.41410	RRT	.9176	RRF	-.9769	RTF	-.9391	CRT	.9581	CRS	.8693	CST	.9724
FDE	-1.9747	FRA	8.9136	FC	-34.5068	BSP	10403	SGB	2992.5	R23	-.2402	R13	-.9530	LSA	2088.5	MSA	264.5	SSA	30.7
BDE	.4610	BRA	1.2220	BC3	2.7456	FSP	8191	SG1	2963.7	SG2	414.1	THA	20.57	EL1	1061.7	EL2	103.6	ALF	20.60

LAUNCH DATE OCT 31 1964 FLIGHT TIME 278.00 ARRIVAL DATE AUG 5 1965

HELIOCENTRIC CONIC DISTANCE 640.644 EARTH TO MARS

RL	148.50	LAL	-.00	LOL	37.61	VL	32.874	GAL	-3.36	AZL	89.17	HCA	200.87	SMA	187.79	ECC	.21697	INC	.8300
RP	228.51	LAP	-.30	LOP	238.48	VP	21.328	GAP	-.51	AZP	90.78	TAL	340.95	TAP	181.83	RCA	147.05	APO	228.54
RC	236.623	GL	8.51	GP	6.66	ZAL	117.39	ZAP	127.62	ETS	173.47	ZAE	163.93	ETE	149.94	ZAC	95.60	ETC	255.92

V1	30.005	V2	24.070	CLP	127.92														

PLANETOCENTRIC CONIC

C3	10.322	VHL	3.213	DLA	17.46	RAL	160.40	RAD	6567.4	VEL	11.477	PTH	1.99	VHP	3.371	DPA	4.66	RAP	189.18

ECC	1.1699	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG	
		90.00	17 0 50	2644.65	-27.16	70.58	16.87	98.35	17 44 54	2044.6	-25.72	62.21	
		90.00	9 47 42	4136.07	-2.02	168.42	12.35	61.75	10 56 38	3536.1	-5.79	161.75	
		100.00	18 32 19	2349.65	-28.29	48.68	16.66	100.09	19 11 28	1749.6	-26.61	40.28	
		100.00	10 58 54	3906.31	-1.02	150.97	11.79	60.12	12 4 0	3306.3	-4.99	144.43	
		110.00	20 2 50	2066.44	-31.20	26.43	15.92	104.72	20 37 16	1466.4	-28.87	18.01	
		110.00	11 44 52	3762.28	1.51	138.46	10.21	55.85	12 47 35	3162.3	-2.98	132.26	

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3938	TRA	-1.1174	TC3	2.1580	BAU	.3549	SGT	2603.8	SGR	1102.7	SG3	2507.6	ST	942.1	SR	384.8	SS	1816.9
RDE	.1956	RRA	-.2857	RC3	1.3998	FAU	.42867	RRT	.9083	RRF	-.9742	RTF	-.9320	CRT	.9558	CRS	.8502	CST	.9650
FDE	-1.9188	FRA	9.2170	FC	-35.9552	BSP	9820	SGB	2827.7	R23	-.2479	R13	-.9488	LSA	2062.7	MSA	284.4	SSA	30.5
BDE	.4397	BRA	1.1534	BC3	2.5722	FSP	8537	SG1	2794.9	SG2	429.7	THA	21.58	EL1	1012.2	EL2	105.3	ALF	21.57

LAUNCH DATE OCT 31 1964 FLIGHT TIME 280.00 ARRIVAL DATE AUG 7 1965

HELIOCENTRIC CONIC DISTANCE 644.520 EARTH TO MARS

RL	148.50	LAL	-.00	LOL	37.61	VL	32.865	GAL	-3.34	AZL	89.12	HCA	201.91	SMA	187.63	ECC	.21621	INC	.8809
RP	228.12	LAP	-.33	LOP	239.52	VP	21.360	GAP	-.81	AZP	90.82	TAL	341.03	TAP	182.94	RCA	147.06	APO	228.20
RC	238.446	GL	9.06	GP	6.48	ZAL	117.21	ZAP	126.05	ETS	173.90	ZAE	162.45	ETE	153.33	ZAC	95.30	ETC	255.95

V1	30.005	V2	24.111	CLP	126.32														

PLANETOCENTRIC CONIC

C3	10.261	VHL	3.203	DLA	18.02	RAL	160.49	RAD	6567.4	VEL	11.474	PTH	1.99	VHP	3.311	DPA	4.73	RAP	188.59

ECC	1.1689	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG	
		90.00	16 55 29	2665.12	-27.35	72.05	17.08	97.64	17 39 54	2065.1	-26.01	63.64	
		90.00	9 53 45	4113.24	-2.76	167.14	12.50	61.81	11 2 18	3513.2	-6.51	160.47	
		100.00	18 27 29	2368.42	-28.51	50.03	16.88	99.40	19 6 57	1768.4	-26.91	41.59	
		100.00	11 4 26	3885.17	-1.74	149.81	11.93	60.15	12 9 11	3285.2	-5.70	143.26	
		110.00	19 59 3	2081.93	-31.47	27.56	16.17	104.10	20 33 45	1481.9	-29.21	19.08	
		110.00	11 49 21	3744.42	.83	137.53	10.33	55.83	12 51 46	3144.4	-3.66	131.32	

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3733	TRA	-1.0453	TC3	1.9433	BAU	.3286	SGT	2421.0	SGR	1097.3	SG3	2602.1	ST	891.7	SR	385.2	SS	1823.1
RDE	.1959	RRA	-.2793	RC3	1.4006	FAU	.44373	RRT	.8974	RRF	-.9714	RTF	-.9230	CRT	.9548	CRS	.8314	CST	.9562
FDE	-1.8745	FRA	9.5180	FC	-37.4374	BSP	9171	SGB	2658.1	R23	-.2574	R13	-.9439	LSA	2043.0	MSA	303.7	SSA	30.3
BDE	.4216	BRA	1.0819	BC3	2.3954	FSP	8868	SG1	2620.2	SG2	447.3	THA	22.84	EL1	965.6	EL2	105.8	ALF	22.70

LAUNCH DATE OCT 31 1964 FLIGHT TIME 282.00 ARRIVAL DATE AUG 9 1965

HELIOCENTRIC CONIC DISTANCE 648.406 EARTH TO MARS

RL	148.50	LAL	-.00	LOL	37.61	VL	32.856	GAL	-3.32	AZL	89.07	HCA	202.96	SMA	187.48	ECC	.21551	INC	.9275
RP	227.73	LAP	-.36	LOP	240.56	VP	21.393	GAP	-1.11	AZP	90.85	TAL	341.09	TAP	184.04	RCA	147.08	APO	227.88
RC	240.248	GL	9.57	GP	6.32	ZAL	117.05	ZAP	124.44	ETS	174.30	ZAE	160.87	ETE	156.22	ZAC	95.01	ETC	255.98

V1	30.005	V2	24.152	CLP	124.68														

PLANETOCENTRIC CONIC

C3	10.207	VHL	3.195	DLA	18.54	RAL	160.58	RAD	6567.4	VEL	11.472	PTH	1.99	VHP	3.255	DPA	4.83	RAP	187.98

ECC	1.1680	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG	
		90.00	16 50 30	2684.23	-27.52	73.42	17.28	96.97	17 35 14	2084.2	-26.26	64.98	
		90.00	9 59 28	4092.02	-3.44	165.95	12.66	61.88	11 7 40	3492.0	-7.18	159.26	
		100.00	18 23 1	2385.90	-28.69	51.29	17.10	98.76	19 2 47	1785.9	-27.18	42.82	
		100.00	11 9 38	3865.59	-2.40	148.73	12.08	60.20	12 14 4	3265.6	-6.35	142.17	
		110.00	19 55 35	2096.27	-31.70	28.61	16.42	103.52	20 30 31	1496.3	-29.52	20.09	
		110.00	11 53 33	3727.97	.20	136.67	10.46	55.82	12 55 41	3128.0	-4.29	130.46	

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3535	TRA	-.9704	TC3	1.7060	BAU	.3014	SGT	2226.9	SGR	1093.4	SG3	2696.0	ST	840.4	SR	386.5	SS	1831.2
RDE	.1968	RRA	-.2736	RC3	1.4026	FAU	.45865	RRT	.8832	RRF	-.9686	RTF	-.9106	CRT	.9548	CRS	.8123	CST	.9458
FDE	-1.8314	FRA	9.8209	FC	-38.9005	BSP	8498	SGB	2480.9	R23	-.2701	R13	-.9376	LSA	2025.9	MSA	322.1	SSA	30.3
BDE	.4046	BRA	1.0082	BC3	2.2086	FSP	9199	SG1	2436.2	SG2	468.8	THA	24.41	EL1	919.0	EL2	105.1	ALF	24.04

LAUNCH DATE OCT 31 1964 FLIGHT TIME 284.00 ARRIVAL DATE AUG 11 1965

HELIOCENTRIC CONIC DISTANCE 652.301 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.848 GAL -3.30 AZL 89.03 HCA 204.01 SMA 187.34 ECC .21486 INC .9707 V1 30.005
RP 227.34 LAP -.39 LOP 241.61 VP 21.427 GAP -1.40 AZP 90.89 TAL 341.13 TAP 185.14 RCA 147.09 APO 227.59 V2 24.193
RC 242.030 GL 10.04 GP 6.17 ZAL 116.91 ZAP 122.78 ETS 174.68 ZAE 159.20 ETE 158.68 ZAC 94.72 ETC 256.02 CLP 122.99

PLANETOCENTRIC CONIC

C3 10.160 VHL 3.187 DLA 19.01 RAL 160.68 RAD 6567.4 VEL 11.469 PTH 1.99 VHP 3.202 DPA 4.96 RAP 187.34 ECC 1.1672

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 45 53	2702.08	-27.66	74.71	17.49	96.34	17 30 55	2102.1	-26.49	66.24
90.00	10 4 52	4072.31	-4.07	164.85	12.82	61.95	11 12 44	3472.3	-7.79	158.14
100.00	18 18 53	2402.17	-28.86	52.48	17.32	98.16	18 58 55	1802.2	-27.43	43.97
100.00	11 14 33	3847.46	-3.01	147.74	12.24	60.25	12 18 40	3247.5	-6.95	141.16
110.00	19 52 24	2109.56	-31.91	29.59	16.66	102.97	20 27 34	1509.6	-29.79	21.02
110.00	11 57 31	3712.83	-.38	135.88	10.59	55.82	12 59 23	3112.8	-4.86	129.67

DIFFERENTIAL CORRECTIONS
TDE .3348 TRA -.8923 TC3 1.4482 BAU .2741
RDE .1980 RRA -.2686 RC3 1.4052 FAU .47335
FDE-1.7878 FRA10.1238 FC-40.3337 BSP 7800
BDE .3890 BRA .9318 BC3 2.0178 FSP 9538

MID-COURSE EXECUTION ACCURACY
SGT 2023.0 SGR 1090.8 SG3 2788.9
RRT .8644 RRF -.9658 RTF -.8932
SGB 2298.3 R23 -.2860 R13 -.9297
SG1 2244.5 SG2 494.3 THA 26.37

ORBIT DETERMINATION ACCURACY
ST 788.7 SR 388.4 SS 1840.3
CRT .9562 CRS .7929 CST .9327
LSA 2010.7 MSA 340.2 SSA 30.2
EL1 873.1 EL2 102.7 ALF 25.60

LAUNCH DATE OCT 31 1964 FLIGHT TIME 286.00 ARRIVAL DATE AUG 13 1965

HELIOCENTRIC CONIC DISTANCE 656.207 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.841 GAL -3.29 AZL 88.99 HCA 205.06 SMA 187.20 ECC .21425 INC 1.0106 V1 30.005
RP 226.95 LAP -.43 LOP 242.66 VP 21.462 GAP -1.69 AZP 90.92 TAL 341.17 TAP 186.23 RCA 147.10 APO 227.31 V2 24.235
RC 243.792 GL 10.48 GP 6.03 ZAL 116.80 ZAP 121.08 ETS 175.04 ZAE 157.46 ETE 160.80 ZAC 94.44 ETC 256.06 CLP 121.27

PLANETOCENTRIC CONIC

C3 10.119 VHL 3.181 DLA 19.44 RAL 160.79 RAD 6567.4 VEL 11.468 PTH 1.99 VHP 3.151 DPA 5.11 RAP 186.67 ECC 1.1665

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 41 36	2718.76	-27.78	75.92	17.69	95.74	17 26 55	2118.8	-26.69	67.42
90.00	10 9 58	4054.01	-4.66	163.82	13.00	62.04	11 17 32	3454.0	-8.36	157.10
100.00	18 15 5	2417.32	-29.00	53.58	17.53	97.60	18 55 22	1817.3	-27.64	45.04
100.00	11 19 11	3830.69	-3.58	146.81	12.41	60.30	12 23 1	3230.7	-7.51	140.23
110.00	19 49 31	2121.86	-32.09	30.51	16.90	102.46	20 24 53	1521.9	-30.04	21.89
110.00	12 1 14	3698.91	-.91	135.16	10.74	55.83	13 2 53	3098.9	-5.39	128.93

DIFFERENTIAL CORRECTIONS
TDE .3178 TRA -.8113 TC3 1.1711 BAU .2478
RDE .1997 RRA -.2641 RC3 1.4084 FAU .48788
FDE-1.7497 FRA10.4270 FC-41.7399 BSP 7070
BDE .3754 BRA .8532 BC3 1.8317 FSP 9868

MID-COURSE EXECUTION ACCURACY
SGT 1812.1 SGR 1089.4 SG3 2880.8
RRT .8384 RRF -.9629 RTF -.8680
SGB 2114.4 R23 -.3058 R13 -.9198
SG1 2048.1 SG2 525.3 THA 28.82

ORBIT DETERMINATION ACCURACY
ST 737.8 SR 391.2 SS 1852.0
CRT .9594 CRS .7739 CST .9165
LSA 1999.6 MSA 357.8 SSA 30.2
EL1 829.2 EL2 98.2 ALF 27.38

LAUNCH DATE OCT 31 1964 FLIGHT TIME 288.00 ARRIVAL DATE AUG 15 1965

HELIOCENTRIC CONIC DISTANCE 660.121 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.833 GAL -3.28 AZL 88.95 HCA 206.11 SMA 187.08 ECC .21369 INC 1.0479 V1 30.005
RP 226.56 LAP -.46 LOP 243.71 VP 21.498 GAP -1.98 AZP 90.94 TAL 341.20 TAP 187.31 RCA 147.10 APO 227.06 V2 24.277
RC 245.534 GL 10.88 GP 5.90 ZAL 116.71 ZAP 119.33 ETS 175.38 ZAE 155.65 ETE 162.64 ZAC 94.16 ETC 256.10 CLP 119.50

PLANETOCENTRIC CONIC

C3 10.084 VHL 3.176 DLA 19.83 RAL 160.90 RAD 6567.4 VEL 11.466 PTH 1.99 VHP 3.105 DPA 5.29 RAP 185.97 ECC 1.1660

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 37 41	2734.32	-27.88	77.05	17.90	95.19	17 23 15	2134.3	-26.87	68.52
90.00	10 14 48	4037.07	-5.20	162.87	13.19	62.13	11 22 5	3437.1	-8.89	156.13
100.00	18 11 37	2431.41	-29.12	54.61	17.75	97.07	18 52 8	1831.4	-27.84	46.04
100.00	11 23 33	3815.21	-4.10	145.96	12.59	60.36	12 27 8	3215.2	-8.02	139.36
110.00	19 46 55	2133.26	-32.26	31.35	17.14	101.98	20 22 28	1533.3	-30.27	22.70
110.00	12 4 45	3686.13	-1.40	134.49	10.90	55.84	13 6 11	3086.1	-5.87	128.26

DIFFERENTIAL CORRECTIONS
TDE .3015 TRA -.7270 TC3 .8750 BAU .2239
RDE .2016 RRA -.2601 RC3 1.4116 FAU .50197
FDE-1.7089 FRA10.7299 FC-43.0942 BSP 6331
BDE .3627 BRA .7721 BC3 1.6607 FSP 10200

MID-COURSE EXECUTION ACCURACY
SGT 1596.5 SGR 1088.6 SG3 2970.6
RRT .8008 RRF -.9599 RTF -.8304
SGB 1932.3 R23 -.3288 R13 -.9077
SG1 1848.4 SG2 563.1 THA 31.95

ORBIT DETERMINATION ACCURACY
ST 686.4 SR 394.2 SS 1864.2
CRT .9642 CRS .7547 CST .8959
LSA 1990.0 MSA 375.1 SSA 30.2
EL1 786.3 EL2 91.3 ALF 29.41

LAUNCH DATE OCT 31 1964 FLIGHT TIME 290.00 ARRIVAL DATE AUG 17 1965

HELIOCENTRIC CONIC DISTANCE 664.046 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.827 GAL -3.27 AZL 88.92 HCA 207.17 SMA 186.96 ECC .21318 INC 1.0821 V1 30.005
RP 226.17 LAP -.49 LOP 244.77 VP 21.535 GAP -2.25 AZP 90.96 TAL 341.21 TAP 188.38 RCA 147.11 APO 226.82 V2 24.318
RC 247.256 GL 11.26 GP 5.77 ZAL 116.65 ZAP 117.55 ETS 175.70 ZAE 153.78 ETE 164.24 ZAC 93.87 ETC 256.14 CLP 117.70

PLANETOCENTRIC CONIC

C3 10.055 VHL 3.171 DLA 20.19 RAL 161.02 RAD 6567.4 VEL 11.465 PTH 1.99 VHP 3.061 DPA 5.49 RAP 185.25 ECC 1.1655

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 34 6	2748.82	-27.96	78.10	18.11	94.67	17 19 54	2148.8	-27.02	69.56
90.00	10 19 23	4021.42	-5.70	161.99	13.39	62.22	11 26 24	3421.4	-9.37	155.24
100.00	18 8 28	2444.50	-29.23	55.57	17.97	96.58	18 49 12	1844.5	-28.01	46.98
100.00	11 27 42	3800.97	-4.58	145.17	12.78	60.43	12 31 2	3201.0	-8.48	138.56
110.00	19 44 35	2143.79	-32.40	32.14	17.38	101.54	20 20 19	1543.8	-30.47	23.46
110.00	12 8 4	3674.45	-1.85	133.88	11.08	55.86	13 9 18	3074.4	-6.32	127.64

DIFFERENTIAL CORRECTIONS
TDE .2862 TRA -.6399 TC3 .5596 BAU .2046
RDE .2040 RRA -.2564 RC3 1.4153 FAU .51593
FDE-1.6777 FRA11.0235 FC-44.4205 BSP 5592
BDE .3515 BRA .6893 BC3 1.5219 FSP 10509

MID-COURSE EXECUTION ACCURACY
SGT 1382.3 SGR 1088.6 SG3 3058.6
RRT .7424 RRF -.9569 RTF -.7706
SGB 1759.5 R23 -.3545 R13 -.8934
SG1 1650.0 SG2 611.1 THA 36.00

ORBIT DETERMINATION ACCURACY
ST 635.8 SR 398.1 SS 1878.2
CRT .9705 CRS .7366 CST .8703
LSA 1984.1 MSA 390.9 SSA 30.2
EL1 745.6 EL2 81.8 ALF 31.71

LAUNCH DATE OCT 31 1964 FLIGHT TIME 292.00 ARRIVAL DATE AUG 19 1965

HELIOCENTRIC CONIC DISTANCE 667.979 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.820 GAL -3.26 AZL 88.89 HCA 208.23 SMA 186.86 ECC .21271 INC 1.1143 V1 30.005
RP 225.78 LAP -.53 LOP 245.83 VP 21.573 GAP -2.53 AZP 90.98 TAL 341.21 TAP 189.44 RCA 147.11 APO 226.60 V2 24.360
RC 248.959 GL 11.61 GP 5.66 ZAL 116.60 ZAP 115.73 ETS 176.01 ZAE 151.84 ETE 165.65 ZAC 93.59 ETC 256.19 CLP 115.86

PLANETOCENTRIC CONIC

C3 10.032 VHL 3.167 DLA 20.52 RAL 161.16 RAD 6567.4 VEL 11.464 PTH 1.99 VHP 3.021 DPA 5.71 RAP 184.49 ECC 1.1651

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 30 50	2762.29	-28.03	79.08	18.34	94.18	17 16 53	2162.3	-27.16	70.52
90.00	10 23 43	4007.03	-6.15	161.18	13.60	62.31	11 30 30	3407.0	-9.81	154.41
100.00	18 5 38	2456.63	-29.32	56.46	18.20	96.12	18 46 35	1856.6	-28.16	47.85
100.00	11 31 36	3787.92	-5.02	144.45	12.98	60.49	12 34 44	3187.9	-8.91	137.83
110.00	19 42 31	2153.52	-32.53	32.87	17.64	101.13	20 18 25	1553.5	-30.66	24.15
110.00	12 11 13	3663.80	-2.26	133.33	11.26	55.88	13 12 16	3063.8	-6.72	127.08

DIFFERENTIAL CORRECTIONS
TDE .2725 TRA -.5486 TC3 .2274 BAU .1927
RDE .2066 RRA -.2528 RC3 1.4186 FAU .52935
FDE-1.6510 FRA11.3094 FC-45.6814 BSP 4881
BDE .3420 BRA .6040 BC3 1.4367 FSP 10811

MID-COURSE EXECUTION ACCURACY
SGT 1177.5 SGR 1088.9 SG3 3143.2
RRT .6482 RRF -.9539 RTF -.6720
SGB 1603.8 R23 -.3767 R13 -.8792
SG1 1457.1 SG2 670.0 THA 41.56

ORBIT DETERMINATION ACCURACY
ST 586.6 SR 402.4 SS 1893.1
CRT .9785 CRS .7194 CST .8365
LSA 1980.8 MSA 406.7 SSA 30.2
EL1 708.0 EL2 68.8 ALF 34.24

LAUNCH DATE OCT 31 1964 FLIGHT TIME 294.00 ARRIVAL DATE AUG 21 1965

HELIOCENTRIC CONIC DISTANCE 671.922 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.815 GAL -3.26 AZL 88.86 HCA 209.30 SMA 186.76 ECC .21228 INC 1.1443 V1 30.005
RP 225.38 LAP -.56 LOP 246.90 VP 21.611 GAP -2.80 AZP 91.00 TAL 341.20 TAP 190.49 RCA 147.11 APO 226.40 V2 24.402
RC 250.643 GL 11.93 GP 5.54 ZAL 116.58 ZAP 113.87 ETS 176.30 ZAE 149.86 ETE 166.89 ZAC 93.31 ETC 256.24 CLP 113.99

PLANETOCENTRIC CONIC

C3 10.014 VHL 3.165 DLA 20.81 RAL 161.31 RAD 6567.4 VEL 11.463 PTH 1.99 VHP 2.984 DPA 5.94 RAP 183.71 ECC 1.1648

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 27 56	2774.77	-28.09	79.98	18.57	93.73	17 14 10	2174.8	-27.28	71.41
90.00	10 27 48	3993.85	-6.57	160.43	13.83	62.39	11 34 22	3393.9	-10.21	153.65
100.00	18 3 7	2467.83	-29.40	57.28	18.44	95.69	18 44 15	1867.8	-28.30	48.65
100.00	11 35 18	3776.02	-5.42	143.79	13.20	60.56	12 38 14	3176.0	-9.30	137.16
110.00	19 40 43	2162.47	-32.65	33.54	17.90	100.75	20 16 46	1562.5	-30.82	24.80
110.00	12 14 11	3654.15	-2.62	132.82	11.47	55.91	13 15 5	3054.1	-7.08	126.57

DIFFERENTIAL CORRECTIONS
TDE .2592 TRA -.4544 TC3 -.1229 BAU .1910
RDE .2096 RRA -.2494 RC3 1.4213 FAU .54222
FDE-1.6277 FRA11.5867 FC-46.8740 BSP 4253
BDE .3333 BRA .5183 BC3 1.4266 FSP 11097

MID-COURSE EXECUTION ACCURACY
SGT 1000.4 SGR 1089.3 SG3 3224.1
RRT .4893 RRF -.9508 RTF -.5043
SGB 1479.0 R23 -.3773 R13 -.8739
SG1 1278.7 SG2 743.2 THA 49.94

ORBIT DETERMINATION ACCURACY
ST 538.5 SR 407.1 SS 1908.5
CRT .9867 CRS .7028 CST .7923
LSA 1979.8 MSA 421.4 SSA 30.2
EL1 673.0 EL2 53.0 ALF 36.99

LAUNCH DATE OCT 31 1964 FLIGHT TIME 296.00 ARRIVAL DATE AUG 23 1965

HELIOCENTRIC CONIC DISTANCE 675.874 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.809 GAL -3.26 AZL 88.83 HCA 210.36 SMA 186.66 ECC .21190 INC 1.1724 V1 30.005
RP 224.99 LAP -.59 LOP 247.97 VP 21.650 GAP -3.06 AZP 91.01 TAL 341.17 TAP 191.54 RCA 147.11 APO 226.22 V2 24.444
RC 252.307 GL 12.24 GP 5.44 ZAL 116.58 ZAP 111.98 ETS 176.58 ZAE 147.83 ETE 167.99 ZAC 93.02 ETC 256.30 CLP 112.09

PLANETOCENTRIC CONIC

C3 10.002 VHL 3.163 DLA 21.08 RAL 161.47 RAD 6567.4 VEL 11.463 PTH 1.99 VHP 2.950 DPA 6.19 RAP 182.91 ECC 1.1646

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 25 21	2786.28	-28.14	80.82	18.81	93.31	17 11 47	2186.3	-27.38	72.24
90.00	10 31 40	3981.86	-6.95	159.75	14.07	62.48	11 38 2	3381.9	-10.58	152.96
100.00	18 0 54	2478.15	-29.46	58.04	18.69	95.29	18 42 13	1878.1	-28.42	49.39
100.00	11 38 47	3765.22	-5.78	143.20	13.43	60.62	12 41 33	3165.2	-9.65	136.55
110.00	19 39 11	2170.68	-32.75	34.16	18.16	100.39	20 15 22	1570.7	-30.97	25.39
110.00	12 17 0	3645.45	-2.96	132.37	11.68	55.93	13 17 46	3045.5	-7.41	126.11

DIFFERENTIAL CORRECTIONS
TDE .2483 TRA -.3550 TC3 -.4830 BAU .2012
RDE .2133 RRA -.2455 RC3 1.4251 FAU .55526
FDE-1.6292 FRA11.8300 FC-48.0593 BSP 3754
BDE .3273 BRA .4316 BC3 1.5047 FSP 11323

MID-COURSE EXECUTION ACCURACY
SGT 877.9 SGR 1090.4 SG3 3301.7
RRT .2371 RRF -.9477 RTF -.2346
SGB 1399.9 R23 -.2761 R13 -.9067
SG1 1135.1 SG2 819.3 THA 66.34

ORBIT DETERMINATION ACCURACY
ST 495.1 SR 412.9 SS 1924.7
CRT .9936 CRS .6898 CST .7339
LSA 1982.2 MSA 436.0 SSA 30.1
EL1 643.7 EL2 36.0 ALF 39.79

LAUNCH DATE OCT 31 1964 FLIGHT TIME 298.00 ARRIVAL DATE AUG 25 1965

HELIOCENTRIC CONIC DISTANCE 679.834 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.804 GAL -3.26 AZL 88.80 HCA 211.44 SMA 186.58 ECC .21156 INC 1.1991 V1 30.005
RP 224.60 LAP -.63 LOP 249.04 VP 21.690 GAP -3.32 AZP 91.02 TAL 341.13 TAP 192.57 RCA 147.11 APO 226.05 V2 24.486
RC 253.951 GL 12.52 GP 5.33 ZAL 116.61 ZAP 110.07 ETS 176.85 ZAE 145.76 ETE 168.98 ZAC 92.74 ETC 256.36 CLP 110.16

PLANETOCENTRIC CONIC

C3 9.996 VHL 3.162 DLA 21.32 RAL 161.64 RAD 6567.4 VEL 11.462 PTH 1.99 VHP 2.920 DPA 6.46 RAP 182.08 ECC 1.1645

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 23 7	2796.83	-28.18	81.59	19.06	92.93	17 9 44	2196.8	-27.47	73.00
90.00	10 35 18	3971.06	-7.28	159.14	14.32	62.56	11 41 29	3371.1	-10.91	152.33
100.00	17 59 1	2487.57	-29.52	58.74	18.95	94.93	18 40 29	1887.6	-28.52	50.08
100.00	11 42 5	3755.54	-6.10	142.66	13.68	60.68	12 44 40	3155.5	-9.96	136.00
110.00	19 37 55	2178.18	-32.84	34.73	18.44	100.07	20 14 13	1578.2	-31.10	25.94
110.00	12 19 40	3637.71	-3.25	131.96	11.91	55.95	13 20 18	3037.7	-7.70	125.70

DIFFERENTIAL CORRECTIONS
TDE .2349 TRA -.2551 TC3 -.8708 BAU .2231
RDE .2164 RRA -.2426 RC3 1.4243 FAU .56601
FDE-1.6022 FRA12.0963 FC-49.0205 BSP 3561
BDE .3194 BRA .3520 BC3 1.6694 FSP 11592

MID-COURSE EXECUTION ACCURACY
SGT 854.8 SGR 1089.8 SG3 3371.8
RRT -.1018 RRF -.9443 RTF .1245
SGB 1385.0 R23 .1146 R13 -.9378
SG1 1098.4 SG2 843.7 THA 101.27

ORBIT DETERMINATION ACCURACY
ST 451.3 SR 417.7 SS 1939.9
CRT .9948 CRS .6734 CST .6546
LSA 1984.7 MSA 448.8 SSA 30.2
EL1 614.2 EL2 31.2 ALF 42.78

LAUNCH DATE OCT 31 1964 FLIGHT TIME 300.00 ARRIVAL DATE AUG 27 1965

HELIOCENTRIC CONIC DISTANCE 683.803 EARTH TO MARS

RL	148.50	LAL	-.00	LOL	37.61	VL	32.800	GAL	-3.27	AZL	88.78	HCA	212.51	SMA	186.50	ECC	.21126	INC	1.2243
RP	224.21	LAP	-.66	LOP	250.11	VP	21.730	GAP	-3.58	AZP	91.03	TAL	341.08	TAP	193.60	RCA	147.10	APO	225.90
RC	255.576	GL	12.79	GP	5.23	ZAL	116.66	ZAP	108.12	ETS	177.11	ZAE	143.66	ETE	169.87	ZAC	92.45	ETC	256.43

V1	30.005	V2	24.527	CLP	108.20														

PLANETOCENTRIC CONIC

C3	9.995	VHL	3.161	DLA	21.53	RAL	161.83	RAD	6567.4	VEL	11.462	PTH	1.99	VHP	2.893	DPA	6.73	RAP	181.24

ECC	1.1645																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 21 13	2806.44	-28.21	82.29	19.32	92.58	17 7 59	2206.4	-27.55	73.69
90.00	10 38 43	3961.40	-7.59	158.59	14.59	62.64	11 44 44	3361.4	-11.20	151.77
100.00	17 57 26	2496.16	-29.57	59.37	19.23	94.60	18 39 3	1896.2	-28.62	50.70
100.00	11 45 10	3746.92	-6.39	142.18	13.94	60.74	12 47 37	3146.9	-10.24	135.51
110.00	19 36 54	2184.99	-32.92	35.24	18.73	99.77	20 13 19	1585.0	-31.22	26.43
110.00	12 22 12	3630.86	-3.51	131.60	12.16	55.98	13 22 43	3030.9	-7.95	125.33

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2238	TRA	-.1503	TC3	-1.2648	BAU	.2545	SGT	943.3	SGR	1089.3	SG3	3436.9	ST	415.6	SR	423.4	SS	1955.2
RDE	.2200	RRA	-.2392	RC3	1.4238	FAU	.57657	RRT	-.4106	RRF	-.9409	RTF	.4543	CRT	.9850	CRS	.6601	CST	.5485
FDE	-1.5960	FRA	12.3282	FC	-49.9405	BSP	3698	SGB	1441.0	R23	.3157	R13	-.8895	LSA	1990.1	MSA	462.1	SSA	30.1
BDE	.3138	BRA	.2825	BC3	1.9045	FSP	11808	SG1	1218.8	SG2	768.8	THA	125.31	EL1	591.1	EL2	51.4	ALF	45.54

LAUNCH DATE OCT 31 1964 FLIGHT TIME 302.00 ARRIVAL DATE AUG 29 1965

HELIOCENTRIC CONIC DISTANCE 687.781 EARTH TO MARS

RL	148.50	LAL	-.00	LOL	37.61	VL	32.796	GAL	-3.27	AZL	88.75	HCA	213.59	SMA	186.43	ECC	.21099	INC	1.2480
RP	223.82	LAP	-.69	LOP	251.19	VP	21.771	GAP	-3.83	AZP	91.04	TAL	341.02	TAP	194.62	RCA	147.09	APO	225.76
RC	257.180	GL	13.03	GP	5.13	ZAL	116.74	ZAP	106.15	ETS	177.36	ZAE	141.51	ETE	170.67	ZAC	92.16	ETC	256.50

V1	30.005	V2	24.569	CLP	106.22														

PLANETOCENTRIC CONIC

C3	10.000	VHL	3.162	DLA	21.72	RAL	162.04	RAD	6567.4	VEL	11.462	PTH	1.99	VHP	2.870	DPA	7.02	RAP	180.37

ECC	1.1646																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 19 39	2815.13	-28.23	82.93	19.60	92.26	17 6 34	2215.1	-27.62	74.32
90.00	10 41 55	3952.90	-7.85	158.11	14.87	62.71	11 47 48	3352.9	-11.45	151.28
100.00	17 56 11	2503.89	-29.61	59.94	19.51	94.30	18 37 55	1903.9	-28.70	51.26
100.00	11 48 5	3739.37	-6.64	141.76	14.22	60.79	12 50 24	3139.4	-10.48	135.08
110.00	19 36 9	2191.13	-32.99	35.71	19.03	99.51	20 12 40	1591.1	-31.33	26.88
110.00	12 24 36	3624.90	-3.74	131.29	12.42	56.00	13 25 1	3024.9	-8.18	125.02

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2120	TRA	-.0428	TC3	-1.6771	BAU	.2939	SGT	1131.2	SGR	1087.8	SG3	3494.6	ST	386.3	SR	429.0	SS	1969.8
RDE	.2237	RRA	-.2358	RC3	1.4209	FAU	.58570	RRT	-.6168	RRF	-.9373	RTF	.6747	CRT	.9553	CRS	.6466	CST	.4098
FDE	-1.5862	FRA	12.5505	FC	-50.7081	BSP	4177	SGB	1569.4	R23	.3223	R13	-.8887	LSA	1996.9	MSA	474.0	SSA	30.1
BDE	.3082	BRA	.2396	BC3	2.1981	FSP	12015	SG1	1411.4	SG2	686.2	THA	136.81	EL1	570.9	EL2	85.8	ALF	48.14

LAUNCH DATE OCT 31 1964 FLIGHT TIME 304.00 ARRIVAL DATE AUG 31 1965

HELIOCENTRIC CONIC DISTANCE 691.767 EARTH TO MARS

RL	148.50	LAL	-.00	LOL	37.61	VL	32.792	GAL	-3.28	AZL	88.73	HCA	214.68	SMA	186.36	ECC	.21077	INC	1.2703
RP	223.44	LAP	-.72	LOP	252.28	VP	21.813	GAP	-4.07	AZP	91.04	TAL	340.94	TAP	195.62	RCA	147.08	APO	225.64
RC	258.763	GL	13.26	GP	5.03	ZAL	116.83	ZAP	104.16	ETS	177.60	ZAE	139.35	ETE	171.40	ZAC	91.87	ETC	256.57

V1	30.005	V2	24.611	CLP	104.22														

PLANETOCENTRIC CONIC

C3	10.010	VHL	3.164	DLA	21.88	RAL	162.26	RAD	6567.4	VEL	11.463	PTH	1.99	VHP	2.850	DPA	7.31	RAP	179.50

ECC	1.1647																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 18 26	2822.89	-28.25	83.50	19.90	91.98	17 5 29	2222.9	-27.68	74.88
90.00	10 44 54	3945.54	-8.08	157.69	15.17	62.77	11 50 39	3345.5	-11.67	150.85
100.00	17 55 14	2510.81	-29.64	60.45	19.82	94.04	18 37 4	1910.8	-28.77	51.76
100.00	11 50 48	3732.85	-6.86	141.40	14.51	60.83	12 53 0	3132.8	-10.69	134.71
110.00	19 35 39	2196.62	-33.05	36.13	19.35	99.27	20 12 16	1596.6	-31.42	27.28
110.00	12 26 51	3619.80	-3.93	131.02	12.70	56.02	13 27 11	3019.8	-8.37	124.74

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.2008	TRA	.0680	TC3	-2.0985	BAU	.3388	SGT	1383.1	SGR	1085.9	SG3	3545.5	ST	367.9	SR	435.2	SS	1984.4
RDE	.2278	RRA	-.2322	RC3	1.4168	FAU	.59396	RRT	-.7328	RRF	-.9336	RTF	.8002	CRT	.8963	CRS	.6354	CST	.2396
FDE	-1.5895	FRA	12.7489	FC	-51.3717	BSP	4920	SGB	1758.4	R23	.2822	R13	-.9061	LSA	2006.6	MSA	485.3	SSA	30.1
BDE	.3036	BRA	.2419	BC3	2.5320	FSP	12180	SG1	1645.0	SG2	621.3	THA	144.22	EL1	555.3	EL2	127.9	ALF	50.33

LAUNCH DATE OCT 31 1964 FLIGHT TIME 306.00 ARRIVAL DATE SEP 2 1965

HELIOCENTRIC CONIC DISTANCE 695.762 EARTH TO MARS

RL	148.50	LAL	-.00	LOL	37.61	VL	32.788	GAL	-3.30	AZL	88.71	HCA	215.77	SMA	186.30	ECC	.21059	INC	1.2919
RP	223.05	LAP	-.75	LOP	253.37	VP	21.855	GAP	-4.32	AZP	91.05	TAL	340.85	TAP	196.62	RCA	147.07	APO	225.53
RC	260.326	GL	13.48	GP	4.93	ZAL	116.95	ZAP	102.15	ETS	177.83	ZAE	137.15	ETE	172.06	ZAC	91.57	ETC	256.65

V1	30.005	V2	24.653	CLP	102.20														

PLANETOCENTRIC CONIC

C3	10.025	VHL	3.166	DLA	22.02	RAL	162.50	RAD	6567.4	VEL	11.464	PTH	1.99	VHP	2.834	DPA	7.61	RAP	178.61

ECC	1.1650																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 17 34	2829.74	-28.27	84.00	20.21	91.72	17 4 44	2229.7	-27.73	75.37
90.00	10 47 40	3939.30	-8.28	157.34	15.48	62.82	11 53 19	3339.3	-11.86	150.49
100.00	17 54 35	2516.92	-29.67	60.91	20.13	93.80	18 36 32	1916.9	-28.83	52.20
100.00	11 53 20	3727.36	-7.04	141.09	14.81	60.87	12 55 27	3127.4	-10.87	134.40
110.00	19 35 25	2201.49	-33.10	36.50	19.68	99.05	20 12 6	1601.5	-31.50	27.64
110.00	12 29 0	3615.55	-4.09	130.80	13.00	56.03	13 29 15	3015.6	-8.53	124.52

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1895	TRA	.1818	TC3	-2.5285	BAU	.3880	SGT	1675.5	SGR	1082.8	SG3	3588.1	ST	362.3	SR	441.1	SS	1998.1
RDE	.2318	RRA	-.2286	RC3	1.4101	FAU	.60066	RRT	-.7961	RRF	-.9296	RTF	.8704	CRT	.8030	CRS	.6240	CST	.0449
FDE	-1.5891	FRA	12.9341	FC	-51.8706	BSP	5846	SGB	1994.9	R23	.2348	R13	-.9249	LSA	2017.7	MSA	496.3	SSA	30.0
BDE	.2994	BRA	.2920	BC3	2.8951	FSP	12333	SG1	1910.3	SG2	574.7	THA	149.76	EL1	543.3	EL2	175.4	ALF	51.93

LAUNCH DATE OCT 31 1964 FLIGHT TIME 308.00 ARRIVAL DATE SEP 4 1965

HELIOCENTRIC CONIC DISTANCE 699.763 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.785 GAL -3.31 AZL 88.69 HCA 216.86 SMA 186.25 ECC .21044 INC 1.3121 V1 30.005
RP 222.66 LAP -.79 LOP 254.46 VP 21.898 GAP -4.55 AZP 91.05 TAL 340.75 TAP 197.61 RCA 147.05 APO 225.44 V2 24.695
RC 261.869 GL 13.68 GP 4.84 ZAL 117.10 ZAP 100.14 ETS 178.06 ZAE 134.94 ETE 172.67 ZAC 91.28 ETC 256.73 CLP 100.18

PLANETOCENTRIC CONIC

C3 10.046 VHL 3.170 DLA 22.14 RAL 162.75 RAD 6567.4 VEL 11.465 PTH 1.99 VHP 2.821 DPA 7.91 RAP 177.72 ECC 1.1653

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 17 3	2835.66	-28.28	84.43	20.54	91.51	17 4 19	2235.7	-27.77	75.80
90.00	10 50 13	3934.22	-8.43	157.05	15.81	62.87	11 55 47	3334.2	-12.01	150.19
100.00	17 54 16	2522.20	-29.70	61.30	20.47	93.60	18 36 19	1922.2	-28.88	52.59
100.00	11 55 41	3722.92	-7.19	140.84	15.14	60.91	12 57 44	3122.9	-11.01	134.14
110.00	19 35 26	2205.72	-33.15	36.82	20.03	98.87	20 12 12	1605.7	-31.57	27.95
110.00	12 31 1	3612.17	-4.22	130.62	13.31	56.05	13 31 13	3012.2	-8.65	124.34

DIFFERENTIAL CORRECTIONS
TDE .1760 TRA .2979 TC3-2.9766 BAU .4416
RDE .2347 RRA -.2260 RC3 1.3964 FAU .60344
FDE-1.5360 FRA13.1517 FC-52.0011 BSP 6876
BDE .2934 BRA .3739 BC3 3.2879 FSP 12577

MID-COURSE EXECUTION ACCURACY
SGT 1999.9 SGR 1076.2 SG3 3617.6
RRT -.8325 RRF -.9249 RTF .9105
SGB 2271.1 R23 .1922 R13 -.9396
SG1 2205.8 SG2 540.6 THA 154.21

ORBIT DETERMINATION ACCURACY
ST 367.2 SR 445.3 SS 2009.3
CRT .6754 CRS .6056 CST -.1703
LSA 2028.6 MSA 504.2 SSA 30.3
EL1 530.5 EL2 227.3 ALF 53.01

LAUNCH DATE OCT 31 1964 FLIGHT TIME 310.00 ARRIVAL DATE SEP 6 1965

HELIOCENTRIC CONIC DISTANCE 703.775 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.782 GAL -3.33 AZL 88.67 HCA 217.95 SMA 186.20 ECC .21033 INC 1.3315 V1 30.005
RP 222.28 LAP -.82 LOP 255.55 VP 21.941 GAP -4.79 AZP 91.05 TAL 340.63 TAP 198.59 RCA 147.04 APO 225.36 V2 24.737
RC 263.392 GL 13.87 GP 4.74 ZAL 117.27 ZAP 98.11 ETS 178.27 ZAE 132.72 ETE 173.23 ZAC 90.99 ETC 256.82 CLP 98.14

PLANETOCENTRIC CONIC

C3 10.073 VHL 3.174 DLA 22.24 RAL 163.02 RAD 6567.4 VEL 11.466 PTH 1.99 VHP 2.811 DPA 8.21 RAP 176.82 ECC 1.1658

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 16 52	2840.73	-28.29	84.80	20.88	91.32	17 4 13	2240.7	-27.81	76.17
90.00	10 52 33	3930.21	-8.56	156.82	16.15	62.90	11 58 4	3330.2	-12.13	149.95
100.00	17 54 15	2526.73	-29.71	61.63	20.82	93.42	18 36 22	1926.7	-28.92	52.92
100.00	11 57 52	3719.43	-7.30	140.65	15.47	60.93	12 59 51	3119.4	-11.12	133.94
110.00	19 35 41	2209.38	-33.19	37.10	20.38	98.71	20 12 31	1609.4	-31.63	28.22
110.00	12 32 55	3609.56	-4.32	130.49	13.64	56.06	13 33 4	3009.6	-8.75	124.20

DIFFERENTIAL CORRECTIONS
TDE .1654 TRA .4183 TC3-3.4153 BAU .4965
RDE .2399 RRA -.2211 RC3 1.3883 FAU .60879
FDE-1.5798 FRA13.2580 FC-52.3240 BSP 8014
BDE .2914 BRA .4731 BC3 3.6867 FSP 12595

MID-COURSE EXECUTION ACCURACY
SGT 2335.4 SGR 1072.4 SG3 3645.0
RRT -.8516 RRF -.9207 RTF .9362
SGB 2569.9 R23 .1550 R13 -.9528
SG1 2516.4 SG2 521.7 THA 157.63

ORBIT DETERMINATION ACCURACY
ST 391.5 SR 452.7 SS 2022.0
CRT .5412 CRS .6010 CST -.3410
LSA 2044.7 MSA 514.6 SSA 30.0
EL1 527.7 EL2 282.4 ALF 52.53

LAUNCH DATE OCT 31 1964 FLIGHT TIME 312.00 ARRIVAL DATE SEP 8 1965

HELIOCENTRIC CONIC DISTANCE 707.794 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.780 GAL -3.35 AZL 88.65 HCA 219.05 SMA 186.16 ECC .21025 INC 1.3500 V1 30.005
RP 221.89 LAP -.85 LOP 256.65 VP 21.984 GAP -5.02 AZP 91.05 TAL 340.51 TAP 199.56 RCA 147.02 APO 225.30 V2 24.779
RC 264.895 GL 14.04 GP 4.64 ZAL 117.46 ZAP 96.08 ETS 178.48 ZAE 130.48 ETE 173.74 ZAC 90.70 ETC 256.91 CLP 96.10

PLANETOCENTRIC CONIC

C3 10.105 VHL 3.179 DLA 22.31 RAL 163.31 RAD 6567.4 VEL 11.467 PTH 1.99 VHP 2.805 DPA 8.51 RAP 175.92 ECC 1.1663

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 17 2	2844.91	-28.29	85.11	21.25	91.17	17 4 26	2244.9	-27.83	76.47
90.00	10 54 41	3927.30	-8.65	156.65	16.51	62.93	12 0 9	3327.3	-12.21	149.78
100.00	17 54 32	2530.49	-29.73	61.91	21.18	93.28	18 36 43	1930.5	-28.96	53.19
100.00	11 59 52	3716.95	-7.38	140.51	15.83	60.95	13 1 49	3117.0	-11.20	133.80
110.00	19 36 12	2212.45	-33.22	37.33	20.76	98.57	20 13 4	1612.4	-31.68	28.44
110.00	12 34 42	3607.76	-4.39	130.39	13.99	56.07	13 34 49	3007.8	-8.82	124.10

DIFFERENTIAL CORRECTIONS
TDE .1533 TRA .5409 TC3-3.8600 BAU .5537
RDE .2448 RRA -.2162 RC3 1.3774 FAU .61236
FDE-1.6145 FRA13.3470 FC-52.4638 BSP 9190
BDE .2889 BRA .5826 BC3 4.0984 FSP 12606

MID-COURSE EXECUTION ACCURACY
SGT 2685.0 SGR 1067.3 SG3 3662.8
RRT -.8623 RRF -.9161 RTF .9528
SGB 2889.4 R23 .1255 R13 -.9627
SG1 2844.0 SG2 510.2 THA 160.42

ORBIT DETERMINATION ACCURACY
ST 426.3 SR 459.8 SS 2032.5
CRT .4084 CRS .5956 CST -.4856
LSA 2061.4 MSA 523.7 SSA 29.8
EL1 527.2 EL2 339.3 ALF 50.24

LAUNCH DATE OCT 31 1964 FLIGHT TIME 314.00 ARRIVAL DATE SEP 10 1965

HELIOCENTRIC CONIC DISTANCE 711.821 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.778 GAL -3.37 AZL 88.63 HCA 220.16 SMA 186.12 ECC .21022 INC 1.3678 V1 30.005
RP 221.51 LAP -.88 LOP 257.75 VP 22.028 GAP -5.24 AZP 91.05 TAL 340.36 TAP 200.52 RCA 147.00 APO 225.25 V2 24.820
RC 266.379 GL 14.20 GP 4.55 ZAL 117.67 ZAP 94.06 ETS 178.68 ZAE 128.25 ETE 174.22 ZAC 90.42 ETC 257.00 CLP 94.07

PLANETOCENTRIC CONIC

C3 10.143 VHL 3.185 DLA 22.36 RAL 163.61 RAD 6567.4 VEL 11.469 PTH 1.99 VHP 2.803 DPA 8.81 RAP 175.02 ECC 1.1669

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 17 32	2848.21	-28.30	85.35	21.63	91.05	17 5 0	2248.2	-27.85	76.71
90.00	10 56 37	3925.50	-8.70	156.55	16.88	62.95	12 2 3	3325.5	-12.27	149.68
100.00	17 55 8	2533.49	-29.74	62.13	21.57	93.16	18 37 22	1933.5	-28.99	53.41
100.00	12 1 42	3715.45	-7.43	140.43	16.20	60.96	13 3 37	3115.5	-11.25	133.72
110.00	19 36 57	2214.95	-33.24	37.52	21.15	98.46	20 13 52	1614.9	-31.72	28.63
110.00	12 36 22	3606.76	-4.43	130.34	14.35	56.07	13 36 29	3006.8	-8.85	124.05

DIFFERENTIAL CORRECTIONS
TDE .1408 TRA .6667 TC3-4.3067 BAU .6125
RDE .2496 RRA -.2115 RC3 1.3627 FAU .61358
FDE-1.6391 FRA13.4285 FC-52.3718 BSP 10425
BDE .2866 BRA .6994 BC3 4.5172 FSP 12615

MID-COURSE EXECUTION ACCURACY
SGT 3044.9 SGR 1060.3 SG3 3669.6
RRT -.8675 RRF -.9110 RTF .9638
SGB 3224.2 R23 .1030 R13 -.9700
SG1 3184.5 SG2 504.8 THA 162.74

ORBIT DETERMINATION ACCURACY
ST 471.5 SR 466.4 SS 2042.1
CRT .2891 CRS .5892 CST -.5997
LSA 2079.8 MSA 532.4 SSA 29.5
EL1 532.5 EL2 395.3 ALF 43.92

LAUNCH DATE OCT 31 1964 FLIGHT TIME 316.00 ARRIVAL DATE SEP 12 1965

HELIOCENTRIC CONIC DISTANCE 715.856 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.776 GAL -3.40 AZL 88.62 HCA 221.26 SMA 186.09 ECC .21021 INC 1.3849 V1 30.005
RP 221.13 LAP -.91 LOP 258.86 VP 22.072 GAP -5.46 AZP 91.04 TAL 340.21 TAP 201.47 RCA 146.97 APO 225.21 V2 24.862
RC 267.844 GL 14.35 GP 4.45 ZAL 117.91 ZAP 92.03 ETS 178.87 ZAE 126.01 ETE 174.66 ZAC 90.13 ETC 257.09 CLP 92.04

PLANETOCENTRIC CONIC

C3 10.187 VHL 3.192 DLA 22.40 RAL 163.94 RAD 6567.4 VEL 11.471 PTH 1.99 VHP 2.804 DPA 9.10 RAP 174.13 ECC 1.1676

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 18 22	2850.65	-28.30	85.52	22.03	90.96	17 5 53	2250.6	-27.87	76.89
90.00	10 58 21	3924.79	-8.73	156.51	17.27	62.95	12 3 45	3324.8	-12.29	149.64
100.00	17 56 2	2535.74	-29.75	62.30	21.97	93.07	18 38 18	1935.7	-29.01	53.57
100.00	12 3 22	3714.93	-7.45	140.40	16.58	60.97	13 5 17	3114.9	-11.27	133.69
110.00	19 37 57	2216.89	-33.26	37.67	21.56	98.38	20 14 54	1616.9	-31.75	28.77
110.00	12 37 56	3606.54	-4.44	130.33	14.73	56.07	13 38 3	3006.5	-8.86	124.03

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1273 TRA .7946 TC3-4.7522 BAU .6726 SGT 3410.9 SGR 1052.2 SG3 3667.1 ST 524.2 SR 472.9 SS 2050.5
RDE .2544 RRA -.2065 RC3 1.3456 FAU .61318 RRT -.8693 RRF -.9055 RTF .9714 CRT .1869 CRS .5833 CST -.6863
FDE-1.6640 FRA13.4891 FC-52.1126 BSP 11677 SGB 3569.5 R23 .0857 R13 -.9755 LSA 2100.1 MSA 540.2 SSA 29.3
BDE .2844 BRA .8210 BC3 4.9390 FSP 12601 SG1 3534.0 SG2 502.0 THA 164.67 EL1 549.6 EL2 443.1 ALF 30.57

LAUNCH DATE OCT 31 1964 FLIGHT TIME 318.00 ARRIVAL DATE SEP 14 1965

HELIOCENTRIC CONIC DISTANCE 719.898 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.775 GAL -3.43 AZL 88.60 HCA 222.37 SMA 186.07 ECC .21024 INC 1.4012 V1 30.005
RP 220.75 LAP -.94 LOP 259.97 VP 22.117 GAP -5.68 AZP 91.04 TAL 340.03 TAP 202.41 RCA 146.95 APO 225.19 V2 24.903
RC 269.292 GL 14.48 GP 4.36 ZAL 118.17 ZAP 90.02 ETS 179.05 ZAE 123.78 ETE 175.06 ZAC 89.85 ETC 257.19 CLP 90.01

PLANETOCENTRIC CONIC

C3 10.256 VHL 3.199 DLA 22.41 RAL 164.27 RAD 6567.4 VEL 11.473 PTH 1.99 VHP 2.808 DPA 9.39 RAP 173.26 ECC 1.1685

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 19 33	2852.24	-28.30	85.64	22.45	90.90	17 7 5	2252.2	-27.88	77.00
90.00	10 59 52	3925.14	-8.72	156.53	17.67	62.95	12 5 17	3325.1	-12.28	149.66
100.00	17 57 14	2537.26	-29.75	62.41	22.39	93.01	18 39 32	1937.3	-29.02	53.68
100.00	12 4 52	3715.36	-7.44	140.42	16.99	60.96	13 6 47	3115.4	-11.25	133.71
110.00	19 39 12	2218.29	-33.28	37.78	21.98	98.31	20 16 10	1618.3	-31.77	28.87
110.00	12 39 24	3607.09	-4.42	130.36	15.13	56.07	13 39 31	3007.1	-8.84	124.06

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1126 TRA .9248 TC3-5.1953 BAU .7338 SGT 3781.7 SGR 1043.3 SG3 3655.4 ST 582.6 SR 479.6 SS 2057.3
RDE .2593 RRA -.2012 RC3 1.3269 FAU .61147 RRT -.8686 RRF -.8997 RTF .9769 CRT .1012 CRS .5786 CST -.7507
FDE-1.6946 FRA13.5185 FC-51.7152 BSP 12941 SGB 3923.0 R23 .0723 R13 -.9797 LSA 2121.7 MSA 547.2 SSA 29.1
BDE .2827 BRA .9464 BC3 5.3621 FSP 12552 SG1 3890.7 SG2 502.4 THA 166.29 EL1 588.5 EL2 472.4 ALF 13.66

LAUNCH DATE OCT 31 1964 FLIGHT TIME 320.00 ARRIVAL DATE SEP 16 1965

HELIOCENTRIC CONIC DISTANCE 723.948 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.773 GAL -3.46 AZL 88.58 HCA 223.49 SMA 186.05 ECC .21031 INC 1.4169 V1 30.005
RP 220.37 LAP -.97 LOP 261.09 VP 22.161 GAP -5.90 AZP 91.03 TAL 339.85 TAP 203.34 RCA 146.92 APO 225.17 V2 24.945
RC 270.721 GL 14.60 GP 4.26 ZAL 118.46 ZAP 88.02 ETS 179.22 ZAE 121.55 ETE 175.44 ZAC 89.58 ETC 257.28 CLP 88.01

PLANETOCENTRIC CONIC

C3 10.292 VHL 3.208 DLA 22.40 RAL 164.63 RAD 6567.4 VEL 11.475 PTH 1.99 VHP 2.816 DPA 9.67 RAP 172.40 ECC 1.1694

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 21 4	2853.01	-28.30	85.70	22.88	90.87	17 8 37	2253.0	-27.88	77.06
90.00	11 1 12	3926.55	-8.67	156.61	18.09	62.94	12 6 38	3326.6	-12.23	149.74
100.00	17 58 44	2538.07	-29.76	62.47	22.83	92.98	18 41 2	1938.1	-29.03	53.74
100.00	12 6 12	3716.73	-7.39	140.50	17.40	60.95	13 8 9	3116.7	-11.21	133.79
110.00	19 40 40	2219.16	-33.29	37.84	22.42	98.27	20 17 39	1619.2	-31.78	28.94
110.00	12 40 46	3608.40	-4.37	130.43	15.54	56.06	13 40 54	3008.4	-8.79	124.13

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .0970 TRA 1.0573 TC3-5.6318 BAU .7955 SGT 4154.4 SGR 1033.4 SG3 3634.4 ST 645.9 SR 486.2 SS 2063.3
RDE .2644 RRA -.1957 RC3 1.3058 FAU .60809 RRT -.8661 RRF -.8934 RTF .9810 CRT .0305 CRS .5748 CST -.7987
FDE-1.7273 FRA13.5268 FC-51.1505 BSP 14220 SGB 4281.0 R23 .0621 R13 -.9829 LSA 2145.6 MSA 553.7 SSA 28.8
BDE .2816 BRA 1.0752 BC3 5.7812 FSP 12471 SG1 4251.1 SG2 504.9 THA 167.67 EL1 646.3 EL2 485.7 ALF 3.02

LAUNCH DATE OCT 31 1964 FLIGHT TIME 322.00 ARRIVAL DATE SEP 18 1965

HELIOCENTRIC CONIC DISTANCE 728.005 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.772 GAL -3.50 AZL 88.57 HCA 224.61 SMA 186.03 ECC .21041 INC 1.4320 V1 30.005
RP 220.00 LAP -1.01 LOP 262.20 VP 22.206 GAP -6.11 AZP 91.02 TAL 339.65 TAP 204.26 RCA 146.89 APO 225.17 V2 24.986
RC 272.134 GL 14.72 GP 4.17 ZAL 118.77 ZAP 86.04 ETS 179.39 ZAE 119.34 ETE 175.79 ZAC 89.31 ETC 257.38 CLP 86.03

PLANETOCENTRIC CONIC

C3 10.354 VHL 3.218 DLA 22.38 RAL 165.00 RAD 6567.4 VEL 11.478 PTH 2.00 VHP 2.827 DPA 9.94 RAP 171.55 ECC 1.1704

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 22 54	2852.98	-28.30	85.70	23.34	90.87	17 10 27	2253.0	-27.88	77.06
90.00	11 2 20	3929.00	-8.60	156.75	18.53	62.92	12 7 49	3329.0	-12.16	149.88
100.00	18 0 31	2538.18	-29.76	62.48	23.28	92.98	18 42 50	1938.2	-29.03	53.75
100.00	12 7 24	3719.03	-7.31	140.63	17.84	60.94	13 9 23	3119.0	-11.14	133.92
110.00	19 42 23	2219.52	-33.29	37.87	22.88	98.26	20 19 22	1619.5	-31.79	28.96
110.00	12 42 2	3610.46	-4.29	130.53	15.98	56.05	13 42 12	3010.5	-8.72	124.24

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .0801 TRA 1.1921 TC3-6.0600 BAU .8574 SGT 4527.5 SGR 1022.8 SG3 3604.9 ST 712.9 SR 492.9 SS 2068.2
RDE .2695 RRA -.1900 RC3 1.2832 FAU .60338 RRT -.8621 RRF -.8867 RTF .9841 CRT -.0287 CRS .5719 CST -.8350
FDE-1.7627 FRA13.5108 FC-50.4509 BSP 15498 SGB 4641.6 R23 .0542 R13 -.9855 LSA 2171.3 MSA 559.6 SSA 28.5
BDE .2811 BRA 1.2071 BC3 6.1943 FSP 12363 SG1 4613.7 SG2 508.6 THA 168.84 EL1 713.2 EL2 492.5 ALF 177.83

LAUNCH DATE OCT 31 1964 FLIGHT TIME 324.00 ARRIVAL DATE SEP 20 1965

HELIOCENTRIC CONIC DISTANCE 732.070 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.772 GAL -3.53 AZL 88.55 HCA 225.73 SMA 186.02 ECC .21055 INC 1.4466 V1 30.005
RP 219.62 LAP -1.04 LOP 263.33 VP 22.251 GAP -6.31 AZP 91.01 TAL 339.44 TAP 205.17 RCA 146.85 APO 225.19 V2 25.027
RC 273.529 GL 14.82 GP 4.07 ZAL 119.10 ZAP 84.07 ETS 179.55 ZAE 117.15 ETE 176.12 ZAC 89.04 ETC 257.48 CLP 84.06

PLANETOCENTRIC CONIC

C3 10.422 VHL 3.228 DLA 22.33 RAL 165.39 RAD 6567.4 VEL 11.481 PTH 2.00 VHP 2.841 DPA 10.20 RAP 170.74 ECC 1.1715

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 25 3	2852.17	-28.30	85.64	23.82	90.90	17 12 35	2252.2	-27.88	77.00
90.00	11 3 18	3932.47	-8.49	156.95	18.98	62.88	12 8 50	3332.5	-12.06	150.09
100.00	18 2 36	2537.63	-29.76	62.44	23.76	93.00	18 44 53	1937.6	-29.02	53.71
100.00	12 8 26	3722.24	-7.21	140.81	18.29	60.91	13 10 28	3122.2	-11.03	134.11
110.00	19 44 19	2219.38	-33.29	37.86	23.35	98.27	20 21 18	1619.4	-31.79	28.95
110.00	12 43 12	3613.26	-4.18	130.68	16.43	56.04	13 43 25	3013.3	-8.61	124.39

DIFFERENTIAL CORRECTIONS
TDE .0618 TRA 1.3285 TC3-6.4781 BAU .9195
RDE .2748 RRA -.1841 RC3 1.2587 FAU .59722
FDE-1.8046 FRA13.4698 FC-49.6078 BSP 16774
BDE .2816 BRA 1.3411 BC3 6.5993 FSP 12224

MID-COURSE EXECUTION ACCURACY
SGT 4899.4 SGR 1011.5 SG3 3566.7
RRT -.8569 RRF -.8795 RTF .9864
SGB 5002.7 R23 .0483 R13 -.9874
SG1 4976.3 SG2 513.4 THA 169.86

ORBIT DETERMINATION ACCURACY
ST 782.6 SR 499.6 SS 2072.4
CRT -.0782 CRS .5705 CST -.8623
LSA 2199.2 MSA 565.3 SSA 28.2
EL1 784.2 EL2 497.0 ALF 175.22

LAUNCH DATE OCT 31 1964 FLIGHT TIME 326.00 ARRIVAL DATE SEP 22 1965

HELIOCENTRIC CONIC DISTANCE 736.141 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.771 GAL -3.57 AZL 88.54 HCA 226.85 SMA 186.01 ECC .21072 INC 1.4606 V1 30.005
RP 219.25 LAP -1.07 LOP 264.45 VP 22.296 GAP -6.52 AZP 91.00 TAL 339.21 TAP 206.07 RCA 146.82 APO 225.21 V2 25.067
RC 274.906 GL 14.91 GP 3.98 ZAL 119.45 ZAP 82.14 ETS 179.70 ZAE 114.98 ETE 176.43 ZAC 88.79 ETC 257.57 CLP 82.12

PLANETOCENTRIC CONIC

C3 10.497 VHL 3.240 DLA 22.27 RAL 165.80 RAD 6567.4 VEL 11.484 PTH 2.00 VHP 2.858 DPA 10.45 RAP 169.94 ECC 1.1728

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 27 30	2850.60	-28.30	85.52	24.31	90.96	17 15 1	2250.6	-27.87	76.88
90.00	11 4 4	3936.93	-8.35	157.20	19.45	62.84	12 9 41	3336.9	-11.93	150.35
100.00	18 4 57	2536.42	-29.75	62.35	24.26	93.04	18 47 13	1936.4	-29.01	53.62
100.00	12 9 19	3726.35	-7.07	141.03	18.76	60.88	13 11 25	3126.3	-10.90	134.34
110.00	19 46 29	2218.76	-33.28	37.81	23.84	98.29	20 23 28	1618.8	-31.78	28.91
110.00	12 44 16	3616.77	-4.05	130.87	16.90	56.03	13 44 33	3016.8	-8.48	124.58

DIFFERENTIAL CORRECTIONS
TDE .0422 TRA 1.4674 TC3-6.8852 BAU .9816
RDE .2800 RRA -.1779 RC3 1.2330 FAU .58982
FDE-1.8437 FRA13.4050 FC-48.6434 BSP 18048
BDE .2832 BRA 1.4781 BC3 6.9947 FSP 12059

MID-COURSE EXECUTION ACCURACY
SGT 5270.1 SGR 999.6 SG3 3520.6
RRT -.8507 RRF -.8718 RTF .9882
SGB 5364.0 R23 .0436 R13 -.9890
SG1 5338.9 SG2 518.7 THA 170.75

ORBIT DETERMINATION ACCURACY
ST 855.0 SR 506.2 SS 2074.7
CRT -.1203 CRS .5694 CST -.8837
LSA 2228.3 MSA 570.4 SSA 27.8
EL1 858.3 EL2 500.5 ALF 173.82

LAUNCH DATE OCT 31 1964 FLIGHT TIME 328.00 ARRIVAL DATE SEP 24 1965

HELIOCENTRIC CONIC DISTANCE 740.220 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.771 GAL -3.62 AZL 88.53 HCA 227.98 SMA 186.01 ECC .21092 INC 1.4742 V1 30.005
RP 218.89 LAP -1.10 LOP 265.58 VP 22.342 GAP -6.72 AZP 90.99 TAL 338.97 TAP 206.96 RCA 146.78 APO 225.24 V2 25.108
RC 276.266 GL 14.99 GP 3.89 ZAL 119.82 ZAP 80.23 ETS 179.84 ZAE 112.84 ETE 176.71 ZAC 88.54 ETC 257.67 CLP 80.20

PLANETOCENTRIC CONIC

C3 10.579 VHL 3.253 DLA 22.19 RAL 166.22 RAD 6567.4 VEL 11.488 PTH 2.00 VHP 2.879 DPA 10.68 RAP 169.18 ECC 1.1741

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 30 16	2848.32	-28.30	85.35	24.83	91.04	17 17 44	2248.3	-27.85	76.72
90.00	11 4 41	3942.37	-8.18	157.51	19.94	62.80	12 10 23	3342.4	-11.76	150.66
100.00	18 7 34	2534.59	-29.74	62.21	24.77	93.12	18 49 49	1934.6	-29.00	53.49
100.00	12 10 4	3731.33	-6.91	141.31	19.25	60.84	13 12 15	3131.3	-10.74	134.62
110.00	19 48 52	2217.67	-33.27	37.73	24.35	98.34	20 25 49	1617.7	-31.76	28.83
110.00	12 45 15	3621.01	-3.89	131.09	17.38	56.01	13 45 36	3021.0	-8.32	124.81

DIFFERENTIAL CORRECTIONS
TDE .0207 TRA 1.6075 TC3-7.2784 BAU 1.0435
RDE .2854 RRA -.1716 RC3 1.2058 FAU .58112
FDE-1.8861 FRA13.3179 FC-47.5551 BSP 19304
BDE .2861 BRA 1.6167 BC3 7.3777 FSP 11872

MID-COURSE EXECUTION ACCURACY
SGT 5636.6 SGR 987.2 SG3 3466.7
RRT -.8435 RRF -.8636 RTF .9897
SGB 5722.4 R23 .0399 R13 -.9903
SG1 5698.3 SG2 524.5 THA 171.52

ORBIT DETERMINATION ACCURACY
ST 929.1 SR 512.7 SS 2076.1
CRT -.1571 CRS .5693 CST -.9005
LSA 2259.5 MSA 574.7 SSA 27.5
EL1 934.0 EL2 503.7 ALF 173.00

LAUNCH DATE OCT 31 1964 FLIGHT TIME 330.00 ARRIVAL DATE SEP 26 1965

HELIOCENTRIC CONIC DISTANCE 744.305 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.771 GAL -3.66 AZL 88.51 HCA 229.12 SMA 186.01 ECC .21116 INC 1.4874 V1 30.005
RP 218.52 LAP -1.12 LOP 266.71 VP 22.387 GAP -6.91 AZP 90.97 TAL 338.72 TAP 207.84 RCA 146.73 APO 225.29 V2 25.148
RC 277.609 GL 15.07 GP 3.80 ZAL 120.22 ZAP 78.35 ETS 179.98 ZAE 110.72 ETE 176.98 ZAC 88.30 ETC 257.76 CLP 78.32

PLANETOCENTRIC CONIC

C3 10.668 VHL 3.266 DLA 22.09 RAL 166.66 RAD 6567.4 VEL 11.492 PTH 2.00 VHP 2.902 DPA 10.90 RAP 168.44 ECC 1.1756

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 33 19	2845.34	-28.30	85.14	25.36	91.15	17 20 45	2245.3	-27.84	76.50
90.00	11 5 7	3948.75	-7.98	157.87	20.44	62.74	12 10 56	3348.7	-11.57	151.04
100.00	18 10 27	2532.16	-29.74	62.03	25.30	93.21	18 52 39	1932.2	-28.97	53.31
100.00	12 10 41	3737.16	-6.71	141.64	19.75	60.80	13 12 58	3137.2	-10.56	134.96
110.00	19 51 28	2216.14	-33.26	37.61	24.88	98.41	20 28 24	1616.1	-31.74	28.71
110.00	12 46 10	3625.94	-3.70	131.35	17.89	55.99	13 46 36	3025.9	-8.14	125.07

DIFFERENTIAL CORRECTIONS
TDE -.0023 TRA 1.7501 TC3-7.6548 BAU 1.1046
RDE .2908 RRA -.1652 RC3 1.1776 FAU .57131
FDE-1.9296 FRA13.2142 FC-46.3627 BSP 20550
BDE .2908 BRA 1.7579 BC3 7.7448 FSP 11665

MID-COURSE EXECUTION ACCURACY
SGT 5998.5 SGR 974.6 SG3 3406.5
RRT -.8356 RRF -.8549 RTF .9909
SGB 6077.1 R23 .0371 R13 -.9914
SG1 6053.9 SG2 530.5 THA 172.21

ORBIT DETERMINATION ACCURACY
ST 1005.2 SR 519.2 SS 2077.0
CRT -.1893 CRS .5701 CST -.9140
LSA 2293.1 MSA 578.8 SSA 27.1
EL1 1011.7 EL2 506.6 ALF 172.53

LAUNCH DATE OCT 31 1964 FLIGHT TIME 332.00 ARRIVAL DATE SEP 28 1965

HELIOCENTRIC CONIC DISTANCE 748.397 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.772 GAL -3.71 AZL 88.50 HCA 230.25 SMA 186.02 ECC .21143 INC 1.5002 V1 30.005
RP 218.16 LAP -1.15 LOP 267.85 VP 22.433 GAP -7.11 AZP 90.96 TAL 338.45 TAP 208.71 RCA 146.69 APO 225.35 V2 25.188
RC 278.933 GL 15.13 GP 3.70 ZAL 120.63 ZAP 76.50 ETS 180.10 ZAE 108.63 ETE 177.22 ZAC 88.07 ETC 257.85 CLP 76.47

PLANETOCENTRIC CONIC

C3 10.764 VHL 3.281 DLA 21.97 RAL 167.11 RAD 6567.4 VEL 11.496 PTH 2.00 VHP 2.929 DPA 11.10 RAP 167.74 ECC 1.1772

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 36 39	2841.70	-28.29	84.87	25.92	91.29	17 24 1	2241.7	-27.81	76.24
90.00	11 5 25	3956.04	-7.75	158.29	20.96	62.68	12 11 21	3356.0	-11.36	151.46
100.00	18 13 35	2529.15	-29.72	61.81	25.85	93.33	18 55 44	1929.1	-28.95	53.09
100.00	12 11 10	3743.83	-6.49	142.01	20.27	60.76	13 13 34	3143.8	-10.34	135.33
110.00	19 54 16	2214.17	-33.24	37.46	25.43	98.50	20 31 10	1614.2	-31.71	28.57
110.00	12 46 59	3631.57	-3.49	131.64	18.41	55.97	13 47 30	3031.6	-7.93	125.37

DIFFERENTIAL CORRECTIONS
TDE -.0271 TRA 1.8944 TC3-8.0151 BAU 1.1652
RDE .2964 RRA -.1587 RC3 1.1485 FAU .56047
FDE-1.9759 FRA13.0896 FC-45.0768 BSP 21778
BDE .2976 BRA 1.9010 BC3 8.0969 FSP 11435

MID-COURSE EXECUTION ACCURACY
SGT 6355.2 SGR 961.8 SG3 3340.0
RRT -.8268 RRF -.8456 RTF .9918
SGB 6427.6 R23 .0351 R13 -.9922
SG1 6405.1 SG2 536.8 THA 172.82

ORBIT DETERMINATION ACCURACY
ST 1082.8 SR 525.8 SS 2077.2
CRT -.2178 CRS .5721 CST -.9245
LSA 2328.8 MSA 582.7 SSA 26.6
EL1 1090.6 EL2 509.5 ALF 172.26

LAUNCH DATE OCT 31 1964 FLIGHT TIME 334.00 ARRIVAL DATE SEP 30 1965

HELIOCENTRIC CONIC DISTANCE 752.493 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.772 GAL -3.77 AZL 88.49 HCA 231.40 SMA 186.03 ECC .21174 INC 1.5126 V1 30.005
RP 217.80 LAP -1.18 LOP 268.99 VP 22.478 GAP -7.30 AZP 90.94 TAL 338.17 TAP 209.56 RCA 146.64 APO 225.41 V2 25.228
RC 280.240 GL 15.18 GP 3.61 ZAL 121.07 ZAP 74.69 ETS 180.22 ZAE 106.57 ETE 177.46 ZAC 87.85 ETC 257.93 CLP 74.66

PLANETOCENTRIC CONIC

C3 10.868 VHL 3.297 DLA 21.84 RAL 167.58 RAD 6567.4 VEL 11.500 PTH 2.00 VHP 2.958 DPA 11.29 RAP 167.08 ECC 1.1789

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 40 17	2837.39	-28.28	84.56	26.49	91.44	17 27 34	2237.4	-27.78	75.93
90.00	11 5 33	3964.28	-7.50	158.76	21.49	62.61	12 11 37	3364.3	-11.11	151.94
100.00	18 16 59	2525.55	-29.71	61.54	26.42	93.47	18 59 5	1925.6	-28.91	52.83
100.00	12 11 32	3751.35	-6.24	142.43	20.81	60.71	13 14 3	3151.4	-10.10	135.76
110.00	19 57 17	2211.76	-33.21	37.28	25.99	98.60	20 34 9	1611.8	-31.67	28.39
110.00	12 47 43	3637.90	-3.24	131.97	18.96	55.95	13 48 21	3037.9	-7.69	125.71

DIFFERENTIAL CORRECTIONS
TDE -.0446 TRA 2.0513 TC3-8.3265 BAU 1.2206
RDE .3002 RRA -.1537 RC3 1.1121 FAU .54450
FDE-1.9320 FRA13.0351 FC-43.3731 BSP 23230
BDE .3035 BRA 2.0570 BC3 8.4004 FSP 11371

MID-COURSE EXECUTION ACCURACY
SGT 6700.5 SGR 944.9 SG3 3261.2
RRT -.8169 RRF -.8341 RTF .9924
SGB 6766.8 R23 .0313 R13 -.9927
SG1 6745.1 SG2 541.4 THA 173.39

ORBIT DETERMINATION ACCURACY
ST 1166.5 SR 529.3 SS 2070.5
CRT -.2326 CRS .5605 CST -.9353
LSA 2363.3 MSA 584.9 SSA 26.6
EL1 1174.5 EL2 511.3 ALF 172.56

LAUNCH DATE OCT 31 1964 FLIGHT TIME 336.00 ARRIVAL DATE OCT 2 1965

HELIOCENTRIC CONIC DISTANCE 756.599 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.773 GAL -3.82 AZL 88.48 HCA 232.54 SMA 186.04 ECC .21208 INC 1.5247 V1 30.005
RP 217.44 LAP -1.21 LOP 270.14 VP 22.524 GAP -7.49 AZP 90.93 TAL 337.87 TAP 210.41 RCA 146.58 APO 225.49 V2 25.268
RC 281.529 GL 15.22 GP 3.52 ZAL 121.53 ZAP 72.92 ETS 180.34 ZAE 104.55 ETE 177.67 ZAC 87.64 ETC 258.01 CLP 72.88

PLANETOCENTRIC CONIC

C3 10.980 VHL 3.314 DLA 21.69 RAL 168.07 RAD 6567.4 VEL 11.505 PTH 2.00 VHP 2.991 DPA 11.46 RAP 166.45 ECC 1.1807

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 44 8	2832.55	-28.27	84.20	27.08	91.62	17 31 20	2232.6	-27.75	75.58
90.00	11 5 34	3973.30	-7.21	159.27	22.05	62.54	12 11 47	3373.3	-10.84	152.46
100.00	18 20 36	2521.49	-29.69	61.24	27.01	93.62	19 2 37	1921.5	-28.87	52.53
100.00	12 11 46	3759.60	-5.97	142.88	21.37	60.65	13 14 26	3159.6	-9.83	136.23
110.00	20 0 29	2209.00	-33.18	37.07	26.57	98.72	20 37 18	1609.0	-31.62	28.19
110.00	12 48 23	3644.86	-2.98	132.34	19.51	55.93	13 49 8	3044.9	-7.43	126.08

DIFFERENTIAL CORRECTIONS
TDE -.0775 TRA 2.1944 TC3-8.6624 BAU 1.2815
RDE .3067 RRA -.1463 RC3 1.0852 FAU .53407
FDE-2.0197 FRA12.8402 FC-42.1097 BSP 24312
BDE .3163 BRA 2.1993 BC3 8.7302 FSP 11028

MID-COURSE EXECUTION ACCURACY
SGT 7046.2 SGR 934.1 SG3 3188.5
RRT -.8070 RRF -.8246 RTF .9931
SGB 7107.9 R23 .0310 R13 -.9934
SG1 7086.7 SG2 548.5 THA 173.86

ORBIT DETERMINATION ACCURACY
ST 1244.3 SR 537.0 SS 2071.7
CRT -.2616 CRS .5704 CST -.9416
LSA 2404.5 MSA 588.3 SSA 26.0
EL1 1253.8 EL2 514.3 ALF 172.25

LAUNCH DATE OCT 31 1964 FLIGHT TIME 338.00 ARRIVAL DATE OCT 4 1965

HELIOCENTRIC CONIC DISTANCE 760.712 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.774 GAL -3.88 AZL 88.46 HCA 233.69 SMA 186.06 ECC .21246 INC 1.5364 V1 30.005
RP 217.09 LAP -1.24 LOP 271.29 VP 22.569 GAP -7.67 AZP 90.91 TAL 337.56 TAP 211.25 RCA 146.53 APO 225.59 V2 25.307
RC 282.801 GL 15.26 GP 3.44 ZAL 122.01 ZAP 71.18 ETS 180.44 ZAE 102.56 ETE 177.87 ZAC 87.44 ETC 258.09 CLP 71.14

PLANETOCENTRIC CONIC

C3 11.100 VHL 3.332 DLA 21.52 RAL 168.57 RAD 6567.4 VEL 11.510 PTH 2.00 VHP 3.026 DPA 11.61 RAP 165.87 ECC 1.1827

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 48 14	2827.15	-28.26	83.81	27.70	91.82	17 35 21	2227.2	-27.71	75.19
90.00	11 5 26	3983.17	-6.90	159.83	22.61	62.47	12 11 49	3383.2	-10.54	153.03
100.00	18 24 26	2516.92	-29.67	60.91	27.62	93.80	19 6 23	1916.9	-28.83	52.20
100.00	12 11 55	3768.63	-5.66	143.38	21.94	60.60	13 14 43	3168.6	-9.54	136.74
110.00	20 3 52	2205.85	-33.15	36.83	27.16	98.86	20 40 38	1605.9	-31.57	27.96
110.00	12 48 58	3652.47	-2.69	132.73	20.09	55.91	13 49 51	3052.5	-7.14	126.48

DIFFERENTIAL CORRECTIONS
TDE -.1116 TRA 2.3405 TC3-8.9753 BAU 1.3411
RDE .3129 RRA -.1391 RC3 1.0569 FAU .52226
FDE-2.0932 FRA12.6433 FC-40.7334 BSP 25381
BDE .3323 BRA 2.3446 BC3 9.0373 FSP 10694

MID-COURSE EXECUTION ACCURACY
SGT 7383.9 SGR 922.9 SG3 3110.3
RRT -.7965 RRF -.8146 RTF .9937
SGB 7441.4 R23 .0308 R13 -.9940
SG1 7420.6 SG2 555.3 THA 174.28

ORBIT DETERMINATION ACCURACY
ST 1324.3 SR 544.1 SS 2071.5
CRT -.2876 CRS .5788 CST -.9471
LSA 2447.7 MSA 590.9 SSA 25.4
EL1 1335.2 EL2 516.9 ALF 172.06

LAUNCH DATE OCT 31 1964 FLIGHT TIME 340.00 ARRIVAL DATE OCT 6 1965

HELIOCENTRIC CONIC DISTANCE 764.829 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.775 GAL -3.94 AZL 88.45 HCA 234.84 SMA 186.08 ECC .21287 INC 1.5479 V1 30.005
RP 216.74 LAP -1.27 LOP 272.44 VP 22.615 GAP -7.85 AZP 90.89 TAL 337.23 TAP 212.08 RCA 146.47 APO 225.69 V2 25.346
RC 284.057 GL 15.28 GP 3.35 ZAL 122.51 ZAP 69.48 ETS 180.54 ZAE 100.61 ETE 178.06 ZAC 87.25 ETC 258.16 CLP 69.44

PLANETOCENTRIC CONIC

C3 11.229 VHL 3.351 DLA 21.34 RAL 169.08 RAD 6567.4 VEL 11.516 PTH 2.01 VHP 3.064 DPA 11.75 RAP 165.32 ECC 1.1848

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 52 34	2821.23	-28.25	83.37	28.32	92.04	17 39 35	2221.2	-27.67	74.76
90.00	11 5 12	3993.85	-6.57	160.43	23.20	62.39	12 11 46	3393.8	-10.21	153.65
100.00	18 28 30	2511.89	-29.65	60.53	28.24	94.00	19 10 22	1911.9	-28.78	51.84
100.00	12 11 57	3778.42	-5.34	143.93	22.53	60.54	13 14 55	3178.4	-9.22	137.29
110.00	20 7 26	2202.34	-33.11	36.56	27.78	99.02	20 44 9	1602.3	-31.51	27.70
110.00	12 49 30	3660.73	-2.37	133.17	20.69	55.89	13 50 30	3060.7	-6.83	126.92

DIFFERENTIAL CORRECTIONS
TDE -.1462 TRA 2.4907 TC3-9.2612 BAU 1.3988
RDE .3189 RRA -.1322 RC3 1.0272 FAU .50905
FDE-2.1478 FRA12.4516 FC-39.2487 BSP 26478
BDE .3508 BRA 2.4942 BC3 9.3180 FSP 10389

MID-COURSE EXECUTION ACCURACY
SGT 7712.9 SGR 911.1 SG3 3027.5
RRT -.7853 RRF -.8037 RTF .9941
SGB 7766.5 R23 .0304 R13 -.9944
SG1 7746.2 SG2 561.7 THA 174.67

ORBIT DETERMINATION ACCURACY
ST 1406.6 SR 550.5 SS 2069.6
CRT -.3100 CRS .5851 CST -.9521
LSA 2492.5 MSA 593.0 SSA 24.9
EL1 1418.5 EL2 519.0 ALF 172.01

LAUNCH DATE OCT 31 1964 FLIGHT TIME 342.00 ARRIVAL DATE OCT 8 1965

HELIOCENTRIC CONIC DISTANCE 768.953 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.777 GAL -4.00 AZL 88.44 HCA 236.00 SMA 186.10 ECC .21331 INC 1.5590 V1 30.005
RP 216.39 LAP -1.29 LOP 273.59 VP 22.660 GAP -8.03 AZP 90.87 TAL 336.89 TAP 212.89 RCA 146.40 APO 225.80 V2 25.385
RC 285.296 GL 15.30 GP 3.27 ZAL 123.03 ZAP 67.82 ETS 180.63 ZAE 98.69 ETE 178.24 ZAC 87.07 ETC 258.23 CLP 67.79

PLANETOCENTRIC CONIC

C3 11.366 VHL 3.371 DLA 21.14 RAL 169.61 RAD 6567.4 VEL 11.522 PTH 2.01 VHP 3.104 DPA 11.87 RAP 164.82 ECC 1.1871

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 57 7	2814.82	-28.23	82.91	28.97	92.27	17 44 2	2214.8	-27.62	74.29
90.00	11 4 50	4005.30	-6.21	161.08	23.81	62.32	12 11 36	3405.3	-9.87	154.31
100.00	18 32 46	2506.42	-29.62	60.13	28.88	94.21	19 14 32	1906.4	-28.72	51.44
100.00	12 11 53	3788.93	-4.98	144.51	23.14	60.49	13 15 2	3188.9	-8.88	137.88
110.00	20 11 11	2198.50	-33.07	36.27	28.41	99.18	20 47 50	1598.5	-31.45	27.42
110.00	12 49 57	3669.62	-2.03	133.63	21.30	55.87	13 51 6	3069.6	-6.50	127.39

DIFFERENTIAL CORRECTIONS
TDE -.1835 TRA 2.6423 TC3-9.5262 BAU 1.4555
RDE .3250 RRA -.1254 RC3 .9974 FAU .49532
FDE-2.2025 FRA12.2510 FC-37.7272 BSP 27552
BDE .3732 BRA 2.6453 BC3 9.5783 FSP 10082

MID-COURSE EXECUTION ACCURACY
SGT 8033.3 SGR 899.8 SG3 2941.9
RRT -.7737 RRF -.7924 RTF .9945
SGB 8083.6 R23 .0301 R13 -.9947
SG1 8063.6 SG2 567.9 THA 175.02

ORBIT DETERMINATION ACCURACY
ST 1490.1 SR 556.9 SS 2067.7
CRT -.3316 CRS .5920 CST -.9563
LSA 2540.0 MSA 594.6 SSA 24.5
EL1 1503.1 EL2 520.8 ALF 171.96

LAUNCH DATE OCT 31 1964 FLIGHT TIME 344.00 ARRIVAL DATE OCT 10 1965

HELIOCENTRIC CONIC DISTANCE 773.082 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.778 GAL -4.07 AZL 88.43 HCA 237.16 SMA 186.13 ECC .21379 INC 1.5699 V1 30.005
RP 216.05 LAP -1.32 LOP 274.75 VP 22.705 GAP -8.21 AZP 90.85 TAL 336.54 TAP 213.70 RCA 146.34 APO 225.92 V2 25.423
RC 286.520 GL 15.31 GP 3.18 ZAL 123.57 ZAP 66.21 ETS 180.72 ZAE 96.82 ETE 178.41 ZAC 86.90 ETC 258.29 CLP 66.17

PLANETOCENTRIC CONIC

C3 11.513 VHL 3.393 DLA 20.92 RAL 170.15 RAD 6567.4 VEL 11.528 PTH 2.01 VHP 3.147 DPA 11.98 RAP 164.36 ECC 1.1895

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 1 53	2807.96	-28.21	82.41	29.64	92.52	17 48 41	2208.0	-27.57	73.80
90.00	11 4 23	4017.49	-5.82	161.77	24.43	62.24	12 11 20	3417.5	-9.49	155.01
100.00	18 37 14	2500.55	-29.59	59.69	29.54	94.43	19 18 54	1900.5	-28.66	51.01
100.00	12 11 44	3800.14	-4.61	145.13	23.77	60.43	13 15 4	3200.1	-8.51	138.51
110.00	20 15 6	2194.33	-33.03	35.95	29.06	99.37	20 51 40	1594.3	-31.38	27.11
110.00	12 50 20	3679.12	-1.67	134.13	21.94	55.85	13 51 39	3079.1	-6.14	127.89

DIFFERENTIAL CORRECTIONS
TDE -.2220 TRA 2.7974 TC3-9.7655 BAU 1.5105
RDE .3309 RRA -.1189 RC3 .9673 FAU .48085
FDE-2.2461 FRA12.0487 FC-36.1576 BSP 28621
BDE .3985 BRA 2.8000 BC3 9.8132 FSP 9781

MID-COURSE EXECUTION ACCURACY
SGT 8344.6 SGR 888.4 SG3 2853.7
RRT -.7616 RRF -.7807 RTF .9948
SGB 8391.8 R23 .0299 R13 -.9950
SG1 8372.1 SG2 573.8 THA 175.34

ORBIT DETERMINATION ACCURACY
ST 1575.3 SR 562.8 SS 2064.1
CRT -.3510 CRS .5980 CST -.9601
LSA 2589.1 MSA 595.7 SSA 24.0
EL1 1589.2 EL2 522.4 ALF 171.98

LAUNCH DATE OCT 31 1964 FLIGHT TIME 346.00 ARRIVAL DATE OCT 12 1965

HELIOCENTRIC CONIC DISTANCE 777.216 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.780 GAL -4.14 AZL 88.42 HCA 238.32 SMA 186.16 ECC .21431 INC 1.5805 V1 30.005
RP 215.71 LAP -1.34 LOP 275.92 VP 22.750 GAP -8.38 AZP 90.83 TAL 336.17 TAP 214.49 RCA 146.26 APO 226.05 V2 25.461
RC 287.729 GL 15.31 GP 3.10 ZAL 124.12 ZAP 64.64 ETS 180.80 ZAE 94.99 ETE 178.56 ZAC 86.75 ETC 258.35 CLP 64.60

PLANETOCENTRIC CONIC

C3 11.670 VHL 3.416 DLA 20.69 RAL 170.70 RAD 6567.4 VEL 11.535 PTH 2.01 VHP 3.193 DPA 12.07 RAP 163.94 ECC 1.1921

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 6 51	2800.70	-28.19	81.88	30.32	92.79	17 53 32	2200.7	-27.51	73.28
90.00	11 3 49	4030.40	-5.41	162.49	25.07	62.16	12 11 0	3430.4	-9.09	155.75
100.00	18 41 52	2494.30	-29.56	59.23	30.22	94.67	19 23 27	1894.3	-28.60	50.56
100.00	12 11 29	3812.04	-4.21	145.78	24.41	60.38	13 15 1	3212.0	-8.12	139.18
110.00	20 19 11	2189.87	-32.98	35.61	29.72	99.56	20 55 41	1589.9	-31.31	26.79
110.00	12 50 40	3689.23	-1.28	134.65	22.59	55.84	13 52 9	3089.2	-5.76	128.42

DIFFERENTIAL CORRECTIONS
TDE -.2636 TRA 2.9543 TC3-9.9842 BAU 1.5646
RDE .3370 RRA -.1124 RC3 .9377 FAU .46621
FDE-2.2913 FRA11.8380 FC-34.5855 BSP 29645
BDE .4279 BRA 2.9565 BC310.0281 FSP 9472

MID-COURSE EXECUTION ACCURACY
SGT 8647.7 SGR 877.7 SG3 2764.2
RRT -.7492 RRF -.7687 RTF .9951
SGB 8692.1 R23 .0298 R13 -.9952
SG1 8672.7 SG2 579.6 THA 175.63

ORBIT DETERMINATION ACCURACY
ST 1662.0 SR 568.7 SS 2060.7
CRT -.3702 CRS .6050 CST -.9634
LSA 2641.2 MSA 596.4 SSA 23.5
EL1 1676.7 EL2 523.7 ALF 172.00

LAUNCH DATE OCT 31 1964 FLIGHT TIME 348.00 ARRIVAL DATE OCT 14 1965

HELIOCENTRIC CONIC DISTANCE 781.356 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.782 GAL -4.21 AZL 88.41 HCA 239.49 SMA 186.19 ECC .21486 INC 1.5909 V1 30.005
RP 215.38 LAP -1.37 LOP 277.08 VP 22.795 GAP -8.56 AZP 90.81 TAL 335.79 TAP 215.27 RCA 146.19 APO 226.20 V2 25.498
RC 288.924 GL 15.30 GP 3.03 ZAL 124.70 ZAP 63.10 ETS 180.88 ZAE 93.19 ETE 178.71 ZAC 86.60 ETC 258.40 CLP 63.06

PLANETOCENTRIC CONIC

C3 11.837 VHL 3.441 DLA 20.44 RAL 171.26 RAD 6567.5 VEL 11.542 PTH 2.01 VHP 3.240 DPA 12.14 RAP 163.56 ECC 1.1948

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 12 0	2793.06	-28.16	81.32	31.02	93.06	17 58 33	2193.1	-27.44	72.73
90.00	11 3 11	4044.00	-4.98	163.26	25.73	62.09	12 10 35	3444.0	-8.67	156.53
100.00	18 46 42	2487.70	-29.52	58.75	30.92	94.93	19 28 10	1887.7	-28.52	50.08
100.00	12 11 10	3824.59	-3.79	146.48	25.08	60.33	13 14 55	3224.6	-7.71	139.89
110.00	20 23 25	2185.13	-32.92	35.25	30.40	99.77	20 59 50	1585.1	-31.22	26.44
110.00	12 50 57	3699.93	-.87	135.21	23.26	55.83	13 52 37	3099.9	-5.35	128.99

DIFFERENTIAL CORRECTIONS
TDE -.3076 TRA 3.1137 TC-10.1805 BAU 1.6175
RDE .3431 RRA -.1060 RC3 .9084 FAU .45140
FDE-2.3340 FRA11.6226 FC-33.0137 BSP 30651
BDE .4608 BRA 3.1155 BC310.2209 FSP 9164

MID-COURSE EXECUTION ACCURACY
SGT 8941.9 SGR 867.6 SG3 2674.0
RRT -.7366 RRF -.7565 RTF .9953
SGB 8983.9 R23 .0300 R13 -.9954
SG1 8964.9 SG2 585.3 THA 175.89

ORBIT DETERMINATION ACCURACY
ST 1750.0 SR 574.4 SS 2056.8
CRT -.3884 CRS .6122 CST -.9662
LSA 2695.6 MSA 596.9 SSA 23.1
EL1 1765.6 EL2 524.7 ALF 172.03

LAUNCH DATE OCT 31 1964 FLIGHT TIME 350.00 ARRIVAL DATE OCT 16 1965

HELIOCENTRIC CONIC DISTANCE 785.501 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.784 GAL -4.29 AZL 88.40 HCA 240.66 SMA 186.23 ECC .21545 INC 1.6011 V1 30.005
RP 215.05 LAP -1.40 LOP 278.25 VP 22.840 GAP -8.73 AZP 90.78 TAL 335.39 TAP 216.04 RCA 146.11 APO 226.35 V2 25.535
RC 290.105 GL 15.28 GP 2.95 ZAL 125.29 ZAP 61.61 ETS 180.94 ZAE 91.44 ETE 178.84 ZAC 86.46 ETC 258.45 CLP 61.57

PLANETOCENTRIC CONIC

C3 12.015 VHL 3.466 DLA 20.18 RAL 171.84 RAD 6567.5 VEL 11.550 PTH 2.02 VHP 3.291 DPA 12.19 RAP 163.23 ECC 1.1977

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 17 19	2785.09	-28.13	80.74	31.74	93.35	18 3 45	2185.1	-27.37	72.15
90.00	11 2 28	4058.26	-4.52	164.06	26.41	62.02	12 10 6	3458.3	-8.23	157.34
100.00	18 51 41	2480.79	-29.48	58.24	31.63	95.19	19 33 2	1880.8	-28.45	49.59
100.00	12 10 47	3837.78	-3.34	147.20	25.76	60.28	13 14 45	3237.8	-7.27	140.62
110.00	20 27 47	2180.14	-32.86	34.88	31.10	99.98	21 4 8	1580.1	-31.14	26.08
110.00	12 51 10	3711.21	-.44	135.80	23.95	55.82	13 53 1	3111.2	-4.93	129.58

DIFFERENTIAL CORRECTIONS
TDE -.3541 TRA 3.2754 TC-10.3538 BAU 1.6692
RDE .3493 RRA -.0998 RC3 .8796 FAU .43643
FDE-2.3729 FRA11.4027 FC-31.4454 BSP 31626
BDE .4973 BRA 3.2770 BC310.3911 FSP 8857

MID-COURSE EXECUTION ACCURACY
SGT 9227.0 SGR 857.9 SG3 2583.1
RRT -.7237 RRF -.7442 RTF .9954
SGB 9266.8 R23 .0301 R13 -.9956
SG1 9247.9 SG2 590.7 THA 176.13

ORBIT DETERMINATION ACCURACY
ST 1839.4 SR 580.0 SS 2052.2
CRT -.4059 CRS .6196 CST -.9687
LSA 2752.2 MSA 596.9 SSA 22.7
EL1 1855.7 EL2 525.4 ALF 172.07

LAUNCH DATE OCT 31 1964 FLIGHT TIME 352.00 ARRIVAL DATE OCT 18 1965

HELIOCENTRIC CONIC DISTANCE 789.649 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.786 GAL -4.37 AZL 88.39 HCA 241.83 SMA 186.27 ECC .21608 INC 1.6111 V1 30.005
RP 214.72 LAP -1.42 LOP 279.43 VP 22.884 GAP -8.90 AZP 90.76 TAL 334.97 TAP 216.80 RCA 146.02 APO 226.52 V2 25.572
RC 291.272 GL 15.25 GP 2.87 ZAL 125.90 ZAP 60.16 ETS 181.01 ZAE 89.73 ETE 178.97 ZAC 86.34 ETC 258.48 CLP 60.12

PLANETOCENTRIC CONIC

C3 12.205 VHL 3.494 DLA 19.91 RAL 172.43 RAD 6567.5 VEL 11.558 PTH 2.02 VHP 3.343 DPA 12.23 RAP 162.94 ECC 1.2009

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 22 49	2776.80	-28.10	80.13	32.48	93.65	18 9 6	2176.8	-27.30	71.56
90.00	11 1 40	4073.16	-4.05	164.90	27.11	61.95	12 9 33	3473.2	-7.77	158.19
100.00	18 56 50	2473.59	-29.43	57.71	32.36	95.47	19 38 4	1873.6	-28.36	49.07
100.00	12 10 19	3851.60	-2.87	147.96	26.46	60.23	13 14 31	3251.6	-6.81	141.39
110.00	20 32 19	2174.90	-32.80	34.48	31.82	100.21	21 8 34	1574.9	-31.05	25.70
110.00	12 51 20	3723.06	.01	136.42	24.66	55.82	13 53 23	3123.1	-4.48	130.20

DIFFERENTIAL CORRECTIONS
TDE -.3978 TRA 3.4458 TC-10.4879 BAU 1.7169
RDE .3550 RRA -.0942 RC3 .8498 FAU .42020
FDE-2.3852 FRA11.2027 FC-29.8057 BSP 32722
BDE .5332 BRA 3.4471 BC310.5223 FSP 8604

MID-COURSE EXECUTION ACCURACY
SGT 9500.0 SGR 847.7 SG3 2490.4
RRT -.7101 RRF -.7307 RTF .9955
SGB 9537.8 R23 .0298 R13 -.9957
SG1 9519.2 SG2 595.7 THA 176.36

ORBIT DETERMINATION ACCURACY
ST 1930.0 SR 584.6 SS 2043.6
CRT -.4189 CRS .6232 CST -.9710
LSA 2808.3 MSA 596.7 SSA 22.4
EL1 1946.8 EL2 526.3 ALF 172.19

LAUNCH DATE OCT 31 1964 FLIGHT TIME 354.00 ARRIVAL DATE OCT 20 1965

HELIOCENTRIC CONIC DISTANCE 793.804 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.789 GAL -4.45 AZL 88.38 HCA 243.01 SMA 186.31 ECC .21675 INC 1.6208 V1 30.005
RP 214.40 LAP -1.44 LOP 280.61 VP 22.928 GAP -9.06 AZP 90.74 TAL 334.55 TAP 217.55 RCA 145.93 APO 226.69 V2 25.608
RC 292.426 GL 15.22 GP 2.80 ZAL 126.53 ZAP 58.76 ETS 181.07 ZAE 88.05 ETE 179.09 ZAC 86.22 ETC 258.52 CLP 58.71

PLANETOCENTRIC CONIC

C3 12.406 VHL 3.522 DLA 19.62 RAL 173.03 RAD 6567.5 VEL 11.567 PTH 2.02 VHP 3.398 DPA 12.26 RAP 162.70 ECC 1.2042

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 28 26	2768.26	-28.06	79.51	33.23	93.96	18 14 35	2168.3	-27.22	70.95
90.00	11 0 48	4088.65	-3.55	165.76	27.83	61.89	12 8 57	3488.7	-7.28	159.07
100.00	19 2 8	2466.15	-29.38	57.16	33.11	95.75	19 43 14	1866.1	-28.28	48.53
100.00	12 9 48	3865.99	-2.39	148.75	27.19	60.19	13 14 14	3266.0	-6.34	142.19
110.00	20 36 57	2169.47	-32.73	34.07	32.55	100.44	21 13 7	1569.5	-30.95	25.31
110.00	12 51 28	3735.44	.48	137.06	25.39	55.82	13 53 43	3135.4	-4.00	130.85

DIFFERENTIAL CORRECTIONS
TDE -.4551 TRA 3.6071 TC-10.6359 BAU 1.7694
RDE .3618 RRA -.0879 RC3 .8239 FAU .40642
FDE-2.4416 FRA10.9562 FC-28.3603 BSP 33495
BDE .5814 BRA 3.6081 BC310.6678 FSP 8251

MID-COURSE EXECUTION ACCURACY
SGT 9771.7 SGR 840.5 SG3 2402.0
RRT -.6977 RRF -.7193 RTF .9957
SGB 9807.8 R23 .0306 R13 -.9958
SG1 9789.4 SG2 601.0 THA 176.55

ORBIT DETERMINATION ACCURACY
ST 2022.5 SR 590.6 SS 2041.4
CRT -.4393 CRS .6347 CST -.9729
LSA 2872.5 MSA 595.7 SSA 21.8
EL1 2040.3 EL2 525.9 ALF 172.17

LAUNCH DATE OCT 31 1964 FLIGHT TIME 356.00 ARRIVAL DATE OCT 22 1965

HELIOCENTRIC CONIC DISTANCE 797.963 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.792 GAL -4.54 AZL 88.37 HCA 244.19 SMA 186.36 ECC .21745 INC 1.6305 V1 30.005
RP 214.08 LAP -1.47 LOP 281.79 VP 22.972 GAP -9.23 AZP 90.71 TAL 334.10 TAP 218.29 RCA 145.83 APO 226.88 V2 25.644
RC 293.566 GL 15.18 GP 2.73 ZAL 127.17 ZAP 57.39 ETS 181.12 ZAE 86.41 ETE 179.21 ZAC 86.12 ETC 258.54 CLP 57.35

PLANETOCENTRIC CONIC

C3 12.621 VHL 3.553 DLA 19.31 RAL 173.64 RAD 6567.5 VEL 11.576 PTH 2.02 VHP 3.455 DPA 12.27 RAP 162.49 ECC 1.2077

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 34 13	2759.47	-28.02	78.87	34.00	94.28	18 20 12	2159.5	-27.13	70.32
90.00	10 59 53	4104.73	-3.03	166.66	28.57	61.83	12 8 18	3504.7	-6.78	159.98
100.00	19 7 33	2458.47	-29.33	56.59	33.87	96.05	19 48 32	1858.5	-28.18	47.98
100.00	12 9 14	3880.97	-1.88	149.58	27.93	60.16	13 13 55	3281.0	-5.84	143.02
110.00	20 41 44	2163.84	-32.66	33.64	33.30	100.69	21 17 48	1563.8	-30.85	24.90
110.00	12 51 33	3748.36	.98	137.74	26.14	55.83	13 54 1	3148.4	-3.51	131.53

DIFFERENTIAL CORRECTIONS
TDE -.5095 TRA 3.7778 TC-10.7410 BAU 1.8173
RDE .3683 RRA -.0823 RC3 .7969 FAU .39136
FDE-2.4725 FRA10.7312 FC-26.8463 BSP 34402
BDE .6287 BRA 3.7787 BC310.7705 FSP 7953

MID-COURSE EXECUTION ACCURACY
SGT10029.9 SGR 832.5 SG3 2312.0
RRT -.6847 RRF -.7069 RTF .9957
SGB10064.4 R23 .0311 R13 -.9958
SG110046.2 SG2 605.8 THA 176.74

ORBIT DETERMINATION ACCURACY
ST 2116.4 SR 595.7 SS 2035.5
CRT -.4551 CRS .6426 CST -.9745
LSA 2936.4 MSA 595.0 SSA 21.5
EL1 2134.8 EL2 525.9 ALF 172.23

LAUNCH DATE OCT 31 1964 FLIGHT TIME 358.00 ARRIVAL DATE OCT 24 1965

HELIOCENTRIC CONIC DISTANCE 802.125 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.794 GAL -4.63 AZL 88.36 HCA 245.37 SMA 186.41 ECC .21820 INC 1.6400 V1 30.005
RP 213.77 LAP -1.49 LOP 282.97 VP 23.015 GAP -9.39 AZP 90.68 TAL 333.64 TAP 219.02 RCA 145.73 APO 227.08 V2 25.679
RC 294.693 GL 15.13 GP 2.66 ZAL 127.83 ZAP 56.06 ETS 181.17 ZAE 84.81 ETE 179.31 ZAC 86.03 ETC 258.56 CLP 56.02

PLANETOCENTRIC CONIC

C3 12.848 VHL 3.584 DLA 19.00 RAL 174.25 RAD 6567.5 VEL 11.586 PTH 2.03 VHP 3.514 DPA 12.26 RAP 162.33 ECC 1.2114

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 40 6	2750.48	-27.97	78.22	34.79	94.61	18 25 57	2150.5	-27.04	69.68
90.00	10 58 55	4121.38	-2.50	167.59	29.32	61.78	12 7 36	3521.4	-6.25	160.93
100.00	19 13 6	2450.59	-29.27	56.02	34.65	96.34	19 53 57	1850.6	-28.09	47.41
100.00	12 8 36	3896.50	-1.35	150.43	28.69	60.14	13 13 33	3296.5	-5.32	143.88
110.00	20 46 37	2158.04	-32.59	33.21	34.06	100.93	21 22 35	1558.0	-30.74	24.48
110.00	12 51 35	3761.82	1.49	138.44	26.91	55.85	13 54 17	3161.8	-3.00	132.23

DIFFERENTIAL CORRECTIONS
TDE -.5670 TRA 3.9510 TC-10.8282 BAU 1.8646
RDE .3748 RRA -.0769 RC3 .7708 FAU .37668
FDE-2.5007 FRA10.5034 FC-25.3815 BSP 35280
BDE .6797 BRA 3.9517 BC310.8556 FSP 7658

MID-COURSE EXECUTION ACCURACY
SGT10280.7 SGR 825.4 SG3 2223.6
RRT -.6718 RRF -.6947 RTF .9958
SGB10313.7 R23 .0316 R13 -.9959
SG110295.7 SG2 610.4 THA 176.90

ORBIT DETERMINATION ACCURACY
ST 2211.6 SR 600.6 SS 2028.8
CRT -.4705 CRS .6507 CST -.9761
LSA 3002.4 MSA 593.8 SSA 21.1
EL1 2230.6 EL2 525.4 ALF 172.29

LAUNCH DATE OCT 31 1964 FLIGHT TIME 360.00 ARRIVAL DATE OCT 26 1965

HELIOCENTRIC CONIC DISTANCE 806.291 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.797 GAL -4.73 AZL 88.35 HCA 246.56 SMA 186.46 ECC .21898 INC 1.6492 V1 30.005
RP 213.46 LAP -1.51 LOP 284.16 VP 23.058 GAP -9.55 AZP 90.66 TAL 333.17 TAP 219.73 RCA 145.63 APO 227.29 V2 25.714
RC 295.805 GL 15.07 GP 2.60 ZAL 128.50 ZAP 54.77 ETS 181.21 ZAE 83.25 ETE 179.41 ZAC 85.94 ETC 258.58 CLP 54.73

PLANETOCENTRIC CONIC

C3 13.089 VHL 3.618 DLA 18.67 RAL 174.88 RAD 6567.5 VEL 11.596 PTH 2.03 VHP 3.575 DPA 12.24 RAP 162.21 ECC 1.2154

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 46 7	2741.32	-27.92	77.55	35.60	94.94	18 31 49	2141.3	-26.94	69.02
90.00	10 57 54	4138.56	-1.94	168.55	30.10	61.74	12 6 53	3538.6	-5.71	161.89
100.00	19 18 46	2442.54	-29.21	55.43	35.45	96.65	19 59 29	1842.5	-27.98	46.84
100.00	12 7 56	3912.57	-.81	151.31	29.47	60.12	13 13 9	3312.6	-4.78	144.77
110.00	20 51 36	2152.09	-32.51	32.76	34.84	101.19	21 27 29	1552.1	-30.63	24.05
110.00	12 51 35	3775.78	2.03	139.17	27.70	55.87	13 54 31	3175.8	-2.47	132.96

DIFFERENTIAL CORRECTIONS
TDE -.6278 TRA 4.1272 TC-10.8956 BAU 1.9111
RDE .3815 RRA -.0716 RC3 .7456 FAU .36214
FDE-2.5259 FRA10.2746 FC-23.9521 BSP 36102
BDE .7346 BRA 4.1278 BC310.9211 FSP 7366

MID-COURSE EXECUTION ACCURACY
SGT10523.3 SGR 818.8 SG3 2136.3
RRT -.6593 RRF -.6828 RTF .9958
SGB10555.1 R23 .0320 R13 -.9959
SG110537.2 SG2 614.8 THA 177.05

ORBIT DETERMINATION ACCURACY
ST 2308.3 SR 605.4 SS 2021.3
CRT -.4858 CRS .6589 CST -.9775
LSA 3070.7 MSA 592.0 SSA 20.7
EL1 2328.0 EL2 524.7 ALF 172.35

LAUNCH DATE OCT 31 1964 FLIGHT TIME 362.00 ARRIVAL DATE OCT 28 1965

HELIOCENTRIC CONIC DISTANCE 810.461 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.800 GAL -4.82 AZL 88.34 HCA 247.75 SMA 186.51 ECC .21981 INC 1.6584 V1 30.005
RP 213.16 LAP -1.53 LOP 285.35 VP 23.100 GAP -9.72 AZP 90.63 TAL 332.68 TAP 220.43 RCA 145.51 APO 227.51 V2 25.748
RC 296.904 GL 15.01 GP 2.53 ZAL 129.18 ZAP 53.52 ETS 181.25 ZAE 81.72 ETE 179.51 ZAC 85.87 ETC 258.58 CLP 53.48

PLANETOCENTRIC CONIC

C3 13.346 VHL 3.653 DLA 18.33 RAL 175.51 RAD 6567.5 VEL 11.607 PTH 2.03 VHP 3.638 DPA 12.20 RAP 162.13 ECC 1.2196

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 52 14	2732.01	-27.86	76.88	36.42	95.27	18 37 47	2132.0	-26.84	68.36
90.00	10 56 51	4156.26	-1.37	169.54	30.90	61.71	12 6 7	3556.3	-5.14	162.89
100.00	19 24 33	2434.35	-29.14	54.83	36.26	96.96	20 5 7	1834.4	-27.88	46.25
100.00	12 7 13	3929.15	-.25	152.22	30.27	60.11	13 12 43	3329.1	-4.22	145.69
110.00	20 56 42	2146.02	-32.43	32.31	35.64	101.45	21 32 28	1546.0	-30.51	23.62
110.00	12 51 33	3790.25	2.58	139.92	28.50	55.90	13 54 43	3190.2	-1.91	133.72

DIFFERENTIAL CORRECTIONS
TDE -.6906 TRA 4.3078 TC-10.9397 BAU 1.9561
RDE .3882 RRA -.0667 RC3 .7210 FAU .34773
FDE-2.5468 FRA10.0496 FC-22.5573 BSP 36938
BDE .7922 BRA 4.3084 BC310.9634 FSP 7086

MID-COURSE EXECUTION ACCURACY
SGT10757.2 SGR 812.6 SG3 2050.6
RRT -.6468 RRF -.6711 RTF .9958
SGB10787.8 R23 .0326 R13 -.9959
SG110770.0 SG2 619.0 THA 177.19

ORBIT DETERMINATION ACCURACY
ST 2406.2 SR 610.0 SS 2013.1
CRT -.5000 CRS .6668 CST -.9787
LSA 3140.9 MSA 590.4 SSA 20.3
EL1 2426.4 EL2 523.8 ALF 172.42

LAUNCH DATE OCT 31 1964 FLIGHT TIME 364.00 ARRIVAL DATE OCT 30 1965

HELIOCENTRIC CONIC DISTANCE 814.634 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.804 GAL -4.93 AZL 88.33 HCA 248.95 SMA 186.57 ECC .22068 INC 1.6675 V1 30.005
RP 212.87 LAP -1.56 LOP 286.55 VP 23.143 GAP -9.88 AZP 90.60 TAL 332.18 TAP 221.13 RCA 145.39 APO 227.74 V2 25.782
RC 297.989 GL 14.94 GP 2.47 ZAL 129.88 ZAP 52.30 ETS 181.29 ZAE 80.23 ETE 179.60 ZAC 85.80 ETC 258.59 CLP 52.26

PLANETOCENTRIC CONIC

C3 13.617 VHL 3.690 DLA 17.97 RAL 176.16 RAD 6567.5 VEL 11.619 PTH 2.04 VHP 3.704 DPA 12.15 RAP 162.08 ECC 1.2241

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 58 28	2722.59	-27.80	76.20	37.25	95.61	18 43 50	2122.6	-26.73	67.69
90.00	10 55 45	4174.45	-.79	170.56	31.71	61.69	12 5 19	3574.5	-4.56	163.91
100.00	19 30 25	2426.04	-29.07	54.22	37.09	97.27	20 10 51	1826.0	-27.76	45.66
100.00	12 6 28	3946.23	.33	153.16	31.09	60.11	13 12 15	3346.2	-3.65	146.63
110.00	21 1 54	2139.84	-32.35	31.85	36.45	101.71	21 37 34	1539.8	-30.40	23.17
110.00	12 51 29	3805.20	3.15	140.70	29.33	55.94	13 54 54	3205.2	-1.34	134.50

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.7568 TRA 4.4917 TC-10.9657 BAU 2.0003 SGT10983.3 SGR 807.1 SG3 1966.4 ST 2505.5 SR 614.4 SS 2004.2
RDE .3951 RRA -.0620 RC3 .6972 FAU .33359 RRT -.6348 RRF -.6599 RTF .9958 CRT -.5141 CRS .6748 CST -.9798
FDE-2.5653 FRA 9.8237 FC-21.2086 BSP 37739 SGB11013.0 R23 .0332 R13 -.9959 LSA 3213.3 MSA 588.3 SSA 20.0
BDE .8537 BRA 4.4921 BC310.9878 FSP 6808 SG110995.3 SG2 622.9 THA 177.32 EL1 2526.3 EL2 522.7 ALF 172.49

LAUNCH DATE OCT 31 1964 FLIGHT TIME 366.00 ARRIVAL DATE NOV 1 1965

HELIOCENTRIC CONIC DISTANCE 818.809 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.807 GAL -5.03 AZL 88.32 HCA 250.15 SMA 186.62 ECC .22160 INC 1.6764 V1 30.005
RP 212.57 LAP -1.58 LOP 287.75 VP 23.184 GAP -10.03 AZP 90.57 TAL 331.66 TAP 221.80 RCA 145.27 APO 227.98 V2 25.815
RC 299.061 GL 14.86 GP 2.41 ZAL 130.60 ZAP 51.13 ETS 181.32 ZAE 78.78 ETE 179.68 ZAC 85.75 ETC 258.58 CLP 51.09

PLANETOCENTRIC CONIC

C3 13.905 VHL 3.729 DLA 17.61 RAL 176.81 RAD 6567.5 VEL 11.631 PTH 2.04 VHP 3.771 DPA 12.09 RAP 162.08 ECC 1.2288

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 4 46	2713.08	-27.74	75.51	38.11	95.95	18 49 59	2113.1	-26.62	67.02
90.00	10 54 37	4193.13	-.18	171.60	32.55	61.68	12 4 31	3593.1	-3.97	164.96
100.00	19 36 23	2417.64	-29.00	53.60	37.94	97.59	20 16 41	1817.6	-27.65	45.06
100.00	12 5 42	3963.80	.93	154.12	31.93	60.12	13 11 45	3363.8	-3.05	147.60
110.00	21 7 10	2133.58	-32.26	31.38	37.28	101.97	21 42 44	1533.6	-30.28	22.73
110.00	12 51 23	3820.62	3.74	141.51	30.18	56.00	13 55 4	3220.6	-.75	135.30

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.8257 TRA 4.6798 TC-10.9721 BAU 2.0436 SGT11201.8 SGR 802.0 SG3 1884.3 ST 2606.1 SR 618.7 SS 1994.3
RDE .4021 RRA -.0576 RC3 .6742 FAU .31975 RRT -.6232 RRF -.6490 RTF .9958 CRT -.5275 CRS .6827 CST -.9808
FDE-2.5800 FRA 9.5997 FC-19.9072 BSP 38514 SGB11230.5 R23 .0339 R13 -.9959 LSA 3287.5 MSA 586.1 SSA 19.7
BDE .9184 BRA 4.6801 BC310.9928 FSP 6538 SG111213.0 SG2 626.6 THA 177.44 EL1 2627.3 EL2 521.3 ALF 172.57

LAUNCH DATE OCT 31 1964 FLIGHT TIME 368.00 ARRIVAL DATE NOV 3 1965

HELIOCENTRIC CONIC DISTANCE 822.987 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.811 GAL -5.14 AZL 88.31 HCA 251.35 SMA 186.69 ECC .22256 INC 1.6852 V1 30.005
RP 212.29 LAP -1.60 LOP 288.95 VP 23.225 GAP -10.19 AZP 90.54 TAL 331.12 TAP 222.47 RCA 145.14 APO 228.23 V2 25.847
RC 300.120 GL 14.77 GP 2.35 ZAL 131.32 ZAP 49.99 ETS 181.36 ZAE 77.36 ETE 179.76 ZAC 85.70 ETC 258.57 CLP 49.94

PLANETOCENTRIC CONIC

C3 14.211 VHL 3.770 DLA 17.23 RAL 177.46 RAD 6567.6 VEL 11.645 PTH 2.04 VHP 3.840 DPA 12.01 RAP 162.11 ECC 1.2339

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 11 9	2703.52	-27.67	74.82	38.97	96.29	18 56 12	2103.5	-26.51	66.34
90.00	10 53 28	4212.26	.43	172.66	33.41	61.69	12 3 41	3612.3	-3.35	166.03
100.00	19 42 25	2409.17	-28.92	52.99	38.80	97.90	20 22 35	1809.2	-27.53	44.46
100.00	12 4 53	3981.83	1.54	155.11	32.79	60.14	13 11 15	3381.8	-2.44	148.59
110.00	21 12 32	2127.26	-32.17	30.91	38.13	102.24	21 47 59	1527.3	-30.15	22.28
110.00	12 51 16	3836.51	4.34	142.34	31.05	56.06	13 55 13	3236.5	-.15	136.13

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.8974 TRA 4.8722 TC-10.9591 BAU 2.0858 SGT11412.4 SGR 797.4 SG3 1804.0 ST 2707.7 SR 622.8 SS 1983.6
RDE .4093 RRA -.0534 RC3 .6520 FAU .30616 RRT -.6120 RRF -.6386 RTF .9957 CRT -.5405 CRS .6906 CST -.9817
FDE-2.5920 FRA 9.3775 FC-18.6513 BSP 39283 SGB11440.2 R23 .0346 R13 -.9958 LSA 3363.5 MSA 583.8 SSA 19.4
BDE .9863 BRA 4.8725 BC310.9785 FSP 6276 SG111422.8 SG2 630.0 THA 177.54 EL1 2729.4 EL2 519.8 ALF 172.65

LAUNCH DATE OCT 31 1964 FLIGHT TIME 370.00 ARRIVAL DATE NOV 5 1965

HELIOCENTRIC CONIC DISTANCE 827.168 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.814 GAL -5.25 AZL 88.31 HCA 252.55 SMA 186.75 ECC .22357 INC 1.6939 V1 30.005
RP 212.01 LAP -1.62 LOP 290.15 VP 23.266 GAP -10.35 AZP 90.51 TAL 330.57 TAP 223.12 RCA 145.00 APO 228.50 V2 25.879
RC 301.167 GL 14.68 GP 2.30 ZAL 132.06 ZAP 48.88 ETS 181.38 ZAE 75.97 ETE 179.84 ZAC 85.67 ETC 258.56 CLP 48.84

PLANETOCENTRIC CONIC

C3 14.535 VHL 3.812 DLA 16.84 RAL 178.12 RAD 6567.6 VEL 11.658 PTH 2.05 VHP 3.911 DPA 11.92 RAP 162.18 ECC 1.2392

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 17 36	2693.92	-27.59	74.12	39.86	96.63	19 2 30	2093.9	-26.39	65.66
90.00	10 52 18	4231.83	1.07	173.76	34.29	61.70	12 2 50	3631.8	-2.72	167.13
100.00	19 48 32	2400.66	-28.84	52.37	39.68	98.22	20 28 33	1800.7	-27.40	43.86
100.00	12 4 3	4000.32	2.17	156.13	33.68	60.18	13 10 43	3400.3	-1.82	149.60
110.00	21 17 57	2120.90	-32.08	30.43	38.99	102.50	21 53 18	1520.9	-30.02	21.82
110.00	12 51 7	3852.85	4.96	143.20	31.94	56.14	13 55 20	3252.8	.48	136.98

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.9724 TRA 5.0693 TC-10.9295 BAU 2.1273 SGT11616.6 SGR 793.2 SG3 1725.8 ST 2810.8 SR 626.7 SS 1971.9
RDE .4166 RRA -.0496 RC3 .6305 FAU .29288 RRT -.6013 RRF -.6287 RTF .9956 CRT -.5531 CRS .6984 CST -.9825
FDE-2.6008 FRA 9.1578 FC-17.4452 BSP 40016 SGB11643.6 R23 .0353 R13 -.9957 LSA 3441.5 MSA 581.1 SSA 19.1
BDE 1.0579 BRA 5.0695 BC310.9477 FSP 6019 SG111626.4 SG2 633.3 THA 177.64 EL1 2832.8 EL2 518.1 ALF 172.72

LAUNCH DATE OCT 31 1964 FLIGHT TIME 372.00 ARRIVAL DATE NOV 7 1965

HELIOCENTRIC CONIC DISTANCE 831.349 EARTH TO MARS

RL	148.50	LAL	-.00	LOL	37.61	VL	32.818	GAL	-5.37	AZL	88.30	HCA	253.76	SMA	186.81	ECC	.22463	INC	1.7025
RP	211.73	LAP	-1.63	LOP	291.36	VP	23.306	GAP	-10.51	AZP	90.48	TAL	330.00	TAP	223.77	RCA	144.85	APO	228.78
RC	302.203	GL	14.58	GP	2.24	ZAL	132.81	ZAP	47.80	ETS	181.41	ZAE	74.62	ETE	179.91	ZAC	85.64	ETC	258.54

V1 30.005 V2 25.911 CLP 47.76

PLANETOCENTRIC CONIC

C3	14.878	VHL	3.857	DLA	16.45	RAL	178.79	RAD	6567.6	VEL	11.673	PTH	2.05	VHP	3.985	DPA	11.82	RAP	162.29

ECC 1.2449

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 24 7	2684.31	-27.52	73.43	40.76	96.96	19 8 52	2084.3	-26.27	64.99
90.00	10 51 6	4251.82	1.71	174.87	35.19	61.73	12 1 58	3651.8	-2.08	168.24
100.00	19 54 43	2392.13	-28.76	51.75	40.57	98.53	20 34 35	1792.1	-27.28	43.26
100.00	12 3 11	4019.23	2.81	157.16	34.58	60.23	13 10 11	3419.2	-1.18	150.64
110.00	21 23 27	2114.51	-31.98	29.96	39.87	102.77	21 58 42	1514.5	-29.89	21.37
110.00	12 50 57	3869.62	5.60	144.09	32.85	56.22	13 55 26	3269.6	1.12	137.86

DIFFERENTIAL CORRECTIONS

TDE	-1.0497	TRA	5.2709	TC	-10.8834	BAU	2.1681
RDE	.4241	RRA	-.0460	RC3	.6098	FAU	.27995
FDE	-2.6051	FRA	8.9394	FC	-16.2902	BSP	40755
BDE	1.1321	BRA	5.2711	BC3	10.9005	FSP	5774

MID-COURSE EXECUTION ACCURACY

SGT	11813.8	SGR	789.5	SG3	1649.7		
RRT	-.5912	RRF	-.6194	RTF	.9955		
SGB	11840.1	R23	.0361	R13	-.9956		
SG1	11823.0	SG2	636.2	THA	177.73		

ORBIT DETERMINATION ACCURACY

ST	2914.2	SR	630.5	SS	1958.7		
CRT	-.5651	CRS	.7058	CST	-.9832		
LSA	3520.2	MSA	578.4	SSA	18.9		
EL1	2936.6	EL2	516.2	ALF	172.81		

LAUNCH DATE OCT 31 1964 FLIGHT TIME 374.00 ARRIVAL DATE NOV 9 1965

HELIOCENTRIC CONIC DISTANCE 835.532 EARTH TO MARS

RL	148.50	LAL	-.00	LOL	37.61	VL	32.822	GAL	-5.49	AZL	88.29	HCA	254.97	SMA	186.88	ECC	.22574	INC	1.7111
RP	211.47	LAP	-1.65	LOP	292.57	VP	23.346	GAP	-10.66	AZP	90.44	TAL	329.42	TAP	224.39	RCA	144.70	APO	229.07
RC	303.228	GL	14.47	GP	2.19	ZAL	133.57	ZAP	46.76	ETS	181.43	ZAE	73.29	ETE	179.98	ZAC	85.62	ETC	258.51

V1 30.005 V2 25.941 CLP 46.72

PLANETOCENTRIC CONIC

C3	15.241	VHL	3.904	DLA	16.04	RAL	179.46	RAD	6567.6	VEL	11.689	PTH	2.06	VHP	4.060	DPA	11.71	RAP	162.43

ECC 1.2508

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 30 42	2674.72	-27.43	72.74	41.68	97.30	19 15 16	2074.7	-26.14	64.31
90.00	10 49 54	4272.23	2.37	176.01	36.11	61.77	12 1 6	3672.2	-1.42	169.38
100.00	20 0 58	2383.61	-28.67	51.13	41.48	98.85	20 40 41	1783.6	-27.15	42.66
100.00	12 2 19	4038.57	3.46	158.23	35.50	60.29	13 9 37	3438.6	-.52	151.70
110.00	21 29 1	2108.13	-31.88	29.49	40.76	103.03	22 4 9	1508.1	-29.76	20.92
110.00	12 50 45	3886.82	6.25	144.99	33.78	56.32	13 55 32	3286.8	1.78	138.76

DIFFERENTIAL CORRECTIONS

TDE	-1.1299	TRA	5.4777	TC	-10.8203	BAU	2.2081
RDE	.4317	RRA	-.0428	RC3	.5898	FAU	.26734
FDE	-2.6065	FRA	8.7230	FC	-15.1854	BSP	41466
BDE	1.2096	BRA	5.4779	BC3	10.8364	FSP	5533

MID-COURSE EXECUTION ACCURACY

SGT	12004.0	SGR	786.0	SG3	1575.8		
RRT	-.5816	RRF	-.6107	RTF	.9954		
SGB	12029.7	R23	.0369	R13	-.9955		
SG1	12012.8	SG2	638.9	THA	177.81		

ORBIT DETERMINATION ACCURACY

ST	3018.5	SR	634.1	SS	1944.4		
CRT	-.5765	CRS	.7133	CST	-.9838		
LSA	3600.4	MSA	575.6	SSA	18.6		
EL1	3041.2	EL2	514.2	ALF	172.89		

LAUNCH DATE OCT 31 1964 FLIGHT TIME 376.00 ARRIVAL DATE NOV 11 1965

HELIOCENTRIC CONIC DISTANCE 839.716 EARTH TO MARS

RL	148.50	LAL	-.00	LOL	37.61	VL	32.826	GAL	-5.62	AZL	88.28	HCA	256.19	SMA	186.95	ECC	.22689	INC	1.7195
RP	211.20	LAP	-1.67	LOP	293.79	VP	23.385	GAP	-10.82	AZP	90.41	TAL	328.83	TAP	225.01	RCA	144.53	APO	229.37
RC	304.242	GL	14.36	GP	2.14	ZAL	134.34	ZAP	45.75	ETS	181.45	ZAE	72.00	ETE	180.04	ZAC	85.61	ETC	258.48

V1 30.005 V2 25.971 CLP 45.71

PLANETOCENTRIC CONIC

C3	15.627	VHL	3.953	DLA	15.62	RAL	180.14	RAD	6567.6	VEL	11.705	PTH	2.06	VHP	4.137	DPA	11.58	RAP	162.60

ECC 1.2572

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 37 19	2665.17	-27.35	72.05	42.61	97.64	19 21 44	2065.2	-26.01	63.64
90.00	10 48 40	4293.03	3.04	177.17	37.05	61.83	12 0 14	3693.0	-.75	170.54
100.00	20 7 15	2375.12	-28.58	50.51	42.41	99.16	20 46 50	1775.1	-27.02	42.06
100.00	12 1 25	4058.31	4.12	159.32	36.45	60.37	13 9 3	3458.3	.15	152.79
110.00	21 34 37	2101.76	-31.79	29.02	41.67	103.29	22 9 39	1501.8	-29.63	20.47
110.00	12 50 33	3904.43	6.91	145.92	34.73	56.44	13 55 37	3304.4	2.45	139.68

DIFFERENTIAL CORRECTIONS

TDE	-1.2139	TRA	5.6891	TC	-10.7420	BAU	2.2473
RDE	.4396	RRA	-.0399	RC3	.5705	FAU	.25505
FDE	-2.6058	FRA	8.5093	FC	-14.1300	BSP	42153
BDE	1.2911	BRA	5.6893	BC3	10.7571	FSP	5299

MID-COURSE EXECUTION ACCURACY

SGT	12187.4	SGR	783.0	SG3	1504.1		
RRT	-.5727	RRF	-.6026	RTF	.9953		
SGB	12212.5	R23	.0377	R13	-.9954		
SG1	12195.6	SG2	641.4	THA	177.89		

ORBIT DETERMINATION ACCURACY

ST	3123.9	SR	637.6	SS	1929.4		
CRT	-.5878	CRS	.7207	CST	-.9844		
LSA	3682.3	MSA	572.5	SSA	18.4		
EL1	3146.9	EL2	512.0	ALF	172.97		

LAUNCH DATE OCT 31 1964 FLIGHT TIME 378.00 ARRIVAL DATE NOV 13 1965

HELIOCENTRIC CONIC DISTANCE 843.901 EARTH TO MARS

RL	148.50	LAL	-.00	LOL	37.61	VL	32.830	GAL	-5.75	AZL	88.27	HCA	257.40	SMA	187.02	ECC	.22811	INC	1.7279
RP	210.95	LAP	-1.69	LOP	295.00	VP	23.423	GAP	-10.98	AZP	90.38	TAL	328.21	TAP	225.61	RCA	144.36	APO	229.68
RC	305.247	GL	14.24	GP	2.09	ZAL	135.12	ZAP	44.77	ETS	181.46	ZAE	70.73	ETE	180.10	ZAC	85.61	ETC	258.45

V1 30.005 V2 26.001 CLP 44.73

PLANETOCENTRIC CONIC

C3	16.035	VHL	4.004	DLA	15.20	RAL	180.82	RAD	6567.6	VEL	11.723	PTH	2.07	VHP	4.216	DPA	11.45	RAP	162.80

ECC 1.2639

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 43 58	2655.68	-27.26	71.37	43.56	97.97	19 28 14	2055.7	-25.88	62.98
90.00	10 47 27	4314.21	3.72	178.36	38.02	61.91	11 59 21	3714.2	-.07	171.72
100.00	20 13 35	2366.67	-28.49	49.90	43.35	99.47	20 53 2	1766.7	-26.88	41.47
100.00	12 0 31	4078.45	4.80	160.43	37.42	60.46	13 8 29	3478.4	.83	153.89
110.00	21 40 16	2095.43	-31.69	28.55	42.59	103.55	22 15 12	1495.4	-29.50	20.03
110.00	12 50 19	3922.45	7.59	146.88	35.70	56.57	13 55 41	3322.4	3.14	140.62

DIFFERENTIAL CORRECTIONS

TDE	-1.2996	TRA	5.9072	TC	-10.6474	BAU	2.2856
RDE	.4476	RRA	-.0373	RC3	.5519	FAU	.24309
FDE	-2.6005	FRA	8.2981	FC	-13.1247	BSP	42855
BDE	1.3745	BRA	5.9073	BC3	10.6617	FSP	5076

MID-COURSE EXECUTION ACCURACY

SGT	12364.5	SGR	780.2	SG3	1434.6		
RRT	-.5644	RRF	-.5951	RTF	.9951		
SGB	12389.1	R23	.0387	R13	-.9952		
SG1	12372.4	SG2	643.6	THA	177.96		

ORBIT DETERMINATION ACCURACY

ST	3229.1	SR	640.8	SS	1912.6		
CRT	-.5982	CRS	.7277	CST	-.9849		
LSA	3764.4	MSA	569.6	SSA	18.1		
EL1	3252.4	EL2	509.9	ALF	173.06		

LAUNCH DATE OCT 31 1964 FLIGHT TIME 380.00 ARRIVAL DATE NOV 15 1965

HELIOCENTRIC CONIC DISTANCE 848.085 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.834 GAL -5.88 AZL 88.26 HCA 258.62 SMA 187.09 ECC .22937 INC 1.7362 V1 30.005
RP 210.70 LAP -1.70 LOP 296.22 VP 23.461 GAP -11.13 AZP 90.34 TAL 327.58 TAP 226.21 RCA 144.18 APO 230.01 V2 26.029
RC 306.243 GL 14.11 GP 2.05 ZAL 135.90 ZAP 43.82 ETS 181.48 ZAE 69.50 ETE 180.16 ZAC 85.61 ETC 258.41 CLP 43.78

PLANETOCENTRIC CONIC

C3 16.467 VHL 4.058 DLA 14.76 RAL 181.50 RAD 6567.7 VEL 11.741 PTH 2.07 VHP 4.297 DPA 11.30 RAP 163.03 ECC 1.2710

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 50 40	2646.27	-27.17	70.70	44.52	98.29	19 34 46	2046.3	-25.74	62.32
90.00	10 46 12	4335.75	4.41	179.57	39.00	62.00	11 58 28	3735.8	.63	172.92
100.00	20 19 57	2358.29	-28.39	49.30	44.31	99.77	20 59 16	1758.3	-26.75	40.88
100.00	11 59 36	4098.96	5.49	161.56	38.41	60.57	13 7 55	3499.0	1.53	155.02
110.00	21 45 58	2089.17	-31.59	28.09	43.54	103.81	22 20 47	1489.2	-29.36	19.59
110.00	12 50 4	3940.85	8.28	147.86	36.70	56.72	13 55 45	3340.9	3.84	141.58

DIFFERENTIAL CORRECTIONS
TDE-1.3896 TRA 6.1290 TC-10.5423 BAU 2.3239
RDE .4559 RRA -.0350 RC3 .5340 FAU .23151
FDE-2.5930 FRA 8.0875 FC-12.1710 BSP 43505
BDE 1.4625 BRA 6.1291 BC310.5558 FSP 4857

MID-COURSE EXECUTION ACCURACY
SGT12535.6 SGR 777.7 SG3 1367.3
RRT -.5568 RRF -.5883 RTF .9950
SGB12559.7 R23 .0396 R13 -.9950
SG112543.1 SG2 645.6 THA 178.02

ORBIT DETERMINATION ACCURACY
ST 3335.1 SR 644.0 SS 1894.6
CRT -.6087 CRS .7348 CST -.9853
LSA 3847.9 MSA 566.1 SSA 17.9
EL1 3358.6 EL2 507.4 ALF 173.14

LAUNCH DATE OCT 31 1964 FLIGHT TIME 382.00 ARRIVAL DATE NOV 17 1965

HELIOCENTRIC CONIC DISTANCE 852.269 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.839 GAL -6.02 AZL 88.26 HCA 259.85 SMA 187.17 ECC .23070 INC 1.7445 V1 30.005
RP 210.46 LAP -1.72 LOP 297.45 VP 23.498 GAP -11.29 AZP 90.31 TAL 326.94 TAP 226.78 RCA 143.99 APO 230.35 V2 26.057
RC 307.229 GL 13.98 GP 2.00 ZAL 136.70 ZAP 42.90 ETS 181.49 ZAE 68.29 ETE 180.22 ZAC 85.62 ETC 258.37 CLP 42.86

PLANETOCENTRIC CONIC

C3 16.925 VHL 4.114 DLA 14.32 RAL 182.19 RAD 6567.7 VEL 11.760 PTH 2.08 VHP 4.380 DPA 11.14 RAP 163.30 ECC 1.2785

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 57 23	2636.97	-27.08	70.03	45.51	98.61	19 41 20	2037.0	-25.61	61.68
90.00	10 44 58	4357.64	5.11	180.80	40.01	62.11	11 57 36	3757.6	1.33	174.15
100.00	20 26 22	2350.01	-28.29	48.70	45.28	100.07	21 5 32	1750.0	-26.61	40.30
100.00	11 58 40	4119.84	6.19	162.72	39.42	60.70	13 7 20	3519.8	2.23	156.16
110.00	21 51 42	2082.97	-31.48	27.64	44.49	104.06	22 26 25	1483.0	-29.23	19.16
110.00	12 49 49	3959.64	8.98	148.86	37.72	56.88	13 55 49	3359.6	4.55	142.57

DIFFERENTIAL CORRECTIONS
TDE-1.4824 TRA 6.3578 TC-10.4235 BAU 2.3615
RDE .4644 RRA -.0330 RC3 .5167 FAU .22030
FDE-2.5830 FRA 7.8797 FC-11.2683 BSP 44148
BDE 1.5535 BRA 6.3579 BC310.4363 FSP 4643

MID-COURSE EXECUTION ACCURACY
SGT12701.5 SGR 775.4 SG3 1302.3
RRT -.5499 RRF -.5824 RTF .9948
SGB12725.2 R23 .0406 R13 -.9949
SG112708.7 SG2 647.3 THA 178.07

ORBIT DETERMINATION ACCURACY
ST 3441.6 SR 647.0 SS 1875.5
CRT -.6186 CRS .7417 CST -.9857
LSA 3932.4 MSA 562.8 SSA 17.7
EL1 3465.3 EL2 504.9 ALF 173.22

LAUNCH DATE OCT 31 1964 FLIGHT TIME 384.00 ARRIVAL DATE NOV 19 1965

HELIOCENTRIC CONIC DISTANCE 856.451 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.843 GAL -6.16 AZL 88.25 HCA 261.07 SMA 187.25 ECC .23208 INC 1.7527 V1 30.005
RP 210.22 LAP -1.73 LOP 298.67 VP 23.534 GAP -11.45 AZP 90.27 TAL 326.28 TAP 227.35 RCA 143.79 APO 230.70 V2 26.085
RC 308.206 GL 13.85 GP 1.96 ZAL 137.50 ZAP 42.00 ETS 181.50 ZAE 67.10 ETE 180.27 ZAC 85.65 ETC 258.32 CLP 41.97

PLANETOCENTRIC CONIC

C3 17.411 VHL 4.173 DLA 13.87 RAL 182.88 RAD 6567.7 VEL 11.781 PTH 2.08 VHP 4.465 DPA 10.97 RAP 163.59 ECC 1.2865

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 4 7	2627.79	-26.98	69.38	46.50	98.93	19 47 55	2027.8	-25.47	61.04
90.00	10 43 43	4379.88	5.81	182.05	41.05	62.24	11 56 43	3779.9	2.05	175.39
100.00	20 32 47	2341.83	-28.19	48.11	46.27	100.37	21 11 49	1741.8	-26.47	39.74
100.00	11 57 44	4141.07	6.89	163.90	40.46	60.84	13 6 45	3541.1	2.95	157.33
110.00	21 57 28	2076.87	-31.38	27.19	45.47	104.31	22 32 5	1476.9	-29.10	18.73
110.00	12 49 33	3978.79	9.69	149.89	38.76	57.06	13 55 52	3378.8	5.28	143.57

DIFFERENTIAL CORRECTIONS
TDE-1.5774 TRA 6.5932 TC-10.2919 BAU 2.3984
RDE .4731 RRA -.0315 RC3 .5000 FAU .20937
FDE-2.5689 FRA 7.6745 FC-10.4108 BSP 44814
BDE 1.6468 BRA 6.5933 BC310.3040 FSP 4441

MID-COURSE EXECUTION ACCURACY
SGT12861.7 SGR 773.3 SG3 1239.3
RRT -.5435 RRF -.5769 RTF .9946
SGB12884.9 R23 .0417 R13 -.9946
SG112868.5 SG2 648.8 THA 178.12

ORBIT DETERMINATION ACCURACY
ST 3547.4 SR 649.8 SS 1854.7
CRT -.6279 CRS .7484 CST -.9861
LSA 4016.6 MSA 559.6 SSA 17.5
EL1 3571.3 EL2 502.4 ALF 173.31

LAUNCH DATE OCT 31 1964 FLIGHT TIME 386.00 ARRIVAL DATE NOV 21 1965

HELIOCENTRIC CONIC DISTANCE 860.632 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.848 GAL -6.31 AZL 88.24 HCA 262.30 SMA 187.33 ECC .23353 INC 1.7609 V1 30.005
RP 209.99 LAP -1.75 LOP 299.90 VP 23.570 GAP -11.61 AZP 90.24 TAL 325.60 TAP 227.90 RCA 143.58 APO 231.07 V2 26.111
RC 309.174 GL 13.71 GP 1.92 ZAL 138.30 ZAP 41.13 ETS 181.51 ZAE 65.94 ETE 180.33 ZAC 85.67 ETC 258.27 CLP 41.10

PLANETOCENTRIC CONIC

C3 17.925 VHL 4.234 DLA 13.42 RAL 183.57 RAD 6567.7 VEL 11.803 PTH 2.09 VHP 4.552 DPA 10.79 RAP 163.91 ECC 1.2950

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 10 52	2618.76	-26.89	68.74	47.51	99.24	19 54 31	2018.8	-25.33	60.41
90.00	10 42 29	4402.43	6.53	183.32	42.10	62.38	11 55 51	3802.4	2.78	176.65
100.00	20 39 14	2333.79	-28.09	47.54	47.27	100.66	21 18 8	1733.8	-26.34	39.18
100.00	11 56 48	4162.63	7.61	165.10	41.52	61.00	13 6 11	3562.6	3.68	158.52
110.00	22 3 15	2070.89	-31.28	26.75	46.46	104.55	22 37 46	1470.9	-28.97	18.31
110.00	12 49 16	3998.30	10.41	150.94	39.82	57.25	13 55 55	3398.3	6.02	144.60

DIFFERENTIAL CORRECTIONS
TDE-1.6770 TRA 6.8335 TC-10.1515 BAU 2.4354
RDE .4820 RRA -.0303 RC3 .4839 FAU .19887
FDE-2.5537 FRA 7.4694 FC3-9.6048 BSP 45413
BDE 1.7449 BRA 6.8336 BC310.1630 FSP 4240

MID-COURSE EXECUTION ACCURACY
SGT13016.4 SGR 771.5 SG3 1178.6
RRT -.5380 RRF -.5724 RTF .9943
SGB13039.2 R23 .0429 R13 -.9944
SG113023.0 SG2 650.0 THA 178.17

ORBIT DETERMINATION ACCURACY
ST 3654.1 SR 652.6 SS 1832.9
CRT -.6373 CRS .7552 CST -.9864
LSA 4102.2 MSA 556.0 SSA 17.3
EL1 3678.1 EL2 499.6 ALF 173.38

LAUNCH DATE OCT 31 1964 FLIGHT TIME 388.00 ARRIVAL DATE NOV 23 1965

HELIOCENTRIC CONIC DISTANCE 864.811 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.852 GAL -6.47 AZL 88.23 HCA 263.53 SMA 187.41 ECC .23504 INC 1.7691 V1 30.005
RP 209.77 LAP -1.76 LOP 301.13 VP 23.605 GAP -11.77 AZP 90.20 TAL 324.90 TAP 228.43 RCA 143.36 APO 231.46 V2 26.137
RC 310.132 GL 13.56 GP 1.88 ZAL 139.12 ZAP 40.29 ETS 181.52 ZAE 64.81 ETE 180.38 ZAC 85.71 ETC 258.22 CLP 40.26

PLANETOCENTRIC CONIC

C3 18.470 VHL 4.298 DLA 12.96 RAL 184.26 RAD 6567.7 VEL 11.826 PTH 2.09 VHP 4.641 DPA 10.60 RAP 164.26 ECC 1.3040

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 17 38	2609.88	-26.79	68.11	48.54	99.54	20 1 8	2009.9	-25.20	59.80
90.00	10 41 14	4425.30	7.25	184.62	43.18	62.55	11 55 0	3825.3	3.51	177.93
100.00	20 45 42	2325.89	-27.99	46.97	48.30	100.94	21 24 28	1725.9	-26.20	38.63
100.00	11 55 52	4184.53	8.33	166.33	42.60	61.19	13 5 36	3584.5	4.42	159.72
110.00	22 9 4	2065.03	-31.18	26.33	47.46	104.78	22 43 29	1465.0	-28.84	17.91
110.00	12 48 59	4018.16	11.14	152.02	40.91	57.47	13 55 57	3418.2	6.77	145.65

DIFFERENTIAL CORRECTIONS
TDE-1.7798 TRA 7.0803 TC-10.0026 BAU 2.4726
RDE .4913 RRA -.0294 RC3 .4685 FAU .18874
FDE-2.5360 FRA 7.2663 FC3-8.8468 BSP 46015
BDE 1.8463 BRA 7.0804 BC310.0136 FSP 4047

MID-COURSE EXECUTION ACCURACY
SGT13166.8 SGR 769.9 SG3 1120.1
RRT -.5333 RRF -.5687 RTF .9941
SGB13189.3 R23 .0441 R13 -.9941
SG113173.3 SG2 651.0 THA 178.21

ORBIT DETERMINATION ACCURACY
ST 3760.4 SR 655.2 SS 1809.9
CRT -.6463 CRS .7618 CST -.9866
LSA 4188.1 MSA 552.4 SSA 17.1
EL1 3784.6 EL2 496.8 ALF 173.46

LAUNCH DATE OCT 31 1964 FLIGHT TIME 390.00 ARRIVAL DATE NOV 25 1965

HELIOCENTRIC CONIC DISTANCE 868.986 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.857 GAL -6.62 AZL 88.22 HCA 264.76 SMA 187.49 ECC .23661 INC 1.7772 V1 30.005
RP 209.55 LAP -1.77 LOP 302.37 VP 23.639 GAP -11.93 AZP 90.16 TAL 324.19 TAP 228.96 RCA 143.13 APO 231.85 V2 26.162
RC 311.080 GL 13.41 GP 1.84 ZAL 139.93 ZAP 39.47 ETS 181.52 ZAE 63.70 ETE 180.42 ZAC 85.75 ETC 258.16 CLP 39.44

PLANETOCENTRIC CONIC

C3 19.047 VHL 4.364 DLA 12.49 RAL 184.96 RAD 6567.8 VEL 11.850 PTH 2.10 VHP 4.732 DPA 10.40 RAP 164.63 ECC 1.3135

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 24 25	2601.18	-26.69	67.49	49.59	99.83	20 7 46	2001.2	-25.06	59.20
90.00	10 40 0	4448.48	7.97	185.93	44.29	62.74	11 54 9	3848.5	4.25	179.22
100.00	20 52 10	2318.15	-27.89	46.42	49.33	101.21	21 30 49	1718.1	-26.06	38.10
100.00	11 54 56	4206.75	9.05	167.58	43.71	61.39	13 5 2	3606.7	5.16	160.95
110.00	22 14 54	2059.31	-31.08	25.91	48.48	105.01	22 49 13	1459.3	-28.71	17.51
110.00	12 48 42	4038.35	11.87	153.12	42.02	57.71	13 56 0	3438.3	7.53	146.72

DIFFERENTIAL CORRECTIONS
TDE-1.8858 TRA 7.3340 TC3-9.8429 BAU 2.5091
RDE .5007 RRA -.0289 RC3 .4535 FAU .17888
FDE-2.5153 FRA 7.0644 FC3-8.1304 BSP 46593
BDE 1.9511 BRA 7.3341 BC3 9.8534 FSP 3859

MID-COURSE EXECUTION ACCURACY
SGT13311.4 SGR 768.3 SG3 1063.5
RRT -.5291 RRF -.5656 RTF .9938
SGB13333.6 R23 .0454 R13 -.9938
SG113317.7 SG2 651.7 THA 178.25

ORBIT DETERMINATION ACCURACY
ST 3866.3 SR 657.6 SS 1785.3
CRT -.6549 CRS .7684 CST -.9868
LSA 4273.9 MSA 548.8 SSA 17.0
EL1 3890.6 EL2 493.8 ALF 173.54

LAUNCH DATE OCT 31 1964 FLIGHT TIME 392.00 ARRIVAL DATE NOV 27 1965

HELIOCENTRIC CONIC DISTANCE 873.158 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.862 GAL -6.79 AZL 88.21 HCA 266.00 SMA 187.57 ECC .23825 INC 1.7854 V1 30.005
RP 209.34 LAP -1.78 LOP 303.60 VP 23.673 GAP -12.09 AZP 90.12 TAL 323.47 TAP 229.47 RCA 142.88 APO 232.27 V2 26.186
RC 312.019 GL 13.26 GP 1.80 ZAL 140.76 ZAP 38.68 ETS 181.53 ZAE 62.62 ETE 180.47 ZAC 85.80 ETC 258.10 CLP 38.65

PLANETOCENTRIC CONIC

C3 19.659 VHL 4.434 DLA 12.02 RAL 185.65 RAD 6567.8 VEL 11.876 PTH 2.11 VHP 4.825 DPA 10.19 RAP 165.03 ECC 1.3235

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 31 11	2592.67	-26.59	66.89	50.64	100.12	20 14 24	1992.7	-24.92	58.61
90.00	10 38 46	4471.94	8.70	187.27	45.41	62.95	11 53 18	3871.9	5.00	180.54
100.00	20 58 39	2310.58	-27.79	45.88	50.39	101.48	21 37 10	1710.6	-25.93	37.57
100.00	11 53 59	4229.26	9.78	168.85	44.84	61.61	13 4 29	3629.3	5.92	162.20
110.00	22 20 44	2053.75	-30.98	25.51	49.52	105.23	22 54 58	1453.7	-28.58	17.13
110.00	12 48 24	4058.86	12.62	154.24	43.16	57.96	13 56 3	3458.9	8.29	147.81

DIFFERENTIAL CORRECTIONS
TDE-1.9952 TRA 7.5947 TC3-9.6759 BAU 2.5456
RDE .5105 RRA -.0289 RC3 .4390 FAU .16939
FDE-2.4922 FRA 6.8640 FC3-7.4598 BSP 47167
BDE 2.0595 BRA 7.5948 BC3 9.6858 FSP 3677

MID-COURSE EXECUTION ACCURACY
SGT13451.8 SGR 767.0 SG3 1009.0
RRT -.5257 RRF -.5634 RTF .9934
SGB13473.6 R23 .0468 R13 -.9935
SG113457.8 SG2 652.1 THA 178.28

ORBIT DETERMINATION ACCURACY
ST 3971.9 SR 659.9 SS 1759.4
CRT -.6632 CRS .7748 CST -.9869
LSA 4360.0 MSA 545.1 SSA 16.8
EL1 3996.3 EL2 490.9 ALF 173.62

LAUNCH DATE OCT 31 1964 FLIGHT TIME 394.00 ARRIVAL DATE NOV 29 1965

HELIOCENTRIC CONIC DISTANCE 877.326 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.867 GAL -6.96 AZL 88.21 HCA 267.24 SMA 187.66 ECC .23997 INC 1.7935 V1 30.005
RP 209.14 LAP -1.79 LOP 304.84 VP 23.706 GAP -12.26 AZP 90.09 TAL 322.73 TAP 229.96 RCA 142.63 APO 232.69 V2 26.209
RC 312.950 GL 13.10 GP 1.77 ZAL 141.58 ZAP 37.91 ETS 181.53 ZAE 61.55 ETE 180.51 ZAC 85.86 ETC 258.04 CLP 37.88

PLANETOCENTRIC CONIC

C3 20.307 VHL 4.506 DLA 11.54 RAL 186.35 RAD 6567.8 VEL 11.903 PTH 2.11 VHP 4.920 DPA 9.97 RAP 165.45 ECC 1.3342

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 37 57	2584.37	-26.49	66.30	51.72	100.40	20 21 2	1984.4	-24.78	58.04
90.00	10 37 33	4495.69	9.43	188.63	46.57	63.18	11 52 28	3895.7	5.76	181.88
100.00	21 5 8	2303.21	-27.69	45.35	51.46	101.74	21 43 31	1703.2	-25.79	37.07
100.00	11 53 3	4252.05	10.52	170.15	45.99	61.86	13 3 55	3652.0	6.68	163.47
110.00	22 26 34	2048.36	-30.88	25.12	50.57	105.44	23 0 43	1448.4	-28.46	16.76
110.00	12 48 6	4079.69	13.37	155.39	44.32	58.24	13 56 6	3479.7	9.07	148.93

DIFFERENTIAL CORRECTIONS
TDE-2.1089 TRA 7.8616 TC3-9.5041 BAU 2.5828
RDE .5206 RRA -.0292 RC3 .4252 FAU .16026
FDE-2.4673 FRA 6.6642 FC3-6.8325 BSP 47695
BDE 2.1722 BRA 7.8617 BC3 9.5136 FSP 3500

MID-COURSE EXECUTION ACCURACY
SGT13588.2 SGR 765.7 SG3 956.5
RRT -.5231 RRF -.5619 RTF .9931
SGB13609.7 R23 .0484 R13 -.9932
SG113594.1 SG2 652.3 THA 178.31

ORBIT DETERMINATION ACCURACY
ST 4077.1 SR 662.1 SS 1732.3
CRT -.6715 CRS .7813 CST -.9871
LSA 4446.3 MSA 541.3 SSA 16.6
EL1 4101.7 EL2 487.7 ALF 173.69

LAUNCH DATE OCT 31 1964 FLIGHT TIME 396.00 ARRIVAL DATE DEC 1 1965

HELIOCENTRIC CONIC DISTANCE 881.489 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.872 GAL -7.13 AZL 88.20 HCA 268.48 SMA 187.75 ECC .24176 INC 1.8016 V1 30.005
RP 208.94 LAP -1.80 LOP 306.08 VP 23.737 GAP -12.42 AZP 90.05 TAL 321.97 TAP 230.44 RCA 142.36 APO 233.14 V2 26.232
RC 313.871 GL 12.93 GP 1.73 ZAL 142.41 ZAP 37.16 ETS 181.53 ZAE 60.51 ETE 180.56 ZAC 85.92 ETC 257.97 CLP 37.13

PLANETOCENTRIC CONIC

C3 20.994 VHL 4.582 DLA 11.06 RAL 187.04 RAD 6567.9 VEL 11.932 PTH 2.12 VHP 5.018 DPA 9.74 RAP 165.90 ECC 1.3455

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 44 43	2576.29	-26.39	65.73	52.81	100.67	20 27 39	1976.3	-24.65	57.49
90.00	10 36 20	4519.71	10.17	190.01	47.74	63.43	11 51 39	3919.7	6.52	183.23
100.00	21 11 36	2296.05	-27.59	44.85	52.54	101.99	21 49 53	1696.1	-25.66	36.58
100.00	11 52 7	4275.18	11.26	171.46	47.17	62.13	13 3 23	3675.2	7.44	164.75
110.00	22 32 25	2043.16	-30.79	24.74	51.64	105.64	23 6 29	1443.2	-28.34	16.40
110.00	12 47 48	4100.83	14.12	156.56	45.50	58.54	13 56 9	3500.8	9.85	150.06

DIFFERENTIAL CORRECTIONS
TDE-2.2256 TRA 8.1354 TC3-9.3255 BAU 2.6199
RDE .5309 RRA -.0299 RC3 .4117 FAU .15143
FDE-2.4397 FRA 6.4649 FC3-6.2447 BSP 48210
BDE 2.2881 BRA 8.1355 BC3 9.3346 FSP 3327

MID-COURSE EXECUTION ACCURACY
SGT13719.4 SGR 764.6 SG3 905.8
RRT -.5212 RRF -.5612 RTF .9927
SGB13740.7 R23 .0500 R13 -.9928
SG113725.2 SG2 652.3 THA 178.33

ORBIT DETERMINATION ACCURACY
ST 4181.1 SR 664.1 SS 1703.7
CRT -.6793 CRS .7877 CST -.9871
LSA 4531.6 MSA 537.5 SSA 16.4
EL1 4205.7 EL2 484.5 ALF 173.76

LAUNCH DATE OCT 31 1964 FLIGHT TIME 398.00 ARRIVAL DATE DEC 3 1965

HELIOCENTRIC CONIC DISTANCE 885.645 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.877 GAL -7.31 AZL 88.19 HCA 269.72 SMA 187.84 ECC .24363 INC 1.8097 V1 30.005
RP 208.76 LAP -1.81 LOP 307.33 VP 23.769 GAP -12.59 AZP 90.01 TAL 321.19 TAP 230.91 RCA 142.08 APO 233.60 V2 26.254
RC 314.784 GL 12.77 GP 1.70 ZAL 143.25 ZAP 36.44 ETS 181.53 ZAE 59.49 ETE 180.60 ZAC 85.99 ETC 257.90 CLP 36.41

PLANETOCENTRIC CONIC

C3 21.722 VHL 4.661 DLA 10.57 RAL 187.74 RAD 6567.9 VEL 11.963 PTH 2.13 VHP 5.117 DPA 9.50 RAP 166.37 ECC 1.3575

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 51 28	2568.43	-26.29	65.17	53.92	100.93	20 34 17	1968.4	-24.51	56.95
90.00	10 35 7	4543.98	10.90	191.42	48.95	63.70	11 50 51	3944.0	7.28	184.61
100.00	21 18 5	2289.11	-27.49	44.35	53.64	102.23	21 56 14	1689.1	-25.53	36.10
100.00	11 51 12	4298.54	12.00	172.80	48.38	62.41	13 2 50	3698.5	8.21	166.06
110.00	22 38 16	2038.16	-30.70	24.38	52.73	105.84	23 12 15	1438.2	-28.22	16.06
110.00	12 47 29	4122.25	14.88	157.76	46.71	58.86	13 56 12	3522.3	10.64	151.22

DIFFERENTIAL CORRECTIONS
TDE-2.3468 TRA 8.4171 TC3-9.1417 BAU 2.6574
RDE .5416 RRA -.0311 RC3 .3987 FAU .14293
FDE-2.4103 FRA 6.2666 FC3-5.6963 BSP 48702
BDE 2.4085 BRA 8.4171 BC3 9.1504 FSP 3159

MID-COURSE EXECUTION ACCURACY
SGT13846.9 SGR 763.5 SG3 857.0
RRT -.5200 RRF -.5613 RTF .9923
SGB13867.9 R23 .0518 R13 -.9923
SG113852.6 SG2 651.9 THA 178.35

ORBIT DETERMINATION ACCURACY
ST 4284.9 SR 666.0 SS 1673.8
CRT -.6870 CRS .7940 CST -.9871
LSA 4617.4 MSA 533.5 SSA 16.2
EL1 4309.6 EL2 481.2 ALF 173.83

LAUNCH DATE OCT 31 1964 FLIGHT TIME 400.00 ARRIVAL DATE DEC 5 1965

HELIOCENTRIC CONIC DISTANCE 889.796 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.882 GAL -7.50 AZL 88.18 HCA 270.97 SMA 187.93 ECC .24558 INC 1.8178 V1 30.005
RP 208.58 LAP -1.82 LOP 308.57 VP 23.799 GAP -12.77 AZP 89.97 TAL 320.40 TAP 231.36 RCA 141.78 APO 234.08 V2 26.274
RC 315.690 GL 12.59 GP 1.67 ZAL 144.08 ZAP 35.74 ETS 181.53 ZAE 58.49 ETE 180.64 ZAC 86.06 ETC 257.84 CLP 35.70

PLANETOCENTRIC CONIC

C3 22.495 VHL 4.743 DLA 10.08 RAL 188.43 RAD 6567.9 VEL 11.995 PTH 2.14 VHP 5.219 DPA 9.26 RAP 166.86 ECC 1.3702

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 58 13	2560.83	-26.19	64.64	55.04	101.18	20 40 53	1960.8	-24.38	56.44
90.00	10 33 55	4568.51	11.64	192.84	50.17	64.00	11 50 4	3968.5	8.05	186.00
100.00	21 24 32	2282.39	-27.39	43.88	54.76	102.46	22 2 35	1682.4	-25.40	35.64
100.00	11 50 17	4322.18	12.74	174.17	49.61	62.73	13 2 19	3722.2	8.98	167.39
110.00	22 44 7	2033.37	-30.61	24.04	53.83	106.02	23 18 1	1433.4	-28.11	15.73
110.00	12 47 11	4143.96	15.64	158.98	47.95	59.21	13 56 15	3544.0	11.44	152.40

DIFFERENTIAL CORRECTIONS
TDE-2.4724 TRA 8.7063 TC3-8.9549 BAU 2.6956
RDE .5527 RRA -.0327 RC3 .3862 FAU .13473
FDE-2.3791 FRA 6.0685 FC3-5.1851 BSP 49165
BDE 2.5335 BRA 8.7064 BC3 8.9633 FSP 2996

MID-COURSE EXECUTION ACCURACY
SGT13971.2 SGR 762.6 SG3 810.0
RRT -.5195 RRF -.5622 RTF .9918
SGB13992.0 R23 .0537 R13 -.9919
SG113976.8 SG2 651.4 THA 178.37

ORBIT DETERMINATION ACCURACY
ST 4388.2 SR 667.8 SS 1642.8
CRT -.6946 CRS .8004 CST -.9871
LSA 4703.3 MSA 529.5 SSA 16.1
EL1 4413.0 EL2 477.8 ALF 173.89

LAUNCH DATE OCT 31 1964 FLIGHT TIME 402.00 ARRIVAL DATE DEC 7 1965

HELIOCENTRIC CONIC DISTANCE 893.938 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.887 GAL -7.69 AZL 88.17 HCA 272.21 SMA 188.02 ECC .24761 INC 1.8260 V1 30.005
RP 208.40 LAP -1.82 LOP 309.82 VP 23.828 GAP -12.94 AZP 89.93 TAL 319.59 TAP 231.80 RCA 141.47 APO 234.58 V2 26.294
RC 316.588 GL 12.42 GP 1.64 ZAL 144.92 ZAP 35.05 ETS 181.53 ZAE 57.51 ETE 180.68 ZAC 86.14 ETC 257.76 CLP 35.02

PLANETOCENTRIC CONIC

C3 23.314 VHL 4.828 DLA 9.59 RAL 189.12 RAD 6567.9 VEL 12.029 PTH 2.15 VHP 5.324 DPA 9.00 RAP 167.37 ECC 1.3837

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 4 56	2553.47	-26.09	64.12	56.18	101.42	20 47 29	1953.5	-24.25	55.94
90.00	10 32 44	4593.27	12.37	194.29	51.43	64.33	11 49 17	3993.3	8.82	187.42
100.00	21 30 59	2275.92	-27.30	43.42	55.89	102.68	22 8 55	1675.9	-25.28	35.20
100.00	11 49 22	4346.06	13.48	175.55	50.87	63.07	13 1 48	3746.1	9.76	168.74
110.00	22 49 58	2028.80	-30.52	23.71	54.94	106.20	23 23 46	1428.8	-28.00	15.42
110.00	12 46 53	4165.95	16.40	160.23	49.21	59.58	13 56 19	3565.9	12.24	153.60

DIFFERENTIAL CORRECTIONS
TDE-2.6019 TRA 9.0027 TC3-8.7643 BAU 2.7342
RDE .5640 RRA -.0347 RC3 .3741 FAU .12681
FDE-2.3456 FRA 5.8709 FC3-4.7091 BSP 49596
BDE 2.6623 BRA 9.0027 BC3 8.7723 FSP 2838

MID-COURSE EXECUTION ACCURACY
SGT14090.7 SGR 761.7 SG3 764.8
RRT -.5196 RRF -.5638 RTF .9913
SGB14111.3 R23 .0557 R13 -.9913
SG114096.3 SG2 650.5 THA 178.39

ORBIT DETERMINATION ACCURACY
ST 4490.1 SR 669.5 SS 1610.4
CRT -.7019 CRS .8067 CST -.9871
LSA 4788.2 MSA 525.4 SSA 15.9
EL1 4514.9 EL2 474.3 ALF 173.96

LAUNCH DATE OCT 31 1964 FLIGHT TIME 404.00 ARRIVAL DATE DEC 9 1965

HELIOCENTRIC CONIC DISTANCE 898.072 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.893 GAL -7.89 AZL 88.17 HCA 273.46 SMA 188.12 ECC .24973 INC 1.8342 V1 30.005
RP 208.24 LAP -1.83 LOP 311.07 VP 23.857 GAP -13.12 AZP 89.89 TAL 318.76 TAP 232.22 RCA 141.14 APO 235.09 V2 26.314
RC 317.480 GL 12.24 GP 1.61 ZAL 145.76 ZAP 34.39 ETS 181.53 ZAE 56.55 ETE 180.72 ZAC 86.23 ETC 257.69 CLP 34.36

PLANETOCENTRIC CONIC

C3 24.183 VHL 4.918 DLA 9.10 RAL 189.82 RAD 6568.0 VEL 12.065 PTH 2.16 VHP 5.430 DPA 8.74 RAP 167.90 ECC 1.3980

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 11 38	2546.38	-25.99	63.63	57.33	101.65	20 54 5	1946.4	-24.13	55.46
90.00	10 31 34	4618.27	13.11	195.76	52.71	64.67	11 48 32	4018.3	9.59	188.85
100.00	21 37 25	2269.69	-27.20	42.98	57.04	102.89	22 15 15	1669.7	-25.16	34.78
100.00	11 48 27	4370.19	14.22	176.96	52.15	63.43	13 1 18	3770.2	10.54	170.11
110.00	22 55 48	2024.45	-30.44	23.40	56.08	106.37	23 29 32	1424.5	-27.90	15.13
110.00	12 46 35	4188.19	17.16	161.51	50.50	59.97	13 56 23	3588.2	13.04	154.82

DIFFERENTIAL CORRECTIONS
TDE-2.7354 TRA 9.3074 TC3-8.5701 BAU 2.7732
RDE .5757 RRA -.0373 RC3 .3624 FAU .11918
FDE-2.3100 FRA 5.6735 FC3-4.2664 BSP 50004
BDE 2.7953 BRA 9.3075 BC3 8.5778 FSP 2684

MID-COURSE EXECUTION ACCURACY
SGT14206.2 SGR 760.9 SG3 721.2
RRT -.5204 RRF -.5661 RTF .9907
SGB14226.6 R23 .0580 R13 -.9907
SG114211.7 SG2 649.5 THA 178.40

ORBIT DETERMINATION ACCURACY
ST 4590.9 SR 671.0 SS 1576.7
CRT -.7090 CRS .8130 CST -.9869
LSA 4872.4 MSA 521.3 SSA 15.7
EL1 4615.7 EL2 470.7 ALF 174.02

LAUNCH DATE OCT 31 1964 FLIGHT TIME 406.00 ARRIVAL DATE DEC 11 1965

HELIOCENTRIC CONIC DISTANCE 902.196 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.898 GAL -8.10 AZL 88.16 HCA 274.71 SMA 188.21 ECC .25194 INC 1.8424 V1 30.005
RP 208.08 LAP -1.84 LOP 312.32 VP 23.884 GAP -13.30 AZP 89.85 TAL 317.92 TAP 232.63 RCA 140.79 APO 235.63 V2 26.332
RC 318.367 GL 12.06 GP 1.58 ZAL 146.60 ZAP 33.75 ETS 181.53 ZAE 55.61 ETE 180.76 ZAC 86.33 ETC 257.62 CLP 33.71

PLANETOCENTRIC CONIC

C3 25.105 VHL 5.010 DLA 8.60 RAL 190.51 RAD 6568.0 VEL 12.103 PTH 2.17 VHP 5.540 DPA 8.47 RAP 168.45 ECC 1.4132

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 18 19	2539.56	-25.90	63.15	58.50	101.87	21 0 39	1939.6	-24.00	54.99
90.00	10 30 24	4643.49	13.84	197.25	54.01	65.05	11 47 47	4043.5	10.36	190.30
100.00	21 43 51	2263.73	-27.11	42.56	58.20	103.10	22 21 34	1663.7	-25.04	34.38
100.00	11 47 34	4394.55	14.96	178.40	53.46	63.81	13 0 48	3794.6	11.32	171.50
110.00	23 1 37	2020.35	-30.36	23.10	57.22	106.52	23 35 17	1420.4	-27.80	14.85
110.00	12 46 17	4210.69	17.92	162.81	51.82	60.39	13 56 27	3610.7	13.85	156.07

DIFFERENTIAL CORRECTIONS
TDE-2.8738 TRA 9.6200 TC3-8.3761 BAU 2.8137
RDE .5878 RRA -.0403 RC3 .3511 FAU .11184
FDE-2.2721 FRA 5.4760 FC3-3.8569 BSP 50370
BDE 2.9333 BRA 9.6201 BC3 8.3834 FSP 2533

MID-COURSE EXECUTION ACCURACY
SGT14319.2 SGR 760.1 SG3 679.2
RRT -.5219 RRF -.5692 RTF .9900
SGB14339.3 R23 .0603 R13 -.9901
SG114324.7 SG2 648.1 THA 178.41

ORBIT DETERMINATION ACCURACY
ST 4690.8 SR 672.4 SS 1541.6
CRT -.7160 CRS .8192 CST -.9868
LSA 4956.3 MSA 517.0 SSA 15.6
EL1 4715.7 EL2 466.9 ALF 174.08

LAUNCH DATE OCT 31 1964 FLIGHT TIME 408.00 ARRIVAL DATE DEC 13 1965

HELIOCENTRIC CONIC DISTANCE 906.309 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.904 GAL -8.31 AZL 88.15 HCA 275.97 SMA 188.31 ECC .25425 INC 1.8507 V1 30.005
RP 207.93 LAP -1.84 LOP 313.58 VP 23.911 GAP -13.48 AZP 89.81 TAL 317.06 TAP 233.02 RCA 140.43 APO 236.19 V2 26.349
RC 319.247 GL 11.88 GP 1.55 ZAL 147.43 ZAP 33.12 ETS 181.53 ZAE 54.68 ETE 180.79 ZAC 86.42 ETC 257.54 CLP 33.09

PLANETOCENTRIC CONIC

C3 26.083 VHL 5.107 DLA 8.11 RAL 191.20 RAD 6568.1 VEL 12.143 PTH 2.18 VHP 5.651 DPA 8.19 RAP 169.02 ECC 1.4293

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 24 59	2533.01	-25.81	62.69	59.69	102.08	21 7 12	1933.0	-23.88	54.55
90.00	10 29 15	4668.92	14.56	198.77	55.35	65.44	11 47 4	4068.9	11.13	191.77
100.00	21 50 14	2258.03	-27.02	42.16	59.38	103.29	22 27 52	1658.0	-24.93	33.99
100.00	11 46 40	4419.14	15.69	179.85	54.80	64.23	13 0 20	3819.1	12.10	172.91
110.00	23 7 25	2016.49	-30.28	22.83	58.39	106.67	23 41 2	1416.5	-27.70	14.59
110.00	12 45 59	4233.43	18.68	164.13	53.17	60.84	13 56 32	3633.4	14.65	157.33

DIFFERENTIAL CORRECTIONS
TDE-3.0165 TRA 9.9417 TC3-8.1790 BAU 2.8546
RDE .6002 RRA -.0438 RC3 .3401 FAU .10472
FDE-2.2323 FRA 5.2786 FC3-3.4759 BSP 50721
BDE 3.0757 BRA 9.9418 BC3 8.1861 FSP 2388

MID-COURSE EXECUTION ACCURACY
SGT14428.0 SGR 759.3 SG3 638.8
RRT -.5240 RRF -.5730 RTF .9893
SGB14448.0 R23 .0629 R13 -.9894
SG114433.5 SG2 646.5 THA 178.42

ORBIT DETERMINATION ACCURACY
ST 4789.4 SR 673.6 SS 1505.3
CRT -.7228 CRS .8255 CST -.9866
LSA 5039.3 MSA 512.7 SSA 15.4
EL1 4814.3 EL2 463.2 ALF 174.14

LAUNCH DATE OCT 31 1964 FLIGHT TIME 410.00 ARRIVAL DATE DEC 15 1965

HELIOCENTRIC CONIC DISTANCE 910.411 EARTH TO MARS

RL 148.50 LAL -.00 LOL 37.61 VL 32.909 GAL -8.53 AZL 88.14 HCA 277.22 SMA 188.41 ECC .25666 INC 1.8590 V1 30.005
RP 207.79 LAP -1.84 LOP 314.83 VP 23.937 GAP -13.67 AZP 89.77 TAL 316.18 TAP 233.40 RCA 140.05 APO 236.76 V2 26.366
RC 320.122 GL 11.70 GP 1.52 ZAL 148.27 ZAP 32.52 ETS 181.52 ZAE 53.78 ETE 180.83 ZAC 86.53 ETC 257.47 CLP 32.48

PLANETOCENTRIC CONIC

C3 27.122 VHL 5.208 DLA 7.61 RAL 191.89 RAD 6568.1 VEL 12.186 PTH 2.19 VHP 5.766 DPA 7.90 RAP 169.61 ECC 1.4464

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 31 37	2526.75	-25.72	62.26	60.89	102.28	21 13 44	1926.8	-23.77	54.13
90.00	10 28 7	4694.55	15.28	200.31	56.71	65.87	11 46 21	4094.5	11.89	193.27
100.00	21 56 37	2252.60	-26.94	41.78	60.58	103.47	22 34 10	1652.6	-24.82	33.62
100.00	11 45 48	4443.93	16.42	181.33	56.16	64.66	12 59 52	3843.9	12.87	174.34
110.00	23 13 13	2012.89	-30.21	22.57	59.57	106.81	23 46 46	1412.9	-27.62	14.34
110.00	12 45 41	4256.42	19.44	165.49	54.54	61.31	13 56 38	3656.4	15.46	158.63

DIFFERENTIAL CORRECTIONS
TDE-3.1642 TRA10.2715 TC3-7.9829 BAU 2.8970
RDE .6131 RRA -.0479 RC3 .3295 FAU .09790
FDE-2.1907 FRA 5.0803 FC3-3.1249 BSP 51018
BDE 3.2230 BRA10.2716 BC3 7.9897 FSP 2245

MID-COURSE EXECUTION ACCURACY
SGT14533.9 SGR 758.7 SG3 599.8
RRT -.5267 RRF -.5776 RTF .9885
SGB14553.7 R23 .0658 R13 -.9886
SG114539.4 SG2 644.7 THA 178.42

ORBIT DETERMINATION ACCURACY
ST 4886.6 SR 674.8 SS 1467.7
CRT -.7294 CRS .8318 CST -.9864
LSA 5121.5 MSA 508.4 SSA 15.2
EL1 4911.6 EL2 459.3 ALF 174.20

LAUNCH DATE OCT 31 1964 FLIGHT TIME 412.00 ARRIVAL DATE DEC 17 1965

HELIOCENTRIC CONIC DISTANCE 914.499 EARTH TO MARS

RL	148.50	LAL	-.00	LOL	37.61	VL	32.915	GAL	-8.75	AZL	88.13	HCA	278.48	SMA	188.51	ECC	.25917	INC	1.8673	V1	30.005
RP	207.66	LAP	-1.85	LOP	316.09	VP	23.962	GAP	-13.87	AZP	89.72	TAL	315.28	TAP	233.76	RCA	139.65	APO	237.36	V2	26.381
RC	320.992	GL	11.51	GP	1.50	ZAL	149.11	ZAP	31.93	ETS	181.52	ZAE	52.89	ETE	180.86	ZAC	86.64	ETC	257.39	CLP	31.90

PLANETOCENTRIC CONIC

C3	28.224	VHL	5.313	DLA	7.11	RAL	192.58	RAD	6568.1	VEL	12.231	PTH	2.20	VHP	5.883	DPA	7.61	RAP	170.22	ECC	1.4645

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 38 13	2520.78	-25.63	61.84	62.11	102.47	21 20 14	1920.8	-23.65	53.73
90.00	10 27 0	4720.37	15.99	201.87	58.10	66.32	11 45 40	4120.4	12.66	194.78
100.00	22 2 58	2247.45	-26.86	41.42	61.79	103.65	22 40 26	1647.4	-24.71	33.28
100.00	11 44 56	4468.94	17.14	182.84	57.56	65.13	12 59 25	3868.9	13.65	175.79
110.00	23 18 59	2009.54	-30.15	22.33	60.76	106.93	23 52 29	1409.5	-27.53	14.12
110.00	12 45 24	4279.61	20.19	166.86	55.95	61.81	13 56 44	3679.6	16.27	159.94

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-3.3172	TRA	10.6102	TC3	-7.7865	BAU	2.9406	SGT	14636.4	SGR	758.0	SG3	562.4	ST	4982.8	SR	675.8	SS	1429.1
RDE	.6263	RRA	-.0524	RC3	.3193	FAU	.09129	RRT	-.5300	RRF	-.5829	RTF	.9876	CRT	-.7360	CRS	.8381	CST	-.9860
FDE	-2.1471	FRA	4.8819	FC3	-2.8002	BSP	51279	SGB	14656.0	R23	.0689	R13	-.9877	LSA	5203.1	MSA	503.9	SSA	15.0
BDE	3.3758	BRA	10.6103	BC3	7.7931	FSP	2107	SG1	14641.9	SG2	642.6	THA	178.42	EL1	5007.7	EL2	455.2	ALF	174.25

LAUNCH DATE OCT 31 1964 FLIGHT TIME 414.00 ARRIVAL DATE DEC 19 1965

HELIOCENTRIC CONIC DISTANCE 918.572 EARTH TO MARS

RL	148.50	LAL	-.00	LOL	37.61	VL	32.921	GAL	-8.99	AZL	88.12	HCA	279.74	SMA	188.61	ECC	.26179	INC	1.8758	V1	30.005
RP	207.54	LAP	-1.85	LOP	317.35	VP	23.986	GAP	-14.06	AZP	89.68	TAL	314.37	TAP	234.11	RCA	139.23	APO	237.98	V2	26.396
RC	321.856	GL	11.32	GP	1.47	ZAL	149.95	ZAP	31.36	ETS	181.51	ZAE	52.02	ETE	180.90	ZAC	86.76	ETC	257.32	CLP	31.33

PLANETOCENTRIC CONIC

C3	29.396	VHL	5.422	DLA	6.61	RAL	193.26	RAD	6568.2	VEL	12.279	PTH	2.21	VHP	6.003	DPA	7.30	RAP	170.84	ECC	1.4838

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 44 48	2515.09	-25.54	61.45	63.34	102.65	21 26 43	1915.1	-23.55	53.34
90.00	10 25 53	4746.38	16.70	203.45	59.51	66.79	11 45 0	4146.4	13.41	196.31
100.00	22 9 18	2242.57	-26.78	41.08	63.01	103.81	22 46 41	1642.6	-24.61	32.95
100.00	11 44 5	4494.13	17.86	184.37	58.98	65.62	12 58 59	3894.1	14.42	177.27
110.00	23 24 45	2006.45	-30.09	22.11	61.98	107.05	23 58 11	1406.4	-27.46	13.91
110.00	12 45 7	4303.02	20.94	168.27	57.38	62.34	13 56 50	3703.0	17.07	161.28

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-3.4735	TRA	10.9588	TC3	-7.5893	BAU	2.9850	SGT	14735.0	SGR	757.4	SG3	526.2	ST	5076.2	SR	676.6	SS	1388.6
RDE	.6399	RRA	-.0576	RC3	.3093	FAU	.08489	RRT	-.5338	RRF	-.5887	RTF	.9866	CRT	-.7422	CRS	.8443	CST	-.9857
FDE	-2.1004	FRA	4.6830	FC3	-2.5001	BSP	51523	SGB	14754.4	R23	.0722	R13	-.9866	LSA	5282.5	MSA	499.4	SSA	14.8
BDE	3.5320	BRA	10.9589	BC3	7.5956	FSP	1974	SG1	14740.5	SG2	640.2	THA	178.43	EL1	5101.2	EL2	451.2	ALF	174.31

LAUNCH DATE OCT 31 1964 FLIGHT TIME 416.00 ARRIVAL DATE DEC 21 1965

HELIOCENTRIC CONIC DISTANCE 922.630 EARTH TO MARS

RL	148.50	LAL	-.00	LOL	37.61	VL	32.927	GAL	-9.23	AZL	88.12	HCA	281.00	SMA	188.71	ECC	.26452	INC	1.8843	V1	30.005
RP	207.42	LAP	-1.85	LOP	318.61	VP	24.009	GAP	-14.27	AZP	89.64	TAL	313.44	TAP	234.43	RCA	138.79	APO	238.63	V2	26.409
RC	322.714	GL	11.13	GP	1.45	ZAL	150.79	ZAP	30.80	ETS	181.50	ZAE	51.16	ETE	180.93	ZAC	86.88	ETC	257.24	CLP	30.77

PLANETOCENTRIC CONIC

C3	30.640	VHL	5.535	DLA	6.11	RAL	193.95	RAD	6568.2	VEL	12.329	PTH	2.22	VHP	6.127	DPA	6.99	RAP	171.48	ECC	1.5043

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 51 22	2509.70	-25.46	61.07	64.58	102.82	21 33 11	1909.7	-23.44	52.98
90.00	10 24 48	4772.56	17.39	205.06	60.96	67.30	11 44 21	4172.6	14.17	197.87
100.00	22 15 36	2237.98	-26.70	40.76	64.25	103.96	22 52 54	1638.0	-24.52	32.64
100.00	11 43 14	4519.51	18.56	185.92	60.43	66.14	12 58 34	3919.5	15.18	178.76
110.00	23 30 29	2003.62	-30.03	21.91	63.20	107.16	24 3 53	1403.6	-27.39	13.72
110.00	12 44 51	4326.64	21.68	169.70	58.85	62.90	13 56 57	3726.6	17.87	162.64

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-3.6358	TRA	11.3171	TC3	-7.3941	BAU	3.0313	SGT	14831.3	SGR	756.7	SG3	491.5	ST	5168.7	SR	677.3	SS	1347.2
RDE	.6540	RRA	-.0633	RC3	.2997	FAU	.07872	RRT	-.5382	RRF	-.5953	RTF	.9854	CRT	-.7484	CRS	.8506	CST	-.9852
FDE	-2.0521	FRA	4.4831	FC3	-2.2243	BSP	51717	SGB	14850.6	R23	.0760	R13	-.9855	LSA	5361.3	MSA	494.8	SSA	14.7
BDE	3.6942	BRA	11.3173	BC3	7.4001	FSP	1843	SG1	14836.9	SG2	637.6	THA	178.42	EL1	5193.7	EL2	447.1	ALF	174.36

LAUNCH DATE OCT 31 1964 FLIGHT TIME 418.00 ARRIVAL DATE DEC 23 1965

HELIOCENTRIC CONIC DISTANCE 926.670 EARTH TO MARS

RL	148.50	LAL	-.00	LOL	37.61	VL	32.933	GAL	-9.48	AZL	88.11	HCA	282.26	SMA	188.82	ECC	.26738	INC	1.8929	V1	30.005
RP	207.31	LAP	-1.85	LOP	319.87	VP	24.031	GAP	-14.48	AZP	89.60	TAL	312.49	TAP	234.75	RCA	138.33	APO	239.30	V2	26.422
RC	323.566	GL	10.94	GP	1.43	ZAL	151.62	ZAP	30.27	ETS	181.50	ZAE	50.32	ETE	180.96	ZAC	87.00	ETC	257.16	CLP	30.24

PLANETOCENTRIC CONIC

C3	31.963	VHL	5.654	DLA	5.62	RAL	194.63	RAD	6568.3	VEL	12.383	PTH	2.24	VHP	6.253	DPA	6.68	RAP	172.14	ECC	1.5260

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 57 53	2504.60	-25.39	60.72	65.84	102.99	21 39 38	1904.6	-23.35	52.64
90.00	10 23 44	4798.91	18.08	206.69	62.43	67.83	11 43 43	4198.9	14.91	199.44
100.00	22 21 53	2233.67	-26.63	40.46	65.51	104.11	22 59 7	1633.7	-24.43	32.35
100.00	11 42 25	4545.07	19.26	187.50	61.91	66.69	12 58 10	3945.1	15.94	180.28
110.00	23 36 12	2001.06	-29.98	21.73	64.44	107.25	24 9 34	1401.1	-27.32	13.55
110.00	12 44 35	4350.44	22.41	171.17	60.34	63.49	13 57 5	3750.4	18.67	164.03

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-3.8032	TRA	11.6851	TC3	-7.2000	BAU	3.0791	SGT	14924.1	SGR	756.2	SG3	458.0	ST	5259.2	SR	677.8	SS	1304.5
RDE	.6685	RRA	-.0697	RC3	.2904	FAU	.07275	RRT	-.5430	RRF	-.6025	RTF	.9841	CRT	-.7544	CRS	.8570	CST	-.9847
FDE	-2.0015	FRA	4.2823	FC3	-1.9704	BSP	51874	SGB	14943.2	R23	.0800	R13	-.9842	LSA	5438.8	MSA	490.1	SSA	14.5
BDE	3.8615	BRA	11.6853	BC3	7.2058	FSP	1717	SG1	14929.7	SG2	634.7	THA	178.42	EL1	5284.2	EL2	442.8	ALF	174.41

LAUNCH DATE NOV 1 1964 FLIGHT TIME 180.00 ARRIVAL DATE APR 30 1965

HELIOCENTRIC CONIC DISTANCE 471.190 EARTH TO MARS

RL	148.46	LAL	-.00	LOL	38.61	VL	34.653	GAL	-7.96	AZL	87.51	HCA	153.03	SMA	226.06	ECC	.36708	INC	2.4912	V1	30.013
RP	244.34	LAP	1.13	LOP	191.66	VP	22.343	GAP	21.05	AZP	92.22	TAL	329.89	TAP	122.92	RCA	143.08	APO	309.05	V2	22.451
RC	131.411	GL	13.74	GP	-1.66	ZAL	133.84	ZAP	170.39	ETS	188.59	ZAE	157.04	ETE	353.89	ZAC	86.55	ETC	256.17	CLP	170.53

PLANETOCENTRIC CONIC

C3	39.447	VHL	6.281	DLA	14.93	RAL	180.16	RAD	6568.5	VEL	12.681	PTH	2.30	VHP	9.497	DPA	-1.14	RAP	181.86	ECC	1.6492

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 39 49	2866.23	-28.31	86.66	59.68	90.39	19 27 35	2266.2	-27.96	78.02
90.00	10 38 29	4543.50	10.89	191.39	50.75	63.70	11 54 13	3943.5	7.27	184.58
100.00	20 9 14	2577.85	-29.86	65.43	59.65	91.43	20 52 12	1977.9	-29.34	56.66
100.00	11 51 45	4307.12	12.27	173.30	50.03	62.53	13 3 32	3707.1	8.49	166.54
110.00	21 35 31	2307.90	-33.95	44.68	59.41	94.28	22 13 59	1707.9	-32.98	35.58
110.00	12 41 58	4149.84	15.84	159.32	47.98	59.31	13 51 7	3549.8	11.65	152.72

DIFFERENTIAL CORRECTIONS

TDE	1.3611	TRA	-3.1692	TC3	.6943	BAU	.3716
RDE	-.3790	RRA	.0317	RC3	-.1208	FAU	.07613
FDE	-.7232	FRA	2.5632	FC3	-1.6708	BSP	11378
BDE	1.4129	BRA	3.1693	BC3	.7047	FSP	801

MID-COURSE EXECUTION ACCURACY

SGT	3354.9	SGR	378.7	SG3	282.6		
RRT	-.5125	RRF	.4996	RTF	-.9014		
SGB	3376.2	R23	-.0388	R13	.9016		
SG1	3360.6	SG2	324.7	THA	176.66		

ORBIT DETERMINATION ACCURACY

ST	1532.4	SR	345.9	SS	806.6
CRT	-.8254	CRS	-.6909	CST	.9775
LSA	1747.5	MSA	253.4	SSA	25.6
EL1	1559.2	EL2	191.9	ALF	169.28

LAUNCH DATE NOV 1 1964 FLIGHT TIME 182.00 ARRIVAL DATE MAY 2 1965

HELIOCENTRIC CONIC DISTANCE 473.770 EARTH TO MARS

RL	148.46	LAL	-.00	LOL	38.61	VL	34.569	GAL	-7.77	AZL	87.48	HCA	153.94	SMA	223.86	ECC	.36010	INC	2.5185	V1	30.013
RP	244.11	LAP	1.11	LOP	192.57	VP	22.237	GAP	20.49	AZP	92.26	TAL	330.16	TAP	124.10	RCA	143.25	APO	304.47	V2	22.475
RC	133.550	GL	14.16	GP	-1.75	ZAL	133.42	ZAP	169.90	ETS	188.60	ZAE	156.87	ETE	353.90	ZAC	86.56	ETC	256.15	CLP	170.05

PLANETOCENTRIC CONIC

C3	37.874	VHL	6.154	DLA	15.45	RAL	180.02	RAD	6568.5	VEL	12.619	PTH	2.29	VHP	9.293	DPA	-1.40	RAP	182.21	ECC	1.6233

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 34 31	2874.46	-28.32	87.27	58.98	90.09	19 22 25	2274.5	-28.00	78.62
90.00	10 42 41	4514.71	10.01	189.73	50.01	63.37	11 57 56	3914.7	6.36	182.95
100.00	20 4 19	2584.83	-29.87	65.94	58.96	91.16	20 47 24	1984.8	-29.39	57.17
100.00	11 55 34	4279.57	11.40	171.71	49.29	62.18	13 6 53	3679.6	7.59	165.00
110.00	21 31 25	2312.34	-33.97	45.03	58.74	94.08	22 9 57	1712.3	-33.03	35.92
110.00	12 44 58	4124.83	14.97	157.91	47.22	58.90	13 53 43	3524.8	10.74	151.36

DIFFERENTIAL CORRECTIONS

TDE	1.3384	TRA	-3.1421	TC3	.7442	BAU	.3824
RDE	-.3636	RRA	.0440	RC3	-.1287	FAU	.07830
FDE	-.7261	FRA	2.6269	FC3	-1.7897	BSP	11605
BDE	1.3869	BRA	3.1424	BC3	.7553	FSP	845

MID-COURSE EXECUTION ACCURACY

SGT	3406.3	SGR	376.1	SG3	296.1		
RRT	-.5432	RRF	.5318	RTF	-.9046		
SGB	3427.0	R23	-.0431	R13	.9048		
SG1	3412.5	SG2	315.2	THA	176.54		

ORBIT DETERMINATION ACCURACY

ST	1543.5	SR	338.8	SS	819.1
CRT	-.8291	CRS	-.6911	CST	.9762
LSA	1761.6	MSA	253.1	SSA	25.3
EL1	1569.2	EL2	186.3	ALF	169.54

LAUNCH DATE NOV 1 1964 FLIGHT TIME 184.00 ARRIVAL DATE MAY 4 1965

HELIOCENTRIC CONIC DISTANCE 476.426 EARTH TO MARS

RL	148.46	LAL	-.00	LOL	38.61	VL	34.489	GAL	-7.60	AZL	87.45	HCA	154.85	SMA	221.79	ECC	.35338	INC	2.5477	V1	30.013
RP	243.87	LAP	1.08	LOP	193.48	VP	22.136	GAP	19.92	AZP	92.31	TAL	330.44	TAP	125.28	RCA	143.41	APO	300.16	V2	22.498
RC	135.719	GL	14.59	GP	-1.85	ZAL	132.98	ZAP	169.41	ETS	188.64	ZAE	156.74	ETE	353.88	ZAC	86.56	ETC	256.13	CLP	169.57

PLANETOCENTRIC CONIC

C3	36.392	VHL	6.033	DLA	15.99	RAL	179.88	RAD	6568.4	VEL	12.560	PTH	2.28	VHP	9.093	DPA	-1.66	RAP	182.55	ECC	1.5989

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 28 56	2883.84	-28.32	87.95	58.31	89.74	19 17 0	2283.8	-28.05	79.30
90.00	10 47 9	4485.15	9.11	188.03	49.31	63.07	12 1 55	3885.1	5.42	181.28
100.00	19 59 10	2592.87	-29.88	66.54	58.30	90.84	20 42 23	1992.9	-29.44	57.76
100.00	11 59 37	4251.33	10.50	170.10	48.58	61.85	13 10 28	3651.3	6.65	163.43
110.00	21 27 7	2317.65	-33.99	45.44	58.10	93.83	22 5 45	1717.7	-33.09	36.32
110.00	12 48 9	4099.33	14.07	156.48	46.48	58.52	13 56 28	3499.3	9.80	149.98

DIFFERENTIAL CORRECTIONS

TDE	1.3161	TRA	-3.1133	TC3	.7969	BAU	.3934
RDE	-.3487	RRA	.0564	RC3	-.1372	FAU	.08057
FDE	-.7281	FRA	2.6919	FC3	-1.9168	BSP	11812
BDE	1.3615	BRA	3.1138	BC3	.8086	FSP	891

MID-COURSE EXECUTION ACCURACY

SGT	3456.6	SGR	374.4	SG3	310.3		
RRT	-.5753	RRF	.5652	RTF	-.9077		
SGB	3476.8	R23	-.0476	R13	.9079		
SG1	3463.4	SG2	305.7	THA	176.41		

ORBIT DETERMINATION ACCURACY

ST	1554.0	SR	331.6	SS	831.3
CRT	-.8335	CRS	-.6916	CST	.9747
LSA	1775.1	MSA	253.3	SSA	24.9
EL1	1578.7	EL2	180.4	ALF	169.78

LAUNCH DATE NOV 1 1964 FLIGHT TIME 186.00 ARRIVAL DATE MAY 6 1965

HELIOCENTRIC CONIC DISTANCE 479.153 EARTH TO MARS

RL	148.46	LAL	-.00	LOL	38.61	VL	34.412	GAL	-7.42	AZL	87.42	HCA	155.76	SMA	219.84	ECC	.34692	INC	2.5790	V1	30.013
RP	243.63	LAP	1.06	LOP	194.39	VP	22.041	GAP	19.36	AZP	92.35	TAL	330.72	TAP	126.48	RCA	143.57	APO	296.11	V2	22.522
RC	137.915	GL	15.04	GP	-1.95	ZAL	132.53	ZAP	168.90	ETS	188.71	ZAE	156.66	ETE	353.82	ZAC	86.55	ETC	256.11	CLP	169.07

PLANETOCENTRIC CONIC

C3	34.995	VHL	5.916	DLA	16.54	RAL	179.75	RAD	6568.4	VEL	12.505	PTH	2.26	VHP	8.897	DPA	-1.93	RAP	182.89	ECC	1.5759

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 23 3	2894.49	-28.31	88.73	57.66	89.35	19 11 18	2294.5	-28.10	80.07
90.00	10 51 56	4454.73	8.17	186.29	48.65	62.79	12 6 11	3854.7	4.45	179.57
100.00	19 53 44	2602.06	-29.89	67.22	57.66	90.48	20 37 6	2002.1	-29.50	58.44
100.00	12 3 56	4222.40	9.56	168.46	47.90	61.54	13 14 19	3622.4	5.69	161.82
110.00	21 22 38	2323.91	-34.02	45.93	57.49	93.55	22 1 22	1723.9	-33.16	36.80
110.00	12 51 32	4073.31	13.14	155.04	45.78	58.15	13 59 25	3473.3	8.83	148.58

DIFFERENTIAL CORRECTIONS

TDE	1.2941	TRA	-3.0829	TC3	.8534	BAU	.4051
RDE	-.3343	RRA	.0689	RC3	-.1466	FAU	.08297
FDE	-.7291	FRA	2.7587	FC3	-2.0526	BSP	11990
BDE	1.3366	BRA	3.0837	BC3	.8659	FSP	939

MID-COURSE EXECUTION ACCURACY

SGT	3506.1	SGR	373.9	SG3	325.2		
RRT	-.6087	RRF	.5998	RTF	-.9108		
SGB	3526.0	R23	-.0522	R13	.9111		
SG1	3513.6	SG2	296.0	THA	176.26		

ORBIT DETERMINATION ACCURACY

ST	1563.7	SR	324.5	SS	843.2
CRT	-.8386	CRS	-.6925	CST	.9729
LSA	1787.8	MSA	254.2	SSA	24.4
EL1	1587.5	EL2	174.1	ALF	170.01

LAUNCH DATE NOV 1 1964 FLIGHT TIME 188.00 ARRIVAL DATE MAY 8 1965

HELIOCENTRIC CONIC DISTANCE 481.946 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 34.338 GAL -7.25 AZL 87.39 HCA 156.67 SMA 218.01 ECC .34071 INC 2.6127 V1 30.013
RP 243.38 LAP 1.03 LOP 195.30 VP 21.951 GAP 18.81 AZP 92.40 TAL 331.00 TAP 127.67 RCA 143.73 APO 292.28 V2 22.547
RC 140.134 GL 15.52 GP -2.07 ZAL 132.06 ZAP 168.39 ETS 188.81 ZAE 156.62 ETE 353.73 ZAC 86.52 ETC 256.08 CLP 168.57

PLANETOCENTRIC CONIC

C3 33.682 VHL 5.804 DLA 17.12 RAL 179.61 RAD 6568.3 VEL 12.452 PTH 2.25 VHP 8.706 DPA -2.21 RAP 183.22 ECC 1.5543

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 16 51	2906.54	-28.30	89.61	57.03	88.91	19 5 17	2306.5	-28.15	80.95
90.00	10 57 3	4423.36	7.18	184.51	48.01	62.54	12 10 47	3823.4	3.45	177.82
100.00	19 48 2	2612.50	-29.89	68.00	57.05	90.07	20 31 34	2012.5	-29.56	59.21
100.00	12 8 34	4192.63	8.59	166.79	47.26	61.26	13 18 26	3592.6	4.69	160.17
110.00	21 17 56	2331.19	-34.05	46.50	56.91	93.21	21 56 48	1731.2	-33.23	37.35
110.00	12 55 8	4046.71	12.18	153.58	45.11	57.81	14 2 35	3446.7	7.84	147.17

DIFFERENTIAL CORRECTIONS
TDE 1.2709 TRA-3.0528 TC3 .9109 BAU .4162
RDE -.3204 RRA .0818 RC3 -.1567 FAU .08545
FDE -.7281 FRA 2.8280 FC3-2.1964 BSP 12180
BDE 1.3107 BRA 3.0539 BC3 .9243 FSP 990

MID-COURSE EXECUTION ACCURACY
SGT 3555.0 SGR 374.5 SG3 340.7
RRT -.6426 RRF .6350 RTF -.9138
SGB 3574.7 R23 -.0574 R13 .9141
SG1 3563.2 SG2 286.3 THA 176.10

ORBIT DETERMINATION ACCURACY
ST 1571.8 SR 317.4 SS 854.5
CRT -.8440 CRS -.6933 CST .9708
LSA 1798.7 MSA 255.8 SSA 23.8
EL1 1594.7 EL2 167.8 ALF 170.22

LAUNCH DATE NOV 1 1964 FLIGHT TIME 190.00 ARRIVAL DATE MAY 10 1965

HELIOCENTRIC CONIC DISTANCE 484.801 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 34.267 GAL -7.09 AZL 87.35 HCA 157.59 SMA 216.28 ECC .33473 INC 2.6488 V1 30.013
RP 243.12 LAP 1.01 LOP 196.22 VP 21.866 GAP 18.26 AZP 92.45 TAL 331.29 TAP 128.88 RCA 143.88 APO 288.67 V2 22.572
RC 142.373 GL 16.02 GP -2.19 ZAL 131.58 ZAP 167.86 ETS 188.94 ZAE 156.63 ETE 353.60 ZAC 86.49 ETC 256.06 CLP 168.06

PLANETOCENTRIC CONIC

C3 32.445 VHL 5.696 DLA 17.73 RAL 179.48 RAD 6568.3 VEL 12.402 PTH 2.24 VHP 8.519 DPA -2.49 RAP 183.53 ECC 1.5340

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 10 16	2920.16	-28.28	90.61	56.44	88.41	18 58 56	2320.2	-28.20	81.94
90.00	11 2 34	4390.89	6.16	182.67	47.43	62.31	12 15 45	3790.9	2.41	176.00
100.00	19 41 59	2624.36	-29.89	68.88	56.47	89.61	20 25 44	2024.4	-29.62	60.09
100.00	12 13 32	4161.93	7.58	165.07	46.65	61.00	13 22 54	3561.9	3.66	158.48
110.00	21 13 0	2339.59	-34.08	47.15	56.36	92.82	21 52 0	1739.6	-33.31	37.99
110.00	12 59 0	4019.46	11.18	152.09	44.48	57.49	14 6 0	3419.5	6.82	145.72

DIFFERENTIAL CORRECTIONS
TDE 1.2554 TRA-3.0139 TC3 .9804 BAU .4315
RDE -.3073 RRA .0946 RC3 -.1681 FAU .08808
FDE -.7263 FRA 2.8986 FC3-2.3503 BSP 12174
BDE 1.2925 BRA 3.0154 BC3 .9947 FSP 1042

MID-COURSE EXECUTION ACCURACY
SGT 3601.7 SGR 377.1 SG3 357.0
RRT -.6790 RRF .6703 RTF -.9176
SGB 3621.4 R23 -.0594 R13 .9179
SG1 3610.8 SG2 276.1 THA 175.91

ORBIT DETERMINATION ACCURACY
ST 1583.5 SR 310.6 SS 865.7
CRT -.8522 CRS -.6947 CST .9675
LSA 1812.6 MSA 259.9 SSA 22.7
EL1 1605.7 EL2 160.3 ALF 170.42

LAUNCH DATE NOV 1 1964 FLIGHT TIME 192.00 ARRIVAL DATE MAY 12 1965

HELIOCENTRIC CONIC DISTANCE 487.713 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 34.199 GAL -6.92 AZL 87.31 HCA 158.51 SMA 214.65 ECC .32899 INC 2.6881 V1 30.013
RP 242.87 LAP .98 LOP 197.14 VP 21.786 GAP 17.71 AZP 92.50 TAL 331.58 TAP 130.09 RCA 144.03 APO 285.26 V2 22.598
RC 144.629 GL 16.54 GP -2.33 ZAL 131.09 ZAP 167.32 ETS 189.10 ZAE 156.67 ETE 353.42 ZAC 86.44 ETC 256.05 CLP 167.54

PLANETOCENTRIC CONIC

C3 31.286 VHL 5.593 DLA 18.36 RAL 179.35 RAD 6568.2 VEL 12.356 PTH 2.23 VHP 8.336 DPA -2.78 RAP 183.83 ECC 1.5149

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 3 16	2935.51	-28.24	91.73	55.87	87.85	18 52 12	2335.5	-28.24	83.07
90.00	11 8 32	4357.24	5.09	180.77	46.89	62.11	12 21 10	3757.2	1.32	174.12
100.00	19 35 37	2637.75	-29.88	69.88	55.92	89.09	20 19 34	2037.7	-29.69	61.08
100.00	12 18 53	4130.23	6.53	163.30	46.10	60.77	13 27 44	3530.2	2.59	156.73
110.00	21 7 50	2349.22	-34.11	47.90	55.86	92.38	21 46 59	1749.2	-33.40	38.73
110.00	13 3 10	3991.53	10.16	150.58	43.89	57.18	14 9 41	3391.5	5.76	144.24

DIFFERENTIAL CORRECTIONS
TDE 1.2260 TRA-2.9885 TC3 1.0347 BAU .4393
RDE -.2941 RRA .1083 RC3 -.1800 FAU .09086
FDE -.7238 FRA 2.9711 FC3-2.5141 BSP 12497
BDE 1.2608 BRA 2.9905 BC3 1.0502 FSP 1096

MID-COURSE EXECUTION ACCURACY
SGT 3649.7 SGR 380.8 SG3 374.0
RRT -.7114 RRF .7065 RTF -.9195
SGB 3669.5 R23 -.0695 R13 .9199
SG1 3659.8 SG2 266.9 THA 175.73

ORBIT DETERMINATION ACCURACY
ST 1585.8 SR 303.4 SS 876.9
CRT -.8575 CRS -.6975 CST .9659
LSA 1818.5 MSA 261.1 SSA 22.3
EL1 1607.2 EL2 154.0 ALF 170.60

LAUNCH DATE NOV 1 1964 FLIGHT TIME 194.00 ARRIVAL DATE MAY 14 1965

HELIOCENTRIC CONIC DISTANCE 490.678 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 34.134 GAL -6.77 AZL 87.27 HCA 159.43 SMA 213.11 ECC .32346 INC 2.7310 V1 30.013
RP 242.60 LAP .96 LOP 198.06 VP 21.710 GAP 17.17 AZP 92.56 TAL 331.87 TAP 131.30 RCA 144.18 APO 282.04 V2 22.624
RC 146.900 GL 17.09 GP -2.48 ZAL 130.58 ZAP 166.77 ETS 189.30 ZAE 156.76 ETE 353.20 ZAC 86.38 ETC 256.03 CLP 167.00

PLANETOCENTRIC CONIC

C3 30.199 VHL 5.495 DLA 19.02 RAL 179.23 RAD 6568.2 VEL 12.311 PTH 2.22 VHP 8.157 DPA -3.08 RAP 184.12 ECC 1.4970

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 55 48	2952.85	-28.19	93.00	55.34	87.22	18 45 1	2352.9	-28.28	84.33
90.00	11 15 3	4322.13	3.97	178.80	46.40	61.94	12 27 5	3722.1	.19	172.16
100.00	19 28 49	2652.90	-29.86	71.00	55.41	88.49	20 13 2	2052.9	-29.75	62.20
100.00	12 24 43	4097.32	5.43	161.47	45.59	60.56	13 33 0	3497.3	1.47	154.93
110.00	21 2 22	2360.21	-34.14	48.76	55.39	91.87	21 41 42	1760.2	-33.50	39.57
110.00	13 7 39	3962.77	9.09	149.03	43.35	56.91	14 13 42	3362.8	4.67	142.73

DIFFERENTIAL CORRECTIONS
TDE 1.2010 TRA-2.9573 TC3 1.0965 BAU .4495
RDE -.2815 RRA .1224 RC3 -.1932 FAU .09369
FDE -.7177 FRA 3.0470 FC3-2.6860 BSP 12689
BDE 1.2336 BRA 2.9598 BC3 1.1134 FSP 1155

MID-COURSE EXECUTION ACCURACY
SGT 3695.5 SGR 386.6 SG3 391.8
RRT -.7446 RRF .7415 RTF -.9221
SGB 3715.7 R23 -.0773 R13 .9225
SG1 3706.8 SG2 257.3 THA 175.52

ORBIT DETERMINATION ACCURACY
ST 1589.5 SR 296.4 SS 887.0
CRT -.8648 CRS -.6998 CST .9630
LSA 1825.0 MSA 265.1 SSA 21.4
EL1 1610.2 EL2 146.9 ALF 170.76

LAUNCH DATE NOV 1 1964 FLIGHT TIME 196.00 ARRIVAL DATE MAY 16 1965

HELIOCENTRIC CONIC DISTANCE 493.693 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 34.071 GAL -6.61 AZL 87.22 HCA 160.35 SMA 211.65 ECC .31814 INC 2.7775 V1 30.013
RP 242.34 LAP .93 LOP 198.98 VP 21.639 GAP 16.63 AZP 92.62 TAL 332.17 TAP 132.52 RCA 144.32 APO 278.99 V2 22.651
RC 149.184 GL 17.67 GP -2.65 ZAL 130.05 ZAP 166.21 ETS 189.53 ZAE 156.89 ETE 352.92 ZAC 86.30 ETC 256.01 CLP 166.46

PLANETOCENTRIC CONIC

C3 29.181 VHL 5.402 DLA 19.71 RAL 179.11 RAD 6568.2 VEL 12.270 PTH 2.21 VHP 7.982 DPA -3.39 RAP 184.40 ECC 1.4802

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 47 46	2972.50	-28.12	94.43	54.84	86.50	18 37 19	2372.5	-28.31	85.77
90.00	11 22 11	4285.31	2.79	176.74	45.97	61.81	12 33 36	3685.3	-1.00	170.11
100.00	19 21 34	2670.05	-29.82	72.28	54.93	87.83	20 6 4	2070.0	-29.80	63.47
100.00	12 31 4	4062.99	4.28	159.57	45.15	60.39	13 38 47	3463.0	.31	153.04
110.00	20 56 35	2372.73	-34.16	49.74	54.97	91.30	21 36 8	1772.7	-33.60	40.54
110.00	13 12 32	3933.07	7.98	147.44	42.87	56.65	14 18 5	3333.1	3.54	141.17

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.1798 TRA-2.9214 TC3 1.1663 BAU .4622 SGT 3740.0 SGR 395.1 SG3 410.5 ST 1594.4 SR 289.8 SS 897.4
RDE -.2696 RRA .1370 RC3 -.2080 FAU .09676 RRT -.7775 RRF .7756 RTF -.9250 CRT -.8740 CRS -.7037 CST .9594
FDE -.7115 FRA 3.1238 FC3-2.8707 BSP 12779 SGB 3760.8 R23 -.0846 R13 .9254 LSA 1832.4 MSA 270.6 SSA 20.4
BDE 1.2102 BRA 2.9246 BC3 1.1848 FSP 1214 SG1 3752.6 SG2 247.6 THA 175.28 EL1 1614.6 EL2 139.1 ALF 170.91

LAUNCH DATE NOV 1 1964 FLIGHT TIME 198.00 ARRIVAL DATE MAY 18 1965

HELIOCENTRIC CONIC DISTANCE 496.755 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 34.011 GAL -6.46 AZL 87.17 HCA 161.27 SMA 210.28 ECC .31303 INC 2.8288 V1 30.013
RP 242.06 LAP .91 LOP 199.90 VP 21.573 GAP 16.10 AZP 92.68 TAL 332.47 TAP 133.74 RCA 144.45 APO 276.10 V2 22.678
RC 151.478 GL 18.29 GP -2.83 ZAL 129.51 ZAP 165.63 ETS 189.80 ZAE 157.05 ETE 352.57 ZAC 86.20 ETC 255.99 CLP 165.91

PLANETOCENTRIC CONIC

C3 28.232 VHL 5.313 DLA 20.43 RAL 179.01 RAD 6568.1 VEL 12.231 PTH 2.20 VHP 7.812 DPA -3.72 RAP 184.66 ECC 1.4646

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 39 5	2994.81	-28.01	96.05	54.38	85.69	18 29 0	2394.8	-28.32	87.40
90.00	11 30 4	4246.47	1.54	174.57	45.62	61.72	12 40 50	3646.5	-2.25	167.94
100.00	19 13 46	2689.49	-29.76	73.72	54.50	87.07	19 58 36	2089.5	-29.85	64.92
100.00	12 38 4	4027.02	3.07	157.59	44.77	60.25	13 45 11	3427.0	-.91	151.07
110.00	20 50 28	2386.97	-34.18	50.85	54.61	90.64	21 30 15	1787.0	-33.71	41.63
110.00	13 17 52	3902.30	6.83	145.81	42.44	56.42	14 22 54	3302.3	2.37	139.56

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.1523 TRA-2.8909 TC3 1.2281 BAU .4712 SGT 3783.4 SGR 405.9 SG3 430.0 ST 1594.2 SR 283.1 SS 907.0
RDE -.2579 RRA .1526 RC3 -.2240 FAU .09988 RRT -.8075 RRF .8081 RTF -.9271 CRT -.8826 CRS -.7080 CST .9560
FDE -.7016 FRA 3.2046 FC3-3.0628 BSP 13003 SGB 3805.1 R23 -.0957 R13 .9277 LSA 1835.1 MSA 276.0 SSA 19.5
BDE 1.1808 BRA 2.8949 BC3 1.2484 FSP 1279 SG1 3797.6 SG2 238.6 THA 175.03 EL1 1613.8 EL2 131.5 ALF 171.03

LAUNCH DATE NOV 1 1964 FLIGHT TIME 200.00 ARRIVAL DATE MAY 20 1965

HELIOCENTRIC CONIC DISTANCE 499.861 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 33.953 GAL -6.31 AZL 87.11 HCA 162.20 SMA 208.97 ECC .30812 INC 2.8852 V1 30.013
RP 241.79 LAP .88 LOP 200.83 VP 21.511 GAP 15.57 AZP 92.75 TAL 332.77 TAP 134.97 RCA 144.58 APO 273.36 V2 22.706
RC 153.781 GL 18.96 GP -3.04 ZAL 128.95 ZAP 165.04 ETS 190.11 ZAE 157.25 ETE 352.16 ZAC 86.08 ETC 255.98 CLP 165.34

PLANETOCENTRIC CONIC

C3 27.349 VHL 5.230 DLA 21.20 RAL 178.93 RAD 6568.1 VEL 12.195 PTH 2.19 VHP 7.644 DPA -4.05 RAP 184.90 ECC 1.4501

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 29 36	3020.32	-27.87	97.91	53.96	84.78	18 19 56	2420.3	-28.30	89.27
90.00	11 38 52	4205.13	.20	172.27	45.35	61.68	12 48 57	3605.1	-3.58	165.63
100.00	19 5 20	2711.62	-29.67	75.36	54.12	86.21	19 50 31	2111.6	-29.88	66.56
100.00	12 45 49	3989.06	1.78	155.51	44.47	60.16	13 52 18	3389.1	-2.20	148.99
110.00	20 43 55	2403.18	-34.18	52.11	54.30	89.89	21 23 58	1803.2	-33.82	42.89
110.00	13 23 44	3870.26	5.62	144.12	42.09	56.23	14 28 14	3270.3	1.15	137.89

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.1265 TRA-2.8579 TC3 1.2939 BAU .4813 SGT 3825.3 SGR 420.0 SG3 450.3 ST 1593.7 SR 276.8 SS 916.2
RDE -.2466 RRA .1690 RC3 -.2418 FAU .10317 RRT -.8357 RRF .8384 RTF -.9294 CRT -.8927 CRS -.7133 CST .9517
FDE -.6893 FRA 3.2879 FC3-3.2659 BSP 13182 SGB 3848.3 R23 -.1072 R13 .9300 LSA 1837.2 MSA 283.3 SSA 18.5
BDE 1.1532 BRA 2.8629 BC3 1.3163 FSP 1346 SG1 3841.5 SG2 229.7 THA 174.74 EL1 1612.9 EL2 123.2 ALF 171.13

LAUNCH DATE NOV 1 1964 FLIGHT TIME 202.00 ARRIVAL DATE MAY 22 1965

HELIOCENTRIC CONIC DISTANCE 503.008 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 33.898 GAL -6.17 AZL 87.05 HCA 163.13 SMA 207.74 ECC .30339 INC 2.9478 V1 30.013
RP 241.51 LAP .86 LOP 201.76 VP 21.453 GAP 15.05 AZP 92.82 TAL 333.07 TAP 136.20 RCA 144.71 APO 270.77 V2 22.734
RC 156.092 GL 19.66 GP -3.27 ZAL 128.37 ZAP 164.43 ETS 190.48 ZAE 157.48 ETE 351.65 ZAC 85.93 ETC 255.96 CLP 164.77

PLANETOCENTRIC CONIC

C3 26.531 VHL 5.151 DLA 22.01 RAL 178.86 RAD 6568.1 VEL 12.162 PTH 2.18 VHP 7.481 DPA -4.41 RAP 185.12 ECC 1.4366

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 19 7	3049.72	-27.67	100.03	53.58	83.73	18 9 57	2449.7	-28.25	91.42
90.00	11 48 50	4160.65	-1.23	169.79	45.18	61.71	12 58 10	3560.6	-5.00	163.14
100.00	18 56 7	2736.97	-29.54	77.23	53.79	85.23	19 41 44	2137.0	-29.89	68.44
100.00	12 54 31	3948.63	.41	153.29	44.26	60.11	14 0 20	3348.6	-3.57	146.76
110.00	20 36 53	2421.67	-34.17	53.56	54.06	89.03	21 17 15	1821.7	-33.93	44.32
110.00	13 30 14	3836.69	4.35	142.35	41.81	56.06	14 34 10	3236.7	-.14	136.14

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE 1.1013 TRA-2.8234 TC3 1.3616 BAU .4918 SGT 3865.7 SGR 437.8 SG3 471.6 ST 1592.2 SR 270.9 SS 925.4
RDE -.2358 RRA .1865 RC3 -.2618 FAU .10664 RRT -.8614 RRF .8661 RTF -.9316 CRT -.9040 CRS -.7203 CST .9468
FDE -.6749 FRA 3.3736 FC3-3.4798 BSP 13321 SGB 3890.4 R23 -.1200 R13 .9323 LSA 1838.3 MSA 292.0 SSA 17.3
BDE 1.1263 BRA 2.8296 BC3 1.3865 FSP 1415 SG1 3884.1 SG2 221.3 THA 174.41 EL1 1611.1 EL2 114.4 ALF 171.21

LAUNCH DATE NOV 1 1964 FLIGHT TIME 204.00 ARRIVAL DATE MAY 24 1965

HELIOCENTRIC CONIC DISTANCE 506.194 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 33.844 GAL -6.03 AZL 86.98 HCA 164.06 SMA 206.57 ECC .29885 INC 3.0176 V1 30.013
RP 241.22 LAP .83 LOP 202.69 VP 21.399 GAP 14.53 AZP 92.90 TAL 333.38 TAP 137.44 RCA 144.84 APO 268.31 V2 22.762
RC 158.408 GL 20.42 GP -3.53 ZAL 127.77 ZAP 163.80 ETS 190.90 ZAE 157.75 ETE 351.05 ZAC 85.75 ETC 255.94 CLP 164.18

PLANETOCENTRIC CONIC

C3 25.779 VHL 5.077 DLA 22.87 RAL 178.82 RAD 6568.0 VEL 12.131 PTH 2.17 VHP 7.322 DPA -4.79 RAP 185.32 ECC 1.4243

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 7 21	3084.03	-27.39	102.51	53.25	82.52	17 58 45	2484.0	-28.14	93.92
90.00	12 0 15	4112.10	-2.80	167.08	45.13	61.81	13 8 47	3512.1	-6.54	160.40
100.00	18 45 55	2766.26	-29.36	79.39	53.51	84.11	19 32 1	2166.3	-29.87	70.62
100.00	13 4 23	3905.11	-1.06	150.90	44.17	60.12	14 9 28	3305.1	-5.03	144.36
110.00	20 29 17	2442.84	-34.13	55.21	53.89	88.06	21 10 0	1842.8	-34.03	45.97
110.00	13 37 30	3801.29	3.00	140.50	41.63	55.93	14 40 51	3201.3	-1.49	134.30

DIFFERENTIAL CORRECTIONS
TDE 1.0758 TRA-2.7883 TC3 1.4298 BAU .5024
RDE -.2253 RRA .2056 RC3 -.2842 FAU .11023
FDE -.6558 FRA 3.4634 FC3-3.7018 BSP 13455
BDE 1.0991 BRA 2.7959 BC3 1.4578 FSP 1490

MID-COURSE EXECUTION ACCURACY
SGT 3904.3 SGR 459.7 SG3 493.8
RRT -.8844 RRF .8909 RTF -.9339
SGB 3931.2 R23 -.1338 R13 .9347
SG1 3925.4 SG2 213.4 THA 174.04

ORBIT DETERMINATION ACCURACY
ST 1589.1 SR 265.4 SS 933.9
CRT -.9163 CRS -.7281 CST .9407
LSA 1837.3 MSA 303.0 SSA 16.1
EL1 1607.7 EL2 105.0 ALF 171.26

LAUNCH DATE NOV 1 1964 FLIGHT TIME 206.00 ARRIVAL DATE MAY 26 1965

HELIOCENTRIC CONIC DISTANCE 509.418 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 33.793 GAL -5.90 AZL 86.90 HCA 164.99 SMA 205.47 ECC .29449 INC 3.0960 V1 30.013
RP 240.93 LAP .80 LOP 203.62 VP 21.349 GAP 14.02 AZP 92.99 TAL 333.68 TAP 138.68 RCA 144.96 APO 265.97 V2 22.791
RC 160.729 GL 21.25 GP -3.83 ZAL 127.15 ZAP 163.15 ETS 191.39 ZAE 158.04 ETE 350.32 ZAC 85.53 ETC 255.93 CLP 163.58

PLANETOCENTRIC CONIC

C3 25.093 VHL 5.009 DLA 23.78 RAL 178.81 RAD 6568.0 VEL 12.102 PTH 2.17 VHP 7.166 DPA -5.20 RAP 185.50 ECC 1.4130

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 53 52	3124.79	-26.99	105.42	52.95	81.11	17 45 57	2524.8	-27.95	96.89
90.00	12 13 39	4058.02	-4.53	164.05	45.23	62.02	13 21 17	3458.0	-8.24	157.33
100.00	18 34 26	2800.51	-29.09	81.90	53.29	82.81	19 21 7	2200.5	-29.78	73.16
100.00	13 15 46	3857.54	-2.67	148.29	44.21	60.22	14 20 3	3257.5	-6.62	141.72
110.00	20 20 58	2467.23	-34.06	57.11	53.81	86.93	21 2 5	1867.2	-34.11	47.87
110.00	13 45 44	3763.58	1.56	138.53	41.57	55.85	14 48 27	3163.6	-2.93	132.33

DIFFERENTIAL CORRECTIONS
TDE 1.0595 TRA-2.7443 TC3 1.5108 BAU .5174
RDE -.2157 RRA .2258 RC3 -.3102 FAU .11410
FDE -.6361 FRA 3.5541 FC3-3.9365 BSP 13373
BDE 1.0812 BRA 2.7535 BC3 1.5423 FSP 1563

MID-COURSE EXECUTION ACCURACY
SGT 3940.3 SGR 487.0 SG3 517.1
RRT -.9056 RRF .9124 RTF -.9367
SGB 3970.2 R23 -.1457 R13 .9376
SG1 3964.9 SG2 205.3 THA 173.60

ORBIT DETERMINATION ACCURACY
ST 1590.5 SR 261.0 SS 942.9
CRT -.9311 CRS -.7382 CST .9324
LSA 1839.9 MSA 318.6 SSA 14.6
EL1 1609.0 EL2 94.1 ALF 171.28

LAUNCH DATE NOV 1 1964 FLIGHT TIME 208.00 ARRIVAL DATE MAY 28 1965

HELIOCENTRIC CONIC DISTANCE 512.674 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 33.744 GAL -5.77 AZL 86.82 HCA 165.93 SMA 204.42 ECC .29029 INC 3.1850 V1 30.013
RP 240.64 LAP .77 LOP 204.56 VP 21.302 GAP 13.51 AZP 93.09 TAL 333.99 TAP 139.92 RCA 145.08 APO 263.76 V2 22.821
RC 163.052 GL 22.15 GP -4.17 ZAL 126.50 ZAP 162.47 ETS 191.95 ZAE 158.36 ETE 349.44 ZAC 85.27 ETC 255.91 CLP 162.96

PLANETOCENTRIC CONIC

C3 24.477 VHL 4.947 DLA 24.77 RAL 178.84 RAD 6568.0 VEL 12.077 PTH 2.16 VHP 7.014 DPA -5.64 RAP 185.65 ECC 1.4028

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 37 56	3174.42	-26.42	108.94	52.69	79.43	17 30 51	2574.4	-27.62	100.48
90.00	12 29 49	3996.16	-6.49	160.56	45.54	62.38	13 36 25	3396.2	-10.14	153.78
100.00	18 21 18	2841.17	-28.71	84.86	53.13	81.30	19 8 39	2241.2	-29.62	76.18
100.00	13 29 8	3804.64	-4.46	145.38	44.42	60.41	14 32 33	3204.6	-8.36	138.77
110.00	20 11 47	2495.51	-33.94	59.31	53.83	85.64	20 53 22	1895.5	-34.17	50.07
110.00	13 55 8	3723.07	.01	136.42	41.64	55.82	14 57 11	3123.1	-4.47	130.20

DIFFERENTIAL CORRECTIONS
TDE 1.0220 TRA-2.7206 TC3 1.5567 BAU .5212
RDE -.2053 RRA .2495 RC3 -.3376 FAU .11792
FDE -.6072 FRA 3.6536 FC3-4.1708 BSP 13792
BDE 1.0425 BRA 2.7320 BC3 1.5929 FSP 1649

MID-COURSE EXECUTION ACCURACY
SGT 3976.6 SGR 519.0 SG3 541.2
RRT -.9206 RRF .9315 RTF -.9377
SGB 4010.3 R23 -.1692 R13 .9387
SG1 4005.3 SG2 201.2 THA 173.13

ORBIT DETERMINATION ACCURACY
ST 1576.9 SR 256.4 SS 951.3
CRT -.9429 CRS -.7501 CST .9264
LSA 1830.0 MSA 329.0 SSA 13.7
EL1 1595.4 EL2 84.4 ALF 171.26

LAUNCH DATE NOV 1 1964 FLIGHT TIME 210.00 ARRIVAL DATE MAY 30 1965

HELIOCENTRIC CONIC DISTANCE 515.964 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 33.697 GAL -5.64 AZL 86.71 HCA 166.86 SMA 203.42 ECC .28626 INC 3.2864 V1 30.013
RP 240.34 LAP .75 LOP 205.49 VP 21.260 GAP 13.01 AZP 93.20 TAL 334.29 TAP 141.16 RCA 145.19 APO 261.65 V2 22.851
RC 165.375 GL 23.14 GP -4.55 ZAL 125.82 ZAP 161.77 ETS 192.60 ZAE 158.71 ETE 348.38 ZAC 84.96 ETC 255.90 CLP 162.33

PLANETOCENTRIC CONIC

C3 23.932 VHL 4.892 DLA 25.83 RAL 178.91 RAD 6568.0 VEL 12.054 PTH 2.15 VHP 6.866 DPA -6.12 RAP 185.76 ECC 1.3939

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 18 5	3237.77	-25.56	113.38	52.41	77.37	17 12 3	2637.8	-27.04	105.03
90.00	12 50 16	3921.76	-8.82	156.33	46.13	62.98	13 55 38	3321.8	-12.38	149.46
100.00	18 5 42	2890.83	-28.15	88.45	53.01	79.50	18 53 53	2290.8	-29.31	79.83
100.00	13 45 20	3743.94	-6.49	142.01	44.87	60.76	14 47 44	3143.9	-10.34	135.34
110.00	20 1 26	2528.73	-33.74	61.88	53.95	84.13	20 43 35	1928.7	-34.18	52.67
110.00	14 6 6	3678.80	-1.68	134.11	41.90	55.85	15 7 24	3078.8	-6.15	127.87

DIFFERENTIAL CORRECTIONS
TDE .9978 TRA-2.6834 TC3 1.6212 BAU .5321
RDE -.1960 RRA .2751 RC3 -.3702 FAU .12211
FDE -.5780 FRA 3.7527 FC3-4.4173 BSP 13886
BDE 1.0169 BRA 2.6975 BC3 1.6629 FSP 1729

MID-COURSE EXECUTION ACCURACY
SGT 4009.2 SGR 558.6 SG3 566.4
RRT -.9344 RRF .9472 RTF -.9396
SGB 4048.0 R23 -.1884 R13 .9408
SG1 4043.2 SG2 197.3 THA 172.56

ORBIT DETERMINATION ACCURACY
ST 1570.1 SR 253.6 SS 960.4
CRT -.9573 CRS -.7649 CST .9173
LSA 1825.5 MSA 345.5 SSA 12.5
EL1 1588.8 EL2 72.5 ALF 171.19

LAUNCH DATE NOV 1 1964 FLIGHT TIME 212.00 ARRIVAL DATE JUN 1 1965

HELIOCENTRIC CONIC DISTANCE 519.285 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 33.652 GAL -5.51 AZL 86.60 HCA 167.80 SMA 202.48 ECC .28239 INC 3.4034 V1 30.013
RP 240.04 LAP .72 LOP 206.43 VP 21.221 GAP 12.51 AZP 93.33 TAL 334.60 TAP 142.40 RCA 145.30 APO 259.65 V2 22.881
RC 167.697 GL 24.24 GP -5.01 ZAL 125.11 ZAP 161.03 ETS 193.37 ZAE 159.07 ETE 347.09 ZAC 84.58 ETC 255.88 CLP 161.68

PLANETOCENTRIC CONIC

C3 23.466 VHL 4.844 DLA 26.99 RAL 179.05 RAD 6568.0 VEL 12.035 PTH 2.15 VHP 6.722 DPA -6.65 RAP 185.84 ECC 1.3862

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 50 44	3326.54	-24.09	119.47	52.02	74.65	16 46 11	2726.5	-25.97	111.30
90.00	13 18 43	3823.37	-11.81	150.65	47.17	64.08	14 22 27	3223.4	-15.20	143.62
100.00	17 46 17	2954.06	-27.28	92.94	52.90	77.28	18 35 31	2354.1	-28.76	84.45
100.00	14 5 52	3671.09	-8.89	137.94	45.64	61.34	15 7 3	3071.1	-12.65	131.17
110.00	19 49 32	2568.36	-33.42	64.93	54.18	82.35	20 32 21	1968.4	-34.11	55.76
110.00	14 19 6	3629.55	-3.56	131.53	42.37	55.98	15 19 35	3029.5	-8.00	125.26

DIFFERENTIAL CORRECTIONS
TDE .9723 TRA-2.6470 TC3 1.6800 BAU .5423
RDE -.1868 RRA .3042 RC3 -.4074 FAU .12645
FDE -.5423 FRA 3.8561 FC3-4.6652 BSP 14012
BDE .9901 BRA 2.6644 BC3 1.7287 FSP 1815

MID-COURSE EXECUTION ACCURACY
SGT 4039.3 SGR 606.3 SG3 592.6
RRT -.9453 RRF .9601 RTF -.9413
SGB 4084.6 R23 -.2089 R13 .9428
SG1 4079.9 SG2 195.8 THA 171.91

ORBIT DETERMINATION ACCURACY
ST 1560.8 SR 252.2 SS 969.6
CRT -.9712 CRS -.7820 CST .9067
LSA 1818.5 MSA 364.4 SSA 11.2
EL1 1579.9 EL2 59.4 ALF 171.07

LAUNCH DATE NOV 1 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUN 3 1965

HELIOCENTRIC CONIC DISTANCE 522.636 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 33.608 GAL -5.39 AZL 86.46 HCA 168.75 SMA 201.58 ECC .27867 INC 3.5400 V1 30.013
RP 239.73 LAP .69 LOP 207.37 VP 21.185 GAP 12.02 AZP 93.47 TAL 334.90 TAP 143.65 RCA 145.41 APO 257.75 V2 22.912
RC 170.016 GL 25.47 GP -5.54 ZAL 124.35 ZAP 160.25 ETS 194.26 ZAE 159.44 ETE 345.52 ZAC 84.13 ETC 255.86 CLP 161.01

PLANETOCENTRIC CONIC

C3 23.087 VHL 4.805 DLA 28.26 RAL 179.27 RAD 6567.9 VEL 12.019 PTH 2.15 VHP 6.582 DPA -7.24 RAP 185.86 ECC 1.3800

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 50 41	3522.03	-19.98	132.32	50.63	69.50	15 49 23	2922.0	-22.59	124.62
90.00	14 20 30	3619.94	-17.53	138.45	49.61	67.40	15 20 50	3019.9	-20.44	130.99
100.00	17 19 37	3041.84	-25.82	99.06	52.69	74.38	18 10 18	2441.8	-27.71	90.77
100.00	14 34 16	3575.37	-11.96	132.50	46.91	62.40	15 33 51	2975.4	-15.57	125.56
110.00	19 35 25	2616.74	-32.92	68.62	54.53	80.22	20 19 2	2016.7	-33.92	59.53
110.00	14 34 57	3573.22	-5.70	128.58	43.16	56.24	15 34 30	2973.2	-10.10	122.25

DIFFERENTIAL CORRECTIONS
TDE .9557 TRA-2.6023 TC3 1.7467 BAU .5568
RDE -.1784 RRA .3372 RC3 -.4510 FAU .13104
FDE -.5026 FRA 3.9621 FC3-4.9137 BSP 13945
BDE .9722 BRA 2.6241 BC3 1.8040 FSP 1899

MID-COURSE EXECUTION ACCURACY
SGT 4065.6 SGR 664.5 SG3 619.6
RRT -.9544 RRF .9701 RTF -.9435
SGB 4119.5 R23 -.2264 R13 .9452
SG1 4114.9 SG2 195.9 THA 171.11

ORBIT DETERMINATION ACCURACY
ST 1555.1 SR 253.3 SS 979.9
CRT -.9844 CRS -.8012 CST .8923
LSA 1814.1 MSA 389.6 SSA 9.9
EL1 1575.0 EL2 44.0 ALF 170.88

LAUNCH DATE NOV 1 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUN 5 1965

HELIOCENTRIC CONIC DISTANCE 526.012 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 33.567 GAL -5.27 AZL 86.30 HCA 169.69 SMA 200.73 ECC .27510 INC 3.7018 V1 30.013
RP 239.42 LAP .66 LOP 208.32 VP 21.153 GAP 11.54 AZP 93.64 TAL 335.21 TAP 144.90 RCA 145.51 APO 255.95 V2 22.943
RC 172.331 GL 26.86 GP -6.17 ZAL 123.54 ZAP 159.42 ETS 195.31 ZAE 159.80 ETE 343.59 ZAC 83.57 ETC 255.84 CLP 160.33

PLANETOCENTRIC CONIC

C3 22.813 VHL 4.776 DLA 29.68 RAL 179.59 RAD 6567.9 VEL 12.008 PTH 2.14 VHP 6.447 DPA -7.93 RAP 185.83 ECC 1.3754

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
80.72	13 21 7	3812.66	-19.72	153.57	50.64	67.36	14 24 39	3212.7	-22.62	145.99
99.28	15 52 39	3323.49	-19.71	117.62	50.64	67.35	16 48 3	2723.5	-22.61	110.04
100.00	16 28 10	3209.98	-22.25	110.27	51.72	69.51	17 21 40	2610.0	-24.84	102.43
100.00	15 28 17	3401.40	-17.21	122.25	49.48	65.18	16 24 59	2801.4	-20.42	114.92
110.00	19 17 55	2677.85	-32.12	73.21	54.98	77.62	20 2 32	2077.9	-33.49	64.25
110.00	14 55 2	3506.29	-8.22	125.03	44.37	56.70	15 53 28	2906.3	-12.54	118.60

DIFFERENTIAL CORRECTIONS
TDE .9232 TRA-2.5743 TC3 1.7753 BAU .5624
RDE -.1689 RRA .3773 RC3 -.4991 FAU .13551
FDE -.4504 FRA 4.0785 FC3-5.1425 BSP 14296
BDE .9385 BRA 2.6018 BC3 1.8441 FSP 2000

MID-COURSE EXECUTION ACCURACY
SGT 4091.0 SGR 734.7 SG3 647.3
RRT -.9598 RRF .9783 RTF -.9443
SGB 4156.4 R23 -.2484 R13 .9465
SG1 4151.5 SG2 203.3 THA 170.20

ORBIT DETERMINATION ACCURACY
ST 1538.2 SR 256.3 SS 991.4
CRT -.9938 CRS -.8234 CST .8793
LSA 1801.4 MSA 411.7 SSA 8.8
EL1 1559.1 EL2 28.2 ALF 170.60

LAUNCH DATE NOV 1 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUN 7 1965

HELIOCENTRIC CONIC DISTANCE 529.417 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 33.527 GAL -5.16 AZL 86.10 HCA 170.64 SMA 199.92 ECC .27167 INC 3.8964 V1 30.013
RP 239.11 LAP .63 LOP 209.26 VP 21.124 GAP 11.06 AZP 93.84 TAL 335.51 TAP 146.15 RCA 145.61 APO 254.23 V2 22.975
RC 174.639 GL 28.46 GP -6.93 ZAL 122.65 ZAP 158.52 ETS 196.57 ZAE 160.14 ETE 341.19 ZAC 82.88 ETC 255.81 CLP 159.62

PLANETOCENTRIC CONIC

C3 22.664 VHL 4.761 DLA 31.27 RAL 180.06 RAD 6567.9 VEL 12.002 PTH 2.14 VHP 6.317 DPA -8.72 RAP 185.73 ECC 1.3730

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
76.14	12 49 10	3918.37	-20.76	161.95	51.46	66.07	13 54 28	3318.4	-23.82	154.38
103.86	16 28 17	3214.61	-20.75	109.96	51.45	66.06	17 21 52	2614.6	-23.80	102.38
76.14	12 49 10	3918.37	-20.76	161.95	51.46	66.07	13 54 28	3318.4	-23.82	154.38
103.86	16 28 17	3214.61	-20.75	109.96	51.45	66.06	17 21 52	2614.6	-23.80	102.38
110.00	18 54 21	2760.19	-30.76	79.24	55.45	74.29	19 40 21	2160.2	-32.60	70.51
110.00	15 22 17	3420.78	-11.38	120.43	46.23	57.55	16 19 17	2820.8	-15.58	113.84

DIFFERENTIAL CORRECTIONS
TDE .9057 TRA-2.5331 TC3 1.8176 BAU .5760
RDE -.1604 RRA .4243 RC3 -.5570 FAU .14029
FDE -.3929 FRA 4.1968 FC3-5.3587 BSP 14335
BDE .9198 BRA 2.5684 BC3 1.9010 FSP 2096

MID-COURSE EXECUTION ACCURACY
SGT 4111.7 SGR 821.8 SG3 675.8
RRT -.9645 RRF .9844 RTF -.9460
SGB 4193.1 R23 -.2630 R13 .9486
SG1 4187.7 SG2 213.1 THA 169.06

ORBIT DETERMINATION ACCURACY
ST 1528.4 SR 263.9 SS 1005.0
CRT -.9993 CRS -.8468 CST .8601
LSA 1794.1 MSA 443.7 SSA 7.6
EL1 1551.0 EL2 10.0 ALF 170.21

LAUNCH DATE NOV 1 1964 FLIGHT TIME 220.00 ARRIVAL DATE JUN 9 1965

HELIOCENTRIC CONIC DISTANCE 532.846 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 33.488 GAL -5.05 AZL 85.87 HCA 171.58 SMA 199.15 ECC .26838 INC 4.1346 V1 30.013
RP 238.79 LAP .60 LOP 210.21 VP 21.099 GAP 10.58 AZP 94.09 TAL 335.81 TAP 147.39 RCA 145.70 APO 252.59 V2 23.007
RC 176.939 GL 30.33 GP -7.86 ZAL 121.67 ZAP 157.53 ETS 198.09 ZAE 160.42 ETE 338.20 ZAC 82.01 ETC 255.77 CLP 158.89

PLANETOCENTRIC CONIC

C3 22.682 VHL 4.763 DLA 33.09 RAL 180.71 RAD 6567.9 VEL 12.003 PTH 2.14 VHP 6.194 DPA -9.66 RAP 185.53 ECC 1.3733

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
72.11	12 24 52	4002.43	-21.88	168.91	52.68	64.53	13 31 35	3402.4	-25.13	161.36
107.89	16 57 48	3130.92	-21.87	104.13	52.67	64.52	17 49 59	2530.9	-25.11	96.57
72.11	12 24 52	4002.43	-21.88	168.91	52.68	64.53	13 31 35	3402.4	-25.13	161.36
107.89	16 57 48	3130.92	-21.87	104.13	52.67	64.52	17 49 59	2530.9	-25.11	96.57
110.00	18 16 9	2890.27	-28.00	88.36	55.54	69.54	19 4 20	2290.3	-30.52	80.07
110.00	16 5 42	3291.08	-16.01	113.22	49.37	59.38	17 0 33	2691.1	-19.95	106.32

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .8892 TRA-2.4940 TC3 1.8404 BAU .5894 SGT 4128.3 SGR 930.5 SG3 704.4 ST 1517.0 SR 277.4 SS 1020.7
RDE -.1524 RRA .4812 RC3 -.6252 FAU .14546 RRT -.9671 RRF .9889 RTF -.9471 CRT -.9978 CRS -.8729 CST .8415
FDE -.3347 FRA 4.3115 FC3-5.5520 BSP 14451 SGB 4231.9 R23 -.2756 R13 .9504 LSA 1787.4 MSA 474.6 SSA 6.5
BDE .9022 BRA 2.5400 BC3 1.9437 FSP 2178 SG1 4225.6 SG2 231.3 THA 167.67 EL1 1542.1 EL2 18.0 ALF 169.66

LAUNCH DATE NOV 1 1964 FLIGHT TIME 222.00 ARRIVAL DATE JUN 11 1965

HELIOCENTRIC CONIC DISTANCE 536.299 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 33.452 GAL -4.94 AZL 85.57 HCA 172.54 SMA 198.42 ECC .26522 INC 4.4342 V1 30.013
RP 238.47 LAP .58 LOP 211.17 VP 21.076 GAP 10.12 AZP 94.40 TAL 336.11 TAP 148.64 RCA 145.79 APO 251.04 V2 23.040
RC 179.231 GL 32.56 GP -9.04 ZAL 120.56 ZAP 156.41 ETS 199.94 ZAE 160.58 ETE 334.43 ZAC 80.91 ETC 255.73 CLP 158.12

PLANETOCENTRIC CONIC

C3 22.926 VHL 4.788 DLA 35.20 RAL 181.63 RAD 6567.9 VEL 12.013 PTH 2.14 VHP 6.080 DPA -10.80 RAP 185.19 ECC 1.3773

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
68.15	12 4 44	4077.73	-23.09	175.44	54.47	62.66	13 12 41	3477.7	-26.56	167.91
111.85	17 25 20	3060.84	-23.08	99.31	54.46	62.65	18 16 21	2460.8	-26.55	91.79
68.15	12 4 44	4077.73	-23.09	175.44	54.47	62.66	13 12 41	3477.7	-26.56	167.91
111.85	17 25 20	3060.84	-23.08	99.31	54.46	62.65	18 16 21	2460.8	-26.55	91.79
68.15	12 4 44	4077.73	-23.09	175.44	54.47	62.66	13 12 41	3477.7	-26.56	167.91
111.85	17 25 20	3060.84	-23.08	99.31	54.46	62.65	18 16 21	2460.8	-26.55	91.79

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .8752 TRA-2.4564 TC3 1.8350 BAU .6023 SGT 4140.7 SGR 1068.3 SG3 732.4 ST 1505.3 SR 298.8 SS 1041.1
RDE -.1437 RRA .5542 RC3 -.7029 FAU .15017 RRT -.9686 RRF .9922 RTF -.9480 CRT -.9875 CRS -.8978 CST .8180
FDE -.2595 FRA 4.4400 FC3-5.6707 BSP 14702 SGB 4276.3 R23 -.2831 R13 .9524 LSA 1782.1 MSA 513.1 SSA 5.5
BDE .8869 BRA 2.5201 BC3 1.9650 FSP 2282 SG1 4268.5 SG2 257.7 THA 165.92 EL1 1534.0 EL2 46.2 ALF 168.90

LAUNCH DATE NOV 1 1964 FLIGHT TIME 224.00 ARRIVAL DATE JUN 13 1965

HELIOCENTRIC CONIC DISTANCE 539.775 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 33.417 GAL -4.84 AZL 85.18 HCA 173.49 SMA 197.72 ECC .26219 INC 4.8225 V1 30.013
RP 238.14 LAP .55 LOP 212.12 VP 21.056 GAP 9.65 AZP 94.79 TAL 336.40 TAP 149.89 RCA 145.88 APO 249.56 V2 23.073
RC 181.513 GL 35.26 GP -10.55 ZAL 119.28 ZAP 155.10 ETS 202.23 ZAE 160.55 ETE 329.66 ZAC 79.47 ETC 255.66 CLP 157.32

PLANETOCENTRIC CONIC

C3 23.509 VHL 4.849 DLA 37.70 RAL 182.96 RAD 6568.0 VEL 12.037 PTH 2.15 VHP 5.978 DPA -12.24 RAP 184.68 ECC 1.3869

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
64.00	11 47 41	4150.00	-24.38	182.02	57.08	60.31	12 56 51	3550.0	-28.13	174.55
116.00	17 52 56	3000.81	-24.37	95.25	57.07	60.30	18 42 57	2400.8	-28.12	87.79
64.00	11 47 41	4150.00	-24.38	182.02	57.08	60.31	12 56 51	3550.0	-28.13	174.55
116.00	17 52 56	3000.81	-24.37	95.25	57.07	60.30	18 42 57	2400.8	-28.12	87.79
64.00	11 47 41	4150.00	-24.38	182.02	57.08	60.31	12 56 51	3550.0	-28.13	174.55
116.00	17 52 56	3000.81	-24.37	95.25	57.07	60.30	18 42 57	2400.8	-28.12	87.79

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .8749 TRA-2.4202 TC3 1.8047 BAU .6195 SGT 4146.9 SGR 1247.7 SG3 758.8 ST 1499.2 SR 332.9 SS 1067.2
RDE -.1356 RRA .6493 RC3 -.7926 FAU .15445 RRT -.9694 RRF .9944 RTF -.9489 CRT -.9664 CRS -.9205 CST .7894
FDE -.1757 FRA 4.5735 FC3-5.6880 BSP 14960 SGB 4330.6 R23 -.2848 R13 .9548 LSA 1784.1 MSA 560.6 SSA 4.4
BDE .8854 BRA 2.5058 BC3 1.9711 FSP 2393 SG1 4320.6 SG2 294.0 THA 163.66 EL1 1533.4 EL2 83.7 ALF 167.85

LAUNCH DATE NOV 1 1964 FLIGHT TIME 226.00 ARRIVAL DATE JUN 15 1965

HELIOCENTRIC CONIC DISTANCE 543.272 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 33.383 GAL -4.74 AZL 84.66 HCA 174.45 SMA 197.06 ECC .25928 INC 5.3438 V1 30.013
RP 237.81 LAP .52 LOP 213.08 VP 21.039 GAP 9.20 AZP 95.32 TAL 336.69 TAP 151.14 RCA 145.97 APO 248.15 V2 23.106
RC 183.786 GL 38.62 GP -12.57 ZAL 117.73 ZAP 153.48 ETS 205.10 ZAE 160.15 ETE 323.63 ZAC 77.52 ETC 255.56 CLP 156.46

PLANETOCENTRIC CONIC

C3 24.638 VHL 4.964 DLA 40.71 RAL 184.90 RAD 6568.0 VEL 12.084 PTH 2.16 VHP 5.895 DPA -14.10 RAP 183.88 ECC 1.4055

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
59.43	11 33 46	4223.43	-25.70	189.04	60.92	57.27	12 44 9	3623.4	-29.82	181.70
120.57	18 22 23	2950.37	-25.69	91.92	60.91	57.26	19 11 33	2350.4	-29.81	84.58
59.43	11 33 46	4223.43	-25.70	189.04	60.92	57.27	12 44 9	3623.4	-29.82	181.70
120.57	18 22 23	2950.37	-25.69	91.92	60.91	57.26	19 11 33	2350.4	-29.81	84.58
59.43	11 33 46	4223.43	-25.70	189.04	60.92	57.27	12 44 9	3623.4	-29.82	181.70
120.57	18 22 23	2950.37	-25.69	91.92	60.91	57.26	19 11 33	2350.4	-29.81	84.58

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .9071 TRA-2.3703 TC3 1.7500 BAU .6483 SGT 4140.4 SGR 1488.1 SG3 780.4 ST 1507.2 SR 387.2 SS 1093.9
RDE -.1343 RRA .7744 RC3 -.9008 FAU .15917 RRT -.9693 RRF .9960 RTF -.9493 CRT -.9371 CRS -.9405 CST .7629
FDE -.1217 FRA 4.6772 FC3-5.5930 BSP 15062 SGB 4399.7 R23 -.2819 R13 .9575 LSA 1802.6 MSA 607.3 SSA 3.5
BDE .9170 BRA 2.4936 BC3 1.9682 FSP 2448 SG1 4386.2 SG2 345.1 THA 160.67 EL1 1550.6 EL2 131.4 ALF 166.36

LAUNCH DATE NOV 1 1964 FLIGHT TIME 228.00 ARRIVAL DATE JUN 17 1965

HELIOCENTRIC CONIC DISTANCE 546.789 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 33.351 GAL -4.64 AZL 83.92 HCA 175.40 SMA 196.43 ECC .25649 INC 6.0844 V1 30.013
RP 237.48 LAP .49 LOP 214.04 VP 21.025 GAP 8.75 AZP 96.06 TAL 336.98 TAP 152.39 RCA 146.05 APO 246.81 V2 23.140
RC 186.049 GL 42.94 GP -15.38 ZAL 115.79 ZAP 151.33 ETS 208.75 ZAE 159.09 ETE 316.10 ZAC 74.78 ETC 255.39 CLP 155.51

PLANETOCENTRIC CONIC

C3 26.746 VHL 5.172 DLA 44.43 RAL 187.89 RAD 6568.1 VEL 12.171 PTH 2.18 VHP 5.845 DPA -16.64 RAP 182.63 ECC 1.4402

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
54.22	11 24 3	4302.42	-26.91	196.94	66.71	53.21	12 35 45	3702.4	-31.50	189.85
125.78	18 55 55	2911.96	-26.90	89.47	66.70	53.21	19 44 27	2312.0	-31.49	82.38
54.22	11 24 3	4302.42	-26.91	196.94	66.71	53.21	12 35 45	3702.4	-31.50	189.85
125.78	18 55 55	2911.96	-26.90	89.47	66.70	53.21	19 44 27	2312.0	-31.49	82.38
54.22	11 24 3	4302.42	-26.91	196.94	66.71	53.21	12 35 45	3702.4	-31.50	189.85
125.78	18 55 55	2911.96	-26.90	89.47	66.70	53.21	19 44 27	2312.0	-31.49	82.38

DIFFERENTIAL CORRECTIONS
TDE .9774 TRA-2.3277 TC3 1.6208 BAU .6834
RDE -.1431 RRA .9579 RC3-1.0126 FAU .16152
FDE -.0877 FRA 4.7801 FC3-5.2281 BSP 15616
BDE .9878 BRA 2.5171 BC3 1.9111 FSP 2529

MID-COURSE EXECUTION ACCURACY
SGT 4125.8 SGR 1825.0 SG3 793.0
RRT -.9687 RRF .9970 RTF -.9493
SGB 4511.4 R23 -.2734 R13 .9610
SG1 4492.2 SG2 416.1 THA 156.59

ORBIT DETERMINATION ACCURACY
ST 1532.5 SR 474.2 SS 1127.6
CRT -.9030 CRS -.9561 CST .7375
LSA 1846.5 MSA 659.7 SSA 2.7
EL1 1592.2 EL2 196.1 ALF 164.14

LAUNCH DATE NOV 1 1964 FLIGHT TIME 230.00 ARRIVAL DATE JUN 19 1965

HELIOCENTRIC CONIC DISTANCE 550.323 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 33.320 GAL -4.54 AZL 82.78 HCA 176.36 SMA 195.83 ECC .25382 INC 7.2163 V1 30.013
RP 237.15 LAP .46 LOP 215.00 VP 21.014 GAP 8.30 AZP 97.20 TAL 337.27 TAP 153.63 RCA 146.13 APO 245.54 V2 23.174
RC 188.300 GL 48.67 GP -19.52 ZAL 113.24 ZAP 148.19 ETS 213.37 ZAE 156.78 ETE 306.96 ZAC 70.72 ETC 255.06 CLP 154.38

PLANETOCENTRIC CONIC

C3 30.874 VHL 5.556 DLA 49.07 RAL 192.79 RAD 6568.2 VEL 12.339 PTH 2.22 VHP 5.866 DPA -20.29 RAP 180.57 ECC 1.5081

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
48.08	11 21 39	4393.68	-27.62	206.28	75.83	47.67	12 34 53	3793.7	-32.83	199.66
131.92	19 37 23	2892.40	-27.60	88.26	75.82	47.67	20 25 35	2292.4	-32.81	81.65
48.08	11 21 39	4393.68	-27.62	206.28	75.83	47.67	12 34 53	3793.7	-32.83	199.66
131.92	19 37 23	2892.40	-27.60	88.26	75.82	47.67	20 25 35	2292.4	-32.81	81.65
48.08	11 21 39	4393.68	-27.62	206.28	75.83	47.67	12 34 53	3793.7	-32.83	199.66
131.92	19 37 23	2892.40	-27.60	88.26	75.82	47.67	20 25 35	2292.4	-32.81	81.65

DIFFERENTIAL CORRECTIONS
TDE 1.1766 TRA-2.2594 TC3 1.4298 BAU .7522
RDE -.2132 RRA 1.2298 RC3-1.1300 FAU .16240
FDE -.2318 FRA 4.7705 FC3-4.5537 BSP 16121
BDE 1.1957 BRA 2.5724 BC3 1.8224 FSP 2479

MID-COURSE EXECUTION ACCURACY
SGT 4079.9 SGR 2317.9 SG3 782.7
RRT -.9672 RRF .9975 RTF -.9481
SGB 4692.3 R23 -.2581 R13 .9658
SG1 4664.0 SG2 514.9 THA 150.82

ORBIT DETERMINATION ACCURACY
ST 1616.4 SR 622.1 SS 1150.7
CRT -.8832 CRS -.9675 CST .7359
LSA 1960.9 MSA 692.0 SSA 1.9
EL1 1709.8 EL2 275.8 ALF 160.70

LAUNCH DATE NOV 1 1964 FLIGHT TIME 242.00 ARRIVAL DATE JUL 1 1965

HELIOCENTRIC CONIC DISTANCE 572.012 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 33.160 GAL -4.06 AZL 96.98 HCA 182.24 SMA 192.81 ECC .24010 INC 6.9751 V1 30.013
RP 235.06 LAP .27 LOP 220.83 VP 20.996 GAP 5.77 AZP 83.03 TAL 338.79 TAP 161.03 RCA 146.51 APO 239.10 V2 23.387
RC 201.544 GL -49.73 GP 32.90 ZAL 111.17 ZAP 135.10 ETS 137.83 ZAE 145.33 ETE 75.29 ZAC 121.53 ETC 253.40 CLP 147.53

PLANETOCENTRIC CONIC

C3 27.717 VHL 5.265 DLA -38.54 RAL 142.03 RAD 6568.1 VEL 12.210 PTH 2.19 VHP 5.883 DPA 27.47 RAP 202.93 ECC 1.4562

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
11.63	13 2 14	2615.84	-10.87	84.94	332.27	169.59	13 45 50	2015.8	-3.00	83.91
11.63	23 54 24	1125.70	79.77	356.95	41.55	87.81	24 13 10	525.7	76.80	319.84
21.63	13 52 48	2568.79	-8.63	81.06	340.87	160.84	14 35 36	1968.8	-1.07	78.86
21.63	23 44 20	1135.08	71.01	358.76	40.87	94.44	24 3 15	535.1	70.03	335.20
31.63	14 49 42	2485.86	-5.07	75.43	349.17	152.39	15 31 8	1885.9	2.03	72.15
31.63	23 32 22	1152.55	62.10	358.97	38.16	99.40	23 51 35	552.6	62.35	342.18

DIFFERENTIAL CORRECTIONS
TDE 2.5596 TRA-1.7074 TC3 1.5706 BAU .9598
RDE 2.6545 RRA-1.0187 RC3 2.0598 FAU .15377
FDE-5.9379 FRA 2.0366 FC3-4.8031 BSP 18777
BDE 3.6875 BRA 1.9882 BC3 2.5903 FSP 2375

MID-COURSE EXECUTION ACCURACY
SGT 4017.1 SGR 3880.5 SG3 750.1
RRT .9623 RRF -.9990 RTF -.9490
SGB 5585.3 R23 -.1868 R13 -.9824
SG1 5532.5 SG2 766.4 THA 43.97

ORBIT DETERMINATION ACCURACY
ST 2875.7 SR 2920.7 SS 3314.0
CRT .9946 CRS .9999 CST .9928
LSA 5263.8 MSA 274.4 SSA .7
EL1 4093.2 EL2 213.9 ALF 45.45

LAUNCH DATE NOV 1 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUL 3 1965

HELIOCENTRIC CONIC DISTANCE 575.663 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 33.137 GAL -3.99 AZL 94.29 HCA 183.21 SMA 192.38 ECC .23813 INC 4.2923 V1 30.013
RP 234.71 LAP .24 LOP 221.81 VP 21.001 GAP 5.36 AZP 85.71 TAL 339.05 TAP 162.26 RCA 146.57 APO 238.19 V2 23.424
RC 203.699 GL -35.35 GP 25.06 ZAL 115.72 ZAP 140.04 ETS 144.49 ZAE 152.84 ETE 71.57 ZAC 114.21 ETC 254.49 CLP 147.80

PLANETOCENTRIC CONIC

C3 18.303 VHL 4.278 DLA -25.07 RAL 148.23 RAD 6567.7 VEL 11.819 PTH 2.09 VHP 5.265 DPA 19.98 RAP 200.10 ECC 1.3012

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	22 31 12	1263.51	9.26	346.57	10.88	116.88	22 52 15	663.5	12.79	339.67
90.00	2 32 19	5767.42	27.01	274.28	16.87	98.85	4 8 27	5167.4	27.96	265.74
100.00	23 29 28	1075.40	7.30	331.69	9.83	119.07	23 47 23	475.4	11.12	324.99
100.00	4 16 45	5430.76	29.21	249.85	17.21	96.67	5 47 15	4830.8	29.82	241.10
110.00	23 54 4	998.20	3.08	323.24	7.23	124.06	24 10 42	398.2	7.53	316.98
110.00	6 8 37	5080.73	34.15	223.68	17.64	91.66	7 33 18	4480.7	34.00	214.44

DIFFERENTIAL CORRECTIONS
TDE 1.8136 TRA-1.7859 TC3 2.3668 BAU .8124
RDE 1.4082 RRA -.8935 RC3 2.3285 FAU .18841
FDE-5.1337 FRA 3.1439 FC3-8.9120 BSP 16790
BDE 2.2961 BRA 1.9970 BC3 3.3202 FSP 3041

MID-COURSE EXECUTION ACCURACY
SGT 4119.9 SGR 3045.0 SG3 973.8
RRT .9649 RRF -.9995 RTF -.9566
SGB 5123.1 R23 -.2011 R13 -.9795
SG1 5081.9 SG2 648.6 THA 36.18

ORBIT DETERMINATION ACCURACY
ST 2555.5 SR 1928.1 SS 3192.7
CRT .9941 CRS 1.0000 CST .9933
LSA 4514.9 MSA 239.5 SSA 1.8
EL1 3196.9 EL2 166.7 ALF 36.99

LAUNCH DATE NOV 1 1964 FLIGHT TIME 246.00 ARRIVAL DATE JUL 5 1965

HELIOCENTRIC CONIC DISTANCE 579.333 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 33.115 GAL -3.92 AZL 92.86 HCA 184.20 SMA 191.98 ECC .23625 INC 2.8581 V1 30.013
RP 234.35 LAP .21 LOP 222.80 VP 21.008 GAP 4.96 AZP 87.15 TAL 339.29 TAP 163.48 RCA 146.63 APO 237.34 V2 23.461
RC 205.837 GL -25.23 GP 20.23 ZAL 118.01 ZAP 142.15 ETS 150.16 ZAE 157.58 ETE 69.68 ZAC 109.62 ETC 254.98 CLP 147.30

PLANETOCENTRIC CONIC

C3 14.929 VHL 3.864 DLA -15.50 RAL 151.82 RAD 6567.6 VEL 11.675 PTH 2.05 VHP 4.947 DPA 15.44 RAP 198.31 ECC 1.2457

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 48 41	1643.06	-2.85	7.89	8.09	118.19	21 16 4	1043.1	.94	1.26
90.00	4 43 29	5294.61	27.21	239.96	13.46	81.86	6 11 43	4694.6	25.81	231.58
100.00	22 1 32	1408.05	-3.91	350.02	7.50	119.66	22 25 0	808.0	.06	343.49
100.00	6 13 20	5004.86	28.42	218.44	13.25	80.32	7 36 45	4404.9	26.79	210.01
110.00	22 50 51	1253.57	-6.65	338.61	5.81	123.61	23 11 44	653.6	-2.19	330.37
110.00	7 40 30	4732.10	31.57	196.96	12.49	76.15	8 59 22	4132.1	29.34	188.47

DIFFERENTIAL CORRECTIONS
TDE 1.3995 TRA-1.8273 TC3 2.7999 BAU .7189
RDE .8734 RRA -.7827 RC3 2.2655 FAU .20800
FDE-4.3532 FRA 3.9544 FC-12.0617 BSP 16524
BDE 1.6496 BRA 1.9879 BC3 3.6017 FSP 3649

MID-COURSE EXECUTION ACCURACY
SGT 4110.4 SGR 2488.6 SG3 1111.8
RRT .9642 RRF -.9995 RTF -.9581
SGB 4805.1 R23 -.2171 R13 -.9759
SG1 4771.3 SG2 568.7 THA 30.76

ORBIT DETERMINATION ACCURACY
ST 2241.1 SR 1345.6 SS 2869.8
CRT .9935 CRS 1.0000 CST .9938
LSA 3876.5 MSA 204.4 SSA 3.6
EL1 2610.7 EL2 131.8 ALF 30.90

LAUNCH DATE NOV 1 1964 FLIGHT TIME 248.00 ARRIVAL DATE JUL 7 1965

HELIOCENTRIC CONIC DISTANCE 583.020 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 33.094 GAL -3.85 AZL 91.96 HCA 185.18 SMA 191.60 ECC .23446 INC 1.9659 V1 30.013
RP 233.98 LAP .18 LOP 223.79 VP 21.017 GAP 4.57 AZP 88.05 TAL 339.52 TAP 164.70 RCA 146.68 APO 236.52 V2 23.498
RC 207.958 GL -18.02 GP 17.02 ZAL 119.03 ZAP 142.89 ETS 154.61 ZAE 160.85 ETE 69.21 ZAC 106.55 ETC 255.25 CLP 146.52

PLANETOCENTRIC CONIC

C3 13.374 VHL 3.657 DLA -8.62 RAL 154.12 RAD 6567.5 VEL 11.609 PTH 2.03 VHP 4.738 DPA 12.46 RAP 197.08 ECC 1.2201

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 59 28	1851.93	-9.44	19.69	8.43	116.82	20 30 20	1251.9	-5.77	12.94
90.00	5 51 2	5037.25	23.46	222.08	11.44	73.68	7 14 59	4437.3	21.00	214.27
100.00	21 16 37	1603.02	-10.36	.91	7.95	118.20	21 43 20	1003.0	-6.51	354.23
100.00	7 16 34	4761.39	24.45	201.46	11.11	72.25	8 35 55	4161.4	21.80	193.67
110.00	22 15 19	1419.24	-12.78	345.53	6.52	121.98	22 38 58	819.2	-8.46	339.09
110.00	8 34 21	4517.94	27.08	181.93	10.06	68.30	9 49 39	3917.9	23.89	174.21

DIFFERENTIAL CORRECTIONS
TDE 1.1536 TRA-1.8291 TC3 3.0493 BAU .6644
RDE .6075 RRA -.6855 RC3 2.1243 FAU .22366
FDE-3.7802 FRA 4.5331 FC-14.4783 BSP 16243
BDE 1.3038 BRA 1.9534 BC3 3.7163 FSP 4102

MID-COURSE EXECUTION ACCURACY
SGT 4079.5 SGR 2121.3 SG3 1218.3
RRT .9630 RRF -.9994 RTF -.9586
SGB 4598.0 R23 -.2281 R13 -.9731
SG1 4569.7 SG2 510.1 THA 26.96

ORBIT DETERMINATION ACCURACY
ST 2006.8 SR 1007.1 SS 2583.1
CRT .9929 CRS .9998 CST .9949
LSA 3418.4 MSA 168.6 SSA 6.6
EL1 2242.8 EL2 107.1 ALF 26.55

LAUNCH DATE NOV 1 1964 FLIGHT TIME 250.00 ARRIVAL DATE JUL 9 1965

HELIOCENTRIC CONIC DISTANCE 586.722 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 33.074 GAL -3.78 AZL 91.35 HCA 186.17 SMA 191.24 ECC .23276 INC 1.3522 V1 30.013
RP 233.62 LAP .15 LOP 224.78 VP 21.028 GAP 4.18 AZP 88.66 TAL 339.74 TAP 165.91 RCA 146.73 APO 235.75 V2 23.536
RC 210.060 GL -12.71 GP 14.76 ZAL 119.38 ZAP 142.93 ETS 158.09 ZAE 163.29 ETE 70.01 ZAC 104.36 ETC 255.41 CLP 145.60

PLANETOCENTRIC CONIC

C3 12.525 VHL 3.539 DLA -3.53 RAL 155.68 RAD 6567.5 VEL 11.572 PTH 2.02 VHP 4.577 DPA 10.38 RAP 196.18 ECC 1.2061

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 26 43	1998.91	-13.82	28.27	9.41	114.96	20 0 2	1398.9	-10.34	21.32
90.00	6 36 14	4862.06	19.65	210.65	10.61	69.19	7 57 16	4262.1	16.65	203.27
100.00	20 46 25	1741.84	-14.69	8.93	8.98	116.33	21 15 27	1141.8	-11.04	2.05
100.00	7 59 14	4594.37	20.56	190.59	10.23	67.81	9 15 48	3994.4	17.37	183.25
110.00	21 50 52	1540.05	-17.02	352.32	7.68	120.10	22 16 32	940.0	-12.89	345.64
110.00	9 11 16	4368.92	22.97	172.31	9.07	63.96	10 24 4	3768.9	19.28	165.12

DIFFERENTIAL CORRECTIONS
TDE 1.0086 TRA-1.7951 TC3 3.2442 BAU .6383
RDE .4656 RRA -.5909 RC3 2.0016 FAU .24040
FDE-3.4206 FRA 4.9204 FC-16.6165 BSP 15517
BDE 1.1109 BRA 1.8924 BC3 3.8120 FSP 4342

MID-COURSE EXECUTION ACCURACY
SGT 4051.8 SGR 1876.0 SG3 1318.0
RRT .9621 RRF -.9991 RTF -.9592
SGB 4465.0 R23 -.2337 R13 -.9714
SG1 4440.5 SG2 466.9 THA 24.30

ORBIT DETERMINATION ACCURACY
ST 1853.1 SR 809.3 SS 2390.1
CRT .9924 CRS .9992 CST .9963
LSA 3127.7 MSA 136.5 SSA 11.0
EL1 2020.1 EL2 91.2 ALF 23.48

LAUNCH DATE NOV 1 1964 FLIGHT TIME 252.00 ARRIVAL DATE JUL 11 1965

HELIOCENTRIC CONIC DISTANCE 590.439 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 33.055 GAL -3.72 AZL 90.91 HCA 187.17 SMA 190.89 ECC .23114 INC .9094 V1 30.013
RP 233.25 LAP .11 LOP 225.77 VP 21.041 GAP 3.80 AZP 89.10 TAL 339.95 TAP 167.12 RCA 146.77 APO 235.02 V2 23.574
RC 212.144 GL -8.68 GP 13.09 ZAL 119.40 ZAP 142.56 ETS 160.83 ZAE 165.18 ETE 72.04 ZAC 102.73 ETC 255.51 CLP 144.60

PLANETOCENTRIC CONIC

C3 12.000 VHL 3.464 DLA .36 RAL 156.78 RAD 6567.5 VEL 11.549 PTH 2.02 VHP 4.443 DPA 8.87 RAP 195.46 ECC 1.1975

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 2 13	2110.68	-16.92	35.01	10.48	113.05	19 37 23	1510.7	-13.65	27.85
90.00	7 9 34	4732.11	16.31	202.58	10.36	66.53	8 28 27	4132.1	13.00	195.47
100.00	20 23 43	1847.75	-17.79	15.27	10.08	114.43	20 54 31	1247.7	-14.34	8.18
100.00	8 30 45	4470.27	17.18	182.92	9.95	65.15	9 45 15	3870.3	13.69	175.87
110.00	21 32 21	1632.92	-20.11	357.75	8.86	118.24	21 59 34	1032.9	-16.18	350.84
110.00	9 38 36	4257.87	19.49	165.57	8.72	61.34	10 49 34	3657.9	15.51	158.71

DIFFERENTIAL CORRECTIONS
TDE .8952 TRA-1.7635 TC3 3.3302 BAU .6129
RDE .3740 RRA -.5359 RC3 1.8722 FAU .25393
FDE-3.1118 FRA 5.2876 FC-18.3206 BSP 15169
BDE .9702 BRA 1.8432 BC3 3.8204 FSP 4652

MID-COURSE EXECUTION ACCURACY
SGT 4003.0 SGR 1688.4 SG3 1404.1
RRT .9609 RRF -.9986 RTF -.9595
SGB 4344.5 R23 -.2371 R13 -.9700
SG1 4322.9 SG2 433.2 THA 22.30

ORBIT DETERMINATION ACCURACY
ST 1721.4 SR 674.4 SS 2222.4
CRT .9917 CRS .9978 CST .9977
LSA 2888.8 MSA 106.9 SSA 18.0
EL1 1847.0 EL2 80.7 ALF 21.28

LAUNCH DATE NOV 1 1964 FLIGHT TIME 254.00 ARRIVAL DATE JUL 13 1965

HELIOCENTRIC CONIC DISTANCE 594.170 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 33.037 GAL -3.67 AZL 90.57 HCA 188.16 SMA 190.57 ECC .22959 INC .5711 V1 30.013
RP 232.88 LAP .08 LOP 226.77 VP 21.056 GAP 3.43 AZP 89.43 TAL 340.16 TAP 168.32 RCA 146.81 APO 234.32 V2 23.612
RC 214.210 GL -5.53 GP 11.81 ZAL 119.23 ZAP 141.93 ETS 163.04 ZAE 166.70 ETE 75.31 ZAC 101.47 ETC 255.58 CLP 143.54

PLANETOCENTRIC CONIC

C3 11.640 VHL 3.412 DLA 3.44 RAL 157.59 RAD 6567.4 VEL 11.534 PTH 2.01 VHP 4.324 DPA 7.73 RAP 194.86 ECC 1.1916

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 42 36	2199.63	-19.20	40.54	11.46	111.22	19 19 16	1599.6	-16.15	33.19
90.00	7 35 37	4630.38	13.46	196.48	10.35	64.85	8 52 47	4030.4	9.96	189.55
100.00	20 5 33	1932.08	-20.08	20.49	11.09	112.62	20 37 45	1332.1	-16.84	13.19
100.00	8 55 21	4373.16	14.31	177.14	9.93	63.47	10 8 14	3773.2	10.63	170.28
110.00	21 17 29	1706.96	-22.43	2.25	9.94	116.50	21 45 56	1107.0	-18.69	355.11
110.00	9 59 55	4171.05	16.58	160.52	8.66	59.67	11 9 26	3571.1	12.42	153.88

DIFFERENTIAL CORRECTIONS
TDE .8108 TRA-1.7232 TC3 3.3800 BAU .5935
RDE .3150 RRA -.4842 RC3 1.7667 FAU .26756
FDE-2.8806 FRA 5.6017 FC-19.9008 BSP 14791
BDE .8699 BRA 1.7900 BC3 3.8139 FSP 4925

MID-COURSE EXECUTION ACCURACY
SGT 3947.0 SGR 1548.2 SG3 1488.0
RRT .9594 RRF -.9979 RTF -.9596
SGB 4239.7 R23 -.2385 R13 -.9690
SG1 4220.0 SG2 408.3 THA 20.83

ORBIT DETERMINATION ACCURACY
ST 1617.2 SR 583.9 SS 2098.9
CRT .9907 CRS .9953 CST .9988
LSA 2711.8 MSA 84.8 SSA 28.0
EL1 1717.8 EL2 75.0 ALF 19.72

LAUNCH DATE NOV 1 1964 FLIGHT TIME 256.00 ARRIVAL DATE JUL 15 1965

HELIOCENTRIC CONIC DISTANCE 597.915 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 33.020 GAL -3.61 AZL 90.31 HCA 189.16 SMA 190.26 ECC .22812 INC .3080 V1 30.013
RP 232.51 LAP .05 LOP 227.77 VP 21.072 GAP 3.06 AZP 89.70 TAL 340.35 TAP 169.52 RCA 146.85 APO 233.66 V2 23.650
RC 216.258 GL -3.00 GP 10.80 ZAL 118.98 ZAP 141.13 ETS 164.84 ZAE 167.90 ETE 79.85 ZAC 100.46 ETC 255.63 CLP 142.43

PLANETOCENTRIC CONIC

C3 11.373 VHL 3.372 DLA 5.92 RAL 158.19 RAD 6567.4 VEL 11.522 PTH 2.01 VHP 4.216 DPA 6.86 RAP 194.34 ECC 1.1872

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 26 14	2272.77	-20.94	45.20	12.33	109.51	19 4 7	1672.8	-18.09	37.69
90.00	7 56 47	4547.59	11.01	191.63	10.46	63.75	9 12 35	3947.6	7.40	184.81
100.00	19 50 23	2001.35	-21.83	24.89	11.97	110.94	20 23 44	1401.3	-18.79	17.41
100.00	9 15 19	4294.24	11.86	172.56	10.02	62.36	10 26 53	3694.2	8.07	165.82
110.00	21 5 3	1767.66	-24.22	6.05	10.88	114.90	21 34 31	1167.7	-20.66	358.71
110.00	10 17 8	4100.70	14.12	156.56	8.71	58.54	11 25 29	3500.7	9.85	150.05

DIFFERENTIAL CORRECTIONS
TDE .7397 TRA-1.6833 TC3 3.3822 BAU .5739
RDE .2737 RRA -.4437 RC3 1.6754 FAU .28027
FDE-2.6800 FRA 5.9095 FC-21.3351 BSP 14506
BDE .7887 BRA 1.7408 BC3 3.7744 FSP 5226

MID-COURSE EXECUTION ACCURACY
SGT 3879.5 SGR 1437.8 SG3 1568.8
RRT .9575 RRF -.9969 RTF -.9593
SGB 4137.3 R23 -.2392 R13 -.9679
SG1 4118.9 SG2 390.6 THA 19.72

ORBIT DETERMINATION ACCURACY
ST 1525.8 SR 518.7 SS 1998.0
CRT .9891 CRS .9912 CST .9993
LSA 2565.6 MSA 72.7 SSA 39.3
EL1 1609.9 EL2 72.5 ALF 18.62

LAUNCH DATE NOV 1 1964 FLIGHT TIME 258.00 ARRIVAL DATE JUL 17 1965

HELIOCENTRIC CONIC DISTANCE 601.674 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 33.004 GAL -3.56 AZL 90.09 HCA 190.17 SMA 189.96 ECC .22672 INC .0788 V1 30.013
RP 232.14 LAP .02 LOP 228.77 VP 21.090 GAP 2.70 AZP 89.91 TAL 340.54 TAP 170.71 RCA 146.89 APO 233.03 V2 23.689
RC 218.287 GL -.92 GP 9.99 ZAL 118.67 ZAP 140.20 ETS 166.34 ZAE 168.83 ETE 85.67 ZAC 99.64 ETC 255.68 CLP 141.27

PLANETOCENTRIC CONIC

C3 11.162 VHL 3.341 DLA 7.99 RAL 158.64 RAD 6567.4 VEL 11.513 PTH 2.01 VHP 4.115 DPA 6.18 RAP 193.85 ECC 1.1837

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 12 8	2334.45	-22.29	49.22	13.07	107.94	18 51 3	1734.4	-19.63	41.56
90.00	8 14 30	4478.18	8.89	187.63	10.62	63.01	9 29 8	3878.2	5.20	180.89
100.00	19 37 20	2059.66	-23.20	28.68	12.74	109.40	20 11 40	1459.7	-20.34	21.05
100.00	9 31 59	4228.20	9.75	168.79	10.16	61.60	10 42 27	3628.2	5.88	162.14
110.00	20 54 22	1818.58	-25.64	9.32	11.69	113.42	21 24 41	1218.6	-22.25	1.81
110.00	10 31 26	4042.05	12.01	153.32	8.81	57.75	11 38 48	3442.0	7.67	146.92

DIFFERENTIAL CORRECTIONS
TDE .6975 TRA-1.6231 TC3 3.4222 BAU .5646
RDE .2479 RRA -.4067 RC3 1.6129 FAU .29514
FDE-2.5596 FRA 6.1533 FC-22.8907 BSP 13799
BDE .7402 BRA 1.6733 BC3 3.7832 FSP 5425

MID-COURSE EXECUTION ACCURACY
SGT 3815.8 SGR 1355.8 SG3 1654.7
RRT .9573 RRF -.9958 RTF -.9603
SGB 4049.5 R23 -.2339 R13 -.9682
SG1 4032.5 SG2 370.9 THA 18.95

ORBIT DETERMINATION ACCURACY
ST 1465.1 SR 475.8 SS 1937.5
CRT .9882 CRS .9859 CST .9992
LSA 2473.7 MSA 78.6 SSA 41.8
EL1 1538.9 EL2 69.4 ALF 17.83

LAUNCH DATE NOV 1 1964 FLIGHT TIME 260.00 ARRIVAL DATE JUL 19 1965

HELIOCENTRIC CONIC DISTANCE 605.445 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 32.988 GAL -3.51 AZL 89.92 HCA 191.17 SMA 189.68 ECC .22540 INC .0842 V1 30.013
RP 231.76 LAP -.02 LOP 229.78 VP 21.109 GAP 2.34 AZP 90.08 TAL 340.72 TAP 171.89 RCA 146.93 APO 232.44 V2 23.728
RC 220.299 GL .82 GP 9.32 ZAL 118.35 ZAP 139.17 ETS 167.60 ZAE 169.48 ETE 92.66 ZAC 98.94 ETC 255.71 CLP 140.07

PLANETOCENTRIC CONIC

C3 10.989 VHL 3.315 DLA 9.72 RAL 158.99 RAD 6567.4 VEL 11.506 PTH 2.00 VHP 4.020 DPA 5.65 RAP 193.40 ECC 1.1808

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 59 45	2387.49	-23.35	52.74	13.71	106.48	18 39 32	1787.5	-20.87	44.95
90.00	8 29 40	4418.68	7.04	184.24	10.78	62.50	9 43 19	3818.7	3.30	177.56
100.00	19 25 53	2109.70	-24.29	31.99	13.39	107.98	20 1 2	1509.7	-21.61	24.22
100.00	9 46 13	4171.71	7.90	165.61	10.31	61.08	10 55 45	3571.7	3.99	159.02
110.00	20 45 1	1862.07	-26.78	12.18	12.38	112.08	21 16 3	1262.1	-23.55	4.51
110.00	10 43 35	3992.10	10.18	150.61	8.94	57.19	11 50 7	3392.1	5.78	144.27

DIFFERENTIAL CORRECTIONS
TDE .6526 TRA-1.5717 TC3 3.4020 BAU .5495
RDE .2272 RRA -.3786 RC3 1.5545 FAU .30851
FDE-2.4272 FRA 6.4287 FC-24.3057 BSP 13365
BDE .6910 BRA 1.6167 BC3 3.7403 FSP 5709

MID-COURSE EXECUTION ACCURACY
SGT 3735.8 SGR 1287.3 SG3 1737.4
RRT .9560 RRF -.9943 RTF -.9604
SGB 3951.4 R23 -.2304 R13 -.9679
SG1 3935.1 SG2 358.6 THA 18.39

ORBIT DETERMINATION ACCURACY
ST 1400.2 SR 441.5 SS 1879.3
CRT .9865 CRS .9782 CST .9981
LSA 2382.4 MSA 101.4 SSA 37.0
EL1 1466.5 EL2 69.0 ALF 17.82

LAUNCH DATE NOV 1 1964 FLIGHT TIME 262.00 ARRIVAL DATE JUL 21 1965

HELIOCENTRIC CONIC DISTANCE 609.224 EARTH TO MARS

RL	148.46	LAL	-.00	LOL	38.61	VL	32.973	GAL	-3.47	AZL	89.77	HCA	192.19	SMA	189.42	ECC	.22414	INC	.2312
RP	231.38	LAP	-.05	LOP	230.79	VP	21.130	GAP	1.99	AZP	90.23	TAL	340.88	TAP	173.07	RCA	146.96	APO	231.87
RC	222.292	GL	2.31	GP	8.76	ZAL	118.02	ZAP	138.07	ETS	168.68	ZAE	169.85	ETE	100.57	ZAC	98.34	ETC	255.74

V1	30.013	V2	23.768	CLP	138.82														

PLANETOCENTRIC CONIC

C3	10.841	VHL	3.293	DLA	11.21	RAL	159.27	RAD	6567.4	VEL	11.499	PTH	2.00	VHP	3.931	DPA	5.23	RAP	192.96

ECC	1.1784	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	17 48 42	2433.83	-24.21	55.87	14.26	105.15	18 29 16	1833.8	-21.90	47.96							
		90.00	8 42 55	4366.81	5.40	181.31	10.96	62.16	9 55 41	3766.8	1.63	174.66							
		100.00	19 15 41	2153.30	-25.18	34.93	13.95	106.67	19 51 35	1553.3	-22.65	27.04							
		100.00	9 58 37	4122.58	6.28	162.87	10.47	60.71	11 7 19	3522.6	2.33	156.31							
		110.00	20 36 42	1899.78	-27.72	14.71	12.99	110.85	21 8 22	1299.8	-24.63	6.91							
		110.00	10 54 5	3948.87	8.58	148.29	9.07	56.78	11 59 54	3348.9	4.14	142.00							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5882	TRA	-1.5429	TC3	3.2660	BAU	.5207	SGT	3628.4	SGR	1228.1	SG3	1816.1	ST	1313.8	SR	412.4	SS	1818.9
RDE	.2095	RRA	-.3580	RC3	1.4971	FAU	.31979	RRT	.9497	RRF	-.9926	RTF	-.9570	CRT	.9810	CRS	.9669	CST	.9970
FDE	-2.2636	FRA	6.7529	FC	-25.5375	BSP	13494	SGB	3830.6	R23	-.2375	R13	-.9649	LSA	2277.9	MSA	120.4	SSA	36.7
BDE	.6244	BRA	1.5839	BC3	3.5928	FSP	6100	SG1	3813.1	SG2	366.0	THA	17.99	EL1	1374.9	EL2	76.5	ALF	17.17

LAUNCH DATE NOV 1 1964 FLIGHT TIME 264.00 ARRIVAL DATE JUL 23 1965

HELIOCENTRIC CONIC DISTANCE 613.018 EARTH TO MARS

RL	148.46	LAL	-.00	LOL	38.61	VL	32.959	GAL	-3.42	AZL	89.64	HCA	193.20	SMA	189.17	ECC	.22295	INC	.3555
RP	231.01	LAP	-.08	LOP	231.81	VP	21.153	GAP	1.65	AZP	90.35	TAL	341.04	TAP	174.24	RCA	146.99	APO	231.34
RC	224.266	GL	3.59	GP	8.28	ZAL	117.70	ZAP	136.89	ETS	169.62	ZAE	169.91	ETE	109.00	ZAC	97.82	ETC	255.76

V1	30.013	V2	23.807	CLP	137.54														

PLANETOCENTRIC CONIC

C3	10.712	VHL	3.273	DLA	12.51	RAL	159.48	RAD	6567.4	VEL	11.493	PTH	2.00	VHP	3.845	DPA	4.91	RAP	192.51

ECC	1.1763	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	17 38 41	2474.95	-24.92	58.67	14.72	103.91	18 19 56	1874.9	-22.76	50.67							
		90.00	8 54 38	4320.81	3.93	178.73	11.12	61.93	10 6 39	3720.8	.15	172.09							
		100.00	19 6 28	2191.87	-25.90	37.56	14.44	105.46	19 42 59	1591.9	-23.53	29.57							
		100.00	10 9 33	4079.12	4.82	160.47	10.63	60.46	11 17 32	3479.1	.85	153.93							
		110.00	20 29 13	1932.94	-28.51	16.98	13.51	109.72	21 1 25	1332.9	-25.55	9.04							
		110.00	11 3 17	3910.81	7.15	146.26	9.19	56.48	12 8 28	3310.8	2.69	140.01							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5540	TRA	-1.4872	TC3	3.2044	BAU	.5044	SGT	3528.8	SGR	1184.7	SG3	1902.4	ST	1258.9	SR	394.2	SS	1788.5
RDE	.1993	RRA	-.3371	RC3	1.4624	FAU	.33401	RRT	.9469	RRF	-.9907	RTF	-.9561	CRT	.9778	CRS	.9548	CST	.9947
FDE	-2.1729	FRA	7.0126	FC	-26.9942	BSP	13013	SGB	3722.4	R23	-.2354	R13	-.9640	LSA	2217.4	MSA	144.7	SSA	34.1
BDE	.5888	BRA	1.5250	BC3	3.5224	FSP	6372	SG1	3704.7	SG2	362.9	THA	17.81	EL1	1316.8	EL2	79.0	ALF	17.09

LAUNCH DATE NOV 1 1964 FLIGHT TIME 266.00 ARRIVAL DATE JUL 25 1965

HELIOCENTRIC CONIC DISTANCE 616.824 EARTH TO MARS

RL	148.46	LAL	-.00	LOL	38.61	VL	32.946	GAL	-3.38	AZL	89.53	HCA	194.22	SMA	188.93	ECC	.22182	INC	.4641
RP	230.62	LAP	-.11	LOP	232.82	VP	21.177	GAP	1.31	AZP	90.45	TAL	341.19	TAP	175.40	RCA	147.02	APO	230.84
RC	226.222	GL	4.71	GP	7.87	ZAL	117.39	ZAP	135.65	ETS	170.44	ZAE	169.68	ETE	117.42	ZAC	97.35	ETC	255.79

V1	30.013	V2	23.847	CLP	136.21														

PLANETOCENTRIC CONIC

C3	10.597	VHL	3.255	DLA	13.65	RAL	159.65	RAD	6567.4	VEL	11.489	PTH	2.00	VHP	3.764	DPA	4.67	RAP	192.07

ECC	1.1744	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	17 29 32	2511.79	-25.50	61.22	15.13	102.76	18 11 24	1911.8	-23.48	53.12							
		90.00	9 5 9	4279.59	2.61	176.42	11.28	61.79	10 16 29	3679.6	-1.19	169.79							
		100.00	18 58 3	2226.33	-26.51	39.95	14.86	104.35	19 35 9	1626.3	-24.28	31.86							
		100.00	10 19 20	4040.29	3.52	158.32	10.77	60.30	11 26 40	3440.3	-.46	151.80							
		110.00	20 22 24	1962.40	-29.16	19.01	13.97	108.67	20 55 7	1362.4	-26.34	10.97							
		110.00	11 11 28	3876.98	5.87	144.47	9.31	56.26	12 16 5	3277.0	1.40	138.24							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5198	TRA	-1.4328	TC3	3.1098	BAU	.4851	SGT	3416.1	SGR	1148.9	SG3	1989.0	ST	1202.8	SR	380.1	SS	1762.8
RDE	.1914	RRA	-.3199	RC3	1.4332	FAU	.34793	RRT	.9430	RRF	-.9886	RTF	-.9544	CRT	.9738	CRS	.9402	CST	.9916
FDE	-2.0807	FRA	7.2851	FC	-28.4235	BSP	12596	SGB	3604.2	R23	-.2350	R13	-.9626	LSA	2160.8	MSA	168.9	SSA	32.6
BDE	.5539	BRA	1.4680	BC3	3.4241	FSP	6676	SG1	3585.7	SG2	364.2	THA	17.79	EL1	1258.7	EL2	82.6	ALF	17.18

LAUNCH DATE NOV 1 1964 FLIGHT TIME 268.00 ARRIVAL DATE JUL 27 1965

HELIOCENTRIC CONIC DISTANCE 620.641 EARTH TO MARS

RL	148.46	LAL	-.00	LOL	38.61	VL	32.933	GAL	-3.35	AZL	89.44	HCA	195.24	SMA	188.70	ECC	.22075	INC	.5595
RP	230.24	LAP	-.15	LOP	233.84	VP	21.202	GAP	.97	AZP	90.54	TAL	341.32	TAP	176.56	RCA	147.05	APO	230.36
RC	228.159	GL	5.69	GP	7.52	ZAL	117.09	ZAP	134.36	ETS	171.16	ZAE	169.17	ETE	125.34	ZAC	96.93	ETC	255.81

V1	30.013	V2	23.887	CLP	134.85														

PLANETOCENTRIC CONIC

C3	10.495	VHL	3.240	DLA	14.65	RAL	159.80	RAD	6567.4	VEL	11.484	PTH	2.00	VHP	3.686	DPA	4.49	RAP	191.61

ECC	1.1727	LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG							
		90.00	17 21 7	2545.13	-25.98	63.54	15.48	101.69	18 3 32	1945.1	-24.10	55.37							
		90.00	9 14 42	4242.31	1.40	174.34	11.43	61.71	10 25 24	3642.3	-2.39	167.71							
		100.00	18 50 20	2257.41	-27.01	42.12	15.22	103.31	19 27 58	1657.4	-24.91	33.95							
		100.00	10 28 10	4005.26	2.33	156.40	10.92	60.19	11 34 55	3405.3	-1.65	149.88							
		110.00	20 16 11	1988.80	-29.73	20.87	14.37	107.71	20 49 20	1388.8	-27.02	12.72							
		110.00	11 18 48	3846.64	4.72	142.88	9.43	56.11	12 22 55	3246.6	.24	136.66							

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4881	TRA	-1.3770	TC3	2.9949	BAU	.4644	SGT	3293.5	SGR	1119.7	SG3	2076.8	ST	1148.4	SR	369.4	SS	1743.2
RDE	.1855	RRA	-.3055	RC3	1.4096	FAU	.36188	RRT	.9386	RRF	-.9863	RTF	-.9523	CRT	.9696	CRS	.9233	CST	.9876
FDE	-1.9924	FRA	7.5656	FC	-29.8516	BSP	12155	SGB	3478.6	R23	-.2352	R13	-.9609	LSA	2110.9	MSA	193.2	SSA	31.4
BDE	.5222	BRA	1.4105	BC3	3.3100	FSP	6994	SG1	3459.1	SG2	367.8	THA	17.91	EL1	1203.3	EL2	86.3	ALF	17.41

LAUNCH DATE NOV 1 1964 FLIGHT TIME 270.00 ARRIVAL DATE JUL 29 1965

HELIOCENTRIC CONIC DISTANCE 624.469 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 32.921 GAL -3.31 AZL 89.36 HCA 196.26 SMA 188.49 ECC .21974 INC .6427 V1 30.013
RP 229.86 LAP -.18 LOP 234.87 VP 21.229 GAP .64 AZP 90.62 TAL 341.45 TAP 177.71 RCA 147.07 APO 229.91 V2 23.927
RC 230.076 GL 6.57 GP 7.21 ZAL 116.81 ZAP 133.01 ETS 171.81 ZAE 168.41 ETE 132.47 ZAC 96.55 ETC 255.83 CLP 133.44

PLANETOCENTRIC CONIC

C3 10.402 VHL 3.225 DLA 15.55 RAL 159.91 RAD 6567.4 VEL 11.480 PTH 2.00 VHP 3.611 DPA 4.37 RAP 191.13 ECC 1.1712

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 13 20	2575.54	-26.38	65.68	15.79	100.69	17 56 15	1975.5	-24.63	57.44
90.00	9 23 26	4208.32	.31	172.44	11.58	61.68	10 33 34	3608.3	-3.48	165.81
100.00	18 43 13	2285.66	-27.44	44.11	15.55	102.35	19 21 19	1685.7	-25.46	35.87
100.00	10 36 13	3973.44	1.26	154.65	11.06	60.13	11 42 27	3373.4	-2.73	148.13
110.00	20 10 29	2012.65	-30.21	22.56	14.73	106.82	20 44 1	1412.6	-27.61	14.33
110.00	11 25 27	3819.22	3.68	141.44	9.54	55.99	12 29 7	3219.2	-.81	135.23

DIFFERENTIAL CORRECTIONS
TDE .4604 TRA-1.3184 TC3 2.8644 BAU .4429
RDE .1816 RRA -.2928 RC3 1.3923 FAU .37625
FDE-1.9167 FRA 7.8433 FC-31.3133 BSP 11667
BDE .4949 BRA 1.3505 BC3 3.1848 FSP 7310

MID-COURSE EXECUTION ACCURACY
SGT 3161.2 SGR 1096.4 SG3 2166.5
RRT .9336 RRF -.9838 RTF -.9495
SGB 3346.0 R23 -.2364 R13 -.9589
SG1 3325.0 SG2 373.6 THA 18.18

ORBIT DETERMINATION ACCURACY
ST 1097.2 SR 362.0 SS 1731.1
CRT .9655 CRS .9049 CST .9827
LSA 2069.7 MSA 216.8 SSA 30.6
EL1 1151.9 EL2 89.9 ALF 17.78

LAUNCH DATE NOV 1 1964 FLIGHT TIME 272.00 ARRIVAL DATE JUL 31 1965

HELIOCENTRIC CONIC DISTANCE 628.308 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 32.910 GAL -3.28 AZL 89.28 HCA 197.29 SMA 188.29 ECC .21880 INC .7174 V1 30.013
RP 229.47 LAP -.21 LOP 235.90 VP 21.257 GAP .32 AZP 90.68 TAL 341.56 TAP 178.85 RCA 147.09 APO 229.49 V2 23.968
RC 231.973 GL 7.35 GP 6.94 ZAL 116.55 ZAP 131.61 ETS 172.39 ZAE 167.43 ETE 138.66 ZAC 96.19 ETC 255.86 CLP 131.99

PLANETOCENTRIC CONIC

C3 10.319 VHL 3.212 DLA 16.36 RAL 160.02 RAD 6567.4 VEL 11.476 PTH 1.99 VHP 3.540 DPA 4.30 RAP 190.63 ECC 1.1698

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 6 6	2603.44	-26.71	67.65	16.07	99.76	17 49 30	2003.4	-25.09	59.35
90.00	9 31 28	4177.17	-.70	170.71	11.73	61.69	10 41 5	3577.2	-4.48	164.07
100.00	18 36 38	2311.48	-27.80	45.94	15.84	101.45	19 15 10	1711.5	-25.94	37.64
100.00	10 43 37	3944.36	.27	153.05	11.20	60.11	11 49 22	3344.4	-3.71	146.53
110.00	20 5 13	2034.31	-30.62	24.11	15.05	105.99	20 39 8	1434.3	-28.13	15.80
110.00	11 31 32	3794.30	2.73	140.13	9.66	55.91	12 34 46	3194.3	-1.76	133.93

DIFFERENTIAL CORRECTIONS
TDE .4329 TRA-1.2590 TC3 2.7076 BAU .4191
RDE .1787 RRA -.2822 RC3 1.3780 FAU .39042
FDE-1.8356 FRA 8.1343 FC-32.7554 BSP 11186
BDE .4683 BRA 1.2903 BC3 3.0381 FSP 7651

MID-COURSE EXECUTION ACCURACY
SGT 3016.6 SGR 1077.3 SG3 2256.7
RRT .9274 RRF -.9811 RTF -.9459
SGB 3203.2 R23 -.2394 R13 -.9563
SG1 3180.3 SG2 382.2 THA 18.60

ORBIT DETERMINATION ACCURACY
ST 1044.9 SR 356.4 SS 1721.8
CRT .9611 CRS .8841 CST .9767
LSA 2031.0 MSA 240.1 SSA 30.1
EL1 1100.1 EL2 93.5 ALF 18.29

LAUNCH DATE NOV 1 1964 FLIGHT TIME 274.00 ARRIVAL DATE AUG 2 1965

HELIOCENTRIC CONIC DISTANCE 632.202 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 32.899 GAL -3.25 AZL 89.22 HCA 198.32 SMA 188.10 ECC .21790 INC .7827 V1 30.013
RP 229.09 LAP -.25 LOP 236.93 VP 21.286 GAP .00 AZP 90.74 TAL 341.67 TAP 179.99 RCA 147.11 APO 229.09 V2 24.009
RC 233.848 GL 8.06 GP 6.70 ZAL 116.31 ZAP 130.16 ETS 172.92 ZAE 166.28 ETE 143.94 ZAC 95.86 ETC 255.88 CLP 130.50

PLANETOCENTRIC CONIC

C3 10.243 VHL 3.201 DLA 17.09 RAL 160.11 RAD 6567.4 VEL 11.473 PTH 1.99 VHP 3.472 DPA 4.27 RAP 190.12 ECC 1.1686

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 59 23	2629.17	-27.00	69.48	16.32	98.88	17 43 12	2029.2	-25.49	61.13
90.00	9 38 56	4148.49	-1.62	169.11	11.88	61.73	10 48 4	3548.5	-5.39	162.45
100.00	18 30 32	2335.22	-28.11	47.64	16.10	100.60	19 9 27	1735.2	-26.36	39.28
100.00	10 50 28	3917.67	-.64	151.59	11.34	60.11	11 55 46	3317.7	-4.61	145.06
110.00	20 0 23	2054.09	-30.99	25.53	15.35	105.21	20 34 37	1454.1	-28.59	17.15
110.00	11 37 6	3771.56	1.86	138.95	9.77	55.86	12 39 58	3171.6	-2.63	132.74

DIFFERENTIAL CORRECTIONS
TDE .4091 TRA-1.1961 TC3 2.5387 BAU .3950
RDE .1774 RRA -.2725 RC3 1.3698 FAU .40540
FDE-1.7739 FRA 8.4146 FC-34.2636 BSP 10629
BDE .4459 BRA 1.2267 BC3 2.8847 FSP 7968

MID-COURSE EXECUTION ACCURACY
SGT 2862.8 SGR 1063.1 SG3 2349.5
RRT .9203 RRF -.9783 RTF -.9412
SGB 3053.8 R23 -.2439 R13 -.9532
SG1 3028.4 SG2 393.2 THA 19.20

ORBIT DETERMINATION ACCURACY
ST 995.3 SR 353.5 SS 1719.8
CRT .9572 CRS .8632 CST .9701
LSA 2001.0 MSA 261.4 SSA 29.9
EL1 1051.7 EL2 96.9 ALF 18.95

LAUNCH DATE NOV 1 1964 FLIGHT TIME 276.00 ARRIVAL DATE AUG 4 1965

HELIOCENTRIC CONIC DISTANCE 636.017 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 32.889 GAL -3.22 AZL 89.16 HCA 199.36 SMA 187.92 ECC .21707 INC .8425 V1 30.013
RP 228.70 LAP -.28 LOP 237.96 VP 21.316 GAP -.31 AZP 90.79 TAL 341.76 TAP 181.12 RCA 147.13 APO 228.71 V2 24.049
RC 235.703 GL 8.70 GP 6.48 ZAL 116.09 ZAP 128.67 ETS 173.40 ZAE 164.98 ETE 148.39 ZAC 95.54 ETC 255.91 CLP 128.96

PLANETOCENTRIC CONIC

C3 10.175 VHL 3.190 DLA 17.75 RAL 160.19 RAD 6567.4 VEL 11.470 PTH 1.99 VHP 3.407 DPA 4.28 RAP 189.57 ECC 1.1675

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 53 7	2653.00	-27.24	71.18	16.55	98.06	17 37 20	2053.0	-25.84	62.79
90.00	9 45 53	4121.98	-2.48	167.63	12.04	61.78	10 54 35	3522.0	-6.23	160.96
100.00	18 24 52	2357.13	-28.38	49.21	16.35	99.82	19 4 9	1757.1	-26.73	40.80
100.00	10 56 49	3893.08	-1.47	150.24	11.48	60.14	12 1 42	3293.1	-5.43	143.70
110.00	19 55 55	2072.23	-31.30	26.85	15.62	104.49	20 30 28	1472.2	-29.00	18.41
110.00	11 42 15	3750.74	1.07	137.86	9.89	55.83	12 44 46	3150.7	-3.42	131.65

DIFFERENTIAL CORRECTIONS
TDE .3867 TRA-1.1306 TC3 2.3481 BAU .3693
RDE .1766 RRA -.2643 RC3 1.3633 FAU .42011
FDE-1.7064 FRA 8.7042 FC-35.7444 BSP 10053
BDE .4252 BRA 1.1610 BC3 2.7152 FSP 8308

MID-COURSE EXECUTION ACCURACY
SGT 2696.8 SGR 1051.4 SG3 2442.1
RRT .9120 RRF -.9754 RTF -.9353
SGB 2894.6 R23 -.2500 R13 -.9494
SG1 2866.0 SG2 405.8 THA 19.99

ORBIT DETERMINATION ACCURACY
ST 945.4 SR 351.7 SS 1719.3
CRT .9540 CRS .8405 CST .9616
LSA 1972.9 MSA 283.4 SSA 29.6
EL1 1003.8 EL2 99.3 ALF 19.74

LAUNCH DATE NOV 1 1964 FLIGHT TIME 278.00 ARRIVAL DATE AUG 6 1965

HELIOCENTRIC CONIC DISTANCE 639.888 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 32.879 GAL -3.20 AZL 89.10 HCA 200.39 SMA 187.75 ECC .21628 INC .8963 V1 30.013
RP 228.31 LAP -.31 LOP 239.00 VP 21.348 GAP -.62 AZP 90.84 TAL 341.84 TAP 182.24 RCA 147.15 APO 228.36 V2 24.090
RC 237.537 GL 9.29 GP 6.29 ZAL 115.89 ZAP 127.12 ETS 173.85 ZAE 163.56 ETE 152.13 ZAC 95.23 ETC 255.93 CLP 127.39

PLANETOCENTRIC CONIC

C3 10.114 VHL 3.180 DLA 18.35 RAL 160.28 RAD 6567.4 VEL 11.467 PTH 1.99 VHP 3.345 DPA 4.33 RAP 189.00 ECC 1.1664

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 47 17	2675.14	-27.44	72.77	16.77	97.29	17 31 52	2075.1	-26.15	64.34
90.00	9 52 24	4097.42	-3.27	166.25	12.19	61.86	11 0 41	3497.4	-7.01	159.57
100.00	18 19 37	2377.40	-28.60	50.68	16.58	99.08	18 59 14	1777.4	-27.05	42.22
100.00	11 2 45	3870.39	-2.24	149.00	11.62	60.18	12 7 16	3270.4	-6.19	142.44
110.00	19 51 49	2088.91	-31.58	28.07	15.88	103.82	20 26 38	1488.9	-29.36	19.57
110.00	11 47 2	3731.64	.34	136.86	10.01	55.82	12 49 14	3131.6	-4.15	130.65

DIFFERENTIAL CORRECTIONS
TDE .3665 TRA-1.0626 TC3 2.1395 BAU .3428
RDE .1767 RRA -.2570 RC3 1.3597 FAU .43502
FDE-1.6461 FRA 8.9959 FC-37.2380 BSP 9439
BDE .4068 BRA 1.0932 BC3 2.5350 FSP 8645

MID-COURSE EXECUTION ACCURACY
SGT 2521.1 SGR 1042.7 SG3 2535.7
RRT .9020 RRF -.9724 RTF -.9275
SGB 2728.2 R23 -.2584 R13 -.9447
SG1 2695.5 SG2 421.1 THA 20.99

ORBIT DETERMINATION ACCURACY
ST 896.5 SR 351.3 SS 1723.1
CRT .9519 CRS .8175 CST .9517
LSA 1950.1 MSA 304.4 SSA 29.5
EL1 957.6 EL2 100.8 ALF 20.70

LAUNCH DATE NOV 1 1964 FLIGHT TIME 280.00 ARRIVAL DATE AUG 8 1965

HELIOCENTRIC CONIC DISTANCE 643.768 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 32.870 GAL -3.18 AZL 89.05 HCA 201.44 SMA 187.59 ECC .21555 INC .9451 V1 30.013
RP 227.92 LAP -.35 LOP 240.04 VP 21.380 GAP -.92 AZP 90.88 TAL 341.91 TAP 183.35 RCA 147.16 APO 228.03 V2 24.132
RC 239.350 GL 9.83 GP 6.11 ZAL 115.72 ZAP 125.53 ETS 174.26 ZAE 162.02 ETE 155.29 ZAC 94.93 ETC 255.96 CLP 125.77

PLANETOCENTRIC CONIC

C3 10.059 VHL 3.172 DLA 18.90 RAL 160.37 RAD 6567.4 VEL 11.465 PTH 1.99 VHP 3.287 DPA 4.41 RAP 188.41 ECC 1.1655

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 41 51	2695.74	-27.61	74.25	16.98	96.56	17 26 47	2095.7	-26.41	65.79
90.00	9 58 31	4074.65	-4.00	164.98	12.36	61.94	11 6 26	3474.6	-7.72	158.28
100.00	18 14 44	2396.19	-28.80	52.04	16.80	98.38	18 54 41	1796.2	-27.34	43.54
100.00	11 8 19	3849.42	-2.95	147.84	11.78	60.24	12 12 28	3249.4	-6.89	141.27
110.00	19 48 3	2104.28	-31.83	29.20	16.13	103.19	20 23 7	1504.3	-29.68	20.65
110.00	11 51 30	3714.10	-.33	135.95	10.14	55.82	12 53 24	3114.1	-4.82	129.73

DIFFERENTIAL CORRECTIONS
TDE .3476 TRA -.9926 TC3 1.9096 BAU .3151
RDE .1774 RRA -.2507 RC3 1.3581 FAU .44996
FDE-1.5893 FRA 9.2897 FC-38.7267 BSP 8784
BDE .3902 BRA 1.0238 BC3 2.3433 FSP 8981

MID-COURSE EXECUTION ACCURACY
SGT 2335.4 SGR 1036.3 SG3 2629.6
RRT .8892 RRF -.9693 RTF -.9170
SGB 2555.0 R23 -.2702 R13 -.9387
SG1 2516.9 SG2 440.0 THA 22.25

ORBIT DETERMINATION ACCURACY
ST 847.9 SR 352.1 SS 1729.8
CRT .9507 CRS .7942 CST .9401
LSA 1931.1 MSA 324.3 SSA 29.5
EL1 912.5 EL2 101.5 ALF 21.82

LAUNCH DATE NOV 1 1964 FLIGHT TIME 282.00 ARRIVAL DATE AUG 10 1965

HELIOCENTRIC CONIC DISTANCE 647.659 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 32.861 GAL -3.16 AZL 89.01 HCA 202.48 SMA 187.45 ECC .21486 INC .9897 V1 30.013
RP 227.53 LAP -.38 LOP 241.08 VP 21.414 GAP -1.22 AZP 90.91 TAL 341.97 TAP 184.45 RCA 147.17 APO 227.72 V2 24.173
RC 241.142 GL 10.32 GP 5.95 ZAL 115.56 ZAP 123.90 ETS 174.65 ZAE 160.40 ETE 157.97 ZAC 94.64 ETC 255.99 CLP 124.11

PLANETOCENTRIC CONIC

C3 10.010 VHL 3.164 DLA 19.40 RAL 160.46 RAD 6567.4 VEL 11.463 PTH 1.99 VHP 3.231 DPA 4.51 RAP 187.78 ECC 1.1647

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 36 48	2714.94	-27.75	75.64	17.18	95.88	17 22 3	2114.9	-26.64	67.15
90.00	10 4 17	4053.51	-4.67	163.79	12.53	62.04	11 11 50	3453.5	-8.38	157.07
100.00	18 10 14	2413.65	-28.96	53.31	17.02	97.74	18 50 28	1813.6	-27.59	44.78
100.00	11 13 32	3830.04	-3.60	146.78	11.94	60.31	12 17 22	3230.0	-7.53	140.19
110.00	19 44 35	2118.46	-32.04	30.25	16.38	102.60	20 19 54	1518.5	-29.97	21.65
110.00	11 55 40	3697.98	-.95	135.11	10.28	55.83	12 57 18	3098.0	-5.43	128.89

DIFFERENTIAL CORRECTIONS
TDE .3303 TRA -.9190 TC3 1.6612 BAU .2872
RDE .1786 RRA -.2450 RC3 1.3585 FAU .46498
FDE-1.5388 FRA 9.5792 FC-40.2136 BSP 8094
BDE .3755 BRA .9511 BC3 2.1459 FSP 9313

MID-COURSE EXECUTION ACCURACY
SGT 2139.1 SGR 1031.9 SG3 2723.3
RRT .8730 RRF -.9662 RTF -.9027
SGB 2374.9 R23 -.2851 R13 -.9311
SG1 2329.5 SG2 462.2 THA 23.83

ORBIT DETERMINATION ACCURACY
ST 799.4 SR 353.8 SS 1738.8
CRT .9510 CRS .7712 CST .9263
LSA 1915.5 MSA 343.2 SSA 29.5
EL1 868.3 EL2 100.7 ALF 23.16

LAUNCH DATE NOV 1 1964 FLIGHT TIME 284.00 ARRIVAL DATE AUG 12 1965

HELIOCENTRIC CONIC DISTANCE 651.559 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 32.853 GAL -3.15 AZL 88.97 HCA 203.53 SMA 187.31 ECC .21423 INC 1.0308 V1 30.013
RP 227.14 LAP -.41 LOP 242.13 VP 21.448 GAP -1.51 AZP 90.95 TAL 342.01 TAP 185.54 RCA 147.18 APO 227.43 V2 24.214
RC 242.914 GL 10.77 GP 5.80 ZAL 115.44 ZAP 122.22 ETS 175.01 ZAE 158.69 ETE 160.25 ZAC 94.35 ETC 256.03 CLP 122.41

PLANETOCENTRIC CONIC

C3 9.968 VHL 3.157 DLA 19.85 RAL 160.55 RAD 6567.4 VEL 11.461 PTH 1.99 VHP 3.179 DPA 4.65 RAP 187.13 ECC 1.1640

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 32 8	2732.84	-27.87	76.94	17.38	95.24	17 17 41	2132.8	-26.85	68.42
90.00	10 9 43	4033.91	-5.30	162.69	12.71	62.14	11 16 57	3433.9	-8.99	155.95
100.00	18 6 6	2429.86	-29.11	54.50	17.23	97.13	18 46 36	1829.9	-27.81	45.93
100.00	11 18 26	3812.13	-4.21	145.79	12.11	60.38	12 21 59	3212.1	-8.12	139.19
110.00	19 41 26	2131.56	-32.23	31.23	16.62	102.06	20 16 58	1531.6	-30.24	22.58
110.00	11 59 35	3683.19	-1.51	134.34	10.43	55.85	13 0 58	3083.2	-5.99	128.11

DIFFERENTIAL CORRECTIONS
TDE .3148 TRA -.8425 TC3 1.3925 BAU .2593
RDE .1803 RRA -.2399 RC3 1.3596 FAU .47975
FDE-1.4910 FRA 9.8702 FC-41.6688 BSP 7374
BDE .3627 BRA .8760 BC3 1.9462 FSP 9645

MID-COURSE EXECUTION ACCURACY
SGT 1934.4 SGR 1028.8 SG3 2816.0
RRT .8513 RRF -.9630 RTF -.8825
SGB 2190.9 R23 -.3040 R13 -.9215
SG1 2135.7 SG2 488.8 THA 25.81

ORBIT DETERMINATION ACCURACY
ST 751.5 SR 356.4 SS 1750.0
CRT .9532 CRS .7484 CST .9091
LSA 1903.2 MSA 362.0 SSA 29.5
EL1 826.0 EL2 98.0 ALF 24.69

LAUNCH DATE NOV 1 1964 FLIGHT TIME 286.00 ARRIVAL DATE AUG 14 1965

HELIOCENTRIC CONIC DISTANCE 655.469 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 32.846 GAL -3.13 AZL 88.93 HCA 204.58 SMA 187.18 ECC .21364 INC 1.0686 V1 30.013
RP 226.75 LAP -.44 LOP 243.19 VP 21.483 GAP -1.79 AZP 90.97 TAL 342.05 TAP 186.63 RCA 147.19 APO 227.16 V2 24.256
RC 244.866 GL 11.19 GP 5.66 ZAL 115.33 ZAP 120.50 ETS 175.35 ZAE 156.91 ETE 162.21 ZAC 94.06 ETC 256.07 CLP 120.67

PLANETOCENTRIC CONIC

C3 9.931 VHL 3.151 DLA 20.26 RAL 160.66 RAD 6567.4 VEL 11.459 PTH 1.99 VHP 3.130 DPA 4.81 RAP 186.45 ECC 1.1634

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 27 50	2749.53	-27.97	78.15	17.59	94.64	17 13 39	2149.5	-27.03	69.61
90.00	10 14 51	4015.75	-5.88	161.67	12.90	62.25	11 21 47	3415.7	-9.55	154.91
100.00	18 2 18	2444.91	-29.23	55.60	17.44	96.56	18 43 3	1844.9	-28.01	47.01
100.00	11 23 4	3795.60	-4.76	144.88	12.28	60.45	12 26 20	3195.6	-8.66	138.26
110.00	19 38 35	2143.65	-32.40	32.13	16.86	101.55	20 14 19	1543.7	-30.47	23.45
110.00	12 3 16	3669.62	-2.03	133.63	10.59	55.87	13 4 26	3069.6	-6.50	127.39

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2993 TRA -.7636 TC3 1.1012 BAU .2325 SGT 1722.9 SGR 1026.7 SG3 2907.1 ST 702.7 SR 359.4 SS 1762.2
RDE .1822 RRA -.2354 RC3 1.3613 FAU .49421 RRT .8203 RRF -.9597 RTF -.8525 CRT .9568 CRS .7254 CST .8884
FDE-1.4424 FRA10.1617 FC-43.0840 BSP 6633 SGB 2005.6 R23 -.3279 R13 -.9091 LSA 1893.0 MSA 379.2 SSA 29.6
BDE .3504 BRA .7991 BC3 1.7510 FSP 9971 SG1 1936.3 SG2 522.4 THA 28.30 EL1 783.7 EL2 93.7 ALF 26.48

LAUNCH DATE NOV 1 1964 FLIGHT TIME 288.00 ARRIVAL DATE AUG 16 1965

HELIOCENTRIC CONIC DISTANCE 659.389 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 32.839 GAL -3.12 AZL 88.90 HCA 205.64 SMA 187.05 ECC .21310 INC 1.1037 V1 30.013
RP 226.36 LAP -.48 LOP 244.24 VP 21.520 GAP -2.07 AZP 91.00 TAL 342.07 TAP 187.71 RCA 147.19 APO 226.92 V2 24.297
RC 246.398 GL 11.58 GP 5.53 ZAL 115.25 ZAP 118.74 ETS 175.67 ZAE 155.07 ETE 163.91 ZAC 93.78 ETC 256.11 CLP 118.89

PLANETOCENTRIC CONIC

C3 9.900 VHL 3.146 DLA 20.64 RAL 160.77 RAD 6567.4 VEL 11.458 PTH 1.99 VHP 3.085 DPA 4.99 RAP 185.74 ECC 1.1629

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 23 53	2765.06	-28.05	79.28	17.79	94.08	17 9 58	2165.1	-27.18	70.72
90.00	10 19 42	3998.97	-6.41	160.72	13.10	62.36	11 26 21	3399.0	-10.06	153.95
100.00	17 58 50	2458.86	-29.33	56.62	17.66	96.03	18 39 49	1858.9	-28.19	48.01
100.00	11 27 26	3780.39	-5.27	144.04	12.47	60.53	12 30 26	3180.4	-9.16	137.40
110.00	19 36 2	2154.81	-32.55	32.97	17.10	101.07	20 11 56	1554.8	-30.68	24.25
110.00	12 6 44	3657.22	-2.51	132.98	10.76	55.90	13 7 41	3057.2	-6.97	126.73

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2861 TRA -.6815 TC3 .7928 BAU .2087 SGT 1509.6 SGR 1025.5 SG3 2996.3 ST 655.7 SR 363.1 SS 1776.2
RDE .1845 RRA -.2313 RC3 1.3634 FAU .50837 RRT .7752 RRF -.9564 RTF -.8070 CRT .9627 CRS .7033 CST .8621
FDE-1.3996 FRA10.4495 FC-44.4582 BSP 5878 SGB 1824.9 R23 -.3563 R13 -.8936 LSA 1886.4 MSA 396.4 SSA 29.7
BDE .3404 BRA .7196 BC3 1.5772 FSP 10292 SG1 1735.8 SG2 563.4 THA 31.46 EL1 744.5 EL2 86.5 ALF 28.48

LAUNCH DATE NOV 1 1964 FLIGHT TIME 290.00 ARRIVAL DATE AUG 18 1965

HELIOCENTRIC CONIC DISTANCE 663.317 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 32.832 GAL -3.11 AZL 88.86 HCA 206.70 SMA 186.94 ECC .21260 INC 1.1364 V1 30.013
RP 225.97 LAP -.51 LOP 245.30 VP 21.557 GAP -2.35 AZP 91.02 TAL 342.08 TAP 188.78 RCA 147.20 APO 226.68 V2 24.339
RC 248.110 GL 11.94 GP 5.41 ZAL 115.19 ZAP 116.94 ETS 175.97 ZAE 153.16 ETE 165.39 ZAC 93.50 ETC 256.15 CLP 117.07

PLANETOCENTRIC CONIC

C3 9.874 VHL 3.142 DLA 20.98 RAL 160.89 RAD 6567.4 VEL 11.457 PTH 1.99 VHP 3.042 DPA 5.20 RAP 185.00 ECC 1.1625

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 20 17	2779.48	-28.11	80.33	18.00	93.56	17 6 37	2179.5	-27.32	71.75
90.00	10 24 17	3983.51	-6.89	159.85	13.31	62.47	11 30 41	3383.5	-10.53	153.05
100.00	17 55 43	2471.78	-29.42	57.57	17.88	95.54	18 36 55	1871.8	-28.34	48.94
100.00	11 31 33	3766.44	-5.74	143.26	12.68	60.61	12 34 19	3166.4	-9.61	136.62
110.00	19 33 45	2165.08	-32.68	33.74	17.34	100.63	20 9 50	1565.1	-30.87	24.99
110.00	12 10 0	3645.91	-2.94	132.39	10.94	55.93	13 10 46	3045.9	-7.39	126.13

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2740 TRA -.5956 TC3 .4660 BAU .1905 SGT 1299.3 SGR 1025.0 SG3 3082.8 ST 609.5 SR 367.4 SS 1791.2
RDE .1872 RRA -.2275 RC3 1.3658 FAU .52218 RRT .7048 RRF -.9530 RTF -.7342 CRT .9705 CRS .6824 CST .8289
FDE-1.3630 FRA10.7291 FC-45.7851 BSP 5137 SGB 1655.0 R23 -.3878 R13 -.8750 LSA 1882.4 MSA 412.8 SSA 29.7
BDE .3319 BRA .6375 BC3 1.4431 FSP 10604 SG1 1536.5 SG2 614.9 THA 35.62 EL1 707.6 EL2 76.3 ALF 30.72

LAUNCH DATE NOV 1 1964 FLIGHT TIME 292.00 ARRIVAL DATE AUG 20 1965

HELIOCENTRIC CONIC DISTANCE 667.255 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 32.826 GAL -3.11 AZL 88.83 HCA 207.76 SMA 186.84 ECC .21215 INC 1.1669 V1 30.013
RP 225.58 LAP -.54 LOP 246.36 VP 21.595 GAP -2.62 AZP 91.03 TAL 342.07 TAP 189.84 RCA 147.20 APO 226.47 V2 24.381
RC 249.803 GL 12.28 GP 5.29 ZAL 115.15 ZAP 115.11 ETS 176.26 ZAE 151.21 ETE 166.69 ZAC 93.21 ETC 256.20 CLP 115.22

PLANETOCENTRIC CONIC

C3 9.853 VHL 3.139 DLA 21.29 RAL 161.03 RAD 6567.4 VEL 11.456 PTH 1.99 VHP 3.003 DPA 5.42 RAP 184.24 ECC 1.1622

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 17 3	2792.84	-28.16	81.30	18.22	93.07	17 3 36	2192.8	-27.44	72.71
90.00	10 28 37	3969.34	-7.34	159.04	13.53	62.57	11 34 46	3369.3	-10.96	152.23
100.00	17 52 55	2483.70	-29.50	58.45	18.11	95.08	18 34 19	1883.7	-28.48	49.80
100.00	11 35 26	3753.70	-6.16	142.56	12.89	60.69	12 38 0	3153.7	-10.02	135.89
110.00	19 31 45	2174.51	-32.80	34.45	17.59	100.23	20 8 0	1574.5	-31.04	25.67
110.00	12 13 6	3635.66	-3.33	131.85	11.13	55.96	13 13 41	3035.7	-7.77	125.59

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2622 TRA -.5074 TC3 .1198 BAU .1808 SGT 1105.8 SGR 1024.7 SG3 3166.2 ST 563.9 SR 371.8 SS 1806.9
RDE .1900 RRA -.2241 RC3 1.3675 FAU .53529 RRT .5886 RRF -.9495 RTF -.6124 CRT .9791 CRS .6615 CST .7864
FDE-1.3236 FRA11.0103 FC-47.0314 BSP 4437 SGB 1507.6 R23 -.4167 R13 -.8558 LSA 1880.7 MSA 428.2 SSA 29.8
BDE .3238 BRA .5547 BC3 1.3727 FSP 10907 SG1 1345.0 SG2 681.1 THA 41.31 EL1 672.5 EL2 63.4 ALF 33.18

LAUNCH DATE NOV 1 1964 FLIGHT TIME 294.00 ARRIVAL DATE AUG 22 1965

HELIOCENTRIC CONIC DISTANCE 671.203 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 32.821 GAL -3.11 AZL 88.80 HCA 208.83 SMA 186.74 ECC .21174 INC 1.1954 V1 30.013
RP 225.19 LAP -.58 LOP 247.43 VP 21.633 GAP -2.89 AZP 91.05 TAL 342.06 TAP 190.89 RCA 147.20 APO 226.28 V2 24.423
RC 251.477 GL 12.59 GP 5.18 ZAL 115.14 ZAP 113.23 ETS 176.54 ZAE 149.20 ETE 167.83 ZAC 92.93 ETC 256.26 CLP 113.34

PLANETOCENTRIC CONIC

C3 9.838 VHL 3.137 DLA 21.57 RAL 161.18 RAD 6567.4 VEL 11.455 PTH 1.99 VHP 2.968 DPA 5.66 RAP 183.45 ECC 1.1619

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 14 10	2805.15	-28.21	82.20	18.45	92.62	17 0 55	2205.2	-27.54	73.60
90.00	10 32 42	3956.41	-7.74	158.31	13.76	62.68	11 38 38	3356.4	-11.35	151.48
100.00	17 50 28	2494.66	-29.56	59.26	18.35	94.66	18 32 2	1894.7	-28.60	50.59
100.00	11 39 5	3742.14	-6.55	141.91	13.11	60.77	12 41 28	3142.1	-10.40	135.24
110.00	19 30 2	2183.15	-32.90	35.10	17.85	99.85	20 6 25	1583.2	-31.19	26.30
110.00	12 16 1	3626.41	-3.68	131.37	11.34	55.99	13 16 27	3026.4	-8.12	125.10

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2516 TRA -.4154 TC3 -.2432 BAU .1829 SGT 948.9 SGR 1024.5 SG3 3245.2 ST 520.8 SR 376.8 SS 1822.8
RDE .1931 RRA -.2207 RC3 1.3688 FAU .54784 RRT .3958 RRF -.9460 RTF -.4081 CRT .9878 CRS .6419 CST .7311
FDE-1.2915 FRA11.2764 FC-48.2076 BSP 3842 SGB 1396.4 R23 -.4163 R13 -.8502 LSA 1881.1 MSA 443.0 SSA 29.9
BDE .3172 BRA .4704 BC3 1.3902 FSP 11194 SG1 1169.2 SG2 763.6 THA 50.49 EL1 641.0 EL2 47.7 ALF 35.78

LAUNCH DATE NOV 1 1964 FLIGHT TIME 296.00 ARRIVAL DATE AUG 24 1965

HELIOCENTRIC CONIC DISTANCE 675.159 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 32.815 GAL -3.11 AZL 88.78 HCA 209.90 SMA 186.65 ECC .21137 INC 1.2219 V1 30.013
RP 224.80 LAP -.61 LOP 248.50 VP 21.673 GAP -3.15 AZP 91.06 TAL 342.03 TAP 191.93 RCA 147.20 APO 226.10 V2 24.465
RC 253.132 GL 12.88 GP 5.07 ZAL 115.15 ZAP 111.33 ETS 176.80 ZAE 147.15 ETE 168.85 ZAC 92.64 ETC 256.31 CLP 111.42

PLANETOCENTRIC CONIC

C3 9.829 VHL 3.135 DLA 21.82 RAL 161.34 RAD 6567.4 VEL 11.455 PTH 1.99 VHP 2.935 DPA 5.92 RAP 182.63 ECC 1.1618

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 11 38	2816.46	-28.24	83.03	18.68	92.21	16 58 35	2216.5	-27.63	74.41
90.00	10 36 32	3944.71	-8.11	157.64	14.01	62.78	11 42 17	3344.7	-11.70	150.80
100.00	17 48 19	2504.70	-29.61	60.00	18.59	94.27	18 30 4	1904.7	-28.71	51.32
100.00	11 42 32	3731.70	-6.89	141.33	13.35	60.84	12 44 44	3131.7	-10.73	134.64
110.00	19 28 35	2191.04	-32.99	35.70	18.12	99.51	20 5 6	1591.0	-31.33	26.87
110.00	12 18 46	3618.13	-4.00	130.94	11.57	56.02	13 19 4	3018.1	-8.43	124.65

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2438 TRA -.3189 TC3 -.6161 BAU .1975 SGT 861.3 SGR 1025.3 SG3 3321.1 ST 483.9 SR 383.1 SS 1839.8
RDE .1970 RRA -.2168 RC3 1.3713 FAU .56060 RRT .1090 RRF -.9425 RTF -.1001 CRT .9941 CRS .6276 CST .6611
FDE-1.2911 FRA11.5089 FC-49.3796 BSP 3421 SGB 1339.0 R23 -.2160 R13 -.9174 LSA 1885.6 MSA 457.5 SSA 29.8
BDE .3135 BRA .3856 BC3 1.5034 FSP 11410 SG1 1038.6 SG2 845.2 THA 74.06 EL1 616.3 EL2 32.5 ALF 38.33

LAUNCH DATE NOV 1 1964 FLIGHT TIME 298.00 ARRIVAL DATE AUG 26 1965

HELIOCENTRIC CONIC DISTANCE 679.124 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 32.811 GAL -3.11 AZL 88.75 HCA 210.97 SMA 186.56 ECC .21104 INC 1.2468 V1 30.013
RP 224.41 LAP -.64 LOP 249.58 VP 21.713 GAP -3.41 AZP 91.07 TAL 341.99 TAP 192.96 RCA 147.19 APO 225.94 V2 24.506
RC 254.766 GL 13.15 GP 4.97 ZAL 115.19 ZAP 109.40 ETS 177.05 ZAE 145.06 ETE 169.77 ZAC 92.36 ETC 256.37 CLP 109.48

PLANETOCENTRIC CONIC

C3 9.824 VHL 3.134 DLA 22.04 RAL 161.52 RAD 6567.4 VEL 11.455 PTH 1.99 VHP 2.906 DPA 6.19 RAP 181.80 ECC 1.1617

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 9 28	2826.76	-28.26	83.78	18.93	91.83	16 56 35	2226.8	-27.71	75.16
90.00	10 40 8	3934.23	-8.43	157.05	14.27	62.87	11 45 42	3334.2	-12.01	150.19
100.00	17 46 31	2513.81	-29.66	60.68	18.85	93.92	18 28 25	1913.8	-28.80	51.98
100.00	11 45 46	3722.41	-7.20	140.81	13.61	60.91	12 47 48	3122.4	-11.03	134.11
110.00	19 27 24	2198.18	-33.07	36.24	18.39	99.20	20 4 3	1598.2	-31.45	27.40
110.00	12 21 22	3610.81	-4.28	130.55	11.80	56.05	13 21 33	3010.8	-8.70	124.26

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2338 TRA -.2210 TC3-1.0154 BAU .2240 SGT 881.9 SGR 1024.6 SG3 3389.2 ST 447.3 SR 388.5 SS 1855.6
RDE .2005 RRA -.2137 RC3 1.3703 FAU .57130 RRT -.2285 RRF -.9387 RTF .2600 CRT .9934 CRS .6099 CST .5686
FDE-1.2650 FRA11.7548 FC-50.3447 BSP 3350 SGB 1351.8 R23 .3115 R13 -.8867 LSA 1890.1 MSA 470.1 SSA 30.0
BDE .3080 BRA .3074 BC3 1.7055 FSP 11665 SG1 1077.5 SG2 816.4 THA 118.32 EL1 591.5 EL2 33.6 ALF 40.95

LAUNCH DATE NOV 1 1964 FLIGHT TIME 300.00 ARRIVAL DATE AUG 28 1965

HELIOCENTRIC CONIC DISTANCE 683.098 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 32.806 GAL -3.12 AZL 88.73 HCA 212.05 SMA 186.49 ECC .21075 INC 1.2707 V1 30.013
RP 224.02 LAP -.67 LOP 250.65 VP 21.753 GAP -3.66 AZP 91.08 TAL 341.93 TAP 193.98 RCA 147.19 APO 225.79 V2 24.548
RC 256.380 GL 13.40 GP 4.87 ZAL 115.25 ZAP 107.44 ETS 177.30 ZAE 142.93 ETE 170.59 ZAC 92.07 ETC 256.44 CLP 107.51

PLANETOCENTRIC CONIC

C3 9.825 VHL 3.134 DLA 22.24 RAL 161.72 RAD 6567.4 VEL 11.455 PTH 1.99 VHP 2.881 DPA 6.47 RAP 180.95 ECC 1.1617

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 7 39	2836.07	-28.28	84.46	19.20	91.49	16 54 55	2236.1	-27.77	75.83
90.00	10 43 30	3924.95	-8.72	156.52	14.55	62.95	11 48 55	3324.9	-12.28	149.65
100.00	17 45 2	2522.04	-29.69	61.28	19.13	93.60	18 27 4	1922.0	-28.88	52.58
100.00	11 48 48	3714.21	-7.47	140.36	13.87	60.97	12 50 42	3114.2	-11.29	133.65
110.00	19 26 30	2204.62	-33.14	36.73	18.68	98.92	20 3 15	1604.6	-31.55	27.87
110.00	12 23 50	3604.39	-4.52	130.22	12.06	56.08	13 23 54	3004.4	-8.94	123.92

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2256 TRA -.1192 TC3-1.4220 BAU .2592 SGT 1010.0 SGR 1023.8 SG3 3452.2 ST 419.2 SR 394.5 SS 1871.8
RDE .2043 RRA -.2103 RC3 1.3687 FAU .58139 RRT -.4962 RRF -.9348 RTF .5480 CRT .9801 CRS .5949 CST .4505
FDE-1.2535 FRA11.9801 FC-51.2308 BSP 3649 SGB 1438.2 R23 .3751 R13 -.8617 LSA 1897.5 MSA 483.2 SSA 29.9
BDE .3043 BRA .2418 BC3 1.9737 FSP 11877 SG1 1244.0 SG2 721.7 THA 134.22 EL1 572.8 EL2 57.3 ALF 43.23

LAUNCH DATE NOV 1 1964 FLIGHT TIME 302.00 ARRIVAL DATE AUG 30 1965

HELIOCENTRIC CONIC DISTANCE 687.080 EARTH TO MARS

RL	148.46	LAL	-.00	LOL	38.61	VL	32.802	GAL	-3.13	AZL	88.71	HCA	213.14	SMA	186.42	ECC	.21050	INC	1.2928	V1	30.013
RP	223.63	LAP	-.71	LOP	251.74	VP	21.795	GAP	-3.91	AZP	91.08	TAL	341.86	TAP	195.00	RCA	147.18	APO	225.66	V2	24.590
RC	257.974	GL	13.63	GP	4.77	ZAL	115.34	ZAP	105.47	ETS	177.53	ZAE	140.77	ETE	171.33	ZAC	91.78	ETC	256.51	CLP	105.52

PLANETOCENTRIC CONIC

C3	9.831	VHL	3.135	DLA	22.41	RAL	161.93	RAD	6567.4	VEL	11.455	PTH	1.99	VHP	2.859	DPA	6.76	RAP	180.08	ECC	1.1618

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 6 12	2844.40	-28.29	85.07	19.48	91.19	16 53 36	2244.4	-27.83	76.43
90.00	10 46 38	3916.85	-8.97	156.05	14.83	63.03	11 51 55	3316.9	-12.52	149.17
100.00	17 43 53	2529.38	-29.72	61.83	19.41	93.32	18 26 3	1929.4	-28.95	53.11
100.00	11 51 37	3707.10	-7.71	139.96	14.16	61.03	12 53 25	3107.1	-11.51	133.24
110.00	19 25 51	2210.37	-33.20	37.17	18.99	98.66	20 2 42	1610.4	-31.64	28.29
110.00	12 26 9	3598.87	-4.73	129.93	12.32	56.11	13 26 8	2998.9	-9.15	123.62

DIFFERENTIAL CORRECTIONS

TDE	.2166	TRA	-.0148	TC3	-1.8448	BAU	.3017
RDE	.2083	RRA	-.2068	RC3	1.3659	FAU	.59052
FDE	-1.2477	FRA	12.1847	FC	-52.0046	BSP	4266
BDE	.3005	BRA	.2074	BC3	2.2955	FSP	12060

MID-COURSE EXECUTION ACCURACY

SGT	1223.0	SGR	1022.6	SG3	3508.3
RRT	-.6622	RRF	-.9307	RTF	.7273
SGB	1594.2	R23	.3360	R13	-.8805
SG1	1459.1	SG2	642.3	THA	142.60

ORBIT DETERMINATION ACCURACY

ST	397.4	SR	400.8	SS	1886.9
CRT	.9471	CRS	.5811	CST	.3069
LSA	1906.3	MSA	494.1	SSA	30.0
EL1	556.9	EL2	91.8	ALF	45.26

LAUNCH DATE NOV 1 1964 FLIGHT TIME 304.00 ARRIVAL DATE SEP 1 1965

HELIOCENTRIC CONIC DISTANCE 691.071 EARTH TO MARS

RL	148.46	LAL	-.00	LOL	38.61	VL	32.798	GAL	-3.14	AZL	88.69	HCA	214.22	SMA	186.36	ECC	.21029	INC	1.3141	V1	30.013
RP	223.24	LAP	-.74	LOP	252.82	VP	21.836	GAP	-4.16	AZP	91.09	TAL	341.78	TAP	196.00	RCA	147.17	APO	225.55	V2	24.632
RC	259.547	GL	13.85	GP	4.68	ZAL	115.45	ZAP	103.47	ETS	177.76	ZAE	138.59	ETE	172.00	ZAC	91.49	ETC	256.59	CLP	103.51

PLANETOCENTRIC CONIC

C3	9.842	VHL	3.137	DLA	22.56	RAL	162.15	RAD	6567.4	VEL	11.456	PTH	1.99	VHP	2.840	DPA	7.05	RAP	179.20	ECC	1.1620

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 5 6	2851.75	-28.30	85.61	19.77	90.92	16 52 38	2251.8	-27.88	76.97
90.00	10 49 32	3909.94	-9.19	155.66	15.14	63.10	11 54 42	3309.9	-12.72	148.77
100.00	17 43 4	2535.87	-29.75	62.31	19.71	93.07	18 25 20	1935.9	-29.01	53.58
100.00	11 54 15	3701.06	-7.91	139.62	14.45	61.08	12 55 56	3101.1	-11.71	132.89
110.00	19 25 29	2215.46	-33.25	37.56	19.30	98.44	20 2 25	1615.5	-31.73	28.66
110.00	12 28 20	3594.23	-4.90	129.68	12.61	56.13	13 28 14	2994.2	-9.32	123.38

DIFFERENTIAL CORRECTIONS

TDE	.2081	TRA	.0932	TC3	-2.2784	BAU	.3491
RDE	.2123	RRA	-.2035	RC3	1.3601	FAU	.59779
FDE	-1.2368	FRA	12.3827	FC	-52.5859	BSP	5120
BDE	.2973	BRA	.2238	BC3	2.6535	FSP	12237

MID-COURSE EXECUTION ACCURACY

SGT	1490.6	SGR	1020.1	SG3	3555.5
RRT	-.7541	RRF	-.9264	RTF	.8285
SGB	1806.3	R23	.2806	R13	-.9048
SG1	1709.2	SG2	584.3	THA	148.63

ORBIT DETERMINATION ACCURACY

ST	386.5	SR	406.9	SS	1901.6
CRT	.8877	CRS	.5671	CST	.1369
LSA	1917.0	MSA	505.2	SSA	30.0
EL1	545.3	EL2	132.8	ALF	46.66

LAUNCH DATE NOV 1 1964 FLIGHT TIME 306.00 ARRIVAL DATE SEP 3 1965

HELIOCENTRIC CONIC DISTANCE 695.070 EARTH TO MARS

RL	148.46	LAL	-.00	LOL	38.61	VL	32.795	GAL	-3.15	AZL	88.67	HCA	215.31	SMA	186.30	ECC	.21012	INC	1.3340	V1	30.013
RP	222.85	LAP	-.77	LOP	253.91	VP	21.879	GAP	-4.40	AZP	91.09	TAL	341.69	TAP	197.00	RCA	147.15	APO	225.44	V2	24.674
RC	261.100	GL	14.05	GP	4.58	ZAL	115.58	ZAP	101.46	ETS	177.97	ZAE	136.39	ETE	172.62	ZAC	91.20	ETC	256.67	CLP	101.49

PLANETOCENTRIC CONIC

C3	9.858	VHL	3.140	DLA	22.68	RAL	162.40	RAD	6567.4	VEL	11.456	PTH	1.99	VHP	2.825	DPA	7.36	RAP	178.31	ECC	1.1622

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 4 22	2858.14	-28.31	86.07	20.08	90.68	16 52 0	2258.1	-27.91	77.43
90.00	10 52 13	3904.21	-9.36	155.33	15.45	63.15	11 57 17	3304.2	-12.89	148.43
100.00	17 42 34	2541.51	-29.77	62.73	20.03	92.85	18 24 56	1941.5	-29.06	54.00
100.00	11 56 42	3696.07	-8.07	139.34	14.76	61.12	12 58 18	3096.1	-11.86	132.61
110.00	19 25 22	2219.90	-33.29	37.90	19.63	98.24	20 2 22	1619.9	-31.80	28.99
110.00	12 30 23	3590.45	-5.05	129.48	12.91	56.15	13 30 14	2990.4	-9.46	123.17

DIFFERENTIAL CORRECTIONS

TDE	.1996	TRA	.2038	TC3	-2.7209	BAU	.4005
RDE	.2167	RRA	-.1997	RC3	1.3540	FAU	.60451
FDE	-1.2448	FRA	12.5448	FC	-53.0890	BSP	6112
BDE	.2946	BRA	.2853	BC3	3.0392	FSP	12362

MID-COURSE EXECUTION ACCURACY

SGT	1792.9	SGR	1017.5	SG3	3595.9
RRT	-.8046	RRF	-.9220	RTF	.8863
SGB	2061.5	R23	.2273	R13	-.9260
SG1	1988.2	SG2	544.8	THA	153.29

ORBIT DETERMINATION ACCURACY

ST	387.1	SR	413.7	SS	1915.1
CRT	.8017	CRS	.5564	CST	-.0409
LSA	1929.3	MSA	515.1	SSA	30.0
EL1	537.9	EL2	177.9	ALF	47.36

LAUNCH DATE NOV 1 1964 FLIGHT TIME 308.00 ARRIVAL DATE SEP 5 1965

HELIOCENTRIC CONIC DISTANCE 699.076 EARTH TO MARS

RL	148.46	LAL	-.00	LOL	38.61	VL	32.792	GAL	-3.17	AZL	88.65	HCA	216.40	SMA	186.25	ECC	.20998	INC	1.3532	V1	30.013
RP	222.47	LAP	-.80	LOP	255.00	VP	21.921	GAP	-4.63	AZP	91.09	TAL	341.58	TAP	197.98	RCA	147.14	APO	225.36	V2	24.716
RC	262.633	GL	14.24	GP	4.49	ZAL	115.74	ZAP	99.44	ETS	178.18	ZAE	134.17	ETE	173.18	ZAC	90.91	ETC	256.75	CLP	99.47

PLANETOCENTRIC CONIC

C3	9.879	VHL	3.143	DLA	22.79	RAL	162.66	RAD	6567.4	VEL	11.457	PTH	1.99	VHP	2.813	DPA	7.66	RAP	177.42	ECC	1.1626

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 4 1	2863.54	-28.31	86.47	20.41	90.49	16 51 45	2263.5	-27.95	77.82
90.00	10 54 39	3899.68	-9.50	155.07	15.79	63.20	11 59 39	3299.7	-13.02	148.16
100.00	17 42 25	2546.28	-29.78	63.08	20.37	92.66	18 24 51	1946.3	-29.10	54.34
100.00	11 58 57	3692.17	-8.20	139.12	15.09	61.15	13 0 29	3092.2	-11.99	132.38
110.00	19 25 32	2223.68	-33.33	38.19	19.98	98.07	20 2 36	1623.7	-31.85	29.27
110.00	12 32 19	3587.54	-5.16	129.33	13.23	56.16	13 32 7	2987.5	-9.57	123.02

DIFFERENTIAL CORRECTIONS

TDE	.1897	TRA	.3171	TC3	-3.1780	BAU	.4555
RDE	.2198	RRA	-.1974	RC3	1.3392	FAU	.60625
FDE	-1.1842	FRA	12.7639	FC	-53.1255	BSP	7204
BDE	.2903	BRA	.3735	BC3	3.4486	FSP	12607

MID-COURSE EXECUTION ACCURACY

SGT	2122.2	SGR	1010.7	SG3	3621.4
RRT	-.8336	RRF	-.9166	RTF	.9195
SGB	2350.6	R23	.1833	R13	-.9411
SG1	2293.1	SG2	516.6	THA	157.12

ORBIT DETERMINATION ACCURACY

ST	398.1	SR	418.1	SS	1929.0
CRT	.6907	CRS	.5353	CST	-.2335
LSA	1944.3	MSA	522.6	SSA	30.4
EL1	531.0	EL2	226.7	ALF	47.03

LAUNCH DATE NOV 1 1964 FLIGHT TIME 310.00 ARRIVAL DATE SEP 7 1965

HELIOCENTRIC CONIC DISTANCE 703.092 EARTH TO MARS

RL	148.46	LAL	-.00	LOL	38.61	VL	32.790	GAL	-3.19	AZL	88.63	HCA	217.50	SMA	186.20	ECC	.20988	INC	1.3713
RP	222.08	LAP	-.83	LOP	256.10	VP	21.964	GAP	-4.86	AZP	91.09	TAL	341.46	TAP	198.96	RCA	147.12	APO	225.28
RC	264.145	GL	14.41	GP	4.40	ZAL	115.92	ZAP	97.41	ETS	178.38	ZAE	131.94	ETE	173.70	ZAC	90.62	ETC	256.83

V1 30.013 V2 24.758 CLP 97.43

PLANETOCENTRIC CONIC

C3	9.906	VHL	3.147	DLA	22.87	RAL	162.94	RAD	6567.4	VEL	11.458	PTH	1.99	VHP	2.805	DPA	7.96	RAP	176.52

ECC 1.1630

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 4 1	2868.05	-28.32	86.80	20.76	90.32	16 51 49	2268.0	-27.97	78.15
90.00	10 56 53	3896.25	-9.61	154.87	16.13	63.23	12 1 49	3296.2	-13.12	147.96
100.00	17 42 34	2550.28	-29.80	63.38	20.72	92.51	18 25 4	1950.3	-29.13	54.64
100.00	12 1 1	3689.24	-8.30	138.96	15.43	61.18	13 2 30	3089.2	-12.08	132.21
110.00	19 25 56	2226.88	-33.36	38.43	20.34	97.93	20 3 3	1626.9	-31.90	29.51
110.00	12 34 8	3585.41	-5.24	129.22	13.56	56.17	13 33 53	2985.4	-9.65	122.90

DIFFERENTIAL CORRECTIONS

TDE	.1815	TRA	.4341	TC3	-3.6266	BAU	.5117
RDE	.2252	RRA	-.1925	RC3	1.3319	FAU	.61161
FDE	-1.2354	FRA	12.8500	FC	-53.4502	BSP	8370
BDE	.2892	BRA	.4748	BC3	3.8634	FSP	12598

MID-COURSE EXECUTION ACCURACY

SGT	2460.9	SGR	1007.7	SG3	3646.9		
RRT	-.8487	RRF	-.9118	RTF	.9419		
SGB	2659.3	R23	.1466	R13	-.9544		
SG1	2611.4	SG2	502.3	THA	160.07		

ORBIT DETERMINATION ACCURACY

ST	424.4	SR	426.2	SS	1940.1		
CRT	.5771	CRS	.5323	CST	-.3784		
LSA	1959.9	MSA	532.4	SSA	30.1		
EL1	534.1	EL2	276.6	ALF	45.21		

LAUNCH DATE NOV 1 1964 FLIGHT TIME 312.00 ARRIVAL DATE SEP 9 1965

HELIOCENTRIC CONIC DISTANCE 707.116 EARTH TO MARS

RL	148.46	LAL	-.00	LOL	38.61	VL	32.787	GAL	-3.21	AZL	88.61	HCA	218.60	SMA	186.16	ECC	.20982	INC	1.3887
RP	221.70	LAP	-.87	LOP	257.20	VP	22.008	GAP	-5.09	AZP	91.09	TAL	341.32	TAP	199.93	RCA	147.10	APO	225.23
RC	265.639	GL	14.58	GP	4.30	ZAL	116.13	ZAP	95.38	ETS	178.57	ZAE	129.70	ETE	174.17	ZAC	90.34	ETC	256.92

V1 30.013 V2 24.799 CLP 95.39

PLANETOCENTRIC CONIC

C3	9.938	VHL	3.153	DLA	22.92	RAL	163.23	RAD	6567.4	VEL	11.460	PTH	1.99	VHP	2.800	DPA	8.27	RAP	175.63

ECC 1.1636

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 4 22	2871.60	-28.32	87.06	21.12	90.19	16 52 14	2271.6	-27.99	78.41
90.00	10 58 53	3893.98	-9.68	154.74	16.50	63.26	12 3 47	3294.0	-13.19	147.82
100.00	17 43 3	2553.46	-29.81	63.61	21.09	92.38	18 25 36	1953.5	-29.16	54.87
100.00	12 2 54	3687.35	-8.36	138.85	15.79	61.20	13 4 21	3087.4	-12.14	132.11
110.00	19 26 36	2229.47	-33.38	38.63	20.71	97.82	20 3 46	1629.5	-31.94	29.70
110.00	12 35 49	3584.11	-5.29	129.15	13.91	56.18	13 35 34	2984.1	-9.70	122.83

DIFFERENTIAL CORRECTIONS

TDE	.1727	TRA	.5538	TC3	-4.0797	BAU	.5697
RDE	.2301	RRA	-.1880	RC3	1.3200	FAU	.61412
FDE	-1.2651	FRA	12.9416	FC	-53.4958	BSP	9588
BDE	.2877	BRA	.5848	BC3	4.2880	FSP	12617

MID-COURSE EXECUTION ACCURACY

SGT	2812.4	SGR	1002.6	SG3	3660.7		
RRT	-.8565	RRF	-.9065	RTF	.9563		
SGB	2985.7	R23	.1187	R13	-.9639		
SG1	2944.5	SG2	494.3	THA	162.51		

ORBIT DETERMINATION ACCURACY

ST	460.4	SR	433.5	SS	1950.7		
CRT	.4652	CRS	.5263	CST	-.5033		
LSA	1977.7	MSA	541.4	SSA	29.9		
EL1	541.8	EL2	326.0	ALF	41.32		

LAUNCH DATE NOV 1 1964 FLIGHT TIME 314.00 ARRIVAL DATE SEP 11 1965

HELIOCENTRIC CONIC DISTANCE 711.148 EARTH TO MARS

RL	148.46	LAL	-.00	LOL	38.61	VL	32.785	GAL	-3.23	AZL	88.59	HCA	219.71	SMA	186.13	ECC	.20979	INC	1.4053
RP	221.32	LAP	-.90	LOP	258.31	VP	22.052	GAP	-5.31	AZP	91.08	TAL	341.17	TAP	200.88	RCA	147.08	APO	225.18
RC	267.114	GL	14.72	GP	4.21	ZAL	116.35	ZAP	93.35	ETS	178.76	ZAE	127.46	ETE	174.61	ZAC	90.05	ETC	257.01

V1 30.013 V2 24.841 CLP 93.36

PLANETOCENTRIC CONIC

C3	9.976	VHL	3.158	DLA	22.96	RAL	163.55	RAD	6567.4	VEL	11.461	PTH	1.99	VHP	2.799	DPA	8.57	RAP	174.74

ECC 1.1642

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 5 6	2874.23	-28.32	87.25	21.51	90.09	16 53 0	2274.2	-28.00	78.60
90.00	11 0 39	3892.86	-9.71	154.68	16.87	63.27	12 5 32	3292.9	-13.22	147.76
100.00	17 43 50	2555.85	-29.81	63.79	21.47	92.29	18 26 26	1955.8	-29.18	55.04
100.00	12 4 36	3686.47	-8.39	138.80	16.17	61.20	13 6 2	3086.5	-12.17	132.05
110.00	19 27 31	2231.48	-33.40	38.79	21.10	97.73	20 4 43	1631.5	-31.97	29.85
110.00	12 37 24	3583.61	-5.31	129.12	14.28	56.18	13 37 8	2983.6	-9.71	122.80

DIFFERENTIAL CORRECTIONS

TDE	.1627	TRA	.6756	TC3	-4.5355	BAU	.6295
RDE	.2351	RRA	-.1834	RC3	1.3059	FAU	.61505
FDE	-1.2959	FRA	13.0136	FC	-53.3745	BSP	10829
BDE	.2859	BRA	.7001	BC3	4.7197	FSP	12610

MID-COURSE EXECUTION ACCURACY

SGT	3172.9	SGR	996.5	SG3	3665.3		
RRT	-.8598	RRF	-.9008	RTF	.9660		
SGB	3325.7	R23	.0975	R13	-.9709		
SG1	3289.3	SG2	490.8	THA	164.54		

ORBIT DETERMINATION ACCURACY

ST	504.0	SR	440.7	SS	1960.3		
CRT	.3623	CRS	.5210	CST	-.6032		
LSA	1997.1	MSA	549.4	SSA	29.7		
EL1	556.8	EL2	371.8	ALF	34.82		

LAUNCH DATE NOV 1 1964 FLIGHT TIME 316.00 ARRIVAL DATE SEP 13 1965

HELIOCENTRIC CONIC DISTANCE 715.187 EARTH TO MARS

RL	148.46	LAL	-.00	LOL	38.61	VL	32.784	GAL	-3.26	AZL	88.58	HCA	220.82	SMA	186.10	ECC	.20979	INC	1.4211
RP	220.94	LAP	-.93	LOP	259.42	VP	22.096	GAP	-5.53	AZP	91.08	TAL	341.01	TAP	201.83	RCA	147.06	APO	225.14
RC	268.570	GL	14.86	GP	4.12	ZAL	116.61	ZAP	91.33	ETS	178.93	ZAE	125.22	ETE	175.02	ZAC	89.77	ETC	257.11

V1 30.013 V2 24.883 CLP 91.34

PLANETOCENTRIC CONIC

C3	10.019	VHL	3.165	DLA	22.98	RAL	163.88	RAD	6567.4	VEL	11.463	PTH	1.99	VHP	2.801	DPA	8.86	RAP	173.86

ECC 1.1649

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 6 10	2875.95	-28.32	87.38	21.91	90.03	16 54 6	2275.9	-28.01	78.72
90.00	11 2 13	3892.86	-9.71	154.68	17.26	63.27	12 7 6	3292.9	-13.22	147.76
100.00	17 44 57	2557.45	-29.82	63.91	21.88	92.23	18 27 34	1957.5	-29.19	55.16
100.00	12 6 7	3686.59	-8.38	138.81	16.56	61.20	13 7 34	3086.6	-12.16	132.06
110.00	19 28 41	2232.91	-33.42	38.90	21.51	97.66	20 5 54	1632.9	-32.00	29.95
110.00	12 38 53	3583.89	-5.30	129.14	14.67	56.18	13 38 36	2983.9	-9.70	122.82

DIFFERENTIAL CORRECTIONS

TDE	.1519	TRA	.8002	TC3	-4.9886	BAU	.6902
RDE	.2401	RRA	-.1786	RC3	1.2896	FAU	.61433
FDE	-1.3277	FRA	13.0630	FC	-53.0826	BSP	12092
BDE	.2842	BRA	.8199	BC3	5.1526	FSP	12576

MID-COURSE EXECUTION ACCURACY

SGT	3539.0	SGR	989.3	SG3	3660.2		
RRT	-.8601	RRF	-.8947	RTF	.9730		
SGB	3674.7	R23	.0813	R13	-.9762		
SG1	3641.8	SG2	490.5	THA	166.23		

ORBIT DETERMINATION ACCURACY

ST	554.4	SR	447.9	SS	1968.5		
CRT	.2718	CRS	.5163	CST	-.6811		
LSA	2018.0	MSA	556.7	SSA	29.5		
EL1	583.2	EL2	409.8	ALF	25.83		

LAUNCH DATE NOV 1 1964 FLIGHT TIME 318.00 ARRIVAL DATE SEP 15 1965

HELIOCENTRIC CONIC DISTANCE 719.234 EARTH TO MARS

RL	148.46	LAL	-.00	LOL	38.61	VL	32.782	GAL	-3.29	AZL	88.56	HCA	221.93	SMA	186.08	ECC	.20983	INC	1.4363	V1	30.013
RP	220.56	LAP	-.96	LOP	260.53	VP	22.141	GAP	-5.75	AZP	91.07	TAL	340.84	TAP	202.77	RCA	147.03	APO	225.12	V2	24.924
RC	270.009	GL	14.98	GP	4.03	ZAL	116.88	ZAP	89.32	ETS	179.10	ZAE	122.99	ETE	175.40	ZAC	89.50	ETC	257.20	CLP	89.32

PLANETOCENTRIC CONIC

C3	10.068	VHL	3.173	DLA	22.98	RAL	164.23	RAD	6567.4	VEL	11.465	PTH	1.99	VHP	2.807	DPA	9.15	RAP	172.99	ECC	1.1657

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 7 36	2876.78	-28.32	87.44	22.33	90.00	16 55 33	2276.8	-28.02	78.78
90.00	11 3 34	3893.98	-9.68	154.74	17.67	63.26	12 8 28	3294.0	-13.19	147.82
100.00	17 46 23	2558.30	-29.82	63.97	22.30	92.19	18 29 1	1958.3	-29.20	55.22
100.00	12 7 29	3687.69	-8.35	138.87	16.96	61.19	13 8 56	3087.7	-12.13	132.12
110.00	19 30 6	2233.79	-33.42	38.96	21.94	97.63	20 7 20	1633.8	-32.01	30.02
110.00	12 40 14	3584.96	-5.26	129.19	15.07	56.17	13 39 59	2985.0	-9.66	122.88

DIFFERENTIAL CORRECTIONS

TDE	.1398	TRA	.9267	TC3	-5.4393	BAU	.7519
RDE	.2452	RRA	-.1736	RC3	1.2712	FAU	.61196
FDE	-1.3613	FRA	13.0900	FC	-52.6202	BSP	13364
BDE	.2823	BRA	.9429	BC3	5.5859	FSP	12515

MID-COURSE EXECUTION ACCURACY

SGT	3909.3	SGR	981.3	SG3	3645.5		
RRT	-.8582	RRF	-.8881	RTF	.9780		
SGB	4030.6	R23	.0688	R13	-.9802		
SG1	4000.4	SG2	492.3	THA	167.65		

ORBIT DETERMINATION ACCURACY

ST	609.7	SR	455.1	SS	1975.4
CRT	.1929	CRS	.5124	CST	-.7415
LSA	2040.5	MSA	562.9	SSA	29.3
EL1	622.6	EL2	437.3	ALF	16.52

LAUNCH DATE NOV 1 1964 FLIGHT TIME 320.00 ARRIVAL DATE SEP 17 1965

HELIOCENTRIC CONIC DISTANCE 723.288 EARTH TO MARS

RL	148.46	LAL	-.00	LOL	38.61	VL	32.781	GAL	-3.32	AZL	88.55	HCA	223.05	SMA	186.06	ECC	.20991	INC	1.4510	V1	30.013
RP	220.18	LAP	-.99	LOP	261.64	VP	22.186	GAP	-5.96	AZP	91.06	TAL	340.65	TAP	203.69	RCA	147.00	APO	225.11	V2	24.965
RC	271.430	GL	15.10	GP	3.94	ZAL	117.18	ZAP	87.33	ETS	179.26	ZAE	120.77	ETE	175.75	ZAC	89.23	ETC	257.30	CLP	87.32

PLANETOCENTRIC CONIC

C3	10.123	VHL	3.182	DLA	22.95	RAL	164.59	RAD	6567.4	VEL	11.468	PTH	1.99	VHP	2.815	DPA	9.43	RAP	172.14	ECC	1.1666

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 9 23	2876.74	-28.32	87.43	22.78	90.00	16 57 19	2276.7	-28.02	78.78
90.00	11 4 43	3896.19	-9.61	154.87	18.09	63.24	12 9 39	3296.2	-13.13	147.95
100.00	17 48 6	2558.41	-29.82	63.98	22.74	92.19	18 30 45	1958.4	-29.20	55.23
100.00	12 8 40	3689.75	-8.28	138.99	17.38	61.17	13 10 10	3089.7	-12.06	132.24
110.00	19 31 46	2234.13	-33.43	38.99	22.38	97.61	20 9 0	1634.1	-32.01	30.04
110.00	12 41 30	3586.80	-5.19	129.29	15.49	56.17	13 41 17	2986.8	-9.60	122.98

DIFFERENTIAL CORRECTIONS

TDE	.1269	TRA	1.0558	TC3	-5.8810	BAU	.8137
RDE	.2504	RRA	-.1685	RC3	1.2509	FAU	.60808
FDE	-1.3988	FRA	13.0957	FC	-52.0034	BSP	14646
BDE	.2807	BRA	1.0692	BC3	6.0126	FSP	12429

MID-COURSE EXECUTION ACCURACY

SGT	4280.2	SGR	972.4	SG3	3621.9		
RRT	-.8544	RRF	-.8811	RTF	.9817		
SGB	4389.3	R23	.0595	R13	-.9833		
SG1	4361.2	SG2	495.8	THA	168.87		

ORBIT DETERMINATION ACCURACY

ST	669.7	SR	462.3	SS	1981.6
CRT	.1265	CRS	.5097	CST	-.7872
LSA	2064.9	MSA	569.2	SSA	29.1
EL1	674.5	EL2	455.3	ALF	9.22

LAUNCH DATE NOV 1 1964 FLIGHT TIME 322.00 ARRIVAL DATE SEP 19 1965

HELIOCENTRIC CONIC DISTANCE 727.350 EARTH TO MARS

RL	148.46	LAL	-.00	LOL	38.61	VL	32.780	GAL	-3.36	AZL	88.53	HCA	224.17	SMA	186.05	ECC	.21001	INC	1.4650	V1	30.013
RP	219.81	LAP	-1.02	LOP	262.76	VP	22.230	GAP	-6.17	AZP	91.05	TAL	340.44	TAP	204.61	RCA	146.97	APO	225.12	V2	25.006
RC	272.833	GL	15.20	GP	3.85	ZAL	117.51	ZAP	85.35	ETS	179.42	ZAE	118.56	ETE	176.07	ZAC	88.97	ETC	257.39	CLP	85.34

PLANETOCENTRIC CONIC

C3	10.184	VHL	3.191	DLA	22.91	RAL	164.98	RAD	6567.4	VEL	11.471	PTH	1.99	VHP	2.827	DPA	9.70	RAP	171.31	ECC	1.1676

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 11 30	2875.87	-28.32	87.37	23.24	90.03	16 59 25	2275.9	-28.01	78.72
90.00	11 5 39	3899.46	-9.51	155.06	18.53	63.20	12 10 39	3299.5	-13.03	148.15
100.00	17 50 8	2557.81	-29.82	63.94	23.20	92.21	18 32 46	1957.8	-29.19	55.19
100.00	12 9 42	3692.76	-8.18	139.16	17.82	61.15	13 11 14	3092.8	-11.97	132.42
110.00	19 33 39	2233.94	-33.42	38.97	22.84	97.62	20 10 53	1633.9	-32.01	30.03
110.00	12 42 40	3589.39	-5.09	129.43	15.93	56.15	13 42 29	2989.4	-9.50	123.12

DIFFERENTIAL CORRECTIONS

TDE	.1124	TRA	1.1867	TC3	-6.3161	BAU	.8761
RDE	.2558	RRA	-.1631	RC3	1.2293	FAU	.60291
FDE	-1.4437	FRA	13.0748	FC	-51.2532	BSP	15924
BDE	.2794	BRA	1.1979	BC3	6.4346	FSP	12307

MID-COURSE EXECUTION ACCURACY

SGT	4652.1	SGR	963.1	SG3	3589.8		
RRT	-.8494	RRF	-.8737	RTF	.9845		
SGB	4750.7	R23	.0523	R13	-.9857		
SG1	4724.3	SG2	500.5	THA	169.91		

ORBIT DETERMINATION ACCURACY

ST	732.7	SR	469.6	SS	1986.7
CRT	.0687	CRS	.5087	CST	-.8225
LSA	2091.2	MSA	574.8	SSA	28.8
EL1	733.9	EL2	467.7	ALF	4.25

LAUNCH DATE NOV 1 1964 FLIGHT TIME 324.00 ARRIVAL DATE SEP 21 1965

HELIOCENTRIC CONIC DISTANCE 731.419 EARTH TO MARS

RL	148.46	LAL	-.00	LOL	38.61	VL	32.780	GAL	-3.40	AZL	88.52	HCA	225.29	SMA	186.04	ECC	.21016	INC	1.4786	V1	30.013
RP	219.44	LAP	-1.05	LOP	263.89	VP	22.276	GAP	-6.37	AZP	91.04	TAL	340.22	TAP	205.51	RCA	146.94	APO	225.13	V2	25.047
RC	274.220	GL	15.29	GP	3.76	ZAL	117.85	ZAP	83.40	ETS	179.56	ZAE	116.38	ETE	176.37	ZAC	88.71	ETC	257.49	CLP	83.39

PLANETOCENTRIC CONIC

C3	10.251	VHL	3.202	DLA	22.85	RAL	165.38	RAD	6567.4	VEL	11.473	PTH	1.99	VHP	2.843	DPA	9.96	RAP	170.50	ECC	1.1687

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 13 56	2874.18	-28.32	87.25	23.72	90.10	17 1 50	2274.2	-28.00	78.59
90.00	11 6 24	3903.78	-9.37	155.30	18.99	63.16	12 11 28	3303.8	-12.90	148.40
100.00	17 52 28	2556.51	-29.81	63.84	23.69	92.26	18 35 4	1956.5	-29.18	55.09
100.00	12 10 34	3696.69	-8.05	139.38	18.28	61.12	13 12 11	3096.7	-11.84	132.64
110.00	19 35 47	2233.25	-33.42	38.92	23.32	97.65	20 13 1	1633.2	-32.00	29.98
110.00	12 43 44	3592.72	-4.96	129.60	16.38	56.14	13 43 37	2992.7	-9.38	123.29

DIFFERENTIAL CORRECTIONS

TDE	.0966	TRA	1.3198	TC3	-6.7403	BAU	.9384
RDE	.2611	RRA	-.1576	RC3	1.2059	FAU	.59624
FDE	-1.4859	FRA	13.0328	FC	-50.3539	BSP	17204
BDE	.2784	BRA	1.3292	BC3	6.8473	FSP	12166

MID-COURSE EXECUTION ACCURACY

SGT	5022.7	SGR	953.0	SG3	3549.0		
RRT	-.8433	RRF	-.8656	RTF	.9867		
SGB	5112.3	R23	.0466	R13	-.9876		
SG1	5087.3	SG2	505.7	THA	170.82		

ORBIT DETERMINATION ACCURACY

ST	798.7	SR	476.7	SS	1990.1
CRT	.0189	CRS	.5079	CST	-.8504
LSA	2118.7	MSA	579.6	SSA	28.5
EL1	798.7	EL2	476.6	ALF	1.00

LAUNCH DATE NOV 1 1964 FLIGHT TIME 326.00 ARRIVAL DATE SEP 23 1965

HELIOCENTRIC CONIC DISTANCE 735.495 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 32.779 GAL -3.44 AZL 88.51 HCA 226.42 SMA 186.03 ECC .21033 INC 1.4917 V1 30.013
RP 219.07 LAP -1.08 LOP 265.02 VP 22.321 GAP -6.58 AZP 91.03 TAL 339.99 TAP 206.41 RCA 146.90 APO 225.16 V2 25.088
RC 275.589 GL 15.37 GP 3.67 ZAL 118.22 ZAP 81.47 ETS 179.70 ZAE 114.21 ETE 176.66 ZAC 88.46 ETC 257.58 CLP 81.46

PLANETOCENTRIC CONIC

C3 10.325 VHL 3.213 DLA 22.77 RAL 165.79 RAD 6567.4 VEL 11.477 PTH 1.99 VHP 2.861 DPA 10.20 RAP 169.72 ECC 1.1699

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 16 42	2871.72	-28.32	87.07	24.22	90.19	17 4 34	2271.7	-27.99	78.42
90.00	11 6 59	3909.12	-9.21	155.61	19.46	63.10	12 12 8	3309.1	-12.75	148.72
100.00	17 55 4	2554.54	-29.81	63.69	24.19	92.34	18 37 39	1954.5	-29.17	54.95
100.00	12 11 17	3701.53	-7.89	139.65	18.75	61.07	13 12 59	3101.5	-11.69	132.92
110.00	19 38 9	2232.06	-33.41	38.83	23.81	97.70	20 15 21	1632.1	-31.98	29.89
110.00	12 44 42	3596.77	-4.81	129.82	16.86	56.12	13 44 39	2996.8	-9.23	123.51

DIFFERENTIAL CORRECTIONS
TDE .0794 TRA 1.4553 TC3-7.1497 BAU 1.0002
RDE .2665 RRA -.1519 RC3 1.1811 FAU .58826
FDE-1.5316 FRA12.9699 FC-49.3263 BSP 18479
BDE .2781 BRA 1.4632 BC3 7.2466 FSP 11998

MID-COURSE EXECUTION ACCURACY
SGT 5390.0 SGR 942.5 SG3 3500.4
RRT -.8360 RRF -.8571 RTF .9885
SGB 5471.7 R23 .0423 R13 -.9891
SG1 5447.8 SG2 511.6 THA 171.61

ORBIT DETERMINATION ACCURACY
ST 867.1 SR 483.8 SS 1992.8
CRT -.0244 CRS .5083 CST -.8723
LSA 2148.3 MSA 584.3 SSA 28.2
EL1 867.3 EL2 483.6 ALF 178.87

LAUNCH DATE NOV 1 1964 FLIGHT TIME 328.00 ARRIVAL DATE SEP 25 1965

HELIOCENTRIC CONIC DISTANCE 739.579 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 32.779 GAL -3.48 AZL 88.50 HCA 227.55 SMA 186.03 ECC .21054 INC 1.5043 V1 30.013
RP 218.70 LAP -1.11 LOP 266.15 VP 22.366 GAP -6.77 AZP 91.02 TAL 339.75 TAP 207.30 RCA 146.86 APO 225.20 V2 25.128
RC 276.940 GL 15.44 GP 3.58 ZAL 118.61 ZAP 79.57 ETS 179.83 ZAE 112.08 ETE 176.92 ZAC 88.22 ETC 257.67 CLP 79.55

PLANETOCENTRIC CONIC

C3 10.405 VHL 3.226 DLA 22.68 RAL 166.23 RAD 6567.4 VEL 11.480 PTH 2.00 VHP 2.883 DPA 10.43 RAP 168.97 ECC 1.1712

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 19 46	2868.51	-28.32	86.83	24.75	90.30	17 7 35	2268.5	-27.97	78.18
90.00	11 7 22	3915.45	-9.02	155.97	19.95	63.04	12 12 38	3315.4	-12.56	149.09
100.00	17 57 57	2551.93	-29.80	63.50	24.70	92.44	18 40 29	1951.9	-29.14	54.76
100.00	12 11 52	3707.26	-7.70	139.97	19.24	61.03	13 13 39	3107.3	-11.51	133.25
110.00	19 40 44	2230.40	-33.39	38.70	24.33	97.78	20 17 54	1630.4	-31.96	29.77
110.00	12 45 35	3601.55	-4.63	130.07	17.35	56.09	13 45 37	3001.5	-9.05	123.77

DIFFERENTIAL CORRECTIONS
TDE .0597 TRA 1.5917 TC3-7.5482 BAU 1.0622
RDE .2721 RRA -.1460 RC3 1.1558 FAU .57944
FDE-1.5875 FRA12.8812 FC-48.2125 BSP 19716
BDE .2786 BRA 1.5984 BC3 7.6362 FSP 11792

MID-COURSE EXECUTION ACCURACY
SGT 5754.4 SGR 932.0 SG3 3445.5
RRT -.8280 RRF -.8482 RTF .9898
SGB 5829.4 R23 .0390 R13 -.9904
SG1 5806.3 SG2 517.9 THA 172.30

ORBIT DETERMINATION ACCURACY
ST 936.8 SR 491.2 SS 1995.0
CRT -.0640 CRS .5111 CST -.8896
LSA 2179.9 MSA 588.4 SSA 27.8
EL1 937.5 EL2 489.8 ALF 177.36

LAUNCH DATE NOV 1 1964 FLIGHT TIME 330.00 ARRIVAL DATE SEP 27 1965

HELIOCENTRIC CONIC DISTANCE 743.669 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 32.780 GAL -3.53 AZL 88.48 HCA 228.68 SMA 186.03 ECC .21078 INC 1.5166 V1 30.013
RP 218.34 LAP -1.14 LOP 267.28 VP 22.412 GAP -6.97 AZP 91.00 TAL 339.49 TAP 208.17 RCA 146.82 APO 225.25 V2 25.168
RC 278.273 GL 15.51 GP 3.49 ZAL 119.02 ZAP 77.71 ETS 179.96 ZAE 109.97 ETE 177.16 ZAC 87.99 ETC 257.76 CLP 77.68

PLANETOCENTRIC CONIC

C3 10.492 VHL 3.239 DLA 22.56 RAL 166.68 RAD 6567.4 VEL 11.484 PTH 2.00 VHP 2.907 DPA 10.65 RAP 168.25 ECC 1.1727

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 23 9	2864.59	-28.31	86.54	25.29	90.45	17 10 53	2264.6	-27.95	77.90
90.00	11 7 36	3922.73	-8.79	156.39	20.45	62.97	12 12 58	3322.7	-12.35	149.52
100.00	18 1 7	2548.70	-29.79	63.26	25.24	92.57	18 43 35	1948.7	-29.12	54.52
100.00	12 12 19	3713.85	-7.49	140.34	19.75	60.98	13 14 13	3113.8	-11.30	133.63
110.00	19 43 32	2228.29	-33.37	38.54	24.86	97.87	20 20 40	1628.3	-31.93	29.61
110.00	12 46 23	3607.03	-4.42	130.35	17.86	56.07	13 46 30	3007.0	-8.84	124.06

DIFFERENTIAL CORRECTIONS
TDE .0590 TRA 1.7307 TC3-7.9285 BAU 1.1233
RDE .2777 RRA -.1400 RC3 1.1289 FAU .56915
FDE-1.6363 FRA12.7779 FC-46.9643 BSP 20958
BDE .2804 BRA 1.7364 BC3 8.0085 FSP 11579

MID-COURSE EXECUTION ACCURACY
SGT 6113.6 SGR 920.9 SG3 3382.9
RRT -.8191 RRF -.8386 RTF .9909
SGB 6182.6 R23 .0364 R13 -.9914
SG1 6160.3 SG2 524.2 THA 172.91

ORBIT DETERMINATION ACCURACY
ST 1008.8 SR 498.2 SS 1995.7
CRT -.0985 CRS .5134 CST -.9037
LSA 2213.0 MSA 592.1 SSA 27.5
EL1 1010.3 EL2 495.0 ALF 176.34

LAUNCH DATE NOV 1 1964 FLIGHT TIME 332.00 ARRIVAL DATE SEP 29 1965

HELIOCENTRIC CONIC DISTANCE 747.766 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 32.780 GAL -3.58 AZL 88.47 HCA 229.82 SMA 186.04 ECC .21106 INC 1.5284 V1 30.013
RP 217.98 LAP -1.17 LOP 268.42 VP 22.457 GAP -7.16 AZP 90.99 TAL 339.21 TAP 209.04 RCA 146.78 APO 225.31 V2 25.208
RC 279.589 GL 15.56 GP 3.41 ZAL 119.46 ZAP 75.87 ETS 180.07 ZAE 107.89 ETE 177.39 ZAC 87.77 ETC 257.85 CLP 75.85

PLANETOCENTRIC CONIC

C3 10.586 VHL 3.254 DLA 22.43 RAL 167.15 RAD 6567.4 VEL 11.488 PTH 2.00 VHP 2.935 DPA 10.85 RAP 167.57 ECC 1.1742

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 26 48	2860.00	-28.31	86.21	25.85	90.62	17 14 28	2260.0	-27.93	77.56
90.00	11 7 40	3930.94	-8.54	156.86	20.97	62.90	12 13 11	3330.9	-12.10	150.00
100.00	18 4 31	2544.89	-29.78	62.98	25.80	92.72	18 46 56	1944.9	-29.09	54.24
100.00	12 12 37	3721.28	-7.24	140.75	20.27	60.92	13 14 39	3121.3	-11.06	134.05
110.00	19 46 32	2225.73	-33.35	38.35	25.41	97.98	20 23 38	1625.7	-31.89	29.42
110.00	12 47 6	3613.20	-4.18	130.68	18.39	56.04	13 47 19	3013.2	-8.61	124.39

DIFFERENTIAL CORRECTIONS
TDE .0157 TRA 1.8711 TC3-8.2926 BAU 1.1839
RDE .2834 RRA -.1340 RC3 1.1017 FAU .55816
FDE-1.6926 FRA12.6582 FC-45.6478 BSP 22169
BDE .2838 BRA 1.8759 BC3 8.3655 FSP 11341

MID-COURSE EXECUTION ACCURACY
SGT 6467.3 SGR 910.0 SG3 3315.7
RRT -.8096 RRF -.8286 RTF .9918
SGB 6531.0 R23 .0344 R13 -.9922
SG1 6509.4 SG2 530.8 THA 173.46

ORBIT DETERMINATION ACCURACY
ST 1081.9 SR 505.3 SS 1996.8
CRT -.1309 CRS .5178 CST -.9153
LSA 2249.0 MSA 595.3 SSA 27.1
EL1 1084.5 EL2 499.8 ALF 175.56

LAUNCH DATE NOV 1 1964 FLIGHT TIME 334.00 ARRIVAL DATE OCT 1 1965

DISTANCE 751.866

HELIOCENTRIC CONIC

RL 148.46 LAL -.00 LOL 38.61 VL 32.781 GAL -3.63 AZL 88.46 HCA 230.97 SMA 186.05 ECC .21137 INC 1.5400 V1 30.013
RP 217.62 LAP -1.20 LOP 269.56 VP 22.503 GAP -7.35 AZP 90.97 TAL 338.92 TAP 209.89 RCA 146.73 APO 225.38 V2 25.248
RC 280.887 GL 15.60 GP 3.32 ZAL 119.92 ZAP 74.08 ETS 180.18 ZAE 105.84 ETE 177.61 ZAC 87.56 ETC 257.93 CLP 74.05

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 10.688 VHL 3.269 DLA 22.28 RAL 167.63 RAD 6567.4 VEL 11.492 PTH 2.00 VHP 2.965 DPA 11.04 RAP 166.93 ECC 1.1759

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 30 45	2854.73	-28.31	85.82	26.43	90.81	17 18 19	2254.7	-27.89	77.18
90.00	11 7 35	3940.09	-8.25	157.38	21.51	62.82	12 13 15	3340.1	-11.83	150.53
100.00	18 8 12	2540.49	-29.77	62.65	26.38	92.89	18 50 33	1940.5	-29.05	53.92
100.00	12 12 48	3729.57	-6.96	141.21	20.81	60.86	13 14 58	3129.6	-10.80	134.52
110.00	19 49 46	2222.74	-33.32	38.12	25.97	98.12	20 26 49	1622.7	-31.84	29.20
110.00	12 47 44	3620.09	-3.92	131.04	18.94	56.02	13 48 4	3020.1	-8.36	124.76

DIFFERENTIAL CORRECTIONS

TDE .0003 TRA 2.0250 TC3-8.6041 BAU 1.2388
RDE .2875 RRA -.1294 RC3 1.0673 FAU .54184
FDE-1.6565 FRA12.6083 FC-43.8909 BSP 23620
BDE .2875 BRA 2.0292 BC3 8.6701 FSP 11269

MID-COURSE EXECUTION ACCURACY

SGT 6808.7 SGR 894.9 SG3 3235.4
RRT -.7986 RRF -.8159 RTF .9924
SGB 6867.3 R23 .0307 R13 -.9927
SG1 6846.3 SG2 535.7 THA 173.97

ORBIT DETERMINATION ACCURACY

ST 1162.9 SR 509.6 SS 1992.5
CRT -.1484 CRS .5065 CST -.9273
LSA 2286.0 MSA 596.4 SSA 27.1
EL1 1165.9 EL2 502.7 ALF 175.43

LAUNCH DATE NOV 1 1964 FLIGHT TIME 336.00 ARRIVAL DATE OCT 3 1965

DISTANCE 755.977

HELIOCENTRIC CONIC

RL 148.46 LAL -.00 LOL 38.61 VL 32.782 GAL -3.69 AZL 88.45 HCA 232.11 SMA 186.07 ECC .21171 INC 1.5512 V1 30.013
RP 217.27 LAP -1.22 LOP 270.71 VP 22.548 GAP -7.53 AZP 90.95 TAL 338.62 TAP 210.73 RCA 146.67 APO 225.46 V2 25.287
RC 282.167 GL 15.64 GP 3.24 ZAL 120.39 ZAP 72.32 ETS 180.29 ZAE 103.83 ETE 177.81 ZAC 87.36 ETC 258.01 CLP 72.29

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 10.797 VHL 3.286 DLA 22.11 RAL 168.13 RAD 6567.4 VEL 11.497 PTH 2.00 VHP 2.998 DPA 11.21 RAP 166.32 ECC 1.1777

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 34 55	2848.93	-28.30	85.40	27.03	91.02	17 22 24	2248.9	-27.86	76.76
90.00	11 7 22	3950.04	-7.94	157.95	22.06	62.73	12 13 12	3350.0	-11.54	151.11
100.00	18 12 6	2535.62	-29.75	62.29	26.97	93.08	18 54 21	1935.6	-29.00	53.56
100.00	12 12 53	3738.59	-6.67	141.72	21.37	60.79	13 15 12	3138.6	-10.51	135.04
110.00	19 53 10	2219.38	-33.29	37.86	26.56	98.27	20 30 10	1619.4	-31.79	28.95
110.00	12 48 17	3627.59	-3.64	131.43	19.50	55.99	13 48 45	3027.6	-8.08	125.16

DIFFERENTIAL CORRECTIONS

TDE -.0308 TRA 2.1650 TC3-8.9418 BAU 1.2994
RDE .2940 RRA -.1226 RC3 1.0420 FAU .53115
FDE-1.7524 FRA12.4173 FC-42.5902 BSP 24687
BDE .2956 BRA 2.1685 BC3 9.0023 FSP 10918

MID-COURSE EXECUTION ACCURACY

SGT 7151.1 SGR 886.0 SG3 3161.5
RRT -.7878 RRF -.8058 RTF .9931
SGB 7205.7 R23 .0306 R13 -.9934
SG1 7185.2 SG2 543.1 THA 174.39

ORBIT DETERMINATION ACCURACY

ST 1236.3 SR 517.7 SS 1993.2
CRT -.1809 CRS .5194 CST -.9339
LSA 2325.6 MSA 599.9 SSA 26.4
EL1 1240.5 EL2 507.4 ALF 174.80

LAUNCH DATE NOV 1 1964 FLIGHT TIME 338.00 ARRIVAL DATE OCT 5 1965

DISTANCE 760.094

HELIOCENTRIC CONIC

RL 148.46 LAL -.00 LOL 38.61 VL 32.783 GAL -3.75 AZL 88.44 HCA 233.26 SMA 186.09 ECC .21209 INC 1.5621 V1 30.013
RP 216.91 LAP -1.25 LOP 271.86 VP 22.594 GAP -7.72 AZP 90.93 TAL 338.30 TAP 211.57 RCA 146.62 APO 225.55 V2 25.327
RC 283.431 GL 15.66 GP 3.16 ZAL 120.89 ZAP 70.60 ETS 180.38 ZAE 101.86 ETE 177.99 ZAC 87.17 ETC 258.09 CLP 70.57

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 10.914 VHL 3.304 DLA 21.93 RAL 168.64 RAD 6567.4 VEL 11.502 PTH 2.00 VHP 3.034 DPA 11.36 RAP 165.75 ECC 1.1796

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 39 21	2842.57	-28.29	84.93	27.65	91.26	17 26 44	2242.6	-27.82	76.30
90.00	11 7 1	3960.82	-7.61	158.56	22.64	62.64	12 13 2	3360.8	-11.21	151.74
100.00	18 16 13	2530.24	-29.73	61.89	27.58	93.29	18 58 23	1930.2	-28.96	53.17
100.00	12 12 51	3748.38	-6.34	142.26	21.95	60.73	13 15 19	3148.4	-10.19	135.59
110.00	19 56 46	2215.63	-33.25	37.57	27.16	98.43	20 33 42	1615.6	-31.73	28.68
110.00	12 48 47	3635.75	-3.33	131.86	20.09	55.96	13 49 22	3035.7	-7.77	125.59

DIFFERENTIAL CORRECTIONS

TDE -.0631 TRA 2.3084 TC3-9.2546 BAU 1.3584
RDE .3003 RRA -.1161 RC3 1.0152 FAU .51894
FDE-1.8306 FRA12.2337 FC-41.1635 BSP 25765
BDE .3068 BRA 2.3113 BC3 9.3101 FSP 10595

MID-COURSE EXECUTION ACCURACY

SGT 7485.2 SGR 876.5 SG3 3082.6
RRT -.7766 RRF -.7950 RTF .9937
SGB 7536.3 R23 .0303 R13 -.9939
SG1 7516.2 SG2 549.9 THA 174.78

ORBIT DETERMINATION ACCURACY

ST 1312.2 SR 525.2 SS 1993.5
CRT -.2103 CRS .5299 CST -.9401
LSA 2368.2 MSA 602.2 SSA 25.9
EL1 1317.7 EL2 511.4 ALF 174.33

LAUNCH DATE NOV 1 1964 FLIGHT TIME 340.00 ARRIVAL DATE OCT 7 1965

DISTANCE 764.216

HELIOCENTRIC CONIC

RL 148.46 LAL -.00 LOL 38.61 VL 32.784 GAL -3.81 AZL 88.43 HCA 234.42 SMA 186.11 ECC .21250 INC 1.5726 V1 30.013
RP 216.57 LAP -1.28 LOP 273.02 VP 22.639 GAP -7.90 AZP 90.92 TAL 337.97 TAP 212.39 RCA 146.56 APO 225.66 V2 25.365
RC 284.679 GL 15.68 GP 3.08 ZAL 121.41 ZAP 68.91 ETS 180.47 ZAE 99.92 ETE 178.17 ZAC 86.98 ETC 258.16 CLP 68.88

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 11.040 VHL 3.323 DLA 21.73 RAL 169.17 RAD 6567.4 VEL 11.508 PTH 2.00 VHP 3.073 DPA 11.50 RAP 165.22 ECC 1.1817

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 44 1	2835.69	-28.28	84.43	28.28	91.51	17 31 16	2235.7	-27.77	75.80
90.00	11 6 34	3972.40	-7.24	159.22	23.23	62.55	12 12 46	3372.4	-10.86	152.41
100.00	18 20 33	2524.39	-29.70	61.46	28.21	93.51	19 2 38	1924.4	-28.90	52.75
100.00	12 12 43	3758.93	-5.99	142.85	22.54	60.66	13 15 21	3158.9	-9.85	136.19
110.00	20 0 33	2211.53	-33.21	37.26	27.78	98.61	20 37 25	1611.5	-31.66	28.37
110.00	12 49 12	3644.56	-2.99	132.32	20.69	55.93	13 49 56	3044.6	-7.44	126.06

DIFFERENTIAL CORRECTIONS

TDE -.0971 TRA 2.4543 TC3-9.5444 BAU 1.4162
RDE .3065 RRA -.1097 RC3 .9877 FAU .50579
FDE-1.8994 FRA12.0448 FC-39.6634 BSP 26832
BDE .3215 BRA 2.4568 BC3 9.5953 FSP 10281

MID-COURSE EXECUTION ACCURACY

SGT 7811.0 SGR 866.9 SG3 2999.7
RRT -.7648 RRF -.7835 RTF .9941
SGB 7859.0 R23 .0300 R13 -.9943
SG1 7839.2 SG2 556.5 THA 175.12

ORBIT DETERMINATION ACCURACY

ST 1390.1 SR 532.4 SS 1992.8
CRT -.2374 CRS .5396 CST -.9456
LSA 2412.8 MSA 603.9 SSA 25.4
EL1 1396.7 EL2 514.7 ALF 173.99

LAUNCH DATE NOV 1 1964 FLIGHT TIME 342.00 ARRIVAL DATE OCT 9 1965

HELIOCENTRIC CONIC DISTANCE 768.344 EARTH TO MARS

RL	148.46	LAL	-.00	LOL	38.61	VL	32.785	GAL	-3.87	AZL	88.42	HCA	235.58	SMA	186.13	ECC	.21295	INC	1.5830
RP	216.22	LAP	-1.31	LOP	274.17	VP	22.684	GAP	-8.08	AZP	90.90	TAL	337.63	TAP	213.20	RCA	146.50	APO	225.77
RC	285.910	GL	15.68	GP	3.00	ZAL	121.94	ZAP	67.27	ETS	180.56	ZAE	98.02	ETE	178.33	ZAC	86.81	ETC	258.22

PLANETOCENTRIC CONIC

C3	11.174	VHL	3.343	DLA	21.51	RAL	169.71	RAD	6567.4	VEL	11.514	PTH	2.01	VHP	3.114	DPA	11.62	RAP	164.74

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 48 54	2828.33	-28.27	83.89	28.94	91.78	17 36 2	2228.3	-27.72	75.27
90.00	11 6 0	3984.75	-6.85	159.92	23.84	62.46	12 12 25	3384.8	-10.49	153.13
100.00	18 25 6	2518.12	-29.68	60.99	28.86	93.75	19 7 4	1918.1	-28.84	52.29
100.00	12 12 29	3770.19	-5.61	143.47	23.16	60.59	13 15 19	3170.2	-9.49	136.83
110.00	20 4 31	2207.09	-33.16	36.92	28.41	98.81	20 41 18	1607.1	-31.59	28.05
110.00	12 49 33	3653.99	-2.63	132.81	21.31	55.91	13 50 27	3054.0	-7.09	126.56

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1321	TRA	2.6040	TC3	-9.8067	BAU	1.4720	SGT	8127.3	SGR	857.2	SG3	2913.7	ST	1470.2	SR	539.0	SS	1991.0
RDE	.3125	RRA	-.1035	RC3	.9596	FAU	.49182	RRT	-.7524	RRF	-.7716	RTF	.9945	CRT	-.2617	CRS	.5480	CST	-.9504
FDE	-1.9568	FRA	11.8554	FC	-38.1036	BSP	27906	SGB	8172.4	R23	.0298	R13	-.9947	LSA	2459.5	MSA	605.3	SSA	24.9
BDE	.3393	BRA	2.6060	BC3	9.8536	FSP	9976	SG1	8153.0	SG2	562.8	THA	175.44	EL1	1477.9	EL2	517.5	ALF	173.75

LAUNCH DATE NOV 1 1964 FLIGHT TIME 344.00 ARRIVAL DATE OCT 11 1965

HELIOCENTRIC CONIC DISTANCE 772.478 EARTH TO MARS

RL	148.46	LAL	-.00	LOL	38.61	VL	32.787	GAL	-3.94	AZL	88.41	HCA	236.74	SMA	186.16	ECC	.21343	INC	1.5931
RP	215.88	LAP	-1.33	LOP	275.33	VP	22.729	GAP	-8.25	AZP	90.87	TAL	337.26	TAP	214.00	RCA	146.43	APO	225.90
RC	287.127	GL	15.68	GP	2.92	ZAL	122.50	ZAP	65.67	ETS	180.64	ZAE	96.16	ETE	178.49	ZAC	86.66	ETC	258.28

PLANETOCENTRIC CONIC

C3	11.318	VHL	3.364	DLA	21.28	RAL	170.26	RAD	6567.4	VEL	11.520	PTH	2.01	VHP	3.157	DPA	11.72	RAP	164.30

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 53 59	2820.53	-28.25	83.32	29.61	92.06	17 41 0	2220.5	-27.66	74.71
90.00	11 5 20	3997.83	-6.44	160.66	24.46	62.37	12 11 57	3397.8	-10.09	153.88
100.00	18 29 51	2511.44	-29.65	60.50	29.53	94.01	19 11 42	1911.4	-28.77	51.80
100.00	12 12 9	3782.16	-5.21	144.13	23.79	60.52	13 15 11	3182.2	-9.10	137.50
110.00	20 8 39	2202.32	-33.11	36.56	29.06	99.02	20 45 21	1602.3	-31.51	27.70
110.00	12 49 50	3664.04	-2.25	133.34	21.95	55.88	13 50 54	3064.0	-6.71	127.09

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.1700	TRA	2.7557	TC	-10.0484	BAU	1.5270	SGT	8435.9	SGR	848.0	SG3	2825.6	ST	1551.8	SR	545.6	SS	1989.3
RDE	.3186	RRA	-.0975	RC3	.9315	FAU	.47733	RRT	-.7398	RRF	-.7592	RTF	.9948	CRT	-.2855	CRS	.5569	CST	-.9547
FDE	-2.0128	FRA	11.6606	FC	-36.5113	BSP	28951	SGB	8478.4	R23	.0297	R13	-.9949	LSA	2509.0	MSA	605.9	SSA	24.5
BDE	.3612	BRA	2.7574	BC3	10.0915	FSP	9672	SG1	8459.3	SG2	569.0	THA	175.73	EL1	1560.6	EL2	519.9	ALF	173.55

LAUNCH DATE NOV 1 1964 FLIGHT TIME 346.00 ARRIVAL DATE OCT 13 1965

HELIOCENTRIC CONIC DISTANCE 776.617 EARTH TO MARS

RL	148.46	LAL	-.00	LOL	38.61	VL	32.789	GAL	-4.01	AZL	88.40	HCA	237.90	SMA	186.20	ECC	.21395	INC	1.6029
RP	215.54	LAP	-1.36	LOP	276.50	VP	22.774	GAP	-8.42	AZP	90.85	TAL	336.89	TAP	214.79	RCA	146.36	APO	226.03
RC	288.329	GL	15.67	GP	2.85	ZAL	123.08	ZAP	64.12	ETS	180.71	ZAE	94.35	ETE	178.63	ZAC	86.51	ETC	258.34

PLANETOCENTRIC CONIC

C3	11.472	VHL	3.387	DLA	21.04	RAL	170.83	RAD	6567.4	VEL	11.526	PTH	2.01	VHP	3.203	DPA	11.80	RAP	163.90

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 59 16	2812.34	-28.23	82.73	30.30	92.36	17 46 8	2212.3	-27.60	74.12
90.00	11 4 34	4011.62	-6.01	161.44	25.11	62.28	12 11 26	3411.6	-9.67	154.67
100.00	18 34 46	2504.40	-29.61	59.98	30.21	94.29	19 16 30	1904.4	-28.70	51.29
100.00	12 11 45	3794.79	-4.79	144.83	24.44	60.46	13 15 0	3194.8	-8.69	138.21
110.00	20 12 56	2197.26	-33.06	36.17	29.73	99.24	20 49 34	1597.3	-31.43	27.33
110.00	12 50 4	3674.69	-1.84	133.89	22.61	55.86	13 51 19	3074.7	-6.31	127.66

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2103	TRA	2.9102	TC	-10.2665	BAU	1.5806	SGT	8735.7	SGR	839.2	SG3	2736.1	ST	1635.2	SR	552.0	SS	1987.4
RDE	.3248	RRA	-.0915	RC3	.9037	FAU	.46257	RRT	-.7268	RRF	-.7467	RTF	.9950	CRT	-.3080	CRS	.5662	CST	-.9583
FDE	-2.0667	FRA	11.4607	FC	-34.9089	BSP	29970	SGB	8775.9	R23	.0297	R13	-.9951	LSA	2561.2	MSA	606.5	SSA	24.0
BDE	.3869	BRA	2.9116	BC3	10.3062	FSP	9364	SG1	8757.0	SG2	574.9	THA	175.99	EL1	1645.0	EL2	522.0	ALF	173.40

LAUNCH DATE NOV 1 1964 FLIGHT TIME 348.00 ARRIVAL DATE OCT 15 1965

HELIOCENTRIC CONIC DISTANCE 780.762 EARTH TO MARS

RL	148.46	LAL	-.00	LOL	38.61	VL	32.791	GAL	-4.09	AZL	88.39	HCA	239.07	SMA	186.23	ECC	.21450	INC	1.6125
RP	215.21	LAP	-1.38	LOP	277.67	VP	22.819	GAP	-8.59	AZP	90.83	TAL	336.50	TAP	215.57	RCA	146.28	APO	226.18
RC	289.516	GL	15.65	GP	2.77	ZAL	123.67	ZAP	62.60	ETS	180.78	ZAE	92.57	ETE	178.77	ZAC	86.37	ETC	258.39

PLANETOCENTRIC CONIC

C3	11.635	VHL	3.411	DLA	20.77	RAL	171.41	RAD	6567.4	VEL	11.534	PTH	2.01	VHP	3.252	DPA	11.87	RAP	163.54

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 4 44	2803.79	-28.20	82.10	31.01	92.67	17 51 28	2203.8	-27.53	73.50
90.00	11 3 44	4026.07	-5.55	162.25	25.77	62.19	12 10 50	3426.1	-9.23	155.50
100.00	18 39 52	2497.02	-29.57	59.43	30.92	94.57	19 21 29	1897.0	-28.63	50.76
100.00	12 11 17	3808.08	-4.34	145.57	23.11	60.40	13 14 45	3208.1	-8.25	138.96
110.00	20 17 23	2191.93	-33.00	35.77	30.42	99.47	20 53 55	1591.9	-31.34	26.94
110.00	12 50 15	3685.93	-1.41	134.48	23.29	55.84	13 51 41	3085.9	-5.88	128.25

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	-.2530	TRA	3.0670	TC	-10.4608	BAU	1.6329	SGT	9026.0	SGR	830.8	SG3	2645.9	ST	1720.1	SR	558.1	SS	1984.5
RDE	.3310	RRA	-.0857	RC3	.8763	FAU	.44765	RRT	-.7137	RRF	-.7340	RTF	.9952	CRT	-.3296	CRS	.5753	CST	-.9616
FDE	-2.1156	FRA	11.2558	FC	-33.3075	BSP	30965	SGB	9064.2	R23	.0298	R13	-.9953	LSA	2615.4	MSA	606.5	SSA	23.6
BDE	.4166	BRA	3.0682	BC3	10.4975	FSP	9059	SG1	9045.6	SG2	580.7	THA	176.23	EL1	1730.9	EL2	523.7	ALF	173.28

LAUNCH DATE NOV 1 1964 FLIGHT TIME 350.00 ARRIVAL DATE OCT 17 1965

HELIOCENTRIC CONIC DISTANCE 784.911 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 32.793 GAL -4.17 AZL 88.38 HCA 240.24 SMA 186.27 ECC .21509 INC 1.6219 V1 30.013
RP 214.88 LAP -1.41 LOP 278.84 VP 22.863 GAP -8.76 AZP 90.81 TAL 336.09 TAP 216.34 RCA 146.21 APO 226.33 V2 25.554
RC 290.691 GL 15.63 GP 2.70 ZAL 124.28 ZAP 61.13 ETS 180.84 ZAE 90.83 ETE 178.89 ZAC 86.24 ETC 258.43 CLP 61.09

PLANETOCENTRIC CONIC

C3 11.810 VHL 3.437 DLA 20.50 RAL 172.00 RAD 6567.5 VEL 11.541 PTH 2.01 VHP 3.303 DPA 11.93 RAP 163.23 ECC 1.1944

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 10 22	2794.92	-28.17	81.45	31.74	93.00	17 56 57	2194.9	-27.46	72.86
90.00	11 2 49	4041.17	-5.07	163.10	26.46	62.10	12 10 10	3441.2	-8.76	156.37
100.00	18 45 8	2489.33	-29.53	58.87	31.63	94.87	19 26 37	1889.3	-28.54	50.20
100.00	12 10 44	3821.99	-3.87	146.33	25.80	60.34	13 14 26	3222.0	-7.79	139.74
110.00	20 21 58	2186.35	-32.94	35.35	31.13	99.71	20 58 25	1586.3	-31.25	26.53
110.00	12 50 23	3697.74	-.96	135.10	23.98	55.83	13 52 1	3097.7	-5.44	128.87

DIFFERENTIAL CORRECTIONS
TDE -.2986 TRA 3.2262 TC-10.6335 BAU 1.6842
RDE .3372 RRA -.0801 RC3 .8494 FAU .43262
FDE-2.1628 FRA11.0462 FC-31.7141 BSP 31932
BDE .4505 BRA 3.2271 BC310.6674 FSP 8753

MID-COURSE EXECUTION ACCURACY
SGT 9307.9 SGR 823.0 SG3 2555.3
RRT -.7004 RRF -.7213 RTF .9954
SGB 9344.2 R23 .0299 R13 -.9955
SG1 9325.8 SG2 586.3 THA 176.44

ORBIT DETERMINATION ACCURACY
ST 1806.6 SR 564.2 SS 1981.5
CRT -.3507 CRS .5848 CST -.9645
LSA 2672.2 MSA 606.0 SSA 23.1
EL1 1818.4 EL2 524.9 ALF 173.18

LAUNCH DATE NOV 1 1964 FLIGHT TIME 352.00 ARRIVAL DATE OCT 19 1965

HELIOCENTRIC CONIC DISTANCE 789.065 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 32.796 GAL -4.25 AZL 88.37 HCA 241.42 SMA 186.31 ECC .21572 INC 1.6312 V1 30.013
RP 214.56 LAP -1.43 LOP 280.02 VP 22.908 GAP -8.93 AZP 90.78 TAL 335.67 TAP 217.09 RCA 146.12 APO 226.50 V2 25.590
RC 291.851 GL 15.59 GP 2.63 ZAL 124.91 ZAP 59.69 ETS 180.89 ZAE 89.13 ETE 179.01 ZAC 86.13 ETC 258.46 CLP 59.66

PLANETOCENTRIC CONIC

C3 11.995 VHL 3.463 DLA 20.21 RAL 172.60 RAD 6567.5 VEL 11.549 PTH 2.02 VHP 3.356 DPA 11.97 RAP 162.96 ECC 1.1974

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 16 9	2785.75	-28.14	80.79	32.49	93.33	18 2 35	2185.7	-27.38	72.20
90.00	11 1 50	4056.89	-4.57	163.98	27.16	62.02	12 9 27	3456.9	-8.27	157.27
100.00	18 50 33	2481.36	-29.48	58.28	32.37	95.17	19 31 54	1881.4	-28.45	49.63
100.00	12 10 8	3836.51	-3.38	147.13	26.51	60.28	13 14 4	3236.5	-7.31	140.55
110.00	20 26 42	2180.53	-32.87	34.91	31.85	99.97	21 3 3	1580.5	-31.14	26.11
110.00	12 50 28	3710.11	-.49	135.74	24.70	55.82	13 52 18	3110.1	-4.97	129.52

DIFFERENTIAL CORRECTIONS
TDE -.3429 TRA 3.3926 TC-10.7712 BAU 1.7324
RDE .3433 RRA -.0749 RC3 .8220 FAU .41682
FDE-2.1902 FRA10.8503 FC-30.0829 BSP 32967
BDE .4852 BRA 3.3934 BC310.8025 FSP 8484

MID-COURSE EXECUTION ACCURACY
SGT 9578.9 SGR 814.9 SG3 2463.8
RRT -.6866 RRF -.7078 RTF .9955
SGB 9613.5 R23 .0298 R13 -.9956
SG1 9595.3 SG2 591.5 THA 176.64

ORBIT DETERMINATION ACCURACY
ST 1894.9 SR 569.5 SS 1975.8
CRT -.3679 CRS .5914 CST -.9672
LSA 2729.8 MSA 605.4 SSA 22.8
EL1 1907.4 EL2 526.1 ALF 173.17

LAUNCH DATE NOV 1 1964 FLIGHT TIME 354.00 ARRIVAL DATE OCT 21 1965

HELIOCENTRIC CONIC DISTANCE 793.224 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 32.798 GAL -4.33 AZL 88.36 HCA 242.60 SMA 186.36 ECC .21638 INC 1.6402 V1 30.013
RP 214.24 LAP -1.46 LOP 281.20 VP 22.951 GAP -9.10 AZP 90.76 TAL 335.24 TAP 217.84 RCA 146.03 APO 226.68 V2 25.626
RC 292.998 GL 15.55 GP 2.57 ZAL 125.56 ZAP 58.30 ETS 180.95 ZAE 87.47 ETE 179.12 ZAC 86.02 ETC 258.49 CLP 58.26

PLANETOCENTRIC CONIC

C3 12.193 VHL 3.492 DLA 19.90 RAL 173.21 RAD 6567.5 VEL 11.558 PTH 2.02 VHP 3.411 DPA 11.99 RAP 162.73 ECC 1.2007

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 22 4	2776.35	-28.10	80.10	33.25	93.67	18 8 21	2176.3	-27.29	71.53
90.00	11 0 48	4073.19	-4.04	164.90	27.88	61.95	12 8 41	3473.2	-7.77	158.19
100.00	18 56 6	2473.16	-29.43	57.68	33.12	95.48	19 37 19	1873.2	-28.36	49.04
100.00	12 9 28	3851.60	-2.87	147.96	27.24	60.23	13 13 39	3251.6	-6.81	141.39
110.00	20 31 33	2174.51	-32.80	34.45	32.58	100.23	21 7 48	1574.5	-31.04	25.67
110.00	12 50 30	3723.02	.01	136.41	25.44	55.82	13 52 33	3123.0	-4.48	130.20

DIFFERENTIAL CORRECTIONS
TDE -.3978 TRA 3.5538 TC-10.9100 BAU 1.7831
RDE .3500 RRA -.0693 RC3 .7972 FAU .40256
FDE-2.2470 FRA10.6230 FC-28.5832 BSP 33796
BDE .5298 BRA 3.5545 BC310.9391 FSP 8153

MID-COURSE EXECUTION ACCURACY
SGT 9845.7 SGR 808.9 SG3 2375.1
RRT -.6738 RRF -.6958 RTF .9956
SGB 9878.9 R23 .0304 R13 -.9957
SG1 9860.8 SG2 596.8 THA 176.82

ORBIT DETERMINATION ACCURACY
ST 1984.9 SR 575.7 SS 1974.2
CRT -.3905 CRS .6040 CST -.9694
LSA 2793.4 MSA 604.2 SSA 22.3
EL1 1998.5 EL2 526.3 ALF 173.05

LAUNCH DATE NOV 1 1964 FLIGHT TIME 356.00 ARRIVAL DATE OCT 23 1965

HELIOCENTRIC CONIC DISTANCE 797.388 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 32.801 GAL -4.42 AZL 88.35 HCA 243.78 SMA 186.40 ECC .21708 INC 1.6490 V1 30.013
RP 213.93 LAP -1.48 LOP 282.38 VP 22.995 GAP -9.26 AZP 90.73 TAL 334.79 TAP 218.57 RCA 145.94 APO 226.87 V2 25.662
RC 294.131 GL 15.50 GP 2.50 ZAL 126.22 ZAP 56.95 ETS 180.99 ZAE 85.84 ETE 179.23 ZAC 85.92 ETC 258.52 CLP 56.91

PLANETOCENTRIC CONIC

C3 12.403 VHL 3.522 DLA 19.58 RAL 173.84 RAD 6567.5 VEL 11.567 PTH 2.02 VHP 3.468 DPA 11.99 RAP 162.55 ECC 1.2041

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 28 8	2766.72	-28.05	79.40	34.02	94.02	18 14 15	2166.7	-27.20	70.84
90.00	10 59 43	4090.06	-3.50	165.84	28.63	61.88	12 7 53	3490.1	-7.24	159.15
100.00	19 1 47	2464.75	-29.37	57.06	33.90	95.81	19 42 52	1864.7	-28.26	48.43
100.00	12 8 45	3867.26	-2.34	148.82	27.98	60.19	13 13 12	3267.3	-6.29	142.26
110.00	20 36 32	2168.31	-32.72	33.98	33.34	100.49	21 12 40	1568.3	-30.93	25.22
110.00	12 50 29	3736.47	.52	137.12	26.19	55.82	13 52 46	3136.5	-3.97	130.91

DIFFERENTIAL CORRECTIONS
TDE -.4519 TRA 3.7217 TC-11.0163 BAU 1.8311
RDE .3565 RRA -.0642 RC3 .7722 FAU .38774
FDE-2.2865 FRA10.4071 FC-27.0649 BSP 34669
BDE .5756 BRA 3.7222 BC311.0434 FSP 7852

MID-COURSE EXECUTION ACCURACY
SGT10101.9 SGR 802.8 SG3 2286.2
RRT -.6608 RRF -.6834 RTF .9956
SGB10133.8 R23 .0308 R13 -.9957
SG110115.9 SG2 601.7 THA 176.98

ORBIT DETERMINATION ACCURACY
ST 2076.5 SR 581.2 SS 1970.2
CRT -.4096 CRS .6140 CST -.9714
LSA 2857.8 MSA 602.9 SSA 21.9
EL1 2091.0 EL2 526.5 ALF 173.01

LAUNCH DATE NOV 1 1964 FLIGHT TIME 358.00 ARRIVAL DATE OCT 25 1965

HELIOCENTRIC CONIC DISTANCE 801.555 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 32.804 GAL -4.51 AZL 88.34 HCA 244.97 SMA 186.45 ECC .21783 INC 1.6578 V1 30.013
RP 213.62 LAP -1.50 LOP 283.57 VP 23.038 GAP -9.42 AZP 90.70 TAL 334.32 TAP 219.29 RCA 145.84 APO 227.07 V2 25.697
RC 295.251 GL 15.44 GP 2.44 ZAL 126.90 ZAP 55.63 ETS 181.04 ZAE 84.26 ETE 179.33 ZAC 85.84 ETC 258.54 CLP 55.60

PLANETOCENTRIC CONIC

C3 12.626 VHL 3.553 DLA 19.25 RAL 174.47 RAD 6567.5 VEL 11.576 PTH 2.02 VHP 3.528 DPA 11.98 RAP 162.40 ECC 1.2078

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 34 19	2756.91	-28.00	78.69	34.82	94.37	18 20 16	2156.9	-27.10	70.14
90.00	10 58 34	4107.46	-2.95	166.82	29.39	61.82	12 7 2	3507.5	-6.69	160.14
100.00	19 7 35	2456.14	-29.31	56.42	34.68	96.13	19 48 31	1856.1	-28.15	47.81
100.00	12 7 59	3883.46	-1.80	149.71	28.75	60.16	13 12 43	3283.5	-5.75	143.16
110.00	20 41 37	2161.94	-32.64	33.50	34.11	100.77	21 17 39	1561.9	-30.81	24.76
110.00	12 50 27	3750.43	1.06	137.84	26.97	55.83	13 52 57	3150.4	-3.43	131.64

DIFFERENTIAL CORRECTIONS
TDE -.5087 TRA 3.8930 TC-11.1001 BAU 1.8779
RDE .3631 RRA -.0593 RC3 .7477 FAU .37302
FDE-2.3218 FRA10.1904 FC-25.5775 BSP 35529
BDE .6250 BRA 3.8934 BC311.1253 FSP 7561

MID-COURSE EXECUTION ACCURACY
SGT10349.4 SGR 797.2 SG3 2198.3
RRT -.6479 RRF -.6712 RTF .9957
SGB10380.0 R23 .0313 R13 -.9958
SG110362.3 SG2 606.5 THA 177.13

ORBIT DETERMINATION ACCURACY
ST 2169.7 SR 586.6 SS 1965.3
CRT -.4279 CRS .6238 CST -.9732
LSA 2924.4 MSA 601.4 SSA 21.5
EL1 2185.1 EL2 526.4 ALF 172.99

LAUNCH DATE NOV 1 1964 FLIGHT TIME 360.00 ARRIVAL DATE OCT 27 1965

HELIOCENTRIC CONIC DISTANCE 805.726 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 32.807 GAL -4.61 AZL 88.33 HCA 246.16 SMA 186.50 ECC .21861 INC 1.6664 V1 30.013
RP 213.31 LAP -1.52 LOP 284.76 VP 23.081 GAP -9.58 AZP 90.67 TAL 333.84 TAP 220.00 RCA 145.73 APO 227.28 V2 25.731
RC 296.356 GL 15.38 GP 2.38 ZAL 127.59 ZAP 54.36 ETS 181.08 ZAE 82.71 ETE 179.42 ZAC 85.76 ETC 258.55 CLP 54.32

PLANETOCENTRIC CONIC

C3 12.862 VHL 3.586 DLA 18.90 RAL 175.11 RAD 6567.5 VEL 11.587 PTH 2.03 VHP 3.589 DPA 11.96 RAP 162.30 ECC 1.2117

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 40 36	2746.95	-27.95	77.96	35.63	94.73	18 26 23	2146.9	-27.00	69.42
90.00	10 57 24	4125.39	-2.37	167.82	30.17	61.77	12 6 9	3525.4	-6.12	161.15
100.00	19 13 30	2447.38	-29.25	55.78	35.49	96.47	19 54 18	1847.4	-28.04	47.18
100.00	12 7 11	3900.19	-1.23	150.63	29.54	60.13	13 12 11	3300.2	-5.19	144.09
110.00	20 46 49	2155.43	-32.56	33.01	34.89	101.05	21 22 44	1555.4	-30.69	24.29
110.00	12 50 22	3764.90	1.61	138.60	27.76	55.85	13 53 7	3164.9	-2.88	132.39

DIFFERENTIAL CORRECTIONS
TDE -.5685 TRA 4.0678 TC-11.1632 BAU 1.9236
RDE .3699 RRA -.0546 RC3 .7241 FAU .35856
FDE-2.3533 FRA 9.9750 FC-24.1337 BSP 36367
BDE .6782 BRA 4.0682 BC311.1867 FSP 7274

MID-COURSE EXECUTION ACCURACY
SGT10588.9 SGR 792.1 SG3 2112.0
RRT -.6353 RRF -.6593 RTF .9957
SGB10618.5 R23 .0318 R13 -.9958
SG110600.9 SG2 611.0 THA 177.27

ORBIT DETERMINATION ACCURACY
ST 2264.8 SR 591.7 SS 1959.8
CRT -.4457 CRS .6335 CST -.9748
LSA 2993.4 MSA 599.4 SSA 21.1
EL1 2280.9 EL2 525.9 ALF 172.98

LAUNCH DATE NOV 1 1964 FLIGHT TIME 362.00 ARRIVAL DATE OCT 29 1965

HELIOCENTRIC CONIC DISTANCE 809.900 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 32.810 GAL -4.70 AZL 88.33 HCA 247.35 SMA 186.56 ECC .21944 INC 1.6748 V1 30.013
RP 213.01 LAP -1.55 LOP 285.95 VP 23.123 GAP -9.74 AZP 90.65 TAL 333.35 TAP 220.70 RCA 145.62 APO 227.50 V2 25.765
RC 297.448 GL 15.30 GP 2.32 ZAL 128.30 ZAP 53.12 ETS 181.11 ZAE 81.19 ETE 179.51 ZAC 85.70 ETC 258.55 CLP 53.09

PLANETOCENTRIC CONIC

C3 13.114 VHL 3.621 DLA 18.55 RAL 175.76 RAD 6567.5 VEL 11.597 PTH 2.03 VHP 3.653 DPA 11.92 RAP 162.23 ECC 1.2158

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 47 0	2736.86	-27.89	77.23	36.46	95.10	18 32 37	2136.9	-26.89	68.71
90.00	10 56 11	4143.82	-1.77	168.85	30.97	61.73	12 5 15	3543.8	-5.54	162.19
100.00	19 19 31	2438.49	-29.18	55.13	36.31	96.80	20 0 10	1838.5	-27.93	46.55
100.00	12 6 21	3917.42	-.64	151.58	30.34	60.11	13 11 38	3317.4	-4.62	145.04
110.00	20 52 7	2148.81	-32.47	32.52	35.69	101.33	21 27 56	1548.8	-30.57	23.82
110.00	12 50 15	3779.87	2.18	139.38	28.58	55.88	13 53 15	3179.9	-2.31	133.18

DIFFERENTIAL CORRECTIONS
TDE -.6316 TRA 4.2462 TC-11.2070 BAU 1.9686
RDE .3767 RRA -.0501 RC3 .7012 FAU .34430
FDE-2.3827 FRA 9.7587 FC-22.7299 BSP 37178
BDE .7354 BRA 4.2465 BC311.2289 FSP 6994

MID-COURSE EXECUTION ACCURACY
SGT10821.1 SGR 787.5 SG3 2027.1
RRT -.6231 RRF -.6478 RTF .9957
SGB10849.7 R23 .0324 R13 -.9958
SG110832.2 SG2 615.3 THA 177.40

ORBIT DETERMINATION ACCURACY
ST 2361.6 SR 596.7 SS 1953.8
CRT -.4631 CRS .6434 CST -.9763
LSA 3064.9 MSA 597.1 SSA 20.8
EL1 2378.6 EL2 525.1 ALF 172.98

LAUNCH DATE NOV 1 1964 FLIGHT TIME 364.00 ARRIVAL DATE OCT 31 1965

HELIOCENTRIC CONIC DISTANCE 814.078 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 32.814 GAL -4.81 AZL 88.32 HCA 248.55 SMA 186.62 ECC .22031 INC 1.6832 V1 30.013
RP 212.72 LAP -1.57 LOP 287.15 VP 23.165 GAP -9.90 AZP 90.62 TAL 332.84 TAP 221.39 RCA 145.50 APO 227.73 V2 25.798
RC 298.526 GL 15.22 GP 2.26 ZAL 129.02 ZAP 51.92 ETS 181.15 ZAE 79.72 ETE 179.59 ZAC 85.64 ETC 258.55 CLP 51.89

PLANETOCENTRIC CONIC

C3 13.380 VHL 3.658 DLA 18.18 RAL 176.42 RAD 6567.5 VEL 11.609 PTH 2.03 VHP 3.718 DPA 11.87 RAP 162.21 ECC 1.2202

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 53 29	2726.68	-27.83	76.49	37.30	95.46	18 38 55	2126.7	-26.78	67.98
90.00	10 54 57	4162.72	-1.17	169.90	31.80	61.70	12 4 20	3562.7	-4.94	163.25
100.00	19 25 38	2429.50	-29.10	54.47	37.14	97.14	20 6 7	1829.5	-27.81	45.91
100.00	12 5 29	3935.13	-.04	152.55	31.17	60.11	13 11 4	3335.1	-4.02	146.02
110.00	20 57 30	2142.08	-32.38	32.01	36.51	101.61	21 33 12	1542.1	-30.44	23.33
110.00	12 50 6	3795.31	2.77	140.19	29.41	55.92	13 53 22	3195.3	-1.72	133.98

DIFFERENTIAL CORRECTIONS
TDE -.6975 TRA 4.4283 TC-11.2294 BAU 2.0124
RDE .3837 RRA -.0458 RC3 .6789 FAU .33024
FDE-2.4085 FRA 9.5441 FC-21.3672 BSP 37965
BDE .7961 BRA 4.4286 BC311.2499 FSP 6721

MID-COURSE EXECUTION ACCURACY
SGT11044.6 SGR 783.3 SG3 1943.8
RRT -.6113 RRF -.6367 RTF .9957
SGB11072.3 R23 .0330 R13 -.9958
SG111055.0 SG2 619.3 THA 177.51

ORBIT DETERMINATION ACCURACY
ST 2459.9 SR 601.6 SS 1947.0
CRT -.4797 CRS .6531 CST -.9776
LSA 3138.5 MSA 594.7 SSA 20.4
EL1 2477.6 EL2 524.1 ALF 172.99

LAUNCH DATE NOV 1 1964 FLIGHT TIME 366.00 ARRIVAL DATE NOV 2 1965

HELIOCENTRIC CONIC DISTANCE 818.258 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 32.817 GAL -4.91 AZL 88.31 HCA 249.75 SMA 186.68 ECC .22122 INC 1.6914 V1 30.013
RP 212.43 LAP -1.59 LOP 288.35 VP 23.207 GAP -10.05 AZP 90.59 TAL 332.31 TAP 222.06 RCA 145.38 APO 227.97 V2 25.831
RC 299.592 GL 15.13 GP 2.21 ZAL 129.75 ZAP 50.76 ETS 181.18 ZAE 78.28 ETE 179.67 ZAC 85.59 ETC 258.55 CLP 50.72

PLANETOCENTRIC CONIC

C3 13.663 VHL 3.696 DLA 17.79 RAL 177.08 RAD 6567.5 VEL 11.621 PTH 2.04 VHP 3.786 DPA 11.81 RAP 162.22 ECC 1.2249

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 0 2	2716.44	-27.76	75.75	38.16	95.83	18 45 19	2116.4	-26.66	67.25
90.00	10 53 41	4182.08	-.54	170.98	32.64	61.69	12 3 23	3582.1	-4.32	164.34
100.00	19 31 50	2420.43	-29.03	53.81	37.99	97.48	20 12 10	1820.4	-27.69	45.26
100.00	12 4 35	3953.31	.57	153.55	32.02	60.11	13 10 28	3353.3	-3.41	147.02
110.00	21 2 58	2135.29	-32.28	31.51	37.35	101.90	21 38 33	1535.3	-30.31	22.85
110.00	12 49 56	3811.23	3.38	141.02	30.27	55.96	13 53 27	3211.2	-1.11	134.81

DIFFERENTIAL CORRECTIONS
TDE -.7654 TRA 4.6154 TC-11.2314 BAU 2.0551
RDE .3908 RRA -.0419 RC3 .6573 FAU .31647
FDE-2.4290 FRA 9.3309 FC-20.0520 BSP 38744
BDE .8594 BRA 4.6156 BC311.2506 FSP 6454

MID-COURSE EXECUTION ACCURACY
SGT11260.7 SGR 779.5 SG3 1862.4
RRT -.5999 RRF -.6260 RTF .9957
SGB11287.6 R23 .0337 R13 -.9957
SG111270.4 SG2 623.1 THA 177.61

ORBIT DETERMINATION ACCURACY
ST 2559.4 SR 606.2 SS 1938.9
CRT -.4952 CRS .6623 CST -.9788
LSA 3213.4 MSA 592.3 SSA 20.1
EL1 2577.7 EL2 522.9 ALF 173.02

LAUNCH DATE NOV 1 1964 FLIGHT TIME 368.00 ARRIVAL DATE NOV 4 1965

HELIOCENTRIC CONIC DISTANCE 822.441 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 32.821 GAL -5.02 AZL 88.30 HCA 250.95 SMA 186.74 ECC .22217 INC 1.6995 V1 30.013
RP 212.15 LAP -1.61 LOP 289.55 VP 23.248 GAP -10.21 AZP 90.55 TAL 331.77 TAP 222.72 RCA 145.25 APO 228.23 V2 25.863
RC 300.645 GL 15.04 GP 2.15 ZAL 130.50 ZAP 49.63 ETS 181.20 ZAE 76.87 ETE 179.74 ZAC 85.55 ETC 258.53 CLP 49.59

PLANETOCENTRIC CONIC

C3 13.963 VHL 3.737 DLA 17.40 RAL 177.75 RAD 6567.5 VEL 11.634 PTH 2.04 VHP 3.855 DPA 11.73 RAP 162.27 ECC 1.2298

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 6 40	2706.16	-27.69	75.01	39.04	96.19	18 51 46	2106.2	-26.54	66.53
90.00	10 52 24	4201.88	.10	172.09	33.50	61.68	12 2 26	3601.9	-3.69	165.45
100.00	19 38 6	2411.32	-28.94	53.14	38.86	97.82	20 18 17	1811.3	-27.56	44.61
100.00	12 3 40	3971.95	1.21	154.57	32.89	60.13	13 9 52	3371.9	-2.78	148.05
110.00	21 8 31	2128.44	-32.19	31.00	38.20	102.19	21 43 59	1528.4	-30.17	22.36
110.00	12 49 44	3827.59	4.00	141.88	31.15	56.02	13 53 32	3227.6	-.49	135.67

DIFFERENTIAL CORRECTIONS
TDE -.8369 TRA 4.8062 TC-11.2156 BAU 2.0971
RDE .3980 RRA -.0382 RC3 .6365 FAU .30297
FDE-2.4461 FRA 9.1199 FC-18.7845 BSP 39500
BDE .9267 BRA 4.8064 BC311.2337 FSP 6195

MID-COURSE EXECUTION ACCURACY
SGT11469.4 SGR 776.1 SG3 1783.1
RRT -.5890 RRF -.6159 RTF .9956
SGB11495.7 R23 .0342 R13 -.9957
SG111478.6 SG2 626.7 THA 177.71

ORBIT DETERMINATION ACCURACY
ST 2660.4 SR 610.7 SS 1929.9
CRT -.5104 CRS .6714 CST -.9799
LSA 3290.5 MSA 589.4 SSA 19.8
EL1 2679.3 EL2 521.4 ALF 173.05

LAUNCH DATE NOV 1 1964 FLIGHT TIME 370.00 ARRIVAL DATE NOV 6 1965

HELIOCENTRIC CONIC DISTANCE 826.626 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 32.824 GAL -5.14 AZL 88.29 HCA 252.16 SMA 186.80 ECC .22318 INC 1.7075 V1 30.013
RP 211.87 LAP -1.63 LOP 290.76 VP 23.288 GAP -10.37 AZP 90.52 TAL 331.21 TAP 223.37 RCA 145.11 APO 228.49 V2 25.895
RC 301.687 GL 14.94 GP 2.10 ZAL 131.26 ZAP 48.53 ETS 181.23 ZAE 75.49 ETE 179.81 ZAC 85.52 ETC 258.52 CLP 48.50

PLANETOCENTRIC CONIC

C3 14.281 VHL 3.779 DLA 17.00 RAL 178.43 RAD 6567.6 VEL 11.648 PTH 2.04 VHP 3.927 DPA 11.64 RAP 162.35 ECC 1.2350

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 13 22	2695.86	-27.61	74.26	39.93	96.56	18 58 18	2095.9	-26.41	65.80
90.00	10 51 6	4222.10	.75	173.21	34.39	61.69	12 1 28	3622.1	-3.04	166.58
100.00	19 44 26	2402.17	-28.86	52.48	39.75	98.16	20 24 28	1802.2	-27.43	43.97
100.00	12 2 43	3991.02	1.85	155.61	33.78	60.16	13 9 14	3391.0	-2.13	149.09
110.00	21 14 8	2121.55	-32.09	30.48	39.07	102.47	21 49 29	1521.6	-30.04	21.87
110.00	12 49 31	3844.40	4.64	142.76	32.04	56.10	13 53 36	3244.4	.16	136.54

DIFFERENTIAL CORRECTIONS
TDE -.9119 TRA 5.0010 TC-11.1827 BAU 2.1384
RDE .4054 RRA -.0347 RC3 .6164 FAU .28991
FDE-2.4623 FRA 8.9081 FC-17.5741 BSP 40217
BDE .9979 BRA 5.0011 BC311.1997 FSP 5941

MID-COURSE EXECUTION ACCURACY
SGT11670.9 SGR 773.2 SG3 1705.9
RRT -.5788 RRF -.6065 RTF .9955
SGB11696.5 R23 .0351 R13 -.9956
SG111679.5 SG2 630.1 THA 177.80

ORBIT DETERMINATION ACCURACY
ST 2762.8 SR 615.0 SS 1920.5
CRT -.5253 CRS .6807 CST -.9808
LSA 3369.8 MSA 586.5 SSA 19.5
EL1 2782.3 EL2 519.7 ALF 173.09

LAUNCH DATE NOV 1 1964 FLIGHT TIME 372.00 ARRIVAL DATE NOV 8 1965

HELIOCENTRIC CONIC DISTANCE 830.813 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 32.828 GAL -5.25 AZL 88.28 HCA 253.37 SMA 186.87 ECC .22423 INC 1.7154 V1 30.013
RP 211.60 LAP -1.64 LOP 291.97 VP 23.328 GAP -10.52 AZP 90.49 TAL 330.64 TAP 224.01 RCA 144.97 APO 228.77 V2 25.926
RC 302.717 GL 14.83 GP 2.05 ZAL 132.02 ZAP 47.47 ETS 181.25 ZAE 74.15 ETE 179.88 ZAC 85.50 ETC 258.50 CLP 47.44

PLANETOCENTRIC CONIC

C3 14.619 VHL 3.823 DLA 16.59 RAL 179.11 RAD 6567.6 VEL 11.662 PTH 2.05 VHP 4.000 DPA 11.54 RAP 162.47 ECC 1.2406

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 20 7	2685.58	-27.53	73.52	40.84	96.92	19 4 52	2085.6	-26.28	65.08
90.00	10 49 48	4242.73	1.42	174.36	35.30	61.72	12 0 30	3642.7	-2.37	167.74
100.00	19 50 50	2393.03	-28.77	51.81	40.65	98.50	20 30 43	1793.0	-27.29	43.32
100.00	12 1 46	4010.51	2.51	156.69	34.69	60.20	13 8 36	3410.5	-1.47	150.16
110.00	21 19 48	2114.66	-31.98	29.97	39.95	102.76	21 55 3	1514.7	-29.90	21.38
110.00	12 49 17	3861.65	5.29	143.67	32.96	56.18	13 53 38	3261.6	.82	137.44

DIFFERENTIAL CORRECTIONS
TDE -.9890 TRA 5.2017 TC-11.1309 BAU 2.1785
RDE .4129 RRA -.0315 RC3 .5969 FAU .27704
FDE-2.4722 FRA 8.7009 FC-16.4067 BSP 40954
BDE 1.0717 BRA 5.2018 BC311.1469 FSP 5699

MID-COURSE EXECUTION ACCURACY
SGT11865.7 SGR 770.5 SG3 1630.7
RRT -.5691 RRF -.5976 RTF .9954
SGB11890.7 R23 .0358 R13 -.9955
SG111873.9 SG2 633.1 THA 177.88

ORBIT DETERMINATION ACCURACY
ST 2866.2 SR 619.1 SS 1909.3
CRT -.5391 CRS .6894 CST -.9817
LSA 3450.1 MSA 583.4 SSA 19.2
EL1 2886.2 EL2 517.8 ALF 173.14

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LAUNCH DATE  NOV  1 1964                          FLIGHT TIME 374.00                                  ARRIVAL DATE  NOV 10 1965

 HELIOCENTRIC CONIC                                DISTANCE 835.001                                     EARTH  TO  MARS
  RL  148.46 LAL   -.00 LOL  38.61 VL  32.832 GAL  -5.38 AZL  88.28 HCA 254.58 SMA 186.94 ECC .22533 INC 1.7233 V1  30.013
  RP  211.33 LAP  -1.66 LOP 293.18 VP  23.367 GAP -10.68 AZP  90.46 TAL 330.05 TAP 224.63 RCA 144.81 APO 229.06 V2  25.956
  RC 303.736 GL   14.72 GP    2.00 ZAL 132.80 ZAP  46.44 ETS 181.26 ZAE  72.83 ETE 179.94 ZAC  85.49 ETC 258.47 CLP  46.41
 PLANETOCENTRIC CONIC
  C3  14.976 VHL  3.870 DLA  16.16 RAL 179.80 RAD 6567.6 VEL 11.677 PTH   2.05 VHP  4.075 DPA  11.42 RAP 162.62 ECC 1.2465
  LNCH AZMTH  LNCH TIME  L-I TIME    INJ LAT   INJ LONG  INJ RT ASC  INJ AZMTH  INJ TIME  PO CST TIM  INJ 2 LAT INJ 2 LONG
     90.00    18 26 55   2675.33     -27.44     72.78      41.76      97.28    19 11 30    2075.3     -26.15      64.36
     90.00    10 48 28   4263.75       2.10    175.54      36.23      61.75    11 59 32    3663.8      -1.70     168.91
    100.00    19 57 17   2383.90     -28.67     51.15      41.57      98.84    20 37  1    1783.9     -27.15      42.68
    100.00    12  0 47   4030.41       3.18    157.78      35.62      60.26    13  7 58    3430.4       -.80     151.26
    110.00    21 25 32   2107.78     -31.88     29.46      40.85     103.05    22  0 40    1507.8     -29.76      20.90
    110.00    12 49  1   3879.30       5.96    144.60      33.90      56.28    13 53 41    3279.3       1.49     138.36
 DIFFERENTIAL CORRECTIONS                          MID-COURSE EXECUTION ACCURACY                      ORBIT DETERMINATION ACCURACY
  TDE-1.0687 TRA 5.4082 TC-11.0609 BAU 2.2176       SGT12053.7 SGR  768.0 SG3 1557.5                  ST  2970.6 SR   623.1 SS  1896.8
  RDE  .4206 RRA -.0287 RC3  .5779 FAU .26444       RRT -.5599 RRF -.5891 RTF  .9953                  CRT -.5522 CRS  .6977 CST -.9824
  FDE-2.4780 FRA 8.4961 FC-15.2867 BSP  41678       SGB12078.2 R23  .0365 R13 -.9954                  LSA 3531.8 MSA  580.2 SSA   18.9
  BDE 1.1485 BRA 5.4083 BC311.0760 FSP   5465       SG112061.4 SG2  635.9 THA 177.95                  EL1 2991.1 EL2  515.9 ALF 173.19

LAUNCH DATE  NOV  1 1964                          FLIGHT TIME 376.00                                  ARRIVAL DATE  NOV 12 1965

 HELIOCENTRIC CONIC                                DISTANCE 839.190                                     EARTH  TO  MARS
  RL  148.46 LAL   -.00 LOL  38.61 VL  32.836 GAL  -5.50 AZL  88.27 HCA 255.79 SMA 187.01 ECC .22648 INC 1.7311 V1  30.013
  RP  211.08 LAP  -1.68 LOP 294.40 VP  23.406 GAP -10.83 AZP  90.43 TAL 329.45 TAP 225.24 RCA 144.65 APO 229.36 V2  25.986
  RC 304.746 GL   14.59 GP    1.96 ZAL 133.59 ZAP  45.44 ETS 181.28 ZAE  71.55 ETE 180.01 ZAC  85.49 ETC 258.44 CLP  45.41
 PLANETOCENTRIC CONIC
  C3  15.355 VHL  3.919 DLA  15.73 RAL 180.49 RAD 6567.6 VEL 11.694 PTH   2.06 VHP  4.152 DPA  11.29 RAP 162.81 ECC 1.2527
  LNCH AZMTH  LNCH TIME  L-I TIME    INJ LAT   INJ LONG  INJ RT ASC  INJ AZMTH  INJ TIME  PO CST TIM  INJ 2 LAT INJ 2 LONG
     90.00    18 33 45   2665.15     -27.35     72.05      42.70      97.64    19 18 10    2065.1     -26.01      63.64
     90.00    10 47  9   4285.15       2.78    176.73      37.18      61.81    11 58 34    3685.1      -1.01     170.10
    100.00    20  3 47   2374.83     -28.58     50.49      42.50      99.17    20 43 21    1774.8     -27.01      42.04
    100.00    11 59 48   4050.70       3.87    158.90      36.58      60.34    13  7 19    3450.7       -.11     152.37
    110.00    21 31 19   2100.92     -31.77     28.96      41.76     103.33    22  6 20    1500.9     -29.61      20.41
    110.00    12 48 45   3897.37       6.64    145.55      34.86      56.39    13 53 42    3297.4       2.18     139.31
 DIFFERENTIAL CORRECTIONS                          MID-COURSE EXECUTION ACCURACY                      ORBIT DETERMINATION ACCURACY
  TDE-1.1523 TRA 5.6187 TC-10.9785 BAU 2.2566       SGT12235.8 SGR  766.0 SG3 1486.7                  ST  3075.9 SR   626.9 SS  1883.6
  RDE  .4286 RRA -.0261 RC3  .5598 FAU .25230       RRT -.5515 RRF -.5816 RTF  .9952                  CRT -.5651 CRS  .7062 CST -.9831
  FDE-2.4829 FRA 8.2909 FC-14.2250 BSP  42352       SGB12259.7 R23  .0374 R13 -.9953                  LSA 3615.1 MSA  576.9 SSA   18.7
  BDE 1.2294 BRA 5.6187 BC310.9927 FSP   5232       SG112243.1 SG2  638.6 THA 178.02                  EL1 3096.9 EL2  513.7 ALF 173.24

LAUNCH DATE  NOV  1 1964                          FLIGHT TIME 378.00                                  ARRIVAL DATE  NOV 14 1965

 HELIOCENTRIC CONIC                                DISTANCE 843.379                                     EARTH  TO  MARS
  RL  148.46 LAL   -.00 LOL  38.61 VL  32.840 GAL  -5.63 AZL  88.26 HCA 257.01 SMA 187.08 ECC .22769 INC 1.7388 V1  30.013
  RP  210.82 LAP  -1.69 LOP 295.61 VP  23.444 GAP -10.99 AZP  90.39 TAL 328.83 TAP 225.84 RCA 144.48 APO 229.68 V2  26.015
  RC 305.746 GL   14.47 GP    1.91 ZAL 134.39 ZAP  44.47 ETS 181.29 ZAE  70.29 ETE 180.06 ZAC  85.49 ETC 258.40 CLP  44.44
 PLANETOCENTRIC CONIC
  C3  15.757 VHL  3.969 DLA  15.29 RAL 181.18 RAD 6567.6 VEL 11.711 PTH   2.06 VHP  4.231 DPA  11.16 RAP 163.03 ECC 1.2593
  LNCH AZMTH  LNCH TIME  L-I TIME    INJ LAT   INJ LONG  INJ RT ASC  INJ AZMTH  INJ TIME  PO CST TIM  INJ 2 LAT INJ 2 LONG
     90.00    18 40 37   2655.05     -27.26     71.33      43.66      97.99    19 24 52    2055.0     -25.87      62.94
     90.00    10 45 49   4306.90       3.48    177.95      38.15      61.88    11 57 36    3706.9       -.30     171.32
    100.00    20 10 18   2365.81     -28.48     49.84      43.45      99.50    20 49 44    1765.8     -26.87      41.41
    100.00    11 58 49   4071.37       4.56    160.04      37.56      60.43    13  6 40    3471.4        .59     153.50
    110.00    21 37  9   2094.12     -31.66     28.46      42.69     103.61    22 12  3    1494.1     -29.47      19.93
    110.00    12 48 28   3915.83       7.34    146.53      35.85      56.52    13 53 44    3315.8       2.89     140.27
 DIFFERENTIAL CORRECTIONS                          MID-COURSE EXECUTION ACCURACY                      ORBIT DETERMINATION ACCURACY
  TDE-1.2391 TRA 5.8345 TC-10.8814 BAU 2.2951       SGT12411.6 SGR  764.1 SG3 1418.0                  ST  3182.1 SR   630.6 SS  1869.0
  RDE  .4367 RRA -.0239 RC3  .5422 FAU .24050       RRT -.5438 RRF -.5747 RTF  .9950                  CRT -.5775 CRS  .7144 CST -.9837
  FDE-2.4840 FRA 8.0876 FC-13.2137 BSP  43019       SGB12435.1 R23  .0383 R13 -.9951                  LSA 3699.6 MSA  573.4 SSA   18.4
  BDE 1.3138 BRA 5.8345 BC310.8949 FSP   5009       SG112418.6 SG2  640.9 THA 178.08                  EL1 3203.4 EL2  511.4 ALF 173.30

LAUNCH DATE  NOV  1 1964                          FLIGHT TIME 380.00                                  ARRIVAL DATE  NOV 16 1965

 HELIOCENTRIC CONIC                                DISTANCE 847.568                                     EARTH  TO  MARS
  RL  148.46 LAL   -.00 LOL  38.61 VL  32.845 GAL  -5.77 AZL  88.25 HCA 258.23 SMA 187.16 ECC .22895 INC 1.7464 V1  30.013
  RP  210.58 LAP  -1.71 LOP 296.84 VP  23.482 GAP -11.14 AZP  90.36 TAL 328.19 TAP 226.43 RCA 144.31 APO 230.01 V2  26.043
  RC 306.737 GL   14.33 GP    1.87 ZAL 135.20 ZAP  43.53 ETS 181.31 ZAE  69.07 ETE 180.12 ZAC  85.50 ETC 258.36 CLP  43.50
 PLANETOCENTRIC CONIC
  C3  16.182 VHL  4.023 DLA  14.84 RAL 181.88 RAD 6567.6 VEL 11.729 PTH   2.07 VHP  4.312 DPA  11.01 RAP 163.27 ECC 1.2663
  LNCH AZMTH  LNCH TIME  L-I TIME    INJ LAT   INJ LONG  INJ RT ASC  INJ AZMTH  INJ TIME  PO CST TIM  INJ 2 LAT INJ 2 LONG
     90.00    18 47 31   2645.05     -27.16     70.61      44.63      98.33    19 31 36    2045.0     -25.73      62.24
     90.00    10 44 29   4329.01       4.19    179.19      39.15      61.97    11 56 38    3729.0        .41     172.55
    100.00    20 16 52   2356.89     -28.37     49.20      44.41      99.82    20 56  9    1756.9     -26.72      40.78
    100.00    11 57 48   4092.40       5.27    161.20      38.56      60.53    13  6  1    3492.4       1.30     154.66
    110.00    21 43  0   2087.39     -31.56     27.96      43.64     103.88    22 17 48    1487.4     -29.33      19.46
    110.00    12 48 10   3934.67       8.04    147.53      36.85      56.66    13 53 45    3334.7       3.60     141.26
 DIFFERENTIAL CORRECTIONS                          MID-COURSE EXECUTION ACCURACY                      ORBIT DETERMINATION ACCURACY
  TDE-1.3279 TRA 6.0563 TC-10.7705 BAU 2.3329       SGT12581.6 SGR  762.5 SG3 1351.7                  ST  3288.1 SR   634.0 SS  1852.8
  RDE  .4450 RRA -.0219 RC3  .5253 FAU .22907       RRT -.5368 RRF -.5686 RTF  .9949                  CRT -.5891 CRS  .7223 CST -.9842
  FDE-2.4811 FRA 7.8871 FC-12.2547 BSP  43660       SGB12604.7 R23  .0393 R13 -.9949                  LSA 3784.3 MSA  570.0 SSA   18.2
  BDE 1.4005 BRA 6.0563 BC310.7833 FSP   4794       SG112588.2 SG2  643.0 THA 178.13                  EL1 3309.7 EL2  509.0 ALF 173.36
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LAUNCH DATE NOV 1 1964 FLIGHT TIME 382.00 ARRIVAL DATE NOV 18 1965

HELIOCENTRIC CONIC DISTANCE 851.757 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 32.849 GAL -5.91 AZL 88.25 HCA 259.46 SMA 187.23 ECC .23027 INC 1.7540 V1 30.013
RP 210.34 LAP -1.72 LOP 298.06 VP 23.518 GAP -11.30 AZP 90.32 TAL 327.54 TAP 227.00 RCA 144.12 APO 230.35 V2 26.071
RC 307.719 GL 14.20 GP 1.83 ZAL 136.01 ZAP 42.62 ETS 181.32 ZAE 67.87 ETE 180.17 ZAC 85.52 ETC 258.32 CLP 42.59

PLANETOCENTRIC CONIC

C3 16.634 VHL 4.078 DLA 14.38 RAL 182.58 RAD 6567.7 VEL 11.748 PTH 2.07 VHP 4.395 DPA 10.85 RAP 163.55 ECC 1.2737

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 54 26	2635.17	-27.06	69.91	45.62	98.68	19 38 21	2035.2	-25.58	61.55
90.00	10 43 9	4351.45	4.91	180.45	40.17	62.08	11 55 40	3751.5	1.13	173.80
100.00	20 23 28	2348.07	-28.27	48.56	45.39	100.14	21 2 36	1748.1	-26.58	40.17
100.00	11 56 48	4113.79	5.98	162.38	39.58	60.66	13 5 22	3513.8	2.03	155.83
110.00	21 48 54	2080.74	-31.45	27.47	44.60	104.15	22 23 35	1480.7	-29.18	19.00
110.00	12 47 51	3953.88	8.76	148.56	37.88	56.83	13 53 45	3353.9	4.33	142.26

DIFFERENTIAL CORRECTIONS
TDE-1.4209 TRA 6.2839 TC-10.6468 BAU 2.3703
RDE .4536 RRA -.0203 RC3 .5089 FAU .21796
FDE-2.4759 FRA 7.6877 FC-11.3442 BSP 44321
BDE 1.4915 BRA 6.2839 BC310.6589 FSP 4584

MID-COURSE EXECUTION ACCURACY
SGT12746.0 SGR 761.0 SG3 1287.4
RRT -.5304 RRF -.5631 RTF .9947
SGB12768.7 R23 .0403 R13 -.9947
SG112752.4 SG2 644.8 THA 178.18

ORBIT DETERMINATION ACCURACY
ST 3395.2 SR 637.4 SS 1835.5
CRT -.6004 CRS .7301 CST -.9847
LSA 3870.6 MSA 566.4 SSA 18.0
EL1 3417.2 EL2 506.4 ALF 173.42

LAUNCH DATE NOV 1 1964 FLIGHT TIME 384.00 ARRIVAL DATE NOV 20 1965

HELIOCENTRIC CONIC DISTANCE 855.944 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 32.854 GAL -6.05 AZL 88.24 HCA 260.68 SMA 187.31 ECC .23164 INC 1.7616 V1 30.013
RP 210.10 LAP -1.24 LOP 299.29 VP 23.554 GAP -11.45 AZP 90.29 TAL 326.88 TAP 227.56 RCA 143.92 APO 230.70 V2 26.098
RC 308.691 GL 14.05 GP 1.79 ZAL 136.83 ZAP 41.73 ETS 181.32 ZAE 66.69 ETE 180.22 ZAC 85.55 ETC 258.27 CLP 41.70

PLANETOCENTRIC CONIC

C3 17.112 VHL 4.137 DLA 13.92 RAL 183.28 RAD 6567.7 VEL 11.768 PTH 2.08 VHP 4.480 DPA 10.67 RAP 163.85 ECC 1.2816

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 1 22	2625.44	-26.96	69.21	46.62	99.01	19 45 8	2025.4	-25.44	60.87
90.00	10 41 49	4374.22	5.63	181.73	41.21	62.20	11 54 43	3774.2	1.87	175.07
100.00	20 30 4	2339.38	-28.16	47.94	46.39	100.46	21 9 4	1739.4	-26.43	39.56
100.00	11 55 48	4135.51	6.71	163.59	40.62	60.80	13 4 43	3535.5	2.76	157.02
110.00	21 54 49	2074.20	-31.34	27.00	45.58	104.41	22 29 23	1474.2	-29.04	18.54
110.00	12 47 32	3973.46	9.49	149.60	38.93	57.01	13 53 46	3373.5	5.08	143.29

DIFFERENTIAL CORRECTIONS
TDE-1.5160 TRA 6.5183 TC-10.5091 BAU 2.4068
RDE .4623 RRA -.0191 RC3 .4930 FAU .20714
FDE-2.4666 FRA 7.4907 FC-10.4799 BSP 44969
BDE 1.5849 BRA 6.5183 BC310.5206 FSP 4384

MID-COURSE EXECUTION ACCURACY
SGT12904.3 SGR 759.7 SG3 1225.2
RRT -.5247 RRF -.5583 RTF .9945
SGB12926.7 R23 .0414 R13 -.9945
SG112910.5 SG2 646.4 THA 178.23

ORBIT DETERMINATION ACCURACY
ST 3502.0 SR 640.5 SS 1816.5
CRT -.6110 CRS .7376 CST -.9851
LSA 3956.9 MSA 562.8 SSA 17.8
EL1 3524.3 EL2 503.8 ALF 173.49

LAUNCH DATE NOV 1 1964 FLIGHT TIME 386.00 ARRIVAL DATE NOV 22 1965

HELIOCENTRIC CONIC DISTANCE 860.130 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 32.858 GAL -6.20 AZL 88.23 HCA 261.91 SMA 187.39 ECC .23308 INC 1.7691 V1 30.013
RP 209.88 LAP -1.75 LOP 300.52 VP 23.590 GAP -11.61 AZP 90.25 TAL 326.19 TAP 228.11 RCA 143.71 APO 231.07 V2 26.124
RC 309.654 GL 13.90 GP 1.75 ZAL 137.66 ZAP 40.88 ETS 181.33 ZAE 65.54 ETE 180.27 ZAC 85.58 ETC 258.22 CLP 40.84

PLANETOCENTRIC CONIC

C3 17.618 VHL 4.197 DLA 13.45 RAL 183.98 RAD 6567.7 VEL 11.790 PTH 2.08 VHP 4.567 DPA 10.49 RAP 164.18 ECC 1.2899

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 8 19	2615.87	-26.86	68.53	47.64	99.34	19 51 55	2015.9	-25.29	60.21
90.00	10 40 29	4397.29	6.36	183.03	42.28	62.35	11 53 46	3797.3	2.61	176.36
100.00	20 36 42	2330.83	-28.06	47.33	47.40	100.76	21 15 32	1730.8	-26.29	38.97
100.00	11 54 47	4157.57	7.44	164.82	41.69	60.96	13 4 5	3557.6	3.51	158.24
110.00	22 0 46	2067.78	-31.23	26.53	46.58	104.67	22 35 14	1467.8	-28.90	18.10
110.00	12 47 13	3993.38	10.23	150.68	40.00	57.20	13 53 46	3393.4	5.83	144.34

DIFFERENTIAL CORRECTIONS
TDE-1.6154 TRA 6.7578 TC-10.3637 BAU 2.4436
RDE .4714 RRA -.0181 RC3 .4777 FAU .19675
FDE-2.4559 FRA 7.2937 FC3-9.6683 BSP 45572
BDE 1.6828 BRA 6.7578 BC310.3747 FSP 4187

MID-COURSE EXECUTION ACCURACY
SGT13058.1 SGR 758.6 SG3 1165.3
RRT -.5198 RRF -.5544 RTF .9942
SGB13080.1 R23 .0425 R13 -.9943
SG113064.1 SG2 647.8 THA 178.27

ORBIT DETERMINATION ACCURACY
ST 3609.3 SR 643.6 SS 1796.5
CRT -.6215 CRS .7451 CST -.9855
LSA 4044.2 MSA 559.1 SSA 17.6
EL1 3631.8 EL2 501.1 ALF 173.55

LAUNCH DATE NOV 1 1964 FLIGHT TIME 388.00 ARRIVAL DATE NOV 24 1965

HELIOCENTRIC CONIC DISTANCE 864.314 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 32.863 GAL -6.35 AZL 88.22 HCA 263.15 SMA 187.47 ECC .23458 INC 1.7766 V1 30.013
RP 209.66 LAP -1.76 LOP 301.75 VP 23.624 GAP -11.77 AZP 90.21 TAL 325.49 TAP 228.64 RCA 143.50 APO 231.45 V2 26.149
RC 310.607 GL 13.75 GP 1.72 ZAL 138.49 ZAP 40.04 ETS 181.33 ZAE 64.42 ETE 180.32 ZAC 85.62 ETC 258.16 CLP 40.01

PLANETOCENTRIC CONIC

C3 18.155 VHL 4.261 DLA 12.97 RAL 184.69 RAD 6567.7 VEL 11.813 PTH 2.09 VHP 4.656 DPA 10.30 RAP 164.54 ECC 1.2988

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 15 15	2606.47	-26.75	67.86	48.67	99.65	19 58 42	2006.5	-25.14	59.56
90.00	10 39 10	4420.67	7.10	184.35	43.37	62.52	11 52 51	3820.7	3.36	177.67
100.00	20 43 20	2322.44	-27.95	46.73	48.43	101.06	21 22 2	1722.4	-26.14	38.39
100.00	11 53 47	4179.93	8.17	166.07	42.79	61.15	13 3 27	3579.9	4.26	159.47
110.00	22 6 43	2061.50	-31.12	26.07	47.59	104.92	22 41 5	1461.5	-28.76	17.66
110.00	12 46 53	4013.64	10.97	151.77	41.10	57.42	13 53 46	3413.6	6.60	145.41

DIFFERENTIAL CORRECTIONS
TDE-1.7171 TRA 7.0047 TC-10.2066 BAU 2.4798
RDE .4806 RRA -.0176 RC3 .4629 FAU .18665
FDE-2.4412 FRA 7.0991 FC3-8.9007 BSP 46178
BDE 1.7831 BRA 7.0047 BC310.2171 FSP 3997

MID-COURSE EXECUTION ACCURACY
SGT13206.6 SGR 757.5 SG3 1107.4
RRT -.5155 RRF -.5511 RTF .9939
SGB13228.3 R23 .0437 R13 -.9940
SG113212.3 SG2 648.8 THA 178.30

ORBIT DETERMINATION ACCURACY
ST 3716.0 SR 646.4 SS 1774.7
CRT -.6313 CRS .7523 CST -.9858
LSA 4131.2 MSA 555.4 SSA 17.4
EL1 3738.7 EL2 498.3 ALF 173.62

LAUNCH DATE NOV 1 1964 FLIGHT TIME 390.00 ARRIVAL DATE NOV 26 1965

HELIOCENTRIC CONIC DISTANCE 868.494 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 32.868 GAL -6.51 AZL 88.22 HCA 264.38 SMA 187.56 ECC .23614 INC 1.7841 V1 30.013
RP 209.44 LAP -1.78 LOP 302.99 VP 23.658 GAP -11.93 AZP 90.17 TAL 324.78 TAP 229.16 RCA 143.27 APO 231.85 V2 26.174
RC 311.551 GL 13.59 GP 1.68 ZAL 139.33 ZAP 39.23 ETS 181.34 ZAE 63.32 ETE 180.36 ZAC 85.67 ETC 258.11 CLP 39.20

PLANETOCENTRIC CONIC

C3 18.724 VHL 4.327 DLA 12.49 RAL 185.40 RAD 6567.8 VEL 11.837 PTH 2.10 VHP 4.747 DPA 10.10 RAP 164.93 ECC 1.3081

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 22 12	2597.28	-26.64	67.21	49.72	99.96	20 5 29	1997.3	-24.99	58.93
90.00	10 37 51	4444.33	7.84	185.70	44.48	62.70	11 51 56	3844.3	4.12	178.99
100.00	20 49 58	2314.23	-27.84	46.14	49.47	101.35	21 28 32	1714.2	-25.99	37.83
100.00	11 52 47	4202.61	8.92	167.35	43.90	61.35	13 2 49	3602.6	5.02	160.72
110.00	22 12 41	2055.38	-31.01	25.63	48.61	105.16	22 46 57	1455.4	-28.62	17.24
110.00	12 46 32	4034.22	11.72	152.89	42.22	57.66	13 53 47	3434.2	7.37	146.50

DIFFERENTIAL CORRECTIONS
TDE-1.8233 TRA 7.2576 TC-10.0413 BAU 2.5161
RDE .4902 RRA -.0174 RC3 .4485 FAU .17692
FDE-2.4250 FRA 6.9052 FC3-8.1800 BSP 46761
BDE 1.8881 BRA 7.2576 BC310.0513 FSP 3812

MID-COURSE EXECUTION ACCURACY
SGT13350.1 SGR 756.6 SG3 1051.5
RRT -.5120 RRF -.5487 RTF .9936
SGB13371.6 R23 .0450 R13 -.9937
SG113355.8 SG2 649.7 THA 178.33

ORBIT DETERMINATION ACCURACY
ST 3823.1 SR 649.2 SS 1751.9
CRT -.6410 CRS .7595 CST -.9860
LSA 4219.3 MSA 551.5 SSA 17.2
EL1 3846.1 EL2 495.3 ALF 173.68

LAUNCH DATE NOV 1 1964 FLIGHT TIME 392.00 ARRIVAL DATE NOV 28 1965

HELIOCENTRIC CONIC DISTANCE 872.671 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 32.873 GAL -6.68 AZL 88.21 HCA 265.62 SMA 187.64 ECC .23778 INC 1.7915 V1 30.013
RP 209.24 LAP -1.79 LOP 304.22 VP 23.691 GAP -12.09 AZP 90.14 TAL 324.04 TAP 229.66 RCA 143.03 APO 232.26 V2 26.198
RC 312.486 GL 13.43 GP 1.65 ZAL 140.17 ZAP 38.45 ETS 181.34 ZAE 62.24 ETE 180.41 ZAC 85.72 ETC 258.04 CLP 38.42

PLANETOCENTRIC CONIC

C3 19.327 VHL 4.396 DLA 12.00 RAL 186.10 RAD 6567.8 VEL 11.862 PTH 2.10 VHP 4.840 DPA 9.89 RAP 165.33 ECC 1.3181

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 29 9	2588.29	-26.54	66.58	50.79	100.27	20 12 17	1988.3	-24.85	58.31
90.00	10 36 33	4468.27	8.59	187.06	45.62	62.91	11 51 1	3868.3	4.89	180.34
100.00	20 56 36	2306.22	-27.73	45.57	50.53	101.63	21 35 2	1706.2	-25.85	37.27
100.00	11 51 47	4225.57	9.66	168.64	45.04	61.58	13 2 12	3625.6	5.79	161.99
110.00	22 18 40	2049.43	-30.90	25.20	49.66	105.40	22 52 50	1449.4	-28.48	16.83
110.00	12 46 12	4055.13	12.48	154.04	43.37	57.92	13 53 47	3455.1	8.15	147.61

DIFFERENTIAL CORRECTIONS
TDE-1.9334 TRA 7.5168 TC3-9.8708 BAU 2.5530
RDE .5000 RRA -.0175 RC3 .4348 FAU .16755
FDE-2.4064 FRA 6.7116 FC3-7.5054 BSP 47306
BDE 1.9970 BRA 7.5169 BC3 9.8804 FSP 3631

MID-COURSE EXECUTION ACCURACY
SGT13490.2 SGR 755.9 SG3 997.7
RRT -.5093 RRF -.5471 RTF .9933
SGB13511.4 R23 .0464 R13 -.9934
SG113495.7 SG2 650.2 THA 178.36

ORBIT DETERMINATION ACCURACY
ST 3930.0 SR 651.8 SS 1727.7
CRT -.6504 CRS .7667 CST -.9862
LSA 4307.5 MSA 547.6 SSA 17.0
EL1 3953.2 EL2 492.2 ALF 173.75

LAUNCH DATE NOV 1 1964 FLIGHT TIME 394.00 ARRIVAL DATE NOV 30 1965

HELIOCENTRIC CONIC DISTANCE 876.844 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 32.878 GAL -6.85 AZL 88.20 HCA 266.86 SMA 187.73 ECC .23948 INC 1.7990 V1 30.013
RP 209.04 LAP -1.80 LOP 305.46 VP 23.724 GAP -12.25 AZP 90.10 TAL 323.30 TAP 230.15 RCA 142.77 APO 232.69 V2 26.221
RC 313.411 GL 13.26 GP 1.61 ZAL 141.01 ZAP 37.69 ETS 181.34 ZAE 61.18 ETE 180.45 ZAC 85.78 ETC 257.98 CLP 37.66

PLANETOCENTRIC CONIC

C3 19.967 VHL 4.468 DLA 11.51 RAL 186.81 RAD 6567.8 VEL 11.889 PTH 2.11 VHP 4.935 DPA 9.67 RAP 165.77 ECC 1.3286

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 36 5	2579.52	-26.43	65.96	51.87	100.56	20 19 4	1979.5	-24.70	57.71
90.00	10 35 16	4492.48	9.33	188.45	46.78	63.14	11 50 8	3892.5	5.66	181.70
100.00	21 3 14	2298.42	-27.62	45.01	51.61	101.90	21 41 33	1698.4	-25.70	36.74
100.00	11 50 47	4248.81	10.41	169.96	46.21	61.82	13 1 36	3648.8	6.57	163.29
110.00	22 24 39	2043.67	-30.80	24.78	50.72	105.62	22 58 43	1443.7	-28.35	16.44
110.00	12 45 52	4076.34	13.25	155.21	44.54	58.20	13 53 48	3476.3	8.95	148.75

DIFFERENTIAL CORRECTIONS
TDE-2.0454 TRA 7.7845 TC3-9.6893 BAU 2.5888
RDE .5101 RRA -.0181 RC3 .4213 FAU .15844
FDE-2.3837 FRA 6.5200 FC3-6.8697 BSP 47864
BDE 2.1081 BRA 7.7845 BC3 9.6984 FSP 3459

MID-COURSE EXECUTION ACCURACY
SGT13624.4 SGR 755.1 SG3 945.8
RRT -.5071 RRF -.5460 RTF .9929
SGB13645.4 R23 .0479 R13 -.9930
SG113629.8 SG2 650.5 THA 178.39

ORBIT DETERMINATION ACCURACY
ST 4035.5 SR 654.2 SS 1701.5
CRT -.6591 CRS .7735 CST -.9864
LSA 4394.6 MSA 543.7 SSA 16.8
EL1 4058.8 EL2 489.2 ALF 173.81

LAUNCH DATE NOV 1 1964 FLIGHT TIME 396.00 ARRIVAL DATE DEC 2 1965

HELIOCENTRIC CONIC DISTANCE 881.012 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 32.883 GAL -7.02 AZL 88.19 HCA 268.10 SMA 187.82 ECC .24126 INC 1.8064 V1 30.013
RP 208.85 LAP -1.81 LOP 306.71 VP 23.755 GAP -12.42 AZP 90.06 TAL 322.53 TAP 230.63 RCA 142.51 APO 233.13 V2 26.243
RC 314.329 GL 13.09 GP 1.58 ZAL 141.86 ZAP 36.95 ETS 181.34 ZAE 60.15 ETE 180.49 ZAC 85.85 ETC 257.92 CLP 36.92

PLANETOCENTRIC CONIC

C3 20.644 VHL 4.544 DLA 11.02 RAL 187.52 RAD 6567.8 VEL 11.917 PTH 2.12 VHP 5.032 DPA 9.44 RAP 166.22 ECC 1.3398

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 43 0	2571.00	-26.32	65.36	52.97	100.84	20 25 51	1971.0	-24.56	57.13
90.00	10 33 59	4516.95	10.08	189.85	47.97	63.40	11 49 16	3916.9	6.43	183.08
100.00	21 9 52	2290.83	-27.52	44.48	52.70	102.17	21 48 3	1690.8	-25.56	36.22
100.00	11 49 48	4272.34	11.17	171.30	47.40	62.09	13 1 0	3672.3	7.35	164.60
110.00	22 30 38	2038.10	-30.70	24.38	51.79	105.84	23 4 36	1438.1	-28.22	16.06
110.00	12 45 31	4097.84	14.01	156.40	45.74	58.50	13 53 49	3497.8	9.74	149.90

DIFFERENTIAL CORRECTIONS
TDE-2.1628 TRA 8.0576 TC3-9.5068 BAU 2.6263
RDE .5206 RRA -.0191 RC3 .4084 FAU .14974
FDE-2.3605 FRA 6.3273 FC3-6.2795 BSP 48359
BDE 2.2246 BRA 8.0576 BC3 9.5156 FSP 3288

MID-COURSE EXECUTION ACCURACY
SGT13756.0 SGR 754.5 SG3 895.8
RRT -.5059 RRF -.5460 RTF .9925
SGB13776.7 R23 .0496 R13 -.9926
SG113761.3 SG2 650.6 THA 178.41

ORBIT DETERMINATION ACCURACY
ST 4141.2 SR 656.6 SS 1674.6
CRT -.6679 CRS .7805 CST -.9865
LSA 4482.5 MSA 539.7 SSA 16.6
EL1 4164.7 EL2 485.9 ALF 173.87

LAUNCH DATE NOV 1 1964 FLIGHT TIME 398.00 ARRIVAL DATE DEC 4 1965

DISTANCE 885.174

HELIOCENTRIC CONIC

RL 148.46 LAL -.00 LOL 38.61 VL 32.888 GAL -7.20 AZL 88.19 HCA 269.34 SMA 187.91 ECC .24312 INC 1.8139 V1 30.013
RP 208.67 LAP -1.81 LOP 307.95 VP 23.786 GAP -12.59 AZP 90.02 TAL 321.75 TAP 231.09 RCA 142.23 APO 233.59 V2 26.264
RC 315.238 GL 12.91 GP 1.55 ZAL 142.71 ZAP 36.23 ETS 181.34 ZAE 59.13 ETE 180.53 ZAC 85.93 ETC 257.85 CLP 36.20

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 21.363 VHL 4.622 DLA 10.52 RAL 188.22 RAD 6567.9 VEL 11.948 PTH 2.13 VHP 5.131 DPA 9.20 RAP 166.70 ECC 1.3516

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 49 54	2562.72	-26.21	64.77	54.08	101.11	20 32 37	1962.7	-24.41	56.57
90.00	10 32 43	4541.66	10.83	191.28	49.18	63.68	11 48 24	3941.7	7.21	184.48
100.00	21 16 29	2283.48	-27.41	43.96	53.81	102.42	21 54 32	1683.5	-25.42	35.72
100.00	11 48 49	4296.12	11.92	172.66	48.62	62.38	13 0 25	3696.1	8.13	165.93
110.00	22 36 36	2032.74	-30.60	23.99	52.88	106.05	23 10 29	1432.7	-28.09	15.69
110.00	12 45 11	4119.63	14.79	157.61	46.96	58.82	13 53 50	3519.6	10.55	151.08

DIFFERENTIAL CORRECTIONS

TDE-2.2840 TRA 8.3388 TC3-9.3157 BAU 2.6630
RDE .5313 RRA -.0205 RC3 .3958 FAU .14127
FDE-2.3346 FRA 6.1359 FC3-5.7249 BSP 48861
BDE 2.3450 BRA 8.3388 BC3 9.3241 FSP 3124

MID-COURSE EXECUTION ACCURACY

SGT13882.1 SGR 753.9 SG3 847.6
RRT -.5052 RRF -.5466 RTF .9921
SGB13902.5 R23 .0513 R13 -.9922
SG113887.3 SG2 650.4 THA 178.43

ORBIT DETERMINATION ACCURACY

ST 4246.4 SR 658.8 SS 1646.1
CRT -.6764 CRS .7873 CST -.9866
LSA 4570.4 MSA 535.6 SSA 16.5
EL1 4270.0 EL2 482.6 ALF 173.93

LAUNCH DATE NOV 1 1964 FLIGHT TIME 400.00 ARRIVAL DATE DEC 6 1965

DISTANCE 889.330

HELIOCENTRIC CONIC

RL 148.46 LAL -.00 LOL 38.61 VL 32.893 GAL -7.39 AZL 88.18 HCA 270.59 SMA 188.00 ECC .24505 INC 1.8213 V1 30.013
RP 208.49 LAP -1.82 LOP 309.20 VP 23.816 GAP -12.76 AZP 89.98 TAL 320.95 TAP 231.54 RCA 141.93 APO 234.07 V2 26.285
RC 316.140 GL 12.73 GP 1.52 ZAL 143.56 ZAP 35.53 ETS 181.34 ZAE 58.14 ETE 180.57 ZAC 86.01 ETC 257.78 CLP 35.50

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 22.126 VHL 4.704 DLA 10.02 RAL 188.93 RAD 6567.9 VEL 11.979 PTH 2.14 VHP 5.233 DPA 8.95 RAP 167.19 ECC 1.3641

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 56 47	2554.70	-26.11	64.21	55.21	101.38	20 39 22	1954.7	-24.27	56.02
90.00	10 31 27	4566.60	11.58	192.73	50.42	63.98	11 47 34	3966.6	7.99	185.89
100.00	21 23 5	2276.38	-27.30	43.45	54.93	102.67	22 1 1	1676.4	-25.29	35.23
100.00	11 47 51	4320.16	12.68	174.05	49.86	62.70	12 59 51	3720.2	8.92	167.28
110.00	22 42 35	2027.61	-30.50	23.62	53.99	106.25	23 16 22	1427.6	-27.97	15.34
110.00	12 44 50	4141.69	15.56	158.86	48.21	59.17	13 53 52	3541.7	11.36	152.27

DIFFERENTIAL CORRECTIONS

TDE-2.4095 TRA 8.6268 TC3-9.1236 BAU 2.7011
RDE .5424 RRA -.0223 RC3 .3837 FAU .13318
FDE-2.3068 FRA 5.9441 FC3-5.2111 BSP 49303
BDE 2.4698 BRA 8.6269 BC3 9.1317 FSP 2962

MID-COURSE EXECUTION ACCURACY

SGT14005.4 SGR 753.4 SG3 801.2
RRT -.5053 RRF -.5480 RTF .9916
SGB14025.6 R23 .0532 R13 -.9917
SG114010.6 SG2 649.9 THA 178.44

ORBIT DETERMINATION ACCURACY

ST 4350.7 SR 660.9 SS 1616.5
CRT -.6846 CRS .7942 CST -.9866
LSA 4657.8 MSA 531.4 SSA 16.3
EL1 4374.4 EL2 479.1 ALF 173.99

LAUNCH DATE NOV 1 1964 FLIGHT TIME 402.00 ARRIVAL DATE DEC 8 1965

DISTANCE 893.477

HELIOCENTRIC CONIC

RL 148.46 LAL -.00 LOL 38.61 VL 32.899 GAL -7.58 AZL 88.17 HCA 271.84 SMA 188.10 ECC .24707 INC 1.8288 V1 30.013
RP 208.32 LAP -1.83 LOP 310.45 VP 23.845 GAP -12.93 AZP 89.94 TAL 320.13 TAP 231.97 RCA 141.62 APO 234.57 V2 26.304
RC 317.035 GL 12.55 GP 1.49 ZAL 144.42 ZAP 34.86 ETS 181.33 ZAE 57.17 ETE 180.61 ZAC 86.09 ETC 257.71 CLP 34.83

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 22.934 VHL 4.789 DLA 9.52 RAL 189.63 RAD 6567.9 VEL 12.013 PTH 2.14 VHP 5.337 DPA 8.70 RAP 167.71 ECC 1.3774

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 3 39	2546.96	-26.00	63.67	56.36	101.63	20 46 6	1947.0	-24.14	55.49
90.00	10 30 13	4591.78	12.33	194.20	51.69	64.31	11 46 45	3991.8	8.77	187.33
100.00	21 29 40	2269.54	-27.20	42.97	56.07	102.90	22 7 29	1669.5	-25.15	34.77
100.00	11 46 53	4344.43	13.43	175.46	51.13	63.04	12 59 17	3744.4	9.71	168.65
110.00	22 48 32	2022.71	-30.40	23.27	55.11	106.43	23 22 15	1422.7	-27.85	15.01
110.00	12 44 30	4164.02	16.33	160.12	49.48	59.55	13 53 54	3564.0	12.17	153.49

DIFFERENTIAL CORRECTIONS

TDE-2.5384 TRA 8.9233 TC3-8.9270 BAU 2.7394
RDE .5539 RRA -.0245 RC3 .3720 FAU .12535
FDE-2.2764 FRA 5.7527 FC3-4.7318 BSP 49739
BDE 2.5981 BRA 8.9233 BC3 8.9347 FSP 2805

MID-COURSE EXECUTION ACCURACY

SGT14124.7 SGR 752.9 SG3 756.5
RRT -.5060 RRF -.5502 RTF .9911
SGB14144.7 R23 .0553 R13 -.9911
SG114129.8 SG2 649.2 THA 178.45

ORBIT DETERMINATION ACCURACY

ST 4453.7 SR 662.8 SS 1585.2
CRT -.6925 CRS .8009 CST -.9865
LSA 4744.4 MSA 527.3 SSA 16.1
EL1 4477.5 EL2 475.6 ALF 174.05

LAUNCH DATE NOV 1 1964 FLIGHT TIME 404.00 ARRIVAL DATE DEC 10 1965

DISTANCE 897.617

HELIOCENTRIC CONIC

RL 148.46 LAL -.00 LOL 38.61 VL 32.904 GAL -7.78 AZL 88.16 HCA 273.09 SMA 188.19 ECC .24918 INC 1.8363 V1 30.013
RP 208.16 LAP -1.83 LOP 311.70 VP 23.873 GAP -13.10 AZP 89.90 TAL 319.30 TAP 232.39 RCA 141.30 APO 235.08 V2 26.323
RC 317.924 GL 12.37 GP 1.47 ZAL 145.27 ZAP 34.20 ETS 181.33 ZAE 56.21 ETE 180.64 ZAC 86.18 ETC 257.64 CLP 34.17

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 23.792 VHL 4.878 DLA 9.01 RAL 190.34 RAD 6568.0 VEL 12.049 PTH 2.15 VHP 5.443 DPA 8.44 RAP 168.25 ECC 1.3916

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 10 29	2539.49	-25.90	63.14	57.52	101.87	20 52 49	1939.5	-24.00	54.99
90.00	10 28 59	4617.17	13.07	195.70	52.98	64.66	11 45 56	4017.2	9.55	188.79
100.00	21 36 14	2262.96	-27.10	42.51	57.22	103.12	22 13 57	1663.0	-25.02	34.32
100.00	11 45 56	4368.94	14.18	176.89	52.42	63.41	12 58 45	3768.9	10.50	170.04
110.00	22 54 29	2018.06	-30.31	22.94	56.25	106.61	23 28 7	1418.1	-27.74	14.69
110.00	12 44 10	4186.60	17.11	161.42	50.79	59.95	13 53 56	3586.6	12.99	154.73

DIFFERENTIAL CORRECTIONS

TDE-2.6712 TRA 9.2280 TC3-8.7271 BAU 2.7782
RDE .5656 RRA -.0273 RC3 .3606 FAU .11779
FDE-2.2434 FRA 5.5617 FC3-4.2860 BSP 50152
BDE 2.7305 BRA 9.2281 BC3 8.7345 FSP 2653

MID-COURSE EXECUTION ACCURACY

SGT14240.1 SGR 752.5 SG3 713.4
RRT -.5073 RRF -.5530 RTF .9905
SGB14259.9 R23 .0575 R13 -.9905
SG114245.2 SG2 648.3 THA 178.46

ORBIT DETERMINATION ACCURACY

ST 4555.4 SR 664.6 SS 1552.6
CRT -.7001 CRS .8075 CST -.9864
LSA 4830.1 MSA 523.1 SSA 15.9
EL1 4579.3 EL2 472.0 ALF 174.11

LAUNCH DATE NOV 1 1964 FLIGHT TIME 406.00 ARRIVAL DATE DEC 12 1965

HELIOCENTRIC CONIC DISTANCE 901.746 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 32.910 GAL -7.99 AZL 88.16 HCA 274.34 SMA 188.29 ECC .25137 INC 1.8438 V1 30.013
RP 208.01 LAP -1.84 LOP 312.95 VP 23.900 GAP -13.28 AZP 89.86 TAL 318.45 TAP 232.79 RCA 140.96 APO 235.62 V2 26.341
RC 318.808 GL 12.18 GP 1.44 ZAL 146.12 ZAP 33.56 ETS 181.33 ZAE 55.28 ETE 180.68 ZAC 86.28 ETC 257.56 CLP 33.54

PLANETOCENTRIC CONIC

C3 24.702 VHL 4.970 DLA 8.50 RAL 191.04 RAD 6568.0 VEL 12.086 PTH 2.16 VHP 5.552 DPA 8.16 RAP 168.81 ECC 1.4065

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 17 18	2532.31	-25.80	62.64	58.70	102.10	20 59 30	1932.3	-23.87	54.50
90.00	10 27 47	4642.78	13.81	197.21	54.30	65.03	11 45 9	4042.8	10.34	190.26
100.00	21 42 46	2256.65	-27.00	42.07	58.39	103.34	22 20 23	1656.6	-24.90	33.90
100.00	11 45 0	4393.67	14.93	178.34	53.75	63.80	12 58 13	3793.7	11.29	171.45
110.00	23 0 25	2013.65	-30.23	22.63	57.40	106.78	23 33 59	1413.7	-27.63	14.39
110.00	12 43 50	4209.43	17.88	162.73	52.12	60.37	13 53 59	3609.4	13.80	156.00

DIFFERENTIAL CORRECTIONS
TDE-2.8094 TRA 9.5400 TC3-8.5261 BAU 2.8181
RDE .5778 RRA -.0304 RC3 .3496 FAU .11050
FDE-2.2087 FRA 5.3698 FC3-3.8727 BSP 50519
BDE 2.8682 BRA 9.5401 BC3 8.5333 FSP 2505

MID-COURSE EXECUTION ACCURACY
SGT14351.7 SGR 752.1 SG3 671.9
RRT -.5092 RRF -.5566 RTF .9898
SGB14371.4 R23 .0599 R13 -.9899
SG114356.8 SG2 647.0 THA 178.47

ORBIT DETERMINATION ACCURACY
ST 4656.4 SR 666.2 SS 1518.7
CRT -.7077 CRS .8141 CST -.9863
LSA 4915.6 MSA 518.7 SSA 15.7
EL1 4680.5 EL2 468.3 ALF 174.16

LAUNCH DATE NOV 1 1964 FLIGHT TIME 408.00 ARRIVAL DATE DEC 14 1965

HELIOCENTRIC CONIC DISTANCE 905.865 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 32.915 GAL -8.20 AZL 88.15 HCA 275.59 SMA 188.39 ECC .25367 INC 1.8514 V1 30.013
RP 207.86 LAP -1.84 LOP 314.20 VP 23.926 GAP -13.47 AZP 89.82 TAL 317.59 TAP 233.18 RCA 140.60 APO 236.17 V2 26.357
RC 319.685 GL 11.99 GP 1.42 ZAL 146.98 ZAP 32.94 ETS 181.32 ZAE 54.36 ETE 180.71 ZAC 86.38 ETC 257.49 CLP 32.92

PLANETOCENTRIC CONIC

C3 25.668 VHL 5.066 DLA 7.99 RAL 191.74 RAD 6568.0 VEL 12.126 PTH 2.17 VHP 5.664 DPA 7.88 RAP 169.39 ECC 1.4224

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 24 5	2525.42	-25.70	62.16	59.89	102.32	21 6 11	1925.4	-23.74	54.04
90.00	10 26 35	4668.58	14.55	198.75	55.64	65.44	11 44 24	4068.6	11.12	191.75
100.00	21 49 17	2250.62	-26.91	41.64	59.58	103.54	22 26 48	1650.6	-24.78	33.49
100.00	11 44 4	4418.61	15.67	179.82	55.10	64.22	12 57 43	3818.6	12.08	172.88
110.00	23 6 20	2009.50	-30.15	22.33	58.57	106.94	23 39 50	1409.5	-27.53	14.11
110.00	12 43 30	4232.49	18.65	164.08	53.48	60.82	13 54 3	3632.5	14.62	157.28

DIFFERENTIAL CORRECTIONS
TDE-2.9516 TRA 9.8612 TC3-8.3242 BAU 2.8589
RDE .5903 RRA -.0341 RC3 .3389 FAU .10347
FDE-2.1714 FRA 5.4779 FC3-3.4899 BSP 50865
BDE 3.0100 BRA 9.8613 BC3 8.3311 FSP 2362

MID-COURSE EXECUTION ACCURACY
SGT14460.6 SGR 751.7 SG3 632.0
RRT -.5118 RRF -.5609 RTF .9891
SGB14480.1 R23 .0625 R13 -.9892
SG114465.7 SG2 645.5 THA 178.47

ORBIT DETERMINATION ACCURACY
ST 4756.0 SR 667.7 SS 1483.3
CRT -.7149 CRS .8207 CST -.9861
LSA 5000.1 MSA 514.4 SSA 15.6
EL1 4780.2 EL2 464.5 ALF 174.21

LAUNCH DATE NOV 1 1964 FLIGHT TIME 410.00 ARRIVAL DATE DEC 16 1965

HELIOCENTRIC CONIC DISTANCE 909.973 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 32.921 GAL -8.42 AZL 88.14 HCA 276.85 SMA 188.49 ECC .25606 INC 1.8589 V1 30.013
RP 207.73 LAP -1.85 LOP 315.46 VP 23.952 GAP -13.65 AZP 89.78 TAL 316.70 TAP 233.55 RCA 140.22 APO 236.75 V2 26.373
RC 320.558 GL 11.80 GP 1.39 ZAL 147.83 ZAP 32.34 ETS 181.32 ZAE 53.46 ETE 180.75 ZAC 86.49 ETC 257.41 CLP 32.32

PLANETOCENTRIC CONIC

C3 26.694 VHL 5.167 DLA 7.49 RAL 192.44 RAD 6568.1 VEL 12.168 PTH 2.18 VHP 5.778 DPA 7.59 RAP 169.98 ECC 1.4393

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 30 50	2518.83	-25.60	61.71	61.10	102.53	21 12 49	1918.8	-23.62	53.60
90.00	10 25 24	4694.58	15.28	200.31	57.02	65.87	11 43 39	4094.6	11.89	193.27
100.00	21 55 47	2244.88	-26.81	41.24	60.78	103.73	22 33 12	1644.9	-24.66	33.10
100.00	11 43 9	4443.76	16.41	181.32	56.47	64.66	12 57 13	3843.8	12.87	174.33
110.00	23 12 14	2005.62	-30.07	22.06	59.76	107.08	23 45 39	1405.6	-27.44	13.85
110.00	12 43 11	4255.80	19.42	165.45	54.86	61.30	13 54 7	3655.8	15.44	158.59

DIFFERENTIAL CORRECTIONS
TDE-3.0987 TRA10.1902 TC3-8.1222 BAU 2.9010
RDE .6032 RRA -.0383 RC3 .3285 FAU .09671
FDE-2.1325 FRA 4.9852 FC3-3.1365 BSP 51160
BDE 3.1569 BRA10.1903 BC3 8.1289 FSP 2221

MID-COURSE EXECUTION ACCURACY
SGT14565.6 SGR 751.3 SG3 593.5
RRT -.5150 RRF -.5660 RTF .9883
SGB14585.0 R23 .0653 R13 -.9883
SG114570.8 SG2 643.8 THA 178.48

ORBIT DETERMINATION ACCURACY
ST 4854.2 SR 669.1 SS 1446.8
CRT -.7220 CRS .8273 CST -.9859
LSA 5083.7 MSA 509.9 SSA 15.4
EL1 4878.4 EL2 460.6 ALF 174.27

LAUNCH DATE NOV 1 1964 FLIGHT TIME 412.00 ARRIVAL DATE DEC 18 1965

HELIOCENTRIC CONIC DISTANCE 914.067 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 32.927 GAL -8.65 AZL 88.13 HCA 278.11 SMA 188.59 ECC .25855 INC 1.8666 V1 30.013
RP 207.60 LAP -1.85 LOP 316.72 VP 23.976 GAP -13.85 AZP 89.74 TAL 315.80 TAP 233.91 RCA 139.83 APO 237.35 V2 26.388
RC 321.425 GL 11.61 GP 1.37 ZAL 148.69 ZAP 31.76 ETS 181.31 ZAE 52.57 ETE 180.78 ZAC 86.61 ETC 257.34 CLP 31.74

PLANETOCENTRIC CONIC

C3 27.783 VHL 5.271 DLA 6.98 RAL 193.14 RAD 6568.1 VEL 12.213 PTH 2.19 VHP 5.894 DPA 7.30 RAP 170.59 ECC 1.4572

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 37 35	2512.55	-25.51	61.26	62.32	102.73	21 19 28	1912.5	-23.50	53.17
90.00	10 24 15	4720.75	16.00	201.89	58.42	66.32	11 42 55	4120.8	12.67	194.80
100.00	22 2 15	2239.43	-26.73	40.86	62.00	103.91	22 39 34	1639.4	-24.55	32.74
100.00	11 42 15	4469.09	17.14	182.85	57.88	65.13	12 56 44	3869.1	13.65	175.80
110.00	23 18 6	2002.01	-30.00	21.80	60.96	107.22	23 51 28	1402.0	-27.35	13.61
110.00	12 42 53	4279.28	20.18	166.84	56.28	61.81	13 54 12	3679.3	16.26	159.92

DIFFERENTIAL CORRECTIONS
TDE-3.2502 TRA10.5285 TC3-7.9196 BAU 2.9440
RDE .6165 RRA -.0430 RC3 .3185 FAU .09016
FDE-2.0911 FRA 4.7919 FC3-2.8084 BSP 51422
BDE 3.3082 BRA10.5286 BC3 7.9260 FSP 2084

MID-COURSE EXECUTION ACCURACY
SGT14667.1 SGR 751.0 SG3 556.4
RRT -.5187 RRF -.5717 RTF .9873
SGB14686.3 R23 .0684 R13 -.9874
SG114672.3 SG2 641.8 THA 178.48

ORBIT DETERMINATION ACCURACY
ST 4950.7 SR 670.3 SS 1408.9
CRT -.7289 CRS .8339 CST -.9856
LSA 5166.0 MSA 505.5 SSA 15.2
EL1 4975.0 EL2 456.7 ALF 174.32

LAUNCH DATE NOV 1 1964 FLIGHT TIME 414.00 ARRIVAL DATE DEC 20 1965

HELIOCENTRIC CONIC DISTANCE 918.146 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 32.932 GAL -8.88 AZL 88.13 HCA 279.37 SMA 188.69 ECC .26116 INC 1.8743 V1 30.013
RP 207.48 LAP -1.85 LOP 317.98 VP 23.999 GAP -14.04 AZP 89.70 TAL 314.88 TAP 234.25 RCA 139.41 APO 237.97 V2 26.402
RC 322.286 GL 11.41 GP 1.35 ZAL 149.54 ZAP 31.20 ETS 181.30 ZAE 51.71 ETE 180.81 ZAC 86.73 ETC 257.26 CLP 31.17

PLANETOCENTRIC CONIC

C3 28.940 VHL 5.380 DLA 6.47 RAL 193.83 RAD 6568.2 VEL 12.260 PTH 2.21 VHP 6.014 DPA 6.99 RAP 171.22 ECC 1.4763

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 44 16	2506.57	-25.42	60.85	63.56	102.92	21 26 2	1906.6	-23.38	52.77
90.00	10 23 6	4747.10	16.72	203.50	59.85	66.81	11 42 13	4147.1	13.43	196.36
100.00	22 8 41	2234.28	-26.64	40.50	63.23	104.08	22 45 55	1634.3	-24.44	32.39
100.00	11 41 22	4494.62	17.87	184.40	59.31	65.63	12 56 17	3894.6	14.43	177.30
110.00	23 23 58	1998.67	-29.93	21.56	62.18	107.34	23 57 16	1398.7	-27.27	13.39
110.00	12 42 34	4302.99	20.94	168.27	57.73	62.34	13 54 17	3703.0	17.07	161.28

DIFFERENTIAL CORRECTIONS
TDE-3.4067 TRA10.8771 TC3-7.7170 BAU 2.9882
RDE .6301 RRA -.0483 RC3 .3087 FAU .08383
FDE-2.0474 FRA 4.5980 FC3-2.5076 BSP 51668
BDE 3.4645 BRA10.8772 BC3 7.7232 FSP 1952

MID-COURSE EXECUTION ACCURACY
SGT14766.0 SGR 750.6 SG3 520.7
RRT -.5230 RRF -.5780 RTF .9863
SGB14785.0 R23 .0718 R13 -.9864
SG114771.2 SG2 639.5 THA 178.47

ORBIT DETERMINATION ACCURACY
ST 5045.8 SR 671.4 SS 1369.6
CRT -.7356 CRS .8404 CST -.9852
LSA 5247.5 MSA 500.9 SSA 15.0
EL1 5070.2 EL2 452.6 ALF 174.36

LAUNCH DATE NOV 1 1964 FLIGHT TIME 416.00 ARRIVAL DATE DEC 22 1965

HELIOCENTRIC CONIC DISTANCE 922.210 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 32.938 GAL -9.12 AZL 88.12 HCA 280.63 SMA 188.79 ECC .26387 INC 1.8821 V1 30.013
RP 207.36 LAP -1.85 LOP 319.24 VP 24.022 GAP -14.24 AZP 89.65 TAL 313.95 TAP 234.57 RCA 138.98 APO 238.61 V2 26.416
RC 323.141 GL 11.21 GP 1.32 ZAL 150.39 ZAP 30.65 ETS 181.29 ZAE 50.86 ETE 180.84 ZAC 86.85 ETC 257.19 CLP 30.62

PLANETOCENTRIC CONIC

C3 30.170 VHL 5.493 DLA 5.96 RAL 194.52 RAD 6568.2 VEL 12.310 PTH 2.22 VHP 6.137 DPA 6.68 RAP 171.87 ECC 1.4965

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 50 55	2500.89	-25.33	60.46	64.81	103.10	21 32 36	1900.9	-23.27	52.39
90.00	10 21 59	4773.61	17.42	205.12	61.30	67.32	11 41 32	4173.6	14.20	197.93
100.00	22 15 5	2229.42	-26.56	40.16	64.48	104.25	22 52 15	1629.4	-24.34	32.07
100.00	11 40 30	4520.31	18.58	185.97	60.78	66.16	12 55 50	3920.3	15.20	178.81
110.00	23 29 48	1995.61	-29.87	21.35	63.41	107.46	24 3 3	1395.6	-27.19	13.18
110.00	12 42 16	4326.89	21.69	169.72	59.20	62.91	13 54 23	3726.9	17.88	162.66

DIFFERENTIAL CORRECTIONS
TDE-3.5683 TRA11.2344 TC3-7.5158 BAU 3.0338
RDE .6442 RRA -.0542 RC3 .2992 FAU .07769
FDE-2.0015 FRA 4.4031 FC3-2.2293 BSP 51864
BDE 3.6260 BRA11.2345 BC3 7.5217 FSP 1824

MID-COURSE EXECUTION ACCURACY
SGT14861.0 SGR 750.3 SG3 486.3
RRT -.5278 RRF -.5850 RTF .9851
SGB14879.9 R23 .0755 R13 -.9852
SG114866.3 SG2 637.0 THA 178.47

ORBIT DETERMINATION ACCURACY
ST 5139.1 SR 672.3 SS 1329.1
CRT -.7421 CRS .8470 CST -.9848
LSA 5327.5 MSA 496.3 SSA 14.8
EL1 5163.4 EL2 448.5 ALF 174.41

LAUNCH DATE NOV 1 1964 FLIGHT TIME 418.00 ARRIVAL DATE DEC 24 1965

HELIOCENTRIC CONIC DISTANCE 926.256 EARTH TO MARS

RL 148.46 LAL -.00 LOL 38.61 VL 32.944 GAL -9.37 AZL 88.11 HCA 281.89 SMA 188.90 ECC .26671 INC 1.8899 V1 30.013
RP 207.26 LAP -1.85 LOP 320.50 VP 24.043 GAP -14.45 AZP 89.61 TAL 312.99 TAP 234.88 RCA 138.52 APO 239.28 V2 26.428
RC 323.990 GL 11.02 GP 1.30 ZAL 151.24 ZAP 30.12 ETS 181.29 ZAE 50.02 ETE 180.87 ZAC 86.98 ETC 257.11 CLP 30.09

PLANETOCENTRIC CONIC

C3 31.477 VHL 5.610 DLA 5.45 RAL 195.22 RAD 6568.3 VEL 12.363 PTH 2.23 VHP 6.262 DPA 6.36 RAP 172.53 ECC 1.5180

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 57 33	2495.52	-25.25	60.09	66.08	103.27	21 39 8	1895.5	-23.17	52.03
90.00	10 20 52	4800.28	18.11	206.77	62.79	67.85	11 40 52	4200.3	14.95	199.53
100.00	22 21 28	2224.86	-26.48	39.85	65.74	104.40	22 58 33	1624.9	-24.24	31.76
100.00	11 39 38	4546.17	19.29	187.57	62.27	66.71	12 55 24	3946.2	15.97	180.35
110.00	23 35 36	1992.83	-29.81	21.15	64.66	107.56	24 8 49	1392.8	-27.12	12.99
110.00	12 41 59	4350.97	22.43	171.20	60.71	63.50	13 54 30	3751.0	18.68	164.06

DIFFERENTIAL CORRECTIONS
TDE-3.7349 TRA11.6026 TC3-7.3161 BAU 3.0811
RDE .6588 RRA -.0606 RC3 .2900 FAU .07176
FDE-1.9532 FRA 4.2071 FC3-1.9737 BSP 52034
BDE 3.7925 BRA11.6027 BC3 7.3218 FSP 1700

MID-COURSE EXECUTION ACCURACY
SGT14953.8 SGR 749.9 SG3 453.2
RRT -.5331 RRF -.5926 RTF .9838
SGB14972.6 R23 .0795 R13 -.9839
SG114959.2 SG2 634.3 THA 178.47

ORBIT DETERMINATION ACCURACY
ST 5230.6 SR 673.1 SS 1287.2
CRT -.7485 CRS .8535 CST -.9843
LSA 5406.3 MSA 491.6 SSA 14.6
EL1 5255.0 EL2 444.3 ALF 174.46

LAUNCH DATE NOV 2 1964 FLIGHT TIME 180.00 ARRIVAL DATE MAY 1 1965

HELIOCENTRIC CONIC DISTANCE 469.994 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 34.640 GAL -7.72 AZL 87.58 HCA 152.48 SMA 225.53 ECC .36447 INC 2.4203 V1 30.020
RP 244.23 LAP 1.12 LOP 192.11 VP 22.324 GAP 20.86 AZP 92.15 TAL 330.65 TAP 123.13 RCA 143.33 APO 307.74 V2 22.463
RC 132.477 GL 13.58 GP -1.49 ZAL 132.99 ZAP 170.35 ETS 187.51 ZAE 156.80 ETE 354.43 ZAC 86.80 ETC 256.16 CLP 170.46

PLANETOCENTRIC CONIC

C3 38.135 VHL 6.175 DLA 14.76 RAL 180.15 RAD 6568.5 VEL 12.629 PTH 2.29 VHP 9.436 DPA -1.14 RAP 182.27 ECC 1.6276

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 37 27	2851.43	-28.30	85.58	58.92	90.93	19 24 58	2251.4	-27.87	76.94
90.00	10 32 55	4541.20	10.82	191.26	50.19	63.67	11 48 36	3941.2	7.19	184.45
100.00	20 6 44	2563.47	-29.83	64.36	58.88	91.99	20 49 28	1963.5	-29.24	55.60
100.00	11 46 19	4304.40	12.18	173.14	49.49	62.49	12 58 3	3704.4	8.40	166.39
110.00	21 32 45	2294.38	-33.87	43.63	58.59	94.90	22 10 59	1694.4	-32.82	34.55
110.00	12 36 48	4146.28	15.72	159.12	47.46	59.25	13 45 54	3546.3	11.52	152.52

DIFFERENTIAL CORRECTIONS
TDE 1.3172 TRA-3.1007 TC3 .7291 BAU .3766
RDE -.3739 RRA .0175 RC3 -.1191 FAU .07652
FDE -.7040 FRA 2.5266 FC3-1.7372 BSP 11350
BDE 1.3693 BRA 3.1008 BC3 .7388 FSP 811

MID-COURSE EXECUTION ACCURACY
SGT 3340.0 SGR 377.2 SG3 285.3
RRT -.4813 RRF .4680 RTF -.9014
SGB 3361.2 R23 -.0340 R13 .9016
SG1 3344.9 SG2 330.2 THA 176.86

ORBIT DETERMINATION ACCURACY
ST 1513.6 SR 347.0 SS 798.7
CRT -.8161 CRS -.6782 CST .9773
LSA 1727.0 MSA 257.1 SSA 26.0
EL1 1540.3 EL2 197.1 ALF 169.22

LAUNCH DATE NOV 2 1964 FLIGHT TIME 182.00 ARRIVAL DATE MAY 3 1965

HELIOCENTRIC CONIC DISTANCE 472.596 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 34.557 GAL -7.54 AZL 87.56 HCA 153.39 SMA 223.36 ECC .35755 INC 2.4441 V1 30.020
RP 243.99 LAP 1.09 LOP 193.02 VP 22.219 GAP 20.30 AZP 92.19 TAL 330.93 TAP 124.32 RCA 143.50 APO 303.22 V2 22.486
RC 134.631 GL 13.97 GP -1.57 ZAL 132.56 ZAP 169.86 ETS 187.52 ZAE 156.65 ETE 354.46 ZAC 86.82 ETC 256.13 CLP 169.98

PLANETOCENTRIC CONIC

C3 36.602 VHL 6.050 DLA 15.26 RAL 179.99 RAD 6568.4 VEL 12.569 PTH 2.28 VHP 9.232 DPA -1.39 RAP 182.63 ECC 1.6024

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 32 10	2859.15	-28.31	86.15	58.20	90.65	19 19 49	2259.2	-27.92	77.50
90.00	10 36 55	4512.75	9.95	189.61	49.43	63.35	11 52 7	3912.7	6.30	182.84
100.00	20 1 50	2569.98	-29.85	64.84	58.16	91.74	20 44 40	1970.0	-29.29	56.08
100.00	11 49 56	4277.15	11.32	171.58	48.71	62.15	13 1 13	3677.2	7.51	164.86
110.00	21 28 38	2298.40	-33.90	43.95	57.89	94.71	22 6 56	1698.4	-32.87	34.86
110.00	12 39 37	4121.49	14.85	157.72	46.66	58.85	13 48 19	3521.5	10.62	151.18

DIFFERENTIAL CORRECTIONS
TDE 1.2955 TRA-3.0719 TC3 .7834 BAU .3883
RDE -.3585 RRA .0289 RC3 -.1268 FAU .07877
FDE -.7067 FRA 2.5879 FC3-1.8631 BSP 11538
BDE 1.3442 BRA 3.0720 BC3 .7936 FSP 854

MID-COURSE EXECUTION ACCURACY
SGT 3390.8 SGR 373.7 SG3 299.1
RRT -.5112 RRF .4988 RTF -.9047
SGB 3411.4 R23 -.0375 R13 .9049
SG1 3396.3 SG2 320.7 THA 176.75

ORBIT DETERMINATION ACCURACY
ST 1524.7 SR 339.7 SS 810.9
CRT -.8195 CRS -.6778 CST .9759
LSA 1741.0 MSA 256.7 SSA 25.7
EL1 1550.3 EL2 191.4 ALF 169.49

LAUNCH DATE NOV 2 1964 FLIGHT TIME 184.00 ARRIVAL DATE MAY 5 1965

HELIOCENTRIC CONIC DISTANCE 475.273 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 34.477 GAL -7.36 AZL 87.53 HCA 154.30 SMA 221.31 ECC .35089 INC 2.4696 V1 30.020
RP 243.75 LAP 1.07 LOP 193.93 VP 22.120 GAP 19.73 AZP 92.23 TAL 331.21 TAP 125.51 RCA 143.66 APO 298.97 V2 22.510
RC 136.814 GL 14.39 GP -1.65 ZAL 132.12 ZAP 169.36 ETS 187.55 ZAE 156.55 ETE 354.45 ZAC 86.83 ETC 256.11 CLP 169.49

PLANETOCENTRIC CONIC

C3 35.157 VHL 5.929 DLA 15.79 RAL 179.83 RAD 6568.4 VEL 12.511 PTH 2.27 VHP 9.033 DPA -1.64 RAP 182.98 ECC 1.5786

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 26 38	2867.94	-28.32	86.79	57.49	90.32	19 14 26	2267.9	-27.97	78.14
90.00	10 41 8	4483.60	9.06	187.94	48.70	63.06	11 55 52	3883.6	5.37	181.20
100.00	19 56 42	2577.47	-29.86	65.40	57.46	91.44	20 39 40	1977.5	-29.34	56.63
100.00	11 53 45	4249.30	10.43	169.99	47.97	61.83	13 4 35	3649.3	6.58	163.31
110.00	21 24 20	2303.26	-33.92	44.32	57.21	94.49	22 2 44	1703.3	-32.93	35.23
110.00	12 42 36	4096.28	13.96	156.31	45.90	58.48	13 50 53	3496.3	9.69	149.82

DIFFERENTIAL CORRECTIONS
TDE 1.2722 TRA-3.0435 TC3 .8380 BAU .3990
RDE -.3435 RRA .0405 RC3 -.1350 FAU .08106
FDE -.7075 FRA 2.6517 FC3-1.9962 BSP 11756
BDE 1.3178 BRA 3.0438 BC3 .8488 FSP 901

MID-COURSE EXECUTION ACCURACY
SGT 3440.9 SGR 370.8 SG3 313.5
RRT -.5420 RRF .5309 RTF -.9077
SGB 3460.8 R23 -.0415 R13 .9080
SG1 3446.8 SG2 311.1 THA 176.63

ORBIT DETERMINATION ACCURACY
ST 1533.9 SR 332.2 SS 822.5
CRT -.8231 CRS -.6770 CST .9743
LSA 1753.1 MSA 256.9 SSA 25.3
EL1 1558.5 EL2 185.7 ALF 169.75

LAUNCH DATE NOV 2 1964 FLIGHT TIME 186.00 ARRIVAL DATE MAY 7 1965

HELIOCENTRIC CONIC DISTANCE 478.020 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 34.401 GAL -7.19 AZL 87.50 HCA 155.22 SMA 219.39 ECC .34449 INC 2.4968 V1 30.020
RP 243.50 LAP 1.05 LOP 194.85 VP 22.026 GAP 19.18 AZP 92.27 TAL 331.50 TAP 126.71 RCA 143.81 APO 294.97 V2 22.535
RC 139.022 GL 14.82 GP -1.75 ZAL 131.66 ZAP 168.85 ETS 187.60 ZAE 156.49 ETE 354.41 ZAC 86.83 ETC 256.09 CLP 168.99

PLANETOCENTRIC CONIC

C3 33.796 VHL 5.813 DLA 16.33 RAL 179.66 RAD 6568.3 VEL 12.457 PTH 2.25 VHP 8.838 DPA -1.90 RAP 183.31 ECC 1.5562

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 20 49	2877.92	-28.32	87.52	56.80	89.96	19 8 47	2277.9	-28.02	78.87
90.00	10 45 39	4453.70	8.13	186.23	47.99	62.78	11 59 53	3853.7	4.42	179.52
100.00	19 51 19	2586.04	-29.87	66.03	56.78	91.11	20 34 25	1986.0	-29.40	57.26
100.00	11 57 49	4220.80	9.51	168.37	47.26	61.53	13 8 10	3620.8	5.63	161.73
110.00	21 19 52	2309.01	-33.95	44.77	56.56	94.23	21 58 21	1709.0	-32.99	35.66
110.00	12 45 46	4070.60	13.04	154.89	45.16	58.12	13 53 37	3470.6	8.73	148.44

DIFFERENTIAL CORRECTIONS
TDE 1.2500 TRA-3.0128 TC3 .8974 BAU .4106
RDE -.3291 RRA .0521 RC3 -.1439 FAU .08352
FDE -.7080 FRA 2.7164 FC3-2.1395 BSP 11921
BDE 1.2926 BRA 3.0133 BC3 .9089 FSP 948

MID-COURSE EXECUTION ACCURACY
SGT 3490.1 SGR 368.9 SG3 328.5
RRT -.5746 RRF .5646 RTF -.9109
SGB 3509.6 R23 -.0455 R13 .9111
SG1 3496.6 SG2 301.4 THA 176.50

ORBIT DETERMINATION ACCURACY
ST 1542.9 SR 324.8 SS 834.1
CRT -.8275 CRS -.6770 CST .9726
LSA 1764.8 MSA 257.6 SSA 24.8
EL1 1566.4 EL2 179.6 ALF 169.99

LAUNCH DATE NOV 2 1964 FLIGHT TIME 188.00 ARRIVAL DATE MAY 9 1965

HELIOCENTRIC CONIC DISTANCE 480.831 EARTH TO MARS

RL	148.42	LAL	-.00	LOL	39.61	VL	34.328	GAL	-7.02	AZL	87.47	HCA	156.13	SMA	217.58	ECC	.33833	INC	2.5260
RP	243.25	LAP	1.02	LOP	195.76	VP	21.837	GAP	18.62	AZP	92.31	TAL	331.79	TAP	127.92	RCA	143.96	APO	291.19
RC	141.251	GL	15.27	GP	-1.85	ZAL	131.19	ZAP	168.34	ETS	187.68	ZAE	156.48	ETE	354.35	ZAC	86.82	ETC	256.07

V1 30.020 V2 22.560 CLP 168.48

PLANETOCENTRIC CONIC

C3	32.514	VHL	5.702	DLA	16.90	RAL	179.50	RAD	6568.3	VEL	12.405	PTH	2.24	VHP	8.648	DPA	-2.16	RAP	183.64

ECC 1.5351

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 14 41	2889.18	-28.31	88.34	56.14	89.55	19 2 50	2289.2	-28.08	79.69
90.00	10 50 28	4422.94	7.17	184.48	47.32	62.53	12 4 11	3822.9	3.44	177.79
100.00	19 45 40	2595.77	-29.88	66.76	56.13	90.73	20 28 56	1995.8	-29.46	57.98
100.00	12 2 10	4191.58	8.56	166.73	46.58	61.25	13 12 1	3591.6	4.65	160.11
110.00	21 15 11	2315.70	-33.98	45.29	55.94	93.92	21 53 47	1715.7	-33.07	36.17
110.00	12 49 8	4044.42	12.09	153.45	44.46	57.78	13 56 33	3444.4	7.75	147.04

DIFFERENTIAL CORRECTIONS

TDE	1.2275	TRA	-2.9813	TC3	.9590	BAU	.4222
RDE	-.3152	RRA	.0639	RC3	-.1536	FAU	.08608
FDE	-.7071	FRA	2.7828	FC3	-2.2919	BSP	12094
BDE	1.2674	BRA	2.9819	BC3	.9712	FSP	999

MID-COURSE EXECUTION ACCURACY

SGT	3538.3	SGR	368.1	SG3	344.3		
RRT	-.6083	RRF	.5993	RTF	-.9139		
SGB	3557.4	R23	-.0499	R13	.9141		
SG1	3545.4	SG2	291.6	THA	176.35		

ORBIT DETERMINATION ACCURACY

ST	1550.7	SR	317.4	SS	845.2
CRT	-.8325	CRS	-.6770	CST	.9705
LSA	1775.4	MSA	258.9	SSA	24.2
EL1	1573.3	EL2	173.3	ALF	170.21

LAUNCH DATE NOV 2 1964 FLIGHT TIME 190.00 ARRIVAL DATE MAY 11 1965

HELIOCENTRIC CONIC DISTANCE 483.704 EARTH TO MARS

RL	148.42	LAL	-.00	LOL	39.61	VL	34.257	GAL	-6.86	AZL	87.44	HCA	157.05	SMA	215.87	ECC	.33241	INC	2.5577
RP	243.00	LAP	1.00	LOP	196.68	VP	21.853	GAP	18.07	AZP	92.36	TAL	332.08	TAP	129.13	RCA	144.11	APO	287.63
RC	143.499	GL	15.74	GP	-1.96	ZAL	130.70	ZAP	167.81	ETS	187.79	ZAE	156.50	ETE	354.24	ZAC	86.80	ETC	256.05

V1 30.020 V2 22.585 CLP 167.96

PLANETOCENTRIC CONIC

C3	31.308	VHL	5.595	DLA	17.49	RAL	179.34	RAD	6568.2	VEL	12.356	PTH	2.23	VHP	8.461	DPA	-2.43	RAP	183.96

ECC 1.5153

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 8 13	2901.87	-28.30	89.27	55.50	89.08	18 56 35	2301.9	-28.13	80.61
90.00	10 55 38	4391.23	6.17	182.69	46.69	62.31	12 8 49	3791.2	2.42	176.02
100.00	19 39 43	2606.79	-29.89	67.58	55.51	90.30	20 23 10	2006.8	-29.53	58.79
100.00	12 6 49	4161.54	7.57	165.04	45.93	61.00	13 16 10	3561.5	3.64	158.46
110.00	21 10 17	2323.43	-34.02	45.89	55.34	93.57	21 49 1	1723.4	-33.15	36.76
110.00	12 52 44	4017.66	11.12	151.99	43.79	57.47	13 59 42	3417.7	6.75	145.62

DIFFERENTIAL CORRECTIONS

TDE	1.2078	TRA	-2.9463	TC3	1.0268	BAU	.4352
RDE	-.3017	RRA	.0758	RC3	-.1642	FAU	.08865
FDE	-.7025	FRA	2.8537	FC3	-2.4514	BSP	12179
BDE	1.2450	BRA	2.9473	BC3	1.0399	FSP	1056

MID-COURSE EXECUTION ACCURACY

SGT	3585.5	SGR	368.6	SG3	360.7		
RRT	-.6438	RRF	.6341	RTF	-.9174		
SGB	3604.4	R23	-.0521	R13	.9177		
SG1	3593.4	SG2	281.4	THA	176.19		

ORBIT DETERMINATION ACCURACY

ST	1559.3	SR	310.0	SS	855.4
CRT	-.8389	CRS	-.6759	CST	.9673
LSA	1785.9	MSA	262.7	SSA	23.3
EL1	1581.1	EL2	166.4	ALF	170.42

LAUNCH DATE NOV 2 1964 FLIGHT TIME 192.00 ARRIVAL DATE MAY 13 1965

HELIOCENTRIC CONIC DISTANCE 486.631 EARTH TO MARS

RL	148.42	LAL	-.00	LOL	39.61	VL	34.190	GAL	-6.70	AZL	87.41	HCA	157.97	SMA	214.26	ECC	.32672	INC	2.5918
RP	242.74	LAP	.97	LOP	197.60	VP	21.774	GAP	17.53	AZP	92.40	TAL	332.38	TAP	130.35	RCA	144.26	APO	284.26
RC	145.763	GL	16.23	GP	-2.08	ZAL	130.20	ZAP	167.27	ETS	187.92	ZAE	156.57	ETE	354.10	ZAC	86.76	ETC	256.03

V1 30.020 V2 22.611 CLP 167.44

PLANETOCENTRIC CONIC

C3	30.176	VHL	5.493	DLA	18.10	RAL	179.18	RAD	6568.2	VEL	12.311	PTH	2.22	VHP	8.279	DPA	-2.71	RAP	184.27

ECC 1.4966

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 1 23	2916.14	-28.28	90.31	54.89	88.56	18 49 59	2316.1	-28.18	81.65
90.00	11 1 12	4358.47	5.13	180.84	46.10	62.11	12 13 50	3758.5	1.36	174.19
100.00	19 33 28	2619.21	-29.89	68.50	54.91	89.81	20 17 7	2019.2	-29.60	59.71
100.00	12 11 48	4130.63	6.54	163.32	45.33	60.77	13 20 39	3530.6	2.60	156.76
110.00	21 5 10	2332.27	-34.05	46.58	54.78	93.16	21 44 3	1732.3	-33.24	37.43
110.00	12 56 35	3990.32	10.11	150.51	43.16	57.17	14 3 5	3390.3	5.72	144.18

DIFFERENTIAL CORRECTIONS

TDE	1.1788	TRA	-2.9193	TC3	1.0855	BAU	.4436
RDE	-.2885	RRA	.0883	RC3	-.1755	FAU	.09148
FDE	-.6988	FRA	2.9240	FC3	-2.6245	BSP	12467
BDE	1.2136	BRA	2.9207	BC3	1.0996	FSP	1111

MID-COURSE EXECUTION ACCURACY

SGT	3632.6	SGR	370.3	SG3	378.0		
RRT	-.6768	RRF	.6705	RTF	-.9195		
SGB	3651.4	R23	-.0607	R13	.9198		
SG1	3641.2	SG2	271.9	THA	176.03		

ORBIT DETERMINATION ACCURACY

ST	1560.9	SR	302.3	SS	865.9
CRT	-.8435	CRS	-.6771	CST	.9655
LSA	1790.9	MSA	264.0	SSA	22.9
EL1	1581.8	EL2	160.2	ALF	170.62

LAUNCH DATE NOV 2 1964 FLIGHT TIME 194.00 ARRIVAL DATE MAY 15 1965

HELIOCENTRIC CONIC DISTANCE 489.612 EARTH TO MARS

RL	148.42	LAL	-.00	LOL	39.61	VL	34.125	GAL	-6.54	AZL	87.37	HCA	158.89	SMA	212.74	ECC	.32125	INC	2.6287
RP	242.47	LAP	.95	LOP	198.52	VP	21.699	GAP	16.98	AZP	92.45	TAL	332.68	TAP	131.57	RCA	144.40	APO	281.08
RC	148.041	GL	16.75	GP	-2.21	ZAL	129.69	ZAP	166.72	ETS	188.08	ZAE	156.68	ETE	353.92	ZAC	86.72	ETC	256.02

V1 30.020 V2 22.638 CLP 166.90

PLANETOCENTRIC CONIC

C3	29.113	VHL	5.396	DLA	18.73	RAL	179.02	RAD	6568.2	VEL	12.267	PTH	2.21	VHP	8.101	DPA	-2.99	RAP	184.56

ECC 1.4791

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 54 7	2932.20	-28.25	91.49	54.30	87.97	18 42 59	2332.2	-28.23	82.82
90.00	11 7 14	4324.44	4.05	178.93	45.56	61.95	12 19 18	3724.4	.26	172.29
100.00	19 26 50	2633.22	-29.88	69.54	54.35	89.26	20 10 43	2033.2	-29.67	60.74
100.00	12 17 12	4098.65	5.48	161.55	44.77	60.57	13 25 30	3498.7	1.52	155.00
110.00	20 59 47	2342.37	-34.09	47.37	54.26	92.70	21 38 50	1742.4	-33.34	38.21
110.00	13 0 43	3962.27	9.07	149.00	42.57	56.90	14 6 45	3362.3	4.65	142.70

DIFFERENTIAL CORRECTIONS

TDE	1.1553	TRA	-2.8860	TC3	1.1534	BAU	.4549
RDE	-.2759	RRA	.1010	RC3	-.1880	FAU	.09442
FDE	-.6932	FRA	2.9966	FC3	-2.8078	BSP	12606
BDE	1.1878	BRA	2.8877	BC3	1.1687	FSP	1169

MID-COURSE EXECUTION ACCURACY

SGT	3677.8	SGR	373.9	SG3	396.1		
RRT	-.7114	RRF	.7065	RTF	-.9222		
SGB	3696.7	R23	-.0669	R13	.9226		
SG1	3687.4	SG2	262.1	THA	175.84		

ORBIT DETERMINATION ACCURACY

ST	1564.9	SR	295.0	SS	876.0
CRT	-.8505	CRS	-.6784	CST	.9625
LSA	1797.5	MSA	267.7	SSA	22.0
EL1	1585.1	EL2	153.2	ALF	170.81

LAUNCH DATE NOV 2 1964 FLIGHT TIME 196.00 ARRIVAL DATE MAY 17 1965

HELIOCENTRIC CONIC DISTANCE 492.642 EARTH TO MARS

RL	148.42	LAL	-.00	LOL	39.61	VL	34.063	GAL	-6.39	AZL	87.33	HCA	159.81	SMA	211.30	ECC	.31598	INC	2.6690
RP	242.20	LAP	.92	LOP	199.44	VP	21.629	GAP	16.45	AZP	92.51	TAL	332.99	TAP	132.80	RCA	144.53	APO	278.07
RC	150.330	GL	17.29	GP	-2.36	ZAL	129.16	ZAP	166.16	ETS	188.28	ZAE	156.83	ETE	353.68	ZAC	86.66	ETC	256.00

V1 30.020 V2 22.664 CLP 166.36

PLANETOCENTRIC CONIC

C3	28.116	VHL	5.302	DLA	19.40	RAL	178.87	RAD	6568.1	VEL	12.227	PTH	2.20	VHP	7.927	DPA	-3.28	RAP	184.84

ECC 1.4627

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 46 21	2950.30	-28.20	92.81	53.75	87.31	18 35 31	2350.3	-28.27	84.15
90.00	11 13 48	4288.94	2.91	176.94	45.08	61.82	12 25 17	3688.9	-.88	170.31
100.00	19 19 47	2649.01	-29.86	70.71	53.82	88.65	20 3 56	2049.0	-29.73	61.91
100.00	12 23 3	4065.46	4.37	159.71	44.27	60.40	13 30 49	3465.5	.39	153.18
110.00	20 54 8	2353.83	-34.12	48.26	53.79	92.17	21 33 21	1753.8	-33.45	39.08
110.00	13 5 12	3933.40	8.00	147.46	42.03	56.65	14 10 45	3333.4	3.56	141.19

DIFFERENTIAL CORRECTIONS

TDE	1.1333	TRA	-2.8506	TC3	1.2259	BAU	.4670	SGT	3722.0	SGR	379.7
RDE	-.2637	RRA	.1141	RC3	-.2020	FAU	.09750	RRT	-.7460	RRF	.7418
FDE	-.6853	FRA	3.0721	FC3	-3.0020	BSP	12704	SGB	3741.3	R23	-.0729
BDE	1.1636	BRA	2.8528	BC3	1.2424	FSP	1230	SG1	3732.8	SG2	252.1

MID-COURSE EXECUTION ACCURACY

SG3	415.0	RTF	-.9251	THA	175.63
R13	.9255				

ORBIT DETERMINATION ACCURACY

ST	1568.7	SR	287.7	SS	885.6
CRT	-.8588	CRS	-.6801	CST	.9587
LSA	1803.6	MSA	273.3	SSA	21.0
EL1	1588.2	EL2	145.6	ALF	170.97

LAUNCH DATE NOV 2 1964 FLIGHT TIME 198.00 ARRIVAL DATE MAY 19 1965

HELIOCENTRIC CONIC DISTANCE 495.717 EARTH TO MARS

RL	148.42	LAL	-.00	LOL	39.61	VL	34.003	GAL	-6.24	AZL	87.29	HCA	160.74	SMA	209.94	ECC	.31092	INC	2.7133
RP	241.93	LAP	.89	LOP	200.37	VP	21.564	GAP	15.92	AZP	92.56	TAL	333.29	TAP	134.03	RCA	144.67	APO	275.22
RC	152.629	GL	17.87	GP	-2.52	ZAL	128.62	ZAP	165.58	ETS	188.51	ZAE	157.02	ETE	353.39	ZAC	86.58	ETC	255.98

V1 30.020 V2 22.692 CLP 165.80

PLANETOCENTRIC CONIC

C3	27.185	VHL	5.214	DLA	20.09	RAL	178.73	RAD	6568.1	VEL	12.189	PTH	2.19	VHP	7.756	DPA	-3.58	RAP	185.11

ECC 1.4474

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 38 1	2970.74	-28.13	94.30	53.24	86.57	18 27 32	2370.7	-28.30	85.64
90.00	11 21 2	4251.72	1.71	174.87	44.65	61.73	12 31 53	3651.7	-2.08	168.24
100.00	19 12 16	2666.82	-29.83	72.04	53.33	87.95	19 56 43	2066.8	-29.79	63.23
100.00	12 29 28	4030.88	3.20	157.81	43.83	60.26	13 36 39	3430.9	-.78	151.28
110.00	20 48 9	2366.82	-34.15	49.27	53.36	91.57	21 27 36	1766.8	-33.56	40.08
110.00	13 10 4	3903.64	6.88	145.88	41.55	56.43	14 15 8	3303.6	2.42	139.63

DIFFERENTIAL CORRECTIONS

TDE	1.1027	TRA	-2.8224	TC3	1.2880	BAU	.4747	SGT	3765.4	SGR	387.3
RDE	-.2516	RRA	.1282	RC3	-.2187	FAU	.10062	RRT	-.7774	RRF	.7763
FDE	-.6730	FRA	3.1520	FC3	-3.2044	BSP	12976	SGB	3785.3	R23	-.0835
BDE	1.1311	BRA	2.8253	BC3	1.3061	FSP	1298	SG1	3777.5	SG2	242.8

MID-COURSE EXECUTION ACCURACY

SG3	434.7	RTF	-.9271	THA	175.41
R13	.9275				

ORBIT DETERMINATION ACCURACY

ST	1565.7	SR	280.2	SS	894.4
CRT	-.8659	CRS	-.6817	CST	.9554
LSA	1803.4	MSA	278.1	SSA	20.2
EL1	1584.6	EL2	138.5	ALF	171.12

LAUNCH DATE NOV 2 1964 FLIGHT TIME 200.00 ARRIVAL DATE MAY 21 1965

HELIOCENTRIC CONIC DISTANCE 498.836 EARTH TO MARS

RL	148.42	LAL	-.00	LOL	39.61	VL	33.946	GAL	-6.10	AZL	87.24	HCA	161.66	SMA	208.66	ECC	.30606	INC	2.7616
RP	241.65	LAP	.87	LOP	201.29	VP	21.503	GAP	15.39	AZP	92.62	TAL	333.60	TAP	135.26	RCA	144.79	APO	272.52
RC	154.936	GL	18.48	GP	-2.70	ZAL	128.06	ZAP	164.99	ETS	188.77	ZAE	157.24	ETE	353.04	ZAC	86.48	ETC	255.97

V1 30.020 V2 22.720 CLP 165.23

PLANETOCENTRIC CONIC

C3	26.317	VHL	5.130	DLA	20.82	RAL	178.61	RAD	6568.1	VEL	12.153	PTH	2.18	VHP	7.590	DPA	-3.89	RAP	185.36

ECC 1.4331

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 28 59	2993.95	-28.02	95.99	52.77	88.72	18 18 53	2393.9	-28.32	87.34
90.00	11 29 2	4212.40	.44	172.67	44.30	61.69	12 39 15	3612.4	-3.35	166.04
100.00	19 4 11	2686.98	-29.77	73.53	52.89	87.17	19 48 58	2087.0	-29.85	64.73
100.00	12 36 31	3994.60	1.97	155.81	43.45	60.17	13 43 6	3394.6	-2.01	149.29
110.00	20 41 48	2381.56	-34.17	50.42	52.98	90.89	21 21 30	1781.6	-33.67	41.22
110.00	13 15 23	3872.79	5.72	144.25	41.13	56.24	14 19 56	3272.8	1.24	138.02

DIFFERENTIAL CORRECTIONS

TDE	1.0778	TRA	-2.7879	TC3	1.3596	BAU	.4854	SGT	3806.8	SGR	398.1
RDE	-.2402	RRA	.1427	RC3	-.2336	FAU	.10403	RRT	-.8084	RRF	.8092
FDE	-.6614	FRA	3.2315	FC3	-3.4222	BSP	13115	SGB	3827.6	R23	-.0933
BDE	1.1043	BRA	2.7915	BC3	1.3795	FSP	1364	SG1	3820.4	SG2	253.5

MID-COURSE EXECUTION ACCURACY

SG3	455.4	RTF	-.9294	THA	175.15
R13	.9299				

ORBIT DETERMINATION ACCURACY

ST	1565.1	SR	273.2	SS	903.5
CRT	-.8755	CRS	-.6858	CST	.9512
LSA	1805.3	MSA	284.8	SSA	19.2
EL1	1583.4	EL2	130.5	ALF	171.25

LAUNCH DATE NOV 2 1964 FLIGHT TIME 202.00 ARRIVAL DATE MAY 23 1965

HELIOCENTRIC CONIC DISTANCE 501.996 EARTH TO MARS

RL	148.42	LAL	-.00	LOL	39.61	VL	33.891	GAL	-5.96	AZL	87.18	HCA	162.59	SMA	207.44	ECC	.30139	INC	2.8151
RP	241.36	LAP	.84	LOP	202.22	VP	21.446	GAP	14.87	AZP	92.69	TAL	333.91	TAP	136.50	RCA	144.92	APO	269.96
RC	157.250	GL	19.13	GP	-2.90	ZAL	127.48	ZAP	164.38	ETS	189.08	ZAE	157.50	ETE	352.61	ZAC	86.36	ETC	255.95

V1 30.020 V2 22.748 CLP 164.65

PLANETOCENTRIC CONIC

C3	25.510	VHL	5.051	DLA	21.59	RAL	178.49	RAD	6568.0	VEL	12.120	PTH	2.17	VHP	7.427	DPA	-4.22	RAP	185.59

ECC 1.4198

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 19 7	3020.48	-27.87	97.92	52.33	84.77	18 9 28	2420.5	-28.30	89.28
90.00	11 38 0	4170.47	-.91	170.33	44.04	61.70	12 47 31	3570.5	-4.69	163.69
100.00	18 55 26	2709.92	-29.68	75.23	52.49	86.28	19 40 36	2109.9	-29.88	66.43
100.00	12 44 22	3956.26	.67	153.71	43.15	60.11	13 50 19	3356.3	-3.31	147.18
110.00	20 35 3	2398.29	-34.18	51.73	52.66	90.12	21 15 1	1798.3	-33.79	42.51
110.00	13 21 15	3840.65	4.50	142.56	40.77	56.08	14 25 16	3240.7	.01	136.35

DIFFERENTIAL CORRECTIONS

TDE	1.0534	TRA	-2.7522	TC3	1.4328	BAU	.4962	SGT	3846.6	SGR	412.0
RDE	-.2292	RRA	.1580	RC3	-.2523	FAU	.10760	RRT	-.8373	RRF	.8398
FDE	-.6471	FRA	3.3138	FC3	-3.6517	BSP	13221	SGB	3868.6	R23	-.1042
BDE	1.0781	BRA	2.7567	BC3	1.4549	FSP	1432	SG1	3862.1	SG2	224.3

MID-COURSE EXECUTION ACCURACY

SG3	477.1	RTF	-.9317	THA	174.86
R13	.9323				

ORBIT DETERMINATION ACCURACY

ST	1563.5	SR	266.5	SS	912.4
CRT	-.8864	CRS	-.6911	CST	.9462
LSA	1806.1	MSA	293.0	SSA	18.1
EL1	1581.3	EL2	122.0	ALF	171.36

LAUNCH DATE NOV 2 1964 FLIGHT TIME 204.00 ARRIVAL DATE MAY 25 1965

DISTANCE 505.194

HELIOCENTRIC CONIC

RL 148.42 LAL -.00 LOL 39.61 VL 33.838 GAL -5.82 AZL 87.13 HCA 163.53 SMA 206.28 ECC .29689 INC 2.8747 V1 30.020
RP 241.08 LAP .82 LOP 203.15 VP 21.393 GAP 14.35 AZP 92.76 TAL 334.22 TAP 137.74 RCA 145.04 APO 267.53 V2 22.777
RC 159.588 GL 19.83 GP -3.13 ZAL 126.89 ZAP 163.76 ETS 189.44 ZAE 157.79 ETE 352.09 ZAC 86.22 ETC 255.94 CLP 164.05

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 24.764 VHL 4.976 DLA 22.40 RAL 178.40 RAD 6568.0 VEL 12.089 PTH 2.16 VHP 7.267 DPA -4.57 RAP 185.80 ECC 1.4076

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 8 13	3051.08	-27.66	100.13	51.94	85.68	17 59 4	2451.1	-28.25	91.52
90.00	11 48 11	4125.24	-2.37	167.81	43.87	61.77	12 56 56	3525.2	-6.13	161.14
100.00	18 45 52	2736.17	-29.55	77.17	52.14	85.26	19 31 29	2136.2	-29.89	68.39
100.00	12 53 12	3915.38	-.71	151.46	42.95	60.12	13 58 27	3315.4	-4.68	144.93
110.00	20 27 47	2417.33	-34.18	53.22	52.4[illegible]	89.24	21 8 5	1817.3	-33.90	43.98
110.00	13 27 46	3806.99	3.22	140.80	40.50	55.95	14 31 13	3207.0	-1.27	134.59

DIFFERENTIAL CORRECTIONS

TDE 1.0267 TRA-2.7180 TC3 1.5038 BAU .5060
RDE -.2184 RRA .1747 RC3 -.2730 FAU .11124
FDE -.6273 FRA 3.4014 FC3-3.8890 BSP 13371
BDE 1.0497 BRA 2.7236 BC3 1.5283 FSP 1509

MID-COURSE EXECUTION ACCURACY

SGT 3885.0 SGR 429.4 SG3 499.7
RRT -.8633 RRF .8677 RTF -.9339
SGB 3908.6 R23 -.1168 R13 .9346
SG1 3902.7 SG2 215.7 THA 174.53

ORBIT DETERMINATION ACCURACY

ST 1559.0 SR 259.9 SS 920.6
CRT -.8980 CRS -.6966 CST .9402
LSA 1803.7 MSA 303.2 SSA 16.9
EL1 1576.5 EL2 113.1 ALF 171.44

LAUNCH DATE NOV 2 1964 FLIGHT TIME 206.00 ARRIVAL DATE MAY 27 1965

DISTANCE 508.429

HELIOCENTRIC CONIC

RL 148.42 LAL -.00 LOL 39.61 VL 33.787 GAL -5.68 AZL 87.06 HCA 164.46 SMA 205.19 ECC .29258 INC 2.9416 V1 30.020
RP 240.79 LAP .79 LOP 204.09 VP 21.344 GAP 13.84 AZP 92.83 TAL 334.53 TAP 138.99 RCA 145.16 APO 265.22 V2 22.806
RC 161.890 GL 20.59 GP -3.38 ZAL 126.28 ZAP 163.11 ETS 189.85 ZAE 158.11 ETE 351.47 ZAC 86.04 ETC 255.93 CLP 163.45

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 24.078 VHL 4.907 DLA 23.26 RAL 178.33 RAD 6568.0 VEL 12.061 PTH 2.16 VHP 7.112 DPA -4.93 RAP 185.99 ECC 1.3963

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 55 54	3086.91	-27.36	102.71	51.58	82.42	17 47 21	2486.9	-28.13	94.13
90.00	11 59 56	4075.61	-3.97	165.03	43.84	61.94	13 7 51	3475.6	-7.69	158.33
100.00	18 35 16	2766.54	-29.36	79.41	51.85	84.10	19 21 23	2166.5	-29.86	70.64
100.00	13 3 15	3871.21	-2.21	149.04	42.86	60.18	14 7 46	3271.2	-6.16	142.48
110.00	20 19 56	2439.11	-34.14	54.92	52.23	88.23	21 0 35	1839.1	-34.01	45.68
110.00	13 35 5	3771.41	1.86	138.94	40.32	55.86	14 37 56	3171.4	-2.63	132.73

DIFFERENTIAL CORRECTIONS

TDE 1.0089 TRA-2.6739 TC3 1.5902 BAU .5207
RDE -.2083 RRA .1923 RC3 -.2970 FAU .11509
FDE -.6040 FRA 3.4918 FC3-4.1382 BSP 13290
BDE 1.0302 BRA 2.6808 BC3 1.6177 FSP 1588

MID-COURSE EXECUTION ACCURACY

SGT 3920.7 SGR 451.5 SG3 523.3
RRT -.8880 RRF .8923 RTF -.9370
SGB 3946.6 R23 -.1259 R13 .9377
SG1 3941.2 SG2 206.5 THA 174.14

ORBIT DETERMINATION ACCURACY

ST 1558.6 SR 254.2 SS 928.7
CRT -.9130 CRS -.7034 CST .9312
LSA 1804.0 MSA 319.4 SSA 15.3
EL1 1575.9 EL2 102.6 ALF 171.50

LAUNCH DATE NOV 2 1964 FLIGHT TIME 208.00 ARRIVAL DATE MAY 29 1965

DISTANCE 511.695

HELIOCENTRIC CONIC

RL 148.42 LAL -.00 LOL 39.61 VL 33.738 GAL -5.55 AZL 86.98 HCA 165.40 SMA 204.15 ECC .28843 INC 3.0166 V1 30.020
RP 240.49 LAP .76 LOP 205.02 VP 21.299 GAP 13.34 AZP 92.92 TAL 334.84 TAP 140.24 RCA 145.27 APO 263.04 V2 22.836
RC 164.213 GL 21.40 GP -3.67 ZAL 125.65 ZAP 162.45 ETS 190.32 ZAE 158.46 ETE 350.72 ZAC 85.83 ETC 255.91 CLP 162.82

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 23.456 VHL 4.843 DLA 24.17 RAL 178.29 RAD 6568.0 VEL 12.035 PTH 2.15 VHP 6.960 DPA -5.33 RAP 186.16 ECC 1.3860

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 41 46	3129.59	-26.94	105.77	51.27	80.94	17 33 55	2529.6	-27.92	97.23
90.00	12 13 47	4020.12	-5.74	161.92	43.96	62.22	13 20 47	3420.1	-9.41	155.16
100.00	18 23 21	2807.06	-29.08	82.01	51.61	82.76	19 10 3	2202.1	-29.78	73.28
100.00	13 14 53	3822.88	-3.84	146.38	42.92	60.33	14 18 36	3222.9	-7.76	139.79
110.00	20 11 21	2464.14	-34.07	56.87	52.14	87.08	20 52 25	1864.1	-34.10	47.63
110.00	13 43 22	3733.56	.41	136.96	40.27	55.82	14 45 35	3133.6	-4.08	130.75

DIFFERENTIAL CORRECTIONS

TDE .9718 TRA-2.6487 TC3 1.6427 BAU .5250
RDE -.1977 RRA .2124 RC3 -.3227 FAU .11919
FDE -.5788 FRA 3.5839 FC3-4.3992 BSP 13658
BDE .9917 BRA 2.6572 BC3 1.6741 FSP 1667

MID-COURSE EXECUTION ACCURACY

SGT 3956.0 SGR 477.8 SG3 548.0
RRT -.9059 RRF .9148 RTF -.9378
SGB 3984.8 R23 -.1489 R13 .9386
SG1 3979.7 SG2 201.1 THA 173.74

ORBIT DETERMINATION ACCURACY

ST 1544.6 SR 248.3 SS 937.2
CRT -.9246 CRS -.7149 CST .9263
LSA 1794.0 MSA 327.2 SSA 14.6
EL1 1561.6 EL2 93.6 ALF 171.52

LAUNCH DATE NOV 2 1964 FLIGHT TIME 210.00 ARRIVAL DATE MAY 31 1965

DISTANCE 514.996

HELIOCENTRIC CONIC

RL 148.42 LAL -.00 LOL 39.61 VL 33.692 GAL -5.43 AZL 86.90 HCA 166.33 SMA 203.17 ECC .28445 INC 3.1019 V1 30.020
RP 240.19 LAP .73 LOP 205.96 VP 21.257 GAP 12.84 AZP 93.01 TAL 335.15 TAP 141.48 RCA 145.38 APO 260.96 V2 22.866
RC 166.536 GL 22.29 GP -4.01 ZAL 124.99 ZAP 161.76 ETS 190.87 ZAE 158.84 ETE 349.81 ZAC 85.57 ETC 255.90 CLP 162.19

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 22.897 VHL 4.785 DLA 25.16 RAL 178.30 RAD 6567.9 VEL 12.011 PTH 2.14 VHP 6.812 DPA -5.76 RAP 186.29 ECC 1.3768

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 24 50	3182.18	-26.33	109.49	50.97	79.17	17 17 52	2582.2	-27.55	101.04
90.00	12 30 43	3955.77	-7.76	158.27	44.29	62.68	13 36 39	3355.8	-11.36	151.45
100.00	18 9 34	2844.52	-28.68	85.11	51.43	81.18	18 56 59	2244.5	-29.60	76.42
100.00	13 28 40	3768.66	-5.86	143.39	43.15	60.60	14 31 29	3168.7	-9.54	136.74
110.00	20 1 51	2493.24	-33.95	59.14	52.14	85.74	20 43 24	1893.2	-34.17	49.90
110.00	13 52 53	3692.70	-1.15	134.83	40.35	55.83	14 54 26	3092.7	-5.63	128.61

DIFFERENTIAL CORRECTIONS

TDE .9448 TRA-2.6132 TC3 1.7098 BAU .5344
RDE -.1878 RRA .2343 RC3 -.3527 FAU .12347
FDE -.5488 FRA 3.6801 FC3-4.6684 BSP 13792
BDE .9633 BRA 2.6236 BC3 1.7458 FSP 1750

MID-COURSE EXECUTION ACCURACY

SGT 3988.4 SGR 510.5 SG3 573.7
RRT -.9225 RRF .9336 RTF -.9396
SGB 4021.0 R23 -.1678 R13 .9405
SG1 4016.2 SG2 195.7 THA 173.25

ORBIT DETERMINATION ACCURACY

ST 1535.5 SR 243.6 SS 945.8
CRT -.9394 CRS -.7279 CST .9177
LSA 1787.3 MSA 342.0 SSA 13.4
EL1 1552.5 EL2 82.6 ALF 171.50

LAUNCH DATE NOV 2 1964 FLIGHT TIME 212.00 ARRIVAL DATE JUN 2 1965

HELIOCENTRIC CONIC DISTANCE 518.326 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 33.647 GAL -5.30 AZL 86.80 HCA 167.27 SMA 202.24 ECC .28062 INC 3.2004 V1 30.020
RP 239.88 LAP .70 LOP 206.90 VP 21.219 GAP 12.34 AZP 93.12 TAL 335.46 TAP 142.74 RCA 145.48 APO 258.99 V2 22.897
RC 168.857 GL 23.27 GP -4.39 ZAL 124.31 ZAP 161.04 ETS 191.52 ZAE 159.23 ETE 348.70 ZAC 85.25 ETC 255.88 CLP 161.53

PLANETOCENTRIC CONIC

C3 22.405 VHL 4.733 DLA 26.23 RAL 178.35 RAD 6567.9 VEL 11.991 PTH 2.14 VHP 6.667 DPA -6.23 RAP 186.39 ECC 1.3687

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 3 21	3250.59	-25.36	114.27	50.65	76.96	16 57 31	2650.6	-26.91	105.94
90.00	12 52 38	3876.81	-10.20	153.75	44.94	63.44	13 57 14	3276.8	-13.69	146.81
100.00	17 53 6	2896.77	-28.07	88.87	51.28	79.28	18 41 22	2296.8	-29.26	80.27
100.00	13 45 34	3705.86	-7.75	139.89	43.63	61.04	14 47 20	3105.9	-11.55	133.17
110.00	19 51 7	2527.48	-33.74	61.79	52.24	84.18	20 33 15	1927.5	-34.18	52.57
110.00	14 4 2	3647.91	-2.86	132.50	40.62	55.92	15 4 49	3047.9	-7.32	126.24

DIFFERENTIAL CORRECTIONS
TDE .9168 TRA-2.5782 TC3 1.7721 BAU .5433
RDE -.1779 RRA .2591 RC3 -.3864 FAU .12772
FDE -.5087 FRA 3.7850 FC3-4.9349 BSP 13941
BDE .9339 BRA 2.5912 BC3 1.8137 FSP 1846

MID-COURSE EXECUTION ACCURACY
SGT 4018.5 SGR 550.0 SG3 600.4
RRT -.9362 RRF .9492 RTF -.9414
SGB 4055.9 R23 -.1873 R13 .9426
SG1 4051.4 SG2 191.7 THA 172.68

ORBIT DETERMINATION ACCURACY
ST 1524.2 SR 239.8 SS 954.6
CRT -.9549 CRS -.7420 CST .9064
LSA 1778.0 MSA 361.4 SSA 12.0
EL1 1541.4 EL2 70.4 ALF 171.44

LAUNCH DATE NOV 2 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUN 4 1965

HELIOCENTRIC CONIC DISTANCE 521.687 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 33.604 GAL -5.18 AZL 86.69 HCA 168.22 SMA 201.35 ECC .27695 INC 3.3139 V1 30.020
RP 239.58 LAP .68 LOP 207.85 VP 21.185 GAP 11.85 AZP 93.24 TAL 335.77 TAP 143.99 RCA 145.59 APO 257.11 V2 22.928
RC 171.174 GL 24.37 GP -4.84 ZAL 123.59 ZAP 160.28 ETS 192.27 ZAE 159.65 ETE 347.35 ZAC 84.88 ETC 255.87 CLP 160.86

PLANETOCENTRIC CONIC

C3 21.988 VHL 4.689 DLA 27.39 RAL 178.46 RAD 6567.9 VEL 11.974 PTH 2.13 VHP 6.526 DPA -6.75 RAP 186.45 ECC 1.3619

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 32 1	3351.87	-23.63	121.18	50.13	73.92	16 27 53	2751.9	-25.61	113.07
90.00	13 24 52	3766.41	-13.48	147.30	46.11	64.86	14 27 39	3166.4	-16.76	140.16
100.00	17 32 11	2964.49	-27.12	93.68	51.13	76.92	18 21 35	2364.5	-28.65	85.21
100.00	14 7 23	3629.02	-10.25	135.56	44.45	61.77	15 7 52	3029.0	-13.95	128.72
110.00	19 38 43	2568.51	-33.42	64.95	52.46	82.34	20 21 32	1968.5	-34.11	55.77
110.00	14 17 21	3597.76	-4.77	129.87	41.12	56.11	15 17 18	2997.8	-9.19	123.56

DIFFERENTIAL CORRECTIONS
TDE .9008 TRA-2.5311 TC3 1.8517 BAU .5586
RDE -.1691 RRA .2864 RC3 -.4272 FAU .13256
FDE -.4710 FRA 3.8854 FC3-5.2196 BSP 13806
BDE .9166 BRA 2.5473 BC3 1.9003 FSP 1928

MID-COURSE EXECUTION ACCURACY
SGT 4044.8 SGR 598.8 SG3 628.3
RRT -.9480 RRF .9617 RTF -.9437
SGB 4088.9 R23 -.2044 R13 .9451
SG1 4084.5 SG2 188.7 THA 171.99

ORBIT DETERMINATION ACCURACY
ST 1518.6 SR 238.3 SS 964.5
CRT -.9714 CRS -.7612 CST .8921
LSA 1773.3 MSA 385.5 SSA 10.6
EL1 1536.2 EL2 56.0 ALF 171.32

LAUNCH DATE NOV 2 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUN 6 1965

HELIOCENTRIC CONIC DISTANCE 525.073 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 33.563 GAL -5.07 AZL 86.55 HCA 169.16 SMA 200.51 ECC .27342 INC 3.4477 V1 30.020
RP 239.26 LAP .65 LOP 208.79 VP 21.153 GAP 11.37 AZP 93.39 TAL 336.08 TAP 145.24 RCA 145.68 APO 255.33 V2 22.959
RC 173.485 GL 25.60 GP -5.37 ZAL 122.83 ZAP 159.49 ETS 193.15 ZAE 160.07 ETE 345.69 ZAC 84.41 ETC 255.85 CLP 160.18

PLANETOCENTRIC CONIC

C3 21.655 VHL 4.654 DLA 28.67 RAL 178.66 RAD 6567.9 VEL 11.960 PTH 2.13 VHP 6.390 DPA -7.34 RAP 186.46 ECC 1.3564

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
85.31	13 50 9	3682.05	-19.40	143.80	48.59	68.47	14 51 31	3082.1	-22.15	136.18
94.69	15 8 20	3428.87	-19.39	125.25	48.59	68.46	16 5 29	2828.9	-22.15	117.64
100.00	17 2 14	3062.49	-25.43	100.47	50.82	73.73	17 53 16	2462.5	-27.41	92.23
100.00	14 38 56	3523.67	-13.58	129.50	45.86	63.11	15 37 40	2923.7	-17.08	122.46
110.00	19 23 56	2618.88	-32.89	68.78	52.81	80.13	20 7 35	2018.9	-33.91	59.69
110.00	14 33 43	3540.05	-6.95	126.82	41.94	56.45	15 32 44	2940.0	-11.32	120.45

DIFFERENTIAL CORRECTIONS
TDE .8642 TRA-2.5049 TC3 1.8853 BAU .5626
RDE -.1588 RRA .3197 RC3 -.4712 FAU .13717
FDE -.4173 FRA 3.9998 FC3-5.4839 BSP 14166
BDE .8787 BRA 2.5252 BC3 1.9433 FSP 2031

MID-COURSE EXECUTION ACCURACY
SGT 4070.2 SGR 657.1 SG3 657.0
RRT -.9551 RRF .9720 RTF -.9445
SGB 4122.9 R23 -.2292 R13 .9462
SG1 4118.4 SG2 192.4 THA 171.21

ORBIT DETERMINATION ACCURACY
ST 1499.0 SR 237.7 SS 975.7
CRT -.9840 CRS -.7834 CST .8797
LSA 1758.1 MSA 405.4 SSA 9.6
EL1 1517.2 EL2 41.8 ALF 171.12

LAUNCH DATE NOV 2 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUN 8 1965

HELIOCENTRIC CONIC DISTANCE 528.486 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 33.523 GAL -4.96 AZL 86.39 HCA 170.11 SMA 199.71 ECC .27004 INC 3.6067 V1 30.020
RP 238.95 LAP .62 LOP 209.74 VP 21.125 GAP 10.89 AZP 93.55 TAL 336.38 TAP 146.50 RCA 145.78 APO 253.64 V2 22.991
RC 175.790 GL 27.00 GP -6.01 ZAL 122.01 ZAP 158.64 ETS 194.20 ZAE 160.48 ETE 343.63 ZAC 83.84 ETC 255.83 CLP 159.47

PLANETOCENTRIC CONIC

C3 21.423 VHL 4.628 DLA 30.10 RAL 178.97 RAD 6567.9 VEL 11.950 PTH 2.13 VHP 6.259 DPA -8.02 RAP 186.41 ECC 1.3526

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
79.34	13 4 10	3831.04	-20.39	155.23	49.12	67.36	14 8 2	3231.0	-23.28	147.61
100.66	15 56 46	3274.67	-20.37	114.29	49.12	67.35	16 51 21	2674.7	-23.27	106.67
79.34	13 4 10	3831.04	-20.39	155.23	49.12	67.36	14 8 2	3231.0	-23.28	147.61
100.66	15 56 46	3274.67	-20.37	114.29	49.12	67.35	16 51 21	2674.7	-23.27	106.67
110.00	19 5 18	2683.38	-32.04	73.62	53.24	77.39	19 50 1	2083.4	-33.44	64.67
110.00	14 54 49	3470.33	-9.56	123.11	43.22	57.02	15 52 40	2870.3	-13.83	116.62

DIFFERENTIAL CORRECTIONS
TDE .8428 TRA-2.4648 TC3 1.9360 BAU .5745
RDE -.1497 RRA .3577 RC3 -.5251 FAU .14240
FDE -.3651 FRA 4.1099 FC3-5.7546 BSP 14195
BDE .8560 BRA 2.4906 BC3 2.0059 FSP 2118

MID-COURSE EXECUTION ACCURACY
SGT 4091.3 SGR 729.8 SG3 686.7
RRT -.9611 RRF .9798 RTF -.9460
SGB 4155.9 R23 -.2481 R13 .9480
SG1 4151.1 SG2 198.7 THA 170.25

ORBIT DETERMINATION ACCURACY
ST 1486.9 SR 241.1 SS 988.6
CRT -.9947 CRS -.8099 CST .8633
LSA 1749.1 MSA 432.0 SSA 8.4
EL1 1506.1 EL2 24.5 ALF 170.84

LAUNCH DATE NOV 2 1964 FLIGHT TIME 220.00 ARRIVAL DATE JUN 10 1965

HELIOCENTRIC CONIC DISTANCE 531.923 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 33.485 GAL -4.85 AZL 86.20 HCA 171.06 SMA 198.95 ECC .26679 INC 3.8006 V1 30.020
RP 238.63 LAP .59 LOP 210.69 VP 21.100 GAP 10.42 AZP 93.75 TAL 336.69 TAP 147.75 RCA 145.87 APO 252.02 V2 23.024
RC 178.086 GL 28.62 GP -6.79 ZAL 121.13 ZAP 157.73 ETS 195.47 ZAE 160.86 ETE 341.05 ZAC 83.14 ETC 255.80 CLP 158.74

PLANETOCENTRIC CONIC

C3 21.314 VHL 4.617 DLA 31.72 RAL 179.43 RAD 6567.9 VEL 11.945 PTH 2.13 VHP 6.132 DPA -8.82 RAP 186.28 ECC 1.3508

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
75.07	12 35 20	3926.77	-21.45	162.92	49.97	66.05	13 40 46	3326.8	-24.50	155.30
104.93	16 29 16	3176.50	-21.44	107.40	49.97	66.04	17 22 13	2576.5	-24.49	99.79
75.07	12 35 20	3926.77	-21.45	162.92	49.97	66.05	13 40 46	3326.8	-24.50	155.30
104.93	16 29 16	3176.50	-21.44	107.40	49.97	66.04	17 22 13	2576.5	-24.49	99.79
110.00	18 39 32	2772.49	-30.53	80.12	53.66	73.81	19 25 44	2172.5	-32.44	71.43
110.00	15 24 14	3378.78	-12.90	118.13	45.24	58.07	16 20 33	2778.8	-17.03	111.45

DIFFERENTIAL CORRECTIONS
TDE .8132 TRA-2.4336 TC3 1.9562 BAU .5818
RDE -.1387 RRA .4052 RC3 -.5851 FAU .14703
FDE -.2871 FRA 4.2410 FC3-5.9721 BSP 14478
BDE .8250 BRA 2.4671 BC3 2.0419 FSP 2242

MID-COURSE EXECUTION ACCURACY
SGT 4109.5 SGR 819.2 SG3 716.8
RRT -.9650 RRF .9857 RTF -.9471
SGB 4190.4 R23 -.2643 R13 .9498
SG1 4185.1 SG2 210.8 THA 169.08

ORBIT DETERMINATION ACCURACY
ST 1468.4 SR 247.7 SS 1005.3
CRT -.9995 CRS -.8368 CST .8420
LSA 1735.3 MSA 465.6 SSA 7.2
EL1 1489.1 EL2 7.6 ALF 170.43

LAUNCH DATE NOV 2 1964 FLIGHT TIME 222.00 ARRIVAL DATE JUN 12 1965

HELIOCENTRIC CONIC DISTANCE 535.385 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 33.449 GAL -4.74 AZL 85.96 HCA 172.01 SMA 198.22 ECC .26368 INC 4.0400 V1 30.020
RP 238.31 LAP .56 LOP 211.64 VP 21.079 GAP 9.95 AZP 94.00 TAL 336.99 TAP 149.00 RCA 145.96 APO 250.49 V2 23.056
RC 180.373 GL 30.53 GP -7.75 ZAL 120.15 ZAP 156.72 ETS 197.01 ZAE 161.17 ETE 337.80 ZAC 82.24 ETC 255.77 CLP 157.98

PLANETOCENTRIC CONIC

C3 21.371 VHL 4.623 DLA 33.58 RAL 180.09 RAD 6567.9 VEL 11.948 PTH 2.13 VHP 6.013 DPA -9.77 RAP 186.05 ECC 1.3517

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
71.14	12 12 23	4006.78	-22.61	169.63	51.26	64.48	13 19 10	3406.8	-25.85	162.02
108.86	16 57 30	3097.77	-22.60	101.94	51.26	64.47	17 49 8	2497.8	-25.84	94.34
71.14	12 12 23	4006.78	-22.61	169.63	51.26	64.48	13 19 10	3406.8	-25.85	162.02
108.86	16 57 30	3097.77	-22.60	101.94	51.26	64.47	17 49 8	2497.8	-25.84	94.34
110.00	17 52 58	2928.00	-27.08	90.90	53.42	68.29	18 41 46	2328.0	-29.77	82.75
110.00	16 16 5	3224.54	-18.27	109.40	48.86	60.60	17 9 50	2624.5	-22.05	102.30

DIFFERENTIAL CORRECTIONS
TDE .7970 TRA-2.3926 TC3 1.9781 BAU .5957
RDE -.1289 RRA .4622 RC3 -.6592 FAU .15245
FDE -.2147 FRA 4.3616 FC3-6.1757 BSP 14523
BDE .8073 BRA 2.4368 BC3 2.0851 FSP 2334

MID-COURSE EXECUTION ACCURACY
SGT 4121.9 SGR 932.6 SG3 747.1
RRT -.9677 RRF .9900 RTF -.9483
SGB 4226.1 R23 -.2755 R13 .9517
SG1 4219.9 SG2 229.7 THA 167.61

ORBIT DETERMINATION ACCURACY
ST 1455.7 SR 261.6 SS 1024.5
CRT -.9957 CRS -.8669 CST .8189
LSA 1727.8 MSA 501.8 SSA 6.1
EL1 1478.8 EL2 23.9 ALF 169:85

LAUNCH DATE NOV 2 1964 FLIGHT TIME 224.00 ARRIVAL DATE JUN 14 1965

HELIOCENTRIC CONIC DISTANCE 538.869 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 33.414 GAL -4.64 AZL 85.66 HCA 172.97 SMA 197.54 ECC .26069 INC 4.3448 V1 30.020
RP 237.98 LAP .53 LOP 212.60 VP 21.060 GAP 9.49 AZP 94.31 TAL 337.29 TAP 150.26 RCA 146.04 APO 249.03 V2 23.089
RC 182.651 GL 32.83 GP -8.98 ZAL 119.05 ZAP 155.58 ETS 198.91 ZAE 161.35 ETE 333.65 ZAC 81.08 ETC 255.72 CLP 157.19

PLANETOCENTRIC CONIC

C3 21.661 VHL 4.654 DLA 35.76 RAL 181.05 RAD 6567.9 VEL 11.960 PTH 2.13 VHP 5.902 DPA -10.95 RAP 185.68 ECC 1.3565

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
67.18	11 53 0	4080.40	-23.87	176.09	53.18	62.53	13 1 0	3480.4	-27.34	168.52
112.82	17 24 33	3030.66	-23.85	97.35	53.17	62.52	18 15 4	2430.7	-27.33	89.78
67.18	11 53 0	4080.40	-23.87	176.09	53.18	62.53	13 1 0	3480.4	-27.34	168.52
112.82	17 24 33	3030.66	-23.85	97.35	53.17	62.52	18 15 4	2430.7	-27.33	89.78
67.18	11 53 0	4080.40	-23.87	176.09	53.18	62.53	13 1 0	3480.4	-27.34	168.52
112.82	17 24 33	3030.66	-23.85	97.35	53.17	62.52	18 15 4	2430.7	-27.33	89.78

DIFFERENTIAL CORRECTIONS
TDE .7864 TRA-2.3508 TC3 1.9753 BAU .6115
RDE -.1187 RRA .5348 RC3 -.7466 FAU .15784
FDE -.1324 FRA 4.4853 FC3-6.3085 BSP 14611
BDE .7954 BRA 2.4109 BC3 2.1116 FSP 2426

MID-COURSE EXECUTION ACCURACY
SGT 4127.7 SGR 1078.3 SG3 776.7
RRT -.9691 RRF .9931 RTF -.9493
SGB 4286.2 R23 -.2818 R13 .9537
SG1 4258.4 SG2 257.9 THA 165.74

ORBIT DETERMINATION ACCURACY
ST 1444.0 SR 284.7 SS 1048.2
CRT -.9806 CRS -.8961 CST .7923
LSA 1723.3 MSA 543.3 SSA 5.1
EL1 1470.8 EL2 54.8 ALF 169.04

LAUNCH DATE NOV 2 1964 FLIGHT TIME 226.00 ARRIVAL DATE JUN 16 1965

HELIOCENTRIC CONIC DISTANCE 542.374 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 33.381 GAL -4.54 AZL 85.25 HCA 173.93 SMA 196.88 ECC .25782 INC 4.7460 V1 30.020
RP 237.65 LAP .50 LOP 213.56 VP 21.044 GAP 9.04 AZP 94.72 TAL 337.58 TAP 151.51 RCA 146.12 APO 247.65 V2 23.123
RC 184.919 GL 35.66 GP -10.58 ZAL 117.75 ZAP 154.22 ETS 201.31 ZAE 161.29 ETE 328.36 ZAC 79.54 ETC 255.65 CLP 156.36

PLANETOCENTRIC CONIC

C3 22.310 VHL 4.723 DLA 38.38 RAL 182.46 RAD 6567.9 VEL 11.987 PTH 2.14 VHP 5.804 DPA -12.46 RAP 185.10 ECC 1.3672

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
62.94	11 36 27	4152.66	-25.21	182.76	56.00	60.05	12 45 40	3552.7	-28.99	175.25
117.06	17 52 19	2972.67	-25.20	93.46	55.99	60.04	18 41 52	2372.7	-28.98	85.96
62.94	11 36 27	4152.66	-25.21	182.76	56.00	60.05	12 45 40	3552.7	-28.99	175.25
117.06	17 52 19	2972.67	-25.20	93.46	55.99	60.04	18 41 52	2372.7	-28.98	85.96
62.94	11 36 27	4152.66	-25.21	182.76	56.00	60.05	12 45 40	3552.7	-28.99	175.25
117.06	17 52 19	2972.67	-25.20	93.46	55.99	60.04	18 41 52	2372.7	-28.98	85.96

DIFFERENTIAL CORRECTIONS
TDE .7897 TRA-2.3083 TC3 1.9403 BAU .6319
RDE -.1095 RRA .6304 RC3 -.8506 FAU .16328
FDE -.0518 FRA 4.6040 FC3-6.3362 BSP 14730
BDE .7972 BRA 2.3928 BC3 2.1185 FSP 2499

MID-COURSE EXECUTION ACCURACY
SGT 4127.2 SGR 1270.8 SG3 804.0
RRT -.9694 RRF .9952 RTF -.9498
SGB 4318.4 R23 -.2833 R13 .9559
SG1 4308.1 SG2 299.0 THA 163.30

ORBIT DETERMINATION ACCURACY
ST 1438.3 SR 322.3 SS 1076.0
CRT -.9538 CRS -.9228 CST .7647
LSA 1727.6 MSA 587.9 SSA 4.1
EL1 1470.9 EL2 94.7 ALF 167.89

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LAUNCH DATE  NOV  2 1964                          FLIGHT TIME 228.00                                  ARRIVAL DATE  JUN 18 1965

 HELIOCENTRIC CONIC                               DISTANCE 545.899                                     EARTH  TO  MARS
  RL  148.42 LAL    -.00 LOL  39.61 VL  33.349 GAL  -4.44 AZL  84.70 HCA 174.89 SMA 196.26 ECC .25508 INC 5.2985 V1  30.020
  RP  237.31 LAP     .47 LOP 214.52 VP  21.030 GAP   8.59 AZP  95.28 TAL 337.87 TAP 152.76 RCA 146.20 APO 246.32 V2  23.157
  RC 187.176 GL   39.25 GP  -12.77 ZAL 116.17 ZAP 152.52 ETS 204.38 ZAE 160.78 ETE 321.62 ZAC  77.43 ETC 255.54 CLP 155.46
 PLANETOCENTRIC CONIC
  C3  23.560 VHL  4.854 DLA  41.58 RAL 184.59 RAD 6568.0 VEL 12.039 PTH   2.15 VHP  5.727 DPA -14.47 RAP 184.20 ECC 1.3877
  LNCH AZMTH  LNCH TIME  L-I TIME    INJ LAT   INJ LONG  INJ RT ASC  INJ AZMTH  INJ TIME  PO CST TIM  INJ 2 LAT INJ 2 LONG
     58.18    11 23  5   4227.64     -26.59     190.05      60.25      56.77   12 33 33    3627.6     -30.76     182.68
    121.82    18 22 39   2924.23     -26.58      90.31      60.24      56.76   19 11 23    2324.2     -30.75      82.94
     58.18    11 23  5   4227.64     -26.59     190.05      60.25      56.77   12 33 33    3627.6     -30.76     182.68
    121.82    18 22 39   2924.23     -26.58      90.31      60.24      56.76   19 11 23    2324.2     -30.75      82.94
     58.18    11 23  5   4227.64     -26.59     190.05      60.25      56.77   12 33 33    3627.6     -30.76     182.68
    121.82    18 22 39   2924.23     -26.58      90.31      60.24      56.76   19 11 23    2324.2     -30.75      82.94
 DIFFERENTIAL CORRECTIONS                         MID-COURSE EXECUTION ACCURACY                        ORBIT DETERMINATION ACCURACY
  TDE   .8264 TRA-2.2550 TC3 1.8719 BAU  .6647     SGT 4113.1 SGR 1533.7 SG3  825.2                    ST  1447.1 SR   382.1 SS  1105.2
  RDE  -.1054 RRA  .7608 RC3 -.9746 FAU .16857     RRT -.9691 RRF  .9965 RTF -.9501                    CRT -.9177 CRS -.9440 CST  .7353
  FDE   .0085 FRA 4.7024 FC3-6.1943 BSP  14718     SGB 4389.7 R23 -.2790 R13  .9588                    LSA 1747.9 MSA  637.8 SSA    3.2
  BDE   .8331 BRA 2.3799 BC3 2.1105 FSP   2534     SG1 4375.3 SG2  355.6 THA 159.99                    EL1 1489.5 EL2  147.5 ALF 166.24

LAUNCH DATE  NOV  2 1964                          FLIGHT TIME 230.00                                  ARRIVAL DATE  JUN 20 1965

 HELIOCENTRIC CONIC                               DISTANCE 549.443                                     EARTH  TO  MARS
  RL  148.42 LAL    -.00 LOL  39.61 VL  33.318 GAL  -4.35 AZL  83.89 HCA 175.85 SMA 195.67 ECC .25245 INC 6.1101 V1  30.020
  RP  236.98 LAP     .44 LOP 215.48 VP  21.019 GAP   8.14 AZP  96.09 TAL 338.16 TAP 154.01 RCA 146.28 APO 245.07 V2  23.191
  RC 189.421 GL   43.96 GP  -15.91 ZAL 114.16 ZAP 150.20 ETS 208.36 ZAE 159.44 ETE 313.20 ZAC  74.36 ETC 255.35 CLP 154.46
 PLANETOCENTRIC CONIC
  C3  25.950 VHL  5.094 DLA  45.61 RAL 187.97 RAD 6568.0 VEL 12.138 PTH   2.18 VHP  5.691 DPA -17.28 RAP 182.76 ECC 1.4271
  LNCH AZMTH  LNCH TIME  L-I TIME    INJ LAT   INJ LONG  INJ RT ASC  INJ AZMTH  INJ TIME  PO CST TIM  INJ 2 LAT INJ 2 LONG
     52.62    11 14 24   4310.64     -27.83     198.49      66.86      52.28   12 26 15    3710.6     -32.52     191.41
    127.38    18 50 20   2888.76     -27.82      88.12      66.85      52.28   19 46 29    2288.8     -32.51      81.04
     52.62    11 14 24   4310.64     -27.83     198.49      66.86      52.28   12 26 15    3710.6     -32.52     191.41
    127.38    18 50 20   2888.76     -27.82      88.12      66.85      52.28   19 46 29    2288.8     -32.51      81.04
     52.62    11 14 24   4310.64     -27.83     198.49      66.86      52.28   12 26 15    3710.6     -32.52     191.41
    127.38    18 50 20   2888.76     -27.82      88.12      66.85      52.28   19 46 29    2288.8     -32.51      81.04
 DIFFERENTIAL CORRECTIONS                         MID-COURSE EXECUTION ACCURACY                        ORBIT DETERMINATION ACCURACY
  TDE   .9037 TRA-2.2148 TC3 1.7028 BAU  .7031     SGT 4089.5 SGR 1912.6 SG3  834.7                    ST  1475.5 SR   481.2 SS  1144.0
  RDE  -.1100 RRA  .9615 RC3-1.0988 FAU .17039     RRT -.9682 RRF  .9974 RTF -.9498                    CRT -.8775 CRS -.9598 CST  .7076
  FDE   .0504 FRA 4.8089 FC3-5.6846 BSP  15353     SGB 4514.7 R23 -.2685 R13  .9627                    LSA 1798.4 MSA  695.0 SSA    2.4
  BDE   .9104 BRA 2.4145 BC3 2.0266 FSP   2616     SG1 4493.6 SG2  435.8 THA 155.39                    EL1 1536.1 EL2  221.7 ALF 163.68

LAUNCH DATE  NOV  2 1964                          FLIGHT TIME 232.00                                  ARRIVAL DATE  JUN 22 1965

 HELIOCENTRIC CONIC                               DISTANCE 553.005                                     EARTH  TO  MARS
  RL  148.42 LAL    -.00 LOL  39.61 VL  33.289 GAL  -4.26 AZL  82.59 HCA 176.81 SMA 195.11 ECC .24992 INC 7.4144 V1  30.020
  RP  236.64 LAP     .41 LOP 216.45 VP  21.011 GAP   7.71 AZP  97.40 TAL 338.45 TAP 155.26 RCA 146.35 APO 243.87 V2  23.226
  RC 191.655 GL   50.41 GP  -20.71 ZAL 111.42 ZAP 146.63 ETS 213.53 ZAE 156.47 ETE 303.07 ZAC  69.63 ETC 254.95 CLP 153.23
 PLANETOCENTRIC CONIC
  C3  30.891 VHL  5.558 DLA  50.76 RAL 193.82 RAD 6568.2 VEL 12.340 PTH   2.23 VHP  5.743 DPA -21.49 RAP 180.28 ECC 1.5084
  LNCH AZMTH  LNCH TIME  L-I TIME    INJ LAT   INJ LONG  INJ RT ASC  INJ AZMTH  INJ TIME  PO CST TIM  INJ 2 LAT INJ 2 LONG
     45.94    11 14 55   4410.25     -28.36     208.75      77.67      45.97   12 28 26    3810.3     -33.75     202.26
    134.06    19 44 30   2876.10     -28.35      87.40      77.66      45.96   20 32 26    2276.1     -33.74      80.91
     45.94    11 14 55   4410.25     -28.36     208.75      77.67      45.97   12 28 26    3810.3     -33.75     202.26
    134.06    19 44 30   2876.10     -28.35      87.40      77.66      45.96   20 32 26    2276.1     -33.74      80.91
     45.94    11 14 55   4410.25     -28.36     208.75      77.67      45.97   12 28 26    3810.3     -33.75     202.26
    134.06    19 44 30   2876.10     -28.35      87.40      77.66      45.96   20 32 26    2276.1     -33.74      80.91
 DIFFERENTIAL CORRECTIONS                         MID-COURSE EXECUTION ACCURACY                        ORBIT DETERMINATION ACCURACY
  TDE  1.1309 TRA-2.1581 TC3 1.4357 BAU  .7747     SGT 4034.0 SGR 2495.3 SG3  815.1                    ST  1573.1 SR   657.2 SS  1173.8
  RDE  -.1818 RRA  1.2859 RC3-1.2072 FAU .16746     RRT -.9665 RRF  .9978 RTF -.9482                    CRT -.8548 CRS -.9700 CST  .7030
  FDE  -.1005 FRA 4.8234 FC3-4.6932 BSP  16399     SGB 4743.4 R23 -.2491 R13  .9683                    LSA 1932.9 MSA  740.3 SSA    1.6
  BDE  1.1455 BRA 2.5122 BC3 1.8758 FSP   2636     SG1 4711.6 SG2  548.3 THA 148.65                    EL1 1674.4 EL2  320.5 ALF 159.57

LAUNCH DATE  NOV  2 1964                          FLIGHT TIME 242.00                                  ARRIVAL DATE  JUL  2 1965

 HELIOCENTRIC CONIC                               DISTANCE 571.164                                     EARTH  TO  MARS
  RL  148.42 LAL    -.00 LOL  39.61 VL  33.160 GAL  -3.87 AZL  98.51 HCA 181.73 SMA 192.68 ECC .23894 INC 8.5073 V1  30.020
  RP  234.89 LAP     .26 LOP 221.32 VP  21.006 GAP   5.62 AZP  81.49 TAL 339.70 TAP 161.43 RCA 146.64 APO 238.72 V2  23.405
  RC 202.623 GL  -56.45 GP   37.14 ZAL 107.82 ZAP 131.55 ETS 136.07 ZAE 141.37 ETE  78.38 ZAC 125.46 ETC 252.62 CLP 146.31
 PLANETOCENTRIC CONIC
  C3  34.516 VHL  5.875 DLA -44.53 RAL 137.92 RAD 6568.4 VEL 12.485 PTH   2.26 VHP  6.214 DPA  31.47 RAP 204.66 ECC 1.5680
  LNCH AZMTH  LNCH TIME  L-I TIME    INJ LAT   INJ LONG  INJ RT ASC  INJ AZMTH  INJ TIME  PO CST TIM  INJ 2 LAT INJ 2 LONG
     25.86    14 14 42   2491.14      -4.30      77.89     343.86     157.35   14 56 13    1891.1       3.08      75.23
     25.86    23  0  4   1298.92      63.87      23.08      55.77     119.30   23 21 43     698.9      66.79       5.56
     35.86    15 27  2   2370.36        .74      70.18     353.78     148.95   16  6 33    1770.4       7.58      66.45
     35.86    22 35 24   1340.22      54.10      18.68      45.35     118.42   22 57 45     740.2      57.24       6.02
     45.86    17  3 14   2165.35       8.28      57.55       4.40     140.32   17 39 19    1565.3      14.39      52.70
     45.86    21 56  4   1424.42      42.76      18.55      35.72     120.63   22 19 48     824.4      46.41       8.96
 DIFFERENTIAL CORRECTIONS                         MID-COURSE EXECUTION ACCURACY                        ORBIT DETERMINATION ACCURACY
  TDE  3.0328 TRA-1.4885 TC3 1.3263 BAU 1.1063     SGT 3914.4 SGR 4417.1 SG3  663.8                    ST  3020.5 SR  3557.8 SS  3321.4
  RDE  3.6281 RRA -.8906 RC3 1.9972 FAU .14387     RRT  .9602 RRF -.9987 RTF -.9445                    CRT  .9949 CRS  .9998 CST  .9930
  FDE-6.3187 FRA 1.2812 FC3-3.6085 BSP  17875     SGB 5902.0 R23 -.1750 R13 -.9846                    LSA 5721.3 MSA  283.1 SSA     .5
  BDE  4.7288 BRA 1.7346 BC3 2.3975 FSP   1860     SG1 5843.9 SG2  825.9 THA  48.59                    EL1 4661.3 EL2  232.0 ALF  49.69
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LAUNCH DATE NOV 2 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUL 4 1965

HELIOCENTRIC CONIC DISTANCE 574.819 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 33.137 GAL -3.80 AZL 94.77 HCA 182.71 SMA 192.27 ECC .23700 INC 4.7653 V1 30.020
RP 234.53 LAP .22 LOP 222.31 VP 21.012 GAP 5.21 AZP 85.24 TAL 339.96 TAP 162.67 RCA 146.70 APO 237.84 V2 23.442
RC 204.770 GL -38.80 GP 26.88 ZAL 113.57 ZAP 138.63 ETS 143.24 ZAE 151.21 ETE 73.58 ZAC 115.97 ETC 254.26 CLP 147.29

PLANETOCENTRIC CONIC

C3 19.232 VHL 4.385 DLA -28.12 RAL 146.39 RAD 6567.8 VEL 11.858 PTH 2.10 VHP 5.318 DPA 21.62 RAP 200.95 ECC 1.3165

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	23 49 10	978.43	17.46	329.66	13.31	112.65	24 5 28	378.4	20.38	322.20
90.00	0 51 51	787.74	22.02	317.53	15.12	108.27	1 4 59	187.7	24.31	309.61
100.00	0 17 33	899.34	12.97	321.70	11.15	117.17	0 32 32	299.3	16.51	314.69
100.00	3 10 5	5630.11	26.78	264.15	16.62	103.80	4 43 55	5030.1	28.41	255.73
110.00	0 20 2	891.52	7.12	317.63	7.68	123.52	0 34 53	291.5	11.48	311.25
110.00	5 24 5	5210.69	33.43	233.76	18.07	97.58	6 50 56	4610.7	34.12	224.58

DIFFERENTIAL CORRECTIONS
TDE 1.9349 TRA-1.6774 TC3 2.2715 BAU .8517
RDE 1.6325 RRA -.8757 RC3 2.4110 FAU .18524
FDE-5.4174 FRA 2.7544 FC3-8.3388 BSP 16905
BDE 2.5316 BRA 1.8922 BC3 3.3125 FSP 2932

MID-COURSE EXECUTION ACCURACY
SGT 4066.2 SGR 3271.7 SG3 947.4
RRT .9643 RRF -.9995 RTF -.9555
SGB 5219.0 R23 -.1934 R13 -.9811
SG1 5174.4 SG2 680.9 THA 38.60

ORBIT DETERMINATION ACCURACY
ST 2636.3 SR 2169.1 SS 3301.7
CRT .9943 CRS 1.0000 CST .9933
LSA 4742.9 MSA 248.0 SSA 1.3
EL1 3409.3 EL2 178.2 ALF 39.42

LAUNCH DATE NOV 2 1964 FLIGHT TIME 246.00 ARRIVAL DATE JUL 6 1965

HELIOCENTRIC CONIC DISTANCE 578.493 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 33.116 GAL -3.73 AZL 93.00 HCA 183.69 SMA 191.87 ECC .23516 INC 3.0050 V1 30.020
RP 234.17 LAP .19 LOP 223.29 VP 21.020 GAP 4.82 AZP 87.00 TAL 340.20 TAP 163.89 RCA 146.75 APO 236.99 V2 23.479
RC 206.900 GL -26.72 GP 20.97 ZAL 116.40 ZAP 141.49 ETS 149.66 ZAE 156.98 ETE 71.21 ZAC 110.37 ETC 254.91 CLP 146.93

PLANETOCENTRIC CONIC

C3 14.832 VHL 3.851 DLA -16.73 RAL 150.86 RAD 6567.6 VEL 11.671 PTH 2.05 VHP 4.935 DPA 16.06 RAP 198.75 ECC 1.2441

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 52 37	1596.52	-1.35	5.29	7.27	118.29	21 19 13	996.5	2.44	358.66
90.00	4 24 3	5338.25	27.60	243.10	12.89	83.38	5 53 1	4738.2	26.39	234.64
100.00	22 4 28	1364.70	-2.45	347.63	6.66	119.80	22 27 12	764.7	1.53	341.11
100.00	5 54 53	5045.30	28.85	221.37	12.71	81.80	7 18 58	4445.3	27.41	212.86
110.00	22 51 44	1216.62	-5.26	334.66	4.91	123.83	23 12 0	616.6	-.78	328.44
110.00	7 24 6	4766.15	32.09	199.48	12.02	77.55	8 43 32	4166.1	30.05	190.86

DIFFERENTIAL CORRECTIONS
TDE 1.4122 TRA-1.7482 TC3 2.8114 BAU .7296
RDE .9226 RRA -.7698 RC3 2.3739 FAU .20801
FDE-4.4565 FRA 3.7245 FC-12.1412 BSP 16676
BDE 1.6869 BRA 1.9101 BC3 3.6796 FSP 3681

MID-COURSE EXECUTION ACCURACY
SGT 4059.4 SGR 2580.2 SG3 1109.5
RRT .9634 RRF -.9996 RTF -.9572
SGB 4810.0 R23 -.2146 R13 -.9765
SG1 4773.9 SG2 588.0 THA 32.03

ORBIT DETERMINATION ACCURACY
ST 2254.4 SR 1419.8 SS 2924.8
CRT .9934 CRS 1.0000 CST .9935
LSA 3950.6 MSA 211.9 SSA 2.9
EL1 2660.6 EL2 137.6 ALF 32.13

LAUNCH DATE NOV 2 1964 FLIGHT TIME 248.00 ARRIVAL DATE JUL 8 1965

HELIOCENTRIC CONIC DISTANCE 582.185 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 33.095 GAL -3.67 AZL 91.98 HCA 184.68 SMA 191.50 ECC .23341 INC 1.9811 V1 30.020
RP 233.80 LAP .16 LOP 224.28 VP 21.029 GAP 4.43 AZP 88.03 TAL 340.43 TAP 165.11 RCA 146.80 APO 236.19 V2 23.517
RC 209.011 GL -18.41 GP 17.24 ZAL 117.60 ZAP 142.51 ETS 154.61 ZAE 160.75 ETE 70.48 ZAC 106.80 ETC 255.23 CLP 146.18

PLANETOCENTRIC CONIC

C3 13.049 VHL 3.612 DLA -8.83 RAL 153.56 RAD 6567.5 VEL 11.595 PTH 2.03 VHP 4.707 DPA 12.59 RAP 197.32 ECC 1.2147

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 54 57	1839.98	-9.07	19.01	7.55	116.94	20 25 37	1240.0	-5.39	12.27
90.00	5 43 17	5038.54	23.49	222.17	10.57	73.71	7 7 15	4438.5	21.03	214.35
100.00	21 12 0	1591.43	-9.98	.25	7.07	118.32	21 38 31	991.4	-6.12	353.60
100.00	7 8 55	4762.33	24.47	201.52	10.24	72.28	8 28 17	4162.3	21.82	193.73
110.00	22 10 27	1408.41	-12.38	344.94	5.64	122.12	22 33 55	808.4	-8.05	338.52
110.00	8 26 57	4518.11	27.09	181.94	9.20	68.31	9 42 15	3918.1	23.90	174.22

DIFFERENTIAL CORRECTIONS
TDE 1.1394 TRA-1.7489 TC3 3.1427 BAU .6720
RDE .6106 RRA -.6607 RC3 2.2279 FAU .22703
FDE-3.8063 FRA 4.3314 FC-15.0628 BSP 16008
BDE 1.2927 BRA 1.8695 BC3 3.8522 FSP 4103

MID-COURSE EXECUTION ACCURACY
SGT 4037.5 SGR 2157.2 SG3 1231.6
RRT .9624 RRF -.9995 RTF -.9580
SGB 4577.6 R23 -.2279 R13 -.9733
SG1 4547.9 SG2 520.4 THA 27.60

ORBIT DETERMINATION ACCURACY
ST 1994.9 SR 1020.6 SS 2600.8
CRT .9929 CRS .9999 CST .9945
LSA 3428.6 MSA 173.6 SSA 5.7
EL1 2238.2 EL2 108.3 ALF 27.00

LAUNCH DATE NOV 2 1964 FLIGHT TIME 250.00 ARRIVAL DATE JUL 10 1965

HELIOCENTRIC CONIC DISTANCE 585.894 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 33.076 GAL -3.60 AZL 91.31 HCA 185.67 SMA 191.14 ECC .23173 INC 1.3076 V1 30.020
RP 233.44 LAP .13 LOP 225.28 VP 21.041 GAP 4.04 AZP 88.70 TAL 340.66 TAP 166.32 RCA 146.85 APO 235.43 V2 23.555
RC 211.104 GL -12.50 GP 14.71 ZAL 117.99 ZAP 142.64 ETS 158.38 ZAE 163.44 ETE 71.20 ZAC 104.35 ETC 255.40 CLP 145.27

PLANETOCENTRIC CONIC

C3 12.157 VHL 3.487 DLA -3.17 RAL 155.33 RAD 6567.5 VEL 11.556 PTH 2.02 VHP 4.540 DPA 10.27 RAP 196.30 ECC 1.2001

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 18 42	2003.91	-13.96	28.56	8.71	114.89	19 52 6	1403.9	-10.49	21.61
90.00	6 33 39	4844.39	19.22	209.54	9.76	68.80	7 54 23	4244.4	16.17	202.19
100.00	20 38 34	1746.28	-14.83	9.19	8.28	116.26	21 7 40	1146.3	-11.18	2.30
100.00	7 56 28	4577.25	20.11	189.51	9.38	67.41	9 12 46	3977.3	16.88	182.21
110.00	21 43 25	1543.26	-17.13	352.50	7.00	120.04	22 9 8	943.3	-13.01	345.82
110.00	9 8 7	4353.04	22.49	171.33	8.22	63.55	10 20 40	3753.0	18.75	164.18

DIFFERENTIAL CORRECTIONS
TDE .9806 TRA-1.7165 TC3 3.3635 BAU .6425
RDE .4511 RRA -.5693 RC3 2.0773 FAU .24511
FDE-3.3853 FRA 4.7368 FC-17.4544 BSP 15187
BDE 1.0793 BRA 1.8084 BC3 3.9532 FSP 4347

MID-COURSE EXECUTION ACCURACY
SGT 4009.7 SGR 1877.7 SG3 1338.1
RRT .9614 RRF -.9993 RTF -.9587
SGB 4427.6 R23 -.2350 R13 -.9713
SG1 4402.5 SG2 470.3 THA 24.54

ORBIT DETERMINATION ACCURACY
ST 1821.9 SR 793.9 SS 2371.3
CRT .9925 CRS .9994 CST .9961
LSA 3090.9 MSA 138.0 SSA 10.1
EL1 1985.4 EL2 89.2 ALF 23.44

LAUNCH DATE NOV 2 1964 FLIGHT TIME 252.00 ARRIVAL DATE JUL 12 1965

HELIOCENTRIC CONIC DISTANCE 589.616 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 33.057 GAL -3.54 AZL 90.84 HCA 186.66 SMA 190.80 ECC .23014 INC .8358 V1 30.020
RP 233.07 LAP .10 LOP 226.27 VP 21.054 GAP 3.67 AZP 89.17 TAL 340.87 TAP 167.53 RCA 146.89 APO 234.71 V2 23.593
RC 213.179 GL -8.13 GP 12.89 ZAL 117.99 ZAP 142.30 ETS 161.29 ZAE 165.47 ETE 73.29 ZAC 102.57 ETC 255.52 CLP 144.26

PLANETOCENTRIC CONIC

C3 11.639 VHL 3.412 DLA 1.05 RAL 156.55 RAD 6567.4 VEL 11.534 PTH 2.01 VHP 4.404 DPA 8.62 RAP 195.51 ECC 1.1915

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 52 18	2125.43	-17.31	35.91	9.95	112.77	19 27 44	1525.4	-14.08	28.73
90.00	7 9 47	4704.55	15.56	200.91	9.61	66.04	8 28 12	4104.6	12.19	193.85
100.00	20 14 8	1861.48	-18.17	16.11	9.55	114.15	20 45 9	1261.5	-14.76	8.98
100.00	8 30 38	4443.73	16.41	181.32	9.20	64.66	9 44 42	3843.7	12.87	174.33
110.00	21 23 30	1644.37	-20.47	358.44	8.36	117.99	21 50 54	1044.4	-16.57	351.49
110.00	9 37 46	4233.60	18.69	164.14	7.97	60.84	10 48 20	3633.6	14.66	157.34

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .8582 TRA-1.6894 TC3 3.4459 BAU .6137 SGT 3957.0 SGR 1667.9 SG3 1426.5 ST 1675.4 SR 644.7 SS 2173.5
RDE .3519 RRA -.5049 RC3 1.9183 FAU .25900 RRT .9600 RRF -.9988 RTF -.9588 CRT .9918 CRS .9980 CST .9976
FDE-3.0256 FRA 5.1204 FC-19.2655 BSP 14875 SGB 4294.1 R23 -.2399 R13 -.9695 LSA 2816.9 MSA 105.2 SSA 17.5
BDE .9275 BRA 1.7632 BC3 3.9439 FSP 4680 SG1 4272.3 SG2 432.5 THA 22.27 EL1 1793.5 EL2 77.0 ALF 20.93

LAUNCH DATE NOV 2 1964 FLIGHT TIME 254.00 ARRIVAL DATE JUL 14 1965

HELIOCENTRIC CONIC DISTANCE 593.353 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 33.039 GAL -3.49 AZL 90.49 HCA 187.66 SMA 190.48 ECC .22863 INC .4850 V1 30.020
RP 232.70 LAP .07 LOP 227.27 VP 21.069 GAP 3.29 AZP 89.52 TAL 341.07 TAP 168.74 RCA 146.93 APO 234.03 V2 23.631
RC 215.236 GL -4.79 GP 11.52 ZAL 117.80 ZAP 141.67 ETS 163.58 ZAE 167.06 ETE 76.77 ZAC 101.22 ETC 255.59 CLP 143.18

PLANETOCENTRIC CONIC

C3 11.299 VHL 3.361 DLA 4.30 RAL 157.42 RAD 6567.4 VEL 11.519 PTH 2.01 VHP 4.285 DPA 7.41 RAP 194.87 ECC 1.1860

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 31 32	2220.42	-19.71	41.85	11.07	110.75	19 8 32	1620.4	-16.71	34.46
90.00	7 37 30	4597.24	12.49	194.52	9.72	64.38	8 54 7	3997.2	8.94	187.64
100.00	19 54 53	1951.54	-20.59	21.71	10.71	112.16	20 27 25	1351.5	-17.40	14.37
100.00	8 56 49	4341.34	13.33	175.28	9.29	63.00	10 9 11	3741.3	9.61	168.47
110.00	21 7 46	1723.48	-22.92	3.27	9.58	116.08	21 36 29	1123.5	-19.23	356.08
110.00	10 0 26	4142.18	15.58	158.88	8.01	59.18	11 9 29	3542.2	11.37	152.30

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .7684 TRA-1.6539 TC3 3.4829 BAU .5914 SGT 3897.4 SGR 1512.9 SG3 1510.9 ST 1562.0 SR 546.9 SS 2026.8
RDE .2896 RRA -.4535 RC3 1.7877 FAU .27246 RRT .9585 RRF -.9981 RTF -.9588 CRT .9908 CRS .9952 CST .9988
FDE-2.7504 FRA 5.4524 FC-20.8761 BSP 14531 SGB 4180.8 R23 -.2420 R13 -.9683 LSA 2615.3 MSA 79.4 SSA 29.2
BDE .8212 BRA 1.7149 BC3 3.9149 FSP 4985 SG1 4161.2 SG2 403.9 THA 20.61 EL1 1653.5 EL2 70.0 ALF 19.17

LAUNCH DATE NOV 2 1964 FLIGHT TIME 256.00 ARRIVAL DATE JUL 16 1965

HELIOCENTRIC CONIC DISTANCE 597.102 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 33.022 GAL -3.44 AZL 90.22 HCA 188.66 SMA 190.17 ECC .22719 INC .2159 V1 30.020
RP 232.32 LAP .03 LOP 228.27 VP 21.086 GAP 2.93 AZP 89.79 TAL 341.27 TAP 169.93 RCA 146.97 APO 233.38 V2 23.670
RC 217.275 GL -2.15 GP 10.46 ZAL 117.52 ZAP 140.85 ETS 165.42 ZAE 168.29 ETE 81.65 ZAC 100.16 ETC 255.65 CLP 142.06

PLANETOCENTRIC CONIC

C3 11.054 VHL 3.325 DLA 6.89 RAL 158.06 RAD 6567.4 VEL 11.508 PTH 2.00 VHP 4.177 DPA 6.49 RAP 194.31 ECC 1.1819

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 14 22	2297.47	-21.49	46.80	12.04	108.90	18 52 40	1697.5	-18.71	39.23
90.00	7 59 44	4511.14	9.91	189.52	9.93	63.34	9 14 55	3911.1	6.25	182.75
100.00	19 39 0	2024.50	-22.39	26.38	11.70	110.34	20 12 45	1424.5	-19.42	18.85
100.00	9 17 47	4259.35	10.75	170.56	9.48	61.94	10 28 46	3659.3	6.92	163.87
110.00	20 54 46	1787.39	-24.78	7.31	10.63	114.34	21 24 34	1187.4	-21.28	359.90
110.00	10 18 30	4069.22	12.99	154.81	8.16	58.10	11 26 19	3469.2	8.68	148.37

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .6980 TRA-1.6135 TC3 3.4826 BAU .5715 SGT 3828.0 SGR 1394.3 SG3 1593.0 ST 1468.9 SR 479.6 SS 1915.0
RDE .2481 RRA -.4123 RC3 1.6807 FAU .28550 RRT .9568 RRF -.9971 RTF -.9587 CRT .9894 CRS .9905 CST .9993
FDE-2.5269 FRA 5.7582 FC-22.3598 BSP 14191 SGB 4074.0 R23 -.2425 R13 -.9673 LSA 2459.4 MSA 66.4 SSA 42.4
BDE .7407 BRA 1.6653 BC3 3.8669 FSP 5288 SG1 4056.0 SG2 382.6 THA 19.39 EL1 1543.7 EL2 66.4 ALF 17.94

LAUNCH DATE NOV 2 1964 FLIGHT TIME 258.00 ARRIVAL DATE JUL 18 1965

HELIOCENTRIC CONIC DISTANCE 600.866 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 33.006 GAL -3.39 AZL 90.00 HCA 189.67 SMA 189.88 ECC .22582 INC .0000 V1 30.020
RP 231.95 LAP .00 LOP 229.28 VP 21.105 GAP 2.57 AZP 90.00 TAL 341.46 TAP 171.13 RCA 147.00 APO 232.76 V2 23.709
RC 219.295 GL -.01 GP 9.61 ZAL 117.19 ZAP 139.90 ETS 166.93 ZAE 169.21 ETE 87.91 ZAC 99.30 ETC 255.69 CLP 140.88

PLANETOCENTRIC CONIC

C3 10.864 VHL 3.296 DLA 9.01 RAL 158.53 RAD 6567.4 VEL 11.500 PTH 2.00 VHP 4.078 DPA 5.79 RAP 193.80 ECC 1.1788

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 59 43	2361.79	-22.85	51.03	12.86	107.20	18 39 5	1761.8	-20.28	43.30
90.00	8 18 9	4439.72	7.70	185.43	10.16	62.67	9 32 9	3839.7	3.97	178.73
100.00	19 25 27	2085.26	-23.77	30.37	12.54	108.68	20 0 12	1485.3	-21.00	22.66
100.00	9 35 6	4191.47	8.55	166.72	9.70	61.25	10 44 58	3591.5	4.65	160.11
110.00	20 43 42	1840.38	-26.22	10.75	11.52	112.76	21 14 23	1240.4	-22.91	3.16
110.00	10 33 20	4009.12	10.81	151.53	8.35	57.37	11 40 9	3409.1	6.43	145.17

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .6508 TRA-1.5596 TC3 3.4953 BAU .5585 SGT 3758.1 SGR 1305.1 SG3 1678.3 ST 1401.0 SR 434.7 SS 1841.5
RDE .2216 RRA -.3765 RC3 1.6023 FAU .29993 RRT .9559 RRF -.9959 RTF -.9593 CRT .9881 CRS .9838 CST .9988
FDE-2.3730 FRA 6.0147 FC-23.9007 BSP 13604 SGB 3978.2 R23 -.2390 R13 -.9671 LSA 2352.6 MSA 80.9 SSA 40.7
BDE .6875 BRA 1.6044 BC3 3.8451 FSP 5525 SG1 3961.6 SG2 363.4 THA 18.53 EL1 1465.5 EL2 63.9 ALF 17.08

LAUNCH DATE NOV 2 1964 FLIGHT TIME 260.00 ARRIVAL DATE JUL 20 1965

HELIOCENTRIC CONIC DISTANCE 604.640 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.991 GAL -3.34 AZL 89.83 HCA 190.68 SMA 189.61 ECC .22452 INC .1693 V1 30.020
RP 231.57 LAP -.03 LOP 230.29 VP 21.125 GAP 2.21 AZP 90.17 TAL 341.63 TAP 172.31 RCA 147.04 APO 232.18 V2 23.748
RC 221.297 GL 1.76 GP 8.92 ZAL 116.85 ZAP 138.85 ETS 168.19 ZAE 169.83 ETE 95.40 ZAC 98.58 ETC 255.72 CLP 139.66

PLANETOCENTRIC CONIC

C3 10.709 VHL 3.272 DLA 10.77 RAL 158.89 RAD 6567.4 VEL 11.493 PTH 2.00 VHP 3.984 DPA 5.25 RAP 193.33 ECC 1.1762

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 46 55	2416.64	-23.90	54.70	13.56	105.65	18 27 11	1816.6	-21.53	46.84
90.00	8 33 50	4379.00	5.78	182.00	10.40	62.23	9 46 49	3779.0	2.02	175.34
100.00	19 13 38	2136.94	-24.85	33.82	13.25	107.17	19 49 15	1536.9	-22.27	25.98
100.00	9 49 47	4133.93	6.65	163.50	9.93	60.79	10 58 41	3533.9	2.71	156.94
110.00	20 34 5	1885.21	-27.37	13.73	12.27	111.33	21 5 31	1285.2	-24.22	5.98
110.00	10 45 50	3958.44	8.93	148.80	8.54	56.87	11 51 48	3358.4	4.51	142.50

DIFFERENTIAL CORRECTIONS
TDE .5920 TRA-1.5242 TC3 3.4050 BAU .5344
RDE .2006 RRA -.3499 RC3 1.5293 FAU .31235
FDE-2.2020 FRA 6.3110 FC-25.2503 BSP 13506
BDE .6250 BRA 1.5639 BC3 3.7327 FSP 5864

MID-COURSE EXECUTION ACCURACY
SGT 3663.4 SGR 1230.5 SG3 1759.0
RRT .9514 RRF -.9943 RTF -.9571
SGB 3864.5 R23 -.2430 R13 -.9649
SG1 3847.7 SG2 360.7 THA 17.88

ORBIT DETERMINATION ACCURACY
ST 1320.2 SR 399.0 SS 1771.8
CRT .9842 CRS .9738 CST .9976
LSA 2242.6 MSA 103.6 SSA 37.7
EL1 1377.5 EL2 67.8 ALF 16.61

LAUNCH DATE NOV 2 1964 FLIGHT TIME 262.00 ARRIVAL DATE JUL 22 1965

HELIOCENTRIC CONIC DISTANCE 608.427 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.976 GAL -3.29 AZL 89.68 HCA 191.69 SMA 189.35 ECC .22329 INC .3202 V1 30.020
RP 231.20 LAP -.06 LOP 231.30 VP 21.146 GAP 1.86 AZP 90.31 TAL 341.80 TAP 173.49 RCA 147.07 APO 231.62 V2 23.788
RC 223.281 GL 3.25 GP 8.35 ZAL 116.51 ZAP 137.73 ETS 169.26 ZAE 170.12 ETE 103.78 ZAC 97.97 ETC 255.75 CLP 138.41

PLANETOCENTRIC CONIC

C3 10.577 VHL 3.252 DLA 12.27 RAL 159.17 RAD 6567.4 VEL 11.488 PTH 2.00 VHP 3.895 DPA 4.83 RAP 192.87 ECC 1.1741

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 35 30	2484.33	-24.74	57.94	14.14	104.23	18 16 35	1864.3	-22.54	49.96
90.00	8 47 26	4326.28	4.10	179.03	10.63	61.96	9 59 32	3726.3	.32	172.40
100.00	19 3 8	2181.73	-25.72	36.87	13.85	105.78	19 39 30	1581.7	-23.30	28.90
100.00	10 2 29	4084.11	4.99	160.74	10.14	60.49	11 10 33	3484.1	1.02	154.20
110.00	20 25 33	1923.81	-28.29	16.35	12.92	110.03	20 57 37	1323.8	-25.30	8.45
110.00	10 56 35	3914.79	7.30	146.47	8.72	56.51	12 1 48	3314.8	2.85	140.22

DIFFERENTIAL CORRECTIONS
TDE .5474 TRA-1.4778 TC3 3.3304 BAU .5150
RDE .1860 RRA -.3270 RC3 1.4735 FAU .30554
FDE-2.0608 FRA 6.5892 FC-26.6456 BSP 13182
BDE .5781 BRA 1.5135 BC3 3.6418 FSP 6180

MID-COURSE EXECUTION ACCURACY
SGT 3566.7 SGR 1172.0 SG3 1842.4
RRT .9480 RRF -.9925 RTF -.9559
SGB 3754.3 R23 -.2427 R13 -.9636
SG1 3737.4 SG2 355.8 THA 17.47

ORBIT DETERMINATION ACCURACY
ST 1254.2 SR 373.5 SS 1721.2
CRT .9804 CRS .9607 CST .9952
LSA 2158.0 MSA 130.3 SSA 34.4
EL1 1306.8 EL2 70.6 ALF 16.32

LAUNCH DATE NOV 2 1964 FLIGHT TIME 264.00 ARRIVAL DATE JUL 24 1965

HELIOCENTRIC CONIC DISTANCE 612.226 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.962 GAL -3.25 AZL 89.56 HCA 192.71 SMA 189.10 ECC .22212 INC .4433 V1 30.020
RP 230.82 LAP -.10 LOP 232.31 VP 21.169 GAP 1.52 AZP 90.43 TAL 341.95 TAP 174.66 RCA 147.09 APO 231.10 V2 23.827
RC 225.247 GL 4.53 GP 7.87 ZAL 116.18 ZAP 136.53 ETS 170.18 ZAE 170.10 ETE 112.54 ZAC 97.44 ETC 255.77 CLP 137.10

PLANETOCENTRIC CONIC

C3 10.462 VHL 3.234 DLA 13.57 RAL 159.38 RAD 6567.4 VEL 11.483 PTH 2.00 VHP 3.811 DPA 4.51 RAP 192.41 ECC 1.1722

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 25 13	2506.39	-25.41	60.84	14.63	102.93	18 6 59	1906.4	-23.38	52.76
90.00	8 59 25	4279.78	2.61	176.43	10.84	61.79	10 10 45	3679.8	-1.18	169.80
100.00	18 53 40	2221.10	-26.42	39.58	14.36	104.52	19 30 41	1621.1	-24.16	31.51
100.00	10 13 39	4040.30	3.52	158.32	10.34	60.30	11 20 59	3440.3	-.46	151.80
110.00	20 17 54	1957.53	-29.06	18.68	13.47	108.85	20 50 32	1357.5	-26.21	10.65
110.00	11 5 54	3876.63	5.86	144.45	8.88	56.26	12 10 31	3276.6	1.39	138.22

DIFFERENTIAL CORRECTIONS
TDE .5137 TRA-1.4242 TC3 3.2546 BAU .4973
RDE .1765 RRA -.3067 RC3 1.4323 FAU .33976
FDE-1.9546 FRA 6.8463 FC-28.1157 BSP 12711
BDE .5432 BRA 1.4568 BC3 3.5558 FSP 6463

MID-COURSE EXECUTION ACCURACY
SGT 3463.5 SGR 1126.3 SG3 1928.9
RRT .9448 RRF -.9905 RTF -.9547
SGB 3642.0 R23 -.2412 R13 -.9624
SG1 3624.9 SG2 352.6 THA 17.25

ORBIT DETERMINATION ACCURACY
ST 1199.3 SR 355.9 SS 1688.5
CRT .9766 CRS .9454 CST .9918
LSA 2095.2 MSA 157.7 SSA 32.0
EL1 1248.8 EL2 73.4 ALF 16.22

LAUNCH DATE NOV 2 1964 FLIGHT TIME 266.00 ARRIVAL DATE JUL 26 1965

HELIOCENTRIC CONIC DISTANCE 616.036 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.949 GAL -3.21 AZL 89.45 HCA 193.73 SMA 188.86 ECC .22102 INC .5501 V1 30.020
RP 230.43 LAP -.13 LOP 233.33 VP 21.194 GAP 1.18 AZP 90.54 TAL 342.10 TAP 175.82 RCA 147.12 APO 230.61 V2 23.867
RC 227.193 GL 5.64 GP 7.46 ZAL 115.86 ZAP 135.27 ETS 170.97 ZAE 169.77 ETE 121.08 ZAC 96.97 ETC 255.80 CLP 135.76

PLANETOCENTRIC CONIC

C3 10.360 VHL 3.219 DLA 14.69 RAL 159.55 RAD 6567.4 VEL 11.478 PTH 2.00 VHP 3.731 DPA 4.27 RAP 191.95 ECC 1.1705

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 15 50	2543.95	-25.96	63.46	15.05	101.73	17 58 14	1943.9	-24.08	55.29
90.00	9 10 9	4238.25	1.27	174.11	11.04	61.71	10 20 47	3638.3	-2.52	167.49
100.00	18 45 5	2256.13	-28.99	42.03	14.80	103.35	19 22 41	1656.1	-24.89	33.86
100.00	10 23 35	4001.30	2.20	156.18	10.52	60.18	11 30 16	3401.3	-1.78	149.66
110.00	20 10 59	1987.33	-29.70	20.76	13.94	107.77	20 44 7	1387.3	-26.98	12.63
110.00	11 14 10	3842.87	4.58	142.68	9.04	56.09	12 18 13	3242.9	.10	136.46

DIFFERENTIAL CORRECTIONS
TDE .4796 TRA-1.3729 TC3 3.1419 BAU .4762
RDE .1692 RRA -.2901 RC3 1.3970 FAU .35348
FDE-1.8448 FRA 7.1197 FC-29.5395 BSP 12319
BDE .5086 BRA 1.4032 BC3 3.4385 FSP 6783

MID-COURSE EXECUTION ACCURACY
SGT 3347.1 SGR 1088.4 SG3 2015.3
RRT .9402 RRF -.9882 RTF -.9526
SGB 3519.6 R23 -.2418 R13 -.9606
SG1 3501.7 SG2 354.3 THA 17.18

ORBIT DETERMINATION ACCURACY
ST 1143.3 SR 342.2 SS 1661.3
CRT .9718 CRS .9266 CST .9874
LSA 2036.9 MSA 184.2 SSA 30.6
EL1 1190.9 EL2 77.5 ALF 16.29

LAUNCH DATE NOV 2 1964 FLIGHT TIME 268.00 ARRIVAL DATE JUL 28 1965

HELIOCENTRIC CONIC DISTANCE 619.858 EARTH TO MARS

RL	148.42	LAL	-.00	LOL	39.61	VL	32.937	GAL	-3.18	AZL	89.36	HCA	194.75	SMA	188.64	ECC	.21998	INC	.6420	V1	30.020
RP	230.05	LAP	-.16	LOP	234.36	VP	21.220	GAP	.85	AZP	90.62	TAL	342.23	TAP	176.98	RCA	147.15	APO	230.14	V2	23.907
RC	229.120	GL	6.61	GP	7.11	ZAL	115.56	ZAP	133.95	ETS	171.68	ZAE	169.16	ETE	128.94	ZAC	96.54	ETC	255.82	CLP	134.38

PLANETOCENTRIC CONIC

C3	10.268	VHL	3.204	DLA	15.69	RAL	159.68	RAD	6567.4	VEL	11.474	PTH	1.99	VHP	3.654	DPA	4.10	RAP	191.47	ECC	1.1690

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 7 13	2577.83	-26.41	65.84	15.41	100.61	17 50 11	1977.8	-24.67	57.60
90.00	9 19 51	4200.78	.06	172.02	11.22	61.68	10 29 52	3600.8	-3.72	165.39
100.00	18 37 13	2287.61	-27.47	44.25	15.17	102.28	19 15 20	1687.6	-25.50	36.00
100.00	10 32 32	3966.23	1.01	154.25	10.69	60.12	11 38 39	3366.2	-2.97	147.73
110.00	20 4 41	2013.92	-30.23	22.65	14.36	106.77	20 38 15	1413.9	-27.64	14.41
110.00	11 21 33	3812.69	3.43	141.10	9.18	55.97	12 25 6	3212.7	-1.06	134.89

DIFFERENTIAL CORRECTIONS

TDE	.4518	TRA	-1.3164	TC3	3.0258	BAU	.4560
RDE	.1645	RRA	-.2755	RC3	1.3714	FAU	.36805
FDE	-1.7551	FRA	7.3826	FC	-31.0331	BSP	11821
BDE	.4808	BRA	1.3449	BC3	3.3221	FSP	7087

MID-COURSE EXECUTION ACCURACY

SGT	3223.4	SGR	1058.7	SG3	2104.7		
RRT	.9356	RRF	-.9856	RTF	-.9504		
SGB	3392.8	R23	-.2418	R13	-.9588		
SG1	3374.0	SG2	357.0	THA	17.28		

ORBIT DETERMINATION ACCURACY

ST	1092.7	SR	332.9	SS	1644.3
CRT	.9672	CRS	.9058	CST	.9817
LSA	1990.8	MSA	210.5	SSA	29.6
EL1	1139.4	EL2	81.1	ALF	16.50

LAUNCH DATE NOV 2 1964 FLIGHT TIME 270.00 ARRIVAL DATE JUL 30 1965

HELIOCENTRIC CONIC DISTANCE 623.691 EARTH TO MARS

RL	148.42	LAL	-.00	LOL	39.61	VL	32.925	GAL	-3.14	AZL	89.28	HCA	195.77	SMA	188.43	ECC	.21900	INC	.7231	V1	30.020
RP	229.67	LAP	-.20	LOP	235.38	VP	21.247	GAP	.52	AZP	90.70	TAL	342.36	TAP	178.13	RCA	147.17	APO	229.70	V2	23.948
RC	231.027	GL	7.47	GP	6.80	ZAL	115.28	ZAP	132.58	ETS	172.30	ZAE	168.30	ETE	135.85	ZAC	96.15	ETC	255.84	CLP	132.95

PLANETOCENTRIC CONIC

C3	10.185	VHL	3.191	DLA	16.57	RAL	159.80	RAD	6567.4	VEL	11.471	PTH	1.99	VHP	3.581	DPA	3.98	RAP	190.98	ECC	1.1676

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 59 16	2608.65	-26.77	68.02	15.73	99.58	17 42 44	2008.6	-25.18	59.71
90.00	9 28 42	4166.70	-1.04	170.12	11.40	61.70	10 38 9	3566.7	-4.81	163.48
100.00	18 29 58	2316.13	-27.87	46.27	15.50	101.28	19 8 34	1716.1	-26.03	37.96
100.00	10 40 41	3934.45	-.07	152.51	10.86	60.11	11 46 15	3334.5	-4.04	145.98
110.00	19 58 55	2037.83	-30.69	24.36	14.72	105.85	20 32 53	1437.8	-28.21	16.04
110.00	11 28 13	3785.52	2.40	139.68	9.32	55.89	12 31 19	3185.5	-2.09	133.47

DIFFERENTIAL CORRECTIONS

TDE	.4242	TRA	-1.2600	TC3	2.8781	BAU	.4328
RDE	.1610	RRA	-.2634	RC3	1.3496	FAU	.38220
FDE	-1.6600	FRA	7.6587	FC	-32.4886	BSP	11347
BDE	.4537	BRA	1.2872	BC3	3.1789	FSP	7419

MID-COURSE EXECUTION ACCURACY

SGT	3086.2	SGR	1033.9	SG3	2193.8		
RRT	.9298	RRF	-.9828	RTF	-.9472		
SGB	3254.8	R23	-.2438	R13	-.9564		
SG1	3234.5	SG2	363.1	THA	17.53		

ORBIT DETERMINATION ACCURACY

ST	1041.3	SR	325.8	SS	1631.0
CRT	.9620	CRS	.8818	CST	.9748
LSA	1947.8	MSA	236.2	SSA	29.0
EL1	1087.8	EL2	85.1	ALF	16.86

LAUNCH DATE NOV 2 1964 FLIGHT TIME 272.00 ARRIVAL DATE AUG 1 1965

HELIOCENTRIC CONIC DISTANCE 627.535 EARTH TO MARS

RL	148.42	LAL	-.00	LOL	39.61	VL	32.914	GAL	-3.11	AZL	89.21	HCA	196.80	SMA	188.24	ECC	.21807	INC	.7936	V1	30.020
RP	229.28	LAP	-.23	LOP	236.41	VP	21.275	GAP	.20	AZP	90.76	TAL	342.47	TAP	179.27	RCA	147.19	APO	229.29	V2	23.988
RC	232.913	GL	8.24	GP	6.53	ZAL	115.02	ZAP	131.16	ETS	172.86	ZAE	167.24	ETE	141.75	ZAC	95.79	ETC	255.87	CLP	131.49

PLANETOCENTRIC CONIC

C3	10.109	VHL	3.180	DLA	17.36	RAL	159.89	RAD	6567.4	VEL	11.467	PTH	1.99	VHP	3.511	DPA	3.92	RAP	190.47	ECC	1.1664

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 51 53	2636.87	-27.08	70.03	16.01	98.62	17 35 50	2036.9	-25.61	61.67
90.00	9 36 51	4135.52	-2.04	168.38	11.57	61.75	10 45 47	3535.5	-5.80	161.72
100.00	18 23 17	2342.14	-28.20	48.14	15.80	100.36	19 2 19	1742.1	-26.48	39.76
100.00	10 48 9	3905.48	-1.05	150.92	11.02	60.12	11 53 14	3305.5	-5.02	144.38
110.00	19 53 37	2059.48	-31.08	25.92	15.05	105.00	20 27 57	1459.5	-28.71	17.52
110.00	11 34 17	3760.90	1.46	138.39	9.45	55.84	12 36 58	3160.9	-3.03	132.19

DIFFERENTIAL CORRECTIONS

TDE	.4000	TRA	-1.2012	TC3	2.7169	BAU	.4091
RDE	.1593	RRA	-.2525	RC3	1.3347	FAU	.39709
FDE	-1.5821	FRA	7.9299	FC	-34.0058	BSP	10821
BDE	.4305	BRA	1.2274	BC3	3.0271	FSP	7737

MID-COURSE EXECUTION ACCURACY

SGT	2940.7	SGR	1014.9	SG3	2285.8		
RRT	.9229	RRF	-.9799	RTF	-.9431		
SGB	3110.9	R23	-.2475	R13	-.9534		
SG1	3088.6	SG2	372.0	THA	17.94		

ORBIT DETERMINATION ACCURACY

ST	992.5	SR	321.7	SS	1625.6
CRT	.9569	CRS	.8569	CST	.9671
LSA	1913.9	MSA	259.4	SSA	28.8
EL1	1039.5	EL2	89.2	ALF	17.36

LAUNCH DATE NOV 2 1964 FLIGHT TIME 274.00 ARRIVAL DATE AUG 3 1965

HELIOCENTRIC CONIC DISTANCE 631.389 EARTH TO MARS

RL	148.42	LAL	-.00	LOL	39.61	VL	32.903	GAL	-3.09	AZL	89.14	HCA	197.84	SMA	188.05	ECC	.21720	INC	.8570	V1	30.020
RP	228.89	LAP	-.26	LOP	237.44	VP	21.305	GAP	-.11	AZP	90.82	TAL	342.57	TAP	180.40	RCA	147.21	APO	228.89	V2	24.029
RC	234.778	GL	8.93	GP	6.29	ZAL	114.78	ZAP	129.69	ETS	173.36	ZAE	166.01	ETE	146.72	ZAC	95.46	ETC	255.89	CLP	129.98

PLANETOCENTRIC CONIC

C3	10.041	VHL	3.169	DLA	18.07	RAL	159.98	RAD	6567.4	VEL	11.464	PTH	1.99	VHP	3.444	DPA	3.90	RAP	189.94	ECC	1.1653

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 45 2	2662.85	-27.33	71.89	16.26	97.72	17 29 25	2062.8	-25.98	63.48
90.00	9 44 24	4106.83	-2.97	166.78	11.74	61.83	10 52 51	3506.8	-6.71	160.10
100.00	18 17 5	2365.98	-28.48	49.85	16.06	99.49	18 56 31	1766.0	-26.87	41.42
100.00	10 55 2	3878.93	-1.95	149.46	11.18	60.17	11 59 41	3278.9	-5.91	142.91
110.00	19 48 45	2079.18	-31.42	27.36	15.35	104.21	20 23 25	1479.2	-29.15	18.89
110.00	11 39 51	3738.50	.60	137.22	9.58	55.82	12 42 10	3138.5	-3.89	131.01

DIFFERENTIAL CORRECTIONS

TDE	.3778	TRA	-1.1398	TC3	2.5332	BAU	.3836
RDE	.1583	RRA	-.2433	RC3	1.3228	FAU	.41180
FDE	-1.5033	FRA	8.2072	FC	-35.5049	BSP	10268
BDE	.4097	BRA	1.1654	BC3	2.8578	FSP	8071

MID-COURSE EXECUTION ACCURACY

SGT	2782.8	SGR	999.4	SG3	2377.8		
RRT	.9149	RRF	-.9768	RTF	-.9378		
SGB	2956.8	R23	-.2528	R13	-.9498		
SG1	2931.9	SG2	382.8	THA	18.52		

ORBIT DETERMINATION ACCURACY

ST	944.5	SR	319.1	SS	1623.6
CRT	.9524	CRS	.8299	CST	.9576
LSA	1883.9	MSA	283.0	SSA	28.6
EL1	992.6	EL2	92.5	ALF	18.00

LAUNCH DATE NOV 2 1964 FLIGHT TIME 276.00 ARRIVAL DATE AUG 5 1965

HELIOCENTRIC CONIC DISTANCE 635.254 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.893 GAL -3.06 AZL 89.09 HCA 198.87 SMA 187.88 ECC .21638 INC .9141 V1 30.020
RP 228.51 LAP -.30 LOP 238.48 VP 21.335 GAP -.42 AZP 90.87 TAL 342.66 TAP 181.53 RCA 147.22 APO 228.53 V2 24.070
RC 236.623 GL 9.55 GP 6.08 ZAL 114.56 ZAP 128.17 ETS 173.82 ZAE 164.64 ETE 150.87 ZAC 95.14 ETC 255.92 CLP 128.43

PLANETOCENTRIC CONIC

C3 9.979 VHL 3.159 DLA 18.72 RAL 160.06 RAD 6567.4 VEL 11.462 PTH 1.99 VHP 3.380 DPA 3.92 RAP 189.39 ECC 1.1642

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 38 39	2686.87	-27.54	73.61	16.49	96.87	17 23 26	2086.9	-26.30	65.17
90.00	9 51 26	4080.36	-3.82	165.30	11.91	61.92	10 59 26	3480.4	-7.54	158.60
100.00	18 11 21	2387.94	-28.71	51.44	16.31	98.69	18 51 9	1787.9	-27.21	42.96
100.00	11 1 25	3854.52	-2.78	148.12	11.34	60.22	12 5 40	3254.5	-6.72	141.55
110.00	19 44 17	2097.19	-31.71	28.68	15.63	103.48	20 19 14	1497.2	-29.54	20.15
110.00	11 44 59	3718.03	-.18	136.16	9.72	55.82	12 46 57	3118.0	-4.67	129.94

DIFFERENTIAL CORRECTIONS
TDE .3585 TRA-1.0757 TC3 2.3335 BAU .3573
RDE .1582 RRA -.2352 RC3 1.3145 FAU .42670
FDE-1.4301 FRA 8.4873 FC-37.0168 BSP 9673
BDE .3918 BRA 1.1012 BC3 2.6783 FSP 8411

MID-COURSE EXECUTION ACCURACY
SGT 2615.3 SGR 987.4 SG3 2470.9
RRT .9057 RRF -.9735 RTF -.9312
SGB 2795.5 R23 -.2600 R13 -.9454
SG1 2767.4 SG2 395.5 THA 19.29

ORBIT DETERMINATION ACCURACY
ST 898.1 SR 318.1 SS 1625.9
CRT .9491 CRS .8021 CST .9461
LSA 1859.2 MSA 306.2 SSA 28.4
EL1 948.0 EL2 94.9 ALF 18.77

LAUNCH DATE NOV 2 1964 FLIGHT TIME 278.00 ARRIVAL DATE AUG 7 1965

HELIOCENTRIC CONIC DISTANCE 639.129 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.884 GAL -3.04 AZL 89.03 HCA 199.91 SMA 187.71 ECC .21562 INC .9651 V1 30.020
RP 228.12 LAP -.33 LOP 239.52 VP 21.367 GAP -.73 AZP 90.91 TAL 342.74 TAP 182.65 RCA 147.24 APO 228.18 V2 24.111
RC 238.446 GL 10.12 GP 5.88 ZAL 114.37 ZAP 126.61 ETS 174.24 ZAE 163.16 ETE 154.34 ZAC 94.83 ETC 255.94 CLP 126.83

PLANETOCENTRIC CONIC

C3 9.924 VHL 3.150 DLA 19.30 RAL 160.14 RAD 6567.4 VEL 11.459 PTH 1.99 VHP 3.320 DPA 3.97 RAP 188.80 ECC 1.1633

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 32 43	2709.14	-27.71	75.22	16.70	96.09	17 17 53	2109.1	-26.58	66.74
90.00	9 58 0	4055.87	-4.60	163.93	12.08	62.03	11 5 36	3455.9	-8.31	157.21
100.00	18 6 3	2408.20	-28.91	52.92	16.53	97.94	18 46 11	1808.2	-27.51	44.39
100.00	11 7 22	3832.04	-3.53	146.89	11.50	60.30	12 11 14	3232.0	-7.46	140.30
110.00	19 40 11	2113.69	-31.97	29.90	15.88	102.80	20 15 25	1513.7	-29.88	21.31
110.00	11 49 43	3699.32	-.90	135.18	9.85	55.83	12 51 23	3099.3	-5.38	128.96

DIFFERENTIAL CORRECTIONS
TDE .3399 TRA-1.0096 TC3 2.1111 BAU .3296
RDE .1588 RRA -.2281 RC3 1.3092 FAU .44176
FDE-1.3614 FRA 8.7658 FC-38.5375 BSP 9040
BDE .3751 BRA 1.0350 BC3 2.4841 FSP 8743

MID-COURSE EXECUTION ACCURACY
SGT 2436.5 SGR 978.2 SG3 2564.5
RRT .8940 RRF -.9701 RTF -.9222
SGB 2625.5 R23 -.2705 R13 -.9396
SG1 2593.0 SG2 411.9 THA 20.28

ORBIT DETERMINATION ACCURACY
ST 851.1 SR 318.4 SS 1631.1
CRT .9463 CRS .7738 CST .9333
LSA 1838.1 MSA 327.1 SSA 28.5
EL1 903.5 EL2 96.9 ALF 19.73

LAUNCH DATE NOV 2 1964 FLIGHT TIME 280.00 ARRIVAL DATE AUG 9 1965

HELIOCENTRIC CONIC DISTANCE 643.015 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.875 GAL -3.02 AZL 88.99 HCA 200.96 SMA 187.56 ECC .21491 INC 1.0116 V1 30.020
RP 227.73 LAP -.36 LOP 240.56 VP 21.400 GAP -1.03 AZP 90.95 TAL 342.80 TAP 183.76 RCA 147.25 APO 227.86 V2 24.152
RC 240.248 GL 10.63 GP 5.71 ZAL 114.20 ZAP 125.00 ETS 174.63 ZAE 161.57 ETE 157.25 ZAC 94.53 ETC 255.97 CLP 125.20

PLANETOCENTRIC CONIC

C3 9.874 VHL 3.142 DLA 19.82 RAL 160.23 RAD 6567.4 VEL 11.457 PTH 1.99 VHP 3.262 DPA 4.06 RAP 188.20 ECC 1.1625

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 27 13	2729.84	-27.85	76.72	16.90	95.35	17 12 43	2129.8	-26.82	68.21
90.00	10 4 11	4033.18	-5.32	162.65	12.26	62.15	11 11 24	3433.2	-9.01	155.91
100.00	18 1 8	2426.96	-29.08	54.28	16.75	97.24	18 41 35	1827.0	-27.78	45.73
100.00	11 12 56	3811.30	-4.23	145.74	11.66	60.38	12 16 27	3211.3	-8.15	139.14
110.00	19 36 25	2128.85	-32.19	31.03	16.13	102.17	20 11 54	1528.9	-30.18	22.39
110.00	11 54 9	3682.16	-1.55	134.28	9.99	55.85	12 55 31	3082.2	-6.02	128.05

DIFFERENTIAL CORRECTIONS
TDE .3235 TRA -.9404 TC3 1.8693 BAU .3010
RDE .1599 RRA -.2218 RC3 1.3059 FAU .45673
FDE-1.2970 FRA 9.0461 FC-40.0437 BSP 8365
BDE .3609 BRA .9662 BC3 2.2803 FSP 9076

MID-COURSE EXECUTION ACCURACY
SGT 2247.3 SGR 971.3 SG3 2657.9
RRT .8795 RRF -.9666 RTF -.9101
SGB 2448.2 R23 -.2842 R13 -.9324
SG1 2409.9 SG2 431.1 THA 21.53

ORBIT DETERMINATION ACCURACY
ST 805.1 SR 319.7 SS 1639.4
CRT .9453 CRS .7454 CST .9178
LSA 1821.1 MSA 347.7 SSA 28.6
EL1 860.8 EL2 97.5 ALF 20.86

LAUNCH DATE NOV 2 1964 FLIGHT TIME 282.00 ARRIVAL DATE AUG 11 1965

HELIOCENTRIC CONIC DISTANCE 646.910 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.866 GAL -3.00 AZL 88.95 HCA 202.00 SMA 187.41 ECC .21424 INC 1.0542 V1 30.020
RP 227.34 LAP -.39 LOP 241.61 VP 21.434 GAP -1.32 AZP 90.98 TAL 342.86 TAP 184.86 RCA 147.26 APO 227.56 V2 24.193
RC 242.030 GL 11.11 GP 5.55 ZAL 114.05 ZAP 123.34 ETS 175.00 ZAE 159.90 ETE 159.72 ZAC 94.23 ETC 256.00 CLP 123.52

PLANETOCENTRIC CONIC

C3 9.831 VHL 3.135 DLA 20.30 RAL 160.31 RAD 6567.4 VEL 11.455 PTH 1.99 VHP 3.208 DPA 4.18 RAP 187.56 ECC 1.1618

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 22 6	2749.10	-27.96	78.12	17.10	94.66	17 7 55	2149.1	-27.02	69.58
90.00	10 9 59	4012.15	-5.99	161.47	12.44	62.27	11 16 51	3412.2	-9.66	154.71
100.00	17 56 37	2444.32	-29.22	55.56	16.96	96.58	18 37 21	1844.3	-28.01	46.96
100.00	11 18 9	3792.16	-4.88	144.69	11.83	60.47	12 21 21	3192.2	-8.77	138.07
110.00	19 33 0	2142.80	-32.39	32.07	16.37	101.58	20 8 42	1542.8	-30.45	23.38
110.00	11 58 16	3666.45	-2.15	133.46	10.14	55.88	12 59 22	3066.4	-6.62	127.22

DIFFERENTIAL CORRECTIONS
TDE .3088 TRA -.8690 TC3 1.6069 BAU .2720
RDE .1614 RRA -.2163 RC3 1.3040 FAU .47149
FDE-1.2335 FRA 9.3318 FC-41.5225 BSP 7667
BDE .3484 BRA .8955 BC3 2.0694 FSP 9419

MID-COURSE EXECUTION ACCURACY
SGT 2049.5 SGR 966.1 SG3 2750.8
RRT .8606 RRF -.9630 RTF -.8934
SGB 2265.8 R23 -.3021 R13 -.9231
SG1 2219.8 SG2 454.2 THA 23.10

ORBIT DETERMINATION ACCURACY
ST 759.8 SR 321.9 SS 1650.3
CRT .9462 CRS .7169 CST .8989
LSA 1807.8 MSA 368.0 SSA 28.6
EL1 819.5 EL2 96.6 ALF 22.17

LAUNCH DATE NOV 2 1964 FLIGHT TIME 284.00 ARRIVAL DATE AUG 13 1965

HELIOCENTRIC CONIC DISTANCE 650.815 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.858 GAL -2.99 AZL 88.91 HCA 203.05 SMA 187.27 ECC .21363 INC 1.0930 V1 30.020
RP 226.95 LAP -.43 LOP 242.66 VP 21.469 GAP -1.61 AZP 91.01 TAL 342.90 TAP 185.95 RCA 147.27 APO 227.28 V2 24.235
RC 243.792 GL 11.54 GP 5.40 ZAL 113.93 ZAP 121.65 ETS 175.34 ZAE 158.15 ETE 161.81 ZAC 93.95 ETC 256.04 CLP 121.80

PLANETOCENTRIC CONIC

C3 9.792 VHL 3.129 DLA 20.74 RAL 160.41 RAD 6567.4 VEL 11.453 PTH 1.99 VHP 3.157 DPA 4.32 RAP 186.89 ECC 1.1612

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 17 23	2767.02	-28.06	79.42	17.30	94.01	17 3 30	2167.0	-27.20	70.86
90.00	10 15 27	3992.68	-6.60	160.37	12.63	62.40	11 22 0	3392.7	-10.25	153.58
100.00	17 52 28	2460.41	-29.34	56.74	17.17	95.97	18 33 28	1860.4	-28.21	48.12
100.00	11 23 3	3774.52	-5.47	143.71	12.01	60.57	12 25 58	3174.5	-9.35	137.07
110.00	19 29 53	2155.63	-32.56	33.03	16.61	101.04	20 5 49	1555.6	-30.70	24.31
110.00	12 2 8	3652.07	-2.70	132.71	10.30	55.91	13 3 0	3052.1	-7.16	126.46

DIFFERENTIAL CORRECTIONS
TDE .2951 TRA -.7951 TC3 1.3237 BAU .2432
RDE .1634 RRA -.2114 RC3 1.3034 FAU .48613
FDE-1.1744 FRA 9.6162 FC-42.9793 BSP 6946
BDE .3373 BRA .8228 BC3 1.8577 FSP 9757

MID-COURSE EXECUTION ACCURACY
SGT 1844.4 SGR 962.5 SG3 2842.8
RRT .8348 RRF -.9593 RTF -.8693
SGB 2080.4 R23 -.3253 R13 -.9110
SG1 2023.5 SG2 483.0 THA 25.07

ORBIT DETERMINATION ACCURACY
ST 714.6 SR 324.8 SS 1663.2
CRT .9488 CRS .6889 CST .8767
LSA 1797.9 MSA 386.5 SSA 28.8
EL1 779.3 EL2 94.1 ALF 23.70

LAUNCH DATE NOV 2 1964 FLIGHT TIME 286.00 ARRIVAL DATE AUG 15 1965

HELIOCENTRIC CONIC DISTANCE 654.729 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.851 GAL -2.97 AZL 88.87 HCA 204.11 SMA 187.15 ECC .21306 INC 1.1287 V1 30.020
RP 226.56 LAP -.46 LOP 243.71 VP 21.504 GAP -1.90 AZP 91.03 TAL 342.93 TAP 187.04 RCA 147.27 APO 227.02 V2 24.277
RC 245.534 GL 11.94 GP 5.27 ZAL 113.83 ZAP 119.91 ETS 175.66 ZAE 156.34 ETE 163.61 ZAC 93.66 ETC 256.08 CLP 120.05

PLANETOCENTRIC CONIC

C3 9.759 VHL 3.124 DLA 21.13 RAL 160.51 RAD 6567.4 VEL 11.452 PTH 1.99 VHP 3.110 DPA 4.49 RAP 186.20 ECC 1.1606

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 13 2	2783.68	-28.13	80.63	17.49	93.40	16 59 26	2183.7	-27.36	72.05
90.00	10 20 37	3974.67	-7.17	159.35	12.83	62.53	11 26 52	3374.7	-10.80	152.54
100.00	17 48 40	2475.31	-29.44	57.83	17.38	95.40	18 29 56	1875.3	-28.38	49.19
100.00	11 27 40	3758.28	-6.01	142.81	12.20	60.66	12 30 18	3158.3	-9.87	136.15
110.00	19 27 5	2167.43	-32.71	33.92	16.84	100.53	20 3 12	1567.4	-30.91	25.16
110.00	12 5 45	3638.92	-3.20	132.03	10.46	55.95	13 6 24	3038.9	-7.65	125.76

DIFFERENTIAL CORRECTIONS
TDE .2837 TRA -.7174 TC3 1.0257 BAU .2165
RDE .1659 RRA -.2068 RC3 1.3046 FAU .50087
FDE-1.1252 FRA 9.8902 FC-44.4335 BSP 6173
BDE .3286 BRA .7466 BC3 1.6596 FSP 10069

MID-COURSE EXECUTION ACCURACY
SGT 1634.4 SGR 960.4 SG3 2934.0
RRT .7991 RRF -.9556 RTF -.8342
SGB 1895.6 R23 -.3534 R13 -.8956
SG1 1823.7 SG2 517.4 THA 27.56

ORBIT DETERMINATION ACCURACY
ST 670.9 SR 328.7 SS 1677.6
CRT .9540 CRS .6627 CST .8494
LSA 1791.1 MSA 404.5 SSA 28.9
EL1 741.8 EL2 89.1 ALF 25.44

LAUNCH DATE NOV 2 1964 FLIGHT TIME 288.00 ARRIVAL DATE AUG 17 1965

HELIOCENTRIC CONIC DISTANCE 658.653 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.844 GAL -2.97 AZL 88.84 HCA 205.17 SMA 187.03 ECC .21253 INC 1.1620 V1 30.020
RP 226.17 LAP -.49 LOP 244.77 VP 21.541 GAP -2.18 AZP 91.05 TAL 342.95 TAP 188.11 RCA 147.28 APO 226.78 V2 24.318
RC 247.258 GL 12.31 GP 5.14 ZAL 113.75 ZAP 118.13 ETS 175.96 ZAE 154.46 ETE 165.17 ZAC 93.38 ETC 256.12 CLP 118.25

PLANETOCENTRIC CONIC

C3 9.731 VHL 3.119 DLA 21.49 RAL 160.62 RAD 6567.4 VEL 11.451 PTH 1.99 VHP 3.065 DPA 4.68 RAP 185.48 ECC 1.1601

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 9 4	2799.15	-28.19	81.76	17.69	92.84	16 55 44	2199.1	-27.49	73.16
90.00	10 25 29	3958.07	-7.69	158.40	13.04	62.66	11 31 27	3358.1	-11.30	151.58
100.00	17 45 14	2489.08	-29.53	58.85	17.59	94.88	18 26 43	1889.1	-28.54	50.18
100.00	11 32 0	3743.38	-6.51	141.98	12.40	60.76	12 34 24	3143.4	-10.36	135.31
110.00	19 24 35	2178.27	-32.84	34.74	17.08	100.06	20 0 53	1578.3	-31.10	25.94
110.00	12 9 9	3626.95	-3.66	131.40	10.64	55.99	13 9 36	3026.9	-8.10	125.12

DIFFERENTIAL CORRECTIONS
TDE .2726 TRA -.6374 TC3 .7014 BAU .1927
RDE .1684 RRA -.2029 RC3 1.3049 FAU .51464
FDE-1.0703 FRA10.1712 FC-45.7861 BSP 5413
BDE .3204 BRA .6689 BC3 1.4814 FSP 10395

MID-COURSE EXECUTION ACCURACY
SGT 1423.1 SGR 958.5 SG3 3021.5
RRT .7441 RRF -.9518 RTF -.7785
SGB 1715.8 R23 -.3890 R13 -.8750
SG1 1621.1 SG2 562.2 THA 30.70

ORBIT DETERMINATION ACCURACY
ST 627.1 SR 332.6 SS 1693.2
CRT .9610 CRS .6359 CST .8153
LSA 1786.7 MSA 421.6 SSA 29.1
EL1 705.1 EL2 81.8 ALF 27.41

LAUNCH DATE NOV 2 1964 FLIGHT TIME 290.00 ARRIVAL DATE AUG 19 1965

HELIOCENTRIC CONIC DISTANCE 662.587 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.838 GAL -2.96 AZL 88.81 HCA 206.23 SMA 186.92 ECC .21205 INC 1.1925 V1 30.020
RP 225.78 LAP -.53 LOP 245.83 VP 21.578 GAP -2.45 AZP 91.07 TAL 342.95 TAP 189.18 RCA 147.28 APO 226.55 V2 24.360
RC 248.959 GL 12.65 GP 5.02 ZAL 113.70 ZAP 116.31 ETS 176.24 ZAE 152.53 ETE 166.53 ZAC 93.09 ETC 256.17 CLP 116.42

PLANETOCENTRIC CONIC

C3 9.708 VHL 3.116 DLA 21.81 RAL 160.75 RAD 6567.3 VEL 11.450 PTH 1.99 VHP 3.024 DPA 4.90 RAP 184.73 ECC 1.1598

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 5 29	2813.47	-28.23	82.81	17.89	92.32	16 52 22	2213.5	-27.61	74.20
90.00	10 30 4	3942.83	-8.17	157.54	13.26	62.79	11 35 47	3342.8	-11.75	150.69
100.00	17 42 9	2501.77	-29.60	59.78	17.80	94.39	18 23 51	1901.8	-28.68	51.10
100.00	11 36 5	3729.76	-6.96	141.22	12.61	60.86	12 38 15	3129.8	-10.79	134.53
110.00	19 22 22	2188.21	-32.96	35.49	17.32	99.63	19 58 51	1588.2	-31.28	26.67
110.00	12 12 21	3616.08	-4.07	130.83	10.83	56.03	13 12 37	3016.1	-8.51	124.54

DIFFERENTIAL CORRECTIONS
TDE .2626 TRA -.5542 TC3 .3594 BAU .1758
RDE .1713 RRA -.1990 RC3 1.3060 FAU .52824
FDE-1.0258 FRA10.4388 FC-47.1062 BSP 4671
BDE .3135 BRA .5889 BC3 1.3546 FSP 10700

MID-COURSE EXECUTION ACCURACY
SGT 1219.9 SGR 957.6 SG3 3106.5
RRT .6567 RRF -.9479 RTF -.6881
SGB 1550.9 R23 -.4301 R13 -.8492
SG1 1421.7 SG2 619.7 THA 34.79

ORBIT DETERMINATION ACCURACY
ST 584.5 SR 337.4 SS 1709.5
CRT .9697 CRS .6113 CST .7738
LSA 1784.9 MSA 437.0 SSA 29.3
EL1 671.1 EL2 71.8 ALF 29.61

LAUNCH DATE NOV 2 1964 FLIGHT TIME 292.00 ARRIVAL DATE AUG 21 1965

DISTANCE 666.529

HELIOCENTRIC CONIC — EARTH TO MARS

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RL  148.42 LAL   -.00 LOL  39.61 VL  32.832 GAL  -2.96 AZL  88.78 HCA 207.29 SMA 186.81 ECC .21162 INC 1.2211 V1  30.020
RP  225.38 LAP   -.56 LOP 246.90 VP  21.616 GAP  -2.72 AZP  91.09 TAL 342.94 TAP 190.24 RCA 147.28 APO 226.35 V2  24.402
RC 250.643 GL   12.97 GP    4.91 ZAL 113.68 ZAP 114.46 ETS 176.51 ZAE 150.54 ETE 167.72 ZAC  92.81 ETC 256.22 CLP 114.56
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PLANETOCENTRIC CONIC

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C3   9.690 VHL  3.113 DLA  22.10 RAL 160.89 RAD 6567.3 VEL 11.449 PTH   1.99 VHP  2.986 DPA   5.13 RAP 183.96 ECC 1.1595
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LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 2 16	2826.68	-28.26	83.77	18.11	91.84	16 49 22	2226.7	-27.71	75.15
90.00	10 34 24	3928.89	-8.60	156.74	13.49	62.92	11 39 53	3328.9	-12.16	149.88
100.00	17 39 25	2513.43	-29.66	60.65	18.03	93.94	18 21 18	1913.4	-28.79	51.95
100.00	11 39 56	3717.38	-7.37	140.53	12.83	60.95	12 41 53	3117.4	-11.19	133.83
110.00	19 20 27	2197.29	-33.06	36.18	17.57	99.24	19 57 5	1597.3	-31.43	27.33
110.00	12 15 22	3606.27	-4.45	130.31	11.03	56.07	13 15 29	3006.3	-8.87	124.02

DIFFERENTIAL CORRECTIONS

```
TDE  .2547 TRA -.4680 TC3  .0024 BAU  .1693
RDE  .1745 RRA -.1956 RC3 1.3069 FAU .54126
FDE -.9867 FRA10.7051 FC-48.3564 BSP  3981
BDE  .3087 BRA  .5072 BC3 1.3069 FSP  10998
```

MID-COURSE EXECUTION ACCURACY

```
SGT 1041.2 SGR  957.2 SG3 3188.5
RRT  .5148 RRF -.9439 RTF -.5379
SGB 1414.3 R23 -.4702 R13 -.8207
SG1 1232.9 SG2  693.0 THA  40.35
```

ORBIT DETERMINATION ACCURACY

```
ST   545.4 SR   342.5 SS  1727.2
CRT  .9798 CRS  .5883 CST  .7205
LSA 1786.7 MSA  452.7 SSA   29.4
EL1  641.4 EL2   58.3 ALF  31.90
```

LAUNCH DATE NOV 2 1964 FLIGHT TIME 294.00 ARRIVAL DATE AUG 23 1965

DISTANCE 670.481

HELIOCENTRIC CONIC — EARTH TO MARS

```
RL  148.42 LAL   -.00 LOL  39.61 VL  32.826 GAL  -2.95 AZL  88.75 HCA 208.36 SMA 186.72 ECC .21122 INC 1.2476 V1  30.020
RP  224.99 LAP   -.59 LOP 247.97 VP  21.655 GAP  -2.98 AZP  91.10 TAL 342.92 TAP 191.28 RCA 147.28 APO 226.16 V2  24.444
RC 252.307 GL   13.27 GP    4.80 ZAL 113.68 ZAP 112.58 ETS 176.77 ZAE 148.51 ETE 168.77 ZAC  92.53 ETC 256.27 CLP 112.66
```

PLANETOCENTRIC CONIC

```
C3   9.678 VHL  3.111 DLA  22.36 RAL 161.04 RAD 6567.3 VEL 11.448 PTH   1.99 VHP  2.952 DPA   5.38 RAP 183.16 ECC 1.1593
```

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 59 25	2838.80	-28.29	84.66	18.33	91.39	16 46 43	2238.8	-27.79	76.03
90.00	10 38 27	3916.25	-8.99	156.02	13.73	63.04	11 43 44	3316.3	-12.54	149.14
100.00	17 37 1	2524.09	-29.70	61.44	18.26	93.52	18 19 5	1924.1	-28.90	52.72
100.00	11 43 32	3706.20	-7.74	139.91	13.06	61.04	12 45 18	3106.2	-11.54	133.19
110.00	19 18 50	2205.56	-33.15	36.81	17.82	98.87	19 55 35	1605.6	-31.57	27.94
110.00	12 18 13	3597.48	-4.78	129.85	11.24	56.11	13 18 10	2997.5	-9.20	123.55

DIFFERENTIAL CORRECTIONS

```
TDE  .2464 TRA -.3784 TC3 -.3743 BAU  .1760
RDE  .1779 RRA -.1921 RC3 1.3077 FAU .55374
FDE -.9525 FRA10.9538 FC-49.5364 BSP  3425
BDE  .3040 BRA  .4244 BC3 1.3602 FSP  11265
```

MID-COURSE EXECUTION ACCURACY

```
SGT  910.1 SGR  956.9 SG3 3265.9
RRT  .2843 RRF -.9399 RTF -.2924
SGB 1320.6 R23 -.4749 R13 -.8115
SG1 1059.9 SG2  787.8 THA  50.01
```

ORBIT DETERMINATION ACCURACY

```
ST   507.1 SR   348.1 SS  1744.0
CRT  .9887 CRS  .5666 CST  .6544
LSA 1789.4 MSA  465.9 SSA   29.6
EL1  613.6 EL2   43.2 ALF  34.35
```

LAUNCH DATE NOV 2 1964 FLIGHT TIME 296.00 ARRIVAL DATE AUG 25 1965

DISTANCE 674.439

HELIOCENTRIC CONIC — EARTH TO MARS

```
RL  148.42 LAL   -.00 LOL  39.61 VL  32.821 GAL  -2.96 AZL  88.73 HCA 209.44 SMA 186.63 ECC .21087 INC 1.2726 V1  30.020
RP  224.60 LAP   -.63 LOP 249.04 VP  21.695 GAP  -3.24 AZP  91.11 TAL 342.89 TAP 192.32 RCA 147.28 APO 225.99 V2  24.486
RC 253.951 GL   13.54 GP    4.70 ZAL 113.70 ZAP 110.67 ETS 177.02 ZAE 146.44 ETE 169.71 ZAC  92.24 ETC 256.33 CLP 110.74
```

PLANETOCENTRIC CONIC

```
C3   9.670 VHL  3.110 DLA  22.59 RAL 161.21 RAD 6567.3 VEL 11.448 PTH   1.99 VHP  2.921 DPA   5.64 RAP 182.34 ECC 1.1591
```

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 56 58	2849.80	-28.30	85.46	18.57	90.99	16 44 27	2249.8	-27.86	76.82
90.00	10 42 15	3904.94	-9.34	155.37	13.99	63.15	11 47 20	3304.9	-12.87	148.47
100.00	17 34 59	2533.73	-29.74	62.15	18.51	93.15	18 17 13	1933.7	-28.99	53.43
100.00	11 46 55	3696.24	-8.07	139.35	13.31	61.12	12 48 31	3096.2	-11.86	132.62
110.00	19 17 30	2213.02	-33.22	37.37	18.09	98.55	19 54 23	1613.0	-31.69	28.48
110.00	12 20 53	3589.72	-5.08	129.44	11.47	56.15	13 20 43	2989.7	-9.49	123.13

DIFFERENTIAL CORRECTIONS

```
TDE  .2336 TRA -.2914 TC3 -.7968 BAU  .1971
RDE  .1798 RRA -.1907 RC3 1.3002 FAU .56151
FDE -.8439 FRA11.2827 FC-50.2716 BSP  3188
BDE  .2948 BRA  .3482 BC3 1.5249 FSP  11696
```

MID-COURSE EXECUTION ACCURACY

```
SGT  876.9 SGR  953.1 SG3 3331.6
RRT -.0440 RRF -.9350 RTF  .0512
SGB 1295.2 R23  .1958 R13 -.9144
SG1  957.9 SG2  871.7 THA 103.91
```

ORBIT DETERMINATION ACCURACY

```
ST   464.7 SR   351.3 SS  1765.1
CRT  .9935 CRS  .5328 CST  .5641
LSA 1796.5 MSA  476.0 SSA   30.3
EL1  581.7 EL2   32.0 ALF  37.04
```

LAUNCH DATE NOV 2 1964 FLIGHT TIME 298.00 ARRIVAL DATE AUG 27 1965

DISTANCE 678.412

HELIOCENTRIC CONIC — EARTH TO MARS

```
RL  148.42 LAL   -.00 LOL  39.61 VL  32.817 GAL  -2.96 AZL  88.70 HCA 210.51 SMA 186.55 ECC .21055 INC 1.2960 V1  30.020
RP  224.21 LAP   -.66 LOP 250.11 VP  21.735 GAP  -3.50 AZP  91.12 TAL 342.84 TAP 193.35 RCA 147.27 APO 225.83 V2  24.527
RC 255.576 GL   13.79 GP    4.60 ZAL 113.75 ZAP 108.72 ETS 177.25 ZAE 144.33 ETE 170.54 ZAC  91.95 ETC 256.39 CLP 108.78
```

PLANETOCENTRIC CONIC

```
C3   9.667 VHL  3.109 DLA  22.80 RAL 161.39 RAD 6567.3 VEL 11.448 PTH   1.99 VHP  2.893 DPA   5.91 RAP 181.50 ECC 1.1591
```

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 54 50	2859.85	-28.31	86.20	18.81	90.62	16 42 30	2259.9	-27.92	77.55
90.00	10 45 49	3894.75	-9.65	154.79	14.25	63.25	11 50 44	3294.7	-13.17	147.87
100.00	17 33 15	2542.52	-29.77	62.80	18.76	92.81	18 15 38	1942.5	-29.07	54.07
100.00	11 50 5	3687.32	-8.36	138.85	13.56	61.20	12 51 32	3087.3	-12.14	132.10
110.00	19 16 25	2219.79	-33.29	37.89	18.36	98.25	19 53 24	1619.8	-31.79	28.98
110.00	12 23 25	3582.81	-5.34	129.08	11.71	56.19	13 23 8	2982.8	-9.74	122.76

DIFFERENTIAL CORRECTIONS

```
TDE  .2348 TRA -.1809 TC3-1.1685 BAU  .2266
RDE  .1856 RRA -.1853 RC3 1.3075 FAU .57653
FDE -.9138 FRA11.4116 FC-51.6332 BSP  3200
BDE  .2993 BRA  .2646 BC3 1.7536 FSP  11730
```

MID-COURSE EXECUTION ACCURACY

```
SGT  926.1 SGR  956.7 SG3 3406.0
RRT -.3420 RRF -.9315 RTF  .3831
SGB 1331.5 R23  .4418 R13 -.8229
SG1 1091.2 SG2  763.0 THA 132.29
```

ORBIT DETERMINATION ACCURACY

```
ST   447.8 SR   360.5 SS  1778.0
CRT  .9916 CRS  .5303 CST  .4655
LSA 1802.2 MSA  492.9 SSA   29.7
EL1  573.7 EL2   36.5 ALF  38.79
```

LAUNCH DATE NOV 2 1964 FLIGHT TIME 300.00 ARRIVAL DATE AUG 29 1965

HELIOCENTRIC CONIC DISTANCE 682.390 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.812 GAL -2.97 AZL 88.68 HCA 211.59 SMA 186.48 ECC .21028 INC 1.3181 V1 30.020
RP 223.82 LAP -.69 LOP 251.19 VP 21.776 GAP -3.75 AZP 91.12 TAL 342.78 TAP 194.37 RCA 147.27 APO 225.69 V2 24.569
RC 257.180 GL 14.03 GP 4.50 ZAL 113.82 ZAP 106.75 ETS 177.48 ZAE 142.18 ETE 171.30 ZAC 91.67 ETC 256.46 CLP 106.81

PLANETOCENTRIC CONIC

C3 9.669 VHL 3.109 DLA 22.98 RAL 161.58 RAD 6567.3 VEL 11.448 PTH 1.99 VHP 2.869 DPA 6.20 RAP 180.65 ECC 1.1591

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 53 7	2868.81	-28.32	86.85	19.07	90.29	16 40 56	2268.8	-27.97	78.20
90.00	10 49 7	3885.87	-9.92	154.27	14.53	63.34	11 53 53	3285.9	-13.42	147.35
100.00	17 31 53	2550.32	-29.80	63.38	19.03	92.50	18 14 24	1950.3	-29.13	54.64
100.00	11 53 1	3679.59	-8.61	138.42	13.84	61.26	12 54 21	3079.6	-12.38	131.66
110.00	19 15 37	2225.80	-33.35	38.35	18.65	97.98	19 52 43	1625.8	-31.89	29.43
110.00	12 25 47	3576.88	-5.56	128.77	11.97	56.22	13 25 24	2976.9	-9.96	122.44

DIFFERENTIAL CORRECTIONS

TDE .2293 TRA -.0900 TC3-1.5875 BAU .2657
RDE .1897 RRA -.1819 RC3 1.3056 FAU .58634
FDE -.9016 FRA11.6224 FC-52.5016 BSP 3666
BDE .2976 BRA .2029 BC3 2.0554 FSP 11930

MID-COURSE EXECUTION ACCURACY

SGT 1088.8 SGR 956.0 SG3 3466.6
RRT -.5652 RRF -.9270 RTF .6259
SGB 1448.9 R23 .4033 R13 -.8438
SG1 1285.9 SG2 667.8 THA 141.50

ORBIT DETERMINATION ACCURACY

ST 426.9 SR 367.1 SS 1794.5
CRT .9755 CRS .5143 CST .3397
LSA 1811.5 MSA 504.8 SSA 29.8
EL1 559.6 EL2 61.6 ALF 40.58

LAUNCH DATE NOV 2 1964 FLIGHT TIME 302.00 ARRIVAL DATE AUG 31 1965

HELIOCENTRIC CONIC DISTANCE 686.377 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.809 GAL -2.98 AZL 88.66 HCA 212.68 SMA 186.41 ECC .21004 INC 1.3388 V1 30.020
RP 223.44 LAP -.72 LOP 252.28 VP 21.817 GAP -4.00 AZP 91.13 TAL 342.71 TAP 195.39 RCA 147.26 APO 225.56 V2 24.611
RC 258.763 GL 14.25 GP 4.40 ZAL 113.92 ZAP 104.77 ETS 177.70 ZAE 140.01 ETE 171.98 ZAC 91.38 ETC 256.53 CLP 104.81

PLANETOCENTRIC CONIC

C3 9.675 VHL 3.111 DLA 23.13 RAL 161.80 RAD 6567.3 VEL 11.448 PTH 1.99 VHP 2.848 DPA 6.49 RAP 179.78 ECC 1.1592

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 51 47	2876.72	-28.32	87.43	19.35	90.00	16 39 43	2276.7	-28.02	78.78
90.00	10 52 10	3878.24	-10.16	153.83	14.83	63.43	11 56 48	3278.2	-13.65	146.89
100.00	17 30 52	2557.21	-29.82	63.89	19.31	92.24	18 13 29	1957.2	-29.19	55.14
100.00	11 55 46	3672.98	-8.83	138.05	14.12	61.32	12 56 59	3073.0	-12.59	131.28
110.00	19 15 6	2231.10	-33.40	38.76	18.95	97.75	19 52 18	1631.1	-31.97	29.82
110.00	12 28 1	3571.85	-5.75	128.50	12.24	56.25	13 27 33	2971.9	-10.15	122.17

DIFFERENTIAL CORRECTIONS

TDE .2238 TRA .0116 TC3-2.0218 BAU .3111
RDE .1940 RRA -.1785 RC3 1.3021 FAU .59494
FDE -.8951 FRA11.8180 FC-53.2339 BSP 4417
BDE .2962 BRA .1789 BC3 2.4048 FSP 12106

MID-COURSE EXECUTION ACCURACY

SGT 1323.8 SGR 954.8 SG3 3520.0
RRT -.6961 RRF -.9224 RTF .7699
SGB 1632.2 R23 .3371 R13 -.8768
SG1 1519.0 SG2 597.5 THA 147.77

ORBIT DETERMINATION ACCURACY

ST 414.0 SR 373.8 SS 1810.5
CRT .9409 CRS .5000 CST .1946
LSA 1822.7 MSA 515.8 SSA 29.9
EL1 549.6 EL2 95.4 ALF 41.90

LAUNCH DATE NOV 2 1964 FLIGHT TIME 304.00 ARRIVAL DATE SEP 2 1965

HELIOCENTRIC CONIC DISTANCE 690.373 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.805 GAL -2.99 AZL 88.64 HCA 213.76 SMA 186.35 ECC .20984 INC 1.3585 V1 30.020
RP 223.05 LAP -.75 LOP 253.37 VP 21.859 GAP -4.24 AZP 91.13 TAL 342.62 TAP 196.39 RCA 147.25 APO 225.45 V2 24.653
RC 260.326 GL 14.45 GP 4.31 ZAL 114.04 ZAP 102.76 ETS 177.91 ZAE 137.82 ETE 172.60 ZAC 91.09 ETC 256.60 CLP 102.80

PLANETOCENTRIC CONIC

C3 9.687 VHL 3.112 DLA 23.26 RAL 162.03 RAD 6567.3 VEL 11.449 PTH 1.99 VHP 2.831 DPA 6.79 RAP 178.89 ECC 1.1594

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 50 50	2883.60	-28.32	87.94	19.64	89.75	16 38 53	2283.6	-28.05	79.28
90.00	10 54 58	3871.84	-10.35	153.47	15.13	63.50	11 59 30	3271.8	-13.83	146.51
100.00	17 30 12	2563.20	-29.83	64.34	19.61	92.00	18 12 55	1963.2	-29.23	55.58
100.00	11 58 17	3667.47	-9.01	137.74	14.42	61.38	12 59 25	3067.5	-12.76	130.96
110.00	19 14 52	2235.72	-33.44	39.11	19.26	97.54	19 52 8	1635.7	-32.04	30.16
110.00	12 30 6	3567.71	-5.91	128.29	12.53	56.27	13 29 34	2967.7	-10.30	121.95

DIFFERENTIAL CORRECTIONS

TDE .2180 TRA .1163 TC3-2.4678 BAU .3610
RDE .1982 RRA -.1752 RC3 1.2965 FAU .60195
FDE -.8859 FRA12.0010 FC-53.7961 BSP 5359
BDE .2946 BRA .2103 BC3 2.7876 FSP 12268

MID-COURSE EXECUTION ACCURACY

SGT 1604.7 SGR 952.7 SG3 3564.8
RRT -.7686 RRF -.9174 RTF .8517
SGB 1866.2 R23 .2722 R13 -.9056
SG1 1783.8 SG2 548.2 THA 152.68

ORBIT DETERMINATION ACCURACY

ST 409.9 SR 380.5 SS 1825.5
CRT .8843 CRS .4856 CST .0340
LSA 1835.3 MSA 525.5 SSA 30.0
EL1 543.0 EL2 134.1 ALF 42.60

LAUNCH DATE NOV 2 1964 FLIGHT TIME 306.00 ARRIVAL DATE SEP 4 1965

HELIOCENTRIC CONIC DISTANCE 694.376 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.802 GAL -3.00 AZL 88.62 HCA 214.86 SMA 186.30 ECC .20968 INC 1.3770 V1 30.020
RP 222.66 LAP -.79 LOP 254.46 VP 21.902 GAP -4.48 AZP 91.13 TAL 342.52 TAP 197.38 RCA 147.23 APO 225.36 V2 24.695
RC 261.869 GL 14.64 GP 4.22 ZAL 114.18 ZAP 100.75 ETS 178.11 ZAE 135.60 ETE 173.16 ZAC 90.81 ETC 256.68 CLP 100.77

PLANETOCENTRIC CONIC

C3 9.704 VHL 3.115 DLA 23.37 RAL 162.28 RAD 6567.4 VEL 11.450 PTH 1.99 VHP 2.817 DPA 7.10 RAP 178.00 ECC 1.1597

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 50 16	2889.45	-28.31	88.36	19.95	89.54	16 38 25	2289.5	-28.08	79.71
90.00	10 57 32	3866.67	-10.51	153.17	15.46	63.55	12 1 59	3266.7	-13.98	146.21
100.00	17 29 52	2568.30	-29.84	64.72	19.93	91.80	18 12 40	1968.3	-29.27	55.96
100.00	12 0 37	3663.05	-9.15	137.49	14.74	61.42	13 1 40	3063.1	-12.90	130.70
110.00	19 14 54	2239.68	-33.48	39.41	19.59	97.36	19 52 14	1639.7	-32.10	30.46
110.00	12 32 4	3564.44	-6.03	128.11	12.84	56.29	13 31 28	2964.4	-10.42	121.77

DIFFERENTIAL CORRECTIONS

TDE .2124 TRA .2240 TC3-2.9197 BAU .4141
RDE .2028 RRA -.1715 RC3 1.2899 FAU .60807
FDE -.8948 FRA12.1543 FC-54.2500 BSP 6414
BDE .2937 BRA .2821 BC3 3.1919 FSP 12383

MID-COURSE EXECUTION ACCURACY

SGT 1913.9 SGR 950.3 SG3 3602.1
RRT -.8084 RRF -.9123 RTF .8994
SGB 2136.8 R23 .2164 R13 -.9280
SG1 2073.5 SG2 516.3 THA 156.59

ORBIT DETERMINATION ACCURACY

ST 416.9 SR 387.8 SS 1839.2
CRT .8077 CRS .4749 CST -.1257
LSA 1849.3 MSA 534.8 SSA 30.0
EL1 541.4 EL2 176.0 ALF 42.44

LAUNCH DATE NOV 2 1964 FLIGHT TIME 308.00 ARRIVAL DATE SEP 6 1965

HELIOCENTRIC CONIC DISTANCE 698.386 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.799 GAL -3.02 AZL 88.61 HCA 215.95 SMA 186.25 ECC .20955 INC 1.3948 V1 30.020
RP 222.28 LAP -.82 LOP 255.55 VP 21.945 GAP -4.71 AZP 91.13 TAL 342.41 TAP 198.36 RCA 147.22 APO 225.28 V2 24.737
RC 263.392 GL 14.81 GP 4.13 ZAL 114.36 ZAP 98.72 ETS 178.30 ZAE 133.38 ETE 173.68 ZAC 90.52 ETC 256.76 CLP 98.74

PLANETOCENTRIC CONIC

C3 9.726 VHL 3.119 DLA 23.45 RAL 162.55 RAD 6567.4 VEL 11.451 PTH 1.99 VHP 2.806 DPA 7.40 RAP 177.11 ECC 1.1601

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 50 6	2894.25	-28.31	88.71	20.28	89.36	16 36 20	2294.2	-28.10	80.06
90.00	10 59 51	3862.76	-10.63	152.94	15.79	63.60	12 4 13	3262.8	-14.09	145.97
100.00	17 29 54	2572.49	-29.85	65.03	20.27	91.64	18 12 46	1972.5	-29.30	56.26
100.00	12 2 44	3659.75	-9.26	137.30	15.07	61.45	13 3 44	3059.7	-13.00	130.51
110.00	19 15 13	2242.96	-33.50	39.67	19.93	97.22	19 52 36	1643.0	-32.14	30.70
110.00	12 33 54	3562.04	-6.12	127.99	13.16	56.30	13 33 16	2962.0	-10.51	121.64

DIFFERENTIAL CORRECTIONS
TDE .2057 TRA .3342 TC3-3.3864 BAU .4705
RDE .2062 RRA -.1691 RC3 1.2762 FAU .60960
FDE -.8389 FRA12.3581 FC-54.2637 BSP 7551
BDE .2913 BRA .3746 BC3 3.6189 FSP 12609

MID-COURSE EXECUTION ACCURACY
SGT 2247.7 SGR 944.4 SG3 3625.1
RRT -.8314 RRF -.9062 RTF .9275
SGB 2438.0 R23 .1721 R13 -.9432
SG1 2387.4 SG2 494.0 THA 159.84

ORBIT DETERMINATION ACCURACY
ST 432.6 SR 393.0 SS 1855.1
CRT .7133 CRS .4532 CST -.2939
LSA 1868.0 MSA 541.0 SSA 30.3
EL1 541.4 EL2 220.1 ALF 41.16

LAUNCH DATE NOV 2 1964 FLIGHT TIME 310.00 ARRIVAL DATE SEP 8 1965

HELIOCENTRIC CONIC DISTANCE 702.408 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.797 GAL -3.04 AZL 88.59 HCA 217.05 SMA 186.21 ECC .20946 INC 1.4118 V1 30.020
RP 221.89 LAP -.85 LOP 256.65 VP 21.988 GAP -4.94 AZP 91.13 TAL 342.28 TAP 199.33 RCA 147.20 APO 225.21 V2 24.779
RC 264.895 GL 14.97 GP 4.04 ZAL 114.55 ZAP 96.69 ETS 178.48 ZAE 131.14 ETE 174.16 ZAC 90.24 ETC 256.85 CLP 96.71

PLANETOCENTRIC CONIC

C3 9.752 VHL 3.123 DLA 23.51 RAL 162.84 RAD 6567.4 VEL 11.452 PTH 1.99 VHP 2.799 DPA 7.71 RAP 176.22 ECC 1.1605

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 50 18	2898.09	-28.31	88.99	20.63	89.22	16 38 36	2298.1	-28.12	80.33
90.00	11 1 55	3860.00	-10.71	152.78	16.14	63.63	12 6 15	3260.0	-14.17	145.81
100.00	17 30 14	2575.87	-29.86	65.28	20.62	91.51	18 13 10	1975.9	-29.33	56.51
100.00	12 4 40	3657.45	-9.33	137.17	15.42	61.47	13 5 38	3057.5	-13.07	130.38
110.00	19 16 47	2245.64	-33.53	39.87	20.29	97.10	19 53 13	1645.6	-32.18	30.90
110.00	12 35 36	3560.44	-6.18	127.90	13.50	56.31	13 34 57	2960.4	-10.57	121.56

DIFFERENTIAL CORRECTIONS
TDE .2008 TRA .4481 TC3-3.8434 BAU .5277
RDE .2115 RRA -.1647 RC3 1.2680 FAU .61398
FDE -.8838 FRA12.4476 FC-54.5042 BSP 8758
BDE .2917 BRA .4774 BC3 4.0471 FSP 12608

MID-COURSE EXECUTION ACCURACY
SGT 2588.8 SGR 941.5 SG3 3647.1
RRT -.8425 RRF -.9007 RTF .9467
SGB 2754.7 R23 .1376 R13 -.9560
SG1 2711.8 SG2 484.2 THA 162.38

ORBIT DETERMINATION ACCURACY
ST 461.8 SR 401.2 SS 1865.7
CRT .6190 CRS .4499 CST -.4171
LSA 1884.3 MSA 551.0 SSA 30.1
EL1 552.1 EL2 263.6 ALF 38.58

LAUNCH DATE NOV 2 1964 FLIGHT TIME 312.00 ARRIVAL DATE SEP 10 1965

HELIOCENTRIC CONIC DISTANCE 706.436 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.794 GAL -3.06 AZL 88.57 HCA 218.15 SMA 186.17 ECC .20940 INC 1.4279 V1 30.020
RP 221.51 LAP -.88 LOP 257.75 VP 22.032 GAP -5.16 AZP 91.12 TAL 342.14 TAP 200.30 RCA 147.18 APO 225.15 V2 24.820
RC 266.379 GL 15.12 GP 3.95 ZAL 114.77 ZAP 94.66 ETS 178.66 ZAE 128.89 ETE 174.59 ZAC 89.96 ETC 256.94 CLP 94.67

PLANETOCENTRIC CONIC

C3 9.784 VHL 3.128 DLA 23.56 RAL 163.14 RAD 6567.4 VEL 11.453 PTH 1.99 VHP 2.796 DPA 8.02 RAP 175.33 ECC 1.1610

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 50 53	2900.92	-28.30	89.20	21.00	89.12	16 39 14	2300.9	-28.13	80.54
90.00	11 3 45	3858.46	-10.76	152.69	16.51	63.65	12 8 4	3258.5	-14.21	145.72
100.00	17 30 55	2578.39	-29.86	65.47	20.99	91.41	18 13 54	1978.4	-29.35	56.70
100.00	12 6 24	3656.22	-9.37	137.10	15.78	61.49	13 7 21	3056.2	-13.11	130.31
110.00	19 16 37	2247.71	-33.54	40.03	20.67	97.00	19 54 5	1647.7	-32.21	31.05
110.00	12 37 12	3559.67	-6.21	127.86	13.85	56.32	13 36 31	2959.7	-10.60	121.51

DIFFERENTIAL CORRECTIONS
TDE .1944 TRA .5642 TC3-4.3070 BAU .5869
RDE .2167 RRA -.1604 RC3 1.2569 FAU .61623
FDE -.9183 FRA12.5252 FC-54.5251 BSP 9988
BDE .2911 BRA .5865 BC3 4.4866 FSP 12606

MID-COURSE EXECUTION ACCURACY
SGT 2942.4 SGR 937.3 SG3 3658.3
RRT -.8480 RRF -.8948 RTF .9594
SGB 3088.0 R23 .1113 R13 -.9652
SG1 3050.6 SG2 479.2 THA 164.49

ORBIT DETERMINATION ACCURACY
ST 497.7 SR 409.1 SS 1875.2
CRT .5251 CRS .4452 CST -.5238
LSA 1902.1 MSA 558.9 SSA 30.0
EL1 567.2 EL2 305.5 ALF 34.70

LAUNCH DATE NOV 2 1964 FLIGHT TIME 314.00 ARRIVAL DATE SEP 12 1965

HELIOCENTRIC CONIC DISTANCE 710.472 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.793 GAL -3.09 AZL 88.56 HCA 219.26 SMA 186.14 ECC .20938 INC 1.4432 V1 30.020
RP 221.13 LAP -.91 LOP 258.86 VP 22.076 GAP -5.39 AZP 91.12 TAL 341.99 TAP 201.25 RCA 147.16 APO 225.11 V2 24.862
RC 267.844 GL 15.26 GP 3.86 ZAL 115.01 ZAP 92.64 ETS 178.83 ZAE 126.65 ETE 175.00 ZAC 89.68 ETC 257.03 CLP 92.64

PLANETOCENTRIC CONIC

C3 9.821 VHL 3.134 DLA 23.58 RAL 163.46 RAD 6567.4 VEL 11.455 PTH 1.99 VHP 2.796 DPA 8.32 RAP 174.44 ECC 1.1616

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 51 52	2902.77	-28.30	89.34	21.38	89.05	16 40 14	2302.8	-28.13	80.68
90.00	11 5 21	3858.12	-10.77	152.67	16.88	63.65	12 9 39	3258.1	-14.22	145.70
100.00	17 31 57	2580.08	-29.87	65.59	21.38	91.34	18 14 57	1980.1	-29.36	56.82
100.00	12 7 57	3656.03	-9.38	137.09	16.15	61.49	13 8 53	3056.0	-13.12	130.29
110.00	19 17 43	2249.17	-33.56	40.14	21.06	96.94	19 55 12	1649.2	-32.23	31.16
110.00	12 38 40	3559.72	-6.21	127.86	14.22	56.32	13 38 0	2959.7	-10.60	121.52

DIFFERENTIAL CORRECTIONS
TDE .1870 TRA .6823 TC3-4.7709 BAU .6474
RDE .2219 RRA -.1560 RC3 1.2434 FAU .61667
FDE -.9550 FRA12.5889 FC-54.3572 BSP 11239
BDE .2902 BRA .6999 BC3 4.9303 FSP 12585

MID-COURSE EXECUTION ACCURACY
SGT 3303.3 SGR 932.1 SG3 3660.0
RRT -.8494 RRF -.8883 RTF .9681
SGB 3432.3 R23 .0917 R13 -.9718
SG1 3398.8 SG2 478.0 THA 166.24

ORBIT DETERMINATION ACCURACY
ST 540.1 SR 416.9 SS 1884.3
CRT .4375 CRS .4414 CST -.6102
LSA 1922.2 MSA 566.2 SSA 29.9
EL1 589.5 EL2 343.5 ALF 29.55

LAUNCH DATE NOV 2 1964 FLIGHT TIME 316.00 ARRIVAL DATE SEP 14 1965

HELIOCENTRIC CONIC DISTANCE 714.516 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.791 GAL -3.12 AZL 88.54 HCA 220.37 SMA 186.11 ECC .20940 INC 1.4579 V1 30.020
RP 220.75 LAP -.94 LOP 259.97 VP 22.120 GAP -5.60 AZP 91.11 TAL 341.82 TAP 202.19 RCA 147.14 APO 225.08 V2 24.903
RC 269.292 GL 15.38 GP 3.78 ZAL 115.28 ZAP 90.62 ETS 178.99 ZAE 124.42 ETE 175.37 ZAC 89.41 ETC 257.12 CLP 90.62

PLANETOCENTRIC CONIC

C3 9.864 VHL 3.141 DLA 23.58 RAL 163.80 RAD 6567.4 VEL 11.457 PTH 1.99 VHP 2.799 DPA 8.62 RAP 173.57 ECC 1.1623

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 53 13	2903.65	-28.30	89.40	21.79	89.02	16 41 36	2303.7	-28.14	80.74
90.00	11 6 43	3858.95	-10.74	152.72	17.28	63.64	12 11 2	3258.9	-14.20	145.75
100.00	17 33 18	2580.96	-29.87	65.66	21.78	91.31	18 16 19	1981.0	-29.37	56.89
100.00	12 9 19	3656.87	-9.35	137.14	16.55	61.48	13 10 16	3056.9	-13.09	130.34
110.00	19 19 4	2250.04	-33.56	40.21	21.47	96.90	19 56 34	1650.0	-32.24	31.23
110.00	12 40 2	3560.56	-6.18	127.91	14.61	56.31	13 39 22	2960.6	-10.56	121.56

DIFFERENTIAL CORRECTIONS
TDE .1789 TRA .8036 TC3-5.2315 BAU .7086
RDE .2270 RRA -.1515 RC3 1.2277 FAU .61530
FDE -.9895 FRA12.6313 FC-54.0032 BSP 12515
BDE .2891 BRA .8177 BC3 5.3736 FSP 12542

MID-COURSE EXECUTION ACCURACY
SGT 3669.3 SGR 925.8 SG3 3651.4
RRT -.8481 RRF -.8814 RTF .9744
SGB 3784.3 R23 .0767 R13 -.9769
SG1 3753.8 SG2 479.4 THA 167.72

ORBIT DETERMINATION ACCURACY
ST 588.6 SR 424.6 SS 1891.8
CRT .3581 CRS .4376 CST -.6799
LSA 1943.3 MSA 572.8 SSA 29.7
EL1 620.9 EL2 375.8 ALF 23.56

LAUNCH DATE NOV 2 1964 FLIGHT TIME 318.00 ARRIVAL DATE SEP 16 1965

HELIOCENTRIC CONIC DISTANCE 718.568 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.790 GAL -3.15 AZL 88.53 HCA 221.49 SMA 186.09 ECC .20944 INC 1.4720 V1 30.020
RP 220.37 LAP -.97 LOP 261.09 VP 22.165 GAP -5.82 AZP 91.10 TAL 341.64 TAP 203.13 RCA 147.11 APO 225.06 V2 24.945
RC 270.721 GL 15.49 GP 3.69 ZAL 115.57 ZAP 88.62 ETS 179.15 ZAE 122.19 ETE 175.72 ZAC 89.14 ETC 257.22 CLP 88.61

PLANETOCENTRIC CONIC

C3 9.912 VHL 3.148 DLA 23.56 RAL 164.16 RAD 6567.4 VEL 11.459 PTH 1.99 VHP 2.806 DPA 8.90 RAP 172.71 ECC 1.1631

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 54 56	2903.60	-28.30	89.40	22.22	89.02	16 43 19	2303.6	-28.14	80.74
90.00	11 7 51	3860.93	-10.68	152.83	17.69	63.62	12 12 12	3260.9	-14.14	145.86
100.00	17 34 58	2581.06	-29.87	65.66	22.21	91.30	18 17 59	1981.1	-29.37	56.89
100.00	12 10 30	3658.71	-9.29	137.24	16.95	61.46	13 11 29	3058.7	-13.03	130.45
110.00	19 20 40	2250.35	-33.57	40.23	21.90	96.89	19 58 11	1650.3	-32.25	31.25
110.00	12 41 17	3562.18	-6.12	127.99	15.02	56.30	13 40 39	2962.2	-10.50	121.65

DIFFERENTIAL CORRECTIONS
TDE .1697 TRA .9267 TC3-5.6880 BAU .7706
RDE .2322 RRA -.1469 RC3 1.2100 FAU .61228
FDE-1.0268 FRA12.6595 FC-53.4767 BSP 13797
BDE .2877 BRA .9383 BC3 5.8153 FSP 12476

MID-COURSE EXECUTION ACCURACY
SGT 4038.3 SGR 918.8 SG3 3634.0
RRT -.8449 RRF -.8740 RTF .9789
SGB 4141.5 R23 .0654 R13 -.9806
SG1 4113.3 SG2 482.6 THA 168.97

ORBIT DETERMINATION ACCURACY
ST 641.6 SR 432.2 SS 1899.0
CRT .2878 CRS .4349 CST -.7348
LSA 1967.0 MSA 578.8 SSA 29.5
EL1 661.1 EL2 401.7 ALF 17.69

LAUNCH DATE NOV 2 1964 FLIGHT TIME 320.00 ARRIVAL DATE SEP 18 1965

HELIOCENTRIC CONIC DISTANCE 722.627 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.789 GAL -3.18 AZL 88.51 HCA 222.60 SMA 186.07 ECC .20952 INC 1.4855 V1 30.020
RP 220.00 LAP -1.01 LOP 262.20 VP 22.210 GAP -6.03 AZP 91.09 TAL 341.44 TAP 204.05 RCA 147.09 APO 225.06 V2 24.986
RC 272.134 GL 15.60 GP 3.61 ZAL 115.89 ZAP 86.63 ETS 179.30 ZAE 119.97 ETE 176.04 ZAC 88.88 ETC 257.31 CLP 86.62

PLANETOCENTRIC CONIC

C3 9.966 VHL 3.157 DLA 23.52 RAL 164.54 RAD 6567.4 VEL 11.461 PTH 1.99 VHP 2.816 DPA 9.18 RAP 171.87 ECC 1.1640

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 57 1	2902.64	-28.30	89.33	22.66	89.05	16 45 23	2302.6	-28.13	80.67
90.00	11 8 47	3864.05	-10.59	153.01	18.11	63.58	12 13 11	3264.0	-14.05	146.05
100.00	17 36 58	2580.38	-29.87	65.61	22.66	91.33	18 19 58	1980.4	-29.36	56.84
100.00	12 11 31	3661.53	-9.20	137.40	17.38	61.45	13 12 32	3061.5	-12.95	130.61
110.00	19 22 32	2250.10	-33.56	40.22	22.35	96.90	20 0 2	1650.1	-32.25	31.23
110.00	12 42 26	3564.58	-6.03	128.12	15.44	56.29	13 41 51	2964.6	-10.42	121.78

DIFFERENTIAL CORRECTIONS
TDE .1590 TRA 1.0520 TC3-6.1378 BAU .8330
RDE .2376 RRA -.1420 RC3 1.1908 FAU .60785
FDE-1.0709 FRA12.6569 FC-52.8037 BSP 15079
BDE .2859 BRA 1.0616 BC3 6.2523 FSP 12375

MID-COURSE EXECUTION ACCURACY
SGT 4408.8 SGR 911.2 SG3 3607.0
RRT -.8400 RRF -.8661 RTF .9823
SGB 4501.9 R23 .0566 R13 -.9836
SG1 4475.5 SG2 487.0 THA 170.03

ORBIT DETERMINATION ACCURACY
ST 697.9 SR 440.0 SS 1904.2
CRT .2253 CRS .4340 CST -.7781
LSA 1991.2 MSA 584.1 SSA 29.3
EL1 708.9 EL2 422.0 ALF 12.62

LAUNCH DATE NOV 2 1964 FLIGHT TIME 322.00 ARRIVAL DATE SEP 20 1965

HELIOCENTRIC CONIC DISTANCE 726.693 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.788 GAL -3.22 AZL 88.50 HCA 223.73 SMA 186.06 ECC .20964 INC 1.4984 V1 30.020
RP 219.62 LAP -1.04 LOP 263.33 VP 22.255 GAP -6.23 AZP 91.08 TAL 341.23 TAP 204.96 RCA 147.05 APO 225.07 V2 25.027
RC 273.529 GL 15.69 GP 3.52 ZAL 116.23 ZAP 84.66 ETS 179.44 ZAE 117.77 ETE 176.34 ZAC 88.62 ETC 257.41 CLP 84.65

PLANETOCENTRIC CONIC

C3 10.025 VHL 3.166 DLA 23.46 RAL 164.93 RAD 6567.4 VEL 11.464 PTH 1.99 VHP 2.829 DPA 9.45 RAP 171.05 ECC 1.1650

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 59 27	2900.80	-28.30	89.19	23.13	89.12	16 47 48	2300.8	-28.13	80.53
90.00	11 9 29	3868.26	-10.46	153.26	18.55	63.54	12 13 58	3268.3	-13.93	146.30
100.00	17 39 16	2578.97	-29.86	65.51	23.12	91.39	18 22 15	1979.0	-29.35	56.74
100.00	12 12 21	3665.32	-9.08	137.61	17.82	61.40	13 13 27	3065.3	-12.83	130.83
110.00	19 24 38	2249.32	-33.56	40.16	22.81	96.93	20 2 7	1649.3	-32.23	31.17
110.00	12 43 29	3567.73	-5.91	128.29	15.89	56.27	13 42 57	2967.7	-10.30	121.95

DIFFERENTIAL CORRECTIONS
TDE .1469 TRA 1.1791 TC3-6.5787 BAU .8956
RDE .2431 RRA -.1370 RC3 1.1706 FAU .60237
FDE-1.1257 FRA12.6319 FC-52.0169 BSP 16349
BDE .2841 BRA 1.1871 BC3 6.6821 FSP 12237

MID-COURSE EXECUTION ACCURACY
SGT 4778.8 SGR 903.4 SG3 3573.0
RRT -.8339 RRF -.8578 RTF .9850
SGB 4863.4 R23 .0502 R13 -.9859
SG1 4838.4 SG2 492.5 THA 170.95

ORBIT DETERMINATION ACCURACY
ST 757.1 SR 447.9 SS 1909.1
CRT .1699 CRS .4356 CST -.8114
LSA 2017.5 MSA 589.4 SSA 29.1
EL1 762.8 EL2 438.1 ALF 8.59

LAUNCH DATE NOV 2 1964 FLIGHT TIME 324.00 ARRIVAL DATE SEP 22 1965

HELIOCENTRIC CONIC DISTANCE 730.767 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.788 GAL -3.26 AZL 88.49 HCA 224.85 SMA 186.05 ECC .20979 INC 1.5111 V1 30.020
RP 219.25 LAP -1.07 LOP 264.45 VP 22.300 GAP -6.44 AZP 91.07 TAL 341.01 TAP 205.86 RCA 147.02 APO 225.08 V2 25.067
RC 274.906 GL 15.77 GP 3.44 ZAL 116.59 ZAP 82.72 ETS 179.57 ZAE 115.59 ETE 176.62 ZAC 88.37 ETC 257.50 CLP 82.71

PLANETOCENTRIC CONIC

C3 10.091 VHL 3.177 DLA 23.38 RAL 165.34 RAD 6567.4 VEL 11.466 PTH 1.99 VHP 2.845 DPA 9.71 RAP 170.26 ECC 1.1661

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 2 13	2898.11	-28.31	89.00	23.62	89.22	16 50 31	2298.1	-28.12	80.34
90.00	11 10 0	3873.55	-10.30	153.56	19.01	63.48	12 14 34	3273.5	-13.78	146.61
100.00	17 41 52	2576.84	-29.86	65.35	23.61	91.47	18 24 49	1976.8	-29.34	56.58
100.00	12 13 3	3670.06	-8.92	137.88	18.28	61.35	13 14 13	3070.1	-12.68	131.11
110.00	19 26 58	2248.03	-33.55	40.06	23.29	96.99	20 4 26	1648.0	-32.22	31.08
110.00	12 44 26	3571.63	-5.76	128.49	16.35	56.25	13 43 58	2971.6	-10.16	122.16

DIFFERENTIAL CORRECTIONS
TDE .1337 TRA 1.3093 TC3-7.0054 BAU .9577
RDE .2485 RRA -.1319 RC3 1.1483 FAU .59504
FDE-1.1707 FRA12.5954 FC-51.0498 BSP 17636
BDE .2822 BRA 1.3159 BC3 7.0989 FSP 12090

MID-COURSE EXECUTION ACCURACY
SGT 5146.5 SGR 894.7 SG3 3529.7
RRT -.8266 RRF -.8489 RTF .9870
SGB 5223.7 R23 .0449 R13 -.9877
SG1 5199.9 SG2 498.3 THA 171.75

ORBIT DETERMINATION ACCURACY
ST 819.6 SR 455.5 SS 1912.8
CRT .1210 CRS .4361 CST -.8392
LSA 2045.6 MSA 593.7 SSA 28.8
EL1 822.3 EL2 450.7 ALF 5.51

LAUNCH DATE NOV 2 1964 FLIGHT TIME 326.00 ARRIVAL DATE SEP 24 1965

HELIOCENTRIC CONIC DISTANCE 734.848 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.787 GAL -3.30 AZL 88.48 HCA 225.98 SMA 186.05 ECC .20997 INC 1.5231 V1 30.020
RP 218.89 LAP -1.10 LOP 265.58 VP 22.345 GAP -6.64 AZP 91.06 TAL 340.77 TAP 206.75 RCA 146.99 APO 225.11 V2 25.108
RC 276.266 GL 15.84 GP 3.35 ZAL 116.98 ZAP 80.80 ETS 179.70 ZAE 113.44 ETE 176.88 ZAC 88.13 ETC 257.59 CLP 80.79

PLANETOCENTRIC CONIC

C3 10.163 VHL 3.188 DLA 23.29 RAL 165.77 RAD 6567.4 VEL 11.470 PTH 1.99 VHP 2.865 DPA 9.95 RAP 169.49 ECC 1.1673

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 5 20	2894.62	-28.31	88.74	24.13	89.35	16 53 34	2294.6	-28.10	80.08
90.00	11 10 19	3879.87	-10.11	153.93	19.48	63.41	12 14 59	3279.9	-13.60	146.99
100.00	17 44 46	2574.02	-29.85	65.14	24.11	91.58	18 27 40	1974.0	-29.32	56.38
100.00	12 13 34	3675.71	-8.74	138.20	18.75	61.30	13 14 50	3075.7	-12.50	131.43
110.00	19 29 32	2246.23	-33.53	39.92	23.79	97.07	20 6 58	1646.2	-32.19	30.94
110.00	12 45 17	3576.26	-5.59	128.74	16.83	56.22	13 44 54	2976.3	-9.99	122.41

DIFFERENTIAL CORRECTIONS
TDE .1184 TRA 1.4404 TC3-7.4215 BAU 1.0199
RDE .2541 RRA -.1266 RC3 1.1255 FAU .58689
FDE-1.2273 FRA12.5285 FC-49.9955 BSP 18891
BDE .2803 BRA 1.4460 BC3 7.5064 FSP 11909

MID-COURSE EXECUTION ACCURACY
SGT 5511.8 SGR 886.0 SG3 3479.6
RRT -.8184 RRF -.8395 RTF .9887
SGB 5582.5 R23 .0409 R13 -.9892
SG1 5559.6 SG2 504.7 THA 172.44

ORBIT DETERMINATION ACCURACY
ST 883.4 SR 463.2 SS 1915.1
CRT .0765 CRS .4393 CST -.8610
LSA 2074.7 MSA 597.8 SSA 28.5
EL1 884.4 EL2 461.4 ALF 3.16

LAUNCH DATE NOV 2 1964 FLIGHT TIME 328.00 ARRIVAL DATE SEP 26 1965

HELIOCENTRIC CONIC DISTANCE 738.936 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.788 GAL -3.35 AZL 88.47 HCA 227.12 SMA 186.05 ECC .21018 INC 1.5348 V1 30.020
RP 218.52 LAP -1.12 LOP 266.71 VP 22.391 GAP -6.83 AZP 91.04 TAL 340.52 TAP 207.64 RCA 146.95 APO 225.16 V2 25.148
RC 277.609 GL 15.90 GP 3.27 ZAL 117.38 ZAP 78.92 ETS 179.82 ZAE 111.31 ETE 177.12 ZAC 87.90 ETC 257.68 CLP 78.90

PLANETOCENTRIC CONIC

C3 10.241 VHL 3.200 DLA 23.18 RAL 166.22 RAD 6567.4 VEL 11.473 PTH 1.99 VHP 2.887 DPA 10.18 RAP 168.76 ECC 1.1685

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 8 45	2890.37	-28.31	88.43	24.66	89.50	16 56 55	2290.4	-28.08	79.77
90.00	11 10 28	3887.20	-9.88	154.35	19.97	63.33	12 15 15	3287.2	-13.39	147.42
100.00	17 47 56	2570.55	-29.85	64.88	24.64	91.72	18 30 47	1970.5	-29.29	56.12
100.00	12 13 57	3682.25	-8.52	138.57	19.24	61.24	13 15 20	3082.3	-12.30	131.81
110.00	19 32 20	2243.96	-33.51	39.74	24.30	97.17	20 9 44	1644.0	-32.16	30.77
110.00	12 46 3	3581.61	-5.38	129.02	17.32	56.19	13 45 45	2981.6	-9.79	122.70

DIFFERENTIAL CORRECTIONS
TDE .1014 TRA 1.5741 TC3-7.8216 BAU 1.0814
RDE .2598 RRA -.1212 RC3 1.1014 FAU .57740
FDE-1.2857 FRA12.4456 FC-48.8108 BSP 20137
BDE .2789 BRA 1.5787 BC3 7.8987 FSP 11707

MID-COURSE EXECUTION ACCURACY
SGT 5873.0 SGR 876.9 SG3 3422.1
RRT -.8093 RRF -.8296 RTF .9900
SGB 5938.1 R23 .0379 R13 -.9904
SG1 5916.0 SG2 511.3 THA 173.06

ORBIT DETERMINATION ACCURACY
ST 949.4 SR 470.9 SS 1917.0
CRT .0361 CRS .4436 CST -.8787
LSA 2106.0 MSA 601.6 SSA 28.2
EL1 949.6 EL2 470.5 ALF 1.36

LAUNCH DATE NOV 2 1964 FLIGHT TIME 330.00 ARRIVAL DATE SEP 28 1965

HELIOCENTRIC CONIC DISTANCE 743.030 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.788 GAL -3.40 AZL 88.45 HCA 228.25 SMA 186.06 ECC .21043 INC 1.5460 V1 30.020
RP 218.16 LAP -1.15 LOP 267.85 VP 22.436 GAP -7.02 AZP 91.03 TAL 340.25 TAP 208.51 RCA 146.91 APO 225.21 V2 25.188
RC 278.933 GL 15.95 GP 3.19 ZAL 117.81 ZAP 77.06 ETS 179.93 ZAE 109.21 ETE 177.34 ZAC 87.68 ETC 257.77 CLP 77.04

PLANETOCENTRIC CONIC

C3 10.326 VHL 3.213 DLA 23.05 RAL 166.68 RAD 6567.4 VEL 11.477 PTH 1.99 VHP 2.913 DPA 10.40 RAP 168.06 ECC 1.1699

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 12 28	2885.39	-28.32	88.07	25.21	89.68	17 0 34	2285.4	-28.06	79.41
90.00	11 10 26	3895.50	-9.63	154.83	20.47	63.24	12 15 22	3295.5	-13.15	147.91
100.00	17 51 23	2566.45	-29.84	64.58	25.18	91.88	18 34 10	1966.5	-29.26	55.82
100.00	12 14 12	3689.67	-8.28	138.98	19.75	61.18	13 15 42	3089.7	-12.07	132.24
110.00	19 35 21	2241.22	-33.49	39.53	24.84	97.29	20 12 42	1641.2	-32.12	30.57
110.00	12 46 44	3587.67	-5.15	129.34	17.84	56.16	13 46 32	2987.7	-9.56	123.02

DIFFERENTIAL CORRECTIONS
TDE .0823 TRA 1.7095 TC3-8.2059 BAU 1.1425
RDE .2655 RRA -.1157 RC3 1.0766 FAU .56694
FDE-1.3456 FRA12.3462 FC-47.5326 BSP 21366
BDE .2779 BRA 1.7134 BC3 8.2762 FSP 11482

MID-COURSE EXECUTION ACCURACY
SGT 6229.5 SGR 867.8 SG3 3358.8
RRT -.7995 RRF -.8192 RTF .9910
SGB 6289.7 R23 .0355 R13 -.9914
SG1 6268.3 SG2 518.0 THA 173.60

ORBIT DETERMINATION ACCURACY
ST 1016.9 SR 478.6 SS 1918.3
CRT -.0014 CRS .4489 CST -.8934
LSA 2139.3 MSA 604.8 SSA 27.8
EL1 1016.9 EL2 478.6 ALF 179.95

LAUNCH DATE NOV 2 1964 FLIGHT TIME 332.00 ARRIVAL DATE SEP 30 1965

HELIOCENTRIC CONIC DISTANCE 747.132 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.788 GAL -3.45 AZL 88.44 HCA 229.39 SMA 186.07 ECC .21071 INC 1.5570 V1 30.020
RP 217.80 LAP -1.18 LOP 268.99 VP 22.482 GAP -7.21 AZP 91.01 TAL 339.97 TAP 209.37 RCA 146.86 APO 225.27 V2 25.228
RC 280.240 GL 15.99 GP 3.11 ZAL 118.27 ZAP 75.24 ETS 180.04 ZAE 107.14 ETE 177.56 ZAC 87.46 ETC 257.86 CLP 75.22

PLANETOCENTRIC CONIC

C3 10.418 VHL 3.228 DLA 22.90 RAL 167.16 RAD 6567.4 VEL 11.481 PTH 2.00 VHP 2.941 DPA 10.60 RAP 167.39 ECC 1.1715

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 16 29	2879.73	-28.32	87.65	25.77	89.89	17 4 29	2279.7	-28.03	79.00
90.00	11 10 15	3904.73	-9.35	155.36	20.99	63.15	12 15 20	3304.7	-12.88	148.46
100.00	17 55 6	2561.76	-29.83	64.23	25.74	92.06	18 37 48	1961.8	-29.22	55.48
100.00	12 14 19	3697.93	-8.01	139.45	20.28	61.10	13 15 57	3097.9	-11.80	132.71
110.00	19 38 34	2238.04	-33.46	39.29	25.39	97.44	20 15 52	1638.0	-32.07	30.33
110.00	12 47 20	3594.42	-4.90	129.69	18.37	56.13	13 47 14	2994.4	-9.31	123.39

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .0614 TRA 1.8470 TC3-8.5706 BAU 1.2026 SGT 6579.5 SGR 858.6 SG3 3289.3 ST 1086.1 SR 486.1 SS 1918.9
RDE .2712 RRA -.1102 RC3 1.0510 FAU .55540 RRT -.7889 RRF -.8082 RTF .9919 CRT -.0359 CRS .4550 CST -.9055
FDE-1.4060 FRA12.2308 FC-46.1543 BSP 22581 SGB 6635.3 R23 .0337 R13 -.9922 LSA 2174.4 MSA 607.8 SSA 27.5
BDE .2781 BRA 1.8503 BC3 8.6348 FSP 11248 SG1 6614.5 SG2 524.8 THA 174.08 EL1 1086.2 EL2 485.7 ALF 178.85

LAUNCH DATE NOV 2 1964 FLIGHT TIME 334.00 ARRIVAL DATE OCT 2 1965

HELIOCENTRIC CONIC DISTANCE 751.236 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.789 GAL -3.50 AZL 88.43 HCA 230.54 SMA 186.08 ECC .21102 INC 1.5676 V1 30.020
RP 217.44 LAP -1.21 LOP 270.14 VP 22.527 GAP -7.40 AZP 91.00 TAL 339.68 TAP 210.22 RCA 146.81 APO 225.34 V2 25.268
RC 281.529 GL 16.03 GP 3.03 ZAL 118.74 ZAP 73.46 ETS 180.14 ZAE 105.11 ETE 177.75 ZAC 87.26 ETC 257.94 CLP 73.44

PLANETOCENTRIC CONIC

C3 10.517 VHL 3.243 DLA 22.73 RAL 167.66 RAD 6567.4 VEL 11.485 PTH 2.00 VHP 2.972 DPA 10.78 RAP 166.77 ECC 1.1731

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 20 48	2873.39	-28.32	87.19	26.36	90.12	17 8 41	2273.4	-28.00	78.54
90.00	11 9 55	3914.90	-9.03	155.94	21.54	63.05	12 15 10	3314.9	-12.58	149.06
100.00	17 59 5	2556.47	-29.81	63.84	26.33	92.26	18 41 41	1956.5	-29.18	55.09
100.00	12 14 18	3707.05	-7.71	139.96	20.83	61.03	13 16 5	3107.1	-11.52	133.24
110.00	19 42 2	2234.41	-33.43	39.01	25.96	97.60	20 19 16	1634.4	-32.02	30.06
110.00	12 47 51	3601.89	-4.61	130.08	18.92	56.09	13 47 53	3001.9	-9.04	123.79

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .0479 TRA 1.9976 TC3-8.8831 BAU 1.2572 SGT 6917.0 SGR 845.6 SG3 3207.7 ST 1163.9 SR 491.1 SS 1917.4
RDE .2756 RRA -.1061 RC3 1.0189 FAU .53876 RRT -.7768 RRF -.7944 RTF .9924 CRT -.0563 CRS .4450 CST -.9185
FDE-1.3805 FRA12.1870 FC-44.3495 BSP 24018 SGB 6968.5 R23 .0300 R13 -.9927 LSA 2214.0 MSA 607.9 SSA 27.5
BDE .2797 BRA 2.0004 BC3 8.9413 FSP 11171 SG1 6948.3 SG2 530.1 THA 174.54 EL1 1164.3 EL2 490.2 ALF 178.35

LAUNCH DATE NOV 2 1964 FLIGHT TIME 336.00 ARRIVAL DATE OCT 4 1965

HELIOCENTRIC CONIC DISTANCE 755.352 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.790 GAL -3.56 AZL 88.42 HCA 231.69 SMA 186.10 ECC .21136 INC 1.5779 V1 30.020
RP 217.09 LAP -1.24 LOP 271.29 VP 22.573 GAP -7.58 AZP 90.98 TAL 339.37 TAP 211.06 RCA 146.76 APO 225.43 V2 25.307
RC 282.801 GL 16.05 GP 2.95 ZAL 119.24 ZAP 71.72 ETS 180.23 ZAE 103.11 ETE 177.94 ZAC 87.07 ETC 258.01 CLP 71.69

PLANETOCENTRIC CONIC

C3 10.624 VHL 3.259 DLA 22.55 RAL 168.17 RAD 6567.4 VEL 11.490 PTH 2.00 VHP 3.006 DPA 10.95 RAP 166.18 ECC 1.1748

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 25 20	2866.53	-28.31	86.69	26.97	90.38	17 13 6	2266.5	-27.96	78.04
90.00	11 9 27	3925.85	-8.69	156.57	22.09	62.94	12 14 53	3325.9	-12.25	149.70
100.00	18 3 16	2550.72	-29.80	63.41	26.93	92.49	18 45 47	1950.7	-29.13	54.67
100.00	12 14 11	3716.90	-7.38	140.51	21.39	60.95	13 16 8	3116.9	-11.20	133.80
110.00	19 45 39	2230.42	-33.39	38.70	26.55	97.78	20 22 50	1630.4	-31.96	29.77
110.00	12 48 18	3609.96	-4.31	130.51	19.49	56.06	13 48 28	3010.0	-8.73	124.22

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .0180 TRA 2.1341 TC3-9.2235 BAU 1.3176 SGT 7256.2 SGR 838.7 SG3 3133.4 ST 1232.3 SR 499.7 SS 1917.5
RDE .2822 RRA -.0998 RC3 .9956 FAU .52795 RRT -.7654 RRF -.7837 RTF .9931 CRT -.0930 CRS .4617 CST -.9256
FDE-1.4865 FRA12.0013 FC-43.0233 BSP 25072 SGB 7304.5 R23 .0301 R13 -.9933 LSA 2251.9 MSA 611.2 SSA 26.9
BDE .2828 BRA 2.1365 BC3 9.2771 FSP 10817 SG1 7284.7 SG2 537.6 THA 174.92 EL1 1233.3 EL2 497.1 ALF 177.42

LAUNCH DATE NOV 2 1964 FLIGHT TIME 338.00 ARRIVAL DATE OCT 6 1965

HELIOCENTRIC CONIC DISTANCE 759.474 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.791 GAL -3.62 AZL 88.41 HCA 232.84 SMA 186.12 ECC .21174 INC 1.5879 V1 30.020
RP 216.74 LAP -1.27 LOP 272.44 VP 22.618 GAP -7.77 AZP 90.96 TAL 339.05 TAP 211.89 RCA 146.71 APO 225.53 V2 25.346
RC 284.057 GL 16.07 GP 2.87 ZAL 119.75 ZAP 70.01 ETS 180.32 ZAE 101.15 ETE 178.11 ZAC 86.89 ETC 258.09 CLP 69.98

PLANETOCENTRIC CONIC

C3 10.738 VHL 3.277 DLA 22.35 RAL 168.70 RAD 6567.4 VEL 11.495 PTH 2.00 VHP 3.043 DPA 11.10 RAP 165.63 ECC 1.1767

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 30 7	2859.11	-28.31	86.14	27.60	90.65	17 17 46	2259.1	-27.92	77.50
90.00	11 8 52	3937.64	-8.33	157.24	22.67	62.84	12 14 29	3337.6	-11.91	150.39
100.00	18 7 42	2544.46	-29.78	62.95	27.55	92.73	18 50 6	1944.5	-29.08	54.21
100.00	12 13 58	3727.52	-7.03	141.10	21.97	60.87	13 16 5	3127.5	-10.86	134.41
110.00	19 49 29	2226.05	-33.35	38.37	27.15	97.97	20 26 35	1626.0	-31.89	29.45
110.00	12 48 40	3618.70	-3.97	130.97	20.08	56.02	13 48 59	3018.7	-8.41	124.68

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.0129 TRA 2.2743 TC3-9.5375 BAU 1.3763 SGT 7586.7 SGR 831.1 SG3 3053.9 ST 1303.6 SR 507.6 SS 1917.5
RDE .2885 RRA -.0938 RC3 .9708 FAU .51560 RRT -.7534 RRF -.7722 RTF .9936 CRT -.1263 CRS .4752 CST -.9323
FDE-1.5726 FRA11.8231 FC-41.5687 BSP 26135 SGB 7632.1 R23 .0299 R13 -.9938 LSA 2292.8 MSA 613.3 SSA 26.3
BDE .2888 BRA 2.2763 BC3 9.5868 FSP 10488 SG1 7612.7 SG2 544.6 THA 175.26 EL1 1305.5 EL2 502.9 ALF 176.69

LAUNCH DATE NOV 2 1964 FLIGHT TIME 340.00 ARRIVAL DATE OCT 8 1965

HELIOCENTRIC CONIC DISTANCE 763.601 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.793 GAL -3.68 AZL 88.40 HCA 234.00 SMA 186.14 ECC .21216 INC 1.5976 V1 30.020
RP 216.39 LAP -1.29 LOP 273.59 VP 22.663 GAP -7.94 AZP 90.94 TAL 338.71 TAP 212.70 RCA 146.65 APO 225.63 V2 25.385
RC 285.296 GL 16.07 GP 2.80 ZAL 120.29 ZAP 68.34 ETS 180.40 ZAE 99.23 ETE 178.27 ZAC 86.72 ETC 258.16 CLP 68.32

PLANETOCENTRIC CONIC

C3 10.861 VHL 3.296 DLA 22.13 RAL 169.24 RAD 6567.4 VEL 11.500 PTH 2.00 VHP 3.082 DPA 11.24 RAP 165.12 ECC 1.1787

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 35 8	2851.18	-28.30	85.56	28.24	90.94	17 22 39	2251.2	-27.87	76.92
90.00	11 8 9	3950.21	-7.94	157.96	23.26	62.73	12 14 0	3350.2	-11.53	151.12
100.00	18 12 20	2537.75	-29.76	62.45	28.18	92.99	18 54 38	1937.7	-29.02	53.72
100.00	12 13 38	3738.88	-6.66	141.73	22.56	60.79	13 15 57	3138.9	-10.50	135.05
110.00	19 53 29	2221.31	-33.31	38.01	27.78	98.18	20 30 30	1621.3	-31.82	29.10
110.00	12 48 59	3628.08	-3.62	131.46	20.69	55.99	13 49 27	3028.1	-8.06	125.18

DIFFERENTIAL CORRECTIONS
TDE -.0454 TRA 2.4172 TC3-9.8277 BAU 1.4336
RDE .2948 RRA -.0880 RC3 .9453 FAU .50225
FDE-1.6508 FRA11.6436 FC-40.0349 BSP 27190
BDE .2983 BRA 2.4188 BC3 9.8730 FSP 10169

MID-COURSE EXECUTION ACCURACY
SGT 7908.8 SGR 823.5 SG3 2970.6
RRT -.7409 RRF -.7601 RTF .9941
SGB 7951.5 R23 .0297 R13 -.9942
SG1 7932.4 SG2 551.4 THA 175.57

ORBIT DETERMINATION ACCURACY
ST 1377.1 SR 515.2 SS 1917.5
CRT -.1572 CRS .4880 CST -.9383
LSA 2336.7 MSA 615.0 SSA 25.9
EL1 1379.9 EL2 507.8 ALF 176.11

LAUNCH DATE NOV 2 1964 FLIGHT TIME 342.00 ARRIVAL DATE OCT 10 1965

HELIOCENTRIC CONIC DISTANCE 767.734 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.794 GAL -3.75 AZL 88.39 HCA 235.16 SMA 186.17 ECC .21261 INC 1.6071 V1 30.020
RP 216.05 LAP -1.32 LOP 274.75 VP 22.709 GAP -8.12 AZP 90.92 TAL 338.36 TAP 213.51 RCA 146.59 APO 225.75 V2 25.423
RC 286.520 GL 16.07 GP 2.73 ZAL 120.84 ZAP 66.72 ETS 180.47 ZAE 97.35 ETE 178.42 ZAC 86.55 ETC 258.22 CLP 66.69

PLANETOCENTRIC CONIC

C3 10.992 VHL 3.315 DLA 21.90 RAL 169.79 RAD 6567.4 VEL 11.506 PTH 2.00 VHP 3.124 DPA 11.35 RAP 164.66 ECC 1.1809

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 40 22	2842.79	-28.29	84.95	28.90	91.25	17 27 45	2242.8	-27.82	76.32
90.00	11 7 21	3963.53	-7.52	158.71	23.87	62.62	12 13 25	3363.5	-11.13	151.90
100.00	18 17 11	2530.60	-29.73	61.92	28.84	93.27	18 59 22	1930.6	-28.96	53.20
100.00	12 13 13	3750.95	-6.25	142.40	23.18	60.71	13 15 44	3150.9	-10.11	135.74
110.00	19 57 40	2216.23	-33.26	37.62	28.42	98.40	20 34 36	1616.2	-31.74	28.72
110.00	12 49 13	3638.08	-3.24	131.98	21.31	55.95	13 49 51	3038.1	-7.68	125.72

DIFFERENTIAL CORRECTIONS
TDE -.0796 TRA 2.5636 TC-10.0930 BAU 1.4894
RDE .3010 RRA -.0824 RC3 .9194 FAU .48823
FDE-1.7202 FRA11.4615 FC-38.4524 BSP 28246
BDE .3113 BRA 2.5650 BC310.1348 FSP 9863

MID-COURSE EXECUTION ACCURACY
SGT 8222.5 SGR 815.9 SG3 2884.6
RRT -.7280 RRF -.7476 RTF .9944
SGB 8262.9 R23 .0296 R13 -.9946
SG1 8244.1 SG2 557.9 THA 175.85

ORBIT DETERMINATION ACCURACY
ST 1453.0 SR 522.5 SS 1917.0
CRT -.1860 CRS .4999 CST -.9436
LSA 2383.0 MSA 616.2 SSA 25.4
EL1 1456.7 EL2 512.0 ALF 175.63

LAUNCH DATE NOV 2 1964 FLIGHT TIME 344.00 ARRIVAL DATE OCT 12 1965

HELIOCENTRIC CONIC DISTANCE 771.873 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.796 GAL -3.82 AZL 88.38 HCA 236.32 SMA 186.20 ECC .21309 INC 1.6164 V1 30.020
RP 215.71 LAP -1.34 LOP 275.92 VP 22.754 GAP -8.29 AZP 90.90 TAL 337.99 TAP 214.31 RCA 146.52 APO 225.88 V2 25.461
RC 287.729 GL 16.06 GP 2.66 ZAL 121.42 ZAP 65.14 ETS 180.54 ZAE 95.50 ETE 178.56 ZAC 86.40 ETC 258.27 CLP 65.11

PLANETOCENTRIC CONIC

C3 11.133 VHL 3.337 DLA 21.66 RAL 170.36 RAD 6567.4 VEL 11.512 PTH 2.01 VHP 3.168 DPA 11.46 RAP 164.24 ECC 1.1832

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 45 48	2833.98	-28.28	84.31	29.59	91.57	17 33 2	2234.0	-27.76	75.68
90.00	11 6 27	3977.57	-7.08	159.51	24.50	62.51	12 12 45	3377.6	-10.71	152.71
100.00	18 22 13	2523.07	-29.70	61.36	29.51	93.56	19 4 17	1923.1	-28.89	52.65
100.00	12 12 43	3763.71	-5.83	143.11	23.82	60.63	13 15 27	3163.7	-9.70	136.46
110.00	20 2 1	2210.84	-33.20	37.21	29.07	98.64	20 38 52	1610.8	-31.65	28.32
110.00	12 49 24	3648.70	-2.83	132.54	21.96	55.92	13 50 13	3048.7	-7.29	126.28

DIFFERENTIAL CORRECTIONS
TDE -.1163 TRA 2.7128 TC-10.3332 BAU 1.5437
RDE .3071 RRA -.0769 RC3 .8934 FAU .47365
FDE-1.7827 FRA11.2768 FC-36.8331 BSP 29278
BDE .3284 BRA 2.7139 BC310.3717 FSP 9558

MID-COURSE EXECUTION ACCURACY
SGT 8527.0 SGR 808.6 SG3 2796.5
RRT -.7148 RRF -.7347 RTF .9947
SGB 8565.3 R23 .0294 R13 -.9948
SG1 8546.7 SG2 564.1 THA 176.11

ORBIT DETERMINATION ACCURACY
ST 1530.9 SR 529.4 SS 1915.9
CRT -.2136 CRS .5112 CST -.9485
LSA 2431.9 MSA 616.3 SSA 24.9
EL1 1535.6 EL2 515.6 ALF 175.24

LAUNCH DATE NOV 2 1964 FLIGHT TIME 346.00 ARRIVAL DATE OCT 14 1965

HELIOCENTRIC CONIC DISTANCE 776.016 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.798 GAL -3.89 AZL 88.37 HCA 237.49 SMA 186.23 ECC .21360 INC 1.6254 V1 30.020
RP 215.38 LAP -1.37 LOP 277.08 VP 22.798 GAP -8.46 AZP 90.87 TAL 337.61 TAP 215.09 RCA 146.45 APO 226.01 V2 25.498
RC 288.924 GL 16.04 GP 2.59 ZAL 122.02 ZAP 63.59 ETS 180.61 ZAE 93.70 ETE 178.69 ZAC 86.26 ETC 258.33 CLP 63.57

PLANETOCENTRIC CONIC

C3 11.283 VHL 3.359 DLA 21.39 RAL 170.94 RAD 6567.4 VEL 11.518 PTH 2.01 VHP 3.215 DPA 11.54 RAP 163.86 ECC 1.1857

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 51 26	2824.78	-28.26	83.63	30.29	91.91	17 38 30	2224.8	-27.69	75.01
90.00	11 5 28	3992.29	-6.62	160.34	25.15	62.40	12 12 0	3392.3	-10.26	153.56
100.00	18 27 27	2515.17	-29.66	60.78	30.20	93.87	19 9 22	1915.2	-28.81	52.08
100.00	12 12 8	3777.13	-5.38	143.86	24.47	60.55	13 15 5	3177.1	-9.26	137.22
110.00	20 6 32	2205.16	-33.14	36.78	29.75	98.89	20 43 17	1605.2	-31.56	27.91
110.00	12 49 32	3659.91	-2.40	133.12	22.62	55.89	13 50 32	3059.9	-6.86	126.88

DIFFERENTIAL CORRECTIONS
TDE -.1549 TRA 2.8650 TC-10.5494 BAU 1.5967
RDE .3133 RRA -.0715 RC3 .8676 FAU .45873
FDE-1.8418 FRA11.0882 FC-35.1983 BSP 30299
BDE .3495 BRA 2.8659 BC310.5850 FSP 9256

MID-COURSE EXECUTION ACCURACY
SGT 8822.8 SGR 801.5 SG3 2707.0
RRT -.7013 RRF -.7216 RTF .9949
SGB 8859.2 R23 .0294 R13 -.9951
SG1 8840.8 SG2 570.2 THA 176.34

ORBIT DETERMINATION ACCURACY
ST 1610.7 SR 536.1 SS 1914.6
CRT -.2395 CRS .5225 CST -.9527
LSA 2483.3 MSA 616.5 SSA 24.5
EL1 1616.4 EL2 518.7 ALF 174.92

LAUNCH DATE NOV 2 1964 FLIGHT TIME 348.00 ARRIVAL DATE OCT 16 1965

HELIOCENTRIC CONIC DISTANCE 780.166 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.800 GAL -3.96 AZL 88.37 HCA 238.66 SMA 186.27 ECC .21416 INC 1.6342 V1 30.020
RP 215.05 LAP -1.40 LOP 278.25 VP 22.843 GAP -8.63 AZP 90.85 TAL 337.21 TAP 215.87 RCA 146.38 APO 226.16 V2 25.535
RC 290.105 GL 16.01 GP 2.52 ZAL 122.63 ZAP 62.09 ETS 180.67 ZAE 91.94 ETE 178.82 ZAC 86.14 ETC 258.37 CLP 62.06

PLANETOCENTRIC CONIC

C3 11.443 VHL 3.383 DLA 21.11 RAL 171.54 RAD 6567.4 VEL 11.525 PTH 2.01 VHP 3.264 DPA 11.61 RAP 163.52 ECC 1.1883

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 57 13	2815.25	-28.23	82.94	31.00	92.25	17 44 9	2215.3	-27.62	74.33
90.00	11 4 25	4007.66	-6.13	161.21	25.82	62.30	12 11 12	3407.7	-9.79	154.45
100.00	18 32 50	2506.96	-29.62	60.17	30.91	94.19	19 14 37	1907.0	-28.73	51.48
100.00	12 11 29	3791.19	-4.91	144.63	25.15	60.48	13 14 40	3191.2	-8.81	138.01
110.00	20 11 12	2199.20	-33.08	36.32	30.44	99.15	20 47 51	1599.2	-31.46	27.47
110.00	12 49 37	3671.70	-1.95	133.74	23.31	55.87	13 50 48	3071.7	-6.42	127.50

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.1969 TRA 3.0189 TC-10.7445 BAU 1.6487 SGT 9110.2 SGR 795.1 SG3 2617.1 ST 1692.0 SR 542.8 SS 1913.2
RDE .3196 RRA -.0663 RC3 .8423 FAU .44380 RRT -.6878 RRF -.7086 RTF .9951 CRT -.2652 CRS .5344 CST -.9564
FDE-1.8999 FRA10.8929 FC-33.5767 BSP 31274 SGB 9144.8 R23 .0295 R13 -.9952 LSA 2537.2 MSA 616.1 SSA 24.1
BDE .3754 BRA 3.0196 BC310.7774 FSP 8949 SG1 9126.7 SG2 576.1 THA 176.55 EL1 1698.7 EL2 521.2 ALF 174.63

LAUNCH DATE NOV 2 1964 FLIGHT TIME 350.00 ARRIVAL DATE OCT 18 1965

HELIOCENTRIC CONIC DISTANCE 784.320 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.803 GAL -4.04 AZL 88.36 HCA 239.83 SMA 186.31 ECC .21475 INC 1.6429 V1 30.020
RP 214.72 LAP -1.42 LOP 279.43 VP 22.887 GAP -8.80 AZP 90.83 TAL 336.80 TAP 216.63 RCA 146.30 APO 226.32 V2 25.572
RC 291.272 GL 15.98 GP 2.46 ZAL 123.26 ZAP 60.64 ETS 180.73 ZAE 90.21 ETE 178.93 ZAC 86.02 ETC 258.41 CLP 60.61

PLANETOCENTRIC CONIC

C3 11.613 VHL 3.408 DLA 20.82 RAL 172.14 RAD 6567.4 VEL 11.533 PTH 2.01 VHP 3.315 DPA 11.66 RAP 163.23 ECC 1.1911

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 3 11	2805.42	-28.21	82.22	31.74	92.61	17 49 56	2205.4	-27.55	73.62
90.00	11 3 17	4023.65	-5.62	162.11	26.50	62.20	12 10 21	3423.6	-9.30	155.37
100.00	18 38 23	2498.45	-29.58	59.54	31.64	94.51	19 20 1	1898.4	-28.64	50.86
100.00	12 10 47	3805.86	-4.42	145.44	25.84	60.41	13 14 12	3205.9	-8.32	138.84
110.00	20 16 1	2193.00	-33.01	35.85	31.15	99.42	20 52 34	1593.0	-31.36	27.02
110.00	12 49 38	3684.06	-1.48	134.38	24.01	55.85	13 51 2	3084.1	-5.95	128.15

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2413 TRA 3.1766 TC-10.9143 BAU 1.6993 SGT 9388.8 SGR 789.0 SG3 2526.9 ST 1775.6 SR 549.2 SS 1911.5
RDE .3259 RRA -.0612 RC3 .8173 FAU .42868 RRT -.6742 RRF -.6955 RTF .9953 CRT -.2898 CRS .5461 CST -.9598
FDE-1.9537 FRA10.6968 FC-31.9560 BSP 32237 SGB 9421.9 R23 .0296 R13 -.9954 LSA 2594.0 MSA 615.3 SSA 23.6
BDE .4055 BRA 3.1772 BC310.9449 FSP 8646 SG1 9404.0 SG2 581.8 THA 176.74 EL1 1783.4 EL2 523.3 ALF 174.39

LAUNCH DATE NOV 2 1964 FLIGHT TIME 352.00 ARRIVAL DATE OCT 20 1965

HELIOCENTRIC CONIC DISTANCE 788.478 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.805 GAL -4.12 AZL 88.35 HCA 241.01 SMA 186.35 ECC .21537 INC 1.6513 V1 30.020
RP 214.40 LAP -1.44 LOP 280.61 VP 22.931 GAP -8.96 AZP 90.80 TAL 336.37 TAP 217.38 RCA 146.22 APO 226.49 V2 25.608
RC 292.426 GL 15.93 GP 2.39 ZAL 123.91 ZAP 59.22 ETS 180.78 ZAE 88.53 ETE 179.04 ZAC 85.91 ETC 258.44 CLP 59.19

PLANETOCENTRIC CONIC

C3 11.795 VHL 3.434 DLA 20.51 RAL 172.76 RAD 6567.4 VEL 11.540 PTH 2.01 VHP 3.369 DPA 11.69 RAP 162.98 ECC 1.1941

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 9 17	2795.33	-28.17	81.48	32.49	92.98	17 55 53	2195.3	-27.46	72.89
90.00	11 2 7	4040.24	-5.10	163.05	27.21	62.11	12 9 27	3440.2	-8.79	156.32
100.00	18 44 5	2489.67	-29.53	58.89	32.38	94.85	19 25 34	1889.7	-28.55	50.23
100.00	12 10 0	3821.12	-3.90	146.29	26.55	60.34	13 13 42	3221.1	-7.82	139.69
110.00	20 20 57	2186.58	-32.94	35.36	31.88	99.70	20 57 24	1586.6	-31.25	26.55
110.00	12 49 37	3696.98	-.99	135.06	24.74	55.83	13 51 14	3097.0	-5.46	128.83

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.2866 TRA 3.3388 TC-11.0562 BAU 1.7479 SGT 9657.7 SGR 783.2 SG3 2436.5 ST 1861.1 SR 555.2 SS 1908.3
RDE .3321 RRA -.0563 RC3 .7924 FAU .41328 RRT -.6605 RRF -.6821 RTF .9954 CRT -.3120 CRS .5563 CST -.9628
FDE-1.9967 FRA10.5037 FC-30.3340 BSP 33223 SGB 9689.4 R23 .0296 R13 -.9955 LSA 2652.5 MSA 614.2 SSA 23.2
BDE .4387 BRA 3.3393 BC311.0846 FSP 8365 SG1 9671.6 SG2 587.2 THA 176.92 EL1 1869.9 EL2 525.0 ALF 174.23

LAUNCH DATE NOV 2 1964 FLIGHT TIME 354.00 ARRIVAL DATE OCT 22 1965

HELIOCENTRIC CONIC DISTANCE 792.642 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.808 GAL -4.21 AZL 88.34 HCA 242.19 SMA 186.40 ECC .21604 INC 1.6595 V1 30.020
RP 214.08 LAP -1.47 LOP 281.79 VP 22.975 GAP -9.13 AZP 90.77 TAL 335.93 TAP 218.12 RCA 146.13 APO 226.67 V2 25.644
RC 293.566 GL 15.88 GP 2.33 ZAL 124.58 ZAP 57.84 ETS 180.82 ZAE 86.88 ETE 179.15 ZAC 85.81 ETC 258.47 CLP 57.81

PLANETOCENTRIC CONIC

C3 11.988 VHL 3.462 DLA 20.19 RAL 173.39 RAD 6567.5 VEL 11.549 PTH 2.02 VHP 3.424 DPA 11.71 RAP 162.77 ECC 1.1973

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 15 32	2785.01	-28.13	80.73	33.26	93.36	18 1 57	2185.0	-27.37	72.15
90.00	11 0 53	4057.38	-4.55	164.01	27.94	62.02	12 8 30	3457.4	-8.26	157.29
100.00	18 49 54	2480.68	-29.48	58.23	33.14	95.20	19 31 15	1880.7	-28.45	49.58
100.00	12 9 11	3836.94	-3.37	147.16	27.28	60.28	13 13 8	3236.9	-7.30	140.58
110.00	20 26 2	2179.96	-32.86	34.86	32.62	99.99	21 2 22	1580.0	-31.13	26.07
110.00	12 49 33	3710.43	-.47	135.76	25.48	55.82	13 51 24	3110.4	-4.95	129.54

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE -.3396 TRA 3.4990 TC-11.1902 BAU 1.7977 SGT 9920.8 SGR 778.7 SG3 2348.3 ST 1948.1 SR 561.5 SS 1907.6
RDE .3388 RRA -.0514 RC3 .7693 FAU .39886 RRT -.6475 RRF -.6699 RTF .9955 CRT -.3374 CRS .5705 CST -.9654
FDE-2.0566 FRA10.2916 FC-28.8039 BSP 34063 SGB 9951.3 R23 .0302 R13 -.9956 LSA 2715.4 MSA 612.9 SSA 22.8
BDE .4797 BRA 3.4993 BC311.2166 FSP 8045 SG1 9933.6 SG2 592.6 THA 177.08 EL1 1958.0 EL2 525.9 ALF 174.01

LAUNCH DATE NOV 2 1964 FLIGHT TIME 356.00 ARRIVAL DATE OCT 24 1965

HELIOCENTRIC CONIC DISTANCE 796.810 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.811 GAL -4.30 AZL 88.33 HCA 243.37 SMA 186.45 ECC .21674 INC 1.6677 V1 30.020
RP 213.77 LAP -1.49 LOP 282.97 VP 23.018 GAP -9.29 AZP 90.75 TAL 335.48 TAP 218.85 RCA 146.04 APO 226.86 V2 25.679
RC 294.693 GL 15.82 GP 2.27 ZAL 125.26 ZAP 56.50 ETS 180.86 ZAE 85.27 ETE 179.24 ZAC 85.73 ETC 258.49 CLP 56.47

PLANETOCENTRIC CONIC

C3 12.194 VHL 3.492 DLA 19.86 RAL 174.03 RAD 6567.5 VEL 11.558 PTH 2.02 VHP 3.482 DPA 11.72 RAP 162.60 ECC 1.2007

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 21 54	2774.50	-28.09	79.97	34.04	93.74	18 8 8	2174.5	-27.28	71.39
90.00	10 59 37	4075.07	-3.98	165.00	28.68	61.94	12 7 32	3475.1	-7.71	158.30
100.00	18 55 52	2471.49	-29.42	57.55	33.92	95.55	19 37 3	1871.5	-28.34	48.91
100.00	12 8 20	3853.31	-2.82	148.06	28.04	60.23	13 12 33	3253.3	-6.76	141.49
110.00	20 31 13	2173.15	-32.78	34.35	33.38	100.29	21 7 26	1573.2	-31.01	25.57
110.00	12 49 28	3724.41	.06	136.49	26.24	55.82	13 51 32	3124.4	-4.42	130.27

DIFFERENTIAL CORRECTIONS
TDE -.3931 TRA 3.6647 TC-11.2934 BAU 1.8450
RDE .3454 RRA -.0467 RC3 .7460 FAU .38401
FDE-2.1039 FRA10.0861 FC-27.2638 BSP 34935
BDE .5233 BRA 3.6650 BC311.3180 FSP 7752

MID-COURSE EXECUTION ACCURACY
SGT10173.3 SGR 774.1 SG3 2259.8
RRT -.6344 RRF -.6575 RTF .9955
SGB10202.7 R23 .0307 R13 -.9956
SG110185.1 SG2 597.7 THA 177.23

ORBIT DETERMINATION ACCURACY
ST 2037.3 SR 567.5 SS 1905.2
CRT -.3600 CRS .5828 CST -.9677
LSA 2780.0 MSA 611.3 SSA 22.4
EL1 2048.2 EL2 526.6 ALF 173.87

LAUNCH DATE NOV 2 1964 FLIGHT TIME 358.00 ARRIVAL DATE OCT 26 1965

HELIOCENTRIC CONIC DISTANCE 800.982 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.814 GAL -4.39 AZL 88.32 HCA 244.56 SMA 186.50 ECC .21748 INC 1.6757 V1 30.020
RP 213.46 LAP -1.51 LOP 284.16 VP 23.061 GAP -9.45 AZP 90.72 TAL 335.00 TAP 219.57 RCA 145.94 APO 227.06 V2 25.714
RC 295.805 GL 15.76 GP 2.21 ZAL 125.96 ZAP 55.21 ETS 180.90 ZAE 83.70 ETE 179.34 ZAC 85.65 ETC 258.51 CLP 55.18

PLANETOCENTRIC CONIC

C3 12.412 VHL 3.523 DLA 19.51 RAL 174.68 RAD 6567.5 VEL 11.567 PTH 2.02 VHP 3.542 DPA 11.71 RAP 162.48 ECC 1.2043

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 28 22	2763.83	-28.04	79.19	34.85	94.12	18 14 26	2163.8	-27.17	70.63
90.00	10 58 18	4093.27	-3.40	166.02	29.45	61.87	12 6 31	3493.3	-7.14	159.34
100.00	19 1 56	2482.12	-29.36	56.86	34.71	95.91	19 42 58	1862.1	-28.23	48.24
100.00	12 7 25	3870.21	-2.24	148.99	28.81	60.18	13 11 56	3270.2	-6.20	142.43
110.00	20 36 31	2166.19	-32.69	33.82	34.15	100.59	21 12 37	1566.2	-30.89	25.07
110.00	12 49 19	3738.90	.62	137.24	27.02	55.82	13 51 38	3138.9	-3.87	131.03

DIFFERENTIAL CORRECTIONS
TDE -.4483 TRA 3.8353 TC-11.3726 BAU 1.8910
RDE .3520 RRA -.0424 RC3 .7233 FAU .36928
FDE-2.1432 FRA 9.8842 FC-25.7569 BSP 35816
BDE .5700 BRA 3.8356 BC311.3955 FSP 7468

MID-COURSE EXECUTION ACCURACY
SGT10417.9 SGR 769.9 SG3 2172.7
RRT -.6215 RRF -.6452 RTF .9956
SGB10446.3 R23 .0311 R13 -.9957
SG110428.9 SG2 602.6 THA 177.36

ORBIT DETERMINATION ACCURACY
ST 2128.4 SR 573.1 SS 1901.7
CRT -.3808 CRS .5941 CST -.9698
LSA 2846.6 MSA 609.4 SSA 22.0
EL1 2140.3 EL2 527.0 ALF 173.77

LAUNCH DATE NOV 2 1964 FLIGHT TIME 360.00 ARRIVAL DATE OCT 28 1965

HELIOCENTRIC CONIC DISTANCE 805.158 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.817 GAL -4.49 AZL 88.32 HCA 245.75 SMA 186.55 ECC .21826 INC 1.6835 V1 30.020
RP 213.16 LAP -1.53 LOP 285.35 VP 23.104 GAP -9.61 AZP 90.69 TAL 334.52 TAP 220.27 RCA 145.84 APO 227.27 V2 25.748
RC 296.904 GL 15.68 GP 2.16 ZAL 126.67 ZAP 53.95 ETS 180.94 ZAE 82.16 ETE 179.42 ZAC 85.58 ETC 258.52 CLP 53.92

PLANETOCENTRIC CONIC

C3 12.644 VHL 3.556 DLA 19.15 RAL 175.33 RAD 6567.5 VEL 11.577 PTH 2.02 VHP 3.604 DPA 11.68 RAP 162.39 ECC 1.2081

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 34 57	2753.02	-27.98	78.40	35.67	94.51	18 20 50	2153.0	-27.06	69.86
90.00	10 56 57	4111.98	-2.80	167.07	30.24	61.81	12 5 29	3512.0	-6.55	160.39
100.00	19 8 6	2452.62	-29.29	56.16	35.53	96.27	19 48 59	1852.6	-28.11	47.56
100.00	12 6 29	3887.61	-1.66	149.94	29.60	60.15	13 11 17	3287.6	-5.62	143.39
110.00	20 41 55	2159.10	-32.60	33.29	34.94	100.89	21 17 54	1559.1	-30.76	24.56
110.00	12 49 9	3753.90	1.19	138.03	27.83	55.84	13 51 43	3153.9	-3.30	131.82

DIFFERENTIAL CORRECTIONS
TDE -.5086 TRA 4.0073 TC-11.4354 BAU 1.9367
RDE .3588 RRA -.0381 RC3 .7015 FAU .35496
FDE-2.1850 FRA 9.6772 FC-24.3039 BSP 36617
BDE .6224 BRA 4.0074 BC311.4569 FSP 7180

MID-COURSE EXECUTION ACCURACY
SGT10654.9 SGR 766.4 SG3 2087.2
RRT -.6092 RRF -.6336 RTF .9956
SGB10682.4 R23 .0316 R13 -.9957
SG110665.2 SG2 607.2 THA 177.48

ORBIT DETERMINATION ACCURACY
ST 2221.6 SR 578.7 SS 1898.6
CRT -.4024 CRS .6064 CST -.9718
LSA 2916.5 MSA 607.0 SSA 21.6
EL1 2234.5 EL2 526.7 ALF 173.66

LAUNCH DATE NOV 2 1964 FLIGHT TIME 362.00 ARRIVAL DATE OCT 30 1965

HELIOCENTRIC CONIC DISTANCE 809.338 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.820 GAL -4.58 AZL 88.31 HCA 246.95 SMA 186.61 ECC .21908 INC 1.6912 V1 30.020
RP 212.87 LAP -1.56 LOP 286.55 VP 23.146 GAP -9.76 AZP 90.66 TAL 334.02 TAP 220.96 RCA 145.73 APO 227.49 V2 25.782
RC 297.989 GL 15.60 GP 2.10 ZAL 127.40 ZAP 52.72 ETS 180.97 ZAE 80.66 ETE 179.50 ZAC 85.52 ETC 258.52 CLP 52.69

PLANETOCENTRIC CONIC

C3 12.891 VHL 3.590 DLA 18.77 RAL 176.00 RAD 6567.5 VEL 11.588 PTH 2.03 VHP 3.667 DPA 11.65 RAP 162.34 ECC 1.2121

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 41 37	2742.12	-27.92	77.61	36.50	94.91	18 27 19	2142.1	-26.95	69.08
90.00	10 55 35	4131.16	-2.18	168.14	31.05	61.76	12 4 26	3531.2	-5.94	161.48
100.00	19 14 23	2443.01	-29.21	55.46	36.35	96.63	19 55 6	1843.0	-27.99	46.87
100.00	12 5 31	3905.50	-1.05	150.92	30.42	60.12	13 10 36	3305.5	-5.02	144.38
110.00	20 47 25	2151.90	-32.51	32.75	35.75	101.20	21 23 17	1551.9	-30.63	24.04
110.00	12 48 58	3769.37	1.78	138.83	28.65	55.86	13 51 47	3169.4	-2.71	132.63

DIFFERENTIAL CORRECTIONS
TDE -.5710 TRA 4.1838 TC-11.4760 BAU 1.9812
RDE .3657 RRA -.0341 RC3 .6802 FAU .34076
FDE-2.2208 FRA 9.4719 FC-22.8856 BSP 37417
BDE .6781 BRA 4.1840 BC311.4962 FSP 6903

MID-COURSE EXECUTION ACCURACY
SGT10884.2 SGR 763.2 SG3 2003.1
RRT -.5973 RRF -.6225 RTF .9956
SGB10910.9 R23 .0321 R13 -.9957
SG110893.8 SG2 611.6 THA 177.59

ORBIT DETERMINATION ACCURACY
ST 2316.7 SR 584.1 SS 1894.4
CRT -.4226 CRS .6181 CST -.9735
LSA 2988.5 MSA 604.4 SSA 21.2
EL1 2330.5 EL2 526.2 ALF 173.59

LAUNCH DATE NOV 2 1964 FLIGHT TIME 364.00 ARRIVAL DATE NOV 1 1965

HELIOCENTRIC CONIC DISTANCE 813.520 EARTH TO MARS

RL	148.42	LAL	-.00	LOL	39.61	VL	32.823	GAL	-4.69	AZL	88.30	HCA	248.15	SMA	186.67	ECC	.21994	INC	1.6988
RP	212.57	LAP	-1.58	LOP	287.75	VP	23.188	GAP	-9.92	AZP	90.63	TAL	333.50	TAP	221.65	RCA	145.61	APO	227.72
RC	299.061	GL	15.51	GP	2.05	ZAL	128.14	ZAP	51.54	ETS	181.00	ZAE	79.20	ETE	179.58	ZAC	85.47	ETC	258.52

V1 30.020 V2 25.815 CLP 51.51

PLANETOCENTRIC CONIC

C3	13.152	VHL	3.627	DLA	18.39	RAL	176.67	RAD	6567.5	VEL	11.599	PTH	2.03	VHP	3.733	DPA	11.59	RAP	162.33

ECC 1.2165

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 48 22	2731.15	-27.86	76.82	37.35	95.30	18 33 53	2131.2	-26.83	68.30
90.00	10 54 12	4150.79	-1.55	169.24	31.88	61.72	12 3 23	3550.8	-5.32	162.58
100.00	19 20 44	2433.31	-29.14	54.75	37.19	97.00	20 1 17	1833.3	-27.86	46.18
100.00	12 4 31	3923.87	-.43	151.93	31.25	60.11	13 9 55	3323.9	-4.40	145.40
110.00	20 53 1	2144.61	-32.41	32.20	36.57	101.51	21 28 45	1544.6	-30.49	23.51
110.00	12 48 44	3785.33	2.39	139.67	29.49	55.89	13 51 49	3185.3	-2.10	133.46

DIFFERENTIAL CORRECTIONS

TDE	-.6367	TRA	4.3647	TC	-11.4950	BAU	2.0245
RDE	.3728	RRA	-.0303	RC3	.6596	FAU	.32682
FDE	-2.2525	FRA	9.2679	FC	-21.5130	BSP	38192
BDE	.7378	BRA	4.3648	BC	311.5139	FSP	6631

MID-COURSE EXECUTION ACCURACY

SGT	11105.4	SGR	760.4	SG3	1920.8		
RRT	-.5858	RRF	-.6116	RTF	.9956		
SGB	11131.4	RZ3	.0327	R13	-.9957		
SG	111114.4	SG2	615.8	THA	177.70		

ORBIT DETERMINATION ACCURACY

ST	2413.9	SR	589.3	SS	1889.3
CRT	-.4422	CRS	.6294	CST	-.9751
LSA	3062.9	MSA	601.4	SSA	20.9
EL1	2428.6	EL2	525.3	ALF	173.54

LAUNCH DATE NOV 2 1964 FLIGHT TIME 366.00 ARRIVAL DATE NOV 3 1965

HELIOCENTRIC CONIC DISTANCE 817.705 EARTH TO MARS

RL	148.42	LAL	-.00	LOL	39.61	VL	32.827	GAL	-4.79	AZL	88.29	HCA	249.35	SMA	186.73	ECC	.22085	INC	1.7064
RP	212.29	LAP	-1.60	LOP	288.95	VP	23.229	GAP	-10.08	AZP	90.60	TAL	332.97	TAP	222.32	RCA	145.49	APO	227.97
RC	300.120	GL	15.42	GP	2.00	ZAL	128.90	ZAP	50.39	ETS	181.02	ZAE	77.77	ETE	179.65	ZAC	85.43	ETC	258.51

V1 30.020 V2 25.847 CLP 50.36

PLANETOCENTRIC CONIC

C3	13.430	VHL	3.665	DLA	17.99	RAL	177.35	RAD	6567.5	VEL	11.611	PTH	2.03	VHP	3.801	DPA	11.53	RAP	162.36

ECC 1.2210

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 55 12	2720.14	-27.79	76.02	38.22	95.69	18 40 32	2120.1	-26.71	67.52
90.00	10 52 47	4170.86	-.90	170.36	32.73	61.70	12 2 18	3570.9	-4.68	163.71
100.00	19 27 10	2423.55	-29.05	54.04	38.05	97.36	20 7 34	1823.5	-27.73	45.48
100.00	12 3 30	3942.68	.21	152.96	32.11	60.11	13 9 13	3342.7	-3.77	146.44
110.00	20 58 40	2137.26	-32.31	31.65	37.41	101.82	21 34 18	1537.3	-30.35	22.99
110.00	12 48 29	3801.74	3.02	140.52	30.36	55.93	13 51 51	3201.7	-1.48	134.32

DIFFERENTIAL CORRECTIONS

TDE	-.7047	TRA	4.5499	TC	-11.4941	BAU	2.0669
RDE	.3799	RRA	-.0287	RC3	.6395	FAU	.31314
FDE	-2.2801	FRA	9.0655	FC	-20.1860	BSP	38956
BDE	.8006	BRA	4.5500	BC	311.5118	FSP	6367

MID-COURSE EXECUTION ACCURACY

SGT	11319.1	SGR	757.9	SG3	1840.3		
RRT	-.5749	RRF	-.6013	RTF	.9956		
SGB	11344.5	RZ3	.0333	R13	-.9956		
SG	111327.6	SG2	619.7	THA	177.79		

ORBIT DETERMINATION ACCURACY

ST	2512.4	SR	594.3	SS	1883.4
CRT	-.4605	CRS	.6404	CST	-.9765
LSA	3139.1	MSA	598.5	SSA	20.5
EL1	2528.0	EL2	524.3	ALF	173.50

LAUNCH DATE NOV 2 1964 FLIGHT TIME 368.00 ARRIVAL DATE NOV 5 1965

HELIOCENTRIC CONIC DISTANCE 821.893 EARTH TO MARS

RL	148.42	LAL	-.00	LOL	39.61	VL	32.831	GAL	-4.91	AZL	88.29	HCA	250.55	SMA	186.79	ECC	.22181	INC	1.7138
RP	212.01	LAP	-1.62	LOP	290.15	VP	23.270	GAP	-10.23	AZP	90.57	TAL	332.42	TAP	222.97	RCA	145.36	APO	228.22
RC	301.167	GL	15.31	GP	1.95	ZAL	129.66	ZAP	49.27	ETS	181.04	ZAE	76.37	ETE	179.72	ZAC	85.40	ETC	258.50

V1 30.020 V2 25.879 CLP 49.24

PLANETOCENTRIC CONIC

C3	13.724	VHL	3.705	DLA	17.58	RAL	178.03	RAD	6567.5	VEL	11.624	PTH	2.04	VHP	3.871	DPA	11.45	RAP	162.42

ECC 1.2259

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 2 5	2709.12	-27.71	75.22	39.10	96.09	18 47 14	2109.1	-26.58	66.74
90.00	10 51 22	4191.34	-.24	171.50	33.60	61.68	12 1 14	3591.3	-4.02	164.86
100.00	19 33 41	2413.76	-28.97	53.32	38.93	97.73	20 13 54	1813.8	-27.59	44.79
100.00	12 2 28	3961.94	.87	154.02	32.98	60.12	13 8 30	3361.9	-3.12	147.50
110.00	21 4 25	2129.87	-32.21	31.10	38.27	102.13	21 39 55	1529.9	-30.20	22.46
110.00	12 48 13	3818.59	3.66	141.41	31.24	55.99	13 51 52	3218.6	-.83	135.20

DIFFERENTIAL CORRECTIONS

TDE	-.7760	TRA	4.7392	TC	-11.4752	BAU	2.1085
RDE	.3872	RRA	-.0234	RC3	.6202	FAU	.29980
FDE	-2.3044	FRA	8.8638	FC	-18.9117	BSP	39698
BDE	.8673	BRA	4.7393	BC	311.4919	FSP	6110

MID-COURSE EXECUTION ACCURACY

SGT	11525.9	SGR	755.8	SG3	1761.9		
RRT	-.5645	RRF	-.5917	RTF	.9955		
SGB	11550.6	RZ3	.0340	R13	-.9956		
SG	111533.8	SG2	623.4	THA	177.87		

ORBIT DETERMINATION ACCURACY

ST	2612.7	SR	599.1	SS	1876.6
CRT	-.4782	CRS	.6512	CST	-.9778
LSA	3217.4	MSA	595.3	SSA	20.2
EL1	2629.0	EL2	522.9	ALF	173.48

LAUNCH DATE NOV 2 1964 FLIGHT TIME 370.00 ARRIVAL DATE NOV 7 1965

HELIOCENTRIC CONIC DISTANCE 826.083 EARTH TO MARS

RL	148.42	LAL	-.00	LOL	39.61	VL	32.834	GAL	-5.02	AZL	88.28	HCA	251.76	SMA	186.86	ECC	.22280	INC	1.7211
RP	211.73	LAP	-1.63	LOP	291.36	VP	23.310	GAP	-10.38	AZP	90.54	TAL	331.86	TAP	223.62	RCA	145.22	APO	228.49
RC	302.203	GL	15.20	GP	1.91	ZAL	130.44	ZAP	48.19	ETS	181.06	ZAE	75.01	ETE	179.79	ZAC	85.38	ETC	258.48

V1 30.020 V2 25.911 CLP 48.16

PLANETOCENTRIC CONIC

C3	14.037	VHL	3.747	DLA	17.16	RAL	178.72	RAD	6567.6	VEL	11.637	PTH	2.04	VHP	3.942	DPA	11.38	RAP	162.52

ECC 1.2310

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 9 2	2698.10	-27.63	74.42	40.00	96.48	18 54 0	2098.1	-26.44	65.96
90.00	10 49 56	4212.23	.43	172.66	34.49	61.69	12 0 9	3612.2	-3.35	166.03
100.00	19 40 14	2403.96	-28.87	52.61	39.82	98.10	20 20 18	1804.0	-27.45	44.09
100.00	12 1 25	3981.61	1.53	155.10	33.88	60.14	13 7 46	3381.6	-2.45	148.58
110.00	21 10 13	2122.45	-32.10	30.55	39.14	102.44	21 45 35	1522.4	-30.05	21.93
110.00	12 47 56	3835.89	4.32	142.31	32.15	56.06	13 51 51	3235.9	-.17	136.10

DIFFERENTIAL CORRECTIONS

TDE	-.8506	TRA	4.9333	TC	-11.4376	BAU	2.1493
RDE	.3946	RRA	-.0203	RC3	.6014	FAU	.28678
FDE	-2.3258	FRA	8.6639	FC	-17.6879	BSP	40426
BDE	.9376	BRA	4.9333	BC	311.4534	FSP	5862

MID-COURSE EXECUTION ACCURACY

SGT	11725.5	SGR	753.9	SG3	1685.6		
RRT	-.5548	RRF	-.5827	RTF	.9954		
SGB	11749.7	RZ3	.0347	R13	-.9955		
SG	111733.0	SG2	626.8	THA	177.95		

ORBIT DETERMINATION ACCURACY

ST	2714.6	SR	603.8	SS	1869.1
CRT	-.4952	CRS	.6618	CST	-.9789
LSA	3297.9	MSA	592.1	SSA	19.9
EL1	2731.7	EL2	521.2	ALF	173.48

LAUNCH DATE NOV 2 1964 FLIGHT TIME 372.00 ARRIVAL DATE NOV 9 1965

HELIOCENTRIC CONIC DISTANCE 830.274 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.838 GAL -5.14 AZL 88.27 HCA 252.97 SMA 186.92 ECC .22385 INC 1.7283 V1 30.020
RP 211.47 LAP -1.65 LOP 292.57 VP 23.349 GAP -10.54 AZP 90.51 TAL 331.28 TAP 224.25 RCA 145.08 APO 228.77 V2 25.941
RC 303.228 GL 15.08 GP 1.86 ZAL 131.23 ZAP 47.14 ETS 181.08 ZAE 73.68 ETE 179.85 ZAC 85.37 ETC 258.45 CLP 47.11

PLANETOCENTRIC CONIC

C3 14.368 VHL 3.791 DLA 16.73 RAL 179.42 RAD 6567.6 VEL 11.651 PTH 2.05 VHP 4.015 DPA 11.25 RAP 162.66 ECC 1.2365

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 16 1	2687.12	-27.54	73.63	40.92	96.87	19 0 48	2087.1	-26.30	65.18
90.00	10 48 30	4233.51	1.12	173.85	35.41	61.70	11 59 4	3633.5	-2.67	167.22
100.00	19 46 52	2394.18	-28.78	51.90	40.73	98.46	20 26 46	1794.2	-27.31	43.40
100.00	12 0 21	4001.69	2.21	156.20	34.80	60.18	13 7 3	3401.7	-1.77	149.68
110.00	21 16 5	2115.03	-31.99	30.00	40.03	102.75	21 51 20	1515.0	-29.91	21.41
110.00	12 47 37	3853.60	4.99	143.24	33.07	56.14	13 51 51	3253.6	.51	137.02

DIFFERENTIAL CORRECTIONS
TDE -.9275 TRA 5.1326 TC-11.3819 BAU 2.1892
RDE .4022 RRA -.0176 RC3 .5832 FAU .27407
FDE-2.3419 FRA 8.4648 FC-16.5138 BSP 41146
BDE 1.0110 BRA 5.1326 BC311.3968 FSP 5622

MID-COURSE EXECUTION ACCURACY
SGT11918.4 SGR 752.3 SG3 1611.2
RRT -.5456 RRF -.5744 RTF .9953
SGB11942.1 R23 .0355 R13 -.9954
SG111925.4 SG2 630.1 THA 178.02

ORBIT DETERMINATION ACCURACY
ST 2817.6 SR 608.2 SS 1859.8
CRT -.5112 CRS .6719 CST -.9799
LSA 3379.5 MSA 588.7 SSA 19.6
EL1 2835.3 EL2 519.5 ALF 173.48

LAUNCH DATE NOV 2 1964 FLIGHT TIME 374.00 ARRIVAL DATE NOV 11 1965

HELIOCENTRIC CONIC DISTANCE 834.467 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.842 GAL -5.26 AZL 88.26 HCA 254.19 SMA 186.99 ECC .22495 INC 1.7355 V1 30.020
RP 211.20 LAP -1.67 LOP 293.79 VP 23.389 GAP -10.69 AZP 90.47 TAL 330.68 TAP 224.87 RCA 144.93 APO 229.06 V2 25.971
RC 304.242 GL 14.96 GP 1.82 ZAL 132.03 ZAP 46.12 ETS 181.10 ZAE 72.37 ETE 179.91 ZAC 85.36 ETC 258.42 CLP 46.09

PLANETOCENTRIC CONIC

C3 14.720 VHL 3.837 DLA 16.29 RAL 180.12 RAD 6567.6 VEL 11.666 PTH 2.05 VHP 4.091 DPA 11.13 RAP 162.82 ECC 1.2422

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 23 3	2676.20	-27.45	72.85	41.85	97.25	19 7 39	2076.2	-26.16	64.42
90.00	10 47 4	4255.17	1.82	175.06	36.35	61.74	11 57 59	3655.2	-1.97	168.43
100.00	19 53 32	2384.44	-28.68	51.19	41.65	98.82	20 33 16	1784.4	-27.16	42.71
100.00	11 59 17	4022.16	2.91	157.33	35.74	60.24	13 6 19	3422.2	-1.08	150.80
110.00	21 22 0	2107.64	-31.88	29.45	40.93	103.05	21 57 7	1507.6	-29.75	20.89
110.00	12 47 18	3871.73	5.68	144.20	34.02	56.23	13 51 49	3271.7	1.20	137.97

DIFFERENTIAL CORRECTIONS
TDE-1.0079 TRA 5.3366 TC-11.3092 BAU 2.2283
RDE .4100 RRA -.0150 RC3 .5656 FAU .26166
FDE-2.3547 FRA 8.2684 FC-15.3896 BSP 41837
BDE 1.0881 BRA 5.3366 BC311.3234 FSP 5389

MID-COURSE EXECUTION ACCURACY
SGT12104.1 SGR 750.9 SG3 1539.1
RRT -.5372 RRF -.5667 RTF .9952
SGB12127.4 R23 .0363 R13 -.9953
SG112110.9 SG2 633.0 THA 178.09

ORBIT DETERMINATION ACCURACY
ST 2922.0 SR 612.5 SS 1849.6
CRT -.5266 CRS .6817 CST -.9809
LSA 3462.9 MSA 585.1 SSA 19.3
EL1 2940.3 EL2 517.4 ALF 173.50

LAUNCH DATE NOV 2 1964 FLIGHT TIME 376.00 ARRIVAL DATE NOV 13 1965

HELIOCENTRIC CONIC DISTANCE 838.661 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.847 GAL -5.39 AZL 88.26 HCA 255.40 SMA 187.07 ECC .22609 INC 1.7426 V1 30.020
RP 210.95 LAP -1.69 LOP 295.00 VP 23.427 GAP -10.84 AZP 90.44 TAL 330.07 TAP 225.48 RCA 144.77 APO 229.36 V2 26.001
RC 305.247 GL 14.83 GP 1.77 ZAL 132.84 ZAP 45.13 ETS 181.11 ZAE 71.10 ETE 179.97 ZAC 85.36 ETC 258.39 CLP 45.10

PLANETOCENTRIC CONIC

C3 15.092 VHL 3.885 DLA 15.84 RAL 180.83 RAD 6567.6 VEL 11.682 PTH 2.05 VHP 4.168 DPA 11.01 RAP 163.02 ECC 1.2484

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 30 7	2665.37	-27.35	72.07	42.79	97.63	19 14 32	2065.4	-26.01	63.66
90.00	10 45 37	4277.17	2.53	176.29	37.30	61.79	11 56 55	3677.2	-1.26	169.66
100.00	20 0 14	2374.76	-28.57	50.49	42.59	99.17	20 39 49	1774.8	-27.01	42.03
100.00	11 58 12	4043.01	3.61	158.47	36.71	60.31	13 5 35	3443.0	-.37	151.95
110.00	21 27 57	2100.28	-31.76	28.91	41.86	103.35	22 2 58	1500.3	-29.60	20.37
110.00	12 46 58	3890.25	6.38	145.17	34.99	56.35	13 51 48	3290.2	1.91	138.94

DIFFERENTIAL CORRECTIONS
TDE-1.0907 TRA 5.5469 TC-11.2213 BAU 2.2668
RDE .4180 RRA -.0128 RC3 .5486 FAU .24961
FDE-2.3634 FRA 8.0742 FC-14.3186 BSP 42533
BDE 1.1680 BRA 5.5470 BC311.2347 FSP 5164

MID-COURSE EXECUTION ACCURACY
SGT12284.9 SGR 749.7 SG3 1469.2
RRT -.5293 RRF -.5596 RTF .9951
SGB12307.8 R23 .0371 R13 -.9951
SG112291.4 SG2 635.7 THA 178.14

ORBIT DETERMINATION ACCURACY
ST 3027.3 SR 616.6 SS 1838.0
CRT -.5411 CRS .6911 CST -.9817
LSA 3547.5 MSA 581.5 SSA 19.0
EL1 3046.2 EL2 515.3 ALF 173.52

LAUNCH DATE NOV 2 1964 FLIGHT TIME 378.00 ARRIVAL DATE NOV 15 1965

HELIOCENTRIC CONIC DISTANCE 842.855 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.851 GAL -5.52 AZL 88.25 HCA 256.62 SMA 187.14 ECC .22729 INC 1.7496 V1 30.020
RP 210.70 LAP -1.70 LOP 296.22 VP 23.465 GAP -11.00 AZP 90.41 TAL 329.45 TAP 226.07 RCA 144.61 APO 229.68 V2 26.029
RC 306.243 GL 14.70 GP 1.73 ZAL 133.66 ZAP 44.17 ETS 181.12 ZAE 69.86 ETE 180.02 ZAC 85.37 ETC 258.35 CLP 44.15

PLANETOCENTRIC CONIC

C3 15.487 VHL 3.935 DLA 15.39 RAL 181.53 RAD 6567.6 VEL 11.699 PTH 2.06 VHP 4.247 DPA 10.87 RAP 163.25 ECC 1.2549

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 37 12	2654.63	-27.25	71.30	43.76	98.00	19 21 27	2054.6	-25.86	62.91
90.00	10 44 11	4299.52	3.25	177.54	38.29	61.85	11 55 51	3699.5	-.54	170.90
100.00	20 6 58	2365.16	-28.47	49.79	43.54	99.52	20 46 23	1765.2	-26.86	41.36
100.00	11 57 7	4064.22	4.32	159.64	37.69	60.39	13 4 51	3464.2	.35	153.11
110.00	21 33 57	2092.99	-31.65	28.37	42.79	103.65	22 8 50	1493.0	-29.45	19.86
110.00	12 46 37	3909.16	7.09	146.17	35.99	56.47	13 51 46	3309.2	2.63	139.92

DIFFERENTIAL CORRECTIONS
TDE-1.1770 TRA 5.7617 TC-11.1188 BAU 2.3048
RDE .4261 RRA -.0109 RC3 .5321 FAU .23791
FDE-2.3693 FRA 7.8802 FC-13.2993 BSP 43194
BDE 1.2518 BRA 5.7618 BC311.1315 FSP 4943

MID-COURSE EXECUTION ACCURACY
SGT12458.7 SGR 748.7 SG3 1401.3
RRT -.5222 RRF -.5534 RTF .9949
SGB12481.2 R23 .0380 R13 -.9950
SG112464.9 SG2 638.2 THA 178.20

ORBIT DETERMINATION ACCURACY
ST 3133.4 SR 620.6 SS 1825.2
CRT -.5551 CRS .7003 CST -.9824
LSA 3633.3 MSA 577.8 SSA 18.8
EL1 3152.8 EL2 513.0 ALF 173.55

LAUNCH DATE NOV 2 1964 FLIGHT TIME 380.00 ARRIVAL DATE NOV 17 1965

HELIOCENTRIC CONIC DISTANCE 847.049 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.855 GAL -5.65 AZL 88.24 HCA 257.84 SMA 187.22 ECC .22854 INC 1.7566 V1 30.020
RP 210.46 LAP -1.72 LOP 297.45 VP 23.502 GAP -11.15 AZP 90.37 TAL 328.81 TAP 226.65 RCA 144.43 APO 230.00 V2 26.057
RC 307.229 GL 14.55 GP 1.70 ZAL 134.48 ZAP 43.24 ETS 181.13 ZAE 68.64 ETE 180.07 ZAC 85.39 ETC 258.31 CLP 43.22

PLANETOCENTRIC CONIC

C3 15.906 VHL 3.988 DLA 14.92 RAL 182.25 RAD 6567.6 VEL 11.717 PTH 2.06 VHP 4.328 DPA 10.72 RAP 163.51 ECC 1.2618

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 44 19	2644.02	-27.15	70.54	44.73	98.37	19 28 23	2044.0	-25.71	62.17
90.00	10 42 45	4322.20	3.97	178.81	39.29	61.94	11 54 47	3722.2	.19	172.17
100.00	20 13 44	2355.67	-28.36	49.11	44.52	99.87	20 52 59	1755.7	-26.70	40.70
100.00	11 56 1	4085.78	5.05	160.83	38.70	60.50	13 4 7	3485.8	1.08	154.29
110.00	21 39 59	2085.78	-31.53	27.84	43.74	103.95	22 14 45	1485.8	-29.29	19.35
110.00	12 46 15	3928.44	7.81	147.20	37.00	56.62	13 51 44	3328.4	3.37	140.93

DIFFERENTIAL CORRECTIONS

TDE-1.2662 TRA 5.9833 TC-11.0012 BAU 2.3420
RDE .4345 RRA -.0093 RC3 .5161 FAU .22655
FDE-2.3713 FRA 7.6895 FC-12.3307 BSP 43854
BDE 1.3387 BRA 5.9833 BC311.0133 FSP 4731

MID-COURSE EXECUTION ACCURACY

SGT12627.1 SGR 747.9 SG3 1335.8
RRT -.5158 RRF -.5478 RTF .9948
SGB12649.3 R23 .0389 R13 -.9948
SG112633.0 SG2 640.4 THA 178.25

ORBIT DETERMINATION ACCURACY

ST 3240.4 SR 624.4 SS 1811.0
CRT -.5683 CRS .7092 CST -.9830
LSA 3720.2 MSA 574.0 SSA 18.5
EL1 3260.2 EL2 510.6 ALF 173.59

LAUNCH DATE NOV 2 1964 FLIGHT TIME 382.00 ARRIVAL DATE NOV 19 1965

HELIOCENTRIC CONIC DISTANCE 851.242 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.860 GAL -5.79 AZL 88.24 HCA 259.07 SMA 187.29 ECC .22985 INC 1.7635 V1 30.020
RP 210.22 LAP -1.73 LOP 298.67 VP 23.538 GAP -11.30 AZP 90.33 TAL 328.15 TAP 227.22 RCA 144.24 APO 230.34 V2 26.085
RC 308.206 GL 14.41 GP 1.66 ZAL 135.32 ZAP 42.34 ETS 181.14 ZAE 67.45 ETE 180.12 ZAC 85.42 ETC 258.27 CLP 42.31

PLANETOCENTRIC CONIC

C3 16.350 VHL 4.044 DLA 14.45 RAL 182.96 RAD 6567.7 VEL 11.736 PTH 2.07 VHP 4.411 DPA 10.55 RAP 163.80 ECC 1.2691

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 51 26	2633.56	-27.04	69.79	45.73	98.73	19 35 20	2033.6	-25.56	61.44
90.00	10 41 19	4345.20	4.71	180.10	40.32	62.05	11 53 45	3745.2	.93	173.45
100.00	20 20 30	2346.31	-28.25	48.44	45.50	100.21	20 59 37	1746.3	-26.55	40.05
100.00	11 54 56	4107.69	5.78	162.05	39.73	60.62	13 3 24	3507.7	1.82	155.49
110.00	21 46 3	2078.67	-31.41	27.32	44.71	104.23	22 20 41	1478.7	-29.14	18.85
110.00	12 45 53	3948.09	8.55	148.25	38.04	56.78	13 51 42	3348.1	4.11	141.96

DIFFERENTIAL CORRECTIONS

TDE-1.3582 TRA 6.2103 TC-10.8708 BAU 2.3787
RDE .4431 RRA -.0080 RC3 .5006 FAU .21550
FDE-2.3698 FRA 7.4986 FC-11.4109 BSP 44498
BDE 1.4287 BRA 6.2103 BC310.8823 FSP 4526

MID-COURSE EXECUTION ACCURACY

SGT12789.4 SGR 747.1 SG3 1272.2
RRT -.5100 RRF -.5429 RTF .9946
SGB12811.2 R23 .0399 R13 -.9946
SG112795.1 SG2 642.4 THA 178.29

ORBIT DETERMINATION ACCURACY

ST 3347.5 SR 628.0 SS 1795.1
CRT -.5809 CRS .7178 CST -.9836
LSA 3807.5 MSA 570.2 SSA 18.3
EL1 3367.8 EL2 508.1 ALF 173.64

LAUNCH DATE NOV 2 1964 FLIGHT TIME 384.00 ARRIVAL DATE NOV 21 1965

HELIOCENTRIC CONIC DISTANCE 855.435 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.864 GAL -5.94 AZL 88.23 HCA 260.30 SMA 187.37 ECC .23122 INC 1.7704 V1 30.020
RP 209.99 LAP -1.75 LOP 299.90 VP 23.574 GAP -11.46 AZP 90.30 TAL 327.47 TAP 227.77 RCA 144.05 APO 230.70 V2 26.111
RC 309.174 GL 14.25 GP 1.62 ZAL 136.16 ZAP 41.47 ETS 181.14 ZAE 66.28 ETE 180.17 ZAC 85.45 ETC 258.22 CLP 41.44

PLANETOCENTRIC CONIC

C3 16.821 VHL 4.101 DLA 13.97 RAL 183.67 RAD 6567.7 VEL 11.756 PTH 2.08 VHP 4.496 DPA 10.38 RAP 164.11 ECC 1.2768

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 58 34	2623.26	-26.94	69.06	46.74	99.08	19 42 17	2023.3	-25.40	60.72
90.00	10 39 54	4368.51	5.45	181.41	41.37	62.17	11 52 43	3768.5	1.68	174.75
100.00	20 27 18	2337.08	-28.14	47.77	46.50	100.54	21 6 15	1737.1	-26.39	39.41
100.00	11 53 51	4129.91	6.52	163.28	40.79	60.76	13 2 41	3529.9	2.58	156.72
110.00	21 52 8	2071.67	-31.29	26.81	45.70	104.51	22 26 39	1471.7	-28.98	18.37
110.00	12 45 31	3968.09	9.29	149.32	39.10	56.95	13 51 39	3368.1	4.87	143.01

DIFFERENTIAL CORRECTIONS

TDE-1.4547 TRA 6.4429 TC-10.7307 BAU 2.4156
RDE .4520 RRA -.0070 RC3 .4856 FAU .20488
FDE-2.3671 FRA 7.3087 FC-10.5449 BSP 45120
BDE 1.5232 BRA 6.4429 BC310.7417 FSP 4326

MID-COURSE EXECUTION ACCURACY

SGT12947.3 SGR 746.6 SG3 1211.0
RRT -.5051 RRF -.5389 RTF .9943
SGB12968.8 R23 .0410 R13 -.9944
SG112952.8 SG2 644.1 THA 178.33

ORBIT DETERMINATION ACCURACY

ST 3455.7 SR 631.5 SS 1778.6
CRT -.5933 CRS .7264 CST -.9841
LSA 3896.5 MSA 566.3 SSA 18.1
EL1 3476.4 EL2 505.3 ALF 173.68

LAUNCH DATE NOV 2 1964 FLIGHT TIME 386.00 ARRIVAL DATE NOV 23 1965

HELIOCENTRIC CONIC DISTANCE 859.626 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.869 GAL -6.09 AZL 88.22 HCA 261.53 SMA 187.46 ECC .23265 INC 1.7772 V1 30.020
RP 209.77 LAP -1.76 LOP 301.13 VP 23.609 GAP -11.61 AZP 90.26 TAL 326.78 TAP 228.31 RCA 143.85 APO 231.07 V2 26.137
RC 310.132 GL 14.10 GP 1.59 ZAL 137.00 ZAP 40.62 ETS 181.14 ZAE 65.14 ETE 180.22 ZAC 85.49 ETC 258.17 CLP 40.59

PLANETOCENTRIC CONIC

C3 17.320 VHL 4.162 DLA 13.48 RAL 184.39 RAD 6567.7 VEL 11.777 PTH 2.08 VHP 4.582 DPA 10.20 RAP 164.46 ECC 1.2850

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 5 42	2613.14	-26.82	68.34	47.76	99.43	19 49 15	2013.1	-25.25	60.02
90.00	10 38 30	4392.11	6.20	182.74	42.45	62.32	11 51 42	3792.1	2.44	176.07
100.00	20 34 7	2328.02	-28.02	47.12	47.52	100.86	21 12 55	1728.0	-26.24	38.78
100.00	11 52 46	4152.46	7.27	164.54	41.87	60.93	13 1 59	3552.5	3.34	157.96
110.00	21 58 13	2064.82	-31.18	26.31	46.70	104.79	22 32 38	1464.8	-28.83	17.89
110.00	12 45 9	3988.43	10.04	150.41	40.18	57.15	13 51 37	3388.4	5.65	144.08

DIFFERENTIAL CORRECTIONS

TDE-1.5530 TRA 6.6826 TC-10.5774 BAU 2.4516
RDE .4610 RRA -.0064 RC3 .4711 FAU .19454
FDE-2.3594 FRA 7.1212 FC3-9.7241 BSP 45743
BDE 1.6200 BRA 6.6826 BC310.5879 FSP 4134

MID-COURSE EXECUTION ACCURACY

SGT13099.3 SGR 746.1 SG3 1151.8
RRT -.5008 RRF -.5355 RTF .9941
SGB13120.5 R23 .0421 R13 -.9941
SG113104.7 SG2 645.5 THA 178.36

ORBIT DETERMINATION ACCURACY

ST 3563.3 SR 634.8 SS 1759.9
CRT -.6047 CRS .7345 CST -.9845
LSA 3985.0 MSA 562.4 SSA 17.9
EL1 3584.3 EL2 502.6 ALF 173.73

LAUNCH DATE NOV 2 1964 FLIGHT TIME 388.00 ARRIVAL DATE NOV 25 1965

HELIOCENTRIC CONIC DISTANCE 863.814 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.874 GAL -6.24 AZL 88.22 HCA 262.76 SMA 187.54 ECC .23414 INC 1.7840 V1 30.020
RP 209.55 LAP -1.77 LOP 302.37 VP 23.643 GAP -11.77 AZP 90.22 TAL 326.08 TAP 228.84 RCA 143.63 APO 231.45 V2 26.162
RC 311.080 GL 13.93 GP 1.55 ZAL 137.85 ZAP 39.79 ETS 181.15 ZAE 64.02 ETE 180.26 ZAC 85.53 ETC 258.11 CLP 39.77

PLANETOCENTRIC CONIC

C3 17.849 VHL 4.225 DLA 12.99 RAL 185.11 RAD 6567.7 VEL 11.800 PTH 2.09 VHP 4.671 DPA 10.01 RAP 164.82 ECC 1.2937

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 12 50	2603.22	-26.71	67.63	48.81	99.76	19 56 13	2003.2	-25.09	59.34
90.00	10 37 6	4415.99	6.95	184.09	43.55	62.48	11 50 42	3816.0	3.21	177.40
100.00	20 40 55	2319.14	-27.91	46.49	48.56	101.18	21 19 34	1719.1	-26.08	38.16
100.00	11 51 42	4175.30	8.02	165.81	42.97	61.11	13 1 17	3575.3	4.11	159.21
110.00	22 4 20	2058.11	-31.06	25.82	47.71	105.05	22 38 38	1458.1	-28.68	17.43
110.00	12 44 46	4009.09	10.80	151.53	41.29	57.37	13 51 35	3409.1	6.43	145.17

DIFFERENTIAL CORRECTIONS
TDE-1.6554 TRA 6.9282 TC-10.4157 BAU 2.4878
RDE .4703 RRA -.0061 RC3 .4570 FAU .18459
FDE-2.3496 FRA 6.9336 FC3-8.9533 BSP 46326
BDE 1.7209 BRA 6.9282 BC310.4258 FSP 3945

MID-COURSE EXECUTION ACCURACY
SGT13246.8 SGR 745.7 SG3 1094.6
RRT -.4973 RRF -.5330 RTF .9938
SGB13267.8 R23 .0434 R13 -.9939
SG113252.0 SG2 646.7 THA 178.39

ORBIT DETERMINATION ACCURACY
ST 3671.3 SR 638.0 SS 1740.0
CRT -.6158 CRS .7426 CST -.9849
LSA 4074.4 MSA 558.4 SSA 17.6
EL1 3692.6 EL2 499.7 ALF 173.78

LAUNCH DATE NOV 2 1964 FLIGHT TIME 390.00 ARRIVAL DATE NOV 27 1965

HELIOCENTRIC CONIC DISTANCE 868.000 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.879 GAL -6.40 AZL 88.21 HCA 264.00 SMA 187.62 ECC .23569 INC 1.7909 V1 30.020
RP 209.34 LAP -1.78 LOP 303.60 VP 23.677 GAP -11.93 AZP 90.19 TAL 325.36 TAP 229.36 RCA 143.40 APO 231.85 V2 26.186
RC 312.019 GL 13.77 GP 1.52 ZAL 138.71 ZAP 38.99 ETS 181.15 ZAE 62.93 ETE 180.30 ZAC 85.59 ETC 258.05 CLP 38.97

PLANETOCENTRIC CONIC

C3 18.410 VHL 4.291 DLA 12.50 RAL 185.83 RAD 6567.7 VEL 11.823 PTH 2.09 VHP 4.762 DPA 9.80 RAP 165.22 ECC 1.3030

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 19 57	2593.51	-26.60	66.94	49.86	100.09	20 3 11	1993.5	-24.93	58.67
90.00	10 35 42	4440.15	7.71	185.46	44.67	62.67	11 49 43	3840.2	3.99	178.76
100.00	20 47 43	2310.45	-27.79	45.87	49.61	101.48	21 26 14	1710.5	-25.92	37.57
100.00	11 50 37	4198.44	8.78	167.11	44.10	61.31	13 0 36	3598.4	4.88	160.49
110.00	22 10 27	2051.58	-30.94	25.35	48.75	105.31	22 44 39	1451.6	-28.53	16.98
110.00	12 44 23	4030.08	11.57	152.67	42.42	57.61	13 51 33	3430.1	7.22	146.28

DIFFERENTIAL CORRECTIONS
TDE-1.7607 TRA 7.1811 TC-10.2433 BAU 2.5234
RDE .4799 RRA -.0061 RC3 .4433 FAU .17492
FDE-2.3561 FRA 6.7474 FC3-8.2256 BSP 46916
BDE 1.8249 BRA 7.1811 BC310.2529 FSP 3764

MID-COURSE EXECUTION ACCURACY
SGT13389.1 SGR 745.3 SG3 1039.4
RRT -.4943 RRF -.5311 RTF .9935
SGB13409.8 R23 .0446 R13 -.9936
SG113394.2 SG2 647.7 THA 178.42

ORBIT DETERMINATION ACCURACY
ST 3778.9 SR 641.0 SS 1718.3
CRT -.6264 CRS .7503 CST -.9852
LSA 4163.6 MSA 554.4 SSA 17.4
EL1 3800.5 EL2 496.8 ALF 173.83

LAUNCH DATE NOV 2 1964 FLIGHT TIME 392.00 ARRIVAL DATE NOV 29 1965

HELIOCENTRIC CONIC DISTANCE 872.182 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.884 GAL -6.57 AZL 88.20 HCA 265.24 SMA 187.71 ECC .23732 INC 1.7976 V1 30.020
RP 209.14 LAP -1.79 LOP 304.84 VP 23.710 GAP -12.09 AZP 90.15 TAL 324.62 TAP 229.86 RCA 143.16 APO 232.26 V2 26.209
RC 312.950 GL 13.60 GP 1.49 ZAL 139.57 ZAP 38.22 ETS 181.15 ZAE 61.86 ETE 180.35 ZAC 85.65 ETC 257.99 CLP 38.19

PLANETOCENTRIC CONIC

C3 19.004 VHL 4.359 DLA 12.00 RAL 186.55 RAD 6567.8 VEL 11.848 PTH 2.10 VHP 4.855 DPA 9.59 RAP 165.64 ECC 1.3128

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 27 4	2584.03	-26.48	66.27	50.94	100.41	20 10 8	1984.0	-24.78	58.02
90.00	10 34 20	4464.57	8.47	186.85	45.82	62.88	11 48 44	3864.6	4.77	180.13
100.00	20 54 31	2301.98	-27.67	45.27	50.67	101.78	21 32 53	1702.0	-25.77	36.98
100.00	11 49 34	4221.85	9.54	168.43	45.25	61.54	12 59 56	3621.9	5.67	161.79
110.00	22 16 34	2045.22	-30.83	24.89	49.79	105.56	22 50 40	1445.2	-28.38	16.54
110.00	12 44 0	4051.38	12.35	153.83	43.58	57.87	13 51 31	3451.4	8.01	147.41

DIFFERENTIAL CORRECTIONS
TDE-1.8709 TRA 7.4395 TC-10.0667 BAU 2.5600
RDE .4899 RRA -.0065 RC3 .4302 FAU .16567
FDE-2.3217 FRA 6.5613 FC3-7.5470 BSP 47447
BDE 1.9340 BRA 7.4395 BC310.0759 FSP 3586

MID-COURSE EXECUTION ACCURACY
SGT13527.9 SGR 745.1 SG3 986.4
RRT -.4923 RRF -.5301 RTF .9932
SGB13548.4 R23 .0460 R13 -.9932
SG113532.9 SG2 648.3 THA 178.44

ORBIT DETERMINATION ACCURACY
ST 3887.0 SR 643.9 SS 1695.7
CRT -.6368 CRS .7582 CST -.9855
LSA 4253.9 MSA 550.2 SSA 17.2
EL1 3908.9 EL2 493.7 ALF 173.88

LAUNCH DATE NOV 2 1964 FLIGHT TIME 394.00 ARRIVAL DATE DEC 1 1965

HELIOCENTRIC CONIC DISTANCE 876.360 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.889 GAL -6.74 AZL 88.20 HCA 266.48 SMA 187.80 ECC .23901 INC 1.8044 V1 30.020
RP 208.94 LAP -1.80 LOP 306.08 VP 23.742 GAP -12.25 AZP 90.11 TAL 323.86 TAP 230.34 RCA 142.91 APO 232.69 V2 26.232
RC 313.871 GL 13.42 GP 1.46 ZAL 140.43 ZAP 37.46 ETS 181.15 ZAE 60.81 ETE 180.39 ZAC 85.71 ETC 257.93 CLP 37.44

PLANETOCENTRIC CONIC

C3 19.635 VHL 4.431 DLA 11.49 RAL 187.27 RAD 6567.8 VEL 11.875 PTH 2.11 VHP 4.949 DPA 9.37 RAP 166.08 ECC 1.3231

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 34 10	2574.79	-26.37	65.62	52.02	100.72	20 17 4	1974.8	-24.62	57.39
90.00	10 32 58	4489.25	9.23	188.26	46.99	63.11	11 47 48	3889.2	5.55	181.52
100.00	21 1 19	2293.73	-27.56	44.68	51.76	102.07	21 39 32	1693.7	-25.62	36.42
100.00	11 48 31	4245.54	10.31	169.77	46.43	61.79	12 59 16	3645.5	6.46	163.10
110.00	22 22 41	2039.07	-30.71	24.45	50.86	105.80	22 56 41	1439.1	-28.24	16.12
110.00	12 43 37	4072.97	13.12	155.02	44.76	58.15	13 51 30	3473.0	8.82	148.57

DIFFERENTIAL CORRECTIONS
TDE-1.9841 TRA 7.7059 TC3-9.8817 BAU 2.5963
RDE .5000 RRA -.0073 RC3 .4173 FAU .15670
FDE-2.3036 FRA 6.3758 FC3-6.9091 BSP 47984
BDE 2.0461 BRA 7.7059 BC3 9.8905 FSP 3414

MID-COURSE EXECUTION ACCURACY
SGT13662.3 SGR 744.9 SG3 935.1
RRT -.4909 RRF -.5299 RTF .9928
SGB13682.6 R23 .0475 R13 -.9929
SG113667.2 SG2 648.8 THA 178.46

ORBIT DETERMINATION ACCURACY
ST 3994.4 SR 646.7 SS 1671.4
CRT -.6467 CRS .7657 CST -.9857
LSA 4343.8 MSA 546.0 SSA 17.0
EL1 4016.6 EL2 490.5 ALF 173.93

LAUNCH DATE NOV 2 1964 FLIGHT TIME 396.00 ARRIVAL DATE DEC 3 1965

HELIOCENTRIC CONIC DISTANCE 880.533 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.894 GAL -6.91 AZL 88.19 HCA 267.72 SMA 187.89 ECC .24078 INC 1.8111 V1 30.020
RP 208.76 LAP -1.81 LOP 307.33 VP 23.773 GAP -12.41 AZP 90.07 TAL 323.09 TAP 230.81 RCA 142.65 APO 233.13 V2 26.254
RC 314.784 GL 13.24 GP 1.43 ZAL 141.30 ZAP 36.73 ETS 181.15 ZAE 59.78 ETE 180.42 ZAC 85.79 ETC 257.86 CLP 36.71

PLANETOCENTRIC CONIC

C3 20.303 VHL 4.506 DLA 10.98 RAL 187.99 RAD 6567.8 VEL 11.903 PTH 2.11 VHP 5.046 DPA 9.14 RAP 166.54 ECC 1.3341

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 41 14	2565.81	-26.25	64.99	53.13	101.01	20 24 0	1965.8	-24.47	56.78
90.00	10 31 38	4514.16	10.00	189.69	48.19	63.37	11 46 52	3914.2	6.34	182.92
100.00	21 8 5	2285.72	-27.44	44.11	52.85	102.34	21 46 11	1685.7	-25.46	35.87
100.00	11 47 28	4269.49	11.08	171.14	47.63	62.06	12 58 37	3669.5	7.25	164.44
110.00	22 28 48	2033.13	-30.60	24.02	51.94	106.03	23 2 42	1433.1	-28.10	15.72
110.00	12 43 14	4094.85	13.91	156.23	45.97	58.45	13 51 29	3494.8	9.63	149.74

DIFFERENTIAL CORRECTIONS
TDE-2.1007 TRA 7.9790 TC3-9.6909 BAU 2.6328
RDE .5105 RRA -.0085 RC3 .4049 FAU .14805
FDE-2.2835 FRA 6.1905 FC3-6.3126 BSP 48501
BDE 2.1618 BRA 7.9790 BC3 9.6994 FSP 3247

MID-COURSE EXECUTION ACCURACY
SGT13792.0 SGR 744.8 SG3 885.7
RRT -.4902 RRF -.5304 RTF .9924
SGB13812.1 R23 .0492 R13 -.9924
SG113796.9 SG2 648.9 THA 178.48

ORBIT DETERMINATION ACCURACY
ST 4100.8 SR 649.3 SS 1645.7
CRT -.6562 CRS .7732 CST -.9858
LSA 4433.2 MSA 542.0 SSA 16.9
EL1 4123.2 EL2 487.3 ALF 173.98

LAUNCH DATE NOV 2 1964 FLIGHT TIME 398.00 ARRIVAL DATE DEC 5 1965

HELIOCENTRIC CONIC DISTANCE 884.701 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.899 GAL -7.09 AZL 88.18 HCA 268.97 SMA 187.98 ECC .24262 INC 1.8179 V1 30.020
RP 208.58 LAP -1.82 LOP 308.57 VP 23.803 GAP -12.58 AZP 90.03 TAL 322.31 TAP 231.27 RCA 142.37 APO 233.59 V2 26.274
RC 315.690 GL 13.06 GP 1.40 ZAL 142.17 ZAP 36.02 ETS 181.14 ZAE 58.78 ETE 180.46 ZAC 85.86 ETC 257.79 CLP 36.00

PLANETOCENTRIC CONIC

C3 21.013 VHL 4.584 DLA 10.47 RAL 188.70 RAD 6567.9 VEL 11.933 PTH 2.12 VHP 5.146 DPA 8.90 RAP 167.02 ECC 1.3458

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 48 18	2557.10	-26.14	64.38	54.25	101.30	20 30 55	1957.1	-24.32	56.18
90.00	10 30 18	4539.32	10.76	191.15	49.42	63.65	11 45 57	3939.3	7.14	184.34
100.00	21 14 51	2277.96	-27.33	43.57	53.97	102.61	21 52 49	1678.0	-25.32	35.34
100.00	11 46 26	4293.69	11.84	172.52	48.86	62.35	12 58 0	3693.7	8.05	165.79
110.00	22 34 55	2027.42	-30.49	23.61	53.04	106.25	23 8 42	1427.4	-27.97	15.33
110.00	12 42 51	4117.00	14.69	157.47	47.21	58.78	13 51 28	3517.0	10.45	150.93

DIFFERENTIAL CORRECTIONS
TDE-2.2213 TRA 8.2601 TC3-9.4947 BAU 2.6695
RDE .5213 RRA -.0101 RC3 .3928 FAU .13968
FDE-2.2607 FRA 6.0059 FC3-5.7547 BSP 48988
BDE 2.2816 BRA 8.2601 BC3 9.5028 FSP 3085

MID-COURSE EXECUTION ACCURACY
SGT13918.1 SGR 744.6 SG3 838.1
RRT -.4901 RRF -.5316 RTF .9919
SGB13938.0 R23 .0509 R13 -.9920
SG113922.9 SG2 648.9 THA 178.49

ORBIT DETERMINATION ACCURACY
ST 4206.9 SR 651.7 SS 1618.6
CRT -.6653 CRS .7805 CST -.9859
LSA 4522.5 MSA 537.8 SSA 16.7
EL1 4229.5 EL2 484.0 ALF 174.04

LAUNCH DATE NOV 2 1964 FLIGHT TIME 400.00 ARRIVAL DATE DEC 7 1965

HELIOCENTRIC CONIC DISTANCE 888.861 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.904 GAL -7.28 AZL 88.18 HCA 270.21 SMA 188.07 ECC .24454 INC 1.8247 V1 30.020
RP 208.40 LAP -1.82 LOP 309.82 VP 23.832 GAP -12.75 AZP 89.99 TAL 321.50 TAP 231.71 RCA 142.08 APO 234.07 V2 26.294
RC 316.588 GL 12.87 GP 1.38 ZAL 143.04 ZAP 35.33 ETS 181.14 ZAE 57.79 ETE 180.50 ZAC 85.95 ETC 257.73 CLP 35.31

PLANETOCENTRIC CONIC

C3 21.765 VHL 4.665 DLA 9.96 RAL 189.42 RAD 6567.9 VEL 11.964 PTH 2.13 VHP 5.247 DPA 8.65 RAP 167.53 ECC 1.3582

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 55 20	2548.67	-26.02	63.79	55.39	101.57	20 37 48	1948.7	-24.17	55.61
90.00	10 28 59	4564.69	11.52	192.62	50.67	63.95	11 45 4	3964.7	7.93	185.79
100.00	21 21 35	2270.46	-27.22	43.04	55.10	102.87	21 59 26	1670.5	-25.17	34.83
100.00	11 45 25	4318.13	12.61	173.93	50.11	62.67	12 57 23	3718.1	8.85	167.16
110.00	22 41 1	2021.94	-30.39	23.22	54.15	106.46	23 14 42	1421.9	-27.83	14.96
110.00	12 42 29	4139.42	15.48	158.73	48.47	59.14	13 51 28	3539.4	11.27	152.15

DIFFERENTIAL CORRECTIONS
TDE-2.3466 TRA 8.5475 TC3-9.2954 BAU 2.7070
RDE .5325 RRA -.0121 RC3 .3811 FAU .13165
FDE-2.2360 FRA 5.8203 FC3-5.2364 BSP 49439
BDE 2.4062 BRA 8.5475 BC3 9.3032 FSP 2925

MID-COURSE EXECUTION ACCURACY
SGT14040.0 SGR 744.6 SG3 792.3
RRT -.4907 RRF -.5336 RTF .9914
SGB14059.7 R23 .0528 R13 -.9915
SG114044.8 SG2 648.5 THA 178.51

ORBIT DETERMINATION ACCURACY
ST 4312.3 SR 654.1 SS 1590.1
CRT -.6743 CRS .7878 CST -.9860
LSA 4611.7 MSA 533.5 SSA 16.5
EL1 4335.1 EL2 480.5 ALF 174.09

LAUNCH DATE NOV 2 1964 FLIGHT TIME 402.00 ARRIVAL DATE DEC 9 1965

HELIOCENTRIC CONIC DISTANCE 893.014 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.910 GAL -7.47 AZL 88.17 HCA 271.46 SMA 188.17 ECC .24655 INC 1.8314 V1 30.020
RP 208.24 LAP -1.83 LOP 311.07 VP 23.861 GAP -12.92 AZP 89.95 TAL 320.68 TAP 232.14 RCA 141.78 APO 234.56 V2 26.314
RC 317.480 GL 12.68 GP 1.35 ZAL 143.91 ZAP 34.66 ETS 181.13 ZAE 56.82 ETE 180.53 ZAC 86.04 ETC 257.65 CLP 34.64

PLANETOCENTRIC CONIC

C3 22.563 VHL 4.750 DLA 9.44 RAL 190.14 RAD 6567.9 VEL 11.998 PTH 2.14 VHP 5.351 DPA 8.40 RAP 168.06 ECC 1.3713

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 2 20	2540.52	-25.91	63.22	56.54	101.84	20 44 41	1940.5	-24.02	55.06
90.00	10 27 41	4590.28	12.28	194.12	51.95	64.29	11 44 12	3990.3	8.73	187.24
100.00	21 28 19	2263.24	-27.10	42.53	56.24	103.11	22 6 2	1663.2	-25.03	34.34
100.00	11 44 24	4342.80	13.38	175.36	51.39	63.02	12 56 47	3742.8	9.66	168.55
110.00	22 47 5	2016.70	-30.29	22.84	55.28	106.66	23 20 42	1416.7	-27.71	14.60
110.00	12 42 7	4162.10	16.27	160.01	49.75	59.51	13 51 29	3562.1	12.10	153.39

DIFFERENTIAL CORRECTIONS
TDE-2.4751 TRA 8.8436 TC3-9.0925 BAU 2.7450
RDE .5440 RRA -.0146 RC3 .3697 FAU .12388
FDE-2.2083 FRA 5.6353 FC3-4.7532 BSP 49875
BDE 2.5342 BRA 8.8436 BC3 9.1000 FSP 2771

MID-COURSE EXECUTION ACCURACY
SGT14158.5 SGR 744.5 SG3 748.1
RRT -.4920 RRF -.5363 RTF .9909
SGB14178.1 R23 .0548 R13 -.9909
SG114163.2 SG2 647.9 THA 178.52

ORBIT DETERMINATION ACCURACY
ST 4416.4 SR 656.3 SS 1560.0
CRT -.6828 CRS .7949 CST -.9860
LSA 4699.8 MSA 529.2 SSA 16.3
EL1 4439.4 EL2 477.0 ALF 174.14

LAUNCH DATE NOV 2 1964 FLIGHT TIME 404.00 ARRIVAL DATE DEC 11 1965

HELIOCENTRIC CONIC DISTANCE 897.159 EARTH TO MARS

```
RL  148.42 LAL   -.00 LOL  39.61 VL  32.915 GAL  -7.67 AZL  88.16 HCA 272.71 SMA 188.27 ECC .24864 INC 1.8382 V1  30.020
RP  208.08 LAP  -1.84 LOP 312.32 VP  23.889 GAP -13.09 AZP  89.91 TAL 319.84 TAP 232.56 RCA 141.45 APO 235.08 V2  26.332
RC 318.367 GL   12.49 GP    1.33 ZAL 144.78 ZAP  34.01 ETS 181.13 ZAE  55.88 ETE 180.57 ZAC  86.14 ETC 257.58 CLP  33.99
```

PLANETOCENTRIC CONIC

```
C3  23.410 VHL  4.838 DLA   8.92 RAL 190.85 RAD 6568.0 VEL 12.033 PTH   2.15 VHP  5.457 DPA   8.13 RAP 168.60 ECC 1.3853
```

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 9 19	2532.68	-25.80	62.67	57.71	102.09	20 51 31	1932.7	-23.88	54.53
90.00	10 26 25	4616.07	13.04	195.63	53.25	64.64	11 43 21	4016.1	9.52	188.72
100.00	21 35 0	2256.30	-27.00	42.04	57.41	103.35	22 12 37	1656.3	-24.89	33.87
100.00	11 43 24	4367.69	14.14	176.82	52.70	63.39	12 56 12	3767.7	10.46	169.96
110.00	22 53 9	2011.73	-30.19	22.49	56.42	106.85	23 26 41	1411.7	-27.59	14.26
110.00	12 41 45	4185.02	17.05	161.32	51.07	59.92	13 51 30	3585.0	12.93	154.64

DIFFERENTIAL CORRECTIONS

```
TDE-2.6079 TRA 9.1474 TC3-8.8866 BAU 2.7835
RDE  .5558 RRA -.0175 RC3  .3587 FAU .11640
FDE-2.1784 FRA 5.4497 FC3-4.3045 BSP  50279
BDE 2.6665 BRA 9.1474 BC3 8.8938 FSP   2622
```

MID-COURSE EXECUTION ACCURACY

```
SGT14272.9 SGR  744.4 SG3  705.5
RRT -.4939 RRF -.5397 RTF  .9903
SGB14292.3 R23  .0571 R13 -.9903
SG114277.7 SG2  647.1 THA 178.52
```

ORBIT DETERMINATION ACCURACY

```
ST  4519.4 SR   658.3 SS  1528.5
CRT -.6911 CRS  .8019 CST -.9859
LSA 4787.3 MSA  524.9 SSA   16.1
EL1 4542.5 EL2  473.4 ALF 174.19
```

LAUNCH DATE NOV 2 1964 FLIGHT TIME 406.00 ARRIVAL DATE DEC 13 1965

HELIOCENTRIC CONIC DISTANCE 901.294 EARTH TO MARS

```
RL  148.42 LAL   -.00 LOL  39.61 VL  32.921 GAL  -7.88 AZL  88.15 HCA 273.97 SMA 188.36 ECC .25083 INC 1.8451 V1  30.020
RP  207.93 LAP  -1.84 LOP 313.58 VP  23.915 GAP -13.27 AZP  89.87 TAL 318.99 TAP 232.95 RCA 141.12 APO 235.61 V2  26.349
RC 319.247 GL   12.30 GP    1.30 ZAL 145.65 ZAP  33.38 ETS 181.12 ZAE  54.95 ETE 180.60 ZAC  86.24 ETC 257.51 CLP  33.36
```

PLANETOCENTRIC CONIC

```
C3  24.309 VHL  4.930 DLA   8.40 RAL 191.56 RAD 6568.0 VEL 12.070 PTH   2.16 VHP  5.565 DPA   7.86 RAP 169.17 ECC 1.4001
```

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 16 15	2525.13	-25.69	62.14	58.89	102.33	20 58 21	1925.1	-23.74	54.02
90.00	10 25 9	4642.07	13.79	197.17	54.58	65.02	11 42 31	4042.1	10.31	190.22
100.00	21 41 40	2249.64	-26.89	41.57	58.58	103.57	22 19 10	1649.6	-24.76	33.42
100.00	11 42 25	4392.79	14.90	178.29	54.03	63.78	12 55 38	3792.8	11.26	171.40
110.00	22 59 12	2007.02	-30.10	22.15	57.59	107.03	23 32 39	1407.0	-27.47	13.95
110.00	12 41 23	4208.18	17.84	162.66	52.41	60.35	13 51 31	3608.2	13.76	155.93

DIFFERENTIAL CORRECTIONS

```
TDE-2.7459 TRA 9.4593 TC3-8.6802 BAU 2.8232
RDE  .5680 RRA -.0208 RC3  .3480 FAU .10919
FDE-2.1468 FRA 5.2638 FC3-3.8887 BSP  50647
BDE 2.8040 BRA 9.4594 BC3 8.6872 FSP   2475
```

MID-COURSE EXECUTION ACCURACY

```
SGT14384.7 SGR  744.3 SG3  664.6
RRT -.4964 RRF -.5439 RTF  .9896
SGB14404.0 R23  .0595 R13 -.9897
SG114389.5 SG2  645.9 THA 178.53
```

ORBIT DETERMINATION ACCURACY

```
ST  4621.8 SR   660.2 SS  1495.9
CRT -.6992 CRS  .8090 CST -.9858
LSA 4874.8 MSA  520.5 SSA   15.9
EL1 4645.0 EL2  469.6 ALF 174.24
```

LAUNCH DATE NOV 2 1964 FLIGHT TIME 408.00 ARRIVAL DATE DEC 15 1965

HELIOCENTRIC CONIC DISTANCE 905.419 EARTH TO MARS

```
RL  148.42 LAL   -.00 LOL  39.61 VL  32.926 GAL  -8.09 AZL  88.15 HCA 275.22 SMA 188.46 ECC .25310 INC 1.8519 V1  30.020
RP  207.79 LAP  -1.84 LOP 314.83 VP  23.941 GAP -13.45 AZP  89.83 TAL 318.12 TAP 233.34 RCA 140.76 APO 236.16 V2  26.366
RC 320.122 GL   12.10 GP    1.28 ZAL 146.52 ZAP  32.77 ETS 181.11 ZAE  54.03 ETE 180.63 ZAC  86.35 ETC 257.44 CLP  32.74
```

PLANETOCENTRIC CONIC

```
C3  25.263 VHL  5.026 DLA   7.88 RAL 192.28 RAD 6568.0 VEL 12.109 PTH   2.17 VHP  5.676 DPA   7.58 RAP 169.75 ECC 1.4158
```

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 23 10	2517.89	-25.59	61.64	60.09	102.56	21 5 8	1917.9	-23.60	53.53
90.00	10 23 55	4668.25	14.54	198.73	55.94	65.43	11 41 43	4068.2	11.11	191.74
100.00	21 48 19	2243.29	-26.79	41.13	59.78	103.79	22 25 42	1643.3	-24.63	33.00
100.00	11 41 27	4418.09	15.66	179.79	55.40	64.21	12 55 6	3818.1	12.06	172.85
110.00	23 5 14	2002.58	-30.01	21.84	58.76	107.20	23 38 36	1402.6	-27.36	13.65
110.00	12 41 2	4231.56	18.62	164.02	53.78	60.80	13 51 33	3631.6	14.59	157.23

DIFFERENTIAL CORRECTIONS

```
TDE-2.8867 TRA 9.7803 TC3-8.4710 BAU 2.8633
RDE  .5805 RRA -.0247 RC3  .3375 FAU .10220
FDE-2.1117 FRA 5.0776 FC3-3.5024 BSP  51001
BDE 2.9445 BRA 9.7803 BC3 8.4777 FSP   2334
```

MID-COURSE EXECUTION ACCURACY

```
SGT14492.1 SGR  744.2 SG3  625.0
RRT -.4994 RRF -.5486 RTF  .9888
SGB14511.2 R23  .0620 R13 -.9889
SG114496.9 SG2  644.6 THA 178.53
```

ORBIT DETERMINATION ACCURACY

```
ST  4721.7 SR   661.9 SS  1461.3
CRT -.7068 CRS  .8158 CST -.9856
LSA 4960.0 MSA  516.1 SSA   15.7
EL1 4745.1 EL2  465.9 ALF 174.29
```

LAUNCH DATE NOV 2 1964 FLIGHT TIME 410.00 ARRIVAL DATE DEC 17 1965

HELIOCENTRIC CONIC DISTANCE 909.532 EARTH TO MARS

```
RL  148.42 LAL   -.00 LOL  39.61 VL  32.932 GAL  -8.31 AZL  88.14 HCA 276.48 SMA 188.56 ECC .25548 INC 1.8588 V1  30.020
RP  207.66 LAP  -1.85 LOP 316.09 VP  23.966 GAP -13.64 AZP  89.79 TAL 317.23 TAP 233.70 RCA 140.39 APO 236.74 V2  26.381
RC 320.992 GL   11.90 GP    1.26 ZAL 147.39 ZAP  32.17 ETS 181.11 ZAE  53.14 ETE 180.66 ZAC  86.46 ETC 257.36 CLP  32.15
```

PLANETOCENTRIC CONIC

```
C3  26.276 VHL  5.126 DLA   7.36 RAL 192.98 RAD 6568.1 VEL 12.151 PTH   2.18 VHP  5.790 DPA   7.29 RAP 170.35 ECC 1.4324
```

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 30 3	2510.97	-25.48	61.16	61.30	102.78	21 11 54	1911.0	-23.47	53.07
90.00	10 22 42	4694.60	15.28	200.31	57.32	65.87	11 40 56	4094.6	11.89	193.27
100.00	21 54 55	2237.23	-26.69	40.71	60.98	103.99	22 32 12	1637.2	-24.50	32.59
100.00	11 40 30	4443.58	16.41	181.31	56.79	64.66	12 54 34	3843.6	12.86	174.32
110.00	23 11 14	1998.42	-29.92	21.54	59.95	107.35	23 44 32	1398.4	-27.26	13.37
110.00	12 40 41	4255.17	19.40	165.41	55.18	61.29	13 51 36	3655.2	15.42	158.55

DIFFERENTIAL CORRECTIONS

```
TDE-3.0338 TRA10.1085 TC3-8.2642 BAU 2.9054
RDE  .5935 RRA -.0290 RC3  .3274 FAU .09552
FDE-2.0757 FRA 4.8899 FC3-3.1471 BSP  51288
BDE 3.0914 BRA10.1086 BC3 8.2707 FSP   2195
```

MID-COURSE EXECUTION ACCURACY

```
SGT14597.1 SGR  744.2 SG3  587.0
RRT -.5032 RRF -.5542 RTF  .9880
SGB14616.0 R23  .0649 R13 -.9881
SG114601.9 SG2  642.9 THA 178.53
```

ORBIT DETERMINATION ACCURACY

```
ST  4821.3 SR   663.5 SS  1426.0
CRT -.7145 CRS  .8228 CST -.9854
LSA 5045.5 MSA  511.6 SSA   15.5
EL1 4844.8 EL2  462.0 ALF 174.33
```

LAUNCH DATE NOV 2 1964 FLIGHT TIME 412.00 ARRIVAL DATE DEC 19 1965

HELIOCENTRIC CONIC DISTANCE 913.631 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.938 GAL -8.54 AZL 88.13 HCA 277.74 SMA 188.67 ECC .25796 INC 1.8657 V1 30.020
RP 207.54 LAP -1.85 LOP 317.35 VP 23.990 GAP -13.83 AZP 89.75 TAL 316.32 TAP 234.06 RCA 140.00 APO 237.33 V2 26.396
RC 321.856 GL 11.70 GP 1.24 ZAL 148.26 ZAP 31.60 ETS 181.10 ZAE 52.26 ETE 180.70 ZAC 86.58 ETC 257.29 CLP 31.57

PLANETOCENTRIC CONIC

C3 27.352 VHL 5.230 DLA 6.84 RAL 193.69 RAD 6568.1 VEL 12.195 PTH 2.19 VHP 5.906 DPA 6.99 RAP 170.97 ECC 1.4501

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 36 53	2504.37	-25.38	60.70	62.53	102.99	21 18 38	1904.4	-23.34	52.63
90.00	10 21 29	4721.13	16.01	201.91	58.74	66.33	11 40 11	4121.1	12.68	194.82
100.00	22 1 30	2231.48	-26.59	40.31	62.21	104.18	22 38 41	1631.5	-24.38	32.20
100.00	11 39 34	4469.26	17.15	182.86	58.20	65.14	12 54 3	3869.3	13.66	175.81
110.00	23 17 12	1994.54	-29.84	21.27	61.16	107.50	23 50 27	1394.5	-27.16	13.11
110.00	12 40 21	4278.96	20.17	166.83	56.61	61.80	13 51 40	3679.0	16.25	159.90

DIFFERENTIAL CORRECTIONS
TDE-3.1852 TRA10.4471 TC3-8.0553 BAU 2.9479
RDE .6069 RRA -.0339 RC3 .3176 FAU .08901
FDE-2.0368 FRA 4.7022 FC3-2.8173 BSP 51565
BDE 3.2425 BRA10.4471 BC3 8.0615 FSP 2061

MID-COURSE EXECUTION ACCURACY
SGT14698.5 SGR 744.1 SG3 550.4
RRT -.5074 RRF -.5603 RTF .9871
SGB14717.4 R23 .0680 R13 -.9871
SG114703.4 SG2 641.0 THA 178.53

ORBIT DETERMINATION ACCURACY
ST 4919.3 SR 665.0 SS 1389.0
CRT -.7218 CRS .8297 CST -.9851
LSA 5129.7 MSA 507.0 SSA 15.4
EL1 4942.9 EL2 458.1 ALF 174.38

LAUNCH DATE NOV 2 1964 FLIGHT TIME 414.00 ARRIVAL DATE DEC 21 1965

HELIOCENTRIC CONIC DISTANCE 917.717 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.944 GAL -8.77 AZL 88.13 HCA 279.00 SMA 188.77 ECC .26054 INC 1.8727 V1 30.020
RP 207.42 LAP -1.85 LOP 318.61 VP 24.013 GAP -14.02 AZP 89.71 TAL 315.40 TAP 234.39 RCA 139.59 APO 237.95 V2 26.409
RC 322.714 GL 11.50 GP 1.22 ZAL 149.13 ZAP 31.04 ETS 181.09 ZAE 51.40 ETE 180.73 ZAC 86.70 ETC 257.21 CLP 31.01

PLANETOCENTRIC CONIC

C3 28.495 VHL 5.338 DLA 6.32 RAL 194.40 RAD 6568.1 VEL 12.242 PTH 2.20 VHP 6.025 DPA 6.68 RAP 171.61 ECC 1.4690

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 43 42	2498.09	-25.29	60.27	63.78	103.19	21 25 20	1898.1	-23.22	52.21
90.00	10 20 19	4747.82	16.74	203.54	60.18	66.82	11 39 26	4147.8	13.46	196.40
100.00	22 8 2	2226.04	-26.50	39.93	63.45	104.36	22 45 8	1626.0	-24.27	31.84
100.00	11 38 39	4495.11	17.88	184.43	59.65	65.64	12 53 34	3895.1	14.44	177.32
110.00	23 23 10	1990.95	-29.77	21.02	62.39	107.63	23 56 21	1390.9	-27.07	12.87
110.00	12 40 1	4302.96	20.94	168.27	58.07	62.34	13 51 44	3703.0	17.07	161.28

DIFFERENTIAL CORRECTIONS
TDE-3.3408 TRA10.7944 TC3-7.8478 BAU 2.9919
RDE .6206 RRA -.0393 RC3 .3080 FAU .08275
FDE-1.9954 FRA 4.5131 FC3-2.5140 BSP 51793
BDE 3.3980 BRA10.7944 BC3 7.8538 FSP 1930

MID-COURSE EXECUTION ACCURACY
SGT14796.6 SGR 744.1 SG3 515.1
RRT -.5121 RRF -.5672 RTF .9860
SGB14815.3 R23 .0714 R13 -.9861
SG114801.5 SG2 638.9 THA 178.52

ORBIT DETERMINATION ACCURACY
ST 5015.1 SR 666.3 SS 1350.6
CRT -.7289 CRS .8365 CST -.9848
LSA 5212.2 MSA 502.4 SSA 15.2
EL1 5038.7 EL2 454.0 ALF 174.42

LAUNCH DATE NOV 2 1964 FLIGHT TIME 416.00 ARRIVAL DATE DEC 23 1965

HELIOCENTRIC CONIC DISTANCE 921.787 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.950 GAL -9.01 AZL 88.12 HCA 280.26 SMA 188.87 ECC .26324 INC 1.8797 V1 30.020
RP 207.31 LAP -1.85 LOP 319.87 VP 24.035 GAP -14.22 AZP 89.67 TAL 314.46 TAP 234.71 RCA 139.15 APO 238.59 V2 26.422
RC 323.566 GL 11.29 GP 1.20 ZAL 149.99 ZAP 30.49 ETS 181.08 ZAE 50.55 ETE 180.76 ZAC 86.83 ETC 257.14 CLP 30.47

PLANETOCENTRIC CONIC

C3 29.710 VHL 5.451 DLA 5.80 RAL 195.10 RAD 6568.2 VEL 12.292 PTH 2.21 VHP 6.147 DPA 6.37 RAP 172.26 ECC 1.4889

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 50 28	2492.13	-25.19	59.86	65.04	103.38	21 32 0	1892.1	-23.10	51.81
90.00	10 19 9	4774.66	17.45	205.19	61.65	67.34	11 38 44	4174.7	14.23	197.99
100.00	22 14 33	2220.91	-26.42	39.57	64.70	104.53	22 51 34	1620.9	-24.16	31.50
100.00	11 37 45	4521.12	18.61	186.02	61.13	66.17	12 53 6	3921.1	15.23	178.86
110.00	23 29 5	1987.64	-29.70	20.78	63.62	107.75	24 2 13	1387.6	-26.99	12.65
110.00	12 39 42	4327.15	21.69	169.74	59.56	62.91	13 51 49	3727.1	17.89	162.67

DIFFERENTIAL CORRECTIONS
TDE-3.5013 TRA11.1520 TC3-7.6409 BAU 3.0372
RDE .6347 RRA -.0452 RC3 .2987 FAU .07668
FDE-1.9517 FRA 4.3232 FC3-2.2344 BSP 51997
BDE 3.5584 BRA11.1521 BC3 7.6468 FSP 1804

MID-COURSE EXECUTION ACCURACY
SGT14891.9 SGR 744.0 SG3 481.1
RRT -.5173 RRF -.5746 RTF .9848
SGB14910.4 R23 .0750 R13 -.9849
SG114896.9 SG2 636.5 THA 178.52

ORBIT DETERMINATION ACCURACY
ST 5109.2 SR 667.4 SS 1310.9
CRT -.7357 CRS .8433 CST -.9843
LSA 5293.4 MSA 497.8 SSA 15.0
EL1 5132.9 EL2 450.0 ALF 174.47

LAUNCH DATE NOV 2 1964 FLIGHT TIME 418.00 ARRIVAL DATE DEC 25 1965

HELIOCENTRIC CONIC DISTANCE 925.839 EARTH TO MARS

RL 148.42 LAL -.00 LOL 39.61 VL 32.956 GAL -9.26 AZL 88.11 HCA 281.52 SMA 188.98 ECC .26605 INC 1.8868 V1 30.020
RP 207.21 LAP -1.85 LOP 321.13 VP 24.056 GAP -14.42 AZP 89.62 TAL 313.50 TAP 235.02 RCA 138.70 APO 239.26 V2 26.434
RC 324.413 GL 11.09 GP 1.18 ZAL 150.85 ZAP 29.97 ETS 181.07 ZAE 49.72 ETE 180.78 ZAC 86.96 ETC 257.06 CLP 29.95

PLANETOCENTRIC CONIC

C3 31.001 VHL 5.568 DLA 5.28 RAL 195.80 RAD 6568.2 VEL 12.344 PTH 2.23 VHP 6.272 DPA 6.05 RAP 172.92 ECC 1.5102

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 57 12	2486.49	-25.10	59.47	66.31	103.55	21 38 38	1886.5	-22.99	51.43
90.00	10 18 0	4801.65	18.15	206.86	63.15	67.88	11 38 2	4201.6	14.99	199.61
100.00	22 21 2	2216.09	-26.33	39.24	65.97	104.68	22 57 58	1616.1	-24.06	31.18
100.00	11 36 51	4547.29	19.32	187.64	62.63	66.73	12 52 39	3947.3	16.00	180.41
110.00	23 34 59	1984.63	-29.64	20.57	64.88	107.86	24 8 4	1384.6	-26.91	12.45
110.00	12 39 23	4351.51	22.44	171.23	61.08	63.51	13 51 55	3751.5	18.70	164.09

DIFFERENTIAL CORRECTIONS
TDE-3.6671 TRA11.5187 TC3-7.4362 BAU 3.0843
RDE .6493 RRA -.0518 RC3 .2896 FAU .07080
FDE-1.9057 FRA 4.1317 FC3-1.9772 BSP 52151
BDE 3.7241 BRA11.5188 BC3 7.4418 FSP 1681

MID-COURSE EXECUTION ACCURACY
SGT14983.7 SGR 743.9 SG3 448.3
RRT -.5230 RRF -.5826 RTF .9834
SGB15002.2 R23 .0791 R13 -.9835
SG114988.8 SG2 633.8 THA 178.51

ORBIT DETERMINATION ACCURACY
ST 5201.4 SR 668.4 SS 1269.9
CRT -.7424 CRS .8501 CST -.9838
LSA 5373.2 MSA 493.1 SSA 14.8
EL1 5225.2 EL2 445.8 ALF 174.51

LAUNCH DATE NOV 3 1964 FLIGHT TIME 180.00 ARRIVAL DATE MAY 2 1965

HELIOCENTRIC CONIC DISTANCE 468.795 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 34.626 GAL -7.48 AZL 87.65 HCA 151.94 SMA 225.00 ECC .36187 INC 2.3519 V1 30.028
RP 244.11 LAP 1.11 LOP 192.57 VP 22.305 GAP 20.67 AZP 92.08 TAL 331.42 TAP 123.36 RCA 143.58 APO 306.42 V2 22.475
RC 133.550 GL 13.42 GP -1.32 ZAL 132.11 ZAP 170.29 ETS 186.47 ZAE 156.57 ETE 354.95 ZAC 87.05 ETC 256.14 CLP 170.38

PLANETOCENTRIC CONIC

C3 36.857 VHL 6.071 DLA 14.60 RAL 180.12 RAD 6568.4 VEL 12.579 PTH 2.28 VHP 9.375 DPA -1.14 RAP 182.69 ECC 1.6066

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 34 49	2837.21	-28.28	84.54	58.15	91.45	19 22 7	2237.2	-27.78	75.91
90.00	10 27 26	4538.20	10.73	191.08	49.62	63.64	11 43 4	3938.2	7.10	184.28
100.00	20 4 0	2549.61	-29.79	63.33	58.09	92.53	20 46 30	1949.6	-29.13	54.59
100.00	11 40 56	4301.04	12.08	172.95	48.92	62.45	12 52 37	3701.0	8.29	166.20
110.00	21 29 46	2281.25	-33.79	42.62	57.76	95.49	22 7 47	1681.3	-32.66	33.57
110.00	12 31 39	4142.15	15.58	158.88	46.90	59.18	13 40 42	3542.2	11.37	152.30

DIFFERENTIAL CORRECTIONS
TDE 1.2746 TRA-3.0314 TC3 .7671 BAU .3824
RDE -.3691 RRA .0041 RC3 -.1175 FAU .07696
FDE -.6845 FRA 2.4890 FC3-1.8078 BSP 11294
BDE 1.3270 BRA 3.0314 BC3 .7760 FSP 820

MID-COURSE EXECUTION ACCURACY
SGT 3324.9 SGR 376.4 SG3 288.2
RRT -.4503 RRF .4362 RTF -.9014
SGB 3346.1 R23 -.0293 R13 .9016
SG1 3329.3 SG2 335.6 THA 177.05

ORBIT DETERMINATION ACCURACY
ST 1494.8 SR 348.3 SS 790.3
CRT -.8069 CRS -.6654 CST .9769
LSA 1706.3 MSA 261.1 SSA 26.3
EL1 1521.5 EL2 202.1 ALF 169.16

LAUNCH DATE NOV 3 1964 FLIGHT TIME 182.00 ARRIVAL DATE MAY 4 1965

HELIOCENTRIC CONIC DISTANCE 471.419 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 34.544 GAL -7.31 AZL 87.63 HCA 152.85 SMA 222.85 ECC .35500 INC 2.3725 V1 30.028
RP 243.87 LAP 1.08 LOP 193.48 VP 22.201 GAP 20.11 AZP 92.11 TAL 331.71 TAP 124.55 RCA 143.74 APO 301.97 V2 22.498
RC 135.719 GL 13.80 GP -1.39 ZAL 131.67 ZAP 169.80 ETS 186.46 ZAE 156.45 ETE 354.99 ZAC 87.07 ETC 256.12 CLP 169.90

PLANETOCENTRIC CONIC

C3 35.364 VHL 5.947 DLA 15.10 RAL 179.94 RAD 6568.4 VEL 12.519 PTH 2.27 VHP 9.172 DPA -1.38 RAP 183.04 ECC 1.5820

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 29 33	2844.46	-28.29	85.07	57.39	91.19	19 16 58	2244.5	-27.83	76.44
90.00	10 31 13	4510.06	9.87	189.46	48.82	63.33	11 46 23	3910.1	6.21	182.69
100.00	19 59 6	2555.69	-29.81	63.78	57.34	92.30	20 41 41	1955.7	-29.18	55.03
100.00	11 44 21	4274.06	11.22	171.40	48.11	62.11	12 55 35	3674.1	7.40	164.69
110.00	21 25 38	2284.94	-33.82	42.90	57.02	95.32	22 3 43	1684.9	-32.71	33.84
110.00	12 34 19	4117.58	14.71	157.50	46.08	58.79	13 42 56	3517.6	10.47	150.96

DIFFERENTIAL CORRECTIONS
TDE 1.2521 TRA-3.0027 TC3 .8229 BAU .3935
RDE -.3536 RRA .0148 RC3 -.1248 FAU .07922
FDE -.6863 FRA 2.5487 FC3-1.9394 BSP 11496
BDE 1.3011 BRA 3.0028 BC3 .8323 FSP 865

MID-COURSE EXECUTION ACCURACY
SGT 3375.2 SGR 371.9 SG3 302.1
RRT -.4784 RRF .4653 RTF -.9046
SGB 3395.6 R23 -.0324 R13 .9048
SG1 3380.0 SG2 326.1 THA 176.95

ORBIT DETERMINATION ACCURACY
ST 1504.8 SR 340.8 SS 801.9
CRT -.8096 CRS -.6639 CST .9755
LSA 1719.0 MSA 260.6 SSA 26.1
EL1 1530.3 EL2 196.7 ALF 169.43

LAUNCH DATE NOV 3 1964 FLIGHT TIME 184.00 ARRIVAL DATE MAY 6 1965

HELIOCENTRIC CONIC DISTANCE 474.117 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 34.465 GAL -7.13 AZL 87.61 HCA 153.76 SMA 220.84 ECC .34840 INC 2.3946 V1 30.028
RP 243.63 LAP 1.06 LOP 194.39 VP 22.103 GAP 19.55 AZP 92.15 TAL 332.00 TAP 125.76 RCA 143.90 APO 297.78 V2 22.522
RC 137.915 GL 14.19 GP -1.46 ZAL 131.22 ZAP 169.30 ETS 186.48 ZAE 156.37 ETE 355.00 ZAC 87.09 ETC 256.10 CLP 169.40

PLANETOCENTRIC CONIC

C3 33.957 VHL 5.827 DLA 15.61 RAL 179.75 RAD 6568.3 VEL 12.463 PTH 2.25 VHP 8.973 DPA -1.63 RAP 183.39 ECC 1.5588

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 24 2	2852.72	-28.30	85.68	56.65	90.88	19 11 35	2252.7	-27.88	77.04
90.00	10 35 13	4481.29	8.99	187.81	48.06	63.03	11 49 55	3881.3	5.30	181.07
100.00	19 53 58	2562.70	-29.83	64.30	56.60	92.02	20 36 41	1962.7	-29.23	55.55
100.00	11 47 58	4246.55	10.34	169.83	47.34	61.80	12 58 45	3646.5	6.49	163.16
110.00	21 21 19	2289.39	-33.84	43.25	56.31	95.12	21 59 29	1689.4	-32.76	34.18
110.00	12 37 7	4092.62	13.83	156.11	45.29	58.42	13 45 19	3492.6	9.55	149.62

DIFFERENTIAL CORRECTIONS
TDE 1.2301 TRA-2.9725 TC3 .8824 BAU .4051
RDE -.3387 RRA .0255 RC3 -.1327 FAU .08159
FDE -.6868 FRA 2.6101 FC3-2.0802 BSP 11673
BDE 1.2758 BRA 2.9726 BC3 .8924 FSP 911

MID-COURSE EXECUTION ACCURACY
SGT 3424.8 SGR 368.1 SG3 316.7
RRT -.5083 RRF .4960 RTF -.9079
SGB 3444.6 R23 -.0354 R13 .9081
SG1 3430.0 SG2 316.5 THA 176.85

ORBIT DETERMINATION ACCURACY
ST 1514.1 SR 333.1 SS 813.3
CRT -.8129 CRS -.6624 CST .9739
LSA 1731.0 MSA 260.8 SSA 25.7
EL1 1538.5 EL2 191.0 ALF 169.70

LAUNCH DATE NOV 3 1964 FLIGHT TIME 186.00 ARRIVAL DATE MAY 8 1965

HELIOCENTRIC CONIC DISTANCE 476.883 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 34.389 GAL -6.96 AZL 87.58 HCA 154.67 SMA 218.94 ECC .34206 INC 2.4182 V1 30.028
RP 243.38 LAP 1.03 LOP 195.30 VP 22.010 GAP 18.99 AZP 92.19 TAL 332.29 TAP 126.96 RCA 144.05 APO 293.82 V2 22.547
RC 140.134 GL 14.60 GP -1.55 ZAL 130.75 ZAP 168.79 ETS 186.52 ZAE 156.33 ETE 354.98 ZAC 87.10 ETC 256.08 CLP 168.90

PLANETOCENTRIC CONIC

C3 32.631 VHL 5.712 DLA 16.14 RAL 179.56 RAD 6568.3 VEL 12.410 PTH 2.24 VHP 8.779 DPA -1.87 RAP 183.73 ECC 1.5370

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 18 16	2862.08	-28.31	86.36	55.92	90.54	19 5 58	2262.1	-27.94	77.72
90.00	10 39 28	4451.85	8.08	186.12	47.32	62.77	11 53 40	3851.9	4.36	179.41
100.00	19 48 37	2570.70	-29.85	64.89	55.89	91.71	20 31 28	1970.7	-29.29	56.13
100.00	11 51 48	4218.47	9.43	168.24	46.59	61.50	13 2 7	3618.5	5.56	161.60
110.00	21 16 51	2294.67	-33.87	43.66	55.62	94.88	21 55 5	1694.7	-32.83	34.58
110.00	12 40 4	4067.26	12.92	154.70	44.52	58.07	13 47 52	3467.3	8.61	148.26

DIFFERENTIAL CORRECTIONS
TDE 1.2062 TRA-2.9431 TC3 .9428 BAU .4159
RDE -.3241 RRA .0363 RC3 -.1411 FAU .08403
FDE -.6853 FRA 2.6741 FC3-2.2293 BSP 11876
BDE 1.2490 BRA 2.9433 BC3 .9533 FSP 962

MID-COURSE EXECUTION ACCURACY
SGT 3473.9 SGR 364.9 SG3 331.9
RRT -.5393 RRF .5279 RTF -.9109
SGB 3493.0 R23 -.0389 R13 .9111
SG1 3479.5 SG2 306.8 THA 176.73

ORBIT DETERMINATION ACCURACY
ST 1521.4 SR 325.4 SS 824.0
CRT -.8161 CRS -.6603 CST .9720
LSA 1740.8 MSA 261.5 SSA 25.2
EL1 1544.7 EL2 185.2 ALF 169.95

LAUNCH DATE NOV 3 1964 FLIGHT TIME 188.00 ARRIVAL DATE MAY 10 1965

HELIOCENTRIC CONIC DISTANCE 479.713 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 34.317 GAL -6.79 AZL 87.56 HCA 155.59 SMA 217.15 ECC .33596 INC 2.4433 V1 30.028
RP 243.12 LAP 1.01 LOP 196.22 VP 21.922 GAP 18.43 AZP 92.23 TAL 332.59 TAP 128.18 RCA 144.19 APO 290.10 V2 22.572
RC 142.373 GL 15.03 GP -1.63 ZAL 130.27 ZAP 168.27 ETS 186.59 ZAE 156.34 ETE 354.94 ZAC 87.10 ETC 256.06 CLP 168.39

PLANETOCENTRIC CONIC

C3 31.383 VHL 5.602 DLA 16.69 RAL 179.36 RAD 6568.2 VEL 12.359 PTH 2.23 VHP 8.589 DPA -2.12 RAP 184.06 ECC 1.5165

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 12 13	2872.63	-28.32	87.13	55.22	90.15	19 0 5	2272.6	-28.00	78.48
90.00	10 44 0	4421.67	7.13	184.41	46.61	62.52	11 57 42	3821.7	3.40	177.72
100.00	19 43 1	2579.78	-29.86	65.57	55.20	91.35	20 26 1	1979.8	-29.36	56.80
100.00	11 55 53	4189.75	8.50	166.62	45.87	61.23	13 5 42	3589.7	4.59	160.01
110.00	21 12 11	2300.83	-33.91	44.14	54.95	94.60	21 50 31	1700.8	-32.90	35.04
110.00	12 43 12	4041.47	11.99	153.29	43.78	57.75	13 50 34	3441.5	7.64	146.89

DIFFERENTIAL CORRECTIONS
TDE 1.1824 TRA-2.9124 TC3 1.0062 BAU .4268
RDE -.3101 RRA .0472 RC3 -.1502 FAU .08661
FDE -.6833 FRA 2.7389 FC3-2.3894 BSP 12056
BDE 1.2224 BRA 2.9127 BC3 1.0173 FSP 1013

MID-COURSE EXECUTION ACCURACY
SGT 3521.9 SGR 362.6 SG3 347.8
RRT -.5717 RRF .5615 RTF -.9139
SGB 3540.5 R23 -.0430 R13 .9141
SG1 3528.0 SG2 296.9 THA 176.61

ORBIT DETERMINATION ACCURACY
ST 1527.7 SR 317.6 SS 834.5
CRT -.8200 CRS -.6590 CST .9699
LSA 1749.7 MSA 262.6 SSA 24.7
EL1 1550.0 EL2 179.1 ALF 170.19

LAUNCH DATE NOV 3 1964 FLIGHT TIME 190.00 ARRIVAL DATE MAY 12 1965

HELIOCENTRIC CONIC DISTANCE 482.602 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 34.247 GAL -6.63 AZL 87.53 HCA 156.51 SMA 215.46 ECC .33009 INC 2.4705 V1 30.028
RP 242.87 LAP .98 LOP 197.14 VP 21.839 GAP 17.88 AZP 92.27 TAL 332.89 TAP 129.40 RCA 144.34 APO 286.58 V2 22.598
RC 144.629 GL 15.47 GP -1.73 ZAL 129.77 ZAP 167.75 ETS 186.67 ZAE 156.39 ETE 354.86 ZAC 87.10 ETC 256.04 CLP 167.87

PLANETOCENTRIC CONIC

C3 30.208 VHL 5.496 DLA 17.26 RAL 179.17 RAD 6568.2 VEL 12.312 PTH 2.22 VHP 8.404 DPA -2.38 RAP 184.38 ECC 1.4971

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 5 50	2884.49	-28.32	88.00	54.54	89.72	18 53 55	2284.5	-28.05	79.34
90.00	10 48 50	4390.64	6.15	182.65	45.94	62.31	12 2 1	3790.6	2.40	175.99
100.00	19 37 8	2590.05	-29.88	66.33	54.53	90.95	20 20 19	1990.0	-29.43	57.56
100.00	12 0 13	4160.31	7.53	164.98	45.19	60.99	13 9 33	3560.3	3.60	158.39
110.00	21 7 18	2307.94	-33.95	44.69	54.31	94.28	21 45 46	1707.9	-32.98	35.58
110.00	12 46 32	4015.18	11.03	151.86	43.08	57.44	13 53 28	3415.2	6.66	145.49

DIFFERENTIAL CORRECTIONS
TDE 1.1618 TRA-2.8775 TC3 1.0765 BAU .4395
RDE -.2966 RRA .0581 RC3 -.1602 FAU .08930
FDE -.6792 FRA 2.8063 FC3-2.5593 BSP 12150
BDE 1.1991 BRA 2.8781 BC3 1.0884 FSP 1068

MID-COURSE EXECUTION ACCURACY
SGT 3568.5 SGR 361.5 SG3 364.5
RRT -.6065 RRF .5960 RTF -.9172
SGB 3586.8 R23 -.0454 R13 .9175
SG1 3575.3 SG2 286.8 THA 176.46

ORBIT DETERMINATION ACCURACY
ST 1535.0 SR 309.8 SS 844.6
CRT -.8255 CRS -.6572 CST .9670
LSA 1759.1 MSA 265.6 SSA 23.9
EL1 1556.4 EL2 172.4 ALF 170.42

LAUNCH DATE NOV 3 1964 FLIGHT TIME 192.00 ARRIVAL DATE MAY 14 1965

HELIOCENTRIC CONIC DISTANCE 485.546 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 34.180 GAL -6.47 AZL 87.50 HCA 157.43 SMA 213.87 ECC .32446 INC 2.4998 V1 30.028
RP 242.60 LAP .96 LOP 198.06 VP 21.761 GAP 17.34 AZP 92.31 TAL 333.19 TAP 130.62 RCA 144.48 APO 283.26 V2 22.624
RC 146.900 GL 15.94 GP -1.84 ZAL 129.27 ZAP 167.21 ETS 186.78 ZAE 156.48 ETE 354.75 ZAC 87.08 ETC 256.02 CLP 167.34

PLANETOCENTRIC CONIC

C3 29.104 VHL 5.395 DLA 17.86 RAL 178.98 RAD 6568.2 VEL 12.267 PTH 2.21 VHP 8.222 DPA -2.63 RAP 184.69 ECC 1.4790

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 59 8	2897.78	-28.31	88.97	53.89	89.23	18 47 25	2297.8	-28.11	80.31
90.00	10 54 2	4358.69	5.14	180.85	45.31	62.12	12 6 40	3758.7	1.37	174.20
100.00	19 30 58	2601.59	-29.89	67.19	53.89	90.50	20 14 20	2001.6	-29.50	58.41
100.00	12 4 52	4130.11	6.53	163.29	44.55	60.76	13 13 42	3530.1	2.58	156.73
110.00	21 2 14	2316.08	-33.99	45.32	53.70	93.90	21 40 50	1716.1	-33.07	36.20
110.00	12 50 6	3988.39	10.04	150.41	42.41	57.15	13 56 34	3388.4	5.64	144.08

DIFFERENTIAL CORRECTIONS
TDE 1.1343 TRA-2.8481 TC3 1.1410 BAU .4489
RDE -.2833 RRA .0695 RC3 -.1709 FAU .09216
FDE -.6744 FRA 2.8745 FC3-2.7416 BSP 12389
BDE 1.1692 BRA 2.8490 BC3 1.1537 FSP 1124

MID-COURSE EXECUTION ACCURACY
SGT 3614.7 SGR 361.3 SG3 382.0
RRT -.6400 RRF .6319 RTF -.9196
SGB 3632.8 R23 -.0520 R13 .9198
SG1 3622.2 SG2 277.1 THA 176.32

ORBIT DETERMINATION ACCURACY
ST 1536.8 SR 301.9 SS 854.5
CRT -.8297 CRS -.6566 CST .9649
LSA 1763.8 MSA 267.2 SSA 23.4
EL1 1557.3 EL2 166.3 ALF 170.64

LAUNCH DATE NOV 3 1964 FLIGHT TIME 194.00 ARRIVAL DATE MAY 16 1965

HELIOCENTRIC CONIC DISTANCE 488.542 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 34.116 GAL -6.32 AZL 87.47 HCA 158.35 SMA 212.37 ECC .31904 INC 2.5313 V1 30.028
RP 242.34 LAP .93 LOP 198.98 VP 21.688 GAP 16.80 AZP 92.35 TAL 333.50 TAP 131.85 RCA 144.61 APO 280.12 V2 22.651
RC 149.184 GL 16.42 GP -1.95 ZAL 128.75 ZAP 166.65 ETS 186.92 ZAE 156.62 ETE 354.60 ZAC 87.05 ETC 256.01 CLP 166.79

PLANETOCENTRIC CONIC

C3 28.066 VHL 5.298 DLA 18.47 RAL 178.79 RAD 6568.1 VEL 12.225 PTH 2.20 VHP 8.045 DPA -2.90 RAP 184.99 ECC 1.4619

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 52 2	2912.69	-28.29	90.06	53.26	88.68	18 40 34	2312.7	-28.17	81.40
90.00	10 59 37	4325.66	4.08	179.00	44.72	61.95	12 11 43	3725.7	.30	172.36
100.00	19 24 28	2614.57	-29.89	68.15	53.28	89.99	20 8 3	2014.6	-29.57	59.36
100.00	12 9 52	4099.01	5.49	161.57	43.94	60.57	13 18 11	3499.0	1.53	155.02
110.00	20 56 55	2325.35	-34.03	46.04	53.13	93.48	21 35 40	1725.4	-33.17	36.91
110.00	12 53 55	3960.99	9.03	148.94	41.78	56.89	13 59 56	3361.0	4.60	142.64

DIFFERENTIAL CORRECTIONS
TDE 1.1107 TRA-2.8147 TC3 1.2127 BAU .4602
RDE -.2706 RRA .0809 RC3 -.1827 FAU .09521
FDE -.6688 FRA 2.9441 FC3-2.9367 BSP 12523
BDE 1.1432 BRA 2.8159 BC3 1.2264 FSP 1181

MID-COURSE EXECUTION ACCURACY
SGT 3659.8 SGR 362.9 SG3 400.4
RRT -.6751 RRF .6684 RTF -.9222
SGB 3677.8 R23 -.0576 R13 .9225
SG1 3668.1 SG2 267.1 THA 176.15

ORBIT DETERMINATION ACCURACY
ST 1539.9 SR 294.1 SS 864.3
CRT -.8358 CRS -.6568 CST .9620
LSA 1769.5 MSA 270.3 SSA 22.7
EL1 1559.6 EL2 159.4 ALF 170.84

LAUNCH DATE NOV 3 1964 FLIGHT TIME 196.00 ARRIVAL DATE MAY 18 1965

HELIOCENTRIC CONIC DISTANCE 491.587 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 34.054 GAL -6.17 AZL 87.43 HCA 159.27 SMA 210.95 ECC .31383 INC 2.5658 V1 30.028
RP 242.06 LAP .91 LOP 199.90 VP 21.619 GAP 16.26 AZP 92.40 TAL 333.81 TAP 133.09 RCA 144.75 APO 277.15 V2 22.678
RC 151.478 GL 16.93 GP -2.08 ZAL 128.22 ZAP 166.09 ETS 187.08 ZAE 156.79 ETE 354.41 ZAC 87.01 ETC 255.99 CLP 166.24

PLANETOCENTRIC CONIC

C3 27.092 VHL 5.205 DLA 19.11 RAL 178.61 RAD 6568.1 VEL 12.185 PTH 2.19 VHP 7.871 DPA -3.17 RAP 185.28 ECC 1.4459

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 44 29	2929.41	-28.26	91.29	52.66	88.07	18 33 19	2329.4	-28.23	82.62
90.00	11 5 42	4291.35	2.98	177.08	44.17	61.83	12 17 13	3691.4	-.81	170.45
100.00	19 17 36	2629.14	-29.89	69.24	52.70	89.42	20 1 25	2029.1	-29.65	60.44
100.00	12 15 16	4066.86	4.41	159.79	43.38	60.41	13 23 3	3466.9	.44	153.25
110.00	20 51 20	2335.86	-34.07	46.86	52.60	93.00	21 30 16	1735.9	-33.28	37.71
110.00	12 58 1	3932.90	7.98	147.44	41.19	56.65	14 3 34	3332.9	3.54	141.16

DIFFERENTIAL CORRECTIONS
TDE 1.0881 TRA-2.7789 TC3 1.2890 BAU .4722
RDE -.2583 RRA .0927 RC3 -.1957 FAU .09827
FDE -.6585 FRA 3.0184 FC3-3.1402 BSP 12616
BDE 1.1183 BRA 2.7805 BC3 1.3037 FSP .1246

MID-COURSE EXECUTION ACCURACY
SGT 3703.4 SGR 366.1 SG3 419.5
RRT -.7107 RRF .7043 RTF -.9253
SGB 3721.5 R23 -.0618 R13 .9256
SG1 3712.6 SG2 256.9 THA 175.96

ORBIT DETERMINATION ACCURACY
ST 1542.5 SR 286.3 SS 873.0
CRT -.8431 CRS -.6556 CST .9578
LSA 1773.9 MSA 276.3 SSA 21.6
EL1 1561.5 EL2 152.1 ALF 171.02

LAUNCH DATE NOV 3 1964 FLIGHT TIME 198.00 ARRIVAL DATE MAY 20 1965

HELIOCENTRIC CONIC DISTANCE 494.676 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 33.995 GAL -6.02 AZL 87.40 HCA 160.20 SMA 209.60 ECC .30882 INC 2.6035 V1 30.028
RP 241.79 LAP .88 LOP 200.83 VP 21.555 GAP 15.73 AZP 92.45 TAL 334.12 TAP 134.32 RCA 144.87 APO 274.34 V2 22.706
RC 153.781 GL 17.47 GP -2.22 ZAL 127.67 ZAP 165.51 ETS 187.27 ZAE 156.99 ETE 354.18 ZAC 86.95 ETC 255.98 CLP 165.68

PLANETOCENTRIC CONIC

C3 26.181 VHL 5.117 DLA 19.77 RAL 178.43 RAD 6568.1 VEL 12.147 PTH 2.18 VHP 7.701 DPA -3.45 RAP 185.55 ECC 1.4309

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 36 27	2948.19	-28.21	92.66	52.10	87.39	18 25 35	2348.2	-28.27	83.99
90.00	11 12 19	4255.61	1.83	175.08	43.69	61.74	12 23 15	3655.6	-1.96	168.45
100.00	19 10 19	2645.49	-29.87	70.45	52.16	88.78	19 54 25	2045.5	-29.72	61.65
100.00	12 21 8	4033.53	3.29	157.95	42.88	60.27	13 28 21	3433.5	-.69	151.43
110.00	20 45 30	2347.73	-34.11	47.78	52.11	92.45	21 24 37	1747.7	-33.39	38.62
110.00	13 2 27	3904.06	6.90	145.90	40.65	56.44	14 7 31	3304.1	2.44	139.66

DIFFERENTIAL CORRECTIONS
TDE 1.0587 TRA-2.7492 TC3 1.3564 BAU .4804
RDE -.2462 RRA .1052 RC3 -.2096 FAU .10155
FDE -.6481 FRA 3.0936 FC3-3.3580 BSP 12861
BDE 1.0870 BRA 2.7512 BC3 1.3725 FSP 1311

MID-COURSE EXECUTION ACCURACY
SGT 3746.2 SGR 371.0 SG3 439.6
RRT -.7439 RRF .7405 RTF -.9272
SGB 3764.5 R23 -.0713 R13 .9276
SG1 3756.4 SG2 247.3 THA 175.77

ORBIT DETERMINATION ACCURACY
ST 1539.6 SR 278.3 SS 881.9
CRT -.8494 CRS -.6566 CST .9548
LSA 1773.9 MSA 280.1 SSA 20.9
EL1 1557.8 EL2 145.2 ALF 171.19

LAUNCH DATE NOV 3 1964 FLIGHT TIME 200.00 ARRIVAL DATE MAY 22 1965

HELIOCENTRIC CONIC DISTANCE 497.808 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 33.938 GAL -5.88 AZL 87.36 HCA 161.13 SMA 208.33 ECC .30401 INC 2.6448 V1 30.028
RP 241.51 LAP .86 LOP 201.76 VP 21.495 GAP 15.21 AZP 92.50 TAL 334.44 TAP 135.57 RCA 145.00 APO 271.67 V2 22.734
RC 156.092 GL 18.03 GP -2.38 ZAL 127.11 ZAP 164.92 ETS 187.49 ZAE 157.24 ETE 353.88 ZAC 86.88 ETC 255.96 CLP 165.11

PLANETOCENTRIC CONIC

C3 25.330 VHL 5.033 DLA 20.47 RAL 178.26 RAD 6568.0 VEL 12.112 PTH 2.17 VHP 7.535 DPA -3.74 RAP 185.81 ECC 1.4169

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 27 49	2969.38	-28.13	94.20	51.56	86.61	18 17 18	2369.4	-28.30	85.54
90.00	11 19 36	4218.07	.62	172.99	43.26	61.69	12 29 54	3618.1	-3.17	166.36
100.00	19 2 33	2663.91	-29.84	71.82	51.66	88.06	19 46 57	2063.9	-29.79	63.02
100.00	12 27 33	3998.77	2.11	156.04	42.43	60.18	13 34 12	3398.8	-1.87	149.52
110.00	20 39 19	2361.14	-34.14	48.83	51.66	91.83	21 18 40	1761.1	-33.51	39.64
110.00	13 7 16	3874.30	5.77	144.33	40.16	56.25	14 11 51	3274.3	1.30	138.10

DIFFERENTIAL CORRECTIONS
TDE 1.0326 TRA-2.7157 TC3 1.4306 BAU .4904
RDE -.2345 RRA .1181 RC3 -.2251 FAU .10495
FDE -.6337 FRA 3.1724 FC3-3.5869 BSP 13013
BDE 1.0589 BRA 2.7182 BC3 1.4482 FSP 1381

MID-COURSE EXECUTION ACCURACY
SGT 3787.5 SGR 378.4 SG3 460.6
RRT -.7770 RRF .7752 RTF -.9296
SGB 3806.3 R23 -.0795 R13 .9300
SG1 3798.9 SG2 237.5 THA 175.54

ORBIT DETERMINATION ACCURACY
ST 1537.5 SR 270.5 SS 890.2
CRT -.8578 CRS -.6573 CST .9502
LSA 1773.9 MSA 287.0 SSA 19.9
EL1 1555.0 EL2 137.5 ALF 171.35

LAUNCH DATE NOV 3 1964 FLIGHT TIME 202.00 ARRIVAL DATE MAY 24 1965

HELIOCENTRIC CONIC DISTANCE 500.980 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 33.883 GAL -5.74 AZL 87.31 HCA 162.06 SMA 207.13 ECC .29939 INC 2.6903 V1 30.028
RP 241.22 LAP .83 LOP 202.69 VP 21.439 GAP 14.69 AZP 92.56 TAL 334.75 TAP 136.81 RCA 145.12 APO 269.14 V2 22.762
RC 158.408 GL 18.63 GP -2.55 ZAL 126.54 ZAP 164.32 ETS 187.75 ZAE 157.52 ETE 353.53 ZAC 86.78 ETC 255.95 CLP 164.52

PLANETOCENTRIC CONIC

C3 24.536 VHL 4.953 DLA 21.20 RAL 178.10 RAD 6568.0 VEL 12.079 PTH 2.16 VHP 7.372 DPA -4.04 RAP 186.05 ECC 1.4038

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 18 28	2993.39	-28.02	95.95	51.07	85.74	18 8 21	2393.4	-28.32	87.30
90.00	11 27 42	4178.38	-.66	170.78	42.91	61.69	12 37 20	3578.4	-4.44	164.13
100.00	18 54 12	2684.71	-29.78	73.36	51.19	87.25	19 38 57	2084.7	-29.84	64.56
100.00	12 34 39	3962.30	.88	154.04	42.06	60.12	13 40 41	3362.3	-3.10	147.52
110.00	20 32 47	2376.29	-34.17	50.01	51.27	91.13	21 12 23	1776.3	-33.63	40.81
110.00	13 12 33	3843.48	4.61	142.71	39.74	56.09	14 16 37	3243.5	.12	136.50

DIFFERENTIAL CORRECTIONS
TDE 1.0055 TRA-2.6820 TC3 1.5048 BAU .5000
RDE -.2232 RRA .1318 RC3 -.2422 FAU .10853
FDE -.6174 FRA 3.2533 FC3-3.8294 BSP 13170
BDE 1.0299 BRA 2.6853 BC3 1.5242 FSP 1453

MID-COURSE EXECUTION ACCURACY
SGT 3827.1 SGR 388.6 SG3 482.6
RRT -.8083 RRF .8085 RTF -.9318
SGB 3846.8 R23 -.0895 R13 .9322
SG1 3840.0 SG2 228.0 THA 175.29

ORBIT DETERMINATION ACCURACY
ST 1533.3 SR 262.9 SS 898.3
CRT -.8671 CRS -.6596 CST .9454
LSA 1772.0 MSA 294.5 SSA 48.8
EL1 1550.3 EL2 129.5 ALF 171.48

LAUNCH DATE NOV 3 1964 FLIGHT TIME 204.00 ARRIVAL DATE MAY 26 1965

HELIOCENTRIC CONIC DISTANCE 504.190 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 33.831 GAL -5.60 AZL 87.26 HCA 162.99 SMA 205.99 ECC .29495 INC 2.7407 V1 30.028
RP 240.93 LAP .80 LOP 203.62 VP 21.387 GAP 14.17 AZP 92.62 TAL 335.07 TAP 138.06 RCA 145.24 APO 266.75 V2 22.791
RC 160.729 GL 19.27 GP -2.74 ZAL 125.95 ZAP 163.69 ETS 188.04 ZAE 157.83 ETE 353.09 ZAC 86.67 ETC 255.93 CLP 163.92

PLANETOCENTRIC CONIC

C3 23.799 VHL 4.878 DLA 21.96 RAL 177.96 RAD 6568.0 VEL 12.049 PTH 2.15 VHP 7.213 DPA -4.35 RAP 186.27 ECC 1.3917

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 8 15	3020.83	-27.87	97.94	50.62	84.76	17 58 36	2420.8	-28.30	89.30
90.00	11 36 47	4135.99	-2.03	168.41	42.65	61.75	12 45 43	3536.0	-5.79	161.75
100.00	18 45 10	2708.32	-29.69	75.11	50.78	86.34	19 30 18	2108.3	-29.88	66.31
100.00	12 42 33	3923.72	-.43	151.92	41.76	60.11	13 47 57	3323.7	-4.40	145.39
110.00	20 25 49	2393.43	-34.18	51.35	50.93	90.34	21 5 42	1793.4	-33.76	42.13
110.00	13 18 23	3811.39	3.38	141.03	39.38	55.96	14 21 54	3211.4	-1.11	134.82

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .9797 TRA-2.6460 TC3 1.5821 BAU .5102 SGT 3864.0 SGR 401.9 SG3 505.5 ST 1528.6 SR 255.5 SS 906.2
RDE -.2122 RRA .1462 RC3 -.2614 FAU .11226 RRT -.8377 RRF .8395 RTF -.9341 CRT -.8783 CRS -.6628 CST .9391
FDE -.5973 FRA 3.3375 FC3-4.0838 BSP 13276 SGB 3885.4 R23 -.0998 R13 .9346 LSA 1769.2 MSA 304.6 SSA 17.6
BDE 1.0025 BRA 2.6500 BC3 1.6036 FSP 1530 SG1 3879.2 SG2 218.6 THA 175.01 EL1 1545.1 EL2 120.9 ALF 171.60

LAUNCH DATE NOV 3 1964 FLIGHT TIME 206.00 ARRIVAL DATE MAY 28 1965

HELIOCENTRIC CONIC DISTANCE 507.436 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 33.781 GAL -5.47 AZL 87.20 HCA 163.93 SMA 204.91 ECC .29068 INC 2.7969 V1 30.028
RP 240.64 LAP .77 LOP 204.56 VP 21.339 GAP 13.66 AZP 92.69 TAL 335.39 TAP 139.31 RCA 145.35 APO 264.47 V2 22.821
RC 163.052 GL 19.95 GP -2.96 ZAL 125.34 ZAP 163.05 ETS 188.39 ZAE 158.18 ETE 352.57 ZAC 86.52 ETC 255.92 CLP 163.31

PLANETOCENTRIC CONIC

C3 23.118 VHL 4.808 DLA 22.77 RAL 177.84 RAD 6567.9 VEL 12.021 PTH 2.15 VHP 7.058 DPA -4.69 RAP 186.47 ECC 1.3805

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 56 54	3052.54	-27.65	100.24	50.20	83.63	17 47 47	2452.5	-28.24	91.62
90.00	11 47 8	4090.09	-3.50	165.84	42.49	61.88	12 55 18	3490.1	-7.24	159.15
100.00	18 35 16	2735.37	-29.55	77.11	50.41	85.29	19 20 52	2135.4	-29.89	68.33
100.00	12 51 27	3882.49	-1.83	149.66	41.56	60.16	13 56 10	3282.5	-5.79	143.11
110.00	20 18 21	2412.91	-34.18	52.87	50.66	89.44	20 58 33	1812.9	-33.88	43.64
110.00	13 24 52	3777.72	2.10	139.27	39.11	55.87	14 27 50	3177.7	-2.39	133.06

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .9626 TRA-2.6012 TC3 1.6754 BAU .5252 SGT 3900.3 SGR 419.3 SG3 529.6 ST 1528.1 SR 248.8 SS 914.2
RDE -.2020 RRA .1613 RC3 -.2837 FAU .11626 RRT -.8661 RRF .8675 RTF -.9371 CRT -.8931 CRS -.6677 CST .9302
FDE -.5753 FRA 3.4234 FC3-4.3537 BSP 13172 SGB 3922.7 R23 -.1069 R13 .9377 LSA 1769.3 MSA 319.7 SSA 16.1
BDE .9836 BRA 2.6062 BC3 1.6992 FSP 1608 SG1 3917.2 SG2 208.7 THA 174.66 EL1 1544.3 EL2 110.8 ALF 171.68

LAUNCH DATE NOV 3 1964 FLIGHT TIME 208.00 ARRIVAL DATE MAY 30 1965

HELIOCENTRIC CONIC DISTANCE 510.713 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 33.732 GAL -5.34 AZL 87.14 HCA 164.86 SMA 203.89 ECC .28658 INC 2.8601 V1 30.028
RP 240.34 LAP .75 LOP 205.49 VP 21.295 GAP 13.16 AZP 92.76 TAL 335.70 TAP 140.57 RCA 145.46 APO 262.32 V2 22.851
RC 165.375 GL 20.69 GP -3.21 ZAL 124.72 ZAP 162.39 ETS 188.78 ZAE 158.55 ETE 351.93 ZAC 86.35 ETC 255.91 CLP 162.68

PLANETOCENTRIC CONIC

C3 22.495 VHL 4.743 DLA 23.63 RAL 177.74 RAD 6567.9 VEL 11.995 PTH 2.14 VHP 6.906 DPA -5.04 RAP 186.65 ECC 1.3702

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 44 8	3089.64	-27.34	102.91	49.83	82.32	17 35 38	2489.6	-28.12	94.33
90.00	11 59 8	4039.70	-5.11	163.02	42.46	62.11	13 6 28	3439.7	-8.81	156.29
100.00	18 24 20	2766.58	-29.36	79.41	50.10	84.10	19 10 27	2166.6	-29.86	70.65
100.00	13 1 37	3837.99	-3.33	147.21	41.48	60.28	14 5 35	3238.0	-7.27	140.63
110.00	20 10 17	2435.10	-34.15	54.61	50.47	88.41	20 50 52	1835.1	-33.99	45.36
110.00	13 32 9	3742.24	.74	137.42	38.93	55.82	14 34 32	3142.2	-3.75	131.21

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .9209 TRA-2.5803 TC3 1.7252 BAU .5270 SGT 3935.9 SGR 439.9 SG3 554.7 ST 1510.5 SR 241.4 SS 922.0
RDE -.1909 RRA .1789 RC3 -.3067 FAU .12030 RRT -.8868 RRF .8937 RTF -.9377 CRT -.9029 CRS -.6752 CST .9256
FDE -.5465 FRA 3.5162 FC3-4.6299 BSP 13641 SGB 3960.4 R23 -.1296 R13 .9384 LSA 1756.0 MSA 326.4 SSA 15.4
BDE .9404 BRA 2.5865 BC3 1.7522 FSP 1695 SG1 3955.2 SG2 202.3 THA 174.32 EL1 1526.3 EL2 102.7 ALF 171.75

LAUNCH DATE NOV 3 1964 FLIGHT TIME 210.00 ARRIVAL DATE JUN 1 1965

HELIOCENTRIC CONIC DISTANCE 514.024 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 33.686 GAL -5.22 AZL 87.07 HCA 165.80 SMA 202.92 ECC .28265 INC 2.9314 V1 30.028
RP 240.04 LAP .72 LOP 206.43 VP 21.254 GAP 12.66 AZP 92.84 TAL 336.02 TAP 141.82 RCA 145.56 APO 260.27 V2 22.881
RC 167.697 GL 21.49 GP -3.49 ZAL 124.08 ZAP 161.71 ETS 189.24 ZAE 158.96 ETE 351.16 ZAC 86.14 ETC 255.90 CLP 162.04

PLANETOCENTRIC CONIC

C3 21.929 VHL 4.683 DLA 24.54 RAL 177.67 RAD 6567.9 VEL 11.971 PTH 2.13 VHP 6.758 DPA -5.42 RAP 186.80 ECC 1.3609

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 29 19	3134.20	-26.89	106.09	49.48	80.78	17 21 33	2534.2	-27.89	97.57
90.00	12 13 25	3982.78	-6.92	159.81	42.59	62.47	13 19 48	3382.8	-10.55	153.01
100.00	18 11 58	2803.26	-29.07	82.10	49.84	82.71	18 58 41	2203.3	-29.77	73.37
100.00	13 13 28	3788.95	-4.98	144.51	41.53	60.49	14 16 37	3189.0	-8.88	137.89
110.00	20 1 28	2460.66	-34.08	56.60	50.36	87.24	20 42 29	1860.7	-34.09	47.35
110.00	13 40 27	3704.32	-.71	135.44	38.88	55.82	14 42 11	3104.3	-5.19	129.22

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .8933 TRA-2.5442 TC3 1.7983 BAU .5362 SGT 3967.6 SGR 466.2 SG3 580.9 ST 1500.4 SR 235.2 SS 930.2
RDE -.1807 RRA .1975 RC3 -.3341 FAU .12465 RRT -.9070 RRF .9160 RTF -.9396 CRT -.9180 CRS -.6854 CST .9168
FDE -.5155 FRA 3.6093 FC3-4.9210 BSP 13750 SGB 3994.9 R23 -.1465 R13 .9404 LSA 1748.0 MSA 340.8 SSA 14.2
BDE .9114 BRA 2.5519 BC3 1.8291 FSP 1780 SG1 3990.2 SG2 195.2 THA 173.90 EL1 1515.9 EL2 92.3 ALF 171.78

LAUNCH DATE NOV 3 1964 FLIGHT TIME 212.00 ARRIVAL DATE JUN 3 1965

HELIOCENTRIC CONIC DISTANCE 517.364 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 33.642 GAL -5.10 AZL 86.99 HCA 166.75 SMA 201.99 ECC .27887 INC 3.0129 V1 30.028
RP 239.73 LAP .69 LOP 207.37 VP 21.217 GAP 12.17 AZP 92.93 TAL 336.33 TAP 143.08 RCA 145.66 APO 258.32 V2 22.912
RC 170.016 GL 22.37 GP -3.82 ZAL 123.42 ZAP 161.01 ETS 189.78 ZAE 159.39 ETE 350.22 ZAC 85.88 ETC 255.89 CLP 161.38

PLANETOCENTRIC CONIC

C3 21.422 VHL 4.628 DLA 25.52 RAL 177.65 RAD 6567.9 VEL 11.950 PTH 2.13 VHP 6.613 DPA -5.84 RAP 186.92 ECC 1.3525

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 11 25	3189.64	-26.23	110.02	49.15	78.93	17 4 35	2589.6	-27.49	101.58
90.00	12 31 6	3916.05	-9.00	156.01	42.95	63.04	13 36 22	3316.1	-12.54	149.12
100.00	17 57 36	2847.28	-28.65	85.31	49.63	81.08	18 45 4	2247.3	-29.58	76.63
100.00	13 27 36	3733.64	-6.83	141.44	41.78	60.83	14 29 50	3133.6	-10.67	134.76
110.00	19 51 41	2490.37	-33.96	58.91	50.34	85.87	20 33 11	1890.4	-34.16	49.67
110.00	13 50 1	3663.32	-2.27	133.30	38.96	55.88	14 51 4	3063.3	-6.74	127.06

DIFFERENTIAL CORRECTIONS
TDE .8662 TRA-2.5073 TC3 1.8703 BAU .5457
RDE -.1707 RRA .2181 RC3 -.3654 FAU .12922
FDE -.4798 FRA 3.7061 FC3-5.2225 BSP 13832
BDE .8828 BRA 2.5168 BC3 1.9056 FSP 1868

MID-COURSE EXECUTION ACCURACY
SGT 3997.2 SGR 498.6 SG3 608.3
RRT -.9239 RRF .9349 RTF -.9414
SGB 4028.1 R23 -.1652 R13 .9423
SG1 4023.7 SG2 189.5 THA 173.41

ORBIT DETERMINATION ACCURACY
ST 1489.0 SR 229.8 SS 938.9
CRT -.9344 CRS -.6988 CST .9066
LSA 1738.8 MSA 357.4 SSA 12.9
EL1 1504.5 EL2 81.0 ALF 171.77

LAUNCH DATE NOV 3 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUN 5 1965

HELIOCENTRIC CONIC DISTANCE 520.735 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 33.599 GAL -4.98 AZL 86.89 HCA 167.69 SMA 201.12 ECC .27524 INC 3.1070 V1 30.028
RP 239.42 LAP .66 LOP 208.32 VP 21.184 GAP 11.68 AZP 93.04 TAL 336.65 TAP 144.34 RCA 145.76 APO 256.47 V2 22.943
RC 172.331 GL 23.34 GP -4.20 ZAL 122.73 ZAP 160.27 ETS 190.40 ZAE 159.84 ETE 349.08 ZAC 85.57 ETC 255.87 CLP 160.71

PLANETOCENTRIC CONIC

C3 20.977 VHL 4.580 DLA 26.59 RAL 177.67 RAD 6567.9 VEL 11.931 PTH 2.12 VHP 6.472 DPA -6.30 RAP 187.01 ECC 1.3452

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 48 7	3263.49	-25.16	115.16	48.76	76.56	16 42 31	2663.5	-26.76	106.86
90.00	12 54 34	3832.11	-11.55	151.16	43.63	63.97	13 58 27	3232.1	-14.96	144.14
100.00	17 40 16	2901.99	-28.01	89.25	49.45	79.10	18 28 38	2302.0	-29.22	80.65
100.00	13 45 7	3668.85	-8.96	137.81	42.27	61.36	14 46 16	3068.8	-12.72	131.04
110.00	19 40 37	2525.41	-33.76	61.63	50.43	84.28	20 22 42	1925.4	-34.18	52.41
110.00	14 1 16	3618.19	-3.99	130.94	39.23	56.02	15 1 34	3018.2	-8.43	124.66

DIFFERENTIAL CORRECTIONS
TDE .8518 TRA-2.4575 TC3 1.9623 BAU .5618
RDE -.1615 RRA .2407 RC3 -.4026 FAU .13410
FDE -.4400 FRA 3.8049 FC3-5.5342 BSP 13622
BDE .8670 BRA 2.4693 BC3 2.0032 FSP 1956

MID-COURSE EXECUTION ACCURACY
SGT 4023.0 SGR 538.7 SG3 636.9
RRT -.9393 RRF .9502 RTF -.9441
SGB 4058.9 R23 -.1793 R13 .9452
SG1 4054.8 SG2 183.3 THA 172.82

ORBIT DETERMINATION ACCURACY
ST 1484.0 SR 226.1 SS 948.3
CRT -.9538 CRS -.7150 CST .8907
LSA 1733.7 MSA 383.2 SSA 11.3
EL1 1499.6 EL2 67.3 ALF 171.71

LAUNCH DATE NOV 3 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUN 7 1965

HELIOCENTRIC CONIC DISTANCE 524.129 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 33.559 GAL -4.86 AZL 86.78 HCA 168.64 SMA 200.29 ECC .27177 INC 3.2170 V1 30.028
RP 239.11 LAP .63 LOP 209.26 VP 21.153 GAP 11.20 AZP 93.15 TAL 336.96 TAP 145.60 RCA 145.85 APO 254.72 V2 22.975
RC 174.639 GL 24.42 GP -4.64 ZAL 122.01 ZAP 159.50 ETS 191.13 ZAE 160.31 ETE 347.67 ZAC 85.20 ETC 255.86 CLP 160.02

PLANETOCENTRIC CONIC

C3 20.604 VHL 4.539 DLA 27.75 RAL 177.76 RAD 6567.8 VEL 11.916 PTH 2.12 VHP 6.335 DPA -6.81 RAP 187.06 ECC 1.3391

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 11 35	3381.24	-23.06	123.14	48.08	73.09	16 7 57	2781.2	-25.16	115.10
90.00	13 31 50	3705.77	-15.20	143.68	44.97	65.82	14 33 36	3105.8	-18.34	136.42
100.00	17 17 55	2974.01	-26.97	94.35	49.25	76.60	18 7 29	2374.0	-28.55	85.90
100.00	14 8 12	3588.23	-11.56	133.23	43.14	62.24	15 8 0	2988.2	-15.18	126.32
110.00	19 27 49	2567.47	-33.43	64.87	50.63	82.39	20 10 36	1967.5	-34.12	55.69
110.00	14 14 47	3567.54	-5.92	128.28	39.75	56.27	15 14 14	2967.5	-10.31	121.94

DIFFERENTIAL CORRECTIONS
TDE .8087 TRA-2.4361 TC3 1.9931 BAU .5624
RDE -.1504 RRA .2685 RC3 -.4419 FAU .13873
FDE -.3839 FRA 3.9186 FC3-5.8289 BSP 14094
BDE .8226 BRA 2.4509 BC3 2.0415 FSP 2068

MID-COURSE EXECUTION ACCURACY
SGT 4048.3 SGR 586.2 SG3 666.3
RRT -.9482 RRF .9634 RTF -.9445
SGB 4090.5 R23 -.2073 R13 .9459
SG1 4086.3 SG2 184.4 THA 172.17

ORBIT DETERMINATION ACCURACY
ST 1460.0 SR 222.3 SS 959.2
CRT -.9684 CRS -.7357 CST .8798
LSA 1714.9 MSA 399.9 SSA 10.4
EL1 1475.8 EL2 54.8 ALF 171.60

LAUNCH DATE NOV 3 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUN 9 1965

HELIOCENTRIC CONIC DISTANCE 527.551 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 33.519 GAL -4.75 AZL 86.65 HCA 169.59 SMA 199.50 ECC .26843 INC 3.3464 V1 30.028
RP 238.79 LAP .60 LOP 210.21 VP 21.126 GAP 10.72 AZP 93.29 TAL 337.27 TAP 146.86 RCA 145.95 APO 253.04 V2 23.007
RC 176.939 GL 25.64 GP -5.17 ZAL 121.26 ZAP 158.70 ETS 192.00 ZAE 160.78 ETE 345.92 ZAC 84.73 ETC 255.84 CLP 159.30

PLANETOCENTRIC CONIC

C3 20.311 VHL 4.507 DLA 29.03 RAL 177.94 RAD 6567.8 VEL 11.903 PTH 2.12 VHP 6.202 DPA -7.39 RAP 187.05 ECC 1.3343

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
83.32	13 27 9	3718.79	-20.02	146.76	46.93	68.53	14 29 8	3118.8	-22.76	139.11
96.68	15 17 40	3361.36	-20.01	120.55	46.92	68.51	16 13 41	2761.4	-22.75	112.89
100.00	16 43 58	3084.35	-25.00	101.95	48.81	73.06	17 35 23	2484.4	-27.09	93.77
100.00	14 43 32	3471.03	-15.17	126.41	44.69	63.93	15 41 23	2871.0	-18.56	119.25
110.00	19 12 24	2619.56	-32.89	68.84	50.95	80.10	19 56 3	2019.6	-33.90	59.75
110.00	14 31 36	3508.58	-8.13	125.15	40.59	56.68	15 30 5	2908.6	-12.46	118.73

DIFFERENTIAL CORRECTIONS
TDE .7834 TRA-2.3969 TC3 2.0505 BAU .5725
RDE -.1406 RRA .2994 RC3 -.4907 FAU .14408
FDE -.3306 FRA 4.0253 FC3-6.1415 BSP 14133
BDE .7959 BRA 2.4156 BC3 2.1084 FSP 2159

MID-COURSE EXECUTION ACCURACY
SGT 4068.7 SGR 645.9 SG3 697.0
RRT -.9563 RRF .9734 RTF -.9460
SGB 4119.6 R23 -.2288 R13 .9476
SG1 4115.4 SG2 186.8 THA 171.35

ORBIT DETERMINATION ACCURACY
ST 1445.0 SR 221.8 SS 971.6
CRT -.9839 CRS -.7626 CST .8640
LSA 1703.3 MSA 424.2 SSA 9.2
EL1 1461.4 EL2 39.2 ALF 171.41

LAUNCH DATE NOV 3 1964 FLIGHT TIME 220.00 ARRIVAL DATE JUN 11 1965

HELIOCENTRIC CONIC DISTANCE 530.998 EARTH TO MARS

RL	148.38	LAL	-.00	LOL	40.61	VL	33.482	GAL	-4.64	AZL	86.50	HCA	170.54	SMA	198.74	ECC	.26522	INC	3.5025
RP	238.47	LAP	.58	LOP	211.17	VP	21.102	GAP	10.25	AZP	93.46	TAL	337.58	TAP	148.12	RCA	146.03	APO	251.46
RC	179.231	GL	27.04	GP	-5.81	ZAL	120.45	ZAP	157.83	ETS	193.04	ZAE	161.24	ETE	343.72	ZAC	84.16	ETC	255.82

V1 30.028 V2 23.040 CLP 158.57

PLANETOCENTRIC CONIC

C3	20.113	VHL	4.485	DLA	30.47	RAL	178.23	RAD	6567.8	VEL	11.895	PTH	2.11	VHP	6.074	DPA	-8.06	RAP	186.98

ECC 1.3310

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
78.25	12 49 13	3841.54	-21.02	156.30	47.47	67.42	13 53 14	3241.5	-23.90	148.64
101.75	15 57 55	3233.95	-21.01	111.53	47.46	67.41	16 51 49	2633.9	-23.88	103.87
78.25	12 49 13	3841.54	-21.02	156.30	47.47	67.42	13 53 14	3241.5	-23.90	148.64
101.75	15 57 55	3233.95	-21.01	111.53	47.46	67.41	16 51 49	2633.9	-23.88	103.87
110.00	18 52 43	2687.11	-31.98	73.90	51.36	77.23	19 37 30	2087.1	-33.41	64.96
110.00	14 53 36	3436.38	-10.81	121.27	41.93	57.37	15 50 52	2836.4	-15.04	114.72

DIFFERENTIAL CORRECTIONS

TDE	.7573	TRA	-2.3598	TC3	2.0948	BAU	.5822
RDE	-.1301	RRA	.3368	RC3	-.5471	FAU	.14937
FDE	-.2619	FRA	4.1443	FC3	-6.4292	BSP	14220
BDE	.7684	BRA	2.3837	BC3	2.1651	FSP	2266

MID-COURSE EXECUTION ACCURACY

SGT	4086.7	SGR	719.5	SG3	728.5		
RRT	-.9621	RRF	.9811	RTF	-.9474		
SGB	4149.6	R23	-.2479	R13	.9493		
SG1	4145.1	SG2	193.3	THA	170.36		

ORBIT DETERMINATION ACCURACY

ST	1428.4	SR	224.2	SS	987.1		
CRT	-.9954	CRS	-.7923	CST	.8439		
LSA	1690.6	MSA	454.9	SSA	8.0		
EL1	1445.8	EL2	21.3	ALF	171.12		

LAUNCH DATE NOV 3 1964 FLIGHT TIME 222.00 ARRIVAL DATE JUN 13 1965

HELIOCENTRIC CONIC DISTANCE 534.467 EARTH TO MARS

RL	148.38	LAL	-.00	LOL	40.61	VL	33.446	GAL	-4.54	AZL	86.31	HCA	171.49	SMA	198.03	ECC	.26215	INC	3.6938
RP	238.14	LAP	.55	LOP	212.12	VP	21.081	GAP	9.78	AZP	93.65	TAL	337.88	TAP	149.37	RCA	146.12	APO	249.94
RC	181.513	GL	28.67	GP	-6.60	ZAL	119.57	ZAP	156.90	ETS	194.30	ZAE	161.67	ETE	340.95	ZAC	83.43	ETC	255.80

V1 30.028 V2 23.073 CLP 157.82

PLANETOCENTRIC CONIC

C3	20.038	VHL	4.476	DLA	32.11	RAL	178.67	RAD	6567.8	VEL	11.892	PTH	2.11	VHP	5.951	DPA	-8.86	RAP	186.83

ECC 1.3298

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
74.19	12 22 27	3930.55	-22.11	163.52	48.35	66.10	13 27 57	3330.5	-25.15	155.86
105.81	16 28 15	3143.15	-22.10	105.18	48.34	66.09	17 20 39	2543.1	-25.14	97.52
74.19	12 22 27	3930.55	-22.11	163.52	48.35	66.10	13 27 57	3330.5	-25.15	155.86
105.81	16 28 15	3143.15	-22.10	105.18	48.34	66.09	17 20 39	2543.1	-25.14	97.52
110.00	18 24 40	2783.09	-30.32	80.88	51.72	73.41	19 11 3	2183.1	-32.29	72.22
110.00	15 25 12	3338.60	-14.34	115.90	44.07	58.63	16 20 51	2738.6	-18.39	109.12

DIFFERENTIAL CORRECTIONS

TDE	.7269	TRA	-2.3272	TC3	2.1137	BAU	.5895
RDE	-.1183	RRA	.3829	RC3	-.6126	FAU	.15456
FDE	-.1768	FRA	4.2735	FC3	-6.6780	BSP	14451
BDE	.7364	BRA	2.3585	BC3	2.2007	FSP	2387

MID-COURSE EXECUTION ACCURACY

SGT	4100.4	SGR	811.5	SG3	760.6		
RRT	-.9658	RRF	.9869	RTF	-.9484		
SGB	4180.0	R23	-.2644	R13	.9509		
SG1	4174.8	SG2	206.7	THA	169.15		

ORBIT DETERMINATION ACCURACY

ST	1407.8	SR	230.9	SS	1007.0		
CRT	-.9995	CRS	-.8258	CST	.8213		
LSA	1676.4	MSA	488.8	SSA	6.9		
EL1	1426.6	EL2	7.2	ALF	170.69		

LAUNCH DATE NOV 3 1964 FLIGHT TIME 224.00 ARRIVAL DATE JUN 15 1965

HELIOCENTRIC CONIC DISTANCE 537.959 EARTH TO MARS

RL	148.38	LAL	-.00	LOL	40.61	VL	33.411	GAL	-4.44	AZL	86.07	HCA	172.45	SMA	197.35	ECC	.25921	INC	3.9330
RP	237.81	LAP	.52	LOP	213.08	VP	21.063	GAP	9.33	AZP	93.90	TAL	338.18	TAP	150.63	RCA	146.20	APO	248.51
RC	183.786	GL	30.62	GP	-7.58	ZAL	118.60	ZAP	155.88	ETS	195.86	ZAE	162.01	ETE	337.41	ZAC	82.51	ETC	255.77

V1 30.028 V2 23.106 CLP 157.03

PLANETOCENTRIC CONIC

C3	20.127	VHL	4.486	DLA	34.01	RAL	179.34	RAD	6567.8	VEL	11.896	PTH	2.11	VHP	5.834	DPA	-9.82	RAP	186.57

ECC 1.3312

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
70.33	12 0 28	4007.66	-23.30	170.05	49.69	64.50	13 7 16	3407.7	-26.53	162.40
109.67	16 55 33	3068.15	-23.29	100.00	49.69	64.49	17 46 41	2468.1	-26.52	92.35
70.33	12 0 28	4007.66	-23.30	170.05	49.69	64.50	13 7 16	3407.7	-26.53	162.40
109.67	16 55 33	3068.15	-23.29	100.00	49.69	64.49	17 46 41	2468.1	-26.52	92.35
110.00	17 23 46	2982.08	-25.66	94.47	50.87	66.60	18 13 28	2382.1	-28.60	86.52
110.00	16 31 26	3141.72	-20.97	104.48	48.43	62.36	17 23 48	2541.7	-24.50	97.12

DIFFERENTIAL CORRECTIONS

TDE	.7145	TRA	-2.2808	TC3	2.1416	BAU	.6058
RDE	-.1077	RRA	.4384	RC3	-.6951	FAU	.16078
FDE	-.1003	FRA	4.3882	FC3	-6.9158	BSP	14343
BDE	.7226	BRA	2.3226	BC3	2.2515	FSP	2465

MID-COURSE EXECUTION ACCURACY

SGT	4107.7	SGR	929.5	SG3	792.9		
RRT	-.9683	RRF	.9909	RTF	-.9496		
SGB	4211.5	R23	-.2749	R13	.9529		
SG1	4205.4	SG2	226.8	THA	167.60		

ORBIT DETERMINATION ACCURACY

ST	1395.5	SR	245.6	SS	1028.7		
CRT	-.9926	CRS	-.8619	CST	.7956		
LSA	1669.8	MSA	527.0	SSA	5.8		
EL1	1416.7	EL2	29.4	ALF	170.09		

LAUNCH DATE NOV 3 1964 FLIGHT TIME 226.00 ARRIVAL DATE JUN 17 1965

HELIOCENTRIC CONIC DISTANCE 541.471 EARTH TO MARS

RL	148.38	LAL	-.00	LOL	40.61	VL	33.378	GAL	-4.34	AZL	85.76	HCA	173.41	SMA	196.71	ECC	.25638	INC	4.2428
RP	237.48	LAP	.49	LOP	214.04	VP	21.048	GAP	8.87	AZP	94.22	TAL	338.48	TAP	151.89	RCA	146.27	APO	247.14
RC	186.049	GL	32.99	GP	-8.86	ZAL	117.50	ZAP	154.71	ETS	197.81	ZAE	162.20	ETE	332.84	ZAC	81.30	ETC	255.72

V1 30.028 V2 23.140 CLP 156.22

PLANETOCENTRIC CONIC

C3	20.455	VHL	4.523	DLA	36.26	RAL	180.33	RAD	6567.8	VEL	11.909	PTH	2.12	VHP	5.727	DPA	-11.04	RAP	186.15

ECC 1.3366

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
66.34	11 41 36	4080.31	-24.60	176.50	51.72	62.48	12 49 37	3480.3	-28.08	168.88
113.66	17 22 21	3003.22	-24.59	95.58	51.71	62.47	18 12 24	2403.2	-28.07	87.96
66.34	11 41 36	4080.31	-24.60	176.50	51.72	62.48	12 49 37	3480.3	-28.08	168.88
113.66	17 22 21	3003.22	-24.59	95.58	51.71	62.47	18 12 24	2403.2	-28.07	87.96
66.34	11 41 36	4080.31	-24.60	176.50	51.72	62.48	12 49 37	3480.3	-28.08	168.88
113.66	17 22 21	3003.22	-24.59	95.58	51.71	62.47	18 12 24	2403.2	-28.07	87.96

DIFFERENTIAL CORRECTIONS

TDE	.6938	TRA	-2.2480	TC3	2.1129	BAU	.6168
RDE	-.0937	RRA	.5129	RC3	-.7888	FAU	.16610
FDE	.0075	FRA	4.5265	FC3	-7.0301	BSP	14609
BDE	.7001	BRA	2.3058	BC3	2.2553	FSP	2581

MID-COURSE EXECUTION ACCURACY

SGT	4110.9	SGR	1082.8	SG3	824.3		
RRT	-.9691	RRF	.9939	RTF	-.9501		
SGB	4251.1	R23	-.2814	R13	.9546		
SG1	4243.3	SG2	258.6	THA	165.63		

ORBIT DETERMINATION ACCURACY

ST	1377.9	SR	270.1	SS	1059.9		
CRT	-.9716	CRS	-.8964	CST	.7668		
LSA	1664.0	MSA	570.9	SSA	4.8		
EL1	1402.7	EL2	62.8	ALF	169.19		

LAUNCH DATE NOV 3 1964 FLIGHT TIME 228.00 ARRIVAL DATE JUN 19 1965

HELIOCENTRIC CONIC DISTANCE 545.005 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 33.347 GAL -4.25 AZL 85.34 HCA 174.37 SMA 196.09 ECC .25368 INC 4.6592 V1 30.028
RP 237.15 LAP .46 LOP 215.00 VP 21.035 GAP 8.42 AZP 94.64 TAL 338.78 TAP 153.15 RCA 146.35 APO 245.84 V2 23.174
RC 188.300 GL 35.96 GP -10.56 ZAL 116.20 ZAP 153.32 ETS 200.32 ZAE 162.11 ETE 326.93 ZAC 79.66 ETC 255.65 CLP 155.35

PLANETOCENTRIC CONIC

C3 21.162 VHL 4.600 DLA 39.00 RAL 181.83 RAD 6567.9 VEL 11.939 PTH 2.12 VHP 5.633 DPA -12.62 RAP 185.51 ECC 1.3483

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
61.98	11 25 24	4153.16	-26.02	183.32	54.78	59.86	12 34 37	3553.2	-29.81	175.76
118.02	17 50 29	2946.66	-26.00	91.82	54.77	59.85	18 39 36	2346.7	-29.80	84.26
61.98	11 25 24	4153.16	-26.02	183.32	54.78	59.86	12 34 37	3553.2	-29.81	175.76
118.02	17 50 29	2946.66	-26.00	91.82	54.77	59.85	18 39 36	2346.7	-29.80	84.26
61.98	11 25 24	4153.16	-26.02	183.32	54.78	59.86	12 34 37	3553.2	-29.81	175.76
118.02	17 50 29	2946.66	-26.00	91.82	54.77	59.85	18 39 36	2346.7	-29.80	84.26

DIFFERENTIAL CORRECTIONS
TDE .6942 TRA-2.2063 TC3 2.0629 BAU .6370
RDE -.0790 RRA .6127 RC3 -.9024 FAU .17132
FDE .1194 FRA 4.6624 FC3-7.0086 BSP 14722
BDE .6987 BRA 2.2898 BC3 2.2516 FSP 2681

MID-COURSE EXECUTION ACCURACY
SGT 4105.2 SGR 1289.6 SG3 852.8
RRT -.9695 RRF .9958 RTF -.9509
SGB 4303.0 R23 -.2810 R13 .9571
SG1 4292.3 SG2 302.2 THA 162.97

ORBIT DETERMINATION ACCURACY
ST 1369.7 SR 311.6 SS 1097.4
CRT -.9349 CRS -.9260 CST .7319
LSA 1669.4 MSA 625.1 SSA 3.8
EL1 1400.5 EL2 108.2 ALF 167.92

LAUNCH DATE NOV 3 1964 FLIGHT TIME 230.00 ARRIVAL DATE JUN 21 1965

HELIOCENTRIC CONIC DISTANCE 548.558 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 33.316 GAL -4.16 AZL 84.75 HCA 175.33 SMA 195.51 ECC .25109 INC 5.2486 V1 30.028
RP 236.81 LAP .43 LOP 215.96 VP 21.025 GAP 7.98 AZP 95.23 TAL 339.07 TAP 154.40 RCA 146.42 APO 244.60 V2 23.209
RC 190.540 GL 39.81 GP -12.94 ZAL 114.60 ZAP 151.53 ETS 203.61 ZAE 161.46 ETE 319.36 ZAC 77.35 ETC 255.53 CLP 154.42

PLANETOCENTRIC CONIC

C3 22.537 VHL 4.747 DLA 42.42 RAL 184.16 RAD 6567.9 VEL 11.996 PTH 2.14 VHP 5.563 DPA -14.79 RAP 184.49 ECC 1.3709

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
56.98	11 12 25	4230.67	-27.48	190.97	59.50	56.31	12 22 55	3630.7	-31.69	183.57
123.02	18 22 6	2899.56	-27.46	88.81	59.49	56.30	19 10 26	2299.6	-31.68	81.40
56.98	11 12 25	4230.67	-27.48	190.97	59.50	56.31	12 22 55	3630.7	-31.69	183.57
123.02	18 22 6	2899.56	-27.46	88.81	59.49	56.30	19 10 26	2299.6	-31.68	81.40
56.98	11 12 25	4230.67	-27.48	190.97	59.50	56.31	12 22 55	3630.7	-31.69	183.57
123.02	18 22 6	2899.56	-27.46	88.81	59.49	56.30	19 10 26	2299.6	-31.68	81.40

DIFFERENTIAL CORRECTIONS
TDE .7176 TRA-2.1672 TC3 1.9468 BAU .6638
RDE -.0634 RRA .7569 RC3-1.0320 FAU .17522
FDE .2318 FRA 4.7995 FC3-6.7310 BSP 15079
BDE .7204 BRA 2.2956 BC3 2.2032 FSP 2784

MID-COURSE EXECUTION ACCURACY
SGT 4089.2 SGR 1580.4 SG3 874.7
RRT -.9690 RRF .9970 RTF -.9511
SGB 4383.9 R23 -.2751 R13 .9602
SG1 4368.7 SG2 365.2 THA 159.32

ORBIT DETERMINATION ACCURACY
ST 1372.3 SR 380.2 SS 1143.2
CRT -.8865 CRS -.9491 CST .6957
LSA 1692.5 MSA 685.8 SSA 2.9
EL1 1413.7 EL2 170.8 ALF 165.99

LAUNCH DATE NOV 3 1964 FLIGHT TIME 232.00 ARRIVAL DATE JUN 23 1965

HELIOCENTRIC CONIC DISTANCE 552.128 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 33.287 GAL -4.07 AZL 83.85 HCA 176.30 SMA 194.95 ECC .24861 INC 6.1452 V1 30.028
RP 236.46 LAP .40 LOP 216.93 VP 21.018 GAP 7.55 AZP 96.13 TAL 339.35 TAP 155.65 RCA 146.49 APO 243.42 V2 23.244
RC 192.768 GL 45.01 GP -16.48 ZAL 112.49 ZAP 149.00 ETS 208.00 ZAE 159.74 ETE 309.91 ZAC 73.88 ETC 255.30 CLP 153.37

PLANETOCENTRIC CONIC

C3 25.263 VHL 5.026 DLA 46.84 RAL 188.04 RAD 6568.0 VEL 12.110 PTH 2.17 VHP 5.541 DPA -17.94 RAP 182.82 ECC 1.4158

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
50.99	11 4 52	4319.04	-28.74	200.10	67.10	51.28	12 16 51	3719.0	-33.54	193.03
129.01	19 0 36	2867.11	-28.73	86.89	67.09	51.27	19 48 23	2267.1	-33.53	79.83
50.99	11 4 52	4319.04	-28.74	200.10	67.10	51.28	12 16 51	3719.0	-33.54	193.03
129.01	19 0 36	2867.11	-28.73	86.89	67.09	51.27	19 48 23	2267.1	-33.53	79.83
50.99	11 4 52	4319.04	-28.74	200.10	67.10	51.28	12 16 51	3719.0	-33.54	193.03
129.01	19 0 36	2867.11	-28.73	86.89	67.09	51.27	19 48 23	2267.1	-33.53	79.83

DIFFERENTIAL CORRECTIONS
TDE .8326 TRA-2.1002 TC3 1.7799 BAU .7231
RDE -.0731 RRA .9672 RC3-1.1900 FAU .17947
FDE .2125 FRA 4.8376 FC3-6.1502 BSP 15065
BDE .8358 BRA 2.3122 BC3 2.1411 FSP 2718

MID-COURSE EXECUTION ACCURACY
SGT 4043.4 SGR 2008.9 SG3 878.0
RRT -.9676 RRF .9977 RTF -.9502
SGB 4515.0 R23 -.2629 R13 .9644
SG1 4491.9 SG2 456.4 THA 154.04

ORBIT DETERMINATION ACCURACY
ST 1416.3 SR 492.0 SS 1166.9
CRT -.8449 CRS -.9638 CST .6717
LSA 1751.6 MSA 735.8 SSA 2.1
EL1 1477.9 EL2 252.2 ALF 163.14

LAUNCH DATE NOV 3 1964 FLIGHT TIME 234.00 ARRIVAL DATE JUN 25 1965

HELIOCENTRIC CONIC DISTANCE 555.715 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 33.260 GAL -3.98 AZL 82.32 HCA 177.27 SMA 194.43 ECC .24623 INC 7.6837 V1 30.028
RP 236.12 LAP .37 LOP 217.90 VP 21.013 GAP 7.12 AZP 97.67 TAL 339.64 TAP 156.91 RCA 146.55 APO 242.30 V2 23.279
RC 194.983 GL 52.41 GP -22.18 ZAL 109.52 ZAP 144.85 ETS 213.86 ZAE 155.86 ETE 298.73 ZAC 68.25 ETC 254.80 CLP 152.01

PLANETOCENTRIC CONIC

C3 31.336 VHL 5.598 DLA 52.61 RAL 195.22 RAD 6568.2 VEL 12.358 PTH 2.23 VHP 5.638 DPA -22.90 RAP 179.78 ECC 1.5157

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
43.61	11 9 23	4430.21	-28.99	211.58	80.18	43.96	12 23 13	3830.2	-34.58	205.26
136.39	19 53 18	2863.33	-28.98	86.77	80.16	43.96	20 41 1	2263.3	-34.57	80.45
43.61	11 9 23	4430.21	-28.99	211.58	80.18	43.96	12 23 13	3830.2	-34.58	205.26
136.39	19 53 18	2863.33	-28.98	86.77	80.16	43.96	20 41 1	2263.3	-34.57	80.45
43.61	11 9 23	4430.21	-28.99	211.58	80.18	43.96	12 23 13	3830.2	-34.58	205.26
136.39	19 53 18	2863.33	-28.98	86.77	80.16	43.96	20 41 1	2263.3	-34.57	80.45

DIFFERENTIAL CORRECTIONS
TDE 1.1125 TRA-2.0485 TC3 1.4274 BAU .8068
RDE -.1608 RRA 1.3546 RC3-1.2930 FAU .17293
FDE -.0045 FRA 4.8400 FC3-4.7777 BSP 16549
BDE 1.1240 BRA 2.4559 BC3 1.9259 FSP 2744

MID-COURSE EXECUTION ACCURACY
SGT 3971.6 SGR 2708.6 SG3 842.9
RRT -.9654 RRF .9981 RTF -.9478
SGB 4807.3 R23 -.2389 R13 .9709
SG1 4771.2 SG2 587.9 THA 146.05

ORBIT DETERMINATION ACCURACY
ST 1540.1 SR 705.9 SS 1194.9
CRT -.8271 CRS -.9729 CST .6746
LSA 1919.8 MSA 782.5 SSA 1.3
EL1 1653.4 EL2 369.6 ALF 158.09

LAUNCH DATE NOV 3 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUL 5 1965

HELIOCENTRIC CONIC DISTANCE 573.970 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 33.138 GAL -3.62 AZL 95.46 HCA 182.20 SMA 192.15 ECC .23590 INC 5.4614 V1 30.028
RP 234.35 LAP .21 LOP 222.80 VP 21.023 GAP 5.07 AZP 84.55 TAL 340.88 TAP 163.08 RCA 146.82 APO 237.48 V2 23.461
RC 205.837 GL -43.33 GP 29.37 ZAL 111.11 ZAP 136.72 ETS 141.65 ZAE 148.92 ETE 75.86 ZAC 118.35 ETC 253.91 CLP 146.65

PLANETOCENTRIC CONIC

C3 21.017 VHL 4.584 DLA -32.14 RAL 143.97 RAD 6567.9 VEL 11.933 PTH 2.12 VHP 5.420 DPA 23.90 RAP 202.04 ECC 1.3459

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
12.99	13 0 53	2640.36	-12.59	84.76	333.84	168.30	13 44 54	2040.4	-4.75	83.56
12.99	0 4 43	961.90	73.91	313.60	1.09	45.56	0 20 45	361.9	67.59	298.92
22.99	13 45 21	2595.71	-10.51	81.13	341.16	159.53	14 28 37	1995.7	-3.01	78.75
22.99	0 1 13	965.42	67.72	327.42	14.04	65.11	0 17 18	365.4	63.40	311.46
32.99	14 35 14	2519.63	-7.37	75.86	348.09	151.10	15 17 14	1919.6	-.35	72.42
32.99	23 53 10	971.71	60.59	333.96	19.58	77.46	24 9 22	371.7	57.97	319.53

DIFFERENTIAL CORRECTIONS
TDE 2.0524 TRA-1.6246 TC3 1.9652 BAU .8599
RDE 1.9304 RRA -.9066 RC3 2.3459 FAU .17177
FDE-5.6108 FRA 2.4458 FC3-7.0756 BSP 19293
BDE 2.8176 BRA 1.8605 BC3 3.0602 FSP 3104

MID-COURSE EXECUTION ACCURACY
SGT 3946.6 SGR 3498.3 SG3 882.3
RRT .9614 RRF -.9994 RTF -.9511
SGB 5273.9 R23 -.1906 R13 -.9817
SG1 5223.4 SG2 727.6 THA 41.42

ORBIT DETERMINATION ACCURACY
ST 2664.6 SR 2446.7 SS 3323.9
CRT .9941 CRS .9999 CST .9928
LSA 4905.7 MSA 261.0 SSA .8
EL1 3612.2 EL2 195.8 ALF 42.54

LAUNCH DATE NOV 3 1964 FLIGHT TIME 246.00 ARRIVAL DATE JUL 7 1965

HELIOCENTRIC CONIC DISTANCE 577.651 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 33.117 GAL -3.55 AZL 93.20 HCA 183.18 SMA 191.76 ECC .23409 INC 3.2020 V1 30.028
RP 233.98 LAP .18 LOP 223.79 VP 21.031 GAP 4.67 AZP 86.81 TAL 341.12 TAP 164.31 RCA 146.87 APO 236.65 V2 23.498
RC 207.958 GL -28.57 GP 21.89 ZAL 114.70 ZAP 140.72 ETS 149.01 ZAE 156.20 ETE 72.84 ZAC 111.29 ETC 254.81 CLP 146.53

PLANETOCENTRIC CONIC

C3 14.854 VHL 3.854 DLA -18.28 RAL 149.73 RAD 6567.6 VEL 11.672 PTH 2.05 VHP 4.931 DPA 16.85 RAP 199.25 ECC 1.2445

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 59 42	1537.73	.55	2.01	6.51	118.31	21 25 20	937.7	4.33	355.37
90.00	4 0 3	5397.68	27.99	247.40	12.42	85.51	5 30 1	4797.7	27.07	238.86
100.00	22 10 8	1310.46	-.61	344.66	5.86	119.89	22 31 58	710.5	3.37	338.13
100.00	5 32 18	5100.18	29.31	225.38	12.28	83.87	6 57 19	4500.2	28.16	216.77
110.00	22 54 33	1171.26	-3.53	332.28	4.04	124.02	23 14 5	571.3	.96	326.07
110.00	7 4 22	4812.15	32.72	202.92	11.70	79.50	8 24 34	4212.1	30.92	194.16

DIFFERENTIAL CORRECTIONS
TDE 1.4132 TRA-1.6922 TC3 2.7320 BAU .7274
RDE .9750 RRA -.7753 RC3 2.4396 FAU .20362
FDE-4.5123 FRA 3.5541 FC-11.8677 BSP 17606
BDE 1.7169 BRA 1.8614 BC3 3.6628 FSP 3875

MID-COURSE EXECUTION ACCURACY
SGT 3983.4 SGR 2666.6 SG3 1091.7
RRT .9623 RRF -.9996 RTF -.9557
SGB 4793.6 R23 -.2127 R13 -.9770
SG1 4754.9 SG2 608.0 THA 33.41

ORBIT DETERMINATION ACCURACY
ST 2247.1 SR 1495.6 SS 2947.6
CRT .9933 CRS 1.0000 CST .9930
LSA 3990.8 MSA 218.7 SSA 2.3
EL1 2695.4 EL2 144.2 ALF 33.58

LAUNCH DATE NOV 3 1964 FLIGHT TIME 248.00 ARRIVAL DATE JUL 9 1965

HELIOCENTRIC CONIC DISTANCE 581.348 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 33.096 GAL -3.48 AZL 92.00 HCA 184.17 SMA 191.39 ECC .23237 INC 1.9959 V1 30.028
RP 233.62 LAP .15 LOP 224.78 VP 21.041 GAP 4.29 AZP 88.01 TAL 341.36 TAP 165.53 RCA 146.92 APO 235.86 V2 23.536
RC 210.060 GL -18.84 GP 17.48 ZAL 116.13 ZAP 142.11 ETS 154.60 ZAE 160.63 ETE 71.80 ZAC 107.06 ETC 255.20 CLP 145.83

PLANETOCENTRIC CONIC

C3 12.746 VHL 3.570 DLA -9.05 RAL 152.96 RAD 6567.5 VEL 11.582 PTH 2.03 VHP 4.676 DPA 12.75 RAP 197.55 ECC 1.2098

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 50 23	1827.76	-8.69	18.31	6.64	117.05	20 20 51	1227.8	-5.00	11.58
90.00	5 35 12	5040.68	23.53	222.31	9.68	73.78	6 59 12	4440.7	21.08	214.49
100.00	21 7 19	1579.59	-9.60	359.58	6.16	118.44	21 33 38	979.6	-5.73	352.93
100.00	7 0 57	4764.07	24.51	201.64	9.36	72.33	8 20 21	4164.1	21.86	193.84
110.00	22 5 30	1397.41	-11.99	344.33	4.74	122.26	22 28 47	797.4	-7.64	337.93
110.00	8 19 16	4519.02	27.11	182.00	8.32	68.34	9 34 35	3919.0	23.93	174.28

DIFFERENTIAL CORRECTIONS
TDE 1.1390 TRA-1.6562 TC3 3.2746 BAU .6880
RDE .6233 RRA -.6265 RC3 2.3622 FAU .23298
FDE-3.8908 FRA 4.0657 FC-15.8246 BSP 15422
BDE 1.2984 BRA 1.7707 BC3 4.0377 FSP 3990

MID-COURSE EXECUTION ACCURACY
SGT 4006.5 SGR 2209.5 SG3 1253.0
RRT .9616 RRF -.9996 RTF -.9572
SGB 4575.4 R23 -.2272 R13 -.9736
SG1 4544.0 SG2 534.8 THA 28.37

ORBIT DETERMINATION ACCURACY
ST 1999.5 SR 1047.1 SS 2650.1
CRT .9928 CRS .9999 CST .9940
LSA 3476.3 MSA 182.1 SSA 4.8
EL1 2254.4 EL2 111.4 ALF 27.54

LAUNCH DATE NOV 3 1964 FLIGHT TIME 250.00 ARRIVAL DATE JUL 11 1965

HELIOCENTRIC CONIC DISTANCE 585.062 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 33.077 GAL -3.42 AZL 91.26 HCA 185.16 SMA 191.04 ECC .23073 INC 1.2618 V1 30.028
RP 233.25 LAP .11 LOP 225.77 VP 21.053 GAP 3.90 AZP 88.75 TAL 341.58 TAP 166.74 RCA 146.96 APO 235.12 V2 23.574
RC 212.144 GL -12.20 GP 14.62 ZAL 116.56 ZAP 142.36 ETS 158.73 ZAE 163.63 ETE 72.42 ZAC 104.29 ETC 255.41 CLP 144.92

PLANETOCENTRIC CONIC

C3 11.801 VHL 3.435 DLA -2.70 RAL 154.99 RAD 6567.4 VEL 11.541 PTH 2.01 VHP 4.501 DPA 10.12 RAP 196.39 ECC 1.1942

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 9 56	2012.06	-14.20	29.05	8.01	114.76	19 43 28	1412.1	-10.74	22.08
90.00	6 31 48	4823.70	18.71	208.24	8.89	68.35	7 52 12	4223.7	15.60	200.94
100.00	20 30 1	1753.73	-15.05	9.63	7.59	116.13	20 59 15	1153.7	-11.42	2.72
100.00	7 54 24	4557.27	19.58	188.26	8.51	66.95	9 10 21	3957.3	16.30	181.01
110.00	21 35 22	1549.14	-17.33	352.84	6.33	119.93	22 1 11	949.1	-13.22	346.14
110.00	9 5 32	4334.62	21.93	170.19	7.35	63.09	10 17 47	3734.6	18.14	163.11

DIFFERENTIAL CORRECTIONS
TDE .9300 TRA-1.6595 TC3 3.4172 BAU .6343
RDE .4250 RRA -.5482 RC3 2.1187 FAU .24650
FDE-3.2605 FRA 4.6354 FC-18.0843 BSP 15378
BDE 1.0225 BRA 1.7477 BC3 4.0207 FSP 4521

MID-COURSE EXECUTION ACCURACY
SGT 3949.2 SGR 1859.9 SG3 1349.2
RRT .9603 RRF -.9994 RTF -.9576
SGB 4365.3 R23 -.2380 R13 -.9706
SG1 4339.7 SG2 472.2 THA 24.65

ORBIT DETERMINATION ACCURACY
ST 1761.3 SR 761.4 SS 2304.2
CRT .9924 CRS .9994 CST .9958
LSA 2995.4 MSA 136.3 SSA 9.5
EL1 1916.9 EL2 86.1 ALF 23.27

LAUNCH DATE NOV 3 1964 FLIGHT TIME 252.00 ARRIVAL DATE JUL 13 1965

HELIOCENTRIC CONIC DISTANCE 588.790 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 33.059 GAL -3.37 AZL 90.76 HCA 186.16 SMA 190.70 ECC .22917 INC .7532 V1 30.028
RP 232.88 LAP .08 LOP 226.77 VP 21.067 GAP 3.53 AZP 89.25 TAL 341.79 TAP 167.95 RCA 147.00 APO 234.41 V2 23.612
RC 214.210 GL -7.45 GP 12.63 ZAL 116.55 ZAP 142.04 ETS 161.82 ZAE 165.82 ETE 74.60 ZAC 102.35 ETC 255.53 CLP 143.90

PLANETOCENTRIC CONIC

C3 11.292 VHL 3.360 DLA 1.87 RAL 156.34 RAD 6567.4 VEL 11.519 PTH 2.01 VHP 4.363 DPA 8.32 RAP 195.53 ECC 1.1858

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 41 24	2144.64	-17.81	37.10	9.47	112.38	19 17 9	1544.6	-14.62	29.88
90.00	7 11 5	4672.77	14.67	199.00	8.87	65.51	8 28 58	4072.8	11.24	192.00
100.00	20 3 37	1879.46	-18.67	17.21	9.08	113.78	20 34 56	1279.5	-15.30	10.05
100.00	8 31 32	4413.19	15.51	179.51	8.46	64.12	9 45 5	3813.2	11.91	172.57
110.00	21 13 51	1659.60	-20.96	359.35	7.91	117.64	21 41 31	1059.6	-17.09	352.36
110.00	9 37 48	4205.80	17.76	162.52	7.23	60.30	10 47 54	3605.8	13.67	155.79

DIFFERENTIAL CORRECTIONS

TDE .8134 TRA-1.6221 TC3 3.5431 BAU .6104
RDE .3253 RRA -.4747 RC3 1.9479 FAU .26338
FDE-2.9005 FRA 4.9785 FC-20.1929 BSP 14677
BDE .8760 BRA 1.6902 BC3 4.0433 FSP 4754

MID-COURSE EXECUTION ACCURACY

SGT 3905.3 SGR 1636.2 SG3 1447.7
RRT .9589 RRF -.9989 RTF -.9578
SGB 4234.2 R23 -.2436 R13 -.9688
SG1 4212.3 SG2 430.3 THA 22.13

ORBIT DETERMINATION ACCURACY

ST 1617.9 SR 606.8 SS 2102.9
CRT .9918 CRS .9980 CST .9976
LSA 2719.8 MSA 101.6 SSA 17.3
EL1 1726.4 EL2 72.6 ALF 20.44

LAUNCH DATE NOV 3 1964 FLIGHT TIME 254.00 ARRIVAL DATE JUL 15 1965

HELIOCENTRIC CONIC DISTANCE 592.532 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 33.041 GAL -3.31 AZL 90.39 HCA 187.16 SMA 190.39 ECC .22769 INC .3873 V1 30.028
RP 232.51 LAP .05 LOP 227.77 VP 21.083 GAP 3.16 AZP 89.61 TAL 342.00 TAP 169.16 RCA 147.04 APO 233.73 V2 23.650
RC 216.258 GL -3.91 GP 11.17 ZAL 116.33 ZAP 141.41 ETS 164.20 ZAE 167.48 ETE 78.32 ZAC 100.90 ETC 255.60 CLP 142.81

PLANETOCENTRIC CONIC

C3 10.976 VHL 3.313 DLA 5.31 RAL 157.27 RAD 6567.4 VEL 11.505 PTH 2.00 VHP 4.245 DPA 7.03 RAP 194.84 ECC 1.1806

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 19 22	2246.12	-20.32	43.49	10.75	110.15	18 56 48	1646.1	-17.39	36.04
90.00	7 40 35	4559.58	11.37	192.32	9.12	63.89	8 56 35	3959.6	7.77	185.49
100.00	19 43 13	1975.67	-21.20	23.24	10.40	111.58	20 16 9	1375.7	-18.08	15.83
100.00	8 59 25	4305.26	12.21	173.19	8.69	62.50	10 11 11	3705.3	8.43	166.44
110.00	20 57 12	1744.12	-23.54	4.56	9.29	115.54	21 26 16	1144.1	-19.90	357.30
110.00	10 1 56	4109.58	14.43	157.05	7.40	58.67	11 10 25	3509.6	10.18	150.53

DIFFERENTIAL CORRECTIONS

TDE .7234 TRA-1.5862 TC3 3.5778 BAU .5873
RDE .2620 RRA -.4216 RC3 1.7941 FAU .27735
FDE-2.5955 FRA 5.3101 FC-21.8766 BSP 14283
BDE .7694 BRA 1.6413 BC3 4.0024 FSP 5060

MID-COURSE EXECUTION ACCURACY

SGT 3843.9 SGR 1467.9 SG3 1534.3
RRT .9575 RRF -.9982 RTF -.9580
SGB 4114.6 R23 -.2461 R13 -.9674
SG1 4095.4 SG2 397.5 THA 20.28

ORBIT DETERMINATION ACCURACY

ST 1501.2 SR 504.8 SS 1940.4
CRT .9910 CRS .9949 CST .9989
LSA 2503.4 MSA 72.0 SSA 31.4
EL1 1582.5 EL2 64.0 ALF 18.46

LAUNCH DATE NOV 3 1964 FLIGHT TIME 256.00 ARRIVAL DATE JUL 17 1965

HELIOCENTRIC CONIC DISTANCE 596.287 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 33.024 GAL -3.26 AZL 90.12 HCA 188.16 SMA 190.08 ECC .22628 INC .0974 V1 30.028
RP 232.14 LAP .02 LOP 228.78 VP 21.100 GAP 2.79 AZP 89.89 TAL 342.19 TAP 170.36 RCA 147.07 APO 233.10 V2 23.689
RC 218.287 GL -1.16 GP 10.05 ZAL 116.02 ZAP 140.57 ETS 166.08 ZAE 168.74 ETE 83.61 ZAC 99.79 ETC 255.66 CLP 141.67

PLANETOCENTRIC CONIC

C3 10.756 VHL 3.280 DLA 8.00 RAL 157.94 RAD 6567.4 VEL 11.495 PTH 2.00 VHP 4.138 DPA 6.07 RAP 194.25 ECC 1.1770

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 1 23	2327.20	-22.13	48.74	11.84	108.13	18 40 10	1727.2	-19.45	41.10
90.00	8 3 55	4470.21	8.65	187.17	9.45	62.93	9 18 25	3870.2	4.95	180.44
100.00	19 26 35	2052.39	-23.04	28.20	11.51	109.59	20 0 48	1452.4	-20.16	20.59
100.00	9 21 24	4220.25	9.49	168.34	8.99	61.52	10 31 44	3620.2	5.62	161.70
110.00	20 43 38	1811.27	-25.44	8.85	10.46	113.64	21 13 50	1211.3	-22.02	1.36
110.00	10 20 50	4034.14	11.72	152.89	7.66	57.66	11 28 4	3434.1	7.37	146.50

DIFFERENTIAL CORRECTIONS

TDE .6524 TRA-1.5472 TC3 3.5692 BAU .5667
RDE .2214 RRA -.3794 RC3 1.6719 FAU .29105
FDE-2.3553 FRA 5.6070 FC-23.4272 BSP 13915
BDE .6890 BRA 1.5930 BC3 3.9414 FSP 5351

MID-COURSE EXECUTION ACCURACY

SGT 3772.3 SGR 1341.8 SG3 1618.5
RRT .9553 RRF -.9972 RTF -.9575
SGB 4003.9 R23 -.2479 R13 -.9661
SG1 3986.2 SG2 375.3 THA 18.94

ORBIT DETERMINATION ACCURACY

ST 1405.3 SR 437.0 SS 1821.3
CRT .9894 CRS .9893 CST .9992
LSA 2340.3 MSA 62.0 SSA 45.2
EL1 1470.4 EL2 60.7 ALF 17.13

LAUNCH DATE NOV 3 1964 FLIGHT TIME 258.00 ARRIVAL DATE JUL 19 1965

HELIOCENTRIC CONIC DISTANCE 600.056 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 33.009 GAL -3.21 AZL 89.90 HCA 189.17 SMA 189.80 ECC .22494 INC .1023 V1 30.028
RP 231.76 LAP -.02 LOP 229.78 VP 21.119 GAP 2.43 AZP 90.10 TAL 342.38 TAP 171.55 RCA 147.11 APO 232.49 V2 23.728
RC 220.299 GL 1.02 GP 9.18 ZAL 115.67 ZAP 139.60 ETS 167.59 ZAE 169.64 ETE 90.41 ZAC 98.90 ETC 255.70 CLP 140.48

PLANETOCENTRIC CONIC

C3 10.587 VHL 3.254 DLA 10.16 RAL 158.43 RAD 6567.4 VEL 11.488 PTH 2.00 VHP 4.040 DPA 5.35 RAP 193.72 ECC 1.1742

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 46 9	2394.09	-23.48	53.18	12.74	106.30	18 26 3	1794.1	-21.02	45.37
90.00	8 23 3	4396.91	6.35	183.01	9.77	62.35	9 36 20	3796.9	2.60	176.34
100.00	19 12 31	2115.52	-24.42	32.38	12.42	107.80	19 47 46	1515.5	-21.75	24.60
100.00	9 39 22	4150.71	7.21	164.44	9.31	60.91	10 48 33	3550.7	3.28	157.86
110.00	20 32 11	1866.21	-26.89	12.46	11.43	111.95	21 3 17	1266.2	-23.67	4.77
110.00	10 36 11	3972.79	9.46	149.57	7.93	57.00	11 42 24	3372.8	5.05	143.26

DIFFERENTIAL CORRECTIONS

TDE .6009 TRA-1.5001 TC3 3.5517 BAU .5499
RDE .1941 RRA -.3456 RC3 1.5743 FAU .30450
FDE-2.1563 FRA 5.8882 FC-24.8989 BSP 13453
BDE .6315 BRA 1.5394 BC3 3.8850 FSP 5651

MID-COURSE EXECUTION ACCURACY

SGT 3696.4 SGR 1244.5 SG3 1701.7
RRT .9541 RRF -.9959 RTF -.9579
SGB 3900.2 R23 -.2454 R13 -.9656
SG1 3884.1 SG2 354.7 THA 17.96

ORBIT DETERMINATION ACCURACY

ST 1331.3 SR 390.2 SS 1732.4
CRT .9880 CRS .9806 CST .9980
LSA 2217.4 MSA 88.3 SSA 37.7
EL1 1386.1 EL2 57.9 ALF 16.18

LAUNCH DATE NOV 3 1964 FLIGHT TIME 260.00 ARRIVAL DATE JUL 21 1965

HELIOCENTRIC CONIC DISTANCE 603.837 EARTH TO MARS

RL	148.38	LAL	-.00	LOL	40.61	VL	32.993	GAL	-3.16	AZL	89.72	HCA	190.18	SMA	189.53	ECC	.22367	INC	.2705
RP	231.38	LAP	-.05	LOP	230.79	VP	21.140	GAP	2.08	AZP	90.27	TAL	342.55	TAP	172.74	RCA	147.14	APO	231.92
RC	222.292	GL	2.81	GP	8.48	ZAL	115.31	ZAP	138.53	ETS	168.84	ZAE	170.20	ETE	98.48	ZAC	98.16	ETC	255.73

V1	30.028	V2	23.768	CLP	139.25														

PLANETOCENTRIC CONIC

C3	10.451	VHL	3.233	DLA	11.94	RAL	158.79	RAD	6567.4	VEL	11.482	PTH	2.00	VHP	3.947	DPA	4.81	RAP	193.22
ECC	1.1720																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 32 53	2450.71	-24.51	57.01	13.48	104.64	18 13 44	1850.7	-22.26	49.06
90.00	8 39 12	4335.05	4.38	179.53	10.08	62.00	9 51 27	3735.0	.60	172.89
100.00	19 0 18	2168.77	-25.48	35.98	13.19	106.19	19 36 27	1568.8	-23.01	28.05
100.00	9 54 28	4092.22	5.26	161.19	9.60	60.53	11 2 40	3492.2	1.30	154.65
110.00	20 22 17	1912.25	-28.02	15.56	12.24	110.43	20 54 9	1312.2	-24.98	7.71
110.00	10 48 59	3921.50	7.55	146.83	8.19	56.56	11 54 20	3321.5	3.10	140.57

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5628	TRA	-1.4450	TC3	3.5289	BAU	.5360	SGT	3612.9	SGR	1171.2	SG3	1788.9	ST	1271.3	SR	359.3	SS	1676.4
RDE	.1774	RRA	-.3159	RC3	1.5040	FAU	.31956	RRT	.9524	RRF	-.9943	RTF	-.9578	CRT	.9858	CRS	.9693	CST	.9954
FDE	-2.0214	FRA	6.1208	FC	-26.4712	BSP	12859	SGB	3798.0	R23	-.2424	R13	-.9650	LSA	2130.8	MSA	119.2	SSA	32.3
BDE	.5901	BRA	1.4791	BC3	3.8360	FSP	5878	SG1	3782.6	SG2	341.1	THA	17.30	EL1	1319.8	EL2	58.2	ALF	15.60

LAUNCH DATE NOV 3 1964 FLIGHT TIME 262.00 ARRIVAL DATE JUL 23 1965

HELIOCENTRIC CONIC DISTANCE 607.627 EARTH TO MARS

RL	148.38	LAL	-.00	LOL	40.61	VL	32.979	GAL	-3.12	AZL	89.58	HCA	191.20	SMA	189.27	ECC	.22247	INC	.4217
RP	231.01	LAP	-.08	LOP	231.81	VP	21.162	GAP	1.74	AZP	90.41	TAL	342.72	TAP	173.91	RCA	147.16	APO	231.38
RC	224.266	GL	4.30	GP	7.90	ZAL	114.96	ZAP	137.37	ETS	169.89	ZAE	170.42	ETE	107.36	ZAC	97.54	ETC	255.76

V1	30.028	V2	23.807	CLP	137.97														

PLANETOCENTRIC CONIC

C3	10.336	VHL	3.215	DLA	13.44	RAL	159.07	RAD	6567.4	VEL	11.477	PTH	2.00	VHP	3.860	DPA	4.39	RAP	192.74
ECC	1.1701																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 21 10	2499.53	-25.31	60.37	14.10	103.14	18 2 49	1899.5	-23.25	52.30
90.00	8 53 8	4281.73	2.67	176.54	10.37	61.80	10 4 30	3681.7	-1.12	169.91
100.00	18 49 32	2214.52	-26.31	39.13	13.82	104.73	19 26 27	1614.5	-24.02	31.07
100.00	10 7 27	4041.98	3.57	158.42	9.87	60.30	11 14 49	3442.0	-.41	151.89
110.00	20 13 35	1951.52	-28.93	18.26	12.93	109.06	20 46 7	1351.5	-26.05	10.26
110.00	10 59 53	3877.74	5.90	144.51	8.42	56.27	12 4 31	3277.7	1.43	138.28

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5021	TRA	-1.4179	TC3	3.3724	BAU	.5062	SGT	3500.5	SGR	1106.1	SG3	1867.2	ST	1188.5	SR	331.6	SS	1610.5
RDE	.1613	RRA	-.2963	RC3	1.4305	FAU	.33053	RRT	.9459	RRF	-.9923	RTF	-.9544	CRT	.9796	CRS	.9507	CST	.9919
FDE	-1.8149	FRA	6.4499	FC	-27.6858	BSP	12955	SGB	3671.1	R23	-.2487	R13	-.9619	LSA	2023.3	MSA	147.3	SSA	31.1
BDE	.5274	BRA	1.4486	BC3	3.6633	FSP	6311	SG1	3654.9	SG2	343.7	THA	16.79	EL1	1232.2	EL2	64.3	ALF	15.33

LAUNCH DATE NOV 3 1964 FLIGHT TIME 264.00 ARRIVAL DATE JUL 25 1965

HELIOCENTRIC CONIC DISTANCE 611.431 EARTH TO MARS

RL	148.38	LAL	-.00	LOL	40.61	VL	32.965	GAL	-3.08	AZL	89.46	HCA	192.21	SMA	189.03	ECC	.22133	INC	.5394
RP	230.62	LAP	-.11	LOP	232.82	VP	21.186	GAP	1.39	AZP	90.53	TAL	342.87	TAP	175.08	RCA	147.19	APO	230.87
RC	226.222	GL	5.56	GP	7.41	ZAL	114.62	ZAP	136.15	ETS	170.78	ZAE	170.29	ETE	116.42	ZAC	97.00	ETC	255.79

V1	30.028	V2	23.847	CLP	136.65														

PLANETOCENTRIC CONIC

C3	10.234	VHL	3.199	DLA	14.72	RAL	159.28	RAD	6567.4	VEL	11.473	PTH	1.99	VHP	3.777	DPA	4.07	RAP	192.27
ECC	1.1684																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 10 35	2542.43	-25.94	63.35	14.61	101.78	17 52 58	1942.4	-24.05	55.19
90.00	9 5 22	4234.87	1.16	173.93	10.62	61.70	10 15 57	3634.9	-2.63	167.30
100.00	18 39 51	2254.55	-26.97	41.92	14.35	103.41	19 17 26	1654.5	-24.86	33.76
100.00	10 18 48	3997.98	2.09	156.00	10.11	60.17	11 25 26	3398.0	-1.90	149.48
110.00	20 5 48	1985.62	-29.66	20.64	13.50	107.83	20 38 54	1385.6	-26.94	12.51
110.00	11 9 20	3839.68	4.46	142.51	8.63	56.07	12 13 20	3239.7	-.02	136.30

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4708	TRA	-1.3646	TC3	3.2887	BAU	.4883	SGT	3394.7	SGR	1059.5	SG3	1955.2	ST	1135.6	SR	315.8	SS	1580.6
RDE	.1534	RRA	-.2760	RC3	1.3856	FAU	.34529	RRT	.9421	RRF	-.9901	RTF	-.9530	CRT	.9749	CRS	.9311	CST	.9869
FDE	-1.7053	FRA	6.6907	FC	-29.2086	BSP	12452	SGB	3556.2	R23	-.2479	R13	-.9604	LSA	1963.6	MSA	176.2	SSA	29.4
BDE	.4952	BRA	1.3923	BC3	3.5687	FSP	6579	SG1	3539.9	SG2	340.8	THA	16.54	EL1	1176.8	EL2	67.9	ALF	15.22

LAUNCH DATE NOV 3 1964 FLIGHT TIME 266.00 ARRIVAL DATE JUL 27 1965

HELIOCENTRIC CONIC DISTANCE 615.247 EARTH TO MARS

RL	148.38	LAL	-.00	LOL	40.61	VL	32.952	GAL	-3.04	AZL	89.36	HCA	193.23	SMA	188.80	ECC	.22025	INC	.6431
RP	230.24	LAP	-.15	LOP	233.84	VP	21.211	GAP	1.06	AZP	90.63	TAL	343.01	TAP	176.25	RCA	147.22	APO	230.38
RC	228.159	GL	6.65	GP	7.00	ZAL	114.29	ZAP	134.86	ETS	171.55	ZAE	169.85	ETE	125.02	ZAC	96.53	ETC	255.81

V1	30.028	V2	23.887	CLP	135.29														

PLANETOCENTRIC CONIC

C3	10.144	VHL	3.185	DLA	15.83	RAL	159.44	RAD	6567.4	VEL	11.469	PTH	1.99	VHP	3.698	DPA	3.84	RAP	191.79
ECC	1.1669																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 0 58	2580.58	-26.44	66.03	15.04	100.52	17 43 59	1980.6	-24.72	57.78
90.00	9 16 17	4193.16	-.18	171.60	10.86	61.68	10 26 10	3593.2	-3.97	164.96
100.00	18 31 5	2290.00	-27.50	44.42	14.80	102.20	19 9 15	1690.0	-25.55	36.16
100.00	10 28 52	3958.97	.76	153.86	10.33	60.12	11 34 51	3359.0	-3.22	147.33
110.00	19 58 47	2015.58	-30.27	22.76	13.99	106.71	20 32 23	1415.6	-27.68	14.52
110.00	11 17 39	3806.16	3.18	140.75	8.82	55.95	12 21 5	3206.2	-1.31	134.55

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4395	TRA	-1.3134	TC3	3.1708	BAU	.4672	SGT	3276.7	SGR	1020.8	SG3	2042.3	ST	1082.5	SR	303.4	SS	1555.3
RDE	.1472	RRA	-.2598	RC3	1.3467	FAU	.35926	RRT	.9373	RRF	-.9875	RTF	-.9508	CRT	.9694	CRS	.9065	CST	.9801
FDE	-1.5848	FRA	6.9555	FC	-30.6618	BSP	12022	SGB	3432.0	R23	-.2481	R13	-.9586	LSA	1907.7	MSA	206.2	SSA	28.2
BDE	.4635	BRA	1.3389	BC3	3.4450	FSP	6901	SG1	3415.0	SG2	341.3	THA	16.45	EL1	1121.9	EL2	71.9	ALF	15.26

LAUNCH DATE NOV 3 1964 FLIGHT TIME 268.00 ARRIVAL DATE JUL 29 1965

HELIOCENTRIC CONIC DISTANCE 619.074 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.940 GAL -3.01 AZL 89.27 HCA 194.26 SMA 188.58 ECC .21923 INC .7317 V1 30.028
RP 229.86 LAP -.18 LOP 234.87 VP 21.237 GAP .73 AZP 90.71 TAL 343.15 TAP 177.40 RCA 147.24 APO 229.92 V2 23.927
RC 230.076 GL 7.60 GP 6.65 ZAL 113.99 ZAP 133.52 ETS 172.22 ZAE 169.12 ETE 132.73 ZAC 96.10 ETC 255.83 CLP 133.89

PLANETOCENTRIC CONIC

C3 10.062 VHL 3.172 DLA 16.81 RAL 159.57 RAD 6567.4 VEL 11.465 PTH 1.99 VHP 3.622 DPA 3.67 RAP 191.31 ECC 1.1656

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 52 9	2614.90	-26.84	68.46	15.41	99.37	17 35 44	2014.9	-25.27	60.15
90.00	9 26 7	4155.60	-1.39	169.50	11.07	61.71	10 35 23	3555.6	-5.17	162.85
100.00	18 23 4	2321.75	-27.94	46.68	15.18	101.08	19 1 46	1721.7	-26.13	38.34
100.00	10 37 54	3923.99	-.42	151.94	10.53	60.11	11 43 18	3324.0	-4.40	145.40
110.00	19 52 25	2042.19	-30.77	24.67	14.41	105.68	20 26 27	1442.2	-28.31	16.34
110.00	11 25 2	3776.31	2.05	139.19	8.99	55.87	12 27 59	3176.3	-2.45	132.99

DIFFERENTIAL CORRECTIONS
TDE .4129 TRA-1.2587 TC3 3.0381 BAU .4454
RDE .1434 RRA -.2457 RC3 1.3167 FAU .37367
FDE-1.4799 FRA 7.2142 FC-32.1513 BSP 11532
BDE .4371 BRA 1.2824 BC3 3.3112 FSP 7217

MID-COURSE EXECUTION ACCURACY
SGT 3148.3 SGR 989.8 SG3 2131.3
RRT .9319 RRF -.9846 RTF -.9482
SGB 3300.2 R23 -.2489 R13 -.9564
SG1 3282.2 SG2 344.3 THA 16.52

ORBIT DETERMINATION ACCURACY
ST 1033.0 SR 295.0 SS 1539.5
CRT .9636 CRS .8790 CST .9719
LSA 1862.4 MSA 234.8 SSA 27.5
EL1 1071.6 EL2 76.0 ALF 15.46

LAUNCH DATE NOV 3 1964 FLIGHT TIME 270.00 ARRIVAL DATE JUL 31 1965

HELIOCENTRIC CONIC DISTANCE 622.911 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.928 GAL -2.98 AZL 89.19 HCA 195.29 SMA 188.38 ECC .21827 INC .8086 V1 30.028
RP 229.47 LAP -.21 LOP 235.90 VP 21.264 GAP .40 AZP 90.78 TAL 343.27 TAP 178.55 RCA 147.26 APO 229.49 V2 23.968
RC 231.973 GL 8.44 GP 6.35 ZAL 113.71 ZAP 132.13 ETS 172.81 ZAE 168.16 ETE 139.35 ZAC 95.72 ETC 255.85 CLP 132.45

PLANETOCENTRIC CONIC

C3 9.988 VHL 3.160 DLA 17.67 RAL 159.67 RAD 6567.4 VEL 11.462 PTH 1.99 VHP 3.550 DPA 3.57 RAP 190.80 ECC 1.1644

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 44 2	2646.04	-27.17	70.68	15.72	98.30	17 28 8	2046.0	-25.74	62.31
90.00	9 35 6	4121.52	-2.49	167.60	11.27	61.78	10 43 47	3521.5	-6.25	160.93
100.00	18 15 42	2350.42	-28.30	48.73	15.51	100.06	18 54 53	1750.4	-26.62	40.33
100.00	10 46 6	3892.37	-1.49	150.20	10.72	60.14	11 50 59	3292.4	-5.46	143.66
110.00	19 46 36	2066.02	-31.20	26.40	14.78	104.74	20 21 2	1466.0	-28.86	17.98
110.00	11 31 42	3749.54	1.02	137.80	9.15	55.83	12 34 11	3149.5	-3.47	131.59

DIFFERENTIAL CORRECTIONS
TDE .3875 TRA-1.2042 TC3 2.8784 BAU .4213
RDE .1409 RRA -.2338 RC3 1.2927 FAU .38807
FDE-1.3784 FRA 7.4808 FC-33.6381 BSP 11046
BDE .4123 BRA 1.2267 BC3 3.1553 FSP 7546

MID-COURSE EXECUTION ACCURACY
SGT 3008.9 SGR 964.8 SG3 2221.2
RRT .9250 RRF -.9815 RTF -.9444
SGB 3159.8 R23 -.2521 R13 -.9534
SG1 3140.2 SG2 351.1 THA 16.74

ORBIT DETERMINATION ACCURACY
ST 984.4 SR 289.3 SS 1530.3
CRT .9572 CRS .8482 CST .9623
LSA 1823.6 MSA 261.3 SSA 27.2
EL1 1022.9 EL2 80.6 ALF 15.81

LAUNCH DATE NOV 3 1964 FLIGHT TIME 272.00 ARRIVAL DATE AUG 2 1965

HELIOCENTRIC CONIC DISTANCE 626.760 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.917 GAL -2.95 AZL 89.12 HCA 196.32 SMA 188.18 ECC .21737 INC .8763 V1 30.028
RP 229.09 LAP -.25 LOP 236.93 VP 21.293 GAP .09 AZP 90.84 TAL 343.38 TAP 179.69 RCA 147.28 APO 229.09 V2 24.009
RC 233.848 GL 9.18 GP 6.08 ZAL 113.45 ZAP 130.69 ETS 173.34 ZAE 167.01 ETE 144.92 ZAC 95.36 ETC 255.88 CLP 130.97

PLANETOCENTRIC CONIC

C3 9.920 VHL 3.150 DLA 18.43 RAL 159.76 RAD 6567.4 VEL 11.459 PTH 1.99 VHP 3.482 DPA 3.52 RAP 190.28 ECC 1.1633

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 36 30	2674.50	-27.43	72.72	15.99	97.31	17 21 5	2074.5	-26.14	64.30
90.00	9 43 20	4090.35	-3.49	165.86	11.47	61.88	10 51 30	3490.4	-7.23	159.17
100.00	18 8 55	2376.50	-28.59	50.61	15.80	99.11	18 48 32	1776.5	-27.04	42.16
100.00	10 53 37	3863.59	-2.47	148.62	10.90	60.20	11 58 0	3263.6	-6.42	142.06
110.00	19 41 17	2087.51	-31.56	27.97	15.11	103.88	20 16 5	1487.5	-29.33	19.47
110.00	11 37 44	3725.34	.10	136.54	9.30	55.82	12 39 49	3125.3	-4.39	130.32

DIFFERENTIAL CORRECTIONS
TDE .3664 TRA-1.1455 TC3 2.7072 BAU .3969
RDE .1399 RRA -.2233 RC3 1.2751 FAU .40295
FDE-1.2898 FRA 7.7418 FC-35.1648 BSP 10498
BDE .3922 BRA 1.1671 BC3 2.9924 FSP 7871

MID-COURSE EXECUTION ACCURACY
SGT 2859.6 SGR 945.1 SG3 2312.8
RRT .9176 RRF -.9781 RTF -.9399
SGB 3011.7 R23 -.2560 R13 -.9500
SG1 2990.2 SG2 359.3 THA 17.13

ORBIT DETERMINATION ACCURACY
ST 938.7 SR 286.0 SS 1527.3
CRT .9515 CRS .8160 CST .9510
LSA 1792.4 MSA 287.1 SSA 27.0
EL1 977.7 EL2 84.5 ALF 16.29

LAUNCH DATE NOV 3 1964 FLIGHT TIME 274.00 ARRIVAL DATE AUG 4 1965

HELIOCENTRIC CONIC DISTANCE 630.619 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.907 GAL -2.92 AZL 89.06 HCA 197.35 SMA 188.00 ECC .21652 INC .9358 V1 30.028
RP 228.70 LAP -.28 LOP 237.96 VP 21.323 GAP -.23 AZP 90.89 TAL 343.47 TAP 180.83 RCA 147.29 APO 228.71 V2 24.049
RC 235.703 GL 9.84 GP 5.85 ZAL 113.21 ZAP 129.19 ETS 173.82 ZAE 165.71 ETE 149.54 ZAC 95.02 ETC 255.90 CLP 129.44

PLANETOCENTRIC CONIC

C3 9.859 VHL 3.140 DLA 19.12 RAL 159.84 RAD 6567.4 VEL 11.456 PTH 1.99 VHP 3.416 DPA 3.51 RAP 189.74 ECC 1.1623

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 29 31	2700.67	-27.65	74.61	16.24	96.39	17 14 32	2100.7	-26.47	66.14
90.00	9 50 58	4061.73	-4.41	164.26	11.66	62.00	10 58 40	3461.7	-8.12	157.54
100.00	18 2 39	2400.36	-28.84	52.34	16.06	98.23	18 42 39	1800.4	-27.40	43.84
100.00	11 0 31	3837.27	-3.36	147.17	11.08	60.28	12 4 28	3237.3	-7.29	140.59
110.00	19 36 25	2107.01	-31.87	29.41	15.40	103.08	20 11 32	1507.0	-29.74	20.84
110.00	11 43 15	3703.38	-.74	135.39	9.44	55.82	12 44 58	3103.4	-5.22	129.17

DIFFERENTIAL CORRECTIONS
TDE .3480 TRA-1.0845 TC3 2.5176 BAU .3712
RDE .1400 RRA -.2140 RC3 1.2627 FAU .41826
FDE-1.2131 FRA 7.9993 FC-36.7281 BSP 9897
BDE .3751 BRA 1.1054 BC3 2.8165 FSP 8183

MID-COURSE EXECUTION ACCURACY
SGT 2700.0 SGR 929.9 SG3 2406.1
RRT .9086 RRF -.9746 RTF -.9340
SGB 2855.6 R23 -.2623 R13 -.9458
SG1 2831.5 SG2 370.3 THA 17.69

ORBIT DETERMINATION ACCURACY
ST 894.6 SR 284.9 SS 1529.6
CRT .9464 CRS .7832 CST .9384
LSA 1767.5 MSA 310.6 SSA 27.1
EL1 934.8 EL2 88.1 ALF 16.93

LAUNCH DATE NOV 3 1964 FLIGHT TIME 276.00 ARRIVAL DATE AUG 6 1965

HELIOCENTRIC CONIC DISTANCE 634.489 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.897 GAL -2.90 AZL 89.01 HCA 198.39 SMA 187.83 ECC .21573 INC .9899 V1 30.028
RP 228.31 LAP -.31 LOP 239.00 VP 21.354 GAP -.54 AZP 90.94 TAL 343.56 TAP 181.95 RCA 147.31 APO 228.35 V2 24.090
RC 237.537 GL 10.44 GP 5.64 ZAL 113.00 ZAP 127.66 ETS 174.25 ZAE 164.27 ETE 153.37 ZAC 94.70 ETC 255.93 CLP 127.87

PLANETOCENTRIC CONIC

C3 9.803 VHL 3.131 DLA 19.74 RAL 159.92 RAD 6567.4 VEL 11.454 PTH 1.99 VHP 3.354 DPA 3.54 RAP 189.17 ECC 1.1613

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 23 2	2724.82	-27.82	76.36	16.46	95.53	17 8 26	2124.8	-26.76	67.85
90.00	9 58 4	4035.33	-5.25	162.77	11.84	62.13	11 5 19	3435.3	-8.94	156.04
100.00	17 56 51	2422.27	-29.04	53.94	16.30	97.41	18 37 14	1822.3	-27.71	45.39
100.00	11 6 55	3813.12	-4.17	145.84	11.25	60.37	12 10 28	3213.1	-8.09	139.24
110.00	19 31 57	2124.76	-32.13	30.72	15.67	102.34	20 7 21	1524.8	-30.10	22.10
110.00	11 48 19	3683.39	-1.51	134.35	9.59	55.85	12 49 42	3083.4	-5.98	128.12

DIFFERENTIAL CORRECTIONS
TDE .3298 TRA-1.0230 TC3 2.3023 BAU .3435
RDE .1403 RRA -.2064 RC3 1.2520 FAU .43301
FDE-1.1249 FRA 8.2758 FC-38.2388 BSP 9296
BDE .3584 BRA 1.0436 BC3 2.6207 FSP 8532

MID-COURSE EXECUTION ACCURACY
SGT 2529.5 SGR 917.4 SG3 2498.9
RRT .8977 RRF -.9708 RTF -.9263
SGB 2690.7 R23 -.2713 R13 -.9404
SG1 2663.2 SG2 383.8 THA 18.43

ORBIT DETERMINATION ACCURACY
ST 849.8 SR 284.5 SS 1534.6
CRT .9421 CRS .7474 CST .9228
LSA 1745.1 MSA 334.5 SSA 27.1
EL1 891.5 EL2 91.0 ALF 17.70

LAUNCH DATE NOV 3 1964 FLIGHT TIME 278.00 ARRIVAL DATE AUG 8 1965

HELIOCENTRIC CONIC DISTANCE 638.369 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.888 GAL -2.87 AZL 88.96 HCA 199.43 SMA 187.67 ECC .21499 INC 1.0380 V1 30.028
RP 227.92 LAP -.35 LOP 240.04 VP 21.386 GAP -.84 AZP 90.98 TAL 343.64 TAP 183.07 RCA 147.32 APO 228.01 V2 24.132
RC 239.350 GL 10.98 GP 5.45 ZAL 112.81 ZAP 126.07 ETS 174.65 ZAE 162.73 ETE 156.55 ZAC 94.39 ETC 255.95 CLP 126.26

PLANETOCENTRIC CONIC

C3 9.753 VHL 3.123 DLA 20.29 RAL 160.00 RAD 6567.4 VEL 11.452 PTH 1.99 VHP 3.294 DPA 3.60 RAP 188.58 ECC 1.1605

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 17 0	2747.20	-27.95	77.98	16.66	94.72	17 2 47	2147.2	-27.00	69.44
90.00	10 4 42	4010.93	-6.03	161.40	12.03	62.28	11 11 33	3410.9	-9.69	154.64
100.00	17 51 30	2442.45	-29.21	55.42	16.52	96.65	18 32 12	1842.5	-27.98	46.83
100.00	11 12 52	3790.90	-4.92	144.62	11.42	60.48	12 16 3	3190.9	-8.81	138.00
110.00	19 27 52	2140.99	-32.36	31.93	15.93	101.66	20 3 33	1541.0	-30.42	23.26
110.00	11 53 0	3665.14	-2.20	133.40	9.73	55.88	12 54 5	3065.1	-6.67	127.15

DIFFERENTIAL CORRECTIONS
TDE .3146 TRA -.9577 TC3 2.0705 BAU .3151
RDE .1415 RRA -.1993 RC3 1.2454 FAU .44819
FDE-1.0508 FRA 8.5409 FC-39.7827 BSP 8633
BDE .3449 BRA .9783 BC3 2.4162 FSP 8859

MID-COURSE EXECUTION ACCURACY
SGT 2348.4 SGR 908.0 SG3 2592.4
RRT .8845 RRF -.9669 RTF -.9160
SGB 2517.8 R23 -.2834 R13 -.9336
SG1 2485.8 SG2 400.2 THA 19.40

ORBIT DETERMINATION ACCURACY
ST 806.5 SR 285.8 SS 1543.1
CRT .9394 CRS .7127 CST .9053
LSA 1727.8 MSA 356.3 SSA 27.3
EL1 850.6 EL2 92.9 ALF 18.64

LAUNCH DATE NOV 3 1964 FLIGHT TIME 280.00 ARRIVAL DATE AUG 10 1965

HELIOCENTRIC CONIC DISTANCE 642.258 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.879 GAL -2.86 AZL 88.92 HCA 200.48 SMA 187.51 ECC .21429 INC 1.0815 V1 30.028
RP 227.53 LAP -.38 LOP 241.09 VP 21.420 GAP -1.14 AZP 91.01 TAL 343.70 TAP 184.18 RCA 147.33 APO 227.70 V2 24.173
RC 241.142 GL 11.48 GP 5.28 ZAL 112.64 ZAP 124.44 ETS 175.02 ZAE 161.09 ETE 159.22 ZAC 94.09 ETC 255.98 CLP 124.61

PLANETOCENTRIC CONIC

C3 9.708 VHL 3.116 DLA 20.80 RAL 160.07 RAD 6567.4 VEL 11.450 PTH 1.99 VHP 3.238 DPA 3.70 RAP 187.96 ECC 1.1598

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 11 24	2767.96	-28.06	79.49	16.85	93.97	16 57 32	2168.0	-27.21	70.93
90.00	10 10 55	3988.35	-6.74	160.12	12.22	62.43	11 17 23	3388.4	-10.38	153.33
100.00	17 46 34	2461.09	-29.35	56.79	16.73	95.95	18 27 35	1861.1	-28.22	48.17
100.00	11 18 26	3770.45	-5.60	143.49	11.60	60.59	12 21 16	3170.5	-9.48	136.84
110.00	19 24 8	2155.84	-32.56	33.04	16.17	101.03	20 0 4	1555.8	-30.70	24.32
110.00	11 57 21	3648.47	-2.84	132.52	9.88	55.92	12 58 10	3048.5	-7.29	126.27

DIFFERENTIAL CORRECTIONS
TDE .3008 TRA -.8908 TC3 1.8172 BAU .2856
RDE .1433 RRA -.1932 RC3 1.2411 FAU .46334
FDE -.9814 FRA 8.8099 FC-41.3175 BSP 7945
BDE .3332 BRA .9115 BC3 2.2006 FSP 9187

MID-COURSE EXECUTION ACCURACY
SGT 2158.4 SGR 901.1 SG3 2686.1
RRT .8676 RRF -.9629 RTF -.9019
SGB 2339.0 R23 -.3000 R13 -.9247
SG1 2300.9 SG2 420.4 THA 20.63

ORBIT DETERMINATION ACCURACY
ST 763.9 SR 288.0 SS 1554.7
CRT .9384 CRS .6785 CST .8852
LSA 1715.0 MSA 376.5 SSA 27.5
EL1 811.0 EL2 93.7 ALF 19.76

LAUNCH DATE NOV 3 1964 FLIGHT TIME 282.00 ARRIVAL DATE AUG 12 1965

HELIOCENTRIC CONIC DISTANCE 646.158 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.871 GAL -2.84 AZL 88.88 HCA 201.53 SMA 187.37 ECC .21365 INC 1.1214 V1 30.028
RP 227.14 LAP -.41 LOP 242.13 VP 21.454 GAP -1.43 AZP 91.04 TAL 343.75 TAP 185.28 RCA 147.34 APO 227.40 V2 24.214
RC 242.914 GL 11.93 GP 5.13 ZAL 112.50 ZAP 122.77 ETS 175.36 ZAE 159.38 ETE 161.46 ZAC 93.80 ETC 256.02 CLP 122.92

PLANETOCENTRIC CONIC

C3 9.669 VHL 3.109 DLA 21.25 RAL 160.16 RAD 6567.3 VEL 11.448 PTH 1.99 VHP 3.185 DPA 3.83 RAP 187.31 ECC 1.1591

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 6 13	2787.24	-28.14	80.89	17.04	93.28	16 52 40	2187.2	-27.39	72.31
90.00	10 16 46	3967.45	-7.40	158.94	12.41	62.59	11 22 53	3367.4	-11.01	152.12
100.00	17 42 2	2478.31	-29.46	58.05	16.93	95.29	18 23 20	1878.3	-28.42	49.41
100.00	11 23 38	3751.62	-6.23	142.44	11.78	60.71	12 26 10	3151.6	-10.09	135.78
110.00	19 20 45	2169.45	-32.73	34.07	16.40	100.45	19 56 54	1569.5	-30.95	25.30
110.00	12 1 24	3633.23	-3.42	131.73	10.04	55.97	13 1 58	3033.2	-7.87	125.46

DIFFERENTIAL CORRECTIONS
TDE .2884 TRA -.8213 TC3 1.5415 BAU .2556
RDE .1453 RRA -.1878 RC3 1.2380 FAU .47808
FDE -.9101 FRA 9.0830 FC-42.8073 BSP 7229
BDE .3230 BRA .8425 BC3 1.9771 FSP 9526

MID-COURSE EXECUTION ACCURACY
SGT 1959.1 SGR 895.7 SG3 2778.3
RRT .8453 RRF -.9587 RTF -.8821
SGB 2154.1 R23 -.3217 R13 -.9131
SG1 2107.7 SG2 444.9 THA 22.17

ORBIT DETERMINATION ACCURACY
ST 721.5 SR 290.9 SS 1568.3
CRT .9396 CRS .6440 CST .8606
LSA 1705.0 MSA 396.3 SSA 27.7
EL1 772.4 EL2 93.0 ALF 21.07

LAUNCH DATE NOV 3 1964 FLIGHT TIME 284.00 ARRIVAL DATE AUG 14 1965

HELIOCENTRIC CONIC DISTANCE 650.068 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.863 GAL -2.83 AZL 88.84 HCA 202.58 SMA 187.24 ECC .21305 INC 1.1578 V1 30.028
RP 226.75 LAP -.44 LOP 243.19 VP 21.489 GAP -1.72 AZP 91.07 TAL 343.79 TAP 186.37 RCA 147.35 APO 227.13 V2 24.256
RC 244.666 GL 12.34 GP 4.98 ZAL 112.39 ZAP 121.05 ETS 175.67 ZAE 157.59 ETE 163.37 ZAC 93.51 ETC 256.05 CLP 121.18

PLANETOCENTRIC CONIC

C3 9.634 VHL 3.104 DLA 21.66 RAL 160.25 RAD 6567.3 VEL 11.447 PTH 1.99 VHP 3.136 DPA 3.98 RAP 186.63 ECC 1.1586

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 1 26	2805.15	-28.21	82.20	17.23	92.62	16 48 12	2205.2	-27.54	73.60
90.00	10 22 16	3948.11	-8.00	157.84	12.61	62.75	11 28 4	3348.1	-11.59	151.00
100.00	17 37 52	2494.21	-29.56	59.23	17.13	94.68	18 19 27	1894.2	-28.60	50.56
100.00	11 28 31	3734.29	-6.81	141.48	11.97	60.82	12 30 45	3134.3	-10.65	134.79
110.00	19 17 41	2181.93	-32.88	35.01	16.63	99.91	19 54 3	1581.9	-31.17	26.21
110.00	12 5 11	3619.34	-3.95	131.00	10.20	56.02	13 5 31	3019.3	-8.39	124.72

DIFFERENTIAL CORRECTIONS
TDE .2777 TRA -.7489 TC3 1.2479 BAU .2263
RDE .1477 RRA -.1830 RC3 1.2365 FAU .49274
FDE -.8430 FRA 9.3550 FC-44.2791 BSP 6486
BDE .3145 BRA .7709 BC3 1.7568 FSP 9859

MID-COURSE EXECUTION ACCURACY
SGT 1753.6 SGR 892.0 SG3 2869.8
RRT .8151 RRF -.9545 RTF -.8538
SGB 1967.4 R23 -.3492 R13 -.8979
SG1 1909.4 SG2 474.5 THA 24.10

ORBIT DETERMINATION ACCURACY
ST 680.0 SR 294.5 SS 1583.8
CRT .9434 CRS .6106 CST .8312
LSA 1698.4 MSA 415.1 SSA 27.9
EL1 735.5 EL2 90.3 ALF 22.58

LAUNCH DATE NOV 3 1964 FLIGHT TIME 286.00 ARRIVAL DATE AUG 16 1965

HELIOCENTRIC CONIC DISTANCE 653.987 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.856 GAL -2.82 AZL 88.81 HCA 203.64 SMA 187.12 ECC .21250 INC 1.1915 V1 30.028
RP 226.36 LAP -.48 LOP 244.24 VP 21.525 GAP -2.00 AZP 91.09 TAL 343.81 TAP 187.45 RCA 147.35 APO 226.88 V2 24.297
RC 246.398 GL 12.72 GP 4.85 ZAL 112.30 ZAP 119.30 ETS 175.97 ZAE 155.74 ETE 165.01 ZAC 93.23 ETC 256.09 CLP 119.41

PLANETOCENTRIC CONIC

C3 9.604 VHL 3.099 DLA 22.03 RAL 160.35 RAD 6567.3 VEL 11.445 PTH 1.99 VHP 3.089 DPA 4.16 RAP 185.93 ECC 1.1581

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 57 4	2821.77	-28.25	83.41	17.41	92.02	16 44 5	2221.8	-27.67	74.80
90.00	10 27 27	3930.27	-8.56	156.82	12.82	62.90	11 32 57	3330.3	-12.12	149.96
100.00	17 34 6	2508.89	-29.63	60.31	17.33	94.11	18 15 55	1908.9	-28.75	51.62
100.00	11 33 6	3718.39	-7.33	140.59	12.16	60.94	12 35 4	3118.4	-11.16	133.89
110.00	19 14 57	2193.36	-33.02	35.88	16.86	99.41	19 51 31	1593.4	-31.36	27.04
110.00	12 8 44	3606.69	-4.43	130.34	10.37	56.07	13 8 51	3006.7	-8.86	124.04

DIFFERENTIAL CORRECTIONS
TDE .2682 TRA -.6739 TC3 .9324 BAU .1987
RDE .1502 RRA -.1788 RC3 1.2353 FAU .50681
FDE -.7763 FRA 9.6307 FC-45.6853 BSP 5720
BDE .3074 BRA .6972 BC3 1.5477 FSP 10196

MID-COURSE EXECUTION ACCURACY
SGT 1544.8 SGR 889.2 SG3 2958.9
RRT .7714 RRF -.9501 RTF -.8108
SGB 1782.5 R23 -.3846 R13 -.8773
SG1 1707.4 SG2 511.9 THA 26.51

ORBIT DETERMINATION ACCURACY
ST 639.4 SR 298.5 SS 1601.2
CRT .9497 CRS .5778 CST .7952
LSA 1695.1 MSA 433.0 SSA 28.1
EL1 700.5 EL2 85.3 ALF 24.30

LAUNCH DATE NOV 3 1964 FLIGHT TIME 288.00 ARRIVAL DATE AUG 18 1965

HELIOCENTRIC CONIC DISTANCE 657.916 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.850 GAL -2.81 AZL 88.78 HCA 204.70 SMA 187.00 ECC .21199 INC 1.2223 V1 30.028
RP 225.97 LAP -.51 LOP 245.30 VP 21.562 GAP -2.28 AZP 91.11 TAL 343.83 TAP 188.52 RCA 147.36 APO 226.64 V2 24.339
RC 248.110 GL 13.07 GP 4.73 ZAL 112.23 ZAP 117.50 ETS 176.25 ZAE 153.83 ETE 166.42 ZAC 92.95 ETC 256.13 CLP 117.60

PLANETOCENTRIC CONIC

C3 9.579 VHL 3.095 DLA 22.37 RAL 160.46 RAD 6567.3 VEL 11.444 PTH 1.99 VHP 3.046 DPA 4.36 RAP 185.20 ECC 1.1576

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 53 4	2837.16	-28.28	84.54	17.60	91.45	16 40 22	2237.2	-27.78	75.91
90.00	10 32 20	3913.86	-9.06	155.88	13.04	63.06	11 37 34	3313.9	-12.61	149.00
100.00	17 30 41	2522.40	-29.70	61.31	17.53	93.59	18 12 44	1922.4	-28.88	52.60
100.00	11 37 24	3703.85	-7.82	139.78	12.37	61.06	12 39 8	3103.8	-11.62	133.05
110.00	19 12 32	2203.81	-33.13	36.67	17.09	98.95	19 49 15	1603.8	-31.54	27.81
110.00	12 12 3	3595.21	-4.87	129.73	10.55	56.12	13 11 58	2995.2	-9.28	123.43

DIFFERENTIAL CORRECTIONS
TDE .2608 TRA -.5949 TC3 .5998 BAU .1759
RDE .1533 RRA -.1747 RC3 1.2356 FAU .52087
FDE -.7242 FRA 9.8878 FC-47.0754 BSP 4942
BDE .3025 BRA .6201 BC3 1.3735 FSP 10505

MID-COURSE EXECUTION ACCURACY
SGT 1337.7 SGR 887.6 SG3 3045.8
RRT .7054 RRF -.9457 RTF -.7431
SGB 1605.4 R23 -.4286 R13 -.8498
SG1 1504.8 SG2 559.3 THA 29.56

ORBIT DETERMINATION ACCURACY
ST 600.7 SR 303.5 SS 1618.6
CRT .9587 CRS .5484 CST .7521
LSA 1694.1 MSA 449.3 SSA 28.3
EL1 668.5 EL2 77.6 ALF 26.22

LAUNCH DATE NOV 3 1964 FLIGHT TIME 290.00 ARRIVAL DATE AUG 20 1965

HELIOCENTRIC CONIC DISTANCE 661.854 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.843 GAL -2.80 AZL 88.75 HCA 205.76 SMA 186.89 ECC .21153 INC 1.2505 V1 30.028
RP 225.58 LAP -.54 LOP 246.36 VP 21.600 GAP -2.55 AZP 91.13 TAL 343.83 TAP 189.59 RCA 147.36 APO 226.42 V2 24.381
RC 249.803 GL 13.39 GP 4.61 ZAL 112.19 ZAP 115.67 ETS 176.51 ZAE 151.87 ETE 167.66 ZAC 92.67 ETC 256.18 CLP 115.76

PLANETOCENTRIC CONIC

C3 9.559 VHL 3.092 DLA 22.67 RAL 160.59 RAD 6567.3 VEL 11.443 PTH 1.98 VHP 3.006 DPA 4.58 RAP 184.44 ECC 1.1573

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 49 29	2851.36	-28.30	85.58	17.80	90.93	16 37 0	2251.4	-27.87	76.94
90.00	10 36 55	3898.83	-9.53	155.02	13.26	63.21	11 41 54	3298.8	-13.05	148.11
100.00	17 27 39	2534.81	-29.75	62.23	17.74	93.11	18 9 54	1934.8	-29.00	53.51
100.00	11 41 26	3690.61	-8.25	139.04	12.58	61.17	12 42 57	3090.6	-12.04	132.29
110.00	19 10 24	2213.34	-33.23	37.40	17.32	98.53	19 47 18	1613.3	-31.69	28.51
110.00	12 15 10	3584.84	-5.26	129.19	10.75	56.18	13 14 55	2984.8	-9.67	122.87

DIFFERENTIAL CORRECTIONS
TDE .2543 TRA -.5139 TC3 .2467 BAU .1611
RDE .1567 RRA -.1709 RC3 1.2363 FAU .53447
FDE -.6787 FRA10.1411 FC-48.4074 BSP 4187
BDE .2987 BRA .5416 BC3 1.2607 FSP 10797

MID-COURSE EXECUTION ACCURACY
SGT 1144.9 SGR 886.8 SG3 3130.0
RRT .5985 RRF -.9412 RTF -.6313
SGB 1448.2 R23 -.4827 R13 -.8124
SG1 1307.8 SG2 621.9 THA 33.33

ORBIT DETERMINATION ACCURACY
ST 563.9 SR 308.9 SS 1637.0
CRT .9691 CRS .5212 CST .7002
LSA 1696.2 MSA 464.2 SSA 28.6
EL1 639.5 EL2 67.2 ALF 28.30

LAUNCH DATE NOV 3 1964 FLIGHT TIME 300.00 ARRIVAL DATE AUG 30 1965

DISTANCE 681.681

EARTH TO MARS

HELIOCENTRIC CONIC
RL 148.38 LAL -.00 LOL 40.61 VL 32.819 GAL -2.82 AZL 88.63 HCA 211.13 SMA 186.47 ECC .20982 INC 1.3669 V1 30.028
RP 223.63 LAP -.71 LOP 251.74 VP 21.799 GAP -3.84 AZP 91.17 TAL 343.64 TAP 194.77 RCA 147.34 APO 225.59 V2 24.590
RC 257.974 GL 14.68 GP 4.11 ZAL 112.36 ZAP 106.04 ETS 177.66 ZAE 141.42 ETE 172.00 ZAC 91.25 ETC 256.47 CLP 106.09

PLANETOCENTRIC CONIC
C3 9.527 VHL 3.087 DLA 23.74 RAL 161.43 RAD 6567.3 VEL 11.442 PTH 1.98 VHP 2.857 DPA 5.92 RAP 180.32 ECC 1.1568

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 37 25	2905.24	-28.30	89.52	18.94	88.96	16 25 51	2305.2	-28.14	80.86
90.00	10 55 45	3843.62	-11.20	151.83	14.56	63.82	11 59 48	3243.6	-14.63	144.83
100.00	17 17 53	2581.34	-29.87	65.68	18.94	91.29	18 0 54	1981.3	-29.37	56.91
100.00	11 57 58	3642.76	-9.81	136.34	13.83	61.62	12 58 41	3042.8	-13.53	129.52
110.00	19 4 14	2248.61	-33.55	40.10	18.62	96.96	19 41 43	1648.6	-32.22	31.12
110.00	12 28 7	3548.25	-6.64	127.26	11.91	56.39	13 27 15	2948.2	-11.02	120.89

DIFFERENTIAL CORRECTIONS
TDE .2360 TRA -.0628 TC3-1.7636 BAU .2741
RDE .1763 RRA -.1542 RC3 1.2330 FAU .59085
FDE -.5375 FRA11.2677 FC-53.6938 BSP 3760
BDE .2946 BRA .1665 BC3 2.1519 FSP 11982

MID-COURSE EXECUTION ACCURACY
SGT 1180.4 SGR 885.6 SG3 3479.4
RRT -.6174 RRF -.9169 RTF .6887
SGB 1475.7 R23 .4092 R13 -.8352
SG1 1342.6 SG2 612.5 THA 147.63

ORBIT DETERMINATION ACCURACY
ST 441.0 SR 341.3 SS 1727.7
CRT .9718 CRS .4156 CST .2160
LSA 1736.9 MSA 527.5 SSA 29.5
EL1 553.9 EL2 64.1 ALF 37.53

LAUNCH DATE NOV 3 1964 FLIGHT TIME 302.00 ARRIVAL DATE SEP 1 1965

DISTANCE 685.672

EARTH TO MARS

HELIOCENTRIC CONIC
RL 148.38 LAL -.00 LOL 40.61 VL 32.815 GAL -2.83 AZL 88.61 HCA 212.22 SMA 186.40 ECC .20960 INC 1.3860 V1 30.028
RP 223.24 LAP -.74 LOP 252.82 VP 21.840 GAP -4.08 AZP 91.17 TAL 343.56 TAP 195.78 RCA 147.33 APO 225.47 V2 24.632
RC 259.547 GL 14.88 GP 4.02 ZAL 112.47 ZAP 104.05 ETS 177.86 ZAE 139.23 ETE 172.62 ZAC 90.97 ETC 256.54 CLP 104.09

PLANETOCENTRIC CONIC
C3 9.534 VHL 3.088 DLA 23.87 RAL 161.65 RAD 6567.3 VEL 11.442 PTH 1.98 VHP 2.838 DPA 6.22 RAP 179.45 ECC 1.1569

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 36 13	2912.67	-28.29	90.06	19.21	88.68	16 24 46	2312.7	-28.17	81.40
90.00	10 58 42	3836.51	-11.42	151.42	14.86	63.91	12 2 38	3236.5	-14.83	144.41
100.00	17 17 1	2587.69	-29.88	66.16	19.22	91.05	18 0 9	1987.7	-29.41	57.38
100.00	12 0 35	3636.72	-10.01	136.00	14.12	61.68	13 1 12	3036.7	-13.71	129.17
110.00	19 3 52	2253.41	-33.59	40.47	18.92	96.75	19 41 25	1653.4	-32.29	31.48
110.00	12 30 14	3543.77	-6.81	127.02	12.18	56.42	13 29 18	2943.8	-11.18	120.65

DIFFERENTIAL CORRECTIONS
TDE .2334 TRA .0362 TC3-2.2073 BAU .3221
RDE .1808 RRA -.1509 RC3 1.2295 FAU .59903
FDE -.5288 FRA11.4513 FC-54.3940 BSP 4631
BDE .2952 BRA .1552 BC3 2.5266 FSP 12155

MID-COURSE EXECUTION ACCURACY
SGT 1432.1 SGR 884.7 SG3 3530.0
RRT -.7199 RRF -.9115 RTF .8044
SGB 1683.4 R23 .3273 R13 -.8771
SG1 1589.9 SG2 553.1 THA 152.40

ORBIT DETERMINATION ACCURACY
ST 435.5 SR 348.5 SS 1743.7
CRT .9374 CRS .4005 CST .0743
LSA 1749.9 MSA 537.1 SSA 29.6
EL1 549.4 EL2 96.2 ALF 38.26

LAUNCH DATE NOV 3 1964 FLIGHT TIME 304.00 ARRIVAL DATE SEP 3 1965

DISTANCE 689.672

EARTH TO MARS

HELIOCENTRIC CONIC
RL 148.38 LAL -.00 LOL 40.61 VL 32.812 GAL -2.84 AZL 88.60 HCA 213.31 SMA 186.34 ECC .20941 INC 1.4042 V1 30.028
RP 222.85 LAP -.77 LOP 253.91 VP 21.882 GAP -4.32 AZP 91.17 TAL 343.47 TAP 196.77 RCA 147.32 APO 225.37 V2 24.674
RC 261.100 GL 15.07 GP 3.93 ZAL 112.61 ZAP 102.04 ETS 178.05 ZAE 137.02 ETE 173.19 ZAC 90.68 ETC 256.62 CLP 102.07

PLANETOCENTRIC CONIC
C3 9.546 VHL 3.090 DLA 23.98 RAL 161.89 RAD 6567.3 VEL 11.443 PTH 1.98 VHP 2.822 DPA 6.52 RAP 178.56 ECC 1.1571

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 35 26	2918.99	-28.28	90.52	19.50	88.45	16 24 5	2319.0	-28.19	81.86
90.00	11 1 23	3830.69	-11.59	151.08	15.17	63.98	12 5 14	3230.7	-15.00	144.06
100.00	17 16 31	2593.09	-29.88	66.56	19.52	90.83	17 59 44	1993.1	-29.45	57.78
100.00	12 3 0	3631.81	-10.16	135.72	14.42	61.74	13 3 31	3031.8	-13.86	128.88
110.00	19 3 47	2257.49	-33.62	40.78	19.23	96.56	19 41 24	1657.5	-32.35	31.78
110.00	12 32 13	3540.18	-6.95	126.83	12.48	56.45	13 31 13	2940.2	-11.31	120.46

DIFFERENTIAL CORRECTIONS
TDE .2311 TRA .1379 TC3-2.6624 BAU .3740
RDE .1852 RRA -.1477 RC3 1.2240 FAU .60564
FDE -.5206 FRA11.6244 FC-54.9244 BSP 5654
BDE .2962 BRA .2021 BC3 2.9303 FSP 12305

MID-COURSE EXECUTION ACCURACY
SGT 1723.0 SGR 883.2 SG3 3572.3
RRT -.7762 RRF -.9059 RTF .8707
SGB 1936.2 R23 .2583 R13 -.9080
SG1 1866.7 SG2 514.0 THA 156.41

ORBIT DETERMINATION ACCURACY
ST 439.5 SR 355.7 SS 1759.3
CRT .8859 CRS .3862 CST -.0728
LSA 1765.0 MSA 546.5 SSA 29.8
EL1 549.9 EL2 131.9 ALF 38.24

LAUNCH DATE NOV 3 1964 FLIGHT TIME 306.00 ARRIVAL DATE SEP 5 1965

DISTANCE 693.680

EARTH TO MARS

HELIOCENTRIC CONIC
RL 148.38 LAL -.00 LOL 40.61 VL 32.809 GAL -2.86 AZL 88.58 HCA 214.40 SMA 186.29 ECC .20926 INC 1.4213 V1 30.028
RP 222.47 LAP -.80 LOP 255.00 VP 21.925 GAP -4.56 AZP 91.17 TAL 343.36 TAP 197.76 RCA 147.31 APO 225.28 V2 24.716
RC 262.633 GL 15.24 GP 3.84 ZAL 112.77 ZAP 100.02 ETS 178.23 ZAE 134.80 ETE 173.70 ZAC 90.40 ETC 256.70 CLP 100.04

PLANETOCENTRIC CONIC
C3 9.563 VHL 3.092 DLA 24.07 RAL 162.15 RAD 6567.3 VEL 11.443 PTH 1.99 VHP 2.809 DPA 6.83 RAP 177.68 ECC 1.1574

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 35 4	2924.20	-28.27	90.90	19.81	88.26	16 23 48	2324.2	-28.21	82.24
90.00	11 3 48	3826.17	-11.73	150.81	15.49	64.04	12 7 34	3226.2	-15.12	143.78
100.00	17 16 22	2597.56	-29.89	66.89	19.83	90.66	17 59 40	1997.6	-29.47	58.11
100.00	12 5 11	3628.04	-10.29	135.51	14.74	61.78	13 5 39	3028.0	-13.98	128.66
110.00	19 3 59	2260.90	-33.65	41.05	19.56	96.41	19 41 40	1660.9	-32.40	32.04
110.00	12 34 4	3537.46	-7.05	126.69	12.78	56.46	13 33 1	2937.5	-11.41	120.31

DIFFERENTIAL CORRECTIONS
TDE .2286 TRA .2423 TC3-3.1257 BAU .4289
RDE .1899 RRA -.1443 RC3 1.2175 FAU .61112
FDE -.5276 FRA11.7715 FC-55.3232 BSP 6763
BDE .2972 BRA .2820 BC3 3.3544 FSP 12411

MID-COURSE EXECUTION ACCURACY
SGT 2039.2 SGR 881.2 SG3 3606.4
RRT -.8072 RRF -.8999 RTF .9102
SGB 2221.5 R23 .2030 R13 -.9304
SG1 2166.9 SG2 489.5 THA 159.69

ORBIT DETERMINATION ACCURACY
ST 452.2 SR 363.4 SS 1773.1
CRT .8201 CRS .3754 CST -.2127
LSA 1781.0 MSA 554.8 SSA 29.9
EL1 554.8 EL2 169.5 ALF 37.48

LAUNCH DATE NOV 3 1964 FLIGHT TIME 292.00 ARRIVAL DATE AUG 22 1965

HELIOCENTRIC CONIC DISTANCE 665.801 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.838 GAL -2.80 AZL 88.72 HCA 206.83 SMA 186.79 ECC .21111 INC 1.2773 V1 30.028
RP 225.19 LAP -.58 LOP 247.43 VP 21.638 GAP -2.82 AZP 91.14 TAL 343.81 TAP 190.64 RCA 147.36 APO 226.23 V2 24.423
RC 251.477 GL 13.69 GP 4.50 ZAL 112.17 ZAP 113.80 ETS 176.76 ZAE 149.85 ETE 168.74 ZAC 92.38 ETC 256.23 CLP 113.88

PLANETOCENTRIC CONIC

C3 9.543 VHL 3.089 DLA 22.94 RAL 160.72 RAD 6567.3 VEL 11.443 PTH 1.98 VHP 2.970 DPA 4.82 RAP 183.66 ECC 1.1571

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 46 16	2864.39	-28.31	86.53	18.00	90.46	16 34 1	2264.4	-27.95	77.88
90.00	10 41 14	3885.15	-9.95	154.23	13.50	63.35	11 45 59	3285.1	-13.45	147.30
100.00	17 24 58	2546.15	-29.78	63.07	17.95	92.67	18 7 24	1946.1	-29.10	54.33
100.00	11 45 13	3678.63	-8.64	138.36	12.81	61.27	12 46 31	3078.6	-12.41	131.60
110.00	19 8 35	2221.99	-33.31	38.06	17.56	98.15	19 45 37	1622.0	-31.83	29.15
110.00	12 18 6	3575.54	-5.61	128.70	10.95	56.23	13 17 41	2975.5	-10.01	122.37

DIFFERENTIAL CORRECTIONS
TDE .2492 TRA -.4300 TC3 -.1238 BAU .1585
RDE .1601 RRA -.1676 RC3 1.2361 FAU .54706
FDE -.6303 FRA10.3997 FC-49.6291 BSP 3513
BDE .2962 BRA .4615 BC3 1.2423 FSP 11091

MID-COURSE EXECUTION ACCURACY
SGT 984.7 SGR 886.2 SG3 3209.9
RRT .4254 RRF -.9365 RTF -.4465
SGB 1324.7 R23 -.5442 R13 -.7641
SG1 1122.5 SG2 703.6 THA 38.03

ORBIT DETERMINATION ACCURACY
ST 530.3 SR 314.5 SS 1656.8
CRT .9803 CRS .4946 CST .6340
LSA 1701.3 MSA 479.4 SSA 28.8
EL1 614.2 EL2 53.6 ALF 30.43

LAUNCH DATE NOV 3 1964 FLIGHT TIME 294.00 ARRIVAL DATE AUG 24 1965

HELIOCENTRIC CONIC DISTANCE 669.758 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.832 GAL -2.80 AZL 88.70 HCA 207.90 SMA 186.70 ECC .21073 INC 1.3018 V1 30.028
RP 224.80 LAP -.61 LOP 248.50 VP 21.677 GAP -3.08 AZP 91.15 TAL 343.79 TAP 191.69 RCA 147.36 APO 226.04 V2 24.465
RC 253.132 GL 13.96 GP 4.40 ZAL 112.18 ZAP 111.90 ETS 177.00 ZAE 147.80 ETE 169.70 ZAC 92.10 ETC 256.28 CLP 111.97

PLANETOCENTRIC CONIC

C3 9.532 VHL 3.087 DLA 23.18 RAL 160.88 RAD 6567.3 VEL 11.442 PTH 1.98 VHP 2.936 DPA 5.08 RAP 182.85 ECC 1.1569

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 43 28	2876.28	-28.32	87.40	18.21	90.02	16 31 24	2276.3	-28.01	78.75
90.00	10 45 16	3872.81	-10.32	153.52	13.75	63.49	11 49 49	3272.8	-13.80	146.57
100.00	17 22 40	2556.44	-29.81	63.83	18.18	92.27	18 5 16	1956.4	-29.18	55.09
100.00	11 48 45	3667.88	-8.99	137.76	13.04	61.37	12 49 53	3067.9	-12.75	130.98
110.00	19 7 4	2229.82	-33.39	38.66	17.81	97.80	19 44 13	1629.8	-31.95	29.72
110.00	12 20 50	3567.27	-5.93	128.26	11.17	56.27	13 20 18	2967.3	-10.32	121.92

DIFFERENTIAL CORRECTIONS
TDE .2440 TRA -.3431 TC3 -.5129 BAU .1706
RDE .1638 RRA -.1641 RC3 1.2363 FAU .55930
FDE -.5934 FRA10.6360 FC-50.7984 BSP 3028
BDE .2939 BRA .3803 BC3 1.3385 FSP 11354

MID-COURSE EXECUTION ACCURACY
SGT 886.0 SGR 886.0 SG3 3285.6
RRT .1597 RRF -.9318 RTF -.1613
SGB 1253.0 R23 -.5944 R13 -.7177
SG1 954.2 SG2 812.2 THA 44.99

ORBIT DETERMINATION ACCURACY
ST 498.4 SR 320.6 SS 1675.1
CRT .9894 CRS .4708 CST .5556
LSA 1707.2 MSA 491.5 SSA 29.1
EL1 591.3 EL2 39.2 ALF 32.64

LAUNCH DATE NOV 3 1964 FLIGHT TIME 296.00 ARRIVAL DATE AUG 26 1965

HELIOCENTRIC CONIC DISTANCE 673.720 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.827 GAL -2.80 AZL 88.68 HCA 208.97 SMA 186.62 ECC .21039 INC 1.3248 V1 30.028
RP 224.41 LAP -.64 LOP 249.58 VP 21.717 GAP -3.34 AZP 91.16 TAL 343.75 TAP 192.72 RCA 147.35 APO 225.88 V2 24.506
RC 254.766 GL 14.22 GP 4.30 ZAL 112.22 ZAP 109.98 ETS 177.23 ZAE 145.71 ETE 170.55 ZAC 91.82 ETC 256.34 CLP 110.04

PLANETOCENTRIC CONIC

C3 9.526 VHL 3.086 DLA 23.39 RAL 161.05 RAD 6567.3 VEL 11.442 PTH 1.98 VHP 2.907 DPA 5.34 RAP 182.03 ECC 1.1568

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 41 4	2887.00	-28.31	88.18	18.44	89.63	16 29 11	2287.0	-28.07	79.53
90.00	10 49 1	3861.83	-10.65	152.89	14.01	63.61	11 53 23	3261.8	-14.12	145.92
100.00	17 20 44	2565.68	-29.84	64.52	18.42	91.91	18 3 29	1965.7	-29.25	55.76
100.00	11 52 3	3658.38	-9.30	137.22	13.29	61.46	12 53 1	3058.4	-13.04	130.43
110.00	19 5 51	2236.81	-33.45	39.19	18.07	97.49	19 43 8	1636.8	-32.05	30.24
110.00	12 23 25	3560.02	-6.20	127.88	11.40	56.32	13 22 45	2960.0	-10.58	121.53

DIFFERENTIAL CORRECTIONS
TDE .2349 TRA -.2579 TC3 -.9430 BAU .1974
RDE .1663 RRA -.1625 RC3 1.2297 FAU .56723
FDE -.4883 FRA10.9449 FC-51.5522 BSP 2895
BDE .2878 BRA .3048 BC3 1.5497 FSP 11758

MID-COURSE EXECUTION ACCURACY
SGT 895.1 SGR 882.9 SG3 3350.2
RRT -.1719 RRF -.9263 RTF .1896
SGB 1257.2 R23 .6006 R13 -.7059
SG1 962.6 SG2 808.8 THA 137.28

ORBIT DETERMINATION ACCURACY
ST 463.7 SR 324.8 SS 1700.4
CRT .9936 CRS .4349 CST .4517
LSA 1720.8 MSA 499.7 SSA 29.8
EL1 565.3 EL2 30.2 ALF 34.95

LAUNCH DATE NOV 3 1964 FLIGHT TIME 298.00 ARRIVAL DATE AUG 28 1965

HELIOCENTRIC CONIC DISTANCE 677.698 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.823 GAL -2.81 AZL 88.65 HCA 210.05 SMA 186.54 ECC .21008 INC 1.3465 V1 30.028
RP 224.02 LAP -.67 LOP 250.65 VP 21.758 GAP -3.59 AZP 91.17 TAL 343.70 TAP 193.75 RCA 147.35 APO 225.73 V2 24.548
RC 256.380 GL 14.46 GP 4.20 ZAL 112.28 ZAP 108.02 ETS 177.45 ZAE 143.58 ETE 171.31 ZAC 91.53 ETC 256.41 CLP 108.07

PLANETOCENTRIC CONIC

C3 9.524 VHL 3.086 DLA 23.58 RAL 161.23 RAD 6567.3 VEL 11.442 PTH 1.98 VHP 2.880 DPA 5.63 RAP 181.18 ECC 1.1567

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 39 2	2896.70	-28.31	88.89	18.68	89.27	16 27 19	2296.7	-28.11	80.23
90.00	10 52 31	3852.04	-10.95	152.32	14.28	63.72	11 56 43	3252.0	-14.39	145.33
100.00	17 19 7	2574.02	-29.85	65.14	18.67	91.58	18 2 1	1974.0	-29.32	56.38
100.00	11 55 8	3649.96	-9.58	136.75	13.55	61.55	12 55 57	3050.0	-13.31	129.94
110.00	19 4 53	2243.10	-33.50	39.68	18.34	97.21	19 42 16	1643.1	-32.15	30.71
110.00	12 25 50	3553.64	-6.44	127.54	11.65	56.36	13 25 4	2953.6	-10.82	121.19

DIFFERENTIAL CORRECTIONS
TDE .2384 TRA -.1589 TC3-1.3307 BAU .2312
RDE .1720 RRA -.1575 RC3 1.2352 FAU .58143
FDE -.5490 FRA11.0686 FC-52.8539 BSP 3124
BDE .2939 BRA .2237 BC3 1.8156 FSP 11799

MID-COURSE EXECUTION ACCURACY
SGT 986.9 SGR 886.0 SG3 3421.2
RRT -.4371 RRF -.9221 RTF .4894
SGB 1326.2 R23 .4958 R13 -.7833
SG1 1128.3 SG2 696.9 THA 141.95

ORBIT DETERMINATION ACCURACY
ST 453.6 SR 334.1 SS 1710.5
CRT .9896 CRS .4318 CST .3452
LSA 1725.0 MSA 516.5 SSA 29.4
EL1 562.1 EL2 38.9 ALF 36.29

LAUNCH DATE NOV 3 1964 FLIGHT TIME 308.00 ARRIVAL DATE SEP 7 1965

HELIOCENTRIC CONIC DISTANCE 697.695 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.806 GAL -2.88 AZL 88.56 HCA 215.50 SMA 186.25 ECC .20914 INC 1.4377 V1 30.028
RP 222.08 LAP -.83 LOP 256.10 VP 21.968 GAP -4.79 AZP 91.17 TAL 343.24 TAP 198.74 RCA 147.29 APO 225.20 V2 24.758
RC 264.145 GL 15.40 GP 3.76 ZAL 112.95 ZAP 97.99 ETS 178.41 ZAE 132.57 ETE 174.17 ZAC 90.12 ETC 256.78 CLP 98.01

PLANETOCENTRIC CONIC

C3 9.585 VHL 3.096 DLA 24.14 RAL 162.43 RAD 6567.3 VEL 11.444 PTH 1.99 VHP 2.800 DPA 7.14 RAP 176.79 ECC 1.1577

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 35 7	2928.28	-28.26	91.20	20.14	88.11	16 23 56	2328.3	-28.22	82.54
90.00	11 5 57	3822.98	-11.82	150.63	15.83	64.08	12 9 40	3223.0	-15.21	143.59
100.00	17 16 37	2601.08	-29.89	67.15	20.17	90.52	17 59 58	2001.1	-29.50	58.37
100.00	12 7 9	3625.41	-10.37	135.36	15.07	61.81	13 7 34	3025.4	-14.06	128.51
110.00	19 4 28	2263.62	-33.67	41.26	19.90	96.29	19 42 12	1663.6	-32.43	32.24
110.00	12 35 47	3535.64	-7.12	126.59	13.11	56.48	13 34 42	2935.6	-11.48	120.21

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2250 TRA .3496 TC3-3.6001 BAU .4865 SGT 2376.0 SGR 876.0 SG3 3626.3 ST 472.4 SR 369.2 SS 1791.5
RDE .1936 RRA -.1420 RC3 1.2044 FAU .61207 RRT -.8251 RRF -.8929 RTF .9341 CRT .7415 CRS .3526 CST -.3588
FDE -.4704 FRA11.9679 FC-55.2836 BSP 7941 SGB 2532.3 R23 .1596 R13 -.9454 LSA 1804.3 MSA 559.0 SSA 30.3
BDE .2968 BRA .3774 BC3 3.7962 FSP 12631 SG1 2487.8 SG2 472.7 THA 162.42 EL1 562.2 EL2 208.1 ALF 35.72

LAUNCH DATE NOV 3 1964 FLIGHT TIME 310.00 ARRIVAL DATE SEP 9 1965

HELIOCENTRIC CONIC DISTANCE 701.721 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.804 GAL -2.90 AZL 88.55 HCA 216.40 SMA 186.21 ECC .20906 INC 1.4531 V1 30.028
RP 221.70 LAP -.87 LOP 257.20 VP 22.012 GAP -5.02 AZP 91.17 TAL 343.11 TAP 199.71 RCA 147.28 APO 225.13 V2 24.799
RC 265.639 GL 15.54 GP 3.67 ZAL 113.16 ZAP 95.96 ETS 178.58 ZAE 130.32 ETE 174.61 ZAC 89.84 ETC 256.87 CLP 95.97

PLANETOCENTRIC CONIC

C3 9.611 VHL 3.100 DLA 24.18 RAL 162.72 RAD 6567.3 VEL 11.446 PTH 1.99 VHP 2.795 DPA 7.45 RAP 175.90 ECC 1.1582

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 35 34	2931.34	-28.25	91.43	20.49	88.00	16 24 25	2331.5	-28.23	82.76
90.00	11 7 50	3821.00	-11.88	150.51	16.18	64.11	12 11 31	3221.0	-15.27	143.47
100.00	17 17 10	2603.75	-29.89	67.35	20.52	90.42	18 0 34	2003.7	-29.51	58.57
100.00	12 8 55	3623.83	-10.42	135.27	15.42	61.82	13 9 19	3023.8	-14.11	128.42
110.00	19 5 13	2265.73	-33.68	41.42	20.26	96.19	19 42 59	1665.7	-32.46	32.40
110.00	12 37 22	3534.61	-7.16	126.54	13.45	56.49	13 36 17	2934.6	-11.51	120.15

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2226 TRA .4600 TC3-4.0676 BAU .5448 SGT 2720.0 SGR 874.2 SG3 3645.1 ST 503.0 SR 378.1 SS 1788.1
RDE .1992 RRA -.1376 RC3 1.1971 FAU .61621 RRT -.8329 RRF -.8867 RTF .9509 CRT .6642 CRS .3526 CST -.4594
FDE -.5273 FRA12.0354 FC-55.5045 BSP 9164 SGB 2857.0 R23 .1275 R13 -.9577 LSA 1819.1 MSA 568.2 SSA 30.1
BDE .2987 BRA .4801 BC3 4.2401 FSP 12599 SG1 2818.6 SG2 466.9 THA 164.58 EL1 579.5 EL2 245.4 ALF 33.23

LAUNCH DATE NOV 3 1964 FLIGHT TIME 312.00 ARRIVAL DATE SEP 11 1965

HELIOCENTRIC CONIC DISTANCE 705.754 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.802 GAL -2.92 AZL 88.53 HCA 217.71 SMA 186.17 ECC .20901 INC 1.4678 V1 30.028
RP 221.32 LAP -.90 LOP 258.31 VP 22.056 GAP -5.24 AZP 91.16 TAL 342.96 TAP 200.67 RCA 147.26 APO 225.08 V2 24.841
RC 267.114 GL 15.68 GP 3.59 ZAL 113.40 ZAP 93.93 ETS 178.74 ZAE 128.08 ETE 175.01 ZAC 89.57 ETC 256.96 CLP 93.94

PLANETOCENTRIC CONIC

C3 9.643 VHL 3.105 DLA 24.20 RAL 163.03 RAD 6567.3 VEL 11.447 PTH 1.99 VHP 2.792 DPA 7.76 RAP 175.01 ECC 1.1587

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 36 26	2933.32	-28.25	91.57	20.86	87.93	16 25 19	2333.3	-28.24	82.91
90.00	11 9 28	3820.31	-11.90	150.47	16.55	64.12	12 13 8	3220.3	-15.29	143.43
100.00	17 18 6	2605.51	-29.89	67.48	20.89	90.35	18 1 32	2005.5	-29.52	58.70
100.00	12 10 29	3623.35	-10.44	135.24	15.78	61.83	13 10 52	3023.3	-14.12	128.39
110.00	19 6 14	2267.21	-33.70	41.53	20.64	96.13	19 44 1	1667.2	-32.48	32.51
110.00	12 38 50	3534.42	-7.16	126.53	13.81	56.49	13 37 45	2934.4	-11.52	120.14

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2187 TRA .5725 TC3-4.5393 BAU .6048 SGT 3074.3 SGR 871.0 SG3 3654.0 ST 539.2 SR 386.5 SS 1807.9
RDE .2045 RRA -.1335 RC3 1.1868 FAU .61802 RRT -.8360 RRF -.8799 RTF .9621 CRT .5865 CRS .3493 CST -.5493
FDE -.5651 FRA12.1082 FC-55.4864 BSP 10405 SGB 3195.3 R23 .1033 R13 -.9664 LSA 1837.6 MSA 575.2 SSA 30.0
BDE .2994 BRA .5879 BC3 4.6918 FSP 12588 SG1 3161.4 SG2 464.8 THA 166.38 EL1 601.0 EL2 280.8 ALF 29.98

LAUNCH DATE NOV 3 1964 FLIGHT TIME 314.00 ARRIVAL DATE SEP 13 1965

HELIOCENTRIC CONIC DISTANCE 709.795 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.800 GAL -2.95 AZL 88.52 HCA 218.81 SMA 186.14 ECC .20900 INC 1.4819 V1 30.028
RP 220.94 LAP -.93 LOP 259.42 VP 22.100 GAP -5.46 AZP 91.15 TAL 342.81 TAP 201.62 RCA 147.24 APO 225.05 V2 24.883
RC 268.570 GL 15.80 GP 3.51 ZAL 113.66 ZAP 91.91 ETS 178.90 ZAE 125.84 ETE 175.37 ZAC 89.29 ETC 257.05 CLP 91.91

PLANETOCENTRIC CONIC

C3 9.679 VHL 3.111 DLA 24.21 RAL 163.36 RAD 6567.3 VEL 11.449 PTH 1.99 VHP 2.793 DPA 8.07 RAP 174.13 ECC 1.1593

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 37 42	2934.25	-28.25	91.64	21.25	87.90	16 26 36	2334.2	-28.24	82.97
90.00	11 10 50	3820.87	-11.88	150.50	16.92	64.11	12 14 31	3220.9	-15.27	143.47
100.00	17 19 23	2606.41	-29.89	67.55	21.28	90.31	18 2 49	2006.4	-29.53	58.76
100.00	12 11 51	3623.94	-10.42	135.27	16.16	61.82	13 12 15	3023.9	-14.10	128.42
110.00	19 7 31	2268.06	-33.70	41.60	21.03	96.09	19 45 19	1668.1	-32.49	32.57
110.00	12 40 11	3535.05	-7.14	126.56	14.18	56.48	13 39 6	2935.1	-11.50	120.18

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2145 TRA .6875 TC3-5.0115 BAU .6661 SGT 3436.1 SGR 866.6 SG3 3651.8 ST 581.5 SR 394.8 SS 1816.1
RDE .2097 RRA -.1295 RC3 1.1739 FAU .61766 RRT -.8355 RRF -.8725 RTF .9699 CRT .5134 CRS .3470 CST -.6230
FDE -.6046 FRA12.1663 FC-55.2454 BSP 11678 SGB 3543.7 R23 .0856 R13 -.9727 LSA 1858.0 MSA 582.1 SSA 30.0
BDE .3000 BRA .6996 BC3 5.1472 FSP 12557 SG1 3513.0 SG2 465.8 THA 167.88 EL1 629.3 EL2 313.1 ALF 26.14

LAUNCH DATE NOV 3 1964 FLIGHT TIME 316.00 ARRIVAL DATE SEP 15 1965

HELIOCENTRIC CONIC DISTANCE 713.843 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.798 GAL -2.98 AZL 88.50 HCA 219.93 SMA 186.12 ECC .20902 INC 1.4954 V1 30.028
RP 220.56 LAP -.96 LOP 260.53 VP 22.144 GAP -5.67 AZP 91.15 TAL 342.63 TAP 202.56 RCA 147.21 APO 225.02 V2 24.924
RC 270.009 GL 15.91 GP 3.43 ZAL 113.94 ZAP 89.90 ETS 179.05 ZAE 123.60 ETE 175.72 ZAC 89.03 ETC 257.14 CLP 89.90

PLANETOCENTRIC CONIC

C3 9.721 VHL 3.118 DLA 24.19 RAL 163.71 RAD 6567.4 VEL 11.450 PTH 1.99 VHP 2.798 DPA 8.36 RAP 173.27 ECC 1.1600

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 39 22	2934.15	-28.25	91.63	21.66	87.90	16 28 16	2334.2	-28.24	82.97
90.00	11 11 58	3822.66	-11.83	150.61	17.32	64.08	12 15 40	3222.7	-15.22	143.57
100.00	17 21 0	2606.46	-29.89	67.55	21.69	90.31	18 4 26	2006.5	-29.53	58.77
100.00	12 13 1	3625.58	-10.36	135.37	16.56	61.80	13 13 26	3025.6	-14.05	128.52
110.00	19 9 5	2268.32	-33.70	41.62	21.44	96.08	19 46 53	1668.3	-32.50	32.59
110.00	12 41 25	3536.49	-7.09	126.64	14.57	56.47	13 40 22	2936.5	-11.45	120.25

DIFFERENTIAL CORRECTIONS
TDE .2093 TRA .8052 TC3-5.4783 BAU .7277
RDE .2150 RRA -.1253 RC3 1.1590 FAU .61562
FDE -.6431 FRA12.2085 FC-54.8263 BSP 12962
BDE .3001 BRA .8149 BC3 5.5996 FSP 12511

MID-COURSE EXECUTION ACCURACY
SGT 3801.2 SGR 861.5 SG3 3640.2
RRT -.8326 RRF -.8647 RTF .9755
SGB 3897.6 R23 .0721 R13 -.9775
SG1 3869.3 SG2 468.8 THA 169.15

ORBIT DETERMINATION ACCURACY
ST 628.7 SR 402.9 SS 1823.4
CRT .4457 CRS .3449 CST -.6835
LSA 1880.3 HSA 588.3 SSA 29.8
EL1 664.1 EL2 341.4 ALF 22.05

LAUNCH DATE NOV 3 1964 FLIGHT TIME 318.00 ARRIVAL DATE SEP 17 1965

HELIOCENTRIC CONIC DISTANCE 717.899 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.797 GAL -3.01 AZL 88.49 HCA 221.04 SMA 186.10 ECC .20908 INC 1.5083 V1 30.028
RP 220.18 LAP -.99 LOP 261.64 VP 22.189 GAP -5.89 AZP 91.14 TAL 342.44 TAP 203.49 RCA 147.19 APO 225.01 V2 24.965
RC 271.430 GL 16.01 GP 3.34 ZAL 114.25 ZAP 87.90 ETS 179.19 ZAE 121.37 ETE 176.03 ZAC 88.77 ETC 257.23 CLP 87.90

PLANETOCENTRIC CONIC

C3 9.768 VHL 3.125 DLA 24.15 RAL 164.08 RAD 6567.4 VEL 11.452 PTH 1.99 VHP 2.806 DPA 8.65 RAP 172.42 ECC 1.1608

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 41 25	2933.06	-28.25	91.55	22.09	87.94	16 30 18	2333.1	-28.24	82.89
90.00	11 12 51	3825.66	-11.74	150.78	17.73	64.05	12 16 36	3225.7	-15.14	143.75
100.00	17 22 57	2605.69	-29.89	67.49	22.12	90.34	18 6 23	2005.7	-29.52	58.71
100.00	12 14 0	3628.26	-10.28	135.52	16.96	61.78	13 14 28	3028.3	-13.97	128.68
110.00	19 10 53	2268.00	-33.70	41.60	21.87	96.09	19 48 41	1668.0	-32.49	32.57
110.00	12 42 33	3538.71	-7.00	126.75	14.98	56.46	13 41 32	2938.7	-11.37	120.38

DIFFERENTIAL CORRECTIONS
TDE .2025 TRA .9248 TC3-5.9414 BAU .7901
RDE .2204 RRA -.1210 RC3 1.1430 FAU .61237
FDE -.6903 FRA12.2267 FC-54.2748 BSP 14242
BDE .2993 BRA .9327 BC3 6.0504 FSP 12427

MID-COURSE EXECUTION ACCURACY
SGT 4169.3 SGR 856.4 SG3 3620.6
RRT -.8280 RRF -.8564 RTF .9797
SGB 4256.2 R23 .0618 R13 -.9811
SG1 4229.8 SG2 473.2 THA 170.23

ORBIT DETERMINATION ACCURACY
ST 678.9 SR 411.2 SS 1829.4
CRT .3831 CRS .3450 CST -.7323
LSA 1903.5 HSA 593.6 SSA 29.7
EL1 704.2 EL2 366.1 ALF 18.12

LAUNCH DATE NOV 3 1964 FLIGHT TIME 320.00 ARRIVAL DATE SEP 19 1965

HELIOCENTRIC CONIC DISTANCE 721.963 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.796 GAL -3.04 AZL 88.48 HCA 222.16 SMA 186.08 ECC .20917 INC 1.5207 V1 30.028
RP 219.81 LAP -1.02 LOP 262.76 VP 22.234 GAP -6.09 AZP 91.13 TAL 342.24 TAP 204.41 RCA 147.16 APO 225.01 V2 25.006
RC 272.833 GL 16.10 GP 3.26 ZAL 114.58 ZAP 85.92 ETS 179.32 ZAE 119.16 ETE 176.33 ZAC 88.51 ETC 257.33 CLP 85.91

PLANETOCENTRIC CONIC

C3 9.820 VHL 3.134 DLA 24.10 RAL 164.47 RAD 6567.4 VEL 11.455 PTH 1.99 VHP 2.817 DPA 8.93 RAP 171.59 ECC 1.1616

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 43 51	2931.01	-28.25	91.40	22.54	88.01	16 32 42	2331.0	-28.23	82.74
90.00	11 13 30	3829.82	-11.62	151.03	18.15	63.99	12 17 20	3229.8	-15.02	144.00
100.00	17 25 14	2604.13	-29.89	67.38	22.57	90.40	18 8 39	2004.1	-29.51	58.59
100.00	12 14 48	3631.94	-10.16	135.73	17.39	61.74	13 15 20	3031.9	-13.86	128.89
110.00	19 12 58	2267.12	-33.69	41.53	22.31	96.13	19 50 45	1667.1	-32.48	32.50
110.00	12 43 34	3541.71	-6.89	126.91	15.41	56.44	13 42 36	2941.7	-11.26	120.54

DIFFERENTIAL CORRECTIONS
TDE .1945 TRA 1.0467 TC3-6.3961 BAU .8526
RDE .2258 RRA -.1165 RC3 1.1252 FAU .60743
FDE -.7385 FRA12.2249 FC-53.5502 BSP 15530
BDE .2981 BRA 1.0532 BC3 6.4943 FSP 12316

MID-COURSE EXECUTION ACCURACY
SGT 4537.8 SGR 849.9 SG3 3591.4
RRT -.8218 RRF -.8475 RTF .9829
SGB 4616.7 R23 .0538 R13 -.9839
SG1 4591.8 SG2 478.5 THA 171.15

ORBIT DETERMINATION ACCURACY
ST 732.5 SR 419.3 SS 1834.2
CRT .3264 CRS .3459 CST -.7719
LSA 1928.1 HSA 598.4 SSA 29.6
EL1 750.0 EL2 387.1 ALF 14.54

LAUNCH DATE NOV 3 1964 FLIGHT TIME 322.00 ARRIVAL DATE SEP 21 1965

HELIOCENTRIC CONIC DISTANCE 726.034 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.796 GAL -3.08 AZL 88.47 HCA 223.29 SMA 186.07 ECC .20929 INC 1.5325 V1 30.028
RP 219.44 LAP -1.05 LOP 263.89 VP 22.279 GAP -6.30 AZP 91.12 TAL 342.03 TAP 205.31 RCA 147.13 APO 225.02 V2 25.047
RC 274.220 GL 16.18 GP 3.18 ZAL 114.93 ZAP 83.96 ETS 179.45 ZAE 116.97 ETE 176.60 ZAC 88.26 ETC 257.42 CLP 83.95

PLANETOCENTRIC CONIC

C3 9.878 VHL 3.143 DLA 24.02 RAL 164.87 RAD 6567.4 VEL 11.457 PTH 1.99 VHP 2.831 DPA 9.20 RAP 170.79 ECC 1.1626

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 46 40	2928.04	-28.26	91.19	23.02	88.12	16 35 28	2328.0	-28.22	82.52
90.00	11 13 56	3835.13	-11.46	151.34	18.59	63.93	12 17 51	3235.1	-14.87	144.32
100.00	17 27 51	2601.80	-29.89	67.20	23.04	90.49	18 11 13	2001.8	-29.50	58.42
100.00	12 15 26	3636.61	-10.01	135.99	17.83	61.69	13 16 2	3036.6	-13.72	129.16
110.00	19 15 16	2265.70	-33.68	41.42	22.78	96.20	19 53 2	1665.7	-32.46	32.40
110.00	12 44 29	3545.47	-6.75	127.11	15.86	56.41	13 43 35	2945.5	-11.12	120.74

DIFFERENTIAL CORRECTIONS
TDE .1848 TRA 1.1707 TC3-6.8421 BAU .9153
RDE .2314 RRA -.1119 RC3 1.1061 FAU .60109
FDE -.7969 FRA12.1990 FC-52.6793 BSP 16799
BDE .2962 BRA 1.1761 BC3 6.9310 FSP 12176

MID-COURSE EXECUTION ACCURACY
SGT 4906.2 SGR 843.4 SG3 3553.4
RRT -.8145 RRF -.8382 RTF .9853
SGB 4978.2 R23 .0479 R13 -.9861
SG1 4954.6 SG2 484.6 THA 171.95

ORBIT DETERMINATION ACCURACY
ST 788.4 SR 427.7 SS 1837.8
CRT .2743 CRS .3495 CST -.8034
LSA 1953.9 HSA 603.0 SSA 29.4
EL1 800.1 EL2 405.2 ALF 11.43

LAUNCH DATE NOV 3 1964 FLIGHT TIME 324.00 ARRIVAL DATE SEP 23 1965

HELIOCENTRIC CONIC DISTANCE 730.112 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.795 GAL -3.12 AZL 88.46 HCA 224.42 SMA 186.07 ECC .20944 INC 1.5440 V1 30.028
RP 219.07 LAP -1.08 LOP 265.02 VP 22.324 GAP -6.50 AZP 91.10 TAL 341.80 TAP 206.21 RCA 147.10 APO 225.04 V2 25.088
RC 275.589 GL 16.25 GP 3.11 ZAL 115.31 ZAP 82.03 ETS 179.57 ZAE 114.80 ETE 176.85 ZAC 88.02 ETC 257.51 CLP 82.02

PLANETOCENTRIC CONIC

C3 9.942 VHL 3.153 DLA 23.93 RAL 165.30 RAD 6567.4 VEL 11.460 PTH 1.99 VHP 2.849 DPA 9.46 RAP 170.01 ECC 1.1636

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 49 49	2924.20	-28.27	90.90	23.51	88.26	16 38 33	2324.2	-28.21	82.24
90.00	11 14 9	3841.53	-11.27	151.71	19.05	63.85	12 18 11	3241.5	-14.69	144.71
100.00	17 30 46	2598.73	-29.89	66.98	23.53	90.61	18 14 4	1998.7	-29.48	58.20
100.00	12 15 54	3642.23	-9.83	136.31	18.29	61.63	13 16 36	3042.2	-13.54	129.49
110.00	19 17 50	2263.75	-33.67	41.27	23.26	96.28	19 55 34	1663.7	-32.43	32.25
110.00	12 45 19	3549.98	-6.58	127.35	16.32	56.38	13 44 29	2950.0	-10.95	120.99

DIFFERENTIAL CORRECTIONS
TDE .1738 TRA 1.2970 TC3-7.2736 BAU .9775
RDE .2370 RRA -.1072 RC3 1.0859 FAU .59351
FDE -.8547 FRA12.1599 FC-51.6816 BSP 18076
BDE .2939 BRA 1.3014 BC3 7.3542 FSP 12018

MID-COURSE EXECUTION ACCURACY
SGT 5271.4 SGR 836.6 SG3 3508.5
RRT -.8061 RRF -.8283 RTF .9873
SGB 5337.4 R23 .0432 R13 -.9879
SG1 5314.7 SG2 491.1 THA 172.65

ORBIT DETERMINATION ACCURACY
ST 846.8 SR 435.9 SS 1841.1
CRT .2268 CRS .3535 CST -.8294
LSA 1981.8 MSA 607.1 SSA 29.1
EL1 854.4 EL2 420.7 ALF 8.81

LAUNCH DATE NOV 3 1964 FLIGHT TIME 326.00 ARRIVAL DATE SEP 25 1965

HELIOCENTRIC CONIC DISTANCE 734.198 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.795 GAL -3.17 AZL 88.44 HCA 225.55 SMA 186.07 ECC .20962 INC 1.5550 V1 30.028
RP 218.70 LAP -1.11 LOP 266.15 VP 22.369 GAP -6.70 AZP 91.09 TAL 341.55 TAP 207.10 RCA 147.06 APO 225.07 V2 25.128
RC 276.940 GL 16.31 GP 3.03 ZAL 115.72 ZAP 80.13 ETS 179.69 ZAE 112.65 ETE 177.09 ZAC 87.79 ETC 257.60 CLP 80.11

PLANETOCENTRIC CONIC

C3 10.012 VHL 3.164 DLA 23.82 RAL 165.74 RAD 6567.4 VEL 11.463 PTH 1.99 VHP 2.869 DPA 9.70 RAP 169.26 ECC 1.1648

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 53 19	2919.53	-28.28	90.56	24.03	88.43	16 41 58	2319.5	-28.20	81.90
90.00	11 14 11	3848.99	-11.04	152.14	19.52	63.76	12 18 20	3249.0	-14.48	145.15
100.00	17 33 58	2594.97	-29.88	66.70	24.04	90.76	18 17 13	1995.0	-29.46	57.92
100.00	12 16 12	3648.78	-9.62	136.68	18.77	61.56	13 17 1	3048.8	-13.34	129.87
110.00	19 20 38	2261.29	-33.65	41.06	23.76	96.39	19 58 19	1661.3	-32.40	32.07
110.00	12 46 2	3555.22	-6.38	127.63	16.80	56.35	13 45 17	2955.2	-10.76	121.27

DIFFERENTIAL CORRECTIONS
TDE .1602 TRA 1.4246 TC3-7.6945 BAU 1.0397
RDE .2428 RRA -.1023 RC3 1.0650 FAU .58497
FDE -.9219 FRA12.0945 FC-50.5817 BSP 19323
BDE .2909 BRA 1.4283 BC3 7.7678 FSP 11827

MID-COURSE EXECUTION ACCURACY
SGT 5634.4 SGR 829.8 SG3 3456.5
RRT -.7969 RRF -.8181 RTF .9888
SGB 5695.1 R23 .0396 R13 -.9893
SG1 5673.3 SG2 497.9 THA 173.25

ORBIT DETERMINATION ACCURACY
ST 906.1 SR 444.2 SS 1843.2
CRT .1817 CRS .3602 CST -.8507
LSA 2010.4 MSA 610.7 SSA 28.9
EL1 910.8 EL2 434.6 ALF 6.60

LAUNCH DATE NOV 3 1964 FLIGHT TIME 328.00 ARRIVAL DATE SEP 27 1965

HELIOCENTRIC CONIC DISTANCE 738.290 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.796 GAL -3.21 AZL 88.43 HCA 226.68 SMA 186.07 ECC .20984 INC 1.5657 V1 30.028
RP 218.34 LAP -1.14 LOP 267.28 VP 22.415 GAP -6.89 AZP 91.07 TAL 341.30 TAP 207.98 RCA 147.03 APO 225.12 V2 26.168
RC 278.273 GL 16.36 GP 2.95 ZAL 116.14 ZAP 78.25 ETS 179.79 ZAE 110.54 ETE 177.31 ZAC 87.57 ETC 257.69 CLP 78.24

PLANETOCENTRIC CONIC

C3 10.088 VHL 3.176 DLA 23.69 RAL 166.20 RAD 6567.4 VEL 11.466 PTH 1.99 VHP 2.893 DPA 9.93 RAP 168.54 ECC 1.1660

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 57 8	2914.09	-28.29	90.16	24.56	88.63	16 45 42	2314.1	-28.18	81.50
90.00	11 14 2	3857.46	-10.79	152.63	20.00	63.66	12 18 19	3257.5	-14.24	145.66
100.00	17 37 28	2590.54	-29.88	66.37	24.57	90.93	18 20 39	1990.5	-29.43	57.59
100.00	12 16 22	3656.24	-9.37	137.10	19.26	61.49	13 17 18	3056.2	-13.11	130.31
110.00	19 23 39	2258.35	-33.63	40.85	24.28	96.53	20 1 18	1658.4	-32.36	31.85
110.00	12 46 40	3561.19	-6.16	127.94	17.30	56.31	13 46 2	2961.2	-10.54	121.60

DIFFERENTIAL CORRECTIONS
TDE .1457 TRA 1.5551 TC3-8.0967 BAU 1.1010
RDE .2485 RRA -.0974 RC3 1.0428 FAU .57499
FDE -.9850 FRA12.0177 FC-49.3441 BSP 20570
BDE .2880 BRA 1.5581 BC3 8.1635 FSP 11618

MID-COURSE EXECUTION ACCURACY
SGT 5992.2 SGR 822.5 SG3 3397.3
RRT -.7867 RRF -.8071 RTF .9900
SGB 6048.4 R23 .0368 R13 -.9904
SG1 6027.3 SG2 504.8 THA 173.79

ORBIT DETERMINATION ACCURACY
ST 968.2 SR 452.3 SS 1844.7
CRT .1411 CRS .3666 CST -.8683
LSA 2041.3 MSA 614.2 SSA 28.6
EL1 970.9 EL2 446.6 ALF 4.79

LAUNCH DATE NOV 3 1964 FLIGHT TIME 330.00 ARRIVAL DATE SEP 29 1965

HELIOCENTRIC CONIC DISTANCE 742.390 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.796 GAL -3.26 AZL 88.42 HCA 227.82 SMA 186.08 ECC .21009 INC 1.5759 V1 30.028
RP 217.98 LAP -1.17 LOP 268.42 VP 22.460 GAP -7.08 AZP 91.06 TAL 341.02 TAP 208.85 RCA 146.98 APO 225.17 V2 25.208
RC 279.589 GL 16.40 GP 2.88 ZAL 116.59 ZAP 76.41 ETS 179.90 ZAE 108.45 ETE 177.52 ZAC 87.36 ETC 257.78 CLP 76.39

PLANETOCENTRIC CONIC

C3 10.171 VHL 3.189 DLA 23.54 RAL 166.67 RAD 6567.4 VEL 11.470 PTH 1.99 VHP 2.919 DPA 10.15 RAP 167.86 ECC 1.1674

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 1 15	2907.91	-28.30	89.71	25.12	88.86	16 49 43	2307.9	-28.15	81.05
90.00	11 13 42	3866.90	-10.50	153.18	20.51	63.55	12 18 9	3266.9	-13.97	146.22
100.00	17 41 15	2585.48	-29.87	65.99	25.12	91.13	18 24 21	1985.5	-29.40	57.22
100.00	12 16 23	3664.56	-9.10	137.57	19.77	61.40	13 17 28	3064.6	-12.85	130.79
110.00	19 26 54	2254.95	-33.60	40.59	24.82	96.68	20 4 29	1654.9	-32.31	31.59
110.00	12 47 14	3567.86	-5.90	128.29	17.82	56.27	13 46 41	2967.9	-10.30	121.96

DIFFERENTIAL CORRECTIONS
TDE .1283 TRA 1.6870 TC3-8.4834 BAU 1.1618
RDE .2543 RRA -.0924 RC3 1.0202 FAU .56432
FDE-1.0556 FRA11.9160 FC-48.0351 BSP 21781
BDE .2848 BRA 1.6895 BC3 8.5445 FSP 11384

MID-COURSE EXECUTION ACCURACY
SGT 6345.2 SGR 815.4 SG3 3332.4
RRT -.7758 RRF -.7959 RTF .9911
SGB 6397.3 R23 .0347 R13 -.9914
SG1 6376.8 SG2 511.9 THA 174.27

ORBIT DETERMINATION ACCURACY
ST 1031.1 SR 460.5 SS 1845.0
CRT .1017 CRS .3754 CST -.8829
LSA 2073.0 MSA 617.2 SSA 28.2
EL1 1032.4 EL2 457.5 ALF 3.24

LAUNCH DATE NOV 3 1964 FLIGHT TIME 332.00 ARRIVAL DATE OCT 1 1965

HELIOCENTRIC CONIC DISTANCE 746.496 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.797 GAL -3.31 AZL 88.41 HCA 228.96 SMA 186.09 ECC .21038 INC 1.5858 V1 30.028
RP 217.62 LAP -1.20 LOP 269.56 VP 22.506 GAP -7.27 AZP 91.04 TAL 340.74 TAP 209.70 RCA 146.94 APO 225.24 V2 25.248
RC 280.887 GL 16.43 GP 2.80 ZAL 117.06 ZAP 74.61 ETS 179.99 ZAE 106.39 ETE 177.71 ZAC 87.15 ETC 257.86 CLP 74.59

PLANETOCENTRIC CONIC

C3 10.260 VHL 3.203 DLA 23.38 RAL 167.16 RAD 6567.4 VEL 11.474 PTH 1.99 VHP 2.948 DPA 10.34 RAP 167.21 ECC 1.1689

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 5 40	2901.05	-28.30	89.21	25.70	89.11	16 54 1	2301.0	-28.13	80.55
90.00	11 13 13	3877.28	-10.19	153.78	21.03	63.44	12 17 50	3277.3	-13.67	146.84
100.00	17 45 18	2579.82	-29.86	65.57	25.69	91.35	18 28 17	1979.8	-29.36	56.80
100.00	12 16 17	3673.73	-8.80	138.09	20.80	61.32	13 17 30	3073.7	-12.57	131.32
110.00	19 30 22	2251.10	-33.57	40.29	25.38	96.85	20 7 53	1651.1	-32.26	31.31
110.00	12 47 42	3575.22	-5.63	128.68	18.35	56.23	13 47 17	2975.2	-10.02	122.35

DIFFERENTIAL CORRECTIONS
TDE .1088 TRA 1.8209 TC3-8.8520 BAU 1.2219
RDE .2601 RRA -.0873 RC3 .9969 FAU .55261
FDE-1.1258 FRA11.8060 FC-46.6284 BSP 22978
BDE .2820 BRA 1.8230 BC3 8.9080 FSP 11142

MID-COURSE EXECUTION ACCURACY
SGT 6692.4 SGR 808.3 SG3 3262.3
RRT -.7644 RRF -.7841 RTF .9919
SGB 6741.0 R23 .0330 R13 -.9922
SG1 6721.0 SG2 518.9 THA 174.69

ORBIT DETERMINATION ACCURACY
ST 1095.4 SR 468.5 SS 1845.6
CRT .0642 CRS .3849 CST -.8955
LSA 2107.4 MSA 619.6 SSA 27.9
EL1 1095.9 EL2 467.3 ALF 1.92

LAUNCH DATE NOV 3 1964 FLIGHT TIME 334.00 ARRIVAL DATE OCT 3 1965

HELIOCENTRIC CONIC DISTANCE 750.605 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.798 GAL -3.37 AZL 88.40 HCA 230.11 SMA 186.10 ECC .21069 INC 1.5955 V1 30.028
RP 217.27 LAP -1.22 LOP 270.71 VP 22.551 GAP -7.45 AZP 91.02 TAL 340.44 TAP 210.55 RCA 146.89 APO 225.31 V2 25.287
RC 282.167 GL 16.46 GP 2.73 ZAL 117.55 ZAP 72.84 ETS 180.08 ZAE 104.38 ETE 177.89 ZAC 86.96 ETC 257.94 CLP 72.82

PLANETOCENTRIC CONIC

C3 10.357 VHL 3.218 DLA 23.19 RAL 167.68 RAD 6567.4 VEL 11.478 PTH 2.00 VHP 2.980 DPA 10.53 RAP 166.61 ECC 1.1704

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 10 23	2893.51	-28.31	88.66	26.29	89.39	16 58 36	2293.5	-28.10	80.00
90.00	11 12 35	3888.59	-9.84	154.43	21.57	63.31	12 17 24	3288.6	-13.35	147.51
100.00	17 49 36	2573.57	-29.85	65.11	26.28	91.60	18 32 30	1973.6	-29.31	56.34
100.00	12 16 3	3683.76	-8.48	138.65	20.84	61.23	13 17 27	3083.8	-12.25	131.90
110.00	19 34 3	2246.80	-33.54	39.96	25.95	97.04	20 11 30	1646.8	-32.20	30.99
110.00	12 48 5	3583.30	-5.32	129.11	18.91	56.18	13 47 49	2983.3	-9.73	122.79

DIFFERENTIAL CORRECTIONS
TDE .0978 TRA 1.9689 TC3-9.1633 BAU 1.2758
RDE .2647 RRA -.0836 RC3 .9674 FAU .53565
FDE-1.1065 FRA11.7674 FC-44.7754 BSP 24422
BDE .2821 BRA 1.9706 BC3 9.2143 FSP 11064

MID-COURSE EXECUTION ACCURACY
SGT 7025.6 SGR 797.4 SG3 3179.2
RRT -.7510 RRF -.7689 RTF .9924
SGB 7070.7 R23 .0294 R13 -.9926
SG1 7051.2 SG2 524.6 THA 175.10

ORBIT DETERMINATION ACCURACY
ST 1170.7 SR 474.1 SS 1845.8
CRT .0417 CRS .3757 CST -.9096
LSA 2149.1 MSA 618.6 SSA 27.9
EL1 1170.9 EL2 473.6 ALF 1.16

LAUNCH DATE NOV 3 1964 FLIGHT TIME 336.00 ARRIVAL DATE OCT 5 1965

HELIOCENTRIC CONIC DISTANCE 754.726 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.799 GAL -3.43 AZL 88.40 HCA 231.26 SMA 186.12 ECC .21104 INC 1.6049 V1 30.028
RP 216.91 LAP -1.25 LOP 271.86 VP 22.597 GAP -7.63 AZP 91.00 TAL 340.12 TAP 211.38 RCA 146.84 APO 225.40 V2 25.327
RC 283.431 GL 16.47 GP 2.66 ZAL 118.07 ZAP 71.11 ETS 180.17 ZAE 102.39 ETE 178.06 ZAC 86.78 ETC 258.02 CLP 71.09

PLANETOCENTRIC CONIC

C3 10.461 VHL 3.234 DLA 23.00 RAL 168.20 RAD 6567.4 VEL 11.483 PTH 2.00 VHP 3.015 DPA 10.69 RAP 166.04 ECC 1.1722

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 15 19	2885.46	-28.32	88.07	26.91	89.68	17 3 24	2285.5	-28.06	79.42
90.00	11 11 50	3900.66	-9.47	155.12	22.13	63.19	12 16 51	3300.7	-12.99	148.22
100.00	17 54 7	2566.85	-29.84	64.61	26.88	91.86	18 36 54	1966.9	-29.26	55.85
100.00	12 15 43	3694.50	-8.12	139.25	21.41	61.13	13 17 17	3094.5	-11.91	132.52
110.00	19 37 55	2242.14	-33.50	39.60	26.54	97.25	20 15 17	1642.1	-32.13	30.64
110.00	12 48 24	3591.98	-4.99	129.56	19.49	56.14	13 48 16	2992.0	-9.40	123.25

DIFFERENTIAL CORRECTIONS
TDE .0692 TRA 2.1022 TC3-9.5064 BAU 1.3360
RDE .2713 RRA -.0779 RC3 .9461 FAU .52456
FDE-1.2235 FRA11.5898 FC-43.4131 BSP 25465
BDE .2800 BRA 2.1036 BC3 9.5533 FSP 10710

MID-COURSE EXECUTION ACCURACY
SGT 7361.7 SGR 792.4 SG3 3104.1
RRT -.7389 RRF -.7576 RTF .9931
SGB 7404.2 R23 .0297 R13 -.9932
SG1 7385.1 SG2 532.3 THA 175.43

ORBIT DETERMINATION ACCURACY
ST 1233.7 SR 483.1 SS 1845.4
CRT .0016 CRS .3969 CST -.9166
LSA 2184.6 MSA 622.5 SSA 27.3
EL1 1233.7 EL2 483.1 ALF .04

LAUNCH DATE NOV 3 1964 FLIGHT TIME 338.00 ARRIVAL DATE OCT 7 1965

HELIOCENTRIC CONIC DISTANCE 758.852 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.800 GAL -3.49 AZL 88.39 HCA 232.42 SMA 186.15 ECC .21142 INC 1.6139 V1 30.028
RP 216.57 LAP -1.28 LOP 273.02 VP 22.642 GAP -7.81 AZP 90.98 TAL 339.79 TAP 212.21 RCA 146.79 APO 225.50 V2 25.365
RC 284.679 GL 16.48 GP 2.59 ZAL 118.60 ZAP 69.42 ETS 180.24 ZAE 100.45 ETE 178.22 ZAC 86.60 ETC 258.09 CLP 69.40

PLANETOCENTRIC CONIC

C3 10.572 VHL 3.251 DLA 22.78 RAL 168.74 RAD 6567.4 VEL 11.487 PTH 2.00 VHP 3.053 DPA 10.84 RAP 165.51 ECC 1.1740

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 20 29	2876.86	-28.32	87.44	27.54	90.00	17 8 26	2276.9	-28.02	78.79
90.00	11 10 58	3913.55	-9.07	155.86	22.70	63.06	12 16 12	3313.6	-12.62	148.98
100.00	17 58 53	2559.64	-29.82	64.07	27.51	92.14	18 41 32	1959.6	-29.21	55.32
100.00	12 15 16	3706.01	-7.74	139.90	21.99	61.04	13 17 2	3106.0	-11.55	133.18
110.00	19 41 58	2237.09	-33.45	39.22	27.15	97.48	20 19 16	1637.1	-32.06	30.26
110.00	12 48 39	3601.32	-4.64	130.05	20.08	56.09	13 48 41	3001.3	-9.06	123.76

DIFFERENTIAL CORRECTIONS
TDE .0394 TRA 2.2391 TC3-9.8226 BAU 1.3944
RDE .2777 RRA -.0725 RC3 .9234 FAU .51196
FDE-1.3196 FRA11.4196 FC-41.9232 BSP 26505
BDE .2805 BRA 2.2403 BC3 9.8659 FSP 10376

MID-COURSE EXECUTION ACCURACY
SGT 7688.9 SGR 786.9 SG3 3024.0
RRT -.7263 RRF -.7455 RTF .9936
SGB 7729.1 R23 .0295 R13 -.9937
SG1 7710.2 SG2 539.4 THA 175.73

ORBIT DETERMINATION ACCURACY
ST 1299.9 SR 491.4 SS 1845.2
CRT -.0357 CRS .4144 CST -.9238
LSA 2223.8 MSA 624.4 SSA 26.8
EL1 1300.0 EL2 491.0 ALF 179.10

LAUNCH DATE NOV 3 1964 FLIGHT TIME 340.00 ARRIVAL DATE OCT 9 1965

HELIOCENTRIC CONIC DISTANCE 762.984 EARTH TO MARS

RL	148.38	LAL	-.00	LOL	40.61	VL	32.801	GAL	-3.55	AZL	88.38	HCA	233.57	SMA	186.17	ECC	.21184	INC	1.6228	V1	30.028
RP	216.22	LAP	-1.31	LOP	274.17	VP	22.687	GAP	-7.99	AZP	90.96	TAL	339.45	TAP	213.02	RCA	146.73	APO	225.61	V2	25.404
RC	285.910	GL	16.47	GP	2.52	ZAL	119.16	ZAP	67.77	ETS	180.32	ZAE	98.54	ETE	178.36	ZAC	86.44	ETC	258.15	CLP	67.75

PLANETOCENTRIC CONIC

C3	10.692	VHL	3.270	DLA	22.55	RAL	169.30	RAD	6567.4	VEL	11.493	PTH	2.00	VHP	3.093	DPA	10.98	RAP	165.02	ECC	1.1760		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 25 54	2867.78	-28.32	86.78	28.20	90.33	17 13 42	2267.8	-27.97	78.13
90.00	11 9 59	3927.21	-8.65	156.65	23.30	62.93	12 15 27	3327.2	-12.21	149.78
100.00	18 3 50	2551.98	-29.80	63.50	28.15	92.44	18 46 22	1952.0	-29.15	54.76
100.00	12 14 44	3718.24	-7.34	140.58	22.59	60.94	13 16 42	3118.2	-11.16	133.88
110.00	19 46 13	2231.69	-33.40	38.80	27.78	97.72	20 23 25	1631.7	-31.98	29.86
110.00	12 48 51	3611.30	-4.26	130.58	20.69	56.05	13 49 2	3011.3	-8.69	124.29

DIFFERENTIAL CORRECTIONS

TDE	.0083	TRA	2.3793	TC-10.1128	BAU	1.4512	
RDE	.2839	RRA	-.0672	RC3 .9001	FAU	.49845	
FDE-1.4034		FRA11.2475		FC-40.3602	BSP	27557	
BDE	.2840	BRA	2.3802	BC310.1528	FSP	10060	

MID-COURSE EXECUTION ACCURACY

SGT	8007.3	SGR	781.2	SG3	2940.2		
RRT	-.7132	RRF	-.7328	RTF	.9940		
SGB	8045.3	R23	.0293	R13	-.9941		
SG1	8026.7	SG2	546.3	THA	176.00		

ORBIT DETERMINATION ACCURACY

ST	1368.8	SR	499.3	SS	1844.6		
CRT	-.0703	CRS	.4300	CST	-.9303		
LSA	2265.6	MSA	625.7	SSA	26.3		
EL1	1369.3	EL2	497.9	ALF	178.31		

LAUNCH DATE NOV 3 1964 FLIGHT TIME 342.00 ARRIVAL DATE OCT 11 1965

HELIOCENTRIC CONIC DISTANCE 767.122 EARTH TO MARS

RL	148.38	LAL	-.00	LOL	40.61	VL	32.803	GAL	-3.62	AZL	88.37	HCA	234.73	SMA	186.20	ECC	.21228	INC	1.6314	V1	30.028		
RP	215.88	LAP	-1.33	LOP	275.33	VP	22.733	GAP	-8.16	AZP	90.94	TAL	339.09	TAP	213.82	RCA	146.67	APO	225.73	V2	25.442		
RC	287.127	GL	16.46	GP	2.45	ZAL	119.73	ZAP	66.16	ETS	180.38	ZAE	96.67	ETE	178.50	ZAC	86.29	ETC	258.21	CLP	66.14		

PLANETOCENTRIC CONIC

C3	10.820	VHL	3.289	DLA	22.30	RAL	169.87	RAD	6567.4	VEL	11.498	PTH	2.00	VHP	3.135	DPA	11.09	RAP	164.58	ECC	1.1781		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 31 31	2858.26	-28.31	86.08	28.87	90.68	17 19 9	2258.3	-27.92	77.44
90.00	11 8 55	3941.59	-8.21	157.47	23.91	62.80	12 14 37	3341.6	-11.79	150.62
100.00	18 9 1	2543.90	-29.78	62.90	28.82	92.75	18 51 24	1943.9	-29.08	54.17
100.00	12 14 7	3731.18	-6.91	141.30	23.21	60.85	13 16 18	3131.2	-10.75	134.62
110.00	19 50 38	2225.95	-33.35	38.36	28.42	97.97	20 27 44	1625.9	-31.89	29.44
110.00	12 48 58	3621.90	-3.85	131.13	21.32	56.01	13 49 20	3021.9	-8.29	124.86

DIFFERENTIAL CORRECTIONS

TDE	-.0245	TRA	2.5231	TC-10.3780	BAU	1.5066	
RDE	.2901	RRA	-.0621	RC3 .8765	FAU	.48425	
FDE-1.4803		FRA11.0770		FC-38.7460	BSP	28600	
BDE	.2912	BRA	2.5238	BC310.4149	FSP	9753	

MID-COURSE EXECUTION ACCURACY

SGT	8317.4	SGR	775.6	SG3	2854.2		
RRT	-.6997	RRF	-.7197	RTF	.9943		
SGB	8353.5	R23	.0292	R13	-.9945		
SG1	8335.1	SG2	552.9	THA	176.25		

ORBIT DETERMINATION ACCURACY

ST	1440.3	SR	506.9	SS	1844.5		
CRT	-.1028	CRS	.4450	CST	-.9361		
LSA	2310.9	MSA	626.7	SSA	25.9		
EL1	1441.4	EL2	503.8	ALF	177.64		

LAUNCH DATE NOV 3 1964 FLIGHT TIME 344.00 ARRIVAL DATE OCT 13 1965

HELIOCENTRIC CONIC DISTANCE 771.265 EARTH TO MARS

RL	148.38	LAL	-.00	LOL	40.61	VL	32.805	GAL	-3.69	AZL	88.36	HCA	235.90	SMA	186.23	ECC	.21277	INC	1.6398	V1	30.028		
RP	215.54	LAP	-1.36	LOP	276.50	VP	22.777	GAP	-8.34	AZP	90.92	TAL	338.72	TAP	214.62	RCA	146.61	APO	225.86	V2	25.480		
RC	288.329	GL	16.44	GP	2.39	ZAL	120.33	ZAP	64.60	ETS	180.45	ZAE	94.84	ETE	178.63	ZAC	86.15	ETC	258.27	CLP	64.57		

PLANETOCENTRIC CONIC

C3	10.957	VHL	3.310	DLA	22.04	RAL	170.45	RAD	6567.4	VEL	11.504	PTH	2.00	VHP	3.180	DPA	11.19	RAP	164.17	ECC	1.1803		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 37 20	2848.34	-28.30	85.36	29.56	91.04	17 24 48	2248.3	-27.85	76.72
90.00	11 7 46	3956.66	-7.74	158.32	24.54	62.68	12 13 42	3356.7	-11.34	151.50
100.00	18 14 22	2535.44	-29.75	62.28	29.50	93.08	18 56 37	1935.4	-29.00	53.55
100.00	12 13 24	3744.79	-6.46	142.06	23.85	60.75	13 15 49	3144.8	-10.31	135.39
110.00	19 55 14	2219.89	-33.29	37.90	29.09	98.24	20 32 14	1619.9	-31.80	28.99
110.00	12 49 2	3633.10	-3.43	131.72	21.97	55.97	13 49 35	3033.1	-7.87	125.45

DIFFERENTIAL CORRECTIONS

TDE	-.0599	TRA	2.6696	TC-10.6176	BAU	1.5603	
RDE	.2963	RRA	-.0572	RC3 .8528	FAU	.46960	
FDE-1.5520		FRA10.9007		FC-37.1039	BSP	29623	
BDE	.3023	BRA	2.6702	BC310.6518	FSP	9447	

MID-COURSE EXECUTION ACCURACY

SGT	8618.0	SGR	770.2	SG3	2766.1		
RRT	-.6861	RRF	-.7064	RTF	.9946		
SGB	8652.3	R23	.0291	R13	-.9947		
SG1	8634.2	SG2	559.3	THA	176.48		

ORBIT DETERMINATION ACCURACY

ST	1513.8	SR	514.2	SS	1844.0		
CRT	-.1344	CRS	.4595	CST	-.9415		
LSA	2358.6	MSA	626.8	SSA	25.4		
EL1	1515.6	EL2	508.9	ALF	177.05		

LAUNCH DATE NOV 3 1964 FLIGHT TIME 346.00 ARRIVAL DATE OCT 15 1965

HELIOCENTRIC CONIC DISTANCE 775.414 EARTH TO MARS

RL	148.38	LAL	-.00	LOL	40.61	VL	32.807	GAL	-3.76	AZL	88.35	HCA	237.07	SMA	186.27	ECC	.21328	INC	1.6480	V1	30.028		
RP	215.21	LAP	-1.38	LOP	277.67	VP	22.822	GAP	-8.50	AZP	90.90	TAL	338.33	TAP	215.40	RCA	146.54	APO	226.00	V2	25.517		
RC	289.516	GL	16.41	GP	2.33	ZAL	120.94	ZAP	63.07	ETS	180.50	ZAE	93.05	ETE	178.75	ZAC	86.02	ETC	258.31	CLP	63.05		

PLANETOCENTRIC CONIC

C3	11.103	VHL	3.332	DLA	21.76	RAL	171.05	RAD	6567.4	VEL	11.510	PTH	2.00	VHP	3.227	DPA	11.27	RAP	163.81	ECC	1.1827		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 43 19	2838.07	-28.28	84.61	30.27	91.42	17 30 37	2238.1	-27.79	75.97
90.00	11 6 32	3972.39	-7.24	159.22	25.19	62.55	12 12 44	3372.4	-10.86	152.41
100.00	18 19 54	2526.64	-29.71	61.63	30.20	93.42	19 2 1	1926.6	-28.92	52.91
100.00	12 12 38	3759.04	-5.98	142.85	24.51	60.66	13 15 17	3159.0	-9.85	136.20
110.00	19 59 58	2213.55	-33.23	37.42	29.76	98.52	20 36 52	1613.6	-31.70	28.52
110.00	12 49 3	3644.90	-2.98	132.34	22.64	55.93	13 49 48	3044.9	-7.43	126.08

DIFFERENTIAL CORRECTIONS

TDE	-.0981	TRA	2.8185	TC-10.8358	BAU	1.6132	
RDE	.3026	RRA	-.0523	RC3 .8295	FAU	.45481	
FDE-1.6212		FRA10.7199		FC-35.4618	BSP	30615	
BDE	.3181	BRA	2.8190	BC310.8675	FSP	9141	

MID-COURSE EXECUTION ACCURACY

SGT	8910.9	SGR	765.3	SG3	2677.2		
RRT	-.6723	RRF	-.6931	RTF	.9948		
SGB	8943.7	R23	.0291	R13	-.9949		
SG1	8925.8	SG2	565.5	THA	176.68		

ORBIT DETERMINATION ACCURACY

ST	1589.3	SR	521.4	SS	1843.6		
CRT	-.1651	CRS	.4743	CST	-.9462		
LSA	2409.0	MSA	626.6	SSA	25.0		
EL1	1591.9	EL2	513.4	ALF	176.54		

LAUNCH DATE NOV 3 1964 FLIGHT TIME 348.00 ARRIVAL DATE OCT 17 1965

HELIOCENTRIC CONIC DISTANCE 779.568 EARTH TO MARS

RL	148.38	LAL	-.00	LOL	40.61	VL	32.809	GAL	-3.84	AZL	88.34	HCA	238.24	SMA	186.31	ECC	.21384	INC	1.6560	V1	30.028
RP	214.88	LAP	-1.41	LOP	278.84	VP	22.867	GAP	-8.67	AZP	90.87	TAL	337.92	TAP	216.17	RCA	146.47	APO	226.15	V2	25.554
RC	290.691	GL	16.38	GP	2.27	ZAL	121.58	ZAP	61.59	ETS	180.56	ZAE	91.30	ETE	178.87	ZAC	85.90	ETC	258.36	CLP	61.56

PLANETOCENTRIC CONIC

C3	11.260	VHL	3.356	DLA	21.46	RAL	171.66	RAD	6567.4	VEL	11.517	PTH	2.01	VHP	3.277	DPA	11.34	RAP	163.50	ECC	1.1853

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 49 28	2827.48	-28.26	83.83	30.99	91.81	17 36 36	2227.5	-27.71	75.21
90.00	11 5 14	3988.73	-6.73	160.14	25.86	62.43	12 11 43	3388.7	-10.37	153.36
100.00	18 25 36	2517.54	-29.67	60.95	30.91	93.78	19 7 33	1917.5	-28.84	52.25
100.00	12 11 48	3773.91	-5.49	143.68	25.18	60.57	13 14 42	3173.9	-9.37	137.04
110.00	20 4 52	2206.95	-33.16	36.91	30.46	98.81	20 41 39	1606.9	-31.59	28.04
110.00	12 49 1	3657.27	-2.50	132.98	23.33	55.90	13 49 58	3057.3	-6.96	126.74

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1383	TRA	2.9711	TC-11.0261	BAU 1.6642	SGT	9193.8	SGR	760.6	SG3	2587.5	ST	1667.1	SR	528.3	SS	1843.2
RDE	.3089	RRA	-.0476	RC3 .8062	FAU .43969	RRT	-.6584	RRF	-.6797	RTF	.9950	CRT	-.1941	CRS	.4886	CST	-.9504
FDE	-1.6852	FRA	10.5383	FC-33.8070	BSP 31607	SGB	9225.2	R23	.0292	R13	-.9951	LSA	2462.3	MSA	626.1	SSA	24.5
BDE	.3384	BRA	2.9715	BC311.0555	FSP 8844	SG1	9207.5	SG2	571.6	THA	176.87	EL1	1670.6	EL2	517.1	ALF	176.11

LAUNCH DATE NOV 3 1964 FLIGHT TIME 350.00 ARRIVAL DATE OCT 19 1965

HELIOCENTRIC CONIC DISTANCE 783.727 EARTH TO MARS

RL	148.38	LAL	-.00	LOL	40.61	VL	32.812	GAL	-3.92	AZL	88.34	HCA	239.42	SMA	186.35	ECC	.21442	INC	1.6639	V1	30.028
RP	214.56	LAP	-1.43	LOP	280.02	VP	22.911	GAP	-8.84	AZP	90.85	TAL	337.51	TAP	216.92	RCA	146.39	APO	226.31	V2	25.590
RC	291.851	GL	16.33	GP	2.21	ZAL	122.23	ZAP	60.14	ETS	180.61	ZAE	89.59	ETE	178.97	ZAC	85.79	ETC	258.39	CLP	60.12

PLANETOCENTRIC CONIC

C3	11.426	VHL	3.380	DLA	21.15	RAL	172.28	RAD	6567.4	VEL	11.524	PTH	2.01	VHP	3.328	DPA	11.39	RAP	163.23	ECC	1.1880

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 55 47	2816.63	-28.24	83.04	31.73	92.20	17 42 43	2216.6	-27.63	74.42
90.00	11 3 54	4005.67	-6.19	161.10	26.55	62.31	12 10 39	3405.7	-9.85	154.33
100.00	18 31 27	2508.16	-29.63	60.26	31.65	94.14	19 13 15	1908.2	-28.74	51.57
100.00	12 10 55	3789.38	-4.97	144.53	25.88	60.49	13 14 4	3189.4	-8.86	137.91
110.00	20 9 55	2200.10	-33.09	36.39	31.17	99.11	20 46 35	1600.1	-31.48	27.54
110.00	12 48 56	3670.20	-2.01	133.66	24.04	55.87	13 50 6	3070.2	-6.48	127.42

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.1821	TRA	3.1260	TC-11.1965	BAU 1.7145	SGT	9469.4	SGR	756.4	SG3	2497.8	ST	1746.9	SR	535.1	SS	1842.7
RDE	.3152	RRA	-.0430	RC3 .7835	FAU .42464	RRT	-.6448	RRF	-.6665	RTF	.9952	CRT	-.2230	CRS	.5035	CST	-.9542
FDE	-1.7484	FRA	10.3507	FC-32.1740	BSP 32561	SGB	9499.5	R23	.0294	R13	-.9953	LSA	2518.3	MSA	625.1	SSA	24.1
BDE	.3640	BRA	3.1263	BC311.2239	FSP 8545	SG1	9482.0	SG2	577.4	THA	177.04	EL1	1751.4	EL2	520.3	ALF	175.71

LAUNCH DATE NOV 3 1964 FLIGHT TIME 352.00 ARRIVAL DATE OCT 21 1965

HELIOCENTRIC CONIC DISTANCE 787.890 EARTH TO MARS

RL	148.38	LAL	-.00	LOL	40.61	VL	32.814	GAL	-4.00	AZL	88.33	HCA	240.60	SMA	186.39	ECC	.21505	INC	1.6715	V1	30.028
RP	214.24	LAP	-1.46	LOP	281.20	VP	22.955	GAP	-9.00	AZP	90.82	TAL	337.07	TAP	217.67	RCA	146.31	APO	226.48	V2	25.626
RC	292.998	GL	16.28	GP	2.15	ZAL	122.90	ZAP	58.74	ETS	180.65	ZAE	87.92	ETE	179.07	ZAC	85.69	ETC	258.42	CLP	58.72

PLANETOCENTRIC CONIC

C3	11.604	VHL	3.406	DLA	20.83	RAL	172.91	RAD	6567.4	VEL	11.532	PTH	2.01	VHP	3.382	DPA	11.42	RAP	162.99	ECC	1.1910

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 2 14	2805.54	-28.21	82.23	32.49	92.61	17 48 59	2205.5	-27.55	73.63
90.00	11 2 30	4023.18	-5.64	162.09	27.26	62.20	12 9 33	3423.2	-9.32	155.34
100.00	18 37 26	2498.54	-29.58	59.55	32.40	94.51	19 19 5	1898.5	-28.64	50.87
100.00	12 9 58	3805.42	-4.43	145.42	26.60	60.41	13 13 24	3205.4	-8.34	138.81
110.00	20 15 5	2193.04	-33.01	35.85	31.90	99.42	20 51 38	1593.0	-31.36	27.02
110.00	12 48 49	3683.68	-1.50	134.36	24.77	55.85	13 50 13	3083.7	-5.97	128.13

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2284	TRA	3.2840	TC-11.3411	BAU 1.7633	SGT	9735.1	SGR	752.6	SG3	2408.5	ST	1828.8	SR	541.6	SS	1841.9
RDE	.3216	RRA	-.0386	RC3 .7611	FAU .40955	RRT	-.6312	RRF	-.6534	RTF	.9953	CRT	-.2507	CRS	.5178	CST	-.9577
FDE	-1.8064	FRA	10.1627	FC-30.5562	BSP 33486	SGB	9764.1	R23	.0296	R13	-.9954	LSA	2577.0	MSA	623.7	SSA	23.7
BDE	.3945	BRA	3.2842	BC311.3666	FSP 8248	SG1	9746.7	SG2	583.0	THA	177.20	EL1	1834.3	EL2	522.8	ALF	175.38

LAUNCH DATE NOV 3 1964 FLIGHT TIME 354.00 ARRIVAL DATE OCT 23 1965

HELIOCENTRIC CONIC DISTANCE 792.059 EARTH TO MARS

RL	148.38	LAL	-.00	LOL	40.61	VL	32.817	GAL	-4.09	AZL	88.32	HCA	241.78	SMA	186.44	ECC	.21571	INC	1.6790	V1	30.028
RP	213.93	LAP	-1.48	LOP	282.38	VP	22.998	GAP	-9.16	AZP	90.79	TAL	336.63	TAP	218.41	RCA	146.22	APO	226.66	V2	25.662
RC	294.131	GL	16.22	GP	2.09	ZAL	123.59	ZAP	57.38	ETS	180.69	ZAE	86.29	ETE	179.17	ZAC	85.61	ETC	258.45	CLP	57.36

PLANETOCENTRIC CONIC

C3	11.793	VHL	3.434	DLA	20.49	RAL	173.55	RAD	6567.4	VEL	11.540	PTH	2.01	VHP	3.438	DPA	11.44	RAP	162.80	ECC	1.1941

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 8 48	2794.26	-28.17	81.41	33.27	93.02	17 55 22	2194.3	-27.45	72.81
90.00	11 1 4	4041.22	-5.07	163.10	27.99	62.10	12 8 25	3441.2	-8.76	156.37
100.00	18 43 33	2488.71	-29.53	58.82	33.16	94.89	19 25 2	1888.7	-28.54	50.16
100.00	12 8 59	3822.00	-3.87	146.33	27.33	60.34	13 12 41	3222.0	-7.79	139.74
110.00	20 20 23	2185.79	-32.93	35.30	32.65	99.74	20 56 48	1585.8	-31.24	26.49
110.00	12 48 39	3697.68	-.96	135.09	25.52	55.83	13 50 17	3097.7	-5.44	128.87

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.2788	TRA	3.4441	TC-11.4681	BAU 1.8118	SGT	9994.2	SGR	749.4	SG3	2320.1	ST	1912.9	SR	548.1	SS	1841.4
RDE	.3282	RRA	-.0342	RC3 .7395	FAU .39478	RRT	-.6181	RRF	-.6409	RTF	.9954	CRT	-.2785	CRS	.5333	CST	-.9608
FDE	-1.8664	FRA	9.9673	FC-28.9822	BSP 34360	SGB	10022.3	R23	.0300	R13	-.9955	LSA	2638.7	MSA	622.0	SSA	23.3
BDE	.4306	BRA	3.4442	BC311.4919	FSP 7947	SG1	10005.0	SG2	588.5	THA	177.34	EL1	1919.4	EL2	524.6	ALF	175.07

LAUNCH DATE NOV 3 1964 FLIGHT TIME 356.00 ARRIVAL DATE OCT 25 1965

HELIOCENTRIC CONIC DISTANCE 796.231 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.820 GAL -4.18 AZL 88.31 HCA 242.97 SMA 186.49 ECC .21641 INC 1.6864 V1 30.028
RP 213.62 LAP -1.50 LOP 283.57 VP 23.041 GAP -9.32 AZP 90.77 TAL 336.16 TAP 219.13 RCA 146.13 APO 226.85 V2 25.697
RC 295.251 GL 16.15 GP 2.04 ZAL 124.29 ZAP 56.06 ETS 180.73 ZAE 84.70 ETE 179.26 ZAC 85.53 ETC 258.47 CLP 56.04

PLANETOCENTRIC CONIC

C3 11.994 VHL 3.463 DLA 20.14 RAL 174.21 RAD 6567.5 VEL 11.549 PTH 2.02 VHP 3.496 DPA 11.44 RAP 162.66 ECC 1.1974

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 15 29	2782.81	-28.12	80.57	34.06	93.44	18 1 52	2182.8	-27.35	71.99
90.00	10 59 35	4059.77	-4.47	164.15	28.74	62.01	12 7 15	3459.8	-8.18	157.43
100.00	18 49 47	2478.70	-29.47	58.08	33.95	95.27	19 31 6	1878.7	-28.42	49.43
100.00	12 7 58	3839.11	-3.30	147.28	28.09	60.27	13 11 57	3239.1	-7.23	140.70
110.00	20 25 47	2178.36	-32.84	34.74	33.42	100.06	21 2 6	1578.4	-31.11	25.95
110.00	12 48 27	3712.21	-.41	135.85	26.29	55.82	13 50 20	3112.2	-4.89	129.63

DIFFERENTIAL CORRECTIONS
TDE -.3323 TRA 3.6075 TC-11.5714 BAU 1.8590
RDE .3348 RRA -.0300 RC3 .7184 FAU .38013
FDE-1.9214 FRA 9.7716 FC-27.4387 BSP 35213
BDE .4717 BRA 3.6076 BC311.5937 FSP 7651

MID-COURSE EXECUTION ACCURACY
SGT10244.4 SGR 746.5 SG3 2232.7
RRT -.6053 RRF -.6287 RTF .9954
SGB10271.6 R23 .0304 R13 -.9955
SG110254.4 SG2 593.7 THA 177.47

ORBIT DETERMINATION ACCURACY
ST 1999.2 SR 554.4 SS 1840.4
CRT -.3053 CRS .5482 CST -.9636
LSA 2705.1 MSA 619.7 SSA 22.8
EL1 2006.9 EL2 525.9 ALF 174.80

LAUNCH DATE NOV 3 1964 FLIGHT TIME 358.00 ARRIVAL DATE OCT 27 1965

HELIOCENTRIC CONIC DISTANCE 800.408 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.823 GAL -4.27 AZL 88.31 HCA 244.16 SMA 186.54 ECC .21715 INC 1.6936 V1 30.028
RP 213.31 LAP -1.52 LOP 284.76 VP 23.084 GAP -9.48 AZP 90.74 TAL 335.69 TAP 219.84 RCA 146.04 APO 227.05 V2 25.731
RC 296.356 GL 16.07 GP 1.99 ZAL 125.01 ZAP 54.78 ETS 180.76 ZAE 83.14 ETE 179.34 ZAC 85.46 ETC 258.48 CLP 54.75

PLANETOCENTRIC CONIC

C3 12.207 VHL 3.494 DLA 19.77 RAL 174.87 RAD 6567.5 VEL 11.558 PTH 2.02 VHP 3.557 DPA 11.43 RAP 162.55 ECC 1.2009

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 22 16	2771.23	-28.07	79.73	34.87	93.86	18 8 27	2171.2	-27.24	71.16
90.00	10 58 6	4078.81	-3.86	165.21	29.51	61.93	12 6 4	3478.8	-7.59	158.51
100.00	18 56 8	2468.54	-29.40	57.33	34.75	95.66	19 37 17	1868.5	-28.31	48.70
100.00	12 6 55	3856.73	-2.70	148.25	28.87	60.22	13 11 11	3256.7	-6.64	141.68
110.00	20 31 18	2170.79	-32.75	34.17	34.20	100.39	21 7 29	1570.8	-30.97	25.40
110.00	12 48 14	3727.25	.17	136.64	27.08	55.82	13 50 21	3127.2	-4.32	130.42

DIFFERENTIAL CORRECTIONS
TDE -.3880 TRA 3.7756 TC-11.6508 BAU 1.9048
RDE .3416 RRA -.0261 RC3 .6978 FAU .36555
FDE-1.9724 FRA 9.5786 FC-25.9247 BSP 36054
BDE .5169 BRA 3.7757 BC311.6717 FSP 7365

MID-COURSE EXECUTION ACCURACY
SGT10487.0 SGR 744.0 SG3 2146.6
RRT -.5928 RRF -.6169 RTF .9955
SGB10513.3 R23 .0309 R13 -.9956
SG110496.3 SG2 598.7 THA 177.58

ORBIT DETERMINATION ACCURACY
ST 2088.2 SR 560.5 SS 1839.4
CRT -.3305 CRS .5627 CST -.9660
LSA 2770.6 MSA 617.7 SSA 22.4
EL1 2096.9 EL2 526.8 ALF 174.59

LAUNCH DATE NOV 3 1964 FLIGHT TIME 360.00 ARRIVAL DATE OCT 29 1965

HELIOCENTRIC CONIC DISTANCE 804.589 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.826 GAL -4.37 AZL 88.30 HCA 245.35 SMA 186.60 ECC .21792 INC 1.7007 V1 30.028
RP 213.01 LAP -1.55 LOP 285.95 VP 23.127 GAP -9.63 AZP 90.71 TAL 335.19 TAP 220.54 RCA 145.93 APO 227.26 V2 25.765
RC 297.448 GL 15.99 GP 1.94 ZAL 125.74 ZAP 53.53 ETS 180.79 ZAE 81.62 ETE 179.42 ZAC 85.40 ETC 258.49 CLP 53.51

PLANETOCENTRIC CONIC

C3 12.435 VHL 3.526 DLA 19.39 RAL 175.54 RAD 6567.5 VEL 11.568 PTH 2.02 VHP 3.619 DPA 11.41 RAP 162.48 ECC 1.2046

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 29 9	2759.55	-28.02	78.88	35.70	94.28	18 15 9	2159.5	-27.13	70.32
90.00	10 56 34	4098.32	-3.24	166.31	30.31	61.85	12 4 53	3498.3	-6.98	159.62
100.00	19 2 35	2458.26	-29.33	56.58	35.56	96.05	19 43 33	1858.3	-28.18	47.96
100.00	12 5 50	3874.84	-2.09	149.24	29.67	60.17	13 10 24	3274.8	-6.04	142.68
110.00	20 36 56	2163.10	-32.66	33.59	34.99	100.72	21 12 59	1563.1	-30.83	24.84
110.00	12 47 58	3742.77	.76	137.44	27.89	55.82	13 50 21	3142.8	-3.73	131.24

DIFFERENTIAL CORRECTIONS
TDE -.4471 TRA 3.9466 TC-11.7086 BAU 1.9497
RDE .3484 RRA -.0223 RC3 .6777 FAU .35123
FDE-2.0174 FRA 9.3846 FC-24.4535 BSP 36870
BDE .5668 BRA 3.9467 BC311.7282 FSP 7085

MID-COURSE EXECUTION ACCURACY
SGT10720.6 SGR 741.8 SG3 2061.9
RRT -.5808 RRF -.6055 RTF .9955
SGB10746.3 R23 .0313 R13 -.9956
SG110729.3 SG2 603.4 THA 177.69

ORBIT DETERMINATION ACCURACY
ST 2179.1 SR 566.3 SS 1837.3
CRT -.3551 CRS .5765 CST -.9684
LSA 2840.2 MSA 614.7 SSA 22.0
EL1 2189.0 EL2 527.0 ALF 174.40

LAUNCH DATE NOV 3 1964 FLIGHT TIME 362.00 ARRIVAL DATE OCT 31 1965

HELIOCENTRIC CONIC DISTANCE 808.773 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.830 GAL -4.47 AZL 88.29 HCA 246.55 SMA 186.66 ECC .21874 INC 1.7076 V1 30.028
RP 212.72 LAP -1.57 LOP 287.15 VP 23.169 GAP -9.79 AZP 90.68 TAL 334.68 TAP 221.23 RCA 145.83 APO 227.49 V2 25.798
RC 298.526 GL 15.90 GP 1.89 ZAL 126.49 ZAP 52.32 ETS 180.82 ZAE 80.13 ETE 179.50 ZAC 85.35 ETC 258.49 CLP 52.30

PLANETOCENTRIC CONIC

C3 12.676 VHL 3.560 DLA 19.00 RAL 176.22 RAD 6567.5 VEL 11.579 PTH 2.02 VHP 3.683 DPA 11.37 RAP 162.45 ECC 1.2086

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 36 7	2747.80	-27.96	78.02	36.54	94.70	18 21 55	2147.8	-27.01	69.48
90.00	10 55 2	4118.28	-2.60	167.42	31.12	61.79	12 3 40	3518.3	-6.35	160.75
100.00	19 9 7	2447.89	-29.25	55.82	36.40	96.45	19 49 55	1847.9	-28.05	47.22
100.00	12 4 43	3893.42	-1.46	150.26	30.49	60.14	13 9 36	3293.4	-5.42	143.71
110.00	20 42 38	2155.30	-32.55	33.00	35.80	101.05	21 18 33	1555.3	-30.69	24.28
110.00	12 47 41	3758.77	1.38	138.28	28.72	55.84	13 50 20	3158.8	-3.12	132.07

DIFFERENTIAL CORRECTIONS
TDE -.5094 TRA 4.1215 TC-11.7462 BAU 1.9937
RDE .3553 RRA -.0187 RC3 .6582 FAU .33715
FDE-2.0617 FRA 9.1894 FC-23.0264 BSP 37656
BDE .6211 BRA 4.1215 BC311.7646 FSP 6809

MID-COURSE EXECUTION ACCURACY
SGT10947.1 SGR 740.0 SG3 1978.7
RRT -.5693 RRF -.5947 RTF .9955
SGB10972.1 R23 .0319 R13 -.9956
SG110955.3 SG2 607.9 THA 177.79

ORBIT DETERMINATION ACCURACY
ST 2272.4 SR 572.0 SS 1835.2
CRT -.3788 CRS .5906 CST -.9704
LSA 2912.8 MSA 611.9 SSA 21.7
EL1 2283.3 EL2 526.9 ALF 174.25

LAUNCH DATE NOV 3 1964 FLIGHT TIME 364.00 ARRIVAL DATE NOV 2 1965

HELIOCENTRIC CONIC DISTANCE 812.960 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.833 GAL -4.57 AZL 88.29 HCA 247.75 SMA 186.72 ECC .21960 INC 1.7145 V1 30.028
RP 212.43 LAP -1.59 LOP 288.35 VP 23.210 GAP -9.94 AZP 90.65 TAL 334.16 TAP 221.91 RCA 145.71 APO 227.72 V2 25.831
RC 299.592 GL 15.80 GP 1.84 ZAL 127.25 ZAP 51.15 ETS 180.84 ZAE 78.68 ETE 179.57 ZAC 85.31 ETC 258.48 CLP 51.13

PLANETOCENTRIC CONIC

C3 12.932 VHL 3.596 DLA 18.60 RAL 176.91 RAD 6567.5 VEL 11.590 PTH 2.03 VHP 3.749 DPA 11.31 RAP 162.46 ECC 1.2128

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 43 9	2736.00	-27.89	77.17	37.40	95.13	18 28 45	2136.0	-26.88	68.64
90.00	10 53 29	4138.67	-1.94	168.56	31.96	61.74	12 2 28	3538.7	-5.70	161.90
100.00	19 15 44	2437.46	-29.17	55.05	37.25	96.84	19 56 21	1837.5	-27.92	46.47
100.00	12 3 35	3912.45	-.81	151.30	31.33	60.12	13 8 48	3312.4	-4.78	144.77
110.00	20 48 26	2147.43	-32.45	32.41	36.63	101.39	21 24 13	1547.4	-30.54	23.72
110.00	12 47 23	3775.24	2.00	139.14	29.57	55.87	13 50 18	3175.2	-2.49	132.94

DIFFERENTIAL CORRECTIONS
TDE -.5740 TRA 4.3009 TC-11.7619 BAU 2.0366
RDE .3623 RRA -.0153 RC3 .6393 FAU .32330
FDE-2.0989 FRA 8.9965 FC-21.6426 BSP 38435
BDE .6788 BRA 4.3009 BC311.7792 FSP 6542

MID-COURSE EXECUTION ACCURACY
SGT11165.7 SGR 738.5 SG3 1897.3
RRT -.5583 RRF -.5844 RTF .9955
SGB11190.1 R23 .0325 R13 -.9956
SG111173.4 SG2 612.2 THA 177.88

ORBIT DETERMINATION ACCURACY
ST 2367.6 SR 577.5 SS 1831.8
CRT -.4009 CRS .6037 CST -.9722
LSA 2987.2 MSA 608.8 SSA 21.3
EL1 2379.4 EL2 526.4 ALF 174.13

LAUNCH DATE NOV 3 1964 FLIGHT TIME 366.00 ARRIVAL DATE NOV 4 1965

HELIOCENTRIC CONIC DISTANCE 817.150 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.837 GAL -4.68 AZL 88.28 HCA 248.95 SMA 186.78 ECC .22051 INC 1.7213 V1 30.028
RP 212.15 LAP -1.61 LOP 289.55 VP 23.251 GAP -10.10 AZP 90.62 TAL 333.62 TAP 222.57 RCA 145.59 APO 227.97 V2 25.863
RC 300.645 GL 15.70 GP 1.79 ZAL 128.03 ZAP 50.01 ETS 180.86 ZAE 77.26 ETE 179.63 ZAC 85.28 ETC 258.47 CLP 49.99

PLANETOCENTRIC CONIC

C3 13.205 VHL 3.634 DLA 18.19 RAL 177.60 RAD 6567.5 VEL 11.601 PTH 2.03 VHP 3.817 DPA 11.24 RAP 162.50 ECC 1.2173

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 50 15	2724.20	-27.81	76.31	38.27	95.55	18 35 39	2124.2	-26.75	67.81
90.00	10 51 56	4159.47	-1.27	169.72	32.81	61.71	12 1 15	3559.5	-5.04	163.07
100.00	19 22 25	2426.99	-29.08	54.29	38.11	97.24	20 2 52	1827.0	-27.78	45.73
100.00	12 2 27	3931.91	-.15	152.37	32.19	60.11	13 7 59	3331.9	-4.13	145.84
110.00	20 54 18	2139.51	-32.34	31.82	37.48	101.72	21 29 57	1539.5	-30.39	23.15
110.00	12 47 3	3792.16	2.65	140.02	30.44	55.91	13 50 15	3192.2	-1.84	133.82

DIFFERENTIAL CORRECTIONS
TDE -.6424 TRA 4.4847 TC-11.7589 BAU 2.0787
RDE .3695 RRA -.0121 RC3 .6209 FAU .30980
FDE-2.1341 FRA 8.8044 FC-20.3113 BSP 39187
BDE .7411 BRA 4.4847 BC311.7753 FSP 6281

MID-COURSE EXECUTION ACCURACY
SGT11377.9 SGR 737.2 SG3 1818.0
RRT -.5480 RRF -.5748 RTF .9954
SGB11401.8 R23 .0331 R13 -.9955
SG111385.1 SG2 616.3 THA 177.96

ORBIT DETERMINATION ACCURACY
ST 2465.2 SR 582.8 SS 1828.2
CRT -.4225 CRS .6168 CST -.9739
LSA 3064.7 MSA 605.4 SSA 20.9
EL1 2478.1 EL2 525.5 ALF 174.03

LAUNCH DATE NOV 3 1964 FLIGHT TIME 368.00 ARRIVAL DATE NOV 6 1965

HELIOCENTRIC CONIC DISTANCE 821.343 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.841 GAL -4.79 AZL 88.27 HCA 250.15 SMA 186.84 ECC .22145 INC 1.7280 V1 30.028
RP 211.87 LAP -1.63 LOP 290.76 VP 23.291 GAP -10.25 AZP 90.59 TAL 333.07 TAP 223.22 RCA 145.47 APO 228.22 V2 25.895
RC 301.687 GL 15.58 GP 1.75 ZAL 128.82 ZAP 48.91 ETS 180.88 ZAE 75.88 ETE 179.70 ZAC 85.25 ETC 258.46 CLP 48.89

PLANETOCENTRIC CONIC

C3 13.494 VHL 3.673 DLA 17.76 RAL 178.31 RAD 6567.5 VEL 11.614 PTH 2.03 VHP 3.886 DPA 11.16 RAP 162.58 ECC 1.2221

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 57 24	2712.40	-27.73	75.46	39.16	95.97	18 42 37	2112.4	-26.61	66.97
90.00	10 50 22	4180.67	-.59	170.90	33.69	61.69	12 0 2	3580.7	-4.37	164.26
100.00	19 29 10	2416.50	-28.99	53.52	38.99	97.63	20 9 26	1816.5	-27.63	44.98
100.00	12 1 17	3951.80	.52	153.46	33.08	60.11	13 7 9	3351.8	-3.46	146.94
110.00	21 0 14	2131.55	-32.23	31.23	38.34	102.06	21 35 46	1531.6	-30.24	22.58
110.00	12 46 42	3809.51	3.31	140.93	31.33	55.96	13 50 12	3209.5	-1.18	134.72

DIFFERENTIAL CORRECTIONS
TDE -.7130 TRA 4.6732 TC-11.7345 BAU 2.1197
RDE .3768 RRA -.0092 RC3 .6030 FAU .29652
FDE-2.1639 FRA 8.6132 FC-19.0245 BSP 39932
BDE .8065 BRA 4.6732 BC311.7500 FSP 6030

MID-COURSE EXECUTION ACCURACY
SGT11581.9 SGR 736.2 SG3 1740.4
RRT -.5382 RRF -.5657 RTF .9954
SGB11605.3 R23 .0338 R13 -.9955
SG111588.7 SG2 620.1 THA 178.04

ORBIT DETERMINATION ACCURACY
ST 2564.4 SR 587.9 SS 1823.1
CRT -.4427 CRS .6292 CST -.9753
LSA 3143.7 MSA 602.0 SSA 20.6
EL1 2578.2 EL2 524.4 ALF 173.95

LAUNCH DATE NOV 3 1964 FLIGHT TIME 370.00 ARRIVAL DATE NOV 8 1965

HELIOCENTRIC CONIC DISTANCE 825.537 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.844 GAL -4.90 AZL 88.27 HCA 251.36 SMA 186.91 ECC .22245 INC 1.7346 V1 30.028
RP 211.60 LAP -1.64 LOP 291.97 VP 23.331 GAP -10.40 AZP 90.55 TAL 332.50 TAP 223.86 RCA 145.33 APO 228.49 V2 25.926
RC 302.717 GL 15.47 GP 1.71 ZAL 129.62 ZAP 47.84 ETS 180.90 ZAE 74.53 ETE 179.76 ZAC 85.24 ETC 258.44 CLP 47.82

PLANETOCENTRIC CONIC

C3 13.800 VHL 3.715 DLA 17.32 RAL 179.01 RAD 6567.5 VEL 11.627 PTH 2.04 VHP 3.958 DPA 11.07 RAP 162.69 ECC 1.2271

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 4 36	2700.64	-27.65	74.61	40.07	96.39	18 49 37	2100.6	-26.47	66.14
90.00	10 48 48	4202.24	.11	172.11	34.59	61.68	11 58 50	3602.2	-3.68	165.47
100.00	19 35 58	2406.03	-28.89	52.76	39.89	98.02	20 16 4	1806.0	-27.48	44.24
100.00	12 0 7	3972.09	1.21	154.58	33.98	60.13	13 6 19	3372.1	-2.77	148.05
110.00	21 6 14	2123.58	-32.12	30.63	39.22	102.39	21 41 38	1523.6	-30.08	22.01
110.00	12 46 20	3827.30	3.99	141.86	32.25	56.02	13 50 8	3227.3	-.50	135.65

DIFFERENTIAL CORRECTIONS
TDE -.7875 TRA 4.8654 TC-11.6947 BAU 2.1604
RDE .3843 RRA -.0065 RC3 .5857 FAU .28364
FDE-2.1909 FRA 8.4218 FC-17.7936 BSP 40639
BDE .8763 BRA 4.8654 BC311.7094 FSP 5783

MID-COURSE EXECUTION ACCURACY
SGT11779.7 SGR 735.4 SG3 1664.9
RRT -.5291 RRF -.5574 RTF .9953
SGB11802.7 R23 .0345 R13 -.9954
SG111786.2 SG2 623.7 THA 178.10

ORBIT DETERMINATION ACCURACY
ST 2665.4 SR 592.9 SS 1817.3
CRT -.4625 CRS .6415 CST -.9767
LSA 3224.9 MSA 598.3 SSA 20.3
EL1 2680.0 EL2 522.8 ALF 173.89

LAUNCH DATE NOV 3 1964 FLIGHT TIME 372.00 ARRIVAL DATE NOV 10 1965

HELIOCENTRIC CONIC DISTANCE 829.733 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.848 GAL -5.02 AZL 88.26 HCA 252.58 SMA 186.98 ECC .22349 INC 1.7412 V1 30.028
RP 211.33 LAP -1.66 LOP 293.18 VP 23.371 GAP -10.55 AZP 90.52 TAL 331.91 TAP 224.49 RCA 145.19 APO 228.77 V2 25.956
RC 303.736 GL 15.34 GP 1.67 ZAL 130.43 ZAP 46.80 ETS 180.91 ZAE 73.20 ETE 179.82 ZAC 85.23 ETC 258.41 CLP 46.78

PLANETOCENTRIC CONIC

C3 14.126 VHL 3.758 DLA 16.88 RAL 179.72 RAD 6567.6 VEL 11.641 PTH 2.04 VHP 4.032 DPA 10.96 RAP 162.84 ECC 1.2325

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 11 51	2688.94	-27.55	73.76	40.99	96.80	18 56 39	2088.9	-26.33	65.31
90.00	10 47 14	4224.18	.82	173.33	35.52	61.69	11 57 38	3624.2	-2.97	166.70
100.00	19 42 49	2395.59	-28.79	52.00	40.81	98.41	20 22 44	1795.6	-27.33	43.50
100.00	11 58 57	3992.77	1.91	155.71	34.91	60.16	13 5 30	3392.8	-2.07	149.19
110.00	21 12 17	2115.63	-32.00	30.04	40.11	102.72	21 47 33	1515.6	-29.92	21.45
110.00	12 45 58	3845.49	4.68	142.82	33.18	56.10	13 50 3	3245.5	.20	136.60

DIFFERENTIAL CORRECTIONS
TDE -.8641 TRA 5.0641 TC-11.6329 BAU 2.1995
RDE .3919 RRA -.0041 RC3 .5688 FAU .27098
FDE-2.2124 FRA 8.2345 FC-16.6077 BSP 41358
BDE .9489 BRA 5.0641 BC311.6468 FSP 5548

MID-COURSE EXECUTION ACCURACY
SGT11970.2 SGR 734.8 SG3 1591.5
RRT -.5206 RRF -.5496 RTF .9952
SGB11992.7 R23 .0352 R13 -.9953
SG141976.3 SG2 627.0 THA 178.16

ORBIT DETERMINATION ACCURACY
ST 2768.0 SR 597.6 SS 1810.1
CRT -.4807 CRS .6529 CST -.9779
LSA 3307.8 MSA 594.6 SSA 20.0
EL1 2783.5 EL2 521.2 ALF 173.86

LAUNCH DATE NOV 3 1964 FLIGHT TIME 374.00 ARRIVAL DATE NOV 12 1965

HELIOCENTRIC CONIC DISTANCE 833.931 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.853 GAL -5.15 AZL 88.25 HCA 253.79 SMA 187.05 ECC .22458 INC 1.7476 V1 30.028
RP 211.08 LAP -1.68 LOP 294.40 VP 23.410 GAP -10.71 AZP 90.49 TAL 331.31 TAP 225.10 RCA 145.04 APO 229.06 V2 25.986
RC 304.746 GL 15.21 GP 1.63 ZAL 131.25 ZAP 45.80 ETS 180.92 ZAE 71.91 ETE 179.87 ZAC 85.23 ETC 258.38 CLP 45.78

PLANETOCENTRIC CONIC

C3 14.471 VHL 3.804 DLA 16.42 RAL 180.44 RAD 6567.6 VEL 11.656 PTH 2.05 VHP 4.107 DPA 10.85 RAP 163.02 ECC 1.2382

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 19 7	2677.33	-27.46	72.93	41.93	97.21	19 3 44	2077.3	-26.17	64.50
90.00	10 45 40	4246.47	1.54	174.57	36.46	61.72	11 56 27	3646.5	-2.25	167.94
100.00	19 49 42	2385.21	-28.69	51.24	41.73	98.79	20 29 27	1785.2	-27.17	42.77
100.00	11 57 46	4013.82	2.62	156.87	35.86	60.21	13 4 40	3413.8	-1.36	150.35
110.00	21 18 23	2107.70	-31.88	29.46	41.02	103.05	21 53 31	1507.7	-29.75	20.89
110.00	12 45 34	3864.09	5.39	143.79	34.14	56.19	13 49 58	3264.1	.91	137.57

DIFFERENTIAL CORRECTIONS
TDE -.9448 TRA 5.2670 TC-11.5568 BAU 2.2384
RDE .3998 RRA -.0019 RC3 .5525 FAU .25874
FDE-2.2308 FRA 8.0466 FC-15.4793 BSP 42037
BDE 1.0259 BRA 5.2670 BC311.5700 FSP 5315

MID-COURSE EXECUTION ACCURACY
SGT12154.6 SGR 734.3 SG3 1520.3
RRT -.5129 RRF -.5427 RTF .9951
SGB12176.7 R23 .0360 R13 -.9952
SG112160.4 SG2 630.1 THA 178.22

ORBIT DETERMINATION ACCURACY
ST 2872.4 SR 602.2 SS 1801.8
CRT -.4986 CRS .6642 CST -.9790
LSA 3392.7 MSA 590.4 SSA 19.7
EL1 2888.6 EL2 519.1 ALF 173.83

LAUNCH DATE NOV 3 1964 FLIGHT TIME 376.00 ARRIVAL DATE NOV 14 1965

HELIOCENTRIC CONIC DISTANCE 838.130 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.857 GAL -5.27 AZL 88.25 HCA 255.01 SMA 187.13 ECC .22572 INC 1.7540 V1 30.028
RP 210.82 LAP -1.69 LOP 295.61 VP 23.448 GAP -10.86 AZP 90.45 TAL 330.70 TAP 225.71 RCA 144.89 APO 229.36 V2 26.015
RC 305.746 GL 15.07 GP 1.59 ZAL 132.08 ZAP 44.82 ETS 180.93 ZAE 70.65 ETE 179.93 ZAC 85.24 ETC 258.35 CLP 44.80

PLANETOCENTRIC CONIC

C3 14.837 VHL 3.852 DLA 15.96 RAL 181.16 RAD 6567.6 VEL 11.671 PTH 2.05 VHP 4.184 DPA 10.72 RAP 163.23 ECC 1.2442

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 26 24	2665.82	-27.36	72.10	42.88	97.61	19 10 50	2065.8	-26.02	63.69
90.00	10 44 7	4269.10	2.27	175.84	37.43	61.77	11 55 16	3669.1	-1.52	169.21
100.00	19 56 37	2374.91	-28.58	50.50	42.68	99.17	20 36 12	1774.9	-27.01	42.05
100.00	11 56 36	4035.24	3.35	158.05	36.83	60.28	13 3 51	3435.2	-.63	151.52
110.00	21 24 32	2099.84	-31.76	28.88	41.95	103.37	21 59 32	1499.8	-29.59	20.34
110.00	12 45 10	3883.08	6.11	144.79	35.12	56.30	13 49 53	3283.1	1.64	138.56

DIFFERENTIAL CORRECTIONS
TDE-1.0281 TRA 5.4753 TC-11.4851 BAU 2.2767
RDE .4078 RRA -.0000 RC3 .5367 FAU .24684
FDE-2.2456 FRA 7.8605 FC-14.4027 BSP 42711
BDE 1.1060 BRA 5.4753 BC311.4776 FSP 5093

MID-COURSE EXECUTION ACCURACY
SGT12333.1 SGR 734.1 SG3 1451.3
RRT -.5059 RRF -.5364 RTF .9950
SGB12355.0 R23 .0368 R13 -.9950
SG112338.7 SG2 632.9 THA 178.27

ORBIT DETERMINATION ACCURACY
ST 2977.7 SR 606.7 SS 1792.3
CRT -.5153 CRS .6750 CST -.9800
LSA 3478.9 MSA 586.4 SSA 19.4
EL1 2994.6 EL2 517.0 ALF 173.82

LAUNCH DATE NOV 3 1964 FLIGHT TIME 378.00 ARRIVAL DATE NOV 16 1965

HELIOCENTRIC CONIC DISTANCE 842.329 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.861 GAL -5.41 AZL 88.24 HCA 256.23 SMA 187.20 ECC .22691 INC 1.7603 V1 30.028
RP 210.58 LAP -1.71 LOP 296.84 VP 23.485 GAP -11.01 AZP 90.42 TAL 330.06 TAP 226.30 RCA 144.72 APO 229.68 V2 26.043
RC 306.737 GL 14.92 GP 1.55 ZAL 132.92 ZAP 43.87 ETS 180.94 ZAE 69.42 ETE 179.98 ZAC 85.26 ETC 258.31 CLP 43.85

PLANETOCENTRIC CONIC

C3 15.226 VHL 3.902 DLA 15.49 RAL 181.88 RAD 6567.6 VEL 11.688 PTH 2.06 VHP 4.263 DPA 10.58 RAP 163.48 ECC 1.2506

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 33 43	2654.43	-27.25	71.28	43.85	98.01	19 17 58	2054.4	-25.86	62.89
90.00	10 42 34	4292.06	3.01	177.12	38.42	61.83	11 54 6	3692.1	-.78	170.49
100.00	20 3 33	2364.72	-28.46	49.76	43.64	99.54	20 42 58	1764.7	-26.85	41.33
100.00	11 55 25	4057.01	4.08	159.24	37.83	60.36	13 3 2	3457.0	.10	152.71
110.00	21 30 42	2092.04	-31.63	28.30	42.89	103.69	22 5 34	1492.0	-29.43	19.79
110.00	12 44 46	3902.45	6.84	145.82	36.12	56.43	13 49 48	3302.4	2.37	139.57

DIFFERENTIAL CORRECTIONS
TDE-1.1140 TRA 5.6900 TC-11.3567 BAU 2.3142
RDE .4160 RRA .0016 RC3 .5213 FAU .23520
FDE-2.2559 FRA 7.6767 FC-13.3735 BSP 43385
BDE 1.1891 BRA 5.6900 BC311.3687 FSP 4878

MID-COURSE EXECUTION ACCURACY
SGT12505.6 SGR 733.9 SG3 1384.3
RRT -.4995 RRF -.5308 RTF .9948
SGB12527.1 R23 .0377 R13 -.9949
SG112511.0 SG2 635.5 THA 178.32

ORBIT DETERMINATION ACCURACY
ST 3084.0 SR 610.9 SS 1781.2
CRT -.5310 CRS .6853 CST -.9809
LSA 3566.1 MSA 582.5 SSA 19.1
EL1 3101.5 EL2 514.7 ALF 173.82

LAUNCH DATE NOV 3 1964 FLIGHT TIME 380.00 ARRIVAL DATE NOV 18 1965

HELIOCENTRIC CONIC DISTANCE 846.528 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.866 GAL -5.54 AZL 88.23 HCA 257.46 SMA 187.28 ECC .22815 INC 1.7666 V1 30.028
RP 210.34 LAP -1.72 LOP 298.06 VP 23.522 GAP -11.16 AZP 90.38 TAL 329.42 TAP 226.87 RCA 144.55 APO 230.01 V2 26.071
RC 307.719 GL 14.77 GP 1.52 ZAL 133.76 ZAP 42.95 ETS 180.95 ZAE 68.21 ETE 180.02 ZAC 85.28 ETC 258.26 CLP 42.93

PLANETOCENTRIC CONIC

C3 15.638 VHL 3.954 DLA 15.01 RAL 182.61 RAD 6567.6 VEL 11.706 PTH 2.06 VHP 4.344 DPA 10.42 RAP 163.75 ECC 1.2574

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 41 3	2643.20	-27.14	70.48	44.84	98.40	19 25 6	2043.2	-25.70	62.11
90.00	10 41 2	4315.32	3.75	178.42	39.43	61.91	11 52 57	3715.3	-.03	171.79
100.00	20 10 31	2354.65	-28.35	49.04	44.62	99.91	20 49 46	1754.6	-26.69	40.63
100.00	11 54 15	4079.11	4.82	160.46	38.84	60.46	13 2 14	3479.1	.85	153.93
110.00	21 36 55	2084.34	-31.51	27.74	43.85	104.00	22 11 39	1484.3	-29.26	19.25
110.00	12 44 21	3922.18	7.58	146.87	37.15	56.57	13 49 43	3322.2	3.13	140.60

DIFFERENTIAL CORRECTIONS
TDE-1.2032 TRA 5.9102 TC-11.2339 BAU 2.3510
RDE .4244 RRA .0029 RC3 .5063 FAU .22396
FDE-2.2631 FRA 7.4931 FC-12.3990 BSP 44031
BDE 1.2758 BRA 5.9102 BC311.2453 FSP 4668

MID-COURSE EXECUTION ACCURACY
SGT12671.8 SGR 733.8 SG3 1319.5
RRT -.4938 RRF -.5260 RTF .9946
SGB12693.1 R23 .0386 R13 -.9947
SG112677.0 SG2 637.8 THA 178.36

ORBIT DETERMINATION ACCURACY
ST 3191.2 SR 615.0 SS 1768.8
CRT -.5460 CRS .6954 CST -.9817
LSA 3654.6 MSA 578.4 SSA 18.9
EL1 3209.3 EL2 512.3 ALF 173.84

LAUNCH DATE NOV 3 1964 FLIGHT TIME 382.00 ARRIVAL DATE NOV 20 1965

HELIOCENTRIC CONIC DISTANCE 850.726 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.870 GAL -5.68 AZL 88.23 HCA 258.68 SMA 187.36 ECC .22946 INC 1.7729 V1 30.028
RP 210.10 LAP -1.74 LOP 299.29 VP 23.558 GAP -11.31 AZP 90.35 TAL 328.75 TAP 227.43 RCA 144.37 APO 230.35 V2 26.098
RC 308.691 GL 14.62 GP 1.49 ZAL 134.62 ZAP 42.06 ETS 180.95 ZAE 67.03 ETE 180.07 ZAC 85.31 ETC 258.22 CLP 42.04

PLANETOCENTRIC CONIC

C3 16.075 VHL 4.009 DLA 14.52 RAL 183.33 RAD 6567.6 VEL 11.724 PTH 2.07 VHP 4.427 DPA 10.26 RAP 164.05 ECC 1.2646

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 48 23	2632.13	-27.03	69.69	45.84	98.78	19 32 15	2032.1	-25.54	61.34
90.00	10 39 31	4338.89	4.51	179.74	40.47	62.01	11 51 49	3738.9	.73	173.10
100.00	20 17 30	2344.72	-28.23	48.32	45.61	100.26	20 56 35	1744.7	-26.52	39.94
100.00	11 53 4	4101.53	5.57	161.71	39.88	60.58	13 1 26	3501.5	1.61	155.16
110.00	21 43 8	2076.75	-31.38	27.18	44.82	104.31	22 17 45	1476.8	-29.10	18.72
110.00	12 43 55	3942.26	8.33	147.93	38.20	56.73	13 49 38	3342.3	3.89	141.65

DIFFERENTIAL CORRECTIONS
TDE-1.2955 TRA 6.1366 TC-11.0983 BAU 2.3874
RDE .4330 RRA .0039 RC3 .4918 FAU .21305
FDE-2.2660 FRA 7.3119 FC-11.4744 BSP 44679
BDE 1.3659 BRA 6.1366 BC311.1092 FSP 4467

MID-COURSE EXECUTION ACCURACY
SGT12833.0 SGR 733.8 SG3 1257.0
RRT -.4888 RRF -.5218 RTF .9944
SGB12854.0 R23 .0395 R13 -.9945
SG112838.1 SG2 639.9 THA 178.39

ORBIT DETERMINATION ACCURACY
ST 3299.1 SR 618.9 SS 1754.8
CRT -.5603 CRS .7049 CST -.9824
LSA 3743.9 MSA 574.1 SSA 18.6
EL1 3317.7 EL2 509.8 ALF 173.85

LAUNCH DATE NOV 3 1964 FLIGHT TIME 384.00 ARRIVAL DATE NOV 22 1965

HELIOCENTRIC CONIC DISTANCE 854.923 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.875 GAL -5.83 AZL 88.22 HCA 259.91 SMA 187.44 ECC .23081 INC 1.7791 V1 30.028
RP 209.88 LAP -1.75 LOP 300.52 VP 23.593 GAP -11.47 AZP 90.31 TAL 328.07 TAP 227.98 RCA 144.17 APO 230.70 V2 26.124
RC 309.654 GL 14.46 GP 1.45 ZAL 135.48 ZAP 41.20 ETS 180.95 ZAE 65.87 ETE 180.12 ZAC 85.35 ETC 258.17 CLP 41.18

PLANETOCENTRIC CONIC

C3 16.538 VHL 4.067 DLA 14.02 RAL 184.06 RAD 6567.7 VEL 11.744 PTH 2.07 VHP 4.512 DPA 10.09 RAP 164.37 ECC 1.2722

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 55 42	2621.25	-26.91	68.91	46.86	99.15	19 39 24	2021.2	-25.37	60.58
90.00	10 38 0	4362.75	5.27	181.08	41.53	62.14	11 50 43	3762.7	1.50	174.43
100.00	20 24 29	2334.95	-28.11	47.62	46.62	100.61	21 3 24	1735.0	-26.36	39.26
100.00	11 51 55	4124.27	6.33	162.97	40.95	60.73	13 0 39	3524.3	2.38	156.41
110.00	21 49 23	2069.30	-31.25	26.64	45.81	104.61	22 23 52	1469.3	-28.93	18.20
110.00	12 43 30	3962.69	9.09	149.03	39.27	56.91	13 49 33	3362.7	4.67	142.73

DIFFERENTIAL CORRECTIONS
TDE-1.3913 TRA 6.3688 TC-10.9516 BAU 2.4237
RDE .4419 RRA .0046 RC3 .4778 FAU .20252
FDE-2.2667 FRA 7.1302 FC-10.6012 BSP 45293
BDE 1.4598 BRA 6.3688 BC310.9621 FSP 4269

MID-COURSE EXECUTION ACCURACY
SGT12989.3 SGR 733.9 SG3 1196.4
RRT -.4846 RRF -.5185 RTF .9942
SGB13010.0 R23 .0406 R13 -.9943
SG112994.2 SG2 641.7 THA 178.43

ORBIT DETERMINATION ACCURACY
ST 3407.6 SR 622.7 SS 1739.6
CRT -.5740 CRS .7143 CST -.9830
LSA 3834.2 MSA 570.0 SSA 18.4
EL1 3426.7 EL2 507.0 ALF 173.88

LAUNCH DATE NOV 3 1964 FLIGHT TIME 386.00 ARRIVAL DATE NOV 24 1965

HELIOCENTRIC CONIC DISTANCE 859.119 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.880 GAL -5.98 AZL 88.21 HCA 261.14 SMA 187.52 ECC .23223 INC 1.7852 V1 30.028
RP 209.66 LAP -1.76 LOP 301.75 VP 23.628 GAP -11.62 AZP 90.28 TAL 327.38 TAP 228.52 RCA 143.97 APO 231.07 V2 26.149
RC 310.607 GL 14.29 GP 1.42 ZAL 136.34 ZAP 40.36 ETS 180.96 ZAE 64.74 ETE 180.16 ZAC 85.40 ETC 258.12 CLP 40.34

PLANETOCENTRIC CONIC

C3 17.030 VHL 4.127 DLA 13.52 RAL 184.79 RAD 6567.7 VEL 11.765 PTH 2.08 VHP 4.598 DPA 9.90 RAP 164.73 ECC 1.2803

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 3 2	2610.57	-26.80	68.15	47.89	99.52	19 46 33	2010.6	-25.21	59.85
90.00	10 36 30	4386.88	6.03	182.44	42.62	62.28	11 49 37	3786.9	2.28	175.78
100.00	20 31 28	2325.37	-27.99	46.93	47.65	100.96	21 10 14	1725.4	-26.19	38.59
100.00	11 50 45	4147.31	7.10	164.25	42.04	60.89	12 59 53	3547.3	3.16	157.67
110.00	21 55 38	2061.99	-31.13	26.11	46.82	104.90	22 30 0	1462.0	-28.77	17.70
110.00	12 43 4	3983.45	9.86	150.14	40.36	57.10	13 49 28	3383.5	5.46	143.82

DIFFERENTIAL CORRECTIONS
TDE-1.4903 TRA 6.6076 TC-10.7938 BAU 2.4597
RDE .4510 RRA .0050 RC3 .4641 FAU .19232
FDE-2.2643 FRA 6.9501 FC3-9.7770 BSP 45904
BDE 1.5571 BRA 6.6076 BC310.8038 FSP 4080

MID-COURSE EXECUTION ACCURACY
SGT13140.6 SGR 734.1 SG3 1138.1
RRT -.4811 RRF -.5159 RTF .9939
SGB13161.1 R23 .0418 R13 -.9940
SG113145.4 SG2 643.3 THA 178.46

ORBIT DETERMINATION ACCURACY
ST 3516.5 SR 626.3 SS 1723.0
CRT -.5870 CRS .7235 CST -.9835
LSA 3925.1 MSA 565.8 SSA 18.1
EL1 3536.1 EL2 504.2 ALF 173.91

LAUNCH DATE NOV 3 1964 FLIGHT TIME 388.00 ARRIVAL DATE NOV 26 1965

HELIOCENTRIC CONIC DISTANCE 863.313 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.884 GAL -6.13 AZL 88.21 HCA 262.38 SMA 187.61 ECC .23371 INC 1.7913 V1 30.028
RP 209.44 LAP -1.78 LOP 302.99 VP 23.662 GAP -11.77 AZP 90.24 TAL 326.66 TAP 229.04 RCA 143.76 APO 231.45 V2 26.174
RC 311.551 GL 14.12 GP 1.39 ZAL 137.21 ZAP 39.54 ETS 180.96 ZAE 63.63 ETE 180.20 ZAC 85.45 ETC 258.06 CLP 39.52

PLANETOCENTRIC CONIC

C3 17.551 VHL 4.189 DLA 13.02 RAL 185.53 RAD 6567.7 VEL 11.787 PTH 2.08 VHP 4.687 DPA 9.71 RAP 165.11 ECC 1.2888

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 10 21	2600.10	-26.68	67.41	48.94	99.87	19 53 41	2000.1	-25.04	59.12
90.00	10 35 1	4411.28	8.80	183.82	43.73	62.45	11 48 33	3811.3	3.06	177.14
100.00	20 38 27	2315.98	-27.86	46.26	48.69	101.29	21 17 3	1716.0	-26.02	37.95
100.00	11 49 36	4170.64	7.87	165.55	43.15	61.07	12 59 7	3570.6	3.95	158.96
110.00	22 1 54	2054.85	-31.00	25.59	47.84	105.18	22 36 9	1454.8	-28.61	17.21
110.00	12 42 39	4004.53	10.64	151.28	41.48	57.32	13 49 23	3404.5	6.25	144.93

DIFFERENTIAL CORRECTIONS
TDE-1.5933 TRA 6.8520 TC-10.6268 BAU 2.4957
RDE .4604 RRA .0050 RC3 .4508 FAU .18247
FDE-2.2592 FRA 6.7702 FC3-9.0010 BSP 46480
BDE 1.6585 BRA 6.8520 BC310.6363 FSP 3894

MID-COURSE EXECUTION ACCURACY
SGT13286.8 SGR 734.3 SG3 1081.7
RRT -.4783 RRF -.5142 RTF .9937
SGB13307.1 RZ3 .0430 RZ3 -.9937
SG113291.5 SG2 644.6 THA 178.48

ORBIT DETERMINATION ACCURACY
ST 3625.7 SR 629.8 SS 1705.0
CRT -.5995 CRS .7324 CST -.9839
LSA 4016.7 NSA 561.5 SSA 17.9
EL1 3645.7 EL2 501.3 ALF 173.94

LAUNCH DATE NOV 3 1964 FLIGHT TIME 390.00 ARRIVAL DATE NOV 28 1965

HELIOCENTRIC CONIC DISTANCE 867.503 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.889 GAL -6.29 AZL 88.20 HCA 263.62 SMA 187.80 ECC .23526 INC 1.7975 V1 30.028
RP 209.24 LAP -1.79 LOP 304.22 VP 23.695 GAP -11.93 AZP 90.20 TAL 325.94 TAP 229.55 RCA 143.54 APO 231.85 V2 26.198
RC 312.486 GL 13.95 GP 1.36 ZAL 138.09 ZAP 38.75 ETS 180.96 ZAE 62.55 ETE 180.24 ZAC 85.51 ETC 258.00 CLP 38.73

PLANETOCENTRIC CONIC

C3 18.104 VHL 4.255 DLA 12.51 RAL 186.26 RAD 6567.7 VEL 11.810 PTH 2.09 VHP 4.778 DPA 9.51 RAP 165.51 ECC 1.2979

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 17 39	2589.88	-26.55	66.00	50.00	100.21	20 0 49	1989.0	-24.87	58.42
90.00	10 33 33	4435.94	7.58	185.22	44.86	62.63	11 47 29	3835.9	3.85	178.52
100.00	20 45 26	2306.81	-27.74	45.61	49.74	101.61	21 28 53	1706.8	-25.86	37.31
100.00	11 48 28	4194.24	8.64	166.88	44.29	61.27	12 58 22	3594.2	4.74	160.26
110.00	22 8 10	2047.89	-30.87	25.08	48.88	105.46	22 42 18	1447.9	-28.45	16.73
110.00	12 42 13	4025.92	11.42	152.44	42.62	57.96	13 49 19	3425.9	7.06	146.06

DIFFERENTIAL CORRECTIONS
TDE-1.6989 TRA 7.1041 TC-10.4496 BAU 2.5313
RDE .4701 RRA .0048 RC3 .4379 FAU .17293
FDE-2.2500 FRA 6.5909 FC3-8.2699 BSP 47060
BDE 1.7627 BRA 7.1041 BC310.4588 FSP 3715

MID-COURSE EXECUTION ACCURACY
SGT13428.9 SGR 734.5 SG3 1027.2
RRT -.4762 RRF -.5130 RTF .9934
SGB13448.6 RZ3 .0443 RZ3 -.9934
SG113433.1 SG2 645.7 THA 178.50

ORBIT DETERMINATION ACCURACY
ST 3734.5 SR 633.1 SS 1685.0
CRT -.6113 CRS .7410 CST -.9843
LSA 4108.0 NSA 557.3 SSA 17.7
EL1 3754.9 EL2 498.3 ALF 173.98

LAUNCH DATE NOV 3 1964 FLIGHT TIME 392.00 ARRIVAL DATE NOV 30 1965

HELIOCENTRIC CONIC DISTANCE 871.691 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.894 GAL -6.46 AZL 88.20 HCA 264.86 SMA 187.78 ECC .23687 INC 1.8036 V1 30.028
RP 209.04 LAP -1.80 LOP 305.46 VP 23.728 GAP -12.09 AZP 90.16 TAL 325.19 TAP 230.05 RCA 143.30 APO 232.26 V2 26.221
RC 313.411 GL 13.77 GP 1.34 ZAL 138.97 ZAP 37.98 ETS 180.95 ZAE 61.48 ETE 180.28 ZAC 85.57 ETC 257.94 CLP 37.96

PLANETOCENTRIC CONIC

C3 18.690 VHL 4.323 DLA 11.99 RAL 186.99 RAD 6567.8 VEL 11.835 PTH 2.10 VHP 4.870 DPA 9.29 RAP 165.94 ECC 1.3076

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 24 57	2579.90	-26.43	65.98	51.08	100.55	20 7 56	1979.9	-24.71	57.74
90.00	10 32 7	4460.85	8.36	186.64	46.02	62.85	11 46 27	3860.8	4.65	179.92
100.00	20 52 24	2297.86	-27.62	44.97	50.82	101.92	21 30 42	1697.9	-25.69	36.70
100.00	11 47 21	4218.12	9.42	168.22	45.45	61.50	12 57 39	3618.1	5.54	161.58
110.00	22 14 26	2041.13	-30.75	24.60	49.93	105.72	22 48 27	1441.1	-28.29	16.26
110.00	12 41 47	4047.61	12.21	153.63	43.79	57.82	13 49 15	3447.6	7.87	147.21

DIFFERENTIAL CORRECTIONS
TDE-1.8081 TRA 7.3625 TC-10.2656 BAU 2.5672
RDE .4800 RRA .0041 RC3 .4253 FAU .16373
FDE-2.2382 FRA 6.4122 FC3-7.5841 BSP 47603
BDE 1.8707 BRA 7.3625 BC310.2744 FSP 3540

MID-COURSE EXECUTION ACCURACY
SGT13565.8 SGR 734.8 SG3 974.7
RRT -.4748 RRF -.5127 RTF .9930
SGB13585.7 RZ3 .0456 RZ3 -.9931
SG113570.3 SG2 646.5 THA 178.52

ORBIT DETERMINATION ACCURACY
ST 3843.0 SR 636.2 SS 1663.6
CRT -.6228 CRS .7493 CST -.9846
LSA 4199.4 NSA 553.0 SSA 17.5
EL1 3863.7 EL2 495.2 ALF 174.02

LAUNCH DATE NOV 3 1964 FLIGHT TIME 394.00 ARRIVAL DATE DEC 2 1965

HELIOCENTRIC CONIC DISTANCE 875.874 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.900 GAL -6.63 AZL 88.19 HCA 266.10 SMA 187.87 ECC .23856 INC 1.8096 V1 30.028
RP 208.85 LAP -1.81 LOP 306.71 VP 23.759 GAP -12.25 AZP 90.12 TAL 324.43 TAP 230.53 RCA 143.05 APO 232.69 V2 26.243
RC 314.329 GL 13.58 GP 1.31 ZAL 139.85 ZAP 37.24 ETS 180.95 ZAE 60.44 ETE 180.32 ZAC 85.64 ETC 257.87 CLP 37.22

PLANETOCENTRIC CONIC

C3 19.311 VHL 4.394 DLA 11.47 RAL 187.72 RAD 6567.8 VEL 11.861 PTH 2.10 VHP 4.965 DPA 9.07 RAP 166.39 ECC 1.3178

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 32 13	2570.18	-26.31	65.30	52.18	100.87	20 15 3	1970.2	-24.54	57.07
90.00	10 30 41	4485.99	9.13	188.08	47.21	63.08	11 45 27	3886.0	5.45	181.33
100.00	20 59 21	2289.16	-27.49	44.36	51.91	102.23	21 37 30	1689.2	-25.53	36.11
100.00	11 46 14	4242.25	10.20	169.59	46.64	61.75	12 56 56	3642.2	6.35	162.92
110.00	22 20 42	2034.58	-30.63	24.12	51.00	105.98	22 54 37	1434.6	-28.14	15.82
110.00	12 41 22	4069.59	13.00	154.83	44.98	58.10	13 49 11	3469.6	8.69	148.39

DIFFERENTIAL CORRECTIONS
TDE-1.9206 TRA 7.6284 TC-10.0731 BAU 2.6028
RDE .4902 RRA .0031 RC3 .4130 FAU .15484
FDE-2.2236 FRA 6.2339 FC3-6.9415 BSP 48150
BDE 1.9821 BRA 7.6284 BC310.0816 FSP 3372

MID-COURSE EXECUTION ACCURACY
SGT13698.4 SGR 735.0 SG3 924.1
RRT -.4740 RRF -.5130 RTF .9926
SGB13718.1 RZ3 .0471 RZ3 -.9927
SG113702.9 SG2 647.0 THA 178.54

ORBIT DETERMINATION ACCURACY
ST 3951.0 SR 639.2 SS 1640.7
CRT -.6333 CRS .7574 CST -.9849
LSA 4290.6 NSA 548.8 SSA 17.3
EL1 3972.0 EL2 492.1 ALF 174.06

LAUNCH DATE NOV 3 1964 FLIGHT TIME 396.00 ARRIVAL DATE DEC 4 1965

DISTANCE 880.052

HELIOCENTRIC CONIC

RL 148.38 LAL -.00 LOL 40.61 VL 32.905 GAL -6.80 AZL 88.18 HCA 267.34 SMA 187.96 ECC .24031 INC 1.8157 V1 30.028
RP 208.67 LAP -1.81 LOP 307.95 VP 23.790 GAP -12.41 AZP 90.08 TAL 323.65 TAP 231.00 RCA 142.79 APO 233.13 V2 26.264
RC 315.238 GL 13.39 GP 1.28 ZAL 140.74 ZAP 36.51 ETS 180.95 ZAE 59.42 ETE 180.35 ZAC 85.72 ETC 257.81 CLP 36.49

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 19.971 VHL 4.469 DLA 10.95 RAL 188.45 RAD 6567.8 VEL 11.889 PTH 2.11 VHP 5.062 DPA 8.84 RAP 166.86 ECC 1.3287

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 39 27	2560.74	-26.19	64.63	53.29	101.18	20 22 8	1960.7	-24.38	56.43
90.00	10 29 16	4511.37	9.91	189.53	48.42	63.34	11 44 28	3911.4	6.25	182.76
100.00	21 6 17	2280.71	-27.37	43.76	53.01	102.52	21 44 17	1680.7	-25.37	35.53
100.00	11 45 8	4266.63	10.99	170.98	47.85	62.02	12 56 14	3666.6	7.16	164.28
110.00	22 26 57	2028.26	-30.51	23.67	52.09	106.22	23 0 45	1428.3	-27.99	15.38
110.00	12 40 57	4091.85	13.80	156.06	46.20	58.41	13 49 8	3491.8	9.52	149.58

DIFFERENTIAL CORRECTIONS

TDE-2.0373 TRA 7.9016 TC3-9.8763 BAU 2.6391
RDE .5007 RRA .0017 RC3 .4011 FAU .14627
FDE-2.2066 FRA 6.0558 FC3-6.3406 BSP 48651
BDE 2.0979 BRA 7.9016 BC3 9.8844 FSP 3207

MID-COURSE EXECUTION ACCURACY

SGT13828.0 SGR 735.3 SG3 875.4
RRT -.4739 RRF -.5142 RTF .9922
SGB13847.5 R23 .0487 R13 -.9923
SG113832.4 SG2 647.3 THA 178.55

ORBIT DETERMINATION ACCURACY

ST 4059.0 SR 642.1 SS 1616.4
CRT -.6437 CRS .7654 CST -.9851
LSA 4382.2 MSA 544.4 SSA 17.1
EL1 4080.3 EL2 488.8 ALF 174.10

LAUNCH DATE NOV 3 1964 FLIGHT TIME 398.00 ARRIVAL DATE DEC 6 1965

DISTANCE 884.224

HELIOCENTRIC CONIC

RL 148.38 LAL -.00 LOL 40.61 VL 32.910 GAL -6.99 AZL 88.18 HCA 268.59 SMA 188.05 ECC .24214 INC 1.8218 V1 30.028
RP 208.49 LAP -1.82 LOP 309.20 VP 23.820 GAP -12.57 AZP 90.05 TAL 322.86 TAP 231.45 RCA 142.52 APO 233.59 V2 26.285
RC 316.140 GL 13.20 GP 1.26 ZAL 141.62 ZAP 35.81 ETS 180.94 ZAE 58.42 ETE 180.39 ZAC 85.80 ETC 257.74 CLP 35.79

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 20.671 VHL 4.547 DLA 10.42 RAL 189.18 RAD 6567.8 VEL 11.919 PTH 2.12 VHP 5.160 DPA 8.60 RAP 167.35 ECC 1.3402

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 46 40	2551.59	-26.06	63.99	54.42	101.48	20 29 11	1951.6	-24.22	55.81
90.00	10 27 53	4536.96	10.69	191.01	49.65	63.62	11 43 30	3937.0	7.06	184.21
100.00	21 13 11	2272.53	-27.25	43.18	54.13	102.80	21 51 4	1672.5	-25.21	34.97
100.00	11 44 3	4291.25	11.77	172.38	49.09	62.32	12 55 34	3691.3	7.97	165.65
110.00	22 33 11	2022.18	-30.39	23.24	53.19	106.45	23 6 54	1422.2	-27.84	14.97
110.00	12 40 32	4114.37	14.60	157.32	47.45	58.74	13 49 16	3514.4	10.35	150.79

DIFFERENTIAL CORRECTIONS

TDE-2.1585 TRA 8.1807 TC3-9.6754 BAU 2.6759
RDE .5116 RRA -.0001 RC3 .3896 FAU .13804
FDE-2.1878 FRA 5.8763 FC3-5.7814 BSP 49114
BDE 2.2183 BRA 8.1807 BC3 9.6832 FSP 3045

MID-COURSE EXECUTION ACCURACY

SGT13952.8 SGR 735.7 SG3 828.4
RRT -.4746 RRF -.5161 RTF .9918
SGB13972.2 R23 .0505 R13 -.9918
SG113957.2 SG2 647.3 THA 178.56

ORBIT DETERMINATION ACCURACY

ST 4166.3 SR 644.8 SS 1590.7
CRT -.6539 CRS .7734 CST -.9852
LSA 4473.6 MSA 540.0 SSA 16.9
EL1 4187.9 EL2 485.4 ALF 174.14

LAUNCH DATE NOV 3 1964 FLIGHT TIME 400.00 ARRIVAL DATE DEC 8 1965

DISTANCE 888.390

HELIOCENTRIC CONIC

RL 148.38 LAL -.00 LOL 40.61 VL 32.915 GAL -7.17 AZL 88.17 HCA 269.84 SMA 188.15 ECC .24406 INC 1.8279 V1 30.028
RP 208.32 LAP -1.83 LOP 310.45 VP 23.849 GAP -12.74 AZP 90.01 TAL 322.05 TAP 231.89 RCA 142.23 APO 234.07 V2 26.304
RC 317.035 GL 13.01 GP 1.23 ZAL 142.51 ZAP 35.13 ETS 180.94 ZAE 57.44 ETE 180.42 ZAC 85.89 ETC 257.67 CLP 35.11

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 21.413 VHL 4.627 DLA 9.90 RAL 189.91 RAD 6567.9 VEL 11.950 PTH 2.13 VHP 5.262 DPA 8.35 RAP 167.87 ECC 1.3524

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 53 51	2542.73	-25.94	63.37	55.56	101.77	20 36 13	1942.7	-24.06	55.21
90.00	10 26 31	4562.77	11.47	192.51	50.91	63.93	11 42 33	3962.8	7.87	185.68
100.00	21 20 4	2264.63	-27.13	42.63	55.27	103.07	21 57 49	1664.6	-25.06	34.44
100.00	11 42 58	4316.10	12.55	173.81	50.36	62.65	12 54 54	3716.1	8.79	167.05
110.00	22 39 25	2016.35	-30.28	22.82	54.31	106.68	23 13 1	1416.3	-27.70	14.58
110.00	12 40 7	4137.15	15.40	158.60	48.72	59.10	13 49 4	3537.1	11.19	152.03

DIFFERENTIAL CORRECTIONS

TDE-2.2824 TRA 8.4693 TC3-9.4879 BAU 2.7126
RDE .5228 RRA -.0023 RC3 .3783 FAU .13003
FDE-2.1652 FRA 5.6985 FC3-5.2572 BSP 49588
BDE 2.3415 BRA 8.4693 BC3 9.4755 FSP 2890

MID-COURSE EXECUTION ACCURACY

SGT14074.0 SGR 735.9 SG3 783.1
RRT -.4758 RRF -.5186 RTF .9912
SGB14093.3 R23 .0523 R13 -.9913
SG114078.4 SG2 647.1 THA 178.57

ORBIT DETERMINATION ACCURACY

ST 4272.4 SR 647.4 SS 1563.3
CRT -.6634 CRS .7810 CST -.9853
LSA 4563.9 MSA 535.7 SSA 16.7
EL1 4294.2 EL2 482.0 ALF 174.19

LAUNCH DATE NOV 3 1964 FLIGHT TIME 402.00 ARRIVAL DATE DEC 10 1965

DISTANCE 892.548

HELIOCENTRIC CONIC

RL 148.38 LAL -.00 LOL 40.61 VL 32.921 GAL -7.37 AZL 88.17 HCA 271.09 SMA 188.24 ECC .24605 INC 1.8339 V1 30.028
RP 208.16 LAP -1.83 LOP 311.70 VP 23.877 GAP -12.91 AZP 89.97 TAL 321.22 TAP 232.31 RCA 141.93 APO 234.56 V2 26.323
RC 317.924 GL 12.81 GP 1.21 ZAL 143.40 ZAP 34.46 ETS 180.93 ZAE 56.48 ETE 180.46 ZAC 85.99 ETC 257.60 CLP 34.45

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 22.201 VHL 4.712 DLA 9.37 RAL 190.64 RAD 6567.9 VEL 11.982 PTH 2.14 VHP 5.365 DPA 8.09 RAP 168.40 ECC 1.3654

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 1 0	2534.18	-25.82	62.77	56.72	102.04	20 43 14	1934.2	-23.90	54.63
90.00	10 25 10	4588.77	12.24	194.03	52.20	64.27	11 41 39	3988.8	8.68	187.16
100.00	21 26 56	2257.02	-27.01	42.09	56.42	103.32	22 4 33	1657.0	-24.91	33.92
100.00	11 41 55	4341.16	13.33	175.27	51.65	62.99	12 54 16	3741.2	9.60	168.46
110.00	22 45 37	2010.77	-30.17	22.42	55.45	106.89	23 19 8	1410.8	-27.56	14.20
110.00	12 39 43	4160.17	16.20	159.90	50.02	59.48	13 49 3	3560.2	12.03	153.28

DIFFERENTIAL CORRECTIONS

TDE-2.4116 TRA 8.7641 TC3-9.2598 BAU 2.7505
RDE .5343 RRA -.0049 RC3 .3673 FAU .12239
FDE-2.1410 FRA 5.5188 FC3-4.7726 BSP 50006
BDE 2.4701 BRA 8.7641 BC3 9.2671 FSP 2737

MID-COURSE EXECUTION ACCURACY

SGT14191.9 SGR 736.2 SG3 739.6
RRT -.4777 RRF -.5220 RTF .9907
SGB14211.0 R23 .0544 R13 -.9907
SG114196.3 SG2 646.6 THA 178.58

ORBIT DETERMINATION ACCURACY

ST 4378.2 SR 649.8 SS 1534.5
CRT -.6727 CRS .7887 CST -.9854
LSA 4654.3 MSA 531.2 SSA 16.5
EL1 4400.2 EL2 478.4 ALF 174.23

LAUNCH DATE NOV 3 1964 FLIGHT TIME 404.00 ARRIVAL DATE DEC 12 1965

HELIOCENTRIC CONIC DISTANCE 896.698 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.926 GAL -7.57 AZL 88.16 HCA 272.34 SMA 188.34 ECC .24813 INC 1.8400 V1 30.028
RP 208.01 LAP -1.84 LOP 312.95 VP 23.904 GAP -13.08 AZP 89.93 TAL 320.38 TAP 232.72 RCA 141.61 APO 235.07 V2 26.341
RC 318.808 GL 12.61 GP 1.19 ZAL 144.29 ZAP 33.82 ETS 180.92 ZAE 55.54 ETE 180.49 ZAC 86.09 ETC 257.53 CLP 33.80

PLANETOCENTRIC CONIC

C3 23.037 VHL 4.800 DLA 8.83 RAL 191.36 RAD 6567.9 VEL 12.017 PTH 2.14 VHP 5.471 DPA 7.82 RAP 168.95 ECC 1.3791

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 8 7	2525.94	-25.70	62.20	57.89	102.31	20 50 13	1925.9	-23.75	54.07
90.00	10 23 50	4614.97	13.01	195.57	53.52	64.63	11 40 45	4015.0	9.49	188.66
100.00	21 33 45	2249.71	-26.89	41.58	57.59	103.57	22 11 15	1649.7	-24.76	33.43
100.00	11 40 52	4366.43	14.11	176.74	52.97	63.37	12 53 39	3766.4	10.42	169.89
110.00	22 51 48	2005.47	-30.07	22.05	56.60	107.09	23 25 14	1405.5	-27.43	13.84
110.00	12 39 19	4183.44	17.00	161.23	51.35	59.89	13 49 2	3583.4	12.87	154.56

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-2.5443 TRA 9.0675 TC3-9.0490 BAU 2.7891 SGT14306.4 SGR 736.5 SG3 697.5 ST 4482.5 SR 652.1 SS 1504.3
RDE .5462 RRA -.0080 RC3 .3566 FAU .11499 RRT -.4802 RRF -.5260 RTF .9901 CRT -.6817 CRS .7962 CST -.9853
FDE-2.1142 FRA 5.3391 FC3-4.3213 BSP 50411 SGB14325.3 RZ3 .0566 R13 -.9901 LSA 4743.7 MSA 526.8 SSA 16.3
BDE 2.6023 BRA 9.0675 BC3 9.0560 FSP 2590 SG114310.8 SG2 645.9 THA 178.58 EL1 4504.7 EL2 474.8 ALF 174.27

LAUNCH DATE NOV 3 1964 FLIGHT TIME 406.00 ARRIVAL DATE DEC 14 1965

HELIOCENTRIC CONIC DISTANCE 900.839 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.932 GAL -7.77 AZL 88.15 HCA 273.59 SMA 188.44 ECC .25030 INC 1.8462 V1 30.028
RP 207.86 LAP -1.84 LOP 314.20 VP 23.930 GAP -13.26 AZP 89.88 TAL 319.52 TAP 233.11 RCA 141.27 APO 235.61 V2 26.357
RC 319.685 GL 12.41 GP 1.17 ZAL 145.17 ZAP 33.20 ETS 180.91 ZAE 54.61 ETE 180.52 ZAC 86.19 ETC 257.46 CLP 33.18

PLANETOCENTRIC CONIC

C3 23.924 VHL 4.891 DLA 8.30 RAL 192.09 RAD 6568.0 VEL 12.054 PTH 2.15 VHP 5.579 DPA 7.55 RAP 169.53 ECC 1.3937

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 15 11	2518.03	-25.59	61.65	59.09	102.56	20 57 9	1918.0	-23.60	53.54
90.00	10 22 32	4641.35	13.77	197.13	54.86	65.01	11 39 53	4041.4	10.29	190.18
100.00	21 40 33	2242.71	-26.78	41.09	58.77	103.80	22 17 56	1642.7	-24.62	32.96
100.00	11 39 51	4391.90	14.88	178.24	54.32	63.77	12 53 3	3791.9	11.23	171.35
110.00	22 57 58	2000.45	-29.96	21.69	57.77	107.28	23 31 18	1400.4	-27.31	13.50
110.00	12 38 56	4206.93	17.80	162.59	52.70	60.32	13 49 2	3606.9	13.71	155.86

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-2.6811 TRA 9.3797 TC3-8.8351 BAU 2.8280 SGT14417.2 SGR 736.8 SG3 657.1 ST 4585.5 SR 654.3 SS 1472.6
RDE .5585 RRA -.0115 RC3 .3462 FAU .10784 RRT -.4832 RRF -.5307 RTF .9894 CRT -.6902 CRS .8036 CST -.9852
FDE-2.0848 FRA 5.1591 FC3-3.9022 BSP 50789 SGB14436.0 RZ3 .0590 R13 -.9894 LSA 4832.2 MSA 522.4 SSA 16.1
BDE 2.7387 BRA 9.3797 BC3 8.8419 FSP 2446 SG114421.6 SG2 644.8 THA 178.58 EL1 4607.9 EL2 471.1 ALF 174.32

LAUNCH DATE NOV 3 1964 FLIGHT TIME 408.00 ARRIVAL DATE DEC 16 1965

HELIOCENTRIC CONIC DISTANCE 904.969 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.938 GAL -7.99 AZL 88.15 HCA 274.85 SMA 188.54 ECC .25256 INC 1.8523 V1 30.028
RP 207.73 LAP -1.85 LOP 315.46 VP 23.956 GAP -13.44 AZP 89.84 TAL 318.64 TAP 233.49 RCA 140.92 APO 236.15 V2 26.373
RC 320.558 GL 12.21 GP 1.15 ZAL 146.06 ZAP 32.59 ETS 180.91 ZAE 53.71 ETE 180.55 ZAC 86.31 ETC 257.38 CLP 32.57

PLANETOCENTRIC CONIC

C3 24.867 VHL 4.987 DLA 7.77 RAL 192.81 RAD 6568.0 VEL 12.093 PTH 2.16 VHP 5.689 DPA 7.27 RAP 170.12 ECC 1.4092

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 22 14	2510.44	-25.47	61.12	60.29	102.80	21 4 4	1910.4	-23.46	53.03
90.00	10 21 14	4667.91	14.53	198.71	56.23	65.43	11 39 2	4067.9	11.10	191.72
100.00	21 47 19	2236.01	-26.67	40.62	59.97	104.03	22 24 35	1636.0	-24.48	32.51
100.00	11 38 51	4417.57	15.64	179.76	55.69	64.20	12 52 28	3817.6	12.05	172.82
110.00	23 4 6	1995.71	-29.87	21.35	58.95	107.45	23 37 22	1395.7	-27.19	13.19
110.00	12 38 33	4230.63	18.59	163.97	54.09	60.78	13 49 3	3630.6	14.56	157.18

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-2.8224 TRA 9.7000 TC3-8.6208 BAU 2.8681 SGT14524.7 SGR 737.0 SG3 618.0 ST 4687.3 SR 656.2 SS 1439.4
RDE .5711 RRA -.0155 RC3 .3361 FAU .10093 RRT -.4868 RRF -.5361 RTF .9886 CRT -.6985 CRS .8109 CST -.9851
FDE-2.0531 FRA 4.9780 FC3-3.5139 BSP 51127 SGB14543.3 RZ3 .0616 R13 -.9887 LSA 4919.8 MSA 517.9 SSA 15.9
BDE 2.8796 BRA 9.7000 BC3 8.6273 FSP 2306 SG114529.1 SG2 643.6 THA 178.58 EL1 4709.9 EL2 467.4 ALF 174.36

LAUNCH DATE NOV 3 1964 FLIGHT TIME 410.00 ARRIVAL DATE DEC 18 1965

HELIOCENTRIC CONIC DISTANCE 909.088 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.944 GAL -8.20 AZL 88.14 HCA 276.11 SMA 188.64 ECC .25492 INC 1.8585 V1 30.028
RP 207.60 LAP -1.85 LOP 316.72 VP 23.980 GAP -13.62 AZP 89.80 TAL 317.75 TAP 233.86 RCA 140.55 APO 236.73 V2 26.388
RC 321.425 GL 12.00 GP 1.13 ZAL 146.95 ZAP 32.00 ETS 180.90 ZAE 52.82 ETE 180.58 ZAC 86.42 ETC 257.31 CLP 31.98

PLANETOCENTRIC CONIC

C3 25.867 VHL 5.086 DLA 7.24 RAL 193.53 RAD 6568.0 VEL 12.134 PTH 2.17 VHP 5.802 DPA 6.98 RAP 170.72 ECC 1.4257

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 29 14	2503.18	-25.36	60.62	61.51	103.03	21 10 57	1903.2	-23.32	52.55
90.00	10 19 59	4694.84	15.28	200.31	57.63	65.87	11 38 13	4094.6	11.89	193.27
100.00	21 54 3	2229.64	-26.56	40.18	61.19	104.24	22 31 12	1629.6	-24.34	32.08
100.00	11 37 51	4443.41	16.40	181.30	57.10	64.65	12 51 55	3843.4	12.86	174.31
110.00	23 10 13	1991.27	-29.78	21.04	60.15	107.62	23 43 24	1391.3	-27.08	12.89
110.00	12 38 10	4254.56	19.38	165.37	55.50	61.27	13 49 5	3654.6	15.40	158.52

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-2.9682 TRA10.0286 TC3-8.4066 BAU 2.9093 SGT14628.7 SGR 737.2 SG3 580.5 ST 4787.5 SR 658.1 SS 1404.7
RDE .5841 RRA -.0200 RC3 .3262 FAU .09427 RRT -.4910 RRF -.5420 RTF .9877 CRT -.7065 CRS .8181 CST -.9849
FDE-2.0187 FRA 4.7962 FC3-3.1551 BSP 51437 SGB14647.3 RZ3 .0644 R13 -.9878 LSA 5006.2 MSA 513.3 SSA 15.7
BDE 3.0251 BRA10.0287 BC3 8.4129 FSP 2170 SG114633.2 SG2 642.0 THA 178.58 EL1 4810.2 EL2 463.5 ALF 174.40

LAUNCH DATE NOV 3 1964 FLIGHT TIME 412.00 ARRIVAL DATE DEC 20 1965

HELIOCENTRIC CONIC DISTANCE 913.193 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.949 GAL -8.43 AZL 88.14 HCA 277.36 SMA 188.75 ECC .25738 INC 1.8647 V1 30.028
RP 207.48 LAP -1.85 LOP 317.98 VP 24.004 GAP -13.81 AZP 89.76 TAL 316.84 TAP 234.20 RCA 140.17 APO 237.32 V2 26.402
RC 322.286 GL 11.79 GP 1.11 ZAL 147.83 ZAP 31.43 ETS 180.89 ZAE 51.94 ETE 180.61 ZAC 86.55 ETC 257.23 CLP 31.41

PLANETOCENTRIC CONIC

C3 26.930 VHL 5.189 DLA 6.71 RAL 194.24 RAD 6568.1 VEL 12.178 PTH 2.19 VHP 5.918 DPA 6.68 RAP 171.35 ECC 1.4432

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 36 12	2496.26	-25.26	60.14	62.75	103.25	21 17 48	1896.3	-23.18	52.08
90.00	10 18 44	4721.52	16.02	201.94	59.06	66.34	11 37 26	4121.5	12.69	194.85
100.00	22 0 44	2223.58	-26.46	39.76	62.42	104.44	22 37 48	1623.6	-24.22	31.68
100.00	11 36 53	4469.42	17.15	182.87	58.53	65.14	12 51 22	3869.4	13.66	175.82
110.00	23 16 18	1987.12	-29.69	20.75	61.36	107.77	23 49 25	1387.1	-26.97	12.61
110.00	12 37 49	4278.65	20.16	166.81	56.94	61.79	13 49 7	3678.7	16.23	159.89

DIFFERENTIAL CORRECTIONS
TDE-3.1187 TRA10.3662 TC3-8.1923 BAU 2.9517
RDE .5974 RRA -.0250 RC3 .3166 FAU .08785
FDE-1.9825 FRA 4.6130 FC3-2.8241 BSP 51702
BDE 3.1754 BRA10.3662 BC3 8.1984 FSP 2037

MID-COURSE EXECUTION ACCURACY
SGT14729.4 SGR 737.4 SG3 544.3
RRT -.4957 RRF -.5487 RTF .9868
SGB14747.9 R23 .0675 R13 -.9868
SG114734.0 SG2 640.3 THA 178.58

ORBIT DETERMINATION ACCURACY
ST 4886.1 SR 659.8 SS 1368.8
CRT -.7143 CRS .8253 CST -.9846
LSA 5091.5 MSA 508.8 SSA 15.5
EL1 4909.0 EL2 459.6 ALF 174.44

LAUNCH DATE NOV 3 1964 FLIGHT TIME 414.00 ARRIVAL DATE DEC 22 1965

HELIOCENTRIC CONIC DISTANCE 917.285 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.955 GAL -8.67 AZL 88.13 HCA 278.62 SMA 188.85 ECC .25995 INC 1.8710 V1 30.028
RP 207.36 LAP -1.85 LOP 319.24 VP 24.026 GAP -14.00 AZP 89.72 TAL 315.91 TAP 234.53 RCA 139.76 APO 237.94 V2 26.416
RC 323.141 GL 11.58 GP 1.09 ZAL 148.71 ZAP 30.87 ETS 180.88 ZAE 51.08 ETE 180.64 ZAC 86.67 ETC 257.16 CLP 30.86

PLANETOCENTRIC CONIC

C3 28.059 VHL 5.297 DLA 6.18 RAL 194.96 RAD 6568.1 VEL 12.224 PTH 2.20 VHP 6.037 DPA 6.37 RAP 171.99 ECC 1.4618

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 43 7	2489.67	-25.15	59.69	64.00	103.45	21 24 36	1889.7	-23.05	51.64
90.00	10 17 31	4748.55	16.75	203.59	60.51	66.83	11 36 39	4148.6	13.48	196.44
100.00	22 7 23	2217.85	-26.36	39.36	63.67	104.63	22 44 21	1617.9	-24.10	31.29
100.00	11 35 56	4495.60	17.90	184.46	59.99	65.65	12 50 51	3895.6	14.46	177.35
110.00	23 22 21	1983.27	-29.61	20.48	62.59	107.92	23 55 24	1383.3	-26.88	12.36
110.00	12 37 27	4302.95	20.94	168.27	58.41	62.34	13 49 10	3702.9	17.07	161.28

DIFFERENTIAL CORRECTIONS
TDE-3.2740 TRA10.7131 TC3-7.9786 BAU 2.9952
RDE .6112 RRA -.0305 RC3 .3072 FAU .08163
FDE-1.9434 FRA 4.4290 FC3-2.5187 BSP 51938
BDE 3.3306 BRA10.7131 BC3 7.9845 FSP 1909

MID-COURSE EXECUTION ACCURACY
SGT14826.9 SGR 737.6 SG3 509.4
RRT -.5009 RRF -.5560 RTF .9857
SGB14845.3 R23 .0709 R13 -.9858
SG114831.5 SG2 638.2 THA 178.57

ORBIT DETERMINATION ACCURACY
ST 4983.1 SR 661.3 SS 1331.3
CRT -.7218 CRS .8324 CST -.9843
LSA 5175.6 MSA 504.1 SSA 15.3
EL1 5006.1 EL2 455.6 ALF 174.48

LAUNCH DATE NOV 3 1964 FLIGHT TIME 416.00 ARRIVAL DATE DEC 24 1965

HELIOCENTRIC CONIC DISTANCE 921.360 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.961 GAL -8.91 AZL 88.12 HCA 279.89 SMA 188.96 ECC .26263 INC 1.8772 V1 30.028
RP 207.26 LAP -1.85 LOP 320.50 VP 24.048 GAP -14.20 AZP 89.68 TAL 314.96 TAP 234.85 RCA 139.33 APO 238.58 V2 26.428
RC 323.990 GL 11.37 GP 1.07 ZAL 149.59 ZAP 30.34 ETS 180.87 ZAE 50.24 ETE 180.67 ZAC 86.80 ETC 257.09 CLP 30.32

PLANETOCENTRIC CONIC

C3 29.259 VHL 5.409 DLA 5.65 RAL 195.67 RAD 6568.2 VEL 12.273 PTH 2.21 VHP 6.158 DPA 6.06 RAP 172.64 ECC 1.4815

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 49 59	2483.42	-25.05	59.26	65.27	103.65	21 31 23	1883.4	-22.93	51.23
90.00	10 16 19	4775.72	17.47	205.25	62.00	67.36	11 35 55	4175.7	14.26	198.06
100.00	22 [illegible] 0	2212.45	-26.27	38.98	64.93	104.80	22 50 53	1612.4	-23.98	30.93
100.00	11 34 59	4521.93	18.63	186.07	61.47	66.19	12 50 21	3921.9	15.25	178.91
110.00	23 28 22	1979.72	-29.54	20.23	63.84	108.05	24 1 22	1379.7	-26.79	12.12
110.00	12 37 7	4327.42	21.70	169.75	59.92	62.92	13 49 14	3727.4	17.90	162.69

DIFFERENTIAL CORRECTIONS
TDE-3.4344 TRA11.0700 TC3-7.7671 BAU 3.0405
RDE .6254 RRA -.0365 RC3 .2981 FAU .07563
FDE-1.9024 FRA 4.2437 FC3-2.2376 BSP 52129
BDE 3.4909 BRA11.0701 BC3 7.7728 FSP 1783

MID-COURSE EXECUTION ACCURACY
SGT14922.3 SGR 737.8 SG3 475.8
RRT -.5066 RRF -.5639 RTF .9844
SGB14940.5 R23 .0746 R13 -.9845
SG114927.0 SG2 635.9 THA 178.56

ORBIT DETERMINATION ACCURACY
ST 5078.6 SR 662.7 SS 1292.6
CRT -.7291 CRS .8395 CST -.9838
LSA 5258.6 MSA 499.4 SSA 15.1
EL1 5101.7 EL2 451.5 ALF 174.52

LAUNCH DATE NOV 3 1964 FLIGHT TIME 418.00 ARRIVAL DATE DEC 26 1965

HELIOCENTRIC CONIC DISTANCE 925.419 EARTH TO MARS

RL 148.38 LAL -.00 LOL 40.61 VL 32.967 GAL -9.16 AZL 88.12 HCA 281.15 SMA 189.06 ECC .26542 INC 1.8836 V1 30.028
RP 207.16 LAP -1.85 LOP 321.76 VP 24.069 GAP -14.40 AZP 89.64 TAL 314.00 TAP 235.15 RCA 138.88 APO 239.24 V2 26.439
RC 324.833 GL 11.16 GP 1.06 ZAL 150.47 ZAP 29.82 ETS 180.85 ZAE 49.42 ETE 180.69 ZAC 86.94 ETC 257.01 CLP 29.80

PLANETOCENTRIC CONIC

C3 30.535 VHL 5.526 DLA 5.12 RAL 196.38 RAD 6568.2 VEL 12.325 PTH 2.22 VHP 6.283 DPA 5.74 RAP 173.32 ECC 1.5025

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 56 50	2477.51	-24.96	58.85	66.55	103.83	21 38 7	1877.5	-22.81	50.84
90.00	10 15 9	4803.03	18.18	206.95	63.51	67.91	11 35 12	4203.0	15.03	199.69
100.00	22 20 35	2207.37	-26.18	38.63	66.20	104.97	22 57 22	1607.4	-23.87	30.60
100.00	11 34 4	4548.41	19.35	187.71	62.99	66.76	12 49 53	3948.4	16.04	180.48
110.00	23 34 21	1976.48	-29.47	20.00	65.10	108.16	24 7 18	1376.5	-26.70	11.90
110.00	12 36 47	4352.06	22.46	171.27	61.45	63.53	13 49 19	3752.1	18.72	164.12

DIFFERENTIAL CORRECTIONS
TDE-3.5979 TRA11.4373 TC3-7.5551 BAU 3.0865
RDE .6400 RRA -.0432 RC3 .2891 FAU .06978
FDE-1.8580 FRA 4.0572 FC3-1.9785 BSP 52315
BDE 3.6544 BRA11.4373 BC3 7.5606 FSP 1663

MID-COURSE EXECUTION ACCURACY
SGT15013.2 SGR 737.9 SG3 443.4
RRT -.5126 RRF -.5723 RTF .9830
SGB15031.3 R23 .0786 R13 -.9831
SG115018.0 SG2 633.4 THA 178.55

ORBIT DETERMINATION ACCURACY
ST 5170.9 SR 663.8 SS 1252.2
CRT -.7360 CRS .8465 CST -.9833
LSA 5338.7 MSA 494.7 SSA 14.9
EL1 5194.1 EL2 447.4 ALF 174.56

LAUNCH DATE NOV 4 1964 FLIGHT TIME 180.00 ARRIVAL DATE MAY 3 1965

HELIOCENTRIC CONIC DISTANCE 467.593 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 34.612 GAL -7.25 AZL 87.71 HCA 151.39 SMA 224.46 ECC .35926 INC 2.2861 V1 30.035
RP 243.99 LAP 1.09 LOP 193.02 VP 22.285 GAP 20.48 AZP 92.01 TAL 332.20 TAP 123.59 RCA 143.82 APO 305.11 V2 22.486
RC 134.631 GL 13.27 GP -1.16 ZAL 131.20 ZAP 170.23 ETS 185.45 ZAE 156.36 ETE 355.45 ZAC 87.29 ETC 256.12 CLP 170.30

PLANETOCENTRIC CONIC

C3 35.614 VHL 5.968 DLA 14.46 RAL 180.06 RAD 6568.4 VEL 12.529 PTH 2.27 VHP 9.313 DPA -1.15 RAP 183.09 ECC 1.5861

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 31 57	2323.54	-28.26	83.54	57.36	91.95	19 19 0	2223.5	-27.69	74.92
90.00	10 22 0	4534.53	10.62	190.87	49.01	63.59	11 37 34	3934.5	6.99	184.07
100.00	20 1 1	2536.27	-29.75	62.34	57.28	93.05	20 43 18	1936.3	-29.01	53.61
100.00	11 35 36	4297.04	11.95	172.72	48.32	62.40	12 47 13	3697.0	8.16	165.98
110.00	21 26 34	2268.59	-33.71	41.67	56.91	96.06	22 4 23	1668.6	-32.50	32.61
110.00	12 26 33	4137.48	15.41	158.62	46.32	59.10	13 35 30	3537.5	11.20	152.04

DIFFERENTIAL CORRECTIONS
TDE 1.2320 TRA-2.9628 TC3 .8059 BAU .3876
RDE -.3644 RRA -.0085 RC3 -.1157 FAU .07741
FDE -.6643 FRA 2.4505 FC3-1.8817 BSP 11262
BDE 1.2847 BRA 2.9628 BC3 .8142 FSP 830

MID-COURSE EXECUTION ACCURACY
SGT 3309.6 SGR 376.2 SG3 291.1
RRT -.4190 RRF .4044 RTF -.9014
SGB 3330.9 R23 -.0250 R13 .9015
SG1 3313.4 SG2 341.2 THA 177.24

ORBIT DETERMINATION ACCURACY
ST 1475.3 SR 349.9 SS 781.2
CRT -.7975 CRS -.6522 CST 9765
LSA 1684.7 MSA 265.1 SSA 26.7
EL1 1502.0 EL2 207.3 ALF 169.08

LAUNCH DATE NOV 4 1964 FLIGHT TIME 182.00 ARRIVAL DATE MAY 5 1965

HELIOCENTRIC CONIC DISTANCE 471.239 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 34.531 GAL -7.07 AZL 87.70 HCA 152.30 SMA 222.34 ECC .35246 INC 2.3038 V1 30.035
RP 243.75 LAP 1.07 LOP 193.93 VP 22.182 GAP 19.92 AZP 92.04 TAL 332.50 TAP 124.80 RCA 143.98 APO 300.71 V2 22.510
RC 136.814 GL 13.63 GP -1.22 ZAL 130.75 ZAP 169.74 ETS 185.44 ZAE 156.26 ETE 355.50 ZAC 87.32 ETC 256.10 CLP 169.81

PLANETOCENTRIC CONIC

C3 34.162 VHL 5.845 DLA 14.95 RAL 179.86 RAD 6568.3 VEL 12.471 PTH 2.26 VHP 9.111 DPA -1.38 RAP 183.45 ECC 1.5622

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 26 40	2830.38	-28.27	84.04	56.5	91.70	19 13 51	2230.4	-27.73	75.42
90.00	10 25 36	4506.66	9.77	189.26	48.19	63.29	11 40 42	3906.7	6.11	102.50
100.00	19 56 6	2541.97	-29.77	62.76	56.50	92.83	20 38 28	1942.0	-29.06	54.03
100.00	11 38 51	4270.31	11.10	171.19	47.49	62.07	12 50 1	3670.3	7.28	164.48
110.00	21 22 24	2271.95	-33.73	41.90	56.14	95.91	22 0 16	1671.9	-32.54	32.87
110.00	12 29 2	4113.10	14.56	157.25	45.48	58.72	13 37 35	3513.1	10.31	150.72

DIFFERENTIAL CORRECTIONS
TDE 1.2093 TRA-2.9334 TC3 .8651 BAU .3990
RDE -.3489 RRA .0015 RC3 -.1226 FAU .07970
FDE -.6649 FRA 2.5087 FC3-2.0197 BSP 11455
BDE 1.2586 BRA 2.9334 BC3 .8738 FSP 876

MID-COURSE EXECUTION ACCURACY
SGT 3359.5 SGR 370.9 SG3 305.2
RRT -.4454 RRF .4315 RTF -.9047
SGB 3380.0 R23 -.0274 R13 .9048
SG1 3363.6 SG2 331.7 THA 177.16

ORBIT DETERMINATION ACCURACY
ST 1484.4 SR 342.1 SS 792.3
CRT -.7996 CRS -.6495 CST .9750
LSA 1696.3 MSA 264.7 SSA 26.4
EL1 1509.9 EL2 202.0 ALF 169.37

LAUNCH DATE NOV 4 1964 FLIGHT TIME 184.00 ARRIVAL DATE MAY 7 1965

HELIOCENTRIC CONIC DISTANCE 472.958 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 34.452 GAL -6.90 AZL 87.68 HCA 153.21 SMA 220.35 ECC .34592 INC 2.3224 V1 30.035
RP 243.50 LAP 1.05 LOP 194.85 VP 22.085 GAP 19.35 AZP 92.07 TAL 332.79 TAP 126.01 RCA 144.13 APO 296.58 V2 22.535
RC 139.022 GL 14.01 GP -1.28 ZAL 130.28 ZAP 169.24 ETS 185.45 ZAE 156.20 ETE 355.52 ZAC 87.35 ETC 256.08 CLP 169.31

PLANETOCENTRIC CONIC

C3 32.793 VHL 5.726 DLA 15.45 RAL 179.64 RAD 6568.3 VEL 12.416 PTH 2.24 VHP 8.913 DPA -1.61 RAP 183.80 ECC 1.5397

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 21 10	2838.17	-28.28	84.61	55.79	91.42	19 8 28	2238.2	-27.79	75.98
90.00	10 29 23	4478.25	8.89	187.63	47.39	63.01	11 44 2	3878.3	5.20	180.90
100.00	19 59 59	2548.54	-29.79	63.25	55.73	92.57	20 33 27	1948.5	-29.12	54.51
100.00	11 42 16	4243.11	10.23	169.64	46.68	61.76	12 52 59	3643.1	6.38	162.97
110.00	21 18 5	2276.03	-33.76	42.22	55.39	95.73	21 56 1	1676.0	-32.60	33.17
110.00	12 31 39	4088.39	13.68	159.87	44.65	58.36	13 39 48	3488.4	9.39	149.39

DIFFERENTIAL CORRECTIONS
TDE 1.1858 TRA-2.9037 TC3 .9260 BAU .4100
RDE -.3339 RRA .0115 RC3 -.1301 FAU .08211
FDE -.6649 FRA 2.5679 FC3 2.1677 BSP 11647
BDE 1.2319 BRA 2.9038 BC3 .9351 FSP 922

MID-COURSE EXECUTION ACCURACY
SGT 3408.6 SGR 366.0 SG3 319.9
RRT -.4732 RRF .4603 RTF -.9078
SGB 3428.2 R23 -.0305 R13 .9079
SG1 3413.0 SG2 322.0 THA 177.07

ORBIT DETERMINATION ACCURACY
ST 1492.1 SR 334.2 SS 803.1
CRT -.8018 CRS -.6470 CST .9735
LSA 1706.5 MSA 264.6 SSA 26.1
EL1 1516.4 EL2 196.5 ALF 169.64

LAUNCH DATE NOV 4 1964 FLIGHT TIME 186.00 ARRIVAL DATE MAY 9 1965

HELIOCENTRIC CONIC DISTANCE 475.743 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 34.377 GAL -6.73 AZL 87.66 HCA 154.13 SMA 218.48 ECC .33963 INC 2.3425 V1 30.035
RP 243.25 LAP 1.02 LOP 195.76 VP 21.994 GAP 18.80 AZP 92.11 TAL 333.09 TAP 127.22 RCA 144.28 APO 292.68 V2 22.560
RC 141.251 GL 14.40 GP -1.35 ZAL 129.80 ZAP 168.72 ETS 185.48 ZAE 156.19 ETE 355.52 ZAC 87.37 ETC 256.06 CLP 168.80

PLANETOCENTRIC CONIC

C3 31.503 VHL 5.613 DLA 15.97 RAL 179.42 RAD 6568.3 VEL 12.364 PTH 2.23 VHP 8.720 DPA -1.85 RAP 184.14 ECC 1.5185

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 15 25	2846.98	-28.30	85.26	55.03	91.09	19 2 52	2247.0	-27.85	76.62
90.00	10 33 24	4449.24	7.99	185.98	46.62	62.74	11 47 33	3849.2	4.28	179.27
100.00	19 45 39	2556.04	-29.81	63.81	54.98	92.28	20 28 15	1956.0	-29.18	55.06
100.00	11 45 52	4215.41	9.33	168.07	45.90	61.47	12 56 7	3615.4	5.45	161.43
110.00	21 13 35	2280.89	-33.79	42.59	54.66	95.51	21 51 36	1680.9	-32.66	33.54
110.00	12 34 25	4063.32	12.78	154.49	43.86	58.02	13 42 8	3463.3	8.46	148.05

DIFFERENTIAL CORRECTIONS
TDE 1.1636 TRA-2.8723 TC3 .9916 BAU .4216
RDE -.3195 RRA .0215 RC3 -.1381 FAU .08463
FDE -.6635 FRA 2.6292 FC3-2.3258 BSP 11808
BDE 1.2067 BRA 2.8724 BC3 1.0011 FSP 972

MID-COURSE EXECUTION ACCURACY
SGT 3457.1 SGR 361.8 SG3 335.4
RRT -.5032 RRF .4907 RTF -.9109
SGB 3476.0 R23 -.0330 R13 .9111
SG1 3462.0 SG2 312.2 THA 176.96

ORBIT DETERMINATION ACCURACY
ST 1499.8 SR 326.2 SS 813.6
CRT -.8049 CRS -.6442 CST .9715
LSA 1716.6 MSA 265.2 SSA 25.7
EL1 1522.9 EL2 190.7 ALF 169.91

LAUNCH DATE NOV 4 1964 FLIGHT TIME 188.00 ARRIVAL DATE MAY 11 1965

DISTANCE 478.591

HELIOCENTRIC CONIC — EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 34.305 GAL -6.56 AZL 87.64 HCA 155.05 SMA 216.71 ECC .33359 INC 2.3641 V1 30.035
RP 243.00 LAP 1.00 LOP 196.68 VP 21.907 GAP 18.24 AZP 92.14 TAL 333.40 TAP 128.45 RCA 144.42 APO 289.00 V2 22.585
RC 143.499 GL 14.80 GP -1.43 ZAL 129.31 ZAP 168.20 ETS 185.53 ZAE 156.22 ETE 355.50 ZAC 87.38 ETC 256.04 CLP 168.29

PLANETOCENTRIC CONIC

C3 30.288 VHL 5.503 DLA 16.51 RAL 179.20 RAD 6568.2 VEL 12.315 PTH 2.22 VHP 8.530 DPA -2.08 RAP 184.48 ECC 1.4985

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 9 25	2856.89	-28.31	85.98	54.29	90.73	18 57 2	2256.9	-27.91	77.34
90.00	10 37 39	4419.57	7.07	184.29	45.88	62.51	11 51 19	3819.6	3.33	177.60
100.00	19 40 4	2564.54	-29.83	64.44	54.25	91.95	20 22 49	1964.5	-29.25	55.68
100.00	11 49 41	4187.16	8.41	166.48	45.15	61.21	12 59 28	3587.2	4.51	159.87
110.00	21 8 55	2286.57	-33.83	43.03	53.95	95.25	21 47 1	1686.6	-32.73	33.97
110.00	12 37 20	4037.89	11.86	153.09	43.09	57.70	13 44 38	3437.9	7.51	146.70

DIFFERENTIAL CORRECTIONS
TDE 1.1385 TRA-2.8424 TC3 1.0565 BAU .4319
RDE -.3054 RRA .0316 RC3 -.1466 FAU .08721
FDE -.6596 FRA 2.6930 FC3-2.4929 BSP 12009
BDE 1.1788 BRA 2.8425 BC3 1.0666 FSP 1026

MID-COURSE EXECUTION ACCURACY
SGT 3504.7 SGR 358.2 SG3 351.5
RRT -.5339 RRF .5225 RTF -.9138
SGB 3523.0 R23 -.0365 R13 .9140
SG1 3510.0 SG2 302.4 THA 176.85

ORBIT DETERMINATION ACCURACY
ST 1504.5 SR 318.1 SS 823.3
CRT -.8076 CRS -.6408 CST .9693
LSA 1723.6 MSA 266.4 SSA 25.2
EL1 1526.6 EL2 184.9 ALF 170.16

LAUNCH DATE NOV 4 1964 FLIGHT TIME 190.00 ARRIVAL DATE MAY 13 1965

DISTANCE 481.498

HELIOCENTRIC CONIC — EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 34.236 GAL -6.40 AZL 87.61 HCA 155.97 SMA 215.05 ECC .32778 INC 2.3871 V1 30.035
RP 242.74 LAP .97 LOP 197.60 VP 21.825 GAP 17.70 AZP 92.18 TAL 333.71 TAP 129.67 RCA 144.56 APO 285.53 V2 22.611
RC 145.763 GL 15.22 GP -1.51 ZAL 128.81 ZAP 167.67 ETS 185.60 ZAE 156.29 ETE 355.45 ZAC 87.39 ETC 256.03 CLP 167.76

PLANETOCENTRIC CONIC

C3 29.144 VHL 5.399 DLA 17.07 RAL 178.98 RAD 6568.2 VEL 12.269 PTH 2.21 VHP 8.346 DPA -2.32 RAP 184.80 ECC 1.4796

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 3 7	2868.00	-28.32	86.79	53.57	90.32	18 50 55	2268.0	-27.97	78.15
90.00	10 42 11	4389.18	6.11	182.57	45.17	62.30	11 55 20	3789.2	2.35	175.91
100.00	19 34 15	2574.12	-29.85	65.15	53.54	91.58	20 17 9	1974.1	-29.32	56.38
100.00	11 53 44	4158.28	7.46	164.86	44.43	60.97	13 3 3	3558.3	3.53	158.28
110.00	21 4 3	2293.13	-33.87	43.54	53.27	94.95	21 42 16	1693.1	-32.81	34.46
110.00	12 40 25	4012.04	10.91	151.69	42.35	57.40	13 47 17	3412.0	6.54	145.33

DIFFERENTIAL CORRECTIONS
TDE 1.1164 TRA-2.8084 TC3 1.1292 BAU .4441
RDE -.2918 RRA .0416 RC3 -.1560 FAU .08997
FDE -.6548 FRA 2.7579 FC3-2.6725 BSP 12129
BDE 1.1539 BRA 2.8087 BC3 1.1399 FSP 1081

MID-COURSE EXECUTION ACCURACY
SGT 3551.3 SGR 355.5 SG3 368.4
RRT -.5673 RRF .5558 RTF -.9171
SGB 3569.0 R23 -.0389 R13 .9173
SG1 3557.0 SG2 292.3 THA 176.73

ORBIT DETERMINATION ACCURACY
ST 1510.0 SR 310.0 SS 832.9
CRT -.8119 CRS -.6377 CST .9665
LSA 1731.2 MSA 268.8 SSA 24.5
EL1 1531.1 EL2 178.5 ALF 170.41

LAUNCH DATE NOV 4 1964 FLIGHT TIME 192.00 ARRIVAL DATE MAY 15 1965

DISTANCE 484.458

HELIOCENTRIC CONIC — EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 34.170 GAL -6.25 AZL 87.59 HCA 156.89 SMA 213.48 ECC .32220 INC 2.4119 V1 30.035
RP 242.47 LAP .95 LOP 198.52 VP 21.749 GAP 17.15 AZP 92.22 TAL 334.02 TAP 130.91 RCA 144.69 APO 282.26 V2 22.638
RC 148.041 GL 15.65 GP -1.60 ZAL 128.29 ZAP 167.13 ETS 185.69 ZAE 156.40 ETE 355.37 ZAC 87.39 ETC 256.01 CLP 167.23

PLANETOCENTRIC CONIC

C3 28.069 VHL 5.298 DLA 17.64 RAL 178.76 RAD 6568.1 VEL 12.225 PTH 2.20 VHP 8.165 DPA -2.57 RAP 185.11 ECC 1.4619

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 56 31	2880.41	-28.32	87.70	52.87	89.87	18 44 31	2280.4	-28.04	79.05
90.00	10 47 1	4357.98	5.12	180.81	44.49	62.11	11 59 39	3758.0	1.34	174.16
100.00	19 28 9	2584.87	-29.87	65.95	52.86	91.16	20 11 14	1984.9	-29.39	57.17
100.00	11 58 3	4128.75	6.48	163.22	43.74	60.76	13 6 52	3528.7	2.54	156.65
110.00	20 59 0	2300.63	-33.91	44.12	52.62	94.61	21 37 21	1700.6	-32.90	35.03
110.00	12 43 42	3985.76	9.94	150.27	41.64	57.13	13 50 8	3385.8	5.54	143.94

DIFFERENTIAL CORRECTIONS
TDE 1.0900 TRA-2.7782 TC3 1.1978 BAU .4538
RDE -.2785 RRA .0519 RC3 -.1660 FAU .09287
FDE -.6494 FRA 2.8241 FC3-2.8644 BSP 12337
BDE 1.1250 BRA 2.7787 BC3 1.2093 FSP 1138

MID-COURSE EXECUTION ACCURACY
SGT 3597.2 SGR 353.7 SG3 386.2
RRT -.6004 RRF .5909 RTF -.9195
SGB 3614.6 R23 -.0442 R13 .9198
SG1 3603.5 SG2 282.4 THA 176.60

ORBIT DETERMINATION ACCURACY
ST 1511.8 SR 301.8 SS 842.4
CRT -.8153 CRS -.6355 CST .9642
LSA 1735.6 MSA 270.5 SSA 24.0
EL1 1531.9 EL2 172.4 ALF 170.64

LAUNCH DATE NOV 4 1964 FLIGHT TIME 194.00 ARRIVAL DATE MAY 17 1965

DISTANCE 487.469

HELIOCENTRIC CONIC — EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 34.106 GAL -6.09 AZL 87.56 HCA 157.81 SMA 211.99 ECC .31684 INC 2.4388 V1 30.035
RP 242.20 LAP .92 LOP 199.44 VP 21.677 GAP 16.61 AZP 92.26 TAL 334.33 TAP 132.14 RCA 144.82 APO 279.16 V2 22.664
RC 150.330 GL 16.11 GP -1.70 ZAL 127.77 ZAP 166.57 ETS 185.80 ZAE 156.56 ETE 355.26 ZAC 87.37 ETC 256.00 CLP 166.68

PLANETOCENTRIC CONIC

C3 27.058 VHL 5.202 DLA 18.23 RAL 178.54 RAD 6568.1 VEL 12.183 PTH 2.19 VHP 7.988 DPA -2.82 RAP 185.41 ECC 1.4453

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 49 33	2894.27	-28.31	88.72	52.20	89.36	18 37 47	2294.3	-28.10	80.06
90.00	10 52 13	4325.85	4.09	179.01	43.85	61.96	12 4 18	3725.8	.31	172.37
100.00	19 21 46	2596.91	-29.89	66.84	52.20	90.68	20 5 3	1996.9	-29.47	58.06
100.00	12 2 41	4098.44	5.47	161.53	43.09	60.57	13 10 59	3498.4	1.51	154.99
110.00	20 53 44	2309.15	-33.95	44.78	51.99	94.22	21 32 14	1709.1	-33.00	35.67
110.00	12 47 12	3958.97	8.95	148.83	40.96	56.87	13 53 11	3359.0	4.53	142.53

DIFFERENTIAL CORRECTIONS
TDE 1.0641 TRA-2.7463 TC3 1.2703 BAU .4639
RDE -.2656 RRA .0624 RC3 -.1768 FAU .09586
FDE -.6408 FRA 2.8936 FC3-3.0672 BSP 12515
BDE 1.0968 BRA 2.7471 BC3 1.2825 FSP 1200

MID-COURSE EXECUTION ACCURACY
SGT 3642.0 SGR 353.1 SG3 404.7
RRT -.6349 RRF .6266 RTF -.9222
SGB 3659.1 R23 -.0489 R13 .9224
SG1 3648.9 SG2 272.3 THA 176.46

ORBIT DETERMINATION ACCURACY
ST 1512.7 SR 293.4 SS 851.1
CRT -.8198 CRS -.6325 CST .9611
LSA 1738.8 MSA 273.9 SSA 23.3
EL1 1532.0 EL2 165.9 ALF 170.86

LAUNCH DATE NOV 4 1964 FLIGHT TIME 196.00 ARRIVAL DATE MAY 19 1965

HELIOCENTRIC CONIC DISTANCE 490.528 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 34.045 GAL -5.94 AZL 87.53 HCA 158.74 SMA 210.59 ECC .31168 INC 2.4680 V1 30.035
RP 241.93 LAP .89 LOP 200.37 VP 21.609 GAP 16.08 AZP 92.30 TAL 334.65 TAP 133.38 RCA 144.95 APO 276.23 V2 22.692
RC 152.629 GL 16.58 GP -1.81 ZAL 127.23 ZAP 166.01 ETS 185.93 ZAE 156.75 ETE 355.12 ZAC 87.35 ETC 255.98 CLP 166.12

PLANETOCENTRIC CONIC

C3 26.108 VHL 5.110 DLA 18.85 RAL 178.32 RAD 6568.1 VEL 12.144 PTH 2.18 VHP 7.815 DPA -3.07 RAP 185.70 ECC 1.4297

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 42 12	2909.77	-28.29	89.85	51.55	88.79	18 30 42	2309.8	-28.16	81.19
90.00	10 57 49	4292.63	3.02	177.45	43.26	61.83	12 9 21	3692.6	-.76	170.52
100.00	19 15 2	2610.39	-29.89	67.84	51.57	90.16	19 58 33	2010.4	-29.55	59.06
100.00	12 7 40	4067.24	4.42	159.81	42.49	60.41	13 15 27	3467.2	.45	153.28
110.00	20 48 14	2318.79	-34.00	45.53	51.41	93.78	21 26 53	1718.8	-33.10	36.41
110.00	12 50 57	3931.60	7.93	147.37	40.33	56.64	13 56 28	3331.6	3.49	141.10

DIFFERENTIAL CORRECTIONS
TDE 1.0438 TRA-2.7078 TC3 1.3536 BAU .4771
RDE -.2533 RRA .0729 RC3 -.1890 FAU .09901
FDE -.6304 FRA 2.9647 FC3-3.2832 BSP 12549
BDE 1.0741 BRA 2.7088 BC3 1.3668 FSP 1265

MID-COURSE EXECUTION ACCURACY
SGT 3684.7 SGR 354.2 SG3 424.1
RRT -.6718 RRF .6627 RTF -.9254
SGB 3701.7 R23 -.0511 R13 .9257
SG1 3692.5 SG2 261.8 THA 176.29

ORBIT DETERMINATION ACCURACY
ST 1516.0 SR 285.3 SS 859.5
CRT -.8270 CRS -.6297 CST .9566
LSA 1743.4 MSA 280.0 SSA 22.2
EL1 1534.4 EL2 158.5 ALF 171.06

LAUNCH DATE NOV 4 1964 FLIGHT TIME 198.00 ARRIVAL DATE MAY 21 1965

HELIOCENTRIC CONIC DISTANCE 493.631 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 33.986 GAL -5.80 AZL 87.50 HCA 159.66 SMA 209.26 ECC .30673 INC 2.4995 V1 30.035
RP 241.65 LAP .87 LOP 201.29 VP 21.546 GAP 15.55 AZP 92.34 TAL 334.97 TAP 134.63 RCA 145.08 APO 273.45 V2 22.720
RC 154.936 GL 17.08 GP -1.93 ZAL 126.68 ZAP 165.43 ETS 186.08 ZAE 156.98 ETE 354.93 ZAC 87.31 ETC 255.97 CLP 165.56

PLANETOCENTRIC CONIC

C3 25.218 VHL 5.022 DLA 19.49 RAL 178.10 RAD 6568.0 VEL 12.108 PTH 2.17 VHP 7.645 DPA -3.33 RAP 185.98 ECC 1.4150

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 34 25	2927.06	-28.26	91.11	50.94	88.16	18 23 12	2327.1	-28.22	82.45
90.00	11 3 53	4258.22	1.92	175.23	42.72	61.74	12 14 51	3658.2	-1.88	168.60
100.00	19 7 57	2625.43	-29.89	68.96	50.98	89.57	19 51 43	2025.4	-29.63	60.17
100.00	12 13 2	4035.07	3.34	158.04	41.93	60.28	13 20 17	3435.1	-.64	151.51
110.00	20 42 30	2329.64	-34.04	46.38	50.85	93.28	21 21 19	1729.6	-33.22	37.23
110.00	12 54 59	3903.62	6.88	145.88	39.74	56.43	14 0 2	3303.6	2.42	139.63

DIFFERENTIAL CORRECTIONS
TDE 1.0126 TRA-2.6794 TC3 1.4222 BAU .4843
RDE -.2411 RRA .0840 RC3 -.2017 FAU .10241
FDE -.6200 FRA 3.0361 FC3-3.5156 BSP 12830
BDE 1.0409 BRA 2.6807 BC3 1.4365 FSP 1329

MID-COURSE EXECUTION ACCURACY
SGT 3727.0 SGR 356.5 SG3 444.5
RRT -.7053 RRF .7000 RTF -.9271
SGB 3744.0 R23 -.0608 R13 .9274
SG1 3735.5 SG2 252.1 THA 176.12

ORBIT DETERMINATION ACCURACY
ST 1511.0 SR 276.8 SS 868.0
CRT -.8314 CRS -.6291 CST .9540
LSA 1741.5 MSA 282.5 SSA 21.6
EL1 1528.6 EL2 152.1 ALF 171.25

LAUNCH DATE NOV 4 1964 FLIGHT TIME 200.00 ARRIVAL DATE MAY 23 1965

HELIOCENTRIC CONIC DISTANCE 496.776 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 33.930 GAL -5.66 AZL 87.47 HCA 160.59 SMA 208.01 ECC .30197 INC 2.5342 V1 30.035
RP 241.36 LAP .84 LOP 202.22 VP 21.487 GAP 15.02 AZP 92.39 TAL 335.29 TAP 135.88 RCA 145.20 APO 270.82 V2 22.748
RC 157.250 GL 17.60 GP -2.06 ZAL 126.11 ZAP 164.84 ETS 186.26 ZAE 157.24 ETE 354.69 ZAC 87.25 ETC 255.95 CLP 164.98

PLANETOCENTRIC CONIC

C3 24.385 VHL 4.938 DLA 20.15 RAL 177.90 RAD 6568.0 VEL 12.073 PTH 2.16 VHP 7.480 DPA -3.59 RAP 186.24 ECC 1.4013

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 26 7	2946.44	-28.21	92.53	50.36	87.45	18 15 13	2346.4	-28.27	83.86
90.00	11 10 31	4222.29	.76	173.22	42.23	61.69	12 20 54	3622.3	-3.03	166.59
100.00	19 0 26	2642.28	-29.87	70.21	50.42	88.91	19 44 29	2042.3	-29.71	61.41
100.00	12 18 53	4001.69	2.21	156.20	41.42	60.18	13 25 34	3401.7	-1.77	149.68
110.00	20 36 28	2341.85	-34.09	47.33	50.34	92.72	21 15 30	1741.8	-33.34	38.17
110.00	12 59 20	3874.88	5.80	144.36	39.19	56.25	14 3 55	3274.9	1.32	138.13

DIFFERENTIAL CORRECTIONS
TDE .9856 TRA-2.6465 TC3 1.4993 BAU .4938
RDE -.2293 RRA .0955 RC3 -.2160 FAU .10586
FDE -.6051 FRA 3.1123 FC3-3.7583 BSP 12990
BDE 1.0119 BRA 2.6482 BC3 1.5148 FSP 1400

MID-COURSE EXECUTION ACCURACY
SGT 3768.1 SGR 360.9 SG3 465.8
RRT -.7400 RRF .7364 RTF -.9294
SGB 3785.4 R23 -.0680 R13 .9297
SG1 3777.6 SG2 242.1 THA 175.93

ORBIT DETERMINATION ACCURACY
ST 1507.5 SR 268.5 SS 875.9
CRT -.8383 CRS -.6276 CST .9496
LSA 1740.1 MSA 288.7 SSA 20.7
EL1 1524.4 EL2 144.8 ALF 171.43

LAUNCH DATE NOV 4 1964 FLIGHT TIME 202.00 ARRIVAL DATE MAY 25 1965

HELIOCENTRIC CONIC DISTANCE 499.961 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 33.876 GAL -5.52 AZL 87.43 HCA 161.52 SMA 206.82 ECC .29740 INC 2.5723 V1 30.035
RP 241.08 LAP .82 LOP 203.15 VP 21.432 GAP 14.51 AZP 92.44 TAL 335.61 TAP 137.13 RCA 145.31 APO 268.33 V2 22.777
RC 159.568 GL 18.15 GP -2.21 ZAL 125.54 ZAP 164.23 ETS 186.48 ZAE 157.54 ETE 354.40 ZAC 87.19 ETC 255.94 CLP 164.38

PLANETOCENTRIC CONIC

C3 23.607 VHL 4.859 DLA 20.84 RAL 177.69 RAD 6568.0 VEL 12.041 PTH 2.15 VHP 7.318 DPA -3.87 RAP 186.49 ECC 1.3885

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 17 12	2968.26	-28.14	94.12	49.80	86.66	18 6 40	2368.3	-28.30	85.46
90.00	11 17 50	4184.59	-.46	171.12	41.80	61.69	12 27 34	3584.6	-4.24	164.48
100.00	18 52 26	2661.18	-29.84	71.62	49.89	88.17	19 36 47	2061.2	-29.78	62.81
100.00	12 25 17	3966.89	1.03	154.29	40.97	60.12	13 31 24	3366.9	-2.95	147.77
110.00	20 30 7	2355.57	-34.13	48.40	49.88	92.09	21 9 22	1755.6	-33.46	39.22
110.00	13 4 5	3845.27	4.67	142.60	38.70	56.10	14 8 11	3245.3	.19	136.59

DIFFERENTIAL CORRECTIONS
TDE .9594 TRA-2.6112 TC3 1.5799 BAU .5040
RDE -.2179 RRA .1074 RC3 -.2318 FAU .10956
FDE -.5887 FRA 3.1893 FC3-4.0179 BSP 13107
BDE .9839 BRA 2.6134 BC3 1.5968 FSP 1472

MID-COURSE EXECUTION ACCURACY
SGT 3807.0 SGR 367.7 SG3 488.1
RRT -.7739 RRF .7719 RTF -.9317
SGB 3824.7 R23 -.0761 R13 .9320
SG1 3817.7 SG2 232.2 THA 175.71

ORBIT DETERMINATION ACCURACY
ST 1503.1 SR 260.3 SS 883.6
CRT -.8468 CRS -.6276 CST .9446
LSA 1737.8 MSA 295.9 SSA 19.6
EL1 1519.3 EL2 137.0 ALF 171.59

LAUNCH DATE NOV 4 1964 FLIGHT TIME 204.00 ARRIVAL DATE MAY 27 1965

DISTANCE 503.182

HELIOCENTRIC CONIC

RL 148.35 LAL -.00 LOL 41.61 VL 33.824 GAL -5.39 AZL 87.39 HCA 162.46 SMA 205.70 ECC .29301 INC 2.6145 V1 30.035
RP 240.79 LAP .79 LOP 204.09 VP 21.381 GAP 13.99 AZP 92.49 TAL 335.93 TAP 138.39 RCA 145.42 APO 265.97 V2 22.806
RC 161.890 GL 18.73 GP -2.38 ZAL 124.95 ZAP 163.61 ETS 186.72 ZAE 157.88 ETE 354.05 ZAC 87.10 ETC 255.93 CLP 163.78

PLANETOCENTRIC CONIC

C3 22.882 VHL 4.784 DLA 21.57 RAL 177.51 RAD 6567.9 VEL 12.011 PTH 2.14 VHP 7.159 DPA -4.1[illegible] RAP 186.72 ECC 1.3766

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 7 34	2992.95	-28.02	95.92	49.29	85.76	17 57 27	2393.0	-28.32	87.27
90.00	11 25 57	4144.68	-1 75	168.90	41.44	61.73	12 35 2	3544.7	-5.51	162.24
100.00	18 43 51	2682.49	-29.78	73.20	49.41	87.34	19 28 33	2082.5	-29.84	64.40
100.00	12 32 22	3930.38	-.21	152.29	40.59	60.11	13 37 52	3330.4	-4.18	145.76
110.00	20 23 24	2371.02	-34.16	49.60	49.47	91.38	21 2 55	1771.0	-33.59	40.40
110.00	13 9 18	3814.61	3.51	141.20	38.27	55.98	14 12 52	3214.6	-.98	134.99

DIFFERENTIAL CORRECTIONS

TDE .9342 TRA-2.5742 TC3 1.6639 BAU .5147
RDE -.2069 RRA .1200 RC3 -.2495 FAU .11337
FDE -.5678 FRA 3.2707 FC3-4.2892 BSP 13185
BDE .9568 BRA 2.5770 BC3 1.6825 FSP 1550

MID-COURSE EXECUTION ACCURACY

SGT 3844.2 SGR 377.1 SG3 511.5
RRT -.8066 RRF .8057 RTF -.9342
SGB 3862.6 R23 -.0840 R13 .9346
SG1 3856.2 SG2 222.2 THA 175.46

ORBIT DETERMINATION ACCURACY

ST 1497.8 SR 252.2 SS 891.0
CRT -.8569 CRS -.6276 CST .9380
LSA 1734.1 MSA 305.8 SSA 18.4
EL1 1513.5 EL2 128.6 ALF 171.73

LAUNCH DATE NOV 4 1964 FLIGHT TIME 206.00 ARRIVAL DATE MAY 29 1965

DISTANCE 506.440

HELIOCENTRIC CONIC

RL 148.35 LAL -.00 LOL 41.61 VL 33.774 GAL -5.26 AZL 87.34 HCA 163.39 SMA 204.63 ECC .28879 INC 2.6614 V1 30.035
RP 240.49 LAP .76 LOP 205.02 VP 21.334 GAP 13.48 AZP 92.55 TAL 336.25 TAP 139.65 RCA 145.53 APO 263.72 V2 22.836
RC 164.213 GL 19.35 GP -2.56 ZAL 124.35 ZAP 162.97 ETS 187.00 ZAE 158.25 ETE 353.61 ZAC 86.99 ETC 255.92 CLP 163.16

PLANETOCENTRIC CONIC

C3 22.209 VHL 4.713 DLA 22.33 RAL 177.33 RAD 6567.9 VEL 11.983 PTH 2.14 VHP 7.004 DPA -4.46 RAP 186.93 ECC 1.3655

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 57 0	3021.17	-27.86	97.97	48.81	84.74	17 47 21	2421.2	-28.30	89.33
90.00	11 35 7	4101.96	-3.12	166.51	41.17	61.84	12 43 29	3502.0	-6.86	159.83
100.00	18 34 33	2706.66	-29.70	74.99	48.97	86.40	19 19 39	2106.7	-29.88	66.19
100.00	12 40 15	3891.70	-1.52	150.17	40.28	60.14	13 45 7	3291.7	-5.48	143.62
110.00	20 16 15	2388.46	-34.18	50.96	49.11	90.57	20 56 3	1788.5	-33.72	41.75
110.00	13 15 2	3782.66	2.29	139.53	37.91	55.88	14 18 5	3182.7	-2.20	133.32

DIFFERENTIAL CORRECTIONS

TDE .9179 TRA-2.5278 TC3 1.7644 BAU .5300
RDE -.1964 RRA .1329 RC3 -.2698 FAU .11740
FDE -.5446 FRA 3.3538 FC3-4.5766 BSP 13043
BDE .9387 BRA 2.5313 BC3 1.7849 FSP 1630

MID-COURSE EXECUTION ACCURACY

SGT 3879.3 SGR 390.2 SG3 535.9
RRT -.8390 RRF .8368 RTF -.9374
SGB 3898.9 R23 -.0881 R13 .9378
SG1 3893.1 SG2 211.6 THA 175.16

ORBIT DETERMINATION ACCURACY

ST 1497.1 SR 244.6 SS 898.4
CRT -.8714 CRS -.6290 CST .9284
LSA 1733.4 MSA 321.4 SSA 16.8
EL1 1512.3 EL2 118.8 ALF 171.8[illegible]

LAUNCH DATE NOV 4 1964 FLIGHT TIME 208.00 ARRIVAL DATE MAY 31 1965

DISTANCE 509.728

HELIOCENTRIC CONIC

RL 148.35 LAL -.00 LOL 41.61 VL 33.726 GAL -5.13 AZL 87.29 HCA 164.33 SMA 203.62 ECC .28475 INC 2.7137 V1 30.035
RP 240.19 LAP .73 LOP 205.96 VP 21.291 GAP 12.98 AZP 92.61 TAL 336.57 TAP 140.91 RCA 145.64 APO 261.60 V2 22.866
RC 166.536 GL 20.02 GP -2.77 ZAL 123.74 ZAP 162.32 ETS 187.33 ZAE 158.65 ETE 353.09 ZAC 86.85 ETC 255.91 CLP 162.53

PLANETOCENTRIC CONIC

C3 21.590 VHL 4.646 DLA 23.13 RAL 177.18 RAD 6567.9 VEL 11.957 PTH 2.13 VHP 6.853 DPA -4.78 RAP 187.12 ECC 1.3553

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 45 20	3053.67	-27.64	100.32	48.37	83.59	17 36 14	2453.7	-28.24	91.70
90.00	11 45 33	4055.79	-4.60	163.92	41.01	62.03	12 53 9	3455.8	-8.31	157.20
100.00	18 24 25	2734.20	-29.56	77.03	48.58	85.34	19 9 59	2134.2	-29.89	68.24
100.00	12 49 10	3850.49	-2.91	147.90	40.08	60.24	13 53 20	3250.5	-6.85	141.33
110.00	20 8 38	2408.15	-34.18	52.50	48.82	89.66	20 48 46	1808.2	-33.85	43.27
110.00	13 21 26	3749.30	1.01	137.79	37.63	55.83	14 23 55	3149.3	-3.48	131.58

DIFFERENTIAL CORRECTIONS

TDE .8734 TRA-2.5094 TC3 1.8126 BAU .5298
RDE -.1851 RRA .1481 RC3 -.2903 FAU .12153
FDE -.5159 FRA 3.4428 FC3-4.8734 BSP 13559
BDE .8928 BRA 2.5138 BC3 1.8357 FSP 1717

MID-COURSE EXECUTION ACCURACY

SGT 3913.9 SGR 405.4 SG3 561.4
RRT -.8625 RRF .8670 RTF -.9376
SGB 3934.8 R23 -.1108 R13 .9381
SG1 3929.5 SG2 204.4 THA 174.88

ORBIT DETERMINATION ACCURACY

ST 1477.0 SR 236.1 SS 905.9
CRT -.8788 CRS -.6335 CST .9248
LSA 1718.0 MSA 325.8 SSA 16.3
EL1 1491.5 EL2 111.6 ALF 171.96

LAUNCH DATE NOV 4 1964 FLIGHT TIME 210.00 ARRIVAL DATE JUN 2 1965

DISTANCE 513.048

HELIOCENTRIC CONIC

RL 148.35 LAL -.00 LOL 41.61 VL 33.681 GAL -5.01 AZL 87.23 HCA 165.27 SMA 202.66 ECC .28087 INC 2.7728 V1 30.035
RP 239.88 LAP .70 LOP 206.90 VP 21.251 GAP 12.48 AZP 92.68 TAL 336.90 TAP 142.17 RCA 145.74 APO 259.58 V2 22.897
RC 168.857 GL 20.73 GP -3.01 ZAL 123.11 ZAP 161.64 ETS 187.70 ZAE 159.08 ETE 352.45 ZAC 86.68 ETC 255.90 CLP 161.88

PLANETOCENTRIC CONIC

C3 21.021 VHL 4.585 DLA 23.97 RAL 177.04 RAD 6567.9 VEL 11.933 PTH 2.12 VHP 6.705 DPA -5.11 RAP 187.29 ECC 1.3460

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 32 6	3091.93	-27.32	103.07	47.97	82.24	17 23 38	2491.9	-28.11	94.50
90.00	11 57 45	4004.69	-6.23	161.04	40.98	62.32	13 4 29	3404.7	-9.88	154.28
100.00	18 13 9	2766.11	-29.36	79.38	48.24	84.12	18 59 16	2166.1	-29.87	70.61
100.00	12 59 23	3805.73	-4.42	145.44	39.99	60.41	14 2 48	3205.7	-8.33	138.83
110.00	20 0 23	2430.63	-34.16	54.26	48.60	88.62	20 40 54	1830.6	-33.97	45.02
110.00	13 28 38	3713.98	-.34	135.94	37.45	55.82	14 30 32	3114.0	-4.82	129.73

DIFFERENTIAL CORRECTIONS

TDE .8448 TRA-2.4740 TC3 1.8898 BAU .5384
RDE -.1747 RRA .1639 RC3 -.3150 FAU .12594
FDE -.4838 FRA 3.5335 FC3-5.1865 BSP 13684
BDE .8626 BRA 2.4794 BC3 1.9159 FSP 1807

MID-COURSE EXECUTION ACCURACY

SGT 3945.4 SGR 425.8 SG3 588.1
RRT -.8865 RRF .8931 RTF -.9395
SGB 3968.3 R23 -.1258 R13 .9401
SG1 3963.4 SG2 196.1 THA 174.52

ORBIT DETERMINATION ACCURACY

ST 1465.4 SR 228.6 SS 913.7
CRT -.8930 CRS -.6398 CST .9160
LSA 1708.5 MSA 339.4 SSA 15.1
EL1 1479.7 EL2 101.9 ALF 172.03

LAUNCH DATE NOV 4 1964 FLIGHT TIME 212.00 ARRIVAL DATE JUN 4 1965

HELIOCENTRIC CONIC DISTANCE 516.399 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 33.637 GAL -4.89 AZL 87.16 HCA 166.22 SMA 201.75 ECC .27714 INC 2.8399 V1 30.035
RP 239.58 LAP .68 LOP 207.85 VP 21.215 GAP 11.99 AZP 92.76 TAL 337.22 TAP 143.43 RCA 145.83 APO 257.66 V2 22.928
RC 171.174 GL 21.51 GP -3.28 ZAL 122.46 ZAP 160.94 ETS 188.14 ZAE 159.54 ETE 351.67 ZAC 86.48 ETC 255.89 CLP 161.22

PLANETOCENTRIC CONIC

C3 20.506 VHL 4.528 DLA 24.88 RAL 176.94 RAD 6567.8 VEL 11.912 PTH 2.12 VHP 6.560 DPA -5.48 RAP 187.43 ECC 1.3375

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 16 41	3138.06	-26.85	106.37	47.59	80.65	17 8 59	2538.1	-27.87	97.85
90.00	12 12 22	3946.66	-8.05	157.75	41.11	62.76	13 18 9	3346.7	-11.64	150.91
100.00	18 0 24	2803.64	-29.07	82.13	47.96	82.70	18 47 8	2203.6	-29.77	73.40
100.00	13 11 20	3756.31	-6.08	142.70	40.04	60.68	14 13 56	3156.3	-9.94	136.04
110.00	19 51 22	2456.46	-34.10	56.27	48.47	87.43	20 32 19	1856.5	-34.08	47.03
110.00	13 36 51	3676.25	-1.78	133.98	37.38	55.86	14 38 7	3076.2	-6.25	127.74

DIFFERENTIAL CORRECTIONS
TDE .8169 TRA-2.4373 TC3 1.9668 BAU .5473
RDE -.1644 RRA .1811 RC3 -.3431 FAU .13057
FDE -.4472 FRA 3.6275 FC3-5.5126 BSP 13776
BDE .8333 BRA 2.4440 BC3 1.9965 FSP 1899

MID-COURSE EXECUTION ACCURACY
SGT 3974.5 SGR 451.3 SG3 616.1
RRT -.9073 RRF .9159 RTF -.9413
SGB 4000.0 R23 -.1425 R13 .9420
SG1 3995.5 SG2 188.8 THA 174.10

ORBIT DETERMINATION ACCURACY
ST 1453.0 SR 221.6 SS 922.0
CRT -.9094 CRS -.6495 CST .9057
LSA 1698.2 MSA 355.3 SSA 13.8
EL1 1467.0 EL2 91.3 ALF 172.07

LAUNCH DATE NOV 4 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUN 6 1965

HELIOCENTRIC CONIC DISTANCE 519.779 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 33.594 GAL -4.77 AZL 87.08 HCA 167.16 SMA 200.88 ECC .27355 INC 2.9168 V1 30.035
RP 239.26 LAP .65 LOP 208.79 VP 21.182 GAP 11.50 AZP 92.84 TAL 337.54 TAP 144.70 RCA 145.93 APO 255.83 V2 22.959
RC 173.485 GL 22.37 GP -3.60 ZAL 121.79 ZAP 160.22 ETS 188.65 ZAE 160.03 ETE 350.71 ZAC 86.23 ETC 255.88 CLP 160.54

PLANETOCENTRIC CONIC

C3 20.044 VHL 4.477 DLA 25.85 RAL 176.88 RAD 6567.8 VEL 11.892 PTH 2.11 VHP 6.419 DPA -5.88 RAP 187.54 ECC 1.3299

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 57 50	3196.15	-26.14	110.47	47.21	78.71	16 51 6	2596.1	-27.44	102.04
90.00	12 30 43	3877.70	-10.17	153.80	41.47	63.43	13 35 21	3277.7	-13.66	146.86
100.00	17 45 32	2848.93	-28.63	85.43	47.71	81.01	18 33 1	2248.9	-29.58	76.75
100.00	13 25 42	3700.15	-7.94	139.57	40.28	61.09	14 27 23	3100.2	-11.73	132.84
110.00	19 41 21	2486.53	-33.98	58.61	48.42	86.05	20 22 48	1886.5	-34.16	49.37
110.00	13 46 22	3635.31	-3.34	131.84	37.46	55.96	14 46 58	3035.3	-7.79	125.57

DIFFERENTIAL CORRECTIONS
TDE .8078 TRA-2.3812 TC3 2.0788 BAU .5662
RDE -.1553 RRA .1994 RC3 -.3774 FAU .13570
FDE -.4110 FRA 3.7187 FC3-5.8613 BSP 13402
BDE .8226 BRA 2.3896 BC3 2.1128 FSP 1981

MID-COURSE EXECUTION ACCURACY
SGT 4000.0 SGR 483.8 SG3 645.3
RRT -.9275 RRF .9346 RTF -.9446
SGB 4029.2 R23 -.1521 R13 .9453
SG1 4025.1 SG2 180.0 THA 173.59

ORBIT DETERMINATION ACCURACY
ST 1450.5 SR 216.5 SS 931.0
CRT -.9316 CRS -.6635 CST .8888
LSA 1694.6 MSA 381.8 SSA 12.0
EL1 1464.5 EL2 77.9 ALF 172.0[illegible]

LAUNCH DATE NOV 4 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUN 8 1965

HELIOCENTRIC CONIC DISTANCE 523.182 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 33.554 GAL -4.66 AZL 86.99 HCA 168.11 SMA 200.06 ECC .27012 INC 3.0063 V1 30.035
RP 238.95 LAP .62 LOP 209.74 VP 21.153 GAP 11.02 AZP 92.94 TAL 337.85 TAP 145.96 RCA 146.02 APO 254.10 V2 22.991
RC 175.790 GL 23.31 GP -3.97 ZAL 121.11 ZAP 159.47 ETS 189.24 ZAE 160.54 ETE 349.53 ZAC 85.92 ETC 255.86 CLP 159.84

PLANETOCENTRIC CONIC

C3 19.644 VHL 4.432 DLA 26.90 RAL 176.88 RAD 6567.8 VEL 11.875 PTH 2.11 VHP 6.281 DPA -6.32 RAP 187.62 ECC 1.3233

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 32 50	3275.14	-24.97	115.96	46.77	76.20	16 27 25	2675.1	-26.63	107.68
90.00	12 55 40	3789.12	-12.82	148.64	42.19	64.53	13 58 49	3189.1	-16.15	141.54
100.00	17 27 31	2905.44	-27.96	89.49	47.50	78.97	18 15 57	2305.4	-29.20	80.91
100.00	13 43 40	3634.06	-10.09	135.85	40.78	61.71	14 44 14	3034.1	-13.80	129.02
110.00	19 30 5	2521.92	-33.78	61.36	48.49	84.44	20 12 7	1921.9	-34.18	52.14
110.00	13 57 36	3590.34	-5.05	129.48	37.72	56.15	14 57 26	2990.3	-9.46	123.17

DIFFERENTIAL CORRECTIONS
TDE .7563 TRA-2.3677 TC3 2.1006 BAU .5621
RDE -.1438 RRA .2227 RC3 -.4117 FAU .14036
FDE -.3530 FRA 3.8312 FC3-6.1858 BSP 14044
BDE .7698 BRA 2.3781 BC3 2.1405 FSP 2101

MID-COURSE EXECUTION ACCURACY
SGT 4025.2 SGR 521.5 SG3 675.4
RRT -.9381 RRF .9514 RTF -.9443
SGB 4058.8 R23 -.1841 R13 .9453
SG1 4054.9 SG2 179.3 THA 173.06

ORBIT DETERMINATION ACCURACY
ST 1420.9 SR 209.9 SS 941.7
CRT -.9458 CRS -.6809 CST .8804
LSA 1671.8 MSA 393.5 SSA 11.4
EL1 1434.8 EL2 67.5 ALF 172.03

LAUNCH DATE NOV 4 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUN 10 1965

HELIOCENTRIC CONIC DISTANCE 526.613 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 33.515 GAL -4.55 AZL 86.89 HCA 169.06 SMA 199.28 ECC .26683 INC 3.1111 V1 30.035
RP 238.63 LAP .59 LOP 210.69 VP 21.127 GAP 10.55 AZP 93.05 TAL 338.17 TAP 147.23 RCA 146.11 APO 252.45 V2 23.024
RC 178.086 GL 24.37 GP -4.40 ZAL 120.39 ZAP 158.69 ETS 189.95 ZAE 161.06 ETE 348.07 ZAC 85.55 ETC 255.85 CLP 159.13

PLANETOCENTRIC CONIC

C3 19.308 VHL 4.394 DLA 28.05 RAL 176.93 RAD 6567.8 VEL 11.861 PTH 2.10 VHP 6.148 DPA -6.81 RAP 187.65 ECC 1.3178

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 48 37	3417.20	-22.33	125.53	45.84	72.12	15 45 34	2817.2	-24.56	117.57
90.00	13 40 21	3638.89	-17.03	139.62	43.74	67.03	14 41 0	3038.9	-19.99	132.20
100.00	17 3 45	2981.53	-26.85	94.87	47.24	76.35	17 53 27	2381.5	-28.46	86.44
100.00	14 7 54	3549.79	-12.77	131.02	41.68	62.74	15 7 3	2949.8	-16.32	124.03
110.00	19 16 57	2564.68	-33.45	64.65	48.67	82.51	19 59 41	1964.7	-34.12	55.47
110.00	14 11 12	3539.41	-6.98	126.79	38.23	56.45	15 10 11	2939.4	-11.34	120.41

DIFFERENTIAL CORRECTIONS
TDE .7280 TRA-2.3303 TC3 2.1626 BAU .5704
RDE -.1334 RRA .2480 RC3 -.4547 FAU .14562
FDE -.2953 FRA 3.9395 FC3-6.5292 BSP 14117
BDE .7401 BRA 2.3435 BC3 2.2099 FSP 2206

MID-COURSE EXECUTION ACCURACY
SGT 4045.6 SGR 569.4 SG3 707.0
RRT -.9491 RRF .9643 RTF -.9459
SGB 4085.5 R23 -.2060 R13 .9471
SG1 4081.6 SG2 177.8 THA 172.38

ORBIT DETERMINATION ACCURACY
ST 1404.0 SR 206.1 SS 954.1
CRT -.9653 CRS -.7049 CST .8639
LSA 1658.1 MSA 417.9 SSA 10.1
EL1 1418.1 EL2 53.3 ALF 171.92

LAUNCH DATE NOV 4 1964 FLIGHT TIME 220.00 ARRIVAL DATE JUN 12 1965

HELIOCENTRIC CONIC DISTANCE 530.067 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 33.478 GAL -4.44 AZL 86.76 HCA 170.01 SMA 198.54 ECC .26367 INC 3.2359 V1 30.035
RP 238.31 LAP .56 LOP 211.64 VP 21.104 GAP 10.08 AZP 93.19 TAL 338.48 TAP 148.49 RCA 146.19 APO 250.89 V2 23.056
RC 180.373 GL 25.58 GP -4.92 ZAL 119.64 ZAP 157.86 ETS 190.79 ZAE 161.58 ETE 346.24 ZAC 85.09 ETC 255.84 CLP 158.39

PLANETOCENTRIC CONIC

C3 19.047 VHL 4.364 DLA 29.33 RAL 177.08 RAD 6567.8 VEL 11.850 PTH 2.10 VHP 6.018 DPA -7.38 RAP 187.63 ECC 1.3135

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
82.03	13 9 33	3736.55	-20.59	148.31	45.12	68.65	14 11 49	3136.6	-23.31	140.62
97.97	15 20 35	3313.12	-20.58	117.23	45.12	68.64	16 15 48	2713.1	-23.30	109.53
100.00	16 25 12	3106.08	-24.56	103.42	46.64	72.41	17 16 59	2506.1	-26.74	95.29
100.00	14 47 37	3418.83	-16.71	123.30	43.36	64.85	15 44 35	2818.8	-19.96	116.01
110.00	19 1 2	2617.94	-32.90	68.71	48.96	80.17	19 44 40	2017.9	-33.91	59.62
110.00	14 28 16	3479.74	-9.21	123.61	39.08	56.93	15 26 16	2879.7	-13.50	117.14

DIFFERENTIAL CORRECTIONS
TDE .6981 TRA-2.2946 TC3 2.2138 BAU .5782
RDE -.1226 RRA .2779 RC3 -.5051 FAU .15112
FDE -.2280 FRA 4.0533 FC3-6.8686 BSP 14220
BDE .7088 BRA 2.3114 BC3 2.2707 FSP 2315

MID-COURSE EXECUTION ACCURACY
SGT 4063.6 SGR 628.8 SG3 739.6
RRT -.9570 RRF .9745 RTF -.947
SGB 4112.0 R23 -.2284 R13 .9486
SG1 4108.0 SG2 180.4 THA 171.56

ORBIT DETERMINATION ACCURACY
ST 1384.9 SR 204.5 SS 969.2
CRT -.9829 CRS -.7355 CST .8456
LSA 1643.5 MSA 444.6 SSA 8.9
EL1 1399.4 EL2 37.3 ALF 171.74

LAUNCH DATE NOV 4 1964 FLIGHT TIME 222.00 ARRIVAL DATE JUN 14 1965

HELIOCENTRIC CONIC DISTANCE 533.545 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 33.443 GAL -4.34 AZL 86.61 HCA 170.97 SMA 197.83 ECC .26065 INC 3.3869 V1 30.035
RP 237.98 LAP .53 LOP 212.60 VP 21.083 GAP 9.62 AZP 93.35 TAL 338.79 TAP 149.76 RCA 146.27 APO 249.40 V2 23.089
RC 182.651 GL 26.97 GP -5.56 ZAL 118.84 ZAP 156.99 ETS 191.81 ZAE 162.10 ETE 343.91 ZAC 84.51 ETC 255.82 CLP 157.63

PLANETOCENTRIC CONIC

C3 18.879 VHL 4.345 DLA 30.77 RAL 177.35 RAD 6567.8 VEL 11.843 PTH 2.10 VHP 5.892 DPA -8.04 RAP 187.54 ECC 1.3107

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
77.44	12 35 51	3845.30	-21.61	156.84	45.66	67.55	13 39 56	3245.3	-24.46	149.14
102.56	15 56 24	3200.18	-21.59	109.26	45.65	67.54	16 49 44	2600.2	-24.45	101.55
77.44	12 35 51	3845.30	-21.61	156.84	45.66	67.55	13 39 56	3245.3	-24.46	149.14
102.56	15 56 24	3200.18	-21.59	109.26	45.65	67.54	16 49 44	2600.2	-24.45	101.55
110.00	18 40 30	2687.84	-31.97	73.95	49.34	77.20	19 25 18	2087.8	-33.40	65.01
110.00	14 50 55	3405.63	-11.93	119.60	40.44	57.73	15 47 41	2805.6	-16.11	112.98

DIFFERENTIAL CORRECTIONS
TDE .6743 TRA-2.2533 TC3 2.2638 BAU .5889
RDE -.1118 RRA .3131 RC3 -.5661 FAU .15712
FDE -.1568 FRA 4.1660 FC3-7.2051 BSP 14203
BDE .6835 BRA 2.2750 BC3 2.3335 FSP 2413

MID-COURSE EXECUTION ACCURACY
SGT 4076.5 SGR 703.3 SG3 773.4
RRT -.9628 RRF .9821 RTF -.9485
SGB 4136.8 R23 -.2479 R13 .9504
SG1 4132.5 SG2 187.4 THA 170.55

ORBIT DETERMINATION ACCURACY
ST 1367.6 SR 206.7 SS 986.8
CRT -.9957 CRS -.7731 CST .8242
LSA 1631.1 MSA 475.4 SSA 7.7
EL1 1383.0 EL2 18.9 ALF 171.44

LAUNCH DATE NOV 4 1964 FLIGHT TIME 224.00 ARRIVAL DATE JUN 16 1965

HELIOCENTRIC CONIC DISTANCE 537.045 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 33.409 GAL -4.24 AZL 86.43 HCA 171.93 SMA 197.16 ECC .25775 INC 3.5745 V1 30.035
RP 237.65 LAP .50 LOP 213.56 VP 21.066 GAP 9.16 AZP 93.54 TAL 339.09 TAP 151.02 RCA 146.34 APO 247.98 V2 23.123
RC 184.919 GL 28.60 GP -6.35 ZAL 117.98 ZAP 156.04 ETS 193.06 ZAE 162.57 ETE 340.93 ZAC 83.78 ETC 255.80 CLP 156.85

PLANETOCENTRIC CONIC

C3 18.828 VHL 4.339 DLA 32.41 RAL 177.77 RAD 6567.8 VEL 11.841 PTH 2.10 VHP 5.772 DPA -8.83 RAP 187.37 ECC 1.3099

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
73.53	12 10 30	3929.61	-22.71	163.74	46.55	66.23	13 15 59	3329.6	-25.73	156.03
106.47	16 25 10	3114.60	-22.70	103.29	46.54	66.22	17 17 5	2514.6	-25.72	95.58
73.53	12 10 30	3929.61	-22.71	163.74	46.55	66.23	13 15 59	3329.6	-25.73	156.03
106.47	16 25 10	3114.60	-22.70	103.29	46.54	66.22	17 17 5	2514.6	-25.72	95.58
110.00	18 10 20	2790.04	-30.19	81.38	49.64	73.14	18 56 50	2190.0	-32.20	72.74
110.00	15 24 30	3302.17	-15.62	113.85	42.68	59.20	16 19 33	2702.2	-19.59	106.98

DIFFERENTIAL CORRECTIONS
TDE .6476 TRA-2.2163 TC3 2.2890 BAU .5981
RDE -.0994 RRA .3573 RC3 -.6375 FAU .16294
FDE -.0647 FRA 4.2933 FC3-7.4922 BSP 14282
BDE .6552 BRA 2.2449 BC3 2.3762 FSP 2529

MID-COURSE EXECUTION ACCURACY
SGT 4085.9 SGR 797.3 SG3 807.6
RRT -.9666 RRF .9878 RTF -.9496
SGB 4162.9 R23 -.2639 R13 .9520
SG1 4158.1 SG2 200.9 THA 169.29

ORBIT DETERMINATION ACCURACY
ST 1347.7 SR 213.6 SS 1010.3
CRT -.9992 CRS -.8140 CST .7984
LSA 1618.7 MSA 512.4 SSA 6.5
EL1 1364.5 EL2 8.7 ALF 171.00

LAUNCH DATE NOV 4 1964 FLIGHT TIME 226.00 ARRIVAL DATE JUN 18 1965

HELIOCENTRIC CONIC DISTANCE 540.566 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 33.376 GAL -4.14 AZL 86.19 HCA 172.89 SMA 196.53 ECC .25497 INC 3.8131 V1 30.035
RP 237.31 LAP .47 LOP 214.52 VP 21.052 GAP 8.71 AZP 93.78 TAL 339.39 TAP 152.28 RCA 146.42 APO 246.63 V2 23.157
RC 187.176 GL 30.57 GP -7.36 ZAL 117.02 ZAP 155.00 ETS 194.62 ZAE 162.95 ETE 337.06 ZAC 82.83 ETC 255.77 CLP 156.04

PLANETOCENTRIC CONIC

C3 18.940 VHL 4.352 DLA 34.35 RAL 178.44 RAD 6567.8 VEL 11.846 PTH 2.10 VHP 5.659 DPA -9.80 RAP 187.08 ECC 1.3117

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
69.70	11 49 10	4004.79	-23.94	170.16	47.94	64.60	12 55 55	3404.8	-27.15	162.45
110.30	16 51 49	3042.22	-23.93	98.31	47.93	64.59	17 42 31	2442.2	-27.14	90.60
69.70	11 49 10	4004.79	-23.94	170.16	47.94	64.60	12 55 55	3404.8	-27.15	162.45
110.30	16 51 49	3042.22	-23.93	98.31	47.93	64.59	17 42 31	2442.2	-27.14	90.60
69.70	11 49 10	4004.79	-23.94	170.16	47.94	64.60	12 55 55	3404.8	-27.15	162.45
110.30	16 51 49	3042.22	-23.93	98.31	47.93	64.59	17 42 31	2442.2	-27.14	90.60

DIFFERENTIAL CORRECTIONS
TDE .6211 TRA-2.1811 TC3 2.2871 BAU .6074
RDE -.0849 RRA .4139 RC3 -.7227 FAU .16866
FDE .0475 FRA 4.4315 FC3-7.7092 BSP 14446
BDE .6269 BRA 2.2200 BC3 2.3986 FSP 2657

MID-COURSE EXECUTION ACCURACY
SGT 4089.8 SGR 918.6 SG3 842.0
RRT -.9686 RRF .9918 RTF -.9505
SGB 4191.7 R23 -.2750 R13 .9538
SG1 4185.7 SG2 223.0 THA 167.69

ORBIT DETERMINATION ACCURACY
ST 1326.9 SR 228.1 SS 1041.5
CRT -.9880 CRS -.8570 CST .7686
LSA 1609.0 MSA 555.5 SSA 5.4
EL1 1345.9 EL2 34.8 ALF 170.35

LAUNCH DATE NOV 4 1964 FLIGHT TIME 228.00 ARRIVAL DATE JUN 20 1965

HELIOCENTRIC CONIC DISTANCE 544.107 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 33.345 GAL -4.05 AZL 85.87 HCA 173.85 SMA 195.92 ECC .25231 INC 4.1258 V1 30.035
RP 236.98 LAP .44 LOP 215.48 VP 21.040 GAP 8.26 AZP 94.10 TAL 339.69 TAP 153.54 RCA 146.49 APO 245.35 V2 23.191
RC 189.421 GL 33.01 GP -8.68 ZAL 115.93 ZAP 153.81 ETS 196.62 ZAE 163.15 ETE 332.01 ZAC 81.57 ETC 255.72 CLP 155.20

PLANETOCENTRIC CONIC

C3 19.297 VHL 4.393 DLA 36.67 RAL 179.46 RAD 6567.8 VEL 11.861 PTH 2.10 VHP 5.554 DPA -11.05 RAP 186.62 ECC 1.3176

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
65.67	11 30 35	4077.13	-25.29	176.65	50.07	62.52	12 38 32	3477.1	-28.76	168.97
114.33	17 18 32	2978.69	-25.28	94.00	50.06	62.51	18 8 11	2378.7	-28.75	86.32
65.67	11 30 35	4077.13	-25.29	176.65	50.07	62.52	12 38 32	3477.1	-28.76	188.97
114.33	17 18 32	2978.69	-25.28	94.00	50.06	62.51	18 8 11	2378.7	-28.75	86.32
65.67	11 30 35	4077.13	-25.29	176.65	50.07	62.52	12 38 32	3477.1	-28.76	168.97
114.33	17 18 32	2978.69	-25.28	94.00	50.06	62.51	18 8 11	2378.7	-28.75	86.32

DIFFERENTIAL CORRECTIONS
TDE .6057 TRA-2.1408 TC3 2.2650 BAU .6223
RDE -.0695 RRA .4870 RC3 -.8293 FAU .17508
FDE .1592 FRA 4.5596 FC3-7.8545 BSP 14492
BDE .6097 BRA 2.1955 BC3 2.4121 FSP 2746

MID-COURSE EXECUTION ACCURACY
SGT 4086.7 SGR 1079.9 SG3 875.3
RRT -.9694 RRF .9945 RTF -.9511
SGB 4227.0 R23 -.2806 R13 .9556
SG1 4219.2 SG2 256.9 THA 165.58

ORBIT DETERMINATION ACCURACY
ST 1310.8 SR 255.2 SS 1076.6
CRT -.9595 CRS -.8980 CST .7382
LSA 1607.0 MSA 600.0 SSA 4.4
EL1 1333.6 EL2 70.6 ALF 169.39

LAUNCH DATE NOV 4 1964 FLIGHT TIME 230.00 ARRIVAL DATE JUN 22 1965

HELIOCENTRIC CONIC DISTANCE 547.667 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 33.315 GAL -3.96 AZL 85.44 HCA 174.82 SMA 195.34 ECC .24976 INC 4.5573 V1 30.035
RP 236.64 LAP .41 LOP 216.45 VP 21.031 GAP 7.82 AZP 94.54 TAL 339.98 TAP 154.80 RCA 146.56 APO 244.13 V2 23.226
RC 191.655 GL 36.13 GP -10.48 ZAL 114.64 ZAP 152.38 ETS 199.24 ZAE 163.01 ETE 325.38 ZAC 79.82 ETC 255.65 CLP 154.30

PLANETOCENTRIC CONIC

C3 20.055 VHL 4.478 DLA 39.54 RAL 181.05 RAD 6567.8 VEL 11.893 PTH 2.11 VHP 5.465 DPA -12.72 RAP 185.90 ECC 1.3301

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
61.17	11 14 29	4151.33	-26.78	183.66	53.36	59.75	12 23 40	3551.3	-30.59	176.05
118.83	17 47 18	2922.78	-26.77	90.32	53.36	59.75	18 36 1	2322.8	-30.58	82.71
61.17	11 14 29	4151.33	-26.78	183.66	53.36	59.75	12 23 40	3551.3	-30.59	176.05
118.83	17 47 18	2922.78	-26.77	90.32	53.36	59.75	18 36 1	2322.8	-30.58	82.71
61.17	11 14 29	4151.33	-26.78	183.66	53.36	59.75	12 23 40	3551.3	-30.59	176.05
118.83	17 47 18	2922.78	-26.77	90.32	53.36	59.75	18 36 1	2322.8	-30.58	82.71

DIFFERENTIAL CORRECTIONS
TDE .5974 TRA-2.1052 TC3 2.1860 BAU .6395
RDE -.0485 RRA .5911 RC3 -.9535 FAU .18010
FDE .3065 FRA 4.7134 FC3-7.7743 BSP 14748
BDE .5994 BRA 2.1866 BC3 2.3849 FSP 2875

MID-COURSE EXECUTION ACCURACY
SGT 4076.2 SGR 1301.8 SG3 905.3
RRT -.9694 RRF .9963 RTF -.9516
SGB 4279.0 R23 -.2795 R13 .9581
SG1 4268.2 SG2 305.1 THA 162.71

ORBIT DETERMINATION ACCURACY
ST 1298.2 SR 301.7 SS 1127.3
CRT -.9117 CRS -.9316 CST .7002
LSA 1616.8 MSA 658.3 SSA 3.4
EL1 1327.3 EL2 121.3 ALF 167.93

LAUNCH DATE NOV 4 1964 FLIGHT TIME 232.00 ARRIVAL DATE JUN 24 1965

HELIOCENTRIC CONIC DISTANCE 551.245 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 33.286 GAL -3.87 AZL 84.81 HCA 175.79 SMA 194.80 ECC .24732 INC 5.1865 V1 30.035
RP 236.29 LAP .38 LOP 217.42 VP 21.024 GAP 7.39 AZP 95.17 TAL 340.27 TAP 156.06 RCA 146.62 APO 242.97 V2 23.261
RC 193.877 GL 40.29 GP -13.09 ZAL 113.01 ZAP 150.51 ETS 202.79 ZAE 162.18 ETE 316.83 ZAC 77.29 ETC 255.52 CLP 153.33

PLANETOCENTRIC CONIC

C3 21.560 VHL 4.643 DLA 43.22 RAL 183.62 RAD 6567.9 VEL 11.956 PTH 2.13 VHP 5.402 DPA -15.07 RAP 184.76 ECC 1.3548

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
55.87	11 1 45	4232.27	-28.34	191.77	58.61	55.89	12 12 17	3632.3	-32.60	184.32
124.13	18 20 34	2876.51	-28.33	87.42	58.60	55.88	19 8 30	2276.5	-32.59	79.98
55.87	11 1 45	4232.27	-28.34	191.77	58.61	55.89	12 12 17	3632.3	-32.60	184.32
124.13	18 20 34	2876.51	-28.33	87.42	58.60	55.88	19 8 30	2276.5	-32.59	79.98
55.87	11 1 45	4232.27	-28.34	191.77	58.61	55.89	12 12 17	3632.3	-32.60	184.32
124.13	18 20 34	2876.51	-28.33	87.42	58.60	55.88	19 8 30	2276.5	-32.59	79.98

DIFFERENTIAL CORRECTIONS
TDE .6250 TRA-2.0628 TC3 2.0478 BAU .6708
RDE -.0281 RRA .7418 RC3-1.1060 FAU .18505
FDE .4211 FRA 4.8354 FC3-7.4306 BSP 14982
BDE .6257 BRA 2.1922 BC3 2.3274 FSP 2929

MID-COURSE EXECUTION ACCURACY
SGT 4051.3 SGR 1622.9 SG3 926.2
RRT -.9685 RRF .9975 RTF -.9514
SGB 4364.3 R23 -.2726 R13 .9612
SG1 4348.0 SG2 376.8 THA 158.63

ORBIT DETERMINATION ACCURACY
ST 1302.4 SR 379.7 SS 1175.8
CRT -.8562 CRS -.9556 CST .6660
LSA 1646.5 MSA 715.4 SSA 2.6
EL1 1343.2 EL2 190.2 ALF 165.69

LAUNCH DATE NOV 4 1964 FLIGHT TIME 234.00 ARRIVAL DATE JUN 26 1965

HELIOCENTRIC CONIC DISTANCE 554.841 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 33.259 GAL -3.79 AZL 83.80 HCA 176.76 SMA 194.28 ECC .24498 INC 6.1941 V1 30.035
RP 235.94 LAP .35 LOP 218.39 VP 21.020 GAP 6.96 AZP 96.19 TAL 340.55 TAP 157.31 RCA 146.68 APO 241.87 V2 23.297
RC 196.086 GL 46.10 GP -17.13 ZAL 110.79 ZAP 147.72 ETS 207.69 ZAE 159.97 ETE 306.20 ZAC 73.32 ETC 255.25 CLP 152.21

PLANETOCENTRIC CONIC

C3 24.699 VHL 4.970 DLA 48.11 RAL 188.13 RAD 6568.0 VEL 12.086 PTH 2.16 VHP 5.397 DPA -18.65 RAP 182.80 ECC 1.4065

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
49.32	10 55 27	4328.00	-29.64	201.80	67.47	50.19	12 7 35	3728.0	-34.55	194.76
130.68	19 2 51	2847.01	-29.63	85.79	67.46	50.18	19 50 18	2247.0	-34.54	78.75
49.32	10 55 27	4328.00	-29.64	201.80	67.47	50.19	12 7 35	3728.0	-34.55	194.76
130.68	19 2 51	2847.01	-29.63	85.79	67.46	50.18	19 50 18	2247.0	-34.54	78.75
49.32	10 55 27	4328.00	-29.64	201.80	67.47	50.19	12 7 35	3728.0	-34.55	194.76
130.68	19 2 51	2847.01	-29.63	85.79	67.46	50.18	19 50 18	2247.0	-34.54	78.75

DIFFERENTIAL CORRECTIONS
TDE .7535 TRA-1.9966 TC3 1.8291 BAU .7374
RDE -.0286 RRA .9799 RC3-1.2811 FAU .18809
FDE .4129 FRA 4.8805 FC3-6.5930 BSP 15036
BDE .7541 BRA 2.2241 BC3 2.2331 FSP 2862

MID-COURSE EXECUTION ACCURACY
SGT 3993.3 SGR 2118.0 SG3 923.3
RRT -.9668 RRF .9981 RTF -.9504
SGB 4520.2 R23 -.2569 R13 .9661
SG1 4494.6 SG2 480.3 THA 152.51

ORBIT DETERMINATION ACCURACY
ST 1351.8 SR 510.1 SS 1203.2
CRT -.8059 CRS -.9688 CST .6342
LSA 1712.0 MSA 777.4 SSA 1.8
EL1 1415.8 EL2 288.4 ALF 162.33

LAUNCH DATE NOV 4 1964 FLIGHT TIME 236.00 ARRIVAL DATE JUN 28 1965

HELIOCENTRIC CONIC DISTANCE 558.450 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 33.232 GAL -3.71 AZL 81.93 HCA 177.73 SMA 193.78 ECC .24275 INC 8.0673 V1 30.035
RP 235.59 LAP .32 LOP 219.36 VP 21.018 GAP 6.54 AZP 98.06 TAL 340.83 TAP 158.56 RCA 146.74 APO 240.82 V2 23.333
RC 198.280 GL 54.78 GP -24.09 ZAL 107.52 ZAP 142.75 ETS 214.46 ZAE 154.78 ETE 293.90 ZAC 66.42 ETC 254.59 CLP 150.68

PLANETOCENTRIC CONIC

C3 32.467 VHL 5.698 DLA 54.71 RAL 197.23 RAD 6568.3 VEL 12.403 PTH 2.24 VHP 5.561 DPA -24.66 RAP 178.95 ECC 1.5343

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
41.01	11 5 55	4455.70	-29.41	214.92	83.74	41.54	12 20 10	3855.7	-35.24	208.85
138.99	20 5 0	2855.69	-29.40	86.44	83.72	41.53	20 52 36	2255.7	-35.23	80.38
41.01	11 5 55	4455.70	-29.41	214.92	83.74	41.54	12 20 10	3855.7	-35.24	208.85
138.99	20 5 0	2855.69	-29.40	86.44	83.72	41.53	20 52 36	2255.7	-35.23	80.38
41.01	11 5 55	4455.70	-29.41	214.92	83.74	41.54	12 20 10	3855.7	-35.24	208.85
138.99	20 5 0	2855.69	-29.40	86.44	83.72	41.53	20 52 36	2255.7	-35.23	80.38

DIFFERENTIAL CORRECTIONS
TDE 1.1662 TRA-1.9011 TC3 1.4282 BAU .8751
RDE -.1940 RRA 1.4132 RC3-1.4230 FAU .18328
FDE -.0891 FRA 4.6915 FC3-4.8872 BSP 15616
BDE 1.1823 BRA 2.3688 BC3 2.0161 FSP 2553

MID-COURSE EXECUTION ACCURACY
SGT 3869.8 SGR 2953.0 SG3 854.1
RRT -.9634 RRF .9983 RTF -.9462
SGB 4867.8 R23 -.2283 R13 .9735
SG1 4826.3 SG2 634.7 THA 142.93

ORBIT DETERMINATION ACCURACY
ST 1537.3 SR 764.9 SS 1180.7
CRT -.8196 CRS -.9756 CST .6739
LSA 1930.7 MSA 784.1 SSA 1.0
EL1 1669.0 EL2 403.6 ALF 156.35

LAUNCH DATE NOV 4 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUL 6 1965

HELIOCENTRIC CONIC DISTANCE 573.122 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 33.138 GAL -3.43 AZL 96.56 HCA 181.69 SMA 192.03 ECC .23483 INC 6.5612 V1 30.035
RP 234.17 LAP .19 LOP 223.29 VP 21.033 GAP 4.92 AZP 83.44 TAL 341.81 TAP 163.50 RCA 146.94 APO 237.13 V2 23.479
RC 206.900 GL -49.53 GP 32.98 ZAL 108.15 ZAP 133.91 ETS 139.64 ZAE 145.52 ETE 78.57 ZAC 121.76 ETC 253.34 CLP 145.76

PLANETOCENTRIC CONIC

C3 24.702 VHL 4.970 DLA -37.65 RAL 140.51 RAD 6568.0 VEL 12.086 PTH 2.16 VHP 5.624 DPA 27.26 RAP 203.55 ECC 1.4065

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
30.18	14 19 58	2487.76	-4.89	76.06	345.31	153.63	15 1 26	1887.8	2.29	72.93
30.18	23 19 28	1105.12	63.71	352.41	31.12	92.68	23 37 54	505.1	62.96	335.02
40.18	15 24 35	2366.76	-.39	68.01	352.95	145.39	16 4 2	1766.8	6.19	63.87
40.18	23 5 59	1130.44	54.89	353.91	29.35	99.04	23 24 50	530.4	55.36	340.34
50.18	16 47 12	2176.24	5.60	55.56	.42	137.21	17 23 28	1576.2	11.44	50.45
50.18	22 45 39	1177.49	45.54	355.69	26.22	105.15	23 5 16	577.5	47.07	344.73

DIFFERENTIAL CORRECTIONS
TDE 2.4206 TRA-1.4207 TC3 1.7861 BAU .9867
RDE 2.5984 RRA -.8001 RC3 2.3952 FAU .16751
FDE-6.1787 FRA 1.6811 FC3-5.8708 BSP 17884
BDE 3.5511 BRA 1.6305 BC3 2.9878 FSP 2510

MID-COURSE EXECUTION ACCURACY
SGT 3901.0 SGR 3999.7 SG3 823.2
RRT .9611 RRF -.9993 RTF -.9497
SGB 5587.1 R23 -.1739 R13 -.9848
SG1 5532.5 SG2 779.4 THA 45.75

ORBIT DETERMINATION ACCURACY
ST 2859.1 SR 3016.6 SS 3480.4
CRT .9947 CRS .9999 CST .9933
LSA 5414.3 MSA 269.8 SSA .6
EL1 4150.7 EL2 213.2 ALF 46.54

LAUNCH DATE NOV 4 1964 FLIGHT TIME 246.00 ARRIVAL DATE JUL 8 1965

HELIOCENTRIC CONIC DISTANCE 576.805 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 33.117 GAL -3.36 AZL 93.46 HCA 182.67 SMA 191.65 ECC .23305 INC 3.4584 V1 30.035
RP 233.80 LAP .16 LOP 224.28 VP 21.042 GAP 4.53 AZP 86.54 TAL 342.06 TAP 164.73 RCA 146.98 APO 236.31 V2 23.517
RC 209.011 GL -30.94 GP 23.09 ZAL 112.87 ZAP 139.77 ETS 148.16 ZAE 155.14 ETE 74.61 ZAC 112.47 ETC 254.68 CLP 146.09

PLANETOCENTRIC CONIC

C3 15.068 VHL 3.882 DLA -20.30 RAL 148.34 RAD 6567.6 VEL 11.681 PTH 2.05 VHP 4.940 DPA 17.91 RAP 199.85 ECC 1.2480

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 12 24	1458.38	3.11	357.58	5.92	118.16	21 36 43	858.4	6.85	350.90
90.00	3 28 26	5483.43	28.29	253.66	12.09	88.63	4 59 49	4883.4	27.80	245.02
100.00	22 20 34	1238.39	1.83	340.70	5.21	119.84	22 41 13	638.4	5.79	334.15
100.00	5 2 57	5178.65	29.74	231.17	12.02	86.89	6 29 16	4578.7	29.00	222.45
110.00	23 0 41	1112.69	-1.30	329.22	3.25	124.16	23 19 14	512.7	3.19	323.01
110.00	6 39 20	4877.12	33.42	207.86	11.62	82.34	8 0 37	4277.1	32.00	198.92

DIFFERENTIAL CORRECTIONS
TDE 1.5144 TRA-1.5555 TC3 2.8305 BAU .7827
RDE 1.1186 RRA -.7209 RC3 2.6619 FAU .21068
FDE-4.8876 FRA 3.0664 FC-12.1051 BSP 16220
BDE 1.8827 BRA 1.7145 BC3 3.8855 FSP 3471

MID-COURSE EXECUTION ACCURACY
SGT 3977.3 SGR 2878.1 SG3 1105.3
RRT .9617 RRF -.9997 RTF -.9550
SGB 4909.4 R23 -.2051 R13 -.9787
SG1 4867.0 SG2 644.4 THA 35.55

ORBIT DETERMINATION ACCURACY
ST 2353.8 SR 1686.9 SS 3142.9
CRT .9935 CRS 1.0000 CST .9928
LSA 4267.3 MSA 232.9 SSA 1.7
EL1 2891.6 EL2 156.8 ALF 35.57

LAUNCH DATE NOV 4 1964 FLIGHT TIME 248.00 ARRIVAL DATE JUL 10 1965

HELIOCENTRIC CONIC DISTANCE 580.508 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 33.097 GAL -3.30 AZL 92.03 HCA 183.66 SMA 191.28 ECC .23136 INC 2.0260 V1 30.035
RP 233.44 LAP .13 LOP 225.28 VP 21.053 GAP 4.14 AZP 87.98 TAL 342.29 TAP 165.95 RCA 147.03 APO 235.54 V2 23.555
RC 211.104 GL -19.31 GP 17.75 ZAL 114.62 ZAP 141.68 ETS 154.58 ZAE 160.47 ETE 73.17 ZAC 107.35 ETC 255.18 CLP 145.46

PLANETOCENTRIC CONIC

C3 12.466 VHL 3.531 DLA -9.30 RAL 152.31 RAD 6567.5 VEL 11.569 PTH 2.02 VHP 4.645 DPA 12.93 RAP 197.78 ECC 1.2052

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 45 52	1814.81	-8.29	17.57	5.70	117.17	20 16 7	1214.8	-4.59	10.85
90.00	5 26 39	5044.13	23.60	222.54	8.77	73.87	6 50 43	4444.1	21.16	214.72
100.00	21 2 40	1567.09	-9.19	358.87	5.22	118.57	21 28 47	967.1	-5.31	352.24
100.00	6 52 33	4767.09	24.57	201.84	8.45	72.42	8 12 0	4167.1	21.93	194.04
110.00	22 0 32	1385.86	-11.56	343.70	3.80	122.39	22 23 38	785.9	-7.21	337.32
110.00	8 11 10	4521.08	27.16	182.14	7.43	68.40	9 26 31	3921.1	23.98	174.41

DIFFERENTIAL CORRECTIONS
TDE 1.1054 TRA-1.5982 TC3 3.2952 BAU .6829
RDE .6169 RRA -.6138 RC3 2.4356 FAU .23257
FDE-3.8416 FRA 3.9384 FC-16.1517 BSP 15780
BDE 1.2659 BRA 1.7120 BC3 4.0976 FSP 4169

MID-COURSE EXECUTION ACCURACY
SGT 3942.0 SGR 2231.3 SG3 1254.7
RRT .9607 RRF -.9997 RTF -.9563
SGB 4529.7 R23 -.2273 R13 -.9736
SG1 4497.0 SG2 542.8 THA 29.00

ORBIT DETERMINATION ACCURACY
ST 1960.7 SR 1047.2 SS 2624.4
CRT .9927 CRS 1.0000 CST .9936
LSA 3434.3 MSA 184.0 SSA 4.1
EL1 2220.0 EL2 111.7 ALF 28.01

LAUNCH DATE NOV 4 1964 FLIGHT TIME 250.00 ARRIVAL DATE JUL 12 1965

HELIOCENTRIC CONIC DISTANCE 584.227 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 33.078 GAL -3.24 AZL 91.20 HCA 184.66 SMA 190.93 ECC .22976 INC 1.1988 V1 30.035
RP 233.07 LAP .10 LOP 226.27 VP 21.066 GAP 3.76 AZP 88.81 TAL 342.51 TAP 167.17 RCA 147.07 APO 234.80 V2 23.593
RC 213.179 GL -11.77 GP 14.48 ZAL 115.10 ZAP 142.08 ETS 159.14 ZAE 163.87 ETE 73.66 ZAC 104.18 ETC 255.41 CLP 144.56

PLANETOCENTRIC CONIC

C3 11.455 VHL 3.384 DLA -2.11 RAL 154.65 RAD 6567.4 VEL 11.526 PTH 2.01 VHP 4.462 DPA 9.93 RAP 196.46 ECC 1.1885

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 0 14	2024.27	-14.54	29.78	7.35	114.57	19 33 59	1424.3	-11.11	22.79
90.00	6 30 56	4799.07	18.08	206.70	8.02	67.83	7 50 55	4199.1	14.92	199.45
100.00	20 20 36	1765.04	-15.39	10.30	6.93	115.95	20 50 1	1165.0	-11.78	3.38
100.00	7 53 15	4533.53	18.94	186.79	7.64	66.44	9 8 49	3933.5	15.60	179.59
110.00	21 26 35	1558.47	-17.65	353.38	5.69	119.76	21 52 34	958.5	-13.56	346.66
110.00	9 3 45	4312.87	21.25	168.87	6.47	62.57	10 15 38	3712.9	17.41	161.85

DIFFERENTIAL CORRECTIONS
TDE .8920 TRA-1.5891 TC3 3.5199 BAU .6339
RDE .4033 RRA -.5181 RC3 2.1777 FAU .25093
FDE-3.1820 FRA 4.4725 FC-18.9650 BSP 15162
BDE .9789 BRA 1.6714 BC3 4.1391 FSP 4570

MID-COURSE EXECUTION ACCURACY
SGT 3899.2 SGR 1846.4 SG3 1369.4
RRT .9592 RRF -.9995 RTF -.9565
SGB 4314.3 R23 -.2407 R13 -.9701
SG1 4288.1 SG2 474.8 THA 24.75

ORBIT DETERMINATION ACCURACY
ST 1714.0 SR 733.1 SS 2258.7
CRT .9923 CRS .9995 CST .9955
LSA 2925.4 MSA 137.0 SSA 8.7
EL1 1862.3 EL2 83.6 ALF 23.05

LAUNCH DATE NOV 4 1964 FLIGHT TIME 252.00 ARRIVAL DATE JUL 14 1965

HELIOCENTRIC CONIC DISTANCE 587.981 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 33.060 GAL -3.18 AZL 90.66 HCA 185.66 SMA 190.61 ECC .22823 INC .6550 V1 30.035
RP 232.70 LAP .07 LOP 227.27 VP 21.080 GAP 3.39 AZP 89.34 TAL 342.73 TAP 168.38 RCA 147.10 APO 234.11 V2 23.631
RC 215.236 GL -6.59 GP 12.29 ZAL 115.06 ZAP 141.79 ETS 162.44 ZAE 166.24 ETE 75.95 ZAC 102.05 ETC 255.54 CLP 143.53

PLANETOCENTRIC CONIC

C3 10.960 VHL 3.311 DLA 2.87 RAL 156.14 RAD 6567.4 VEL 11.504 PTH 2.00 VHP 4.322 DPA 7.96 RAP 195.51 ECC 1.1804

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 29 17	2169.44	-18.45	38.64	9.06	111.87	19 5 27	1569.4	-15.32	31.36
90.00	7 13 47	4635.69	13.61	196.79	8.17	64.93	8 31 3	4035.7	10.12	189.85
100.00	19 51 58	1902.75	-19.30	18.66	8.68	113.28	20 23 41	1302.8	-15.99	11.43
100.00	8 33 48	4377.61	14.44	177.40	7.76	63.54	9 46 45	3777.6	10.78	170.53
110.00	21 3 17	1679.55	-21.58	.56	7.54	117.17	21 31 16	1079.6	-17.77	353.51
110.00	9 38 58	4173.57	16.66	160.67	6.52	59.71	10 48 32	3573.6	12.52	154.02

DIFFERENTIAL CORRECTIONS
TDE .7704 TRA-1.5520 TC3 3.6553 BAU .6083
RDE .2968 RRA -.4418 RC3 1.9672 FAU .26852
FDE-2.7635 FRA 4.8304 FC-21.2098 BSP 14378
BDE .8256 BRA 1.6137 BC3 4.1510 FSP 4814

MID-COURSE EXECUTION ACCURACY
SGT 3855.9 SGR 1595.8 SG3 1471.7
RRT .9582 RRF -.9991 RTF -.9573
SGB 4173.1 R23 -.2464 R13 -.9682
SG1 4151.5 SG2 423.8 THA 21.87

ORBIT DETERMINATION ACCURACY
ST 1560.1 SR 564.1 SS 2023.1
CRT .9921 CRS .9980 CST .9977
LSA 2614.5 MSA 94.9 SSA 17.7
EL1 1657.6 EL2 66.5 ALF 19.77

LAUNCH DATE NOV 4 1964 FLIGHT TIME 254.00 ARRIVAL DATE JUL 16 1965

HELIOCENTRIC CONIC DISTANCE 591.708 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 33.043 GAL -3.13 AZL 90.28 HCA 186.66 SMA 190.29 ECC .22678 INC .2020 V1 30.035
RP 232.32 LAP .03 LOP 228.27 VP 21.097 GAP 3.02 AZP 89.72 TAL 342.93 TAP 169.59 RCA 147.14 APO 233.45 V2 23.670
RC 217.275 GL -2.85 GP 10.73 ZAL 114.81 ZAP 141.15 ETS 164.91 ZAE 167.97 ETE 80.00 ZAC 100.51 ETC 255.62 CLP 142.43

PLANETOCENTRIC CONIC

C3 10.672 VHL 3.267 DLA 6.50 RAL 157.15 RAD 6567.4 VEL 11.492 PTH 2.00 VHP 4.203 DPA 6.59 RAP 194.76 ECC 1.1756

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 5 54	2277.83	-21.05	45.53	10.53	109.39	18 43 52	1677.8	-18.22	38.00
90.00	7 45 13	4516.42	10.07	189.82	8.59	63.39	9 0 29	3916.4	6.41	183.05
100.00	19 30 20	2005.50	-21.93	25.15	10.19	110.83	20 3 45	1405.5	-18.90	17.67
100.00	9 3 28	4263.99	10.90	170.82	8.15	61.99	10 14 32	3664.0	7.07	164.13
110.00	20 45 39	1769.78	-24.28	6.18	9.11	114.84	21 15 9	1169.8	-20.73	358.84
110.00	10 4 38	4072.46	13.11	154.99	6.85	58.14	11 12 30	3472.5	8.80	148.54

DIFFERENTIAL CORRECTIONS
TDE .6686 TRA-1.5268 TC3 3.6469 BAU .5788
RDE .2302 RRA -.3902 RC3 1.7764 FAU .28148
FDE-2.3893 FRA 5.1988 FC-22.8332 BSP 14173
BDE .7071 BRA 1.5759 BC3 4.0565 FSP 5192

MID-COURSE EXECUTION ACCURACY
SGT 3783.7 SGR 1408.8 SG3 1556.0
RRT .9559 RRF -.9983 RTF -.9567
SGB 4037.4 R23 -.2518 R13 -.9661
SG1 4018.6 SG2 389.4 THA 19.79

ORBIT DETERMINATION ACCURACY
ST 1426.2 SR 454.8 SS 1828.2
CRT .9912 CRS .9941 CST .9990
LSA 2361.8 MSA 63.0 SSA 35.4
EL1 1495.9 EL2 57.4 ALF 17.57

LAUNCH DATE NOV 4 1964 FLIGHT TIME 256.00 ARRIVAL DATE JUL 18 1965

HELIOCENTRIC CONIC DISTANCE 595.469 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 33.026 GAL -3.08 AZL 90.00 HCA 187.67 SMA 190.00 ECC .22540 INC .0448 V1 30.035
RP 231.95 LAP .00 LOP 229.28 VP 21.115 GAP 2.66 AZP 90.00 TAL 343.12 TAP 170.79 RCA 147.17 APO 232.82 V2 23.709
RC 219.295 GL -.02 GP 9.57 ZAL 114.47 ZAP 140.29 ETS 166.82 ZAE 169.25 ETE 85.80 ZAC 99.34 ETC 255.68 CLP 141.27

PLANETOCENTRIC CONIC

C3 10.479 VHL 3.237 DLA 9.27 RAL 157.85 RAD 6567.4 VEL 11.483 PTH 2.00 VHP 4.098 DPA 5.59 RAP 194.14 ECC 1.1725

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 47 3	2362.95	-22.87	51.11	11.74	107.17	18 26 26	1762.9	-20.31	43.37
90.00	8 9 39	4423.89	7.20	184.54	9.04	62.54	9 23 23	3823.9	3.47	177.85
100.00	19 12 56	2085.96	-23.79	30.41	11.42	108.66	19 47 41	1486.0	-21.02	22.71
100.00	9 26 27	4176.11	8.05	165.86	8.58	61.11	10 36 4	3576.1	4.13	159.26
110.00	20 31 30	1840.09	-26.21	10.73	10.41	112.77	21 2 10	1240.1	-22.90	3.14
110.00	10 24 23	3994.75	10.28	150.75	7.23	57.22	11 30 57	3394.8	5.88	144.41

DIFFERENTIAL CORRECTIONS
TDE .5995 TRA-1.4878 TC3 3.6323 BAU .5581
RDE .1907 RRA -.3479 RC3 1.6354 FAU .29523
FDE-2.1194 FRA 5.4997 FC-24.3902 BSP 13768
BDE .6291 BRA 1.5279 BC3 3.9835 FSP 5500

MID-COURSE EXECUTION ACCURACY
SGT 3711.5 SGR 1274.4 SG3 1640.9
RRT .9540 RRF -.9973 RTF -.9566
SGB 3924.2 R23 -.2530 R13 -.9648
SG1 3907.4 SG2 362.8 THA 18.30

ORBIT DETERMINATION ACCURACY
ST 1331.0 SR 387.2 SS 1699.9
CRT .9898 CRS .9869 CST .9987
LSA 2192.1 MSA 66.3 SSA 42.2
EL1 1385.2 EL2 52.9 ALF 16.09

LAUNCH DATE NOV 4 1964 FLIGHT TIME 258.00 ARRIVAL DATE JUL 20 1965

HELIOCENTRIC CONIC DISTANCE 599.243 EARTH TO MARS

RL	148.35	LAL	-.00	LOL	41.61	VL	33.011	GAL	-3.03	AZL	89.79	HCA	188.67	SMA	189.71	ECC	.22409	INC	.2160	V1	30.035
RP	231.57	LAP	-.03	LOP	230.29	VP	21.134	GAP	2.30	AZP	90.21	TAL	343.31	TAP	171.98	RCA	147.20	APO	232.23	V2	23.748
RC	221.297	GL	2.20	GP	8.67	ZAL	114.09	ZAP	139.29	ETS	168.33	ZAE	170.12	ETE	93.24	ZAC	98.42	ETC	255.72	CLP	140.07

PLANETOCENTRIC CONIC

C3	10.335	VHL	3.215	DLA	11.46	RAL	158.35	RAD	6567.4	VEL	11.477	PTH	2.00	VHP	4.001	DPA	4.86	RAP	193.59	ECC	1.1701

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 31 13	2432.30	-24.19	55.76	12.72	105.19	18 11 45	1832.3	-21.87	47.86
90.00	8 29 29	4348.93	4.83	180.31	9.47	62.06	9 41 58	3748.9	1.05	173.66
100.00	18 58 20	2151.30	-25.14	34.79	12.42	106.73	19 34 12	1551.3	-22.61	26.91
100.00	9 45 2	4105.17	5.70	161.91	8.99	60.61	10 53 27	3505.2	1.74	155.36
110.00	20 19 41	1896.78	-27.65	14.51	11.46	110.95	20 51 17	1296.8	-24.55	6.71
110.00	10 40 11	3932.46	7.96	147.41	7.60	56.65	11 45 43	3332.5	3.52	131.14

DIFFERENTIAL CORRECTIONS

TDE	.5517	TRA	-1.4385	TC3	3.6141	BAU	.5423
RDE	.1667	RRA	-.3125	RC3	1.5308	FAU	.30993
FDE	-1.9242	FRA	5.7516	FC	-25.9622	BSP	13206
BDE	.5763	BRA	1.4721	BC3	3.9249	FSP	5753

MID-COURSE EXECUTION ACCURACY

SGT	3634.5	SGR	1674.8	SG3	1727.6		
RRT	.9523	RRF	-.9959	RTF	-.9567		
SGB	3819.6	R23	-.2513	R13	-.9641		
SG1	3804.2	SG2	342.5	THA	17.25		

ORBIT DETERMINATION ACCURACY

ST	1260.0	SR	343.8	SS	1616.1
CRT	.9880	CRS	.9759	CST	.9964
LSA	2075.1	MSA	101.4	SSA	33.2
EL1	1305.0	EL2	51.3	ALF	15.11

LAUNCH DATE NOV 4 1964 FLIGHT TIME 260.00 ARRIVAL DATE JUL 22 1965

HELIOCENTRIC CONIC DISTANCE 603.030 EARTH TO MARS

RL	148.35	LAL	-.00	LOL	41.61	VL	32.996	GAL	-2.99	AZL	89.61	HCA	189.69	SMA	189.45	ECC	.22284	INC	.3870	V1	30.035
RP	231.20	LAP	-.06	LOP	231.30	VP	21.155	GAP	1.95	AZP	90.38	TAL	343.48	TAP	173.17	RCA	147.23	APO	231.67	V2	23.788
RC	223.281	GL	3.99	GP	7.96	ZAL	113.72	ZAP	138.19	ETS	169.55	ZAE	170.60	ETE	101.98	ZAC	97.68	ETC	255.75	CLP	138.81

PLANETOCENTRIC CONIC

C3	10.218	VHL	3.197	DLA	13.24	RAL	158.71	RAD	6567.4	VEL	11.472	PTH	1.99	VHP	3.910	DPA	4.31	RAP	193.07	ECC	1.1682

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 17 30	2490.46	-25.17	59.74	13.50	103.43	17 59 1	1890.5	-23.07	51.70
90.00	8 46 4	4286.20	2.82	176.79	9.85	61.81	9 57 30	3686.2	-.97	170.16
100.00	18 45 45	2205.86	-26.15	38.53	13.23	105.01	19 22 31	1605.9	-23.84	30.50
100.00	10 0 30	4046.03	3.71	158.64	9.35	60.32	11 7 56	3446.0	-.27	152.11
110.00	20 9 31	1943.74	-28.75	17.72	12.32	109.34	20 41 55	1343.7	-25.84	9.75
110.00	10 53 14	3880.91	6.02	144.68	7.92	56.29	11 57 54	3280.9	1.55	138.45

DIFFERENTIAL CORRECTIONS

TDE	.5162	TRA	-1.3845	TC3	3.5822	BAU	.5279
RDE	.1512	RRA	-.2838	RC3	1.4499	FAU	.32484
FDE	-1.7686	FRA	5.9864	FC	-27.5237	BSP	12591
BDE	.5379	BRA	1.4132	BC3	3.8645	FSP	5998

MID-COURSE EXECUTION ACCURACY

SGT	3549.6	SGR	1098.1	SG3	1814.8		
RRT	.9507	RRF	-.9942	RTF	-.9567		
SGB	3715.6	R23	-.2477	R13	-.9635		
SG1	3701.2	SG2	326.4	THA	16.52		

ORBIT DETERMINATION ACCURACY

ST	1202.4	SR	314.4	SS	1557.9
CRT	.9858	CRS	.9605	CST	.9917
LSA	1987.7	MSA	140.0	SSA	28.0
EL1	1241.7	EL2	51.2	ALF	14.48

LAUNCH DATE NOV 4 1964 FLIGHT TIME 262.00 ARRIVAL DATE JUL 24 1965

HELIOCENTRIC CONIC DISTANCE 606.824 EARTH TO MARS

RL	148.35	LAL	-.00	LOL	41.61	VL	32.982	GAL	-2.95	AZL	89.47	HCA	190.70	SMA	189.20	ECC	.22167	INC	.5259	V1	30.035
RP	230.82	LAP	-.10	LOP	232.31	VP	21.178	GAP	1.61	AZP	90.52	TAL	343.64	TAP	174.34	RCA	147.26	APO	231.14	V2	23.827
RC	225.247	GL	5.46	GP	7.38	ZAL	113.36	ZAP	137.01	ETS	170.57	ZAE	170.72	ETE	111.38	ZAC	97.05	ETC	255.78	CLP	137.52

PLANETOCENTRIC CONIC

C3	10.119	VHL	3.181	DLA	14.72	RAL	158.98	RAD	6567.4	VEL	11.468	PTH	1.99	VHP	3.824	DPA	3.89	RAP	192.58	ECC	1.1665

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 5 27	2540.28	-25.91	63.20	14.15	101.85	17 47 47	1940.3	-24.02	55.04
90.00	9 0 18	4232.46	1.09	173.79	10.19	61.70	10 10 50	3632.5	-2.70	167.16
100.00	18 34 43	2252.39	-26.93	41.77	13.89	103.48	19 12 15	1652.4	-24.81	33.61
100.00	10 13 43	3995.59	2.01	155.87	9.68	60.17	11 20 18	3395.6	-1.98	149.34
110.00	20 0 40	1983.45	-29.61	20.49	13.04	107.91	20 33 44	1383.4	-26.88	12.37
110.00	11 4 15	3837.30	4.37	142.39	8.21	56.06	12 8 12	3237.3	-.12	136.17

DIFFERENTIAL CORRECTIONS

TDE	.4603	TRA	-1.3557	TC3	3.4199	BAU	.4986
RDE	.1383	RRA	-.2632	RC3	1.3753	FAU	.33703
FDE	-1.5745	FRA	6.2819	FC	-28.8362	BSP	12613
BDE	.4806	BRA	1.3810	BC3	3.6861	FSP	6384

MID-COURSE EXECUTION ACCURACY

SGT	3434.5	SGR	1033.4	SG3	1895.8		
RRT	.9433	RRF	-.9920	RTF	-.9528		
SGB	3586.6	R23	-.2554	R13	-.9599		
SG1	3571.3	SG2	330.0	THA	15.98		

ORBIT DETERMINATION ACCURACY

ST	1124.9	SR	290.4	SS	1502.1
CRT	.9783	CRS	.9369	CST	.9867
LSA	1891.3	MSA	167.4	SSA	28.1
EL1	1160.3	EL2	58.4	ALF	14.21

LAUNCH DATE NOV 4 1964 FLIGHT TIME 264.00 ARRIVAL DATE JUL 26 1965

HELIOCENTRIC CONIC DISTANCE 610.634 EARTH TO MARS

RL	148.35	LAL	-.00	LOL	41.61	VL	32.968	GAL	-2.91	AZL	89.36	HCA	191.72	SMA	188.96	ECC	.22056	INC	.6434	V1	30.035
RP	230.43	LAP	-.13	LOP	233.33	VP	21.202	GAP	1.27	AZP	90.63	TAL	343.79	TAP	175.51	RCA	147.28	APO	230.63	V2	23.867
RC	227.193	GL	6.70	GP	6.90	ZAL	113.01	ZAP	135.76	ETS	171.43	ZAE	170.47	ETE	120.70	ZAC	96.51	ETC	255.80	CLP	136.19

PLANETOCENTRIC CONIC

C3	10.030	VHL	3.167	DLA	15.98	RAL	159.18	RAD	6567.4	VEL	11.464	PTH	1.99	VHP	3.743	DPA	3.59	RAP	192.10	ECC	1.1651

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 54 36	2583.84	-26.48	66.26	14.67	100.41	17 37 39	1983.8	-24.77	58.01
90.00	9 12 45	4185.41	-.43	171.17	10.49	61.69	10 22 30	3585.4	-4.21	164.53
100.00	18 24 49	2292.87	-27.54	44.62	14.43	102.10	19 3 2	1692.9	-25.60	36.36
100.00	10 25 12	3951.61	.52	153.45	9.96	60.11	11 31 4	3351.6	-3.47	146.93
110.00	19 52 46	2017.68	-30.31	22.91	13.63	106.63	20 26 24	1417.7	-27.73	14.67
110.00	11 13 44	3799.57	2.93	140.41	8.45	55.93	12 17 4	3199.6	-1.56	134.21

DIFFERENTIAL CORRECTIONS

TDE	.4292	TRA	-1.3049	TC3	3.3208	BAU	.4793
RDE	.1310	RRA	-.2443	RC3	1.3228	FAU	.35124
FDE	-1.4359	FRA	6.5326	FC	-30.3162	BSP	12122
BDE	.4488	BRA	1.3276	BC3	3.5745	FSP	6686

MID-COURSE EXECUTION ACCURACY

SGT	3325.3	SGR	984.6	SG3	1982.7		
RRT	.9392	RRF	-.9894	RTF	-.9513		
SGB	3468.0	R23	-.2540	R13	-.9584		
SG1	3454.7	SG2	325.5	THA	15.68		

ORBIT DETERMINATION ACCURACY

ST	1072.3	SR	275.3	SS	1470.6
CRT	.9729	CRS	.9095	CST	.9783
LSA	1829.4	MSA	202.6	SSA	26.4
EL1	1105.3	EL2	61.8	ALF	14.07

LAUNCH DATE NOV 4 1964 FLIGHT TIME 266.00 ARRIVAL DATE JUL 28 1965

HELIOCENTRIC CONIC DISTANCE 614.454 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 32.955 GAL -2.87 AZL 89.26 HCA 192.74 SMA 188.73 ECC .21950 INC .7407 V1 30.035
RP 230.05 LAP -.16 LOP 234.36 VP 21.227 GAP .93 AZP 90.72 TAL 343.93 TAP 176.68 RCA 147.30 APO 230.16 V2 23.907
RC 229.120 GL 7.76 GP 6.50 ZAL 112.68 ZAP 134.45 ETS 172.16 ZAE 169.90 ETE 129.27 ZAC 96.04 ETC 255.82 CLP 134.81

PLANETOCENTRIC CONIC

C3 9.951 VHL 3.155 DLA 17.07 RAL 159.34 RAD 6567.4 VEL 11.460 PTH 1.99 VHP 3.665 DPA 3.36 RAP 191.61 ECC 1.1638

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 44 45	2622.44	-26.93	69.00	15.10	99.11	17 28 27	2022.4	-25.39	60.67
90.00	9 23 48	4143.65	-1.78	168.84	10.76	61.73	10 32 52	3543.7	-5.55	162.18
100.00	18 15 53	2328.57	-28.03	47.16	14.88	100.84	18 54 41	1728.6	-26.25	38.82
100.00	10 35 22	3912.76	-.80	151.32	10.22	60.12	11 40 34	3312.8	-4.77	144.78
110.00	19 45 41	2047.57	-30.87	25.06	14.12	105.47	20 19 49	1447.6	-28.44	16.70
110.00	11 22 3	3766.52	1.67	138.68	8.67	55.85	12 24 49	3166.5	-2.82	132.48

DIFFERENTIAL CORRECTIONS
TDE .4020 TRA-1.2534 TC3 3.1966 BAU .4582
RDE .1267 RRA -.2280 RC3 1.2824 FAU .36594
FDE-1.3206 FRA 6.7733 FC-31.8365 BSP 11649
BDE .4215 BRA 1.2740 BC3 3.4442 FSP 6982

MID-COURSE EXECUTION ACCURACY
SGT 3204.9 SGR 946.1 SG3 2071.4
RRT .9337 RRF -.9865 RTF -.9488
SGB 3341.7 R23 -.2549 R13 -.9561
SG1 3325.7 SG2 326.4 THA 15.56

ORBIT DETERMINATION ACCURACY
ST 1023.3 SR 265.3 SS 1451.9
CRT .9660 CRS .8780 CST .9689
LSA 1780.6 MSA 232.9 SSA 25.8
EL1 1055.1 EL2 66.5 ALF 14.12

LAUNCH DATE NOV 4 1964 FLIGHT TIME 268.00 ARRIVAL DATE JUL 30 1965

HELIOCENTRIC CONIC DISTANCE 618.286 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 32.943 GAL -2.84 AZL 89.17 HCA 193.77 SMA 188.52 ECC .21851 INC .8255 V1 30.035
RP 229.67 LAP -.20 LOP 235.38 VP 21.254 GAP .61 AZP 90.80 TAL 344.06 TAP 177.83 RCA 147.32 APO 229.71 V2 23.948
RC 231.027 GL 8.68 GP 6.15 ZAL 112.38 ZAP 133.08 ETS 172.80 ZAE 169.06 ETE 136.72 ZAC 95.62 ETC 255.85 CLP 133.39

PLANETOCENTRIC CONIC

C3 9.879 VHL 3.143 DLA 18.01 RAL 159.45 RAD 6567.4 VEL 11.457 PTH 1.99 VHP 3.591 DPA 3.21 RAP 191.11 ECC 1.1626

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 35 44	2657.07	-27.28	71.47	15.46	97.92	17 20 1	2057.1	-25.90	63.08
90.00	9 33 46	4106.13	-2.99	166.74	11.00	61.83	10 42 12	3506.1	-6.73	160.06
100.00	18 7 44	2360.41	-28.41	49.45	15.26	99.70	18 47 4	1760.4	-26.78	41.03
100.00	10 44 27	3878.02	-1.98	149.41	10.44	60.17	11 49 5	3278.0	-5.94	142.86
110.00	19 39 16	2074.00	-31.33	26.98	14.54	104.42	20 13 50	1474.0	-29.04	18.53
110.00	11 29 24	3737.20	.55	137.15	8.86	55.82	12 31 41	3137.2	-3.94	130.95

DIFFERENTIAL CORRECTIONS
TDE .3765 TRA-1.2008 TC3 3.0492 BAU .4352
RDE .1237 RRA -.2147 RC3 1.2490 FAU .38031
FDE-1.2013 FRA 7.0278 FC-33.3280 BSP 11166
BDE .3963 BRA 1.2198 BC3 3.2951 FSP 7308

MID-COURSE EXECUTION ACCURACY
SGT 3073.0 SGR 914.7 SG3 2160.3
RRT .9275 RRF -.9832 RTF -.9457
SGB 3206.2 R23 -.2562 R13 -.9535
SG1 3189.2 SG2 329.6 THA 15.60

ORBIT DETERMINATION ACCURACY
ST 975.3 SR 258.2 SS 1439.4
CRT .9586 CRS .8412 CST .9569
LSA 1737.7 MSA 263.5 SSA 25.4
EL1 1006.4 EL2 71.2 ALF 14.31

LAUNCH DATE NOV 4 1964 FLIGHT TIME 270.00 ARRIVAL DATE AUG 1 1965

HELIOCENTRIC CONIC DISTANCE 622.129 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 32.932 GAL -2.81 AZL 89.10 HCA 194.80 SMA 188.32 ECC .21758 INC .8984 V1 30.035
RP 229.28 LAP -.23 LOP 236.41 VP 21.282 GAP .28 AZP 90.87 TAL 344.18 TAP 178.98 RCA 147.34 APO 229.29 V2 23.988
RC 232.913 GL 9.48 GP 5.85 ZAL 112.10 ZAP 131.66 ETS 173.36 ZAE 168.00 ETE 142.99 ZAC 95.23 ETC 255.87 CLP 131.93

PLANETOCENTRIC CONIC

C3 9.813 VHL 3.133 DLA 18.84 RAL 159.55 RAD 6567.4 VEL 11.454 PTH 1.99 VHP 3.520 DPA 3.12 RAP 190.59 ECC 1.1615

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 27 26	2688.43	-27.55	73.73	15.77	96.82	17 12 14	2088.4	-26.32	65.28
90.00	9 42 50	4072.11	-4.08	164.84	11.23	61.95	10 50 42	3472.1	-7.80	158.13
100.00	18 0 16	2389.09	-28.73	51.53	15.58	98.65	18 40 5	1789.1	-27.23	43.04
100.00	10 52 41	3846.69	-3.04	147.69	10.65	60.25	11 56 48	3246.7	-6.98	141.12
110.00	19 33 26	2097.56	-31.72	28.71	14.91	103.47	20 8 24	1497.6	-29.54	20.18
110.00	11 36 0	3710.98	-.45	135.79	9.04	55.82	12 37 51	3111.0	-4.93	129.57

DIFFERENTIAL CORRECTIONS
TDE .3551 TRA-1.1461 TC3 2.8842 BAU .4110
RDE .1225 RRA -.2030 RC3 1.2236 FAU .39511
FDE-1.0970 FRA 7.2780 FC-34.8580 BSP 10650
BDE .3756 BRA 1.1640 BC3 3.1330 FSP 7632

MID-COURSE EXECUTION ACCURACY
SGT 2931.3 SGR 889.9 SG3 2251.1
RRT .9200 RRF -.9796 RTF -.9417
SGB 3063.4 R23 -.2594 R13 -.9502
SG1 3045.0 SG2 335.7 THA 15.80

ORBIT DETERMINATION ACCURACY
ST 930.7 SR 254.1 SS 1435.0
CRT .9512 CRS .8019 CST .9434
LSA 1704.1 MSA 291.8 SSA 25.3
EL1 961.8 EL2 75.9 ALF 14.65

LAUNCH DATE NOV 4 1964 FLIGHT TIME 272.00 ARRIVAL DATE AUG 3 1965

HELIOCENTRIC CONIC DISTANCE 625.981 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 32.921 GAL -2.78 AZL 89.04 HCA 195.83 SMA 188.13 ECC .21670 INC .9619 V1 30.035
RP 228.89 LAP -.26 LOP 237.44 VP 21.311 GAP -.03 AZP 90.93 TAL 344.29 TAP 180.12 RCA 147.36 APO 228.89 V2 24.029
RC 234.778 GL 10.19 GP 5.60 ZAL 111.84 ZAP 130.20 ETS 173.85 ZAE 166.76 ETE 148.16 ZAC 94.88 ETC 255.89 CLP 130.43

PLANETOCENTRIC CONIC

C3 9.753 VHL 3.123 DLA 19.57 RAL 159.63 RAD 6567.4 VEL 11.452 PTH 1.99 VHP 3.453 DPA 3.08 RAP 190.06 ECC 1.1605

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 19 45	2717.06	-27.76	75.79	16.03	95.80	17 5 2	2117.1	-26.67	67.30
90.00	9 51 9	4041.04	-5.07	163.09	11.44	62.10	10 58 30	3441.0	-8.77	156.36
100.00	17 53 23	2415.12	-28.98	53.42	15.86	97.68	18 33 38	1815.1	-27.61	44.88
100.00	11 0 12	3818.22	-4.00	146.13	10.85	60.35	12 3 50	3218.2	-7.92	139.53
110.00	19 28 7	2118.73	-32.04	30.27	15.23	102.59	20 3 26	1518.7	-29.98	21.67
110.00	11 41 57	3687.37	-1.36	134.56	9.20	55.84	12 43 25	3087.4	-5.83	128.33

DIFFERENTIAL CORRECTIONS
TDE .3355 TRA-1.0899 TC3 2.6980 BAU .3852
RDE .1223 RRA -.1930 RC3 1.2042 FAU .41011
FDE -.9994 FRA 7.5303 FC-36.4050 BSP 10086
BDE .3571 BRA 1.1069 BC3 2.9546 FSP 7951

MID-COURSE EXECUTION ACCURACY
SGT 2779.0 SGR 870.2 SG3 2343.0
RRT .9110 RRF -.9757 RTF -.9364
SGB 2912.1 R23 -.2648 R13 -.9461
SG1 2891.6 SG2 344.8 THA 16.16

ORBIT DETERMINATION ACCURACY
ST 887.0 SR 252.1 SS 1436.2
CRT .9437 CRS .7603 CST .9282
LSA 1676.7 MSA 317.5 SSA 25.4
EL1 918.6 EL2 80.5 ALF 15.13

LAUNCH DATE NOV 4 1964 FLIGHT TIME 274.00 ARRIVAL DATE AUG 5 1965

DISTANCE 629.846

HELIOCENTRIC CONIC

RL 148.35 LAL -.00 LOL 41.61 VL 32.911 GAL -2.75 AZL 88.98 HCA 196.87 SMA 187.95 ECC .21587 INC 1.0190 V1 30.035
RP 228.51 LAP -.30 LOP 238.48 VP 21.342 GAP -.35 AZP 90.98 TAL 344.39 TAP 181.25 RCA 147.37 APO 228.52 V2 24.070
RC 236.623 GL 10.82 GP 5.37 ZAL 111.61 ZAP 128.68 ETS 174.30 ZAE 165.37 ETE 152.40 ZAC 94.54 ETC 255.91 CLP 128.89

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 9.698 VHL 3.114 DLA 20.23 RAL 159.70 RAD 6567.3 VEL 11.449 PTH 1.99 VHP 3.388 DPA 3.08 RAP 189.51 ECC 1.1596

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 12 37	2743.35	-27.93	77.70	16.26	94.86	16 58 21	2143.4	-26.96	69.17
90.00	9 58 51	4012.51	-5.98	161.49	11.65	62.27	11 5 44	3412.5	-9.64	154.73
100.00	17 47 3	2438.87	-29.18	55.16	16.11	96.79	18 27 42	1838.9	-27.93	46.57
100.00	11 7 7	3792.22	-4.87	144.69	11.04	60.47	12 10 19	3192.2	-8.77	138.07
110.00	19 23 16	2137.87	-32.32	31.70	15.51	101.79	19 58 53	1537.9	-30.36	23.03
110.00	11 47 23	3665.99	-2.17	133.44	9.36	55.88	12 48 29	3066.0	-6.63	127.20

DIFFERENTIAL CORRECTIONS

TDE .3185 TRA-1.0320 TC3 2.4910 BAU .3578
RDE .1226 RRA -.1847 RC3 1.1882 FAU .42477
FDE -.8982 FRA 7.7958 FC-37.9208 BSP 9509
BDE .3413 BRA 1.0484 BC3 2.7599 FSP 8301

MID-COURSE EXECUTION ACCURACY

SGT 2616.4 SGR 854.2 SG3 2434.9
RRT .9007 RRF -.9715 RTF -.9296
SGB 2752.3 R23 -.2723 R13 -.9410
SG1 2729.2 SG2 355.7 THA 16.68

ORBIT DETERMINATION ACCURACY

ST 845.0 SR 251.4 SS 1442.0
CRT .9376 CRS .7161 CST .9094
LSA 1654.6 MSA 344.3 SSA 25.5
EL1 877.6 EL2 84.1 ALF 15.73

LAUNCH DATE NOV 4 1964 FLIGHT TIME 276.00 ARRIVAL DATE AUG 7 1965

DISTANCE 633.721

HELIOCENTRIC CONIC

RL 148.35 LAL -.00 LOL 41.61 VL 32.901 GAL -2.73 AZL 88.93 HCA 197.91 SMA 187.78 ECC .21510 INC 1.0692 V1 30.035
RP 228.12 LAP -.33 LOP 239.52 VP 21.373 GAP -.65 AZP 91.02 TAL 344.47 TAP 182.38 RCA 147.39 APO 228.17 V2 24.111
RC 238.446 GL 11.39 GP 5.17 ZAL 111.40 ZAP 127.12 ETS 174.70 ZAE 163.87 ETE 155.89 ZAC 94.23 ETC 255.94 CLP 127.30

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 9.647 VHL 3.106 DLA 20.82 RAL 159.77 RAD 6567.3 VEL 11.447 PTH 1.99 VHP 3.327 DPA 3.13 RAP 188.93 ECC 1.1588

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 6 0	2767.60	-28.06	79.46	16.46	93.99	16 52 8	2167.6	-27.21	70.90
90.00	10 6 1	3986.22	-6.81	160.00	11.84	62.45	11 12 27	3386.2	-10.45	153.21
100.00	17 41 12	2460.64	-29.35	56.75	16.33	95.96	18 22 13	1860.6	-28.21	48.13
100.00	11 13 30	3768.41	-5.67	143.37	11.22	60.60	12 16 18	3168.4	-9.55	136.73
110.00	19 18 49	2155.24	-32.55	33.00	15.77	101.05	19 54 44	1555.2	-30.69	24.28
110.00	11 52 22	3646.58	-2.91	132.43	9.51	55.93	12 53 9	3046.6	-7.37	126.17

DIFFERENTIAL CORRECTIONS

TDE .3034 TRA -.9705 TC3 2.2667 BAU .3294
RDE .1239 RRA -.1770 RC3 1.1771 FAU .43990
FDE -.8091 FRA 8.0500 FC-39.4757 BSP 8876
BDE .3277 BRA .9865 BC3 2.5542 FSP 8633

MID-COURSE EXECUTION ACCURACY

SGT 2442.1 SGR 842.0 SG3 2527.8
RRT .8883 RRF -.9671 RTF -.9208
SGB 2583.2 R23 -.2826 R13 -.9346
SG1 2556.6 SG2 369.3 THA 17.40

ORBIT DETERMINATION ACCURACY

ST 803.2 SR 252.4 SS 1451.2
CRT .9326 CRS .6725 CST .8890
LSA 1636.8 MSA 367.5 SSA 25.7
EL1 837.4 EL2 87.3 ALF 16.52

LAUNCH DATE NOV 4 1964 FLIGHT TIME 278.00 ARRIVAL DATE AUG 9 1965

DISTANCE 637.605

HELIOCENTRIC CONIC

RL 148.35 LAL -.00 LOL 41.61 VL 32.892 GAL -2.71 AZL 88.89 HCA 198.95 SMA 187.62 ECC .21438 INC 1.1141 V1 30.035
RP 227.73 LAP -.36 LOP 240.56 VP 21.406 GAP -.95 AZP 91.05 TAL 344.54 TAP 183.49 RCA 147.40 APO 227.84 V2 24.152
RC 240.248 GL 11.90 GP 4.98 ZAL 111.22 ZAP 125.52 ETS 175.07 ZAE 162.27 ETE 158.77 ZAC 93.92 ETC 255.97 CLP 125.67

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 9.602 VHL 3.099 DLA 21.34 RAL 159.84 RAD 6567.3 VEL 11.445 PTH 1.99 VHP 3.269 DPA 3.21 RAP 188.32 ECC 1.1580

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 59 52	2790.04	-28.15	81.10	16.65	93.17	16 46 22	2190.0	-27.42	72.51
90.00	10 12 42	3961.92	-7.57	158.62	12.04	62.63	11 18 44	3361.9	-11.18	151.80
100.00	17 35 49	2480.66	-29.48	58.23	16.54	95.20	18 17 9	1880.7	-28.45	49.58
100.00	11 19 26	3746.53	-6.40	142.16	11.41	60.74	12 21 53	3146.5	-10.25	135.49
110.00	19 14 46	2171.05	-32.75	34.19	16.02	100.38	19 50 57	1571.0	-30.98	25.42
110.00	11 56 58	3628.91	-3.59	131.50	9.67	55.98	12 57 27	3028.9	-8.03	125.23

DIFFERENTIAL CORRECTIONS

TDE .2912 TRA -.9071 TC3 2.0223 BAU .2999
RDE .1258 RRA -.1704 RC3 1.1692 FAU .45507
FDE -.7289 FRA 8.3064 FC-41.0296 BSP 8196
BDE .3172 BRA .9230 BC3 2.3360 FSP 8959

MID-COURSE EXECUTION ACCURACY

SGT 2259.1 SGR 832.8 SG3 2621.1
RRT .8730 RRF -.9625 RTF -.9089
SGB 2407.7 R23 -.2972 R13 -.9262
SG1 2376.5 SG2 386.1 THA 18.34

ORBIT DETERMINATION ACCURACY

ST 763.7 SR 254.6 SS 1464.2
CRT .9300 CRS .6303 CST .8657
LSA 1624.7 MSA 389.5 SSA 25.9
EL1 800.0 EL2 89.4 ALF 17.45

LAUNCH DATE NOV 4 1964 FLIGHT TIME 280.00 ARRIVAL DATE AUG 11 1965

DISTANCE 641.500

HELIOCENTRIC CONIC

RL 148.35 LAL -.00 LOL 41.61 VL 32.884 GAL -2.69 AZL 88.85 HCA 200.00 SMA 187.47 ECC .21371 INC 1.1551 V1 30.035
RP 227.34 LAP -.39 LOP 241.61 VP 21.439 GAP -1.25 AZP 91.09 TAL 344.60 TAP 184.60 RCA 147.41 APO 227.54 V2 24.193
RC 242.030 GL 12.36 GP 4.82 ZAL 111.06 ZAP 123.87 ETS 175.41 ZAE 160.59 ETE 161.18 ZAC 93.63 ETC 256.00 CLP 124.00

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 9.561 VHL 3.092 DLA 21.82 RAL 159.91 RAD 6567.3 VEL 11.443 PTH 1.98 VHP 3.214 DPA 3.32 RAP 187.69 ECC 1.1574

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 54 10	2810.84	-28.22	82.62	16.83	92.42	16 41 1	2210.8	-27.59	74.01
90.00	10 18 58	3939.45	-8.27	157.34	12.24	62.82	11 24 38	3339.4	-11.85	150.49
100.00	17 30 51	2499.10	-29.58	59.59	16.73	94.49	18 12 30	1899.1	-28.65	50.91
100.00	11 24 58	3726.42	-7.07	141.04	11.59	60.88	12 27 5	3126.4	-10.90	134.34
110.00	19 11 6	2185.47	-32.93	35.28	16.24	99.75	19 47 31	1585.5	-31.23	26.47
110.00	12 1 13	3612.81	-4.20	130.66	9.82	56.04	13 1 26	3012.8	-8.63	124.37

DIFFERENTIAL CORRECTIONS

TDE .2796 TRA -.8424 TC3 1.7553 BAU .2692
RDE .1278 RRA -.1647 RC3 1.1630 FAU .46981
FDE -.6407 FRA 8.5748 FC-42.5390 BSP 7513
BDE .3074 BRA .8583 BC3 2.1056 FSP 9313

MID-COURSE EXECUTION ACCURACY

SGT 2067.3 SGR 825.5 SG3 2713.5
RRT .8533 RRF -.9577 RTF -.8925
SGB 2226.0 R23 -.3166 R13 -.9153
SG1 2188.5 SG2 406.6 THA 19.52

ORBIT DETERMINATION ACCURACY

ST 723.7 SR 257.4 SS 1479.9
CRT .9292 CRS .5866 CST .8376
LSA 1615.8 MSA 410.6 SSA 26.2
EL1 762.8 EL2 90.2 ALF 18.55

LAUNCH DATE NOV 4 1964 FLIGHT TIME 282.00 ARRIVAL DATE AUG 13 1965

HELIOCENTRIC CONIC DISTANCE 645.405 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 32.876 GAL -2.68 AZL 88.81 HCA 201.05 SMA 187.33 ECC .21308 INC 1.1917 V1 30.035
RP 226.95 LAP -.43 LOP 242.66 VP 21.474 GAP -1.54 AZP 91.11 TAL 344.65 TAP 185.70 RCA 147.42 APO 227.25 V2 24.235
RC 243.792 GL 12.79 GP 4.67 ZAL 110.93 ZAP 122.17 ETS 175.72 ZAE 158.83 ETE 163.20 ZAC 93.34 ETC 256.03 CLP 122.29

PLANETOCENTRIC CONIC

C3 9.525 VHL 3.086 DLA 22.25 RAL 159.99 RAD 6567.3 VEL 11.442 PTH 1.98 VHP 3.163 DPA 3.45 RAP 187.03 ECC 1.1568

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 48 54	2830.15	-28.27	84.03	17.00	91.71	16 36 4	2230.1	-27.73	75.40
90.00	10 24 52	3918.66	-8.92	156.16	12.44	63.01	11 30 10	3318.7	-12.47	149.28
100.00	17 26 18	2516.09	-29.67	60.84	16.92	93.83	18 8 14	1916.1	-28.82	52.14
100.00	11 30 9	3707.95	-7.68	140.01	11.78	61.02	12 31 57	3107.9	-11.49	133.29
110.00	19 7 46	2198.64	-33.07	36.28	16.47	99.18	19 44 25	1598.6	-31.45	27.43
110.00	12 5 10	3598.16	-4.76	129.89	9.98	56.11	13 5 8	2998.2	-9.17	123.59

DIFFERENTIAL CORRECTIONS
TDE .2707 TRA -.7739 TC3 1.4699 BAU .2384
RDE .1304 RRA -.1594 RC3 1.1597 FAU .48481
FDE -.5697 FRA 8.8291 FC-44.0637 BSP 6763
BDE .3005 BRA .7902 BC3 1.8723 FSP 9632

MID-COURSE EXECUTION ACCURACY
SGT 1866.9 SGR 820.5 SG3 2805.7
RRT .8274 RRF -.9528 RTF -.8693
SGB 2039.3 R23 -.3424 R13 -.9008
SG1 1993.0 SG2 431.6 THA 21.02

ORBIT DETERMINATION ACCURACY
ST 685.7 SR 261.3 SS 1497.0
CRT .9316 CRS .5471 CST .8061
LSA 1610.6 MSA 429.5 SSA 26.5
EL1 728.3 EL2 89.4 ALF 19.86

LAUNCH DATE NOV 4 1964 FLIGHT TIME 284.00 ARRIVAL DATE AUG 15 1965

HELIOCENTRIC CONIC DISTANCE 649.319 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 32.868 GAL -2.67 AZL 88.77 HCA 202.10 SMA 187.20 ECC .21250 INC 1.2253 V1 30.035
RP 226.56 LAP -.46 LOP 243.71 VP 21.509 GAP -1.82 AZP 91.14 TAL 344.68 TAP 186.79 RCA 147.42 APO 226.99 V2 24.277
RC 245.534 GL 13.17 GP 4.53 ZAL 110.82 ZAP 120.44 ETS 176.01 ZAE 157.00 ETE 164.92 ZAC 93.05 ETC 256.06 CLP 120.54

PLANETOCENTRIC CONIC

C3 9.494 VHL 3.081 DLA 22.63 RAL 160.08 RAD 6567.3 VEL 11.440 PTH 1.98 VHP 3.114 DPA 3.62 RAP 186.34 ECC 1.1562

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 44 4	2848.05	-28.30	85.33	17.17	91.05	16 31 32	2248.0	-27.85	76.70
90.00	10 30 24	3899.46	-9.51	155.06	12.65	63.20	11 35 23	3299.5	-13.03	148.15
100.00	17 22 10	2531.75	-29.73	62.00	17.11	93.23	18 4 21	1931.7	-28.97	53.28
100.00	11 34 59	3690.99	-8.24	139.06	11.97	61.16	12 36 30	3091.0	-12.02	132.31
110.00	19 4 47	2210.66	-33.20	37.19	16.68	98.65	19 41 38	1610.7	-31.65	28.31
110.00	12 8 51	3584.84	-5.26	129.19	10.15	56.18	13 8 36	2984.8	-9.67	122.87

DIFFERENTIAL CORRECTIONS
TDE .2627 TRA -.7036 TC3 1.1615 BAU .2081
RDE .1333 RRA -.1548 RC3 1.1574 FAU .49937
FDE -.4980 FRA 9.0876 FC-45.5382 BSP 6008
BDE .2946 BRA .7204 BC3 1.6397 FSP 9963

MID-COURSE EXECUTION ACCURACY
SGT 1661.3 SGR 816.9 SG3 2896.1
RRT .7910 RRF -.9478 RTF -.8348
SGB 1851.3 R23 -.3766 R13 -.8808
SG1 1792.4 SG2 463.3 THA 22.87

ORBIT DETERMINATION ACCURACY
ST 648.0 SR 265.8 SS 1515.8
CRT .9366 CRS .5085 CST .7687
LSA 1608.7 MSA 446.8 SSA 26.9
EL1 695.0 EL2 86.8 ALF 21.37

LAUNCH DATE NOV 4 1964 FLIGHT TIME 286.00 ARRIVAL DATE AUG 17 1965

HELIOCENTRIC CONIC DISTANCE 653.243 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 32.861 GAL -2.66 AZL 88.74 HCA 203.16 SMA 187.08 ECC .21197 INC 1.2561 V1 30.035
RP 226.17 LAP -.49 LOP 244.77 VP 21.546 GAP -2.10 AZP 91.15 TAL 344.70 TAP 187.87 RCA 147.43 APO 226.74 V2 24.318
RC 247.256 GL 13.53 GP 4.41 ZAL 110.74 ZAP 118.66 ETS 176.29 ZAE 155.11 ETE 166.40 ZAC 92.77 ETC 256.10 CLP 118.76

PLANETOCENTRIC CONIC

C3 9.467 VHL 3.077 DLA 22.98 RAL 160.17 RAD 6567.3 VEL 11.439 PTH 1.98 VHP 3.069 DPA 3.81 RAP 185.63 ECC 1.1558

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 39 38	2864.62	-28.31	86.55	17.34	90.45	16 27 23	2264.6	-27.95	77.90
90.00	10 35 37	3881.77	-10.05	154.04	12.87	63.39	11 40 18	3281.8	-13.54	147.10
100.00	17 18 24	2546.14	-29.78	63.07	17.29	92.67	18 0 51	1946.1	-29.10	54.33
100.00	11 39 31	3675.48	-8.75	138.19	12.17	61.30	12 40 47	3075.5	-12.51	131.42
110.00	19 2 8	2221.62	-33.31	38.03	16.90	98.17	19 39 10	1621.6	-31.82	29.12
110.00	12 12 17	3572.76	-5.72	128.55	10.32	56.24	13 11 50	2972.8	-10.11	122.22

DIFFERENTIAL CORRECTIONS
TDE .2564 TRA -.6304 TC3 .8360 BAU .1806
RDE .1364 RRA -.1506 RC3 1.1564 FAU .51369
FDE -.4314 FRA 9.3438 FC-46.9780 BSP 5218
BDE .2905 BRA .6481 BC3 1.4269 FSP 10280

MID-COURSE EXECUTION ACCURACY
SGT 1455.5 SGR 814.6 SG3 2984.9
RRT .7385 RRF -.9427 RTF -.7826
SGB 1668.0 R23 -.4202 R13 -.8535
SG1 1590.4 SG2 502.7 THA 25.14

ORBIT DETERMINATION ACCURACY
ST 612.1 SR 270.8 SS 1535.9
CRT .9447 CRS .4722 CST .7238
LSA 1609.8 MSA 463.2 SSA 27.2
EL1 664.3 EL2 81.8 ALF 23.06

LAUNCH DATE NOV 4 1964 FLIGHT TIME 288.00 ARRIVAL DATE AUG 19 1965

HELIOCENTRIC CONIC DISTANCE 657.176 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 32.855 GAL -2.65 AZL 88.72 HCA 204.22 SMA 186.97 ECC .21148 INC 1.2845 V1 30.035
RP 225.78 LAP -.53 LOP 245.83 VP 21.583 GAP -2.38 AZP 91.17 TAL 344.71 TAP 188.94 RCA 147.43 APO 226.51 V2 24.360
RC 248.959 GL 13.85 GP 4.29 ZAL 110.69 ZAP 116.85 ETS 176.54 ZAE 153.17 ETE 167.67 ZAC 92.49 ETC 256.15 CLP 116.93

PLANETOCENTRIC CONIC

C3 9.444 VHL 3.073 DLA 23.29 RAL 160.28 RAD 6567.3 VEL 11.438 PTH 1.98 VHP 3.027 DPA 4.02 RAP 184.89 ECC 1.1554

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 35 37	2879.92	-28.32	87.67	17.51	89.89	16 23 37	2279.9	-28.03	79.01
90.00	10 40 31	3865.52	-10.54	153.10	13.09	63.57	11 44 56	3265.5	-14.01	146.14
100.00	17 15 2	2559.34	-29.82	64.05	17.48	92.15	17 57 42	1959.3	-29.80	55.30
100.00	11 43 46	3661.34	-9.21	137.39	12.38	61.44	12 44 47	3061.3	-12.95	130.60
110.00	18 59 48	2231.59	-33.40	38.79	17.12	97.72	19 37 0	1631.6	-31.98	29.86
110.00	12 15 30	3561.85	-6.13	127.98	10.51	56.31	13 14 52	2961.9	-10.52	121.63

DIFFERENTIAL CORRECTIONS
TDE .2523 TRA -.5542 TC3 .4914 BAU .1586
RDE .1399 RRA -.1467 RC3 1.1560 FAU .52756
FDE -.3737 FRA 9.5941 FC-48.3624 BSP 4430
BDE .2884 BRA .5733 BC3 1.2561 FSP 10588

MID-COURSE EXECUTION ACCURACY
SGT 1256.2 SGR 813.3 SG3 3070.9
RRT .6579 RRF -.9375 RTF -.6991
SGB 1496.5 R23 -.4766 R13 -.8147
SG1 1390.4 SG2 553.3 THA 27.86

ORBIT DETERMINATION ACCURACY
ST 579.0 SR 276.4 SS 1556.5
CRT .9558 CRS .4392 CST .6697
LSA 1613.8 MSA 478.9 SSA 27.5
EL1 637.3 EL2 73.8 ALF 24.89

LAUNCH DATE NOV 4 1964 FLIGHT TIME 290.00 ARRIVAL DATE AUG 21 1965

HELIOCENTRIC CONIC DISTANCE 661.119 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 32.849 GAL -2.65 AZL 88.69 HCA 205.29 SMA 186.87 ECC .21103 INC 1.3106 V1 30.035
RP 225.38 LAP -.56 LOP 246.90 VP 21.621 GAP -2.65 AZP 91.19 TAL 344.71 TAP 190.00 RCA 147.43 APO 226.30 V2 24.402
RC 250.643 GL 14.15 GP 4.18 ZAL 110.65 ZAP 115.00 ETS 176.79 ZAE 151.18 ETE 168.78 ZAC 92.21 ETC 256.19 CLP 115.07

PLANETOCENTRIC CONIC

C3 9.426 VHL 3.070 DLA 23.56 RAL 160.41 RAD 6567.3 VEL 11.437 PTH 1.98 VHP 2.989 DPA 4.25 RAP 184.12 ECC 1.1551

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 32 1	2893.98	-28.31	88.69	17.70	89.37	16 20 15	2294.0	-28.10	80.04
90.00	10 45 6	3850.71	-10.99	152.24	13.32	63.74	11 49 17	3250.7	-14.43	145.26
100.00	17 12 4	2571.39	-29.85	64.95	17.68	91.68	17 54 55	1971.4	-29.30	56.18
100.00	11 47 44	3648.53	-9.62	136.67	12.60	61.56	12 48 33	3048.5	-13.35	129.86
110.00	18 57 47	2240.62	-33.48	39.49	17.35	97.32	19 35 8	1640.6	-32.11	30.53
110.00	12 18 30	3552.06	-6.50	127.46	10.70	56.37	13 17 42	2952.1	-10.88	121.10

DIFFERENTIAL CORRECTIONS
TDE .2484 TRA -.4759 TC3 .1245 BAU .1465
RDE .1434 RRA -.1432 RC3 1.1557 FAU .54069
FDE -.3156 FRA 9.8435 FC-49.6624 BSP 3689
BDE .2868 BRA .4969 BC3 1.1624 FSP 10889

MID-COURSE EXECUTION ACCURACY
SGT 1076.7 SGR 812.5 SG3 3153.2
RRT .5266 RRF -.9321 RTF -.5604
SGB 1348.9 R23 -.5505 R13 -.7566
SG1 1197.4 SG2 621.1 THA 30.78

ORBIT DETERMINATION ACCURACY
ST 547.1 SR 282.3 SS 1577.9
CRT .9679 CRS .4075 CST .6051
LSA 1620.2 MSA 492.6 SSA 27.9
EL1 612.4 EL2 63.4 ALF 26.85

LAUNCH DATE NOV 4 1964 FLIGHT TIME 292.00 ARRIVAL DATE AUG 23 1965

HELIOCENTRIC CONIC DISTANCE 665.071 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 32.843 GAL -2.65 AZL 88.67 HCA 206.36 SMA 186.77 ECC .21062 INC 1.3351 V1 30.035
RP 224.99 LAP -.59 LOP 247.97 VP 21.660 GAP -2.91 AZP 91.20 TAL 344.69 TAP 191.05 RCA 147.43 APO 226.11 V2 24.444
RC 252.307 GL 14.43 GP 4.08 ZAL 110.65 ZAP 113.12 ETS 177.02 ZAE 149.14 ETE 169.76 ZAC 91.93 ETC 256.24 CLP 113.18

PLANETOCENTRIC CONIC

C3 9.412 VHL 3.068 DLA 23.81 RAL 160.55 RAD 6567.3 VEL 11.437 PTH 1.98 VHP 2.954 DPA 4.50 RAP 183.33 ECC 1.1549

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 28 49	2906.83	-28.30	89.63	17.89	88.90	16 17 16	2306.8	-28.15	80.97
90.00	10 49 24	3837.28	-11.39	151.46	13.56	63.90	11 53 21	3237.3	-14.81	144.45
100.00	17 9 28	2582.34	-29.87	65.76	17.89	91.25	17 52 30	1982.3	-29.37	56.99
100.00	11 51 27	3637.00	-10.00	136.01	12.83	61.68	12 52 4	3037.0	-13.70	129.19
110.00	18 56 5	2248.77	-33.55	40.11	17.58	96.96	19 33 34	1648.8	-32.23	31.13
110.00	12 21 19	3543.34	-6.83	127.00	10.91	56.42	13 20 22	2943.3	-11.20	120.63

DIFFERENTIAL CORRECTIONS
TDE .2461 TRA -.3937 TC3 -.2571 BAU .1489
RDE .1472 RRA -.1398 RC3 1.1555 FAU .55324
FDE -.2667 FRA10.0821 FC-50.8910 BSP 3041
BDE .2868 BRA .4178 BC3 1.1838 FSP 11168

MID-COURSE EXECUTION ACCURACY
SGT 939.3 SGR 812.2 SG3 3231.5
RRT .3197 RRF -.9267 RTF -.3372
SGB 1241.7 R23 -.6512 R13 -.6607
SG1 1019.3 SG2 709.1 THA 32.74

ORBIT DETERMINATION ACCURACY
ST 519.1 SR 288.7 SS 1598.8
CRT .9803 CRS .3791 CST .5269
LSA 1628.6 MSA 505.8 SSA 28.1
EL1 591.8 EL2 50.0 ALF 28.82

LAUNCH DATE NOV 4 1964 FLIGHT TIME 294.00 ARRIVAL DATE AUG 25 1965

HELIOCENTRIC CONIC DISTANCE 669.032 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 32.838 GAL -2.65 AZL 88.64 HCA 207.43 SMA 186.68 ECC .21026 INC 1.3575 V1 30.035
RP 224.60 LAP -.63 LOP 249.04 VP 21.699 GAP -3.17 AZP 91.21 TAL 344.66 TAP 192.09 RCA 147.43 APO 225.93 V2 24.486
RC 253.951 GL 14.68 GP 3.98 ZAL 110.67 ZAP 111.21 ETS 177.23 ZAE 147.07 ETE 170.62 ZAC 91.65 ETC 256.30 CLP 111.26

PLANETOCENTRIC CONIC

C3 9.402 VHL 3.066 DLA 24.03 RAL 160.70 RAD 6567.3 VEL 11.436 PTH 1.98 VHP 2.922 DPA 4.76 RAP 182.52 ECC 1.1547

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 26 3	2918.47	-28.28	90.49	18.10	88.47	16 14 41	2318.5	-28.19	81.82
90.00	10 53 24	3825.24	-11.75	150.76	13.81	64.05	11 57 10	3225.2	-15.15	143.73
100.00	17 7 14	2592.20	-29.88	66.49	18.11	90.87	17 50 27	1992.2	-29.44	57.71
100.00	11 54 54	3626.74	-10.33	135.43	13.07	61.79	12 55 21	3026.7	-14.02	128.59
110.00	18 54 41	2256.06	-33.61	40.67	17.82	96.63	19 32 17	1656.1	-32.33	31.68
110.00	12 23 57	3535.64	-7.12	126.59	11.13	56.48	13 22 53	2935.6	-11.48	120.21

DIFFERENTIAL CORRECTIONS
TDE .2447 TRA -.3090 TC3 -.6580 BAU .1671
RDE .1512 RRA -.1365 RC3 1.1555 FAU .56519
FDE -.2292 FRA10.3046 FC-52.0433 BSP 2647
BDE .2877 BRA .3378 BC3 1.3297 FSP 11417

MID-COURSE EXECUTION ACCURACY
SGT 878.4 SGR 812.4 SG3 3305.0
RRT .0278 RRF -.9211 RTF -.0192
SGB 1196.5 R23 -.9066 R13 -.1631
SG1 880.4 SG2 810.3 THA 9.77

ORBIT DETERMINATION ACCURACY
ST 495.2 SR 295.5 SS 1618.4
CRT .9899 CRS .3544 CST .4358
LSA 1638.0 MSA 517.4 SSA 28.5
EL1 575.5 EL2 36.1 ALF 30.70

LAUNCH DATE NOV 4 1964 FLIGHT TIME 296.00 ARRIVAL DATE AUG 27 1965

HELIOCENTRIC CONIC DISTANCE 672.999 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 32.833 GAL -2.65 AZL 88.62 HCA 208.51 SMA 186.60 ECC .20993 INC 1.3787 V1 30.035
RP 224.21 LAP -.66 LOP 250.11 VP 21.739 GAP -3.43 AZP 91.21 TAL 344.62 TAP 193.13 RCA 147.42 APO 225.77 V2 24.527
RC 255.576 GL 14.92 GP 3.88 ZAL 110.72 ZAP 109.27 ETS 177.44 ZAE 144.95 ETE 171.39 ZAC 91.37 ETC 256.36 CLP 109.32

PLANETOCENTRIC CONIC

C3 9.397 VHL 3.065 DLA 24.22 RAL 160.87 RAD 6567.3 VEL 11.436 PTH 1.98 VHP 2.893 DPA 5.04 RAP 181.69 ECC 1.1546

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 23 43	2928.87	-28.26	91.25	18.32	88.09	16 12 32	2328.9	-28.22	82.58
90.00	10 57 7	3814.63	-12.07	150.14	14.08	64.19	12 0 41	3214.6	-15.44	143.09
100.00	17 5 26	2600.96	-29.89	67.14	18.34	90.53	17 48 46	2001.0	-29.50	58.36
100.00	11 58 6	3617.77	-10.62	134.92	13.32	61.89	12 58 24	3017.8	-14.29	128.06
110.00	18 53 36	2262.52	-33.66	41.17	18.07	96.34	19 31 19	1662.5	-32.42	32.16
110.00	12 26 25	3528.97	-7.37	126.24	11.37	56.53	13 25 13	2929.0	-11.72	119.85

DIFFERENTIAL CORRECTIONS
TDE .2391 TRA -.2259 TC3-1.0973 BAU .1997
RDE .1541 RRA -.1347 RC3 1.1497 FAU .57300
FDE -.1253 FRA10.5957 FC-52.7912 BSP 2673
BDE .2845 BRA .2630 BC3 1.5893 FSP 11805

MID-COURSE EXECUTION ACCURACY
SGT 930.9 SGR 810.0 SG3 3367.5
RRT -.2886 RRF -.9147 RTF .3202
SGB 1234.0 R23 .6511 R13 -.6451
SG1 1001.6 SG2 720.8 THA 147.91

ORBIT DETERMINATION ACCURACY
ST 468.4 SR 300.5 SS 1647.6
CRT .9933 CRS .3168 CST .3206
LSA 1658.2 MSA 523.2 SSA 29.2
EL1 555.8 EL2 29.2 ALF 32.61

LAUNCH DATE NOV 4 1964 FLIGHT TIME 298.00 ARRIVAL DATE AUG 29 1965

HELIOCENTRIC CONIC DISTANCE 676.981 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 32.829 GAL -2.66 AZL 88.60 HCA 209.59 SMA 186.52 ECC .20964 INC 1.3984 V1 30.035
RP 223.82 LAP -.69 LOP 251.19 VP 21.780 GAP -3.68 AZP 91.22 TAL 344.56 TAP 194.15 RCA 147.42 APO 225.63 V2 24.569
RC 257.180 GL 15.14 GP 3.79 ZAL 110.79 ZAP 107.31 ETS 177.64 ZAE 142.80 ETE 172.07 ZAC 91.09 ETC 256.42 CLP 107.34

PLANETOCENTRIC CONIC

C3 9.396 VHL 3.065 DLA 24.38 RAL 161.06 RAD 6567.3 VEL 11.436 PTH 1.98 VHP 2.868 DPA 5.33 RAP 180.84 ECC 1.1546

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 21 47	2938.18	-28.23	91.93	18.55	87.75	16 10 45	2338.2	-28.25	83.26
90.00	11 0 33	3805.27	-12.35	149.59	14.35	64.31	12 3 58	3205.3	-15.70	142.52
100.00	17 3 57	2608.77	-29.89	67.72	18.58	90.22	17 47 26	2008.8	-29.54	58.94
100.00	12 1 4	3609.91	-10.87	134.47	13.59	61.98	13 1 13	3009.9	-14.53	127.60
110.00	18 52 47	2268.25	-33.70	41.61	18.34	96.08	19 30 36	1668.3	-32.49	32.59
110.00	12 28 42	3523.19	-7.59	125.93	11.61	56.57	13 27 26	2923.2	-11.93	119.53

DIFFERENTIAL CORRECTIONS
TDE .2451 TRA -.1304 TC3-1.5002 BAU .2377
RDE .1598 RRA -.1301 RC3 1.1541 FAU .58657
FDE -.1806 FRA10.7161 FC-54.0478 BSP 3142
BDE .2926 BRA .1842 BC3 1.8927 FSP 11844

MID-COURSE EXECUTION ACCURACY
SGT 1061.7 SGR 813.1 SG3 3436.1
RRT -.5123 RRF -.9097 RTF .5786
SGB 1337.3 R23 .5031 R13 -.7691
SG1 1180.8 SG2 627.9 THA 148.89

ORBIT DETERMINATION ACCURACY
ST 465.9 SR 310.1 SS 1655.6
CRT .9880 CRS .3141 CST .2111
LSA 1662.0 MSA 539.5 SSA 28.9
EL1 558.2 EL2 40.1 ALF 33.52

LAUNCH DATE NOV 4 1964 FLIGHT TIME 300.00 ARRIVAL DATE AUG 31 1965

HELIOCENTRIC CONIC DISTANCE 680.969 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 32.825 GAL -2.67 AZL 88.58 HCA 210.67 SMA 186.45 ECC .20939 INC 1.4169 V1 30.035
RP 223.44 LAP -.72 LOP 252.28 VP 21.821 GAP -3.93 AZP 91.22 TAL 344.49 TAP 195.17 RCA 147.41 APO 225.50 V2 24.611
RC 258.763 GL 15.34 GP 3.70 ZAL 110.89 ZAP 105.32 ETS 177.83 ZAE 140.63 ETE 172.69 ZAC 90.81 ETC 256.49 CLP 105.35

PLANETOCENTRIC CONIC

C3 9.399 VHL 3.066 DLA 24.52 RAL 161.27 RAD 6567.3 VEL 11.436 PTH 1.98 VHP 2.847 DPA 5.63 RAP 179.98 ECC 1.1547

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 20 18	2946.23	-28.21	92.51	18.80	87.46	16 9 24	2346.2	-28.27	83.85
90.00	11 3 40	3797.36	-12.58	149.13	14.64	64.42	12 6 58	3197.4	-15.92	142.04
100.00	17 2 53	2615.51	-29.89	68.22	18.84	89.96	17 46 28	2015.5	-29.58	59.43
100.00	12 3 47	3603.32	-11.08	134.10	13.86	62.06	13 3 50	3003.3	-14.73	127.21
110.00	18 52 17	2273.19	-33.74	42.00	18.61	95.86	19 30 11	1673.2	-32.58	32.96
110.00	12 30 51	3518.39	-7.77	125.67	11.87	56.61	13 29 29	2918.4	-12.18	119.27

DIFFERENTIAL CORRECTIONS
TDE .2455 TRA -.0372 TC3-1.9441 BAU .2840
RDE .1644 RRA -.1270 RC3 1.1520 FAU .59558
FDE -.1679 FRA10.9009 FC-54.8575 BSP 3926
BDE .2954 BRA .1323 BC3 2.2598 FSP 12031

MID-COURSE EXECUTION ACCURACY
SGT 1279.5 SGR 813.3 SG3 3491.3
RRT -.6546 RRF -.9037 RTF .7396
SGB 1516.1 R23 .3964 R13 -.8354
SG1 1409.7 SG2 558.1 THA 152.81

ORBIT DETERMINATION ACCURACY
ST 460.7 SR 317.7 SS 1672.5
CRT .9699 CRS .2978 CST .0836
LSA 1675.8 MSA 548.7 SSA 29.1
EL1 556.0 EL2 64.2 ALF 34.30

LAUNCH DATE NOV 4 1964 FLIGHT TIME 302.00 ARRIVAL DATE SEP 2 1965

HELIOCENTRIC CONIC DISTANCE 684.965 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 32.821 GAL -2.68 AZL 88.57 HCA 211.76 SMA 186.39 ECC .20918 INC 1.4345 V1 30.035
RP 223.05 LAP -.75 LOP 253.37 VP 21.863 GAP -4.17 AZP 91.22 TAL 344.41 TAP 196.17 RCA 147.40 APO 225.38 V2 24.653
RC 260.326 GL 15.52 GP 3.62 ZAL 111.01 ZAP 103.32 ETS 178.01 ZAE 138.43 ETE 173.25 ZAC 90.53 ETC 256.56 CLP 103.34

PLANETOCENTRIC CONIC

C3 9.407 VHL 3.067 DLA 24.63 RAL 161.49 RAD 6567.3 VEL 11.437 PTH 1.98 VHP 2.828 DPA 5.94 RAP 179.10 ECC 1.1548

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 19 16	2953.09	-28.19	93.01	19.07	87.21	16 8 29	2353.1	-28.28	84.35
90.00	11 6 30	3790.83	-12.77	148.74	14.94	64.51	12 9 41	3190.8	-16.10	141.65
100.00	17 2 12	2621.23	-29.89	68.65	19.12	89.73	17 45 53	2021.2	-29.61	59.86
100.00	12 6 15	3597.92	-11.25	133.79	14.15	62.12	13 6 13	2997.9	-14.89	126.89
110.00	18 52 5	2277.40	-33.77	42.32	18.91	95.67	19 30 3	1677.4	-32.61	33.28
110.00	12 32 51	3514.52	-7.91	125.47	12.15	56.64	13 31 25	2914.5	-12.25	119.05

DIFFERENTIAL CORRECTIONS
TDE .2461 TRA .0587 TC3-2.3991 BAU .3345
RDE .1689 RRA -.1240 RC3 1.1483 FAU .60306
FDE -.1538 FRA11.0788 FC-55.5009 BSP 4903
BDE .2985 BRA .1372 BC3 2.6598 FSP 12192

MID-COURSE EXECUTION ACCURACY
SGT 1546.5 SGR 812.8 SG3 3538.7
RRT -.7337 RRF -.8973 RTF .8323
SGB 1747.1 R23 .3089 R13 -.8805
SG1 1670.6 SG2 511.2 THA 156.59

ORBIT DETERMINATION ACCURACY
ST 463.3 SR 325.4 SS 1689.3
CRT .9379 CRS .2820 CST -.0501
LSA 1691.9 MSA 557.3 SSA 29.3
EL1 558.4 EL2 93.7 ALF 34.48

LAUNCH DATE NOV 4 1964 FLIGHT TIME 304.00 ARRIVAL DATE SEP 4 1965

HELIOCENTRIC CONIC DISTANCE 688.969 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 32.818 GAL -2.69 AZL 88.55 HCA 212.85 SMA 186.34 ECC .20901 INC 1.4509 V1 30.035
RP 222.66 LAP -.79 LOP 254.46 VP 21.905 GAP -4.41 AZP 91.22 TAL 344.31 TAP 197.16 RCA 147.39 APO 225.28 V2 24.695
RC 261.869 GL 15.69 GP 3.54 ZAL 111.16 ZAP 101.30 ETS 178.19 ZAE 136.21 ETE 173.76 ZAC 90.25 ETC 256.64 CLP 101.32

PLANETOCENTRIC CONIC

C3 9.419 VHL 3.069 DLA 24.72 RAL 161.74 RAD 6567.3 VEL 11.437 PTH 1.98 VHP 2.814 DPA 6.25 RAP 178.22 ECC 1.1550

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 18 40	2958.74	-28.17	93.43	19.36	87.00	16 7 59	2358.7	-28.29	84.76
90.00	11 9 2	3785.68	-12.92	148.44	15.25	64.58	12 12 8	3185.7	-16.24	141.34
100.00	17 1 53	2625.95	-29.89	69.00	19.42	89.55	17 45 39	2025.9	-29.63	60.20
100.00	12 8 30	3593.71	-11.38	133.55	14.46	62.17	13 8 24	2993.7	-15.02	126.64
110.00	18 52 11	2280.88	-33.79	42.59	19.21	95.51	19 30 12	1680.9	-32.66	33.54
110.00	12 34 42	3511.54	-8.02	125.31	12.44	56.66	13 33 13	2911.5	-12.35	118.89

DIFFERENTIAL CORRECTIONS
TDE .2468 TRA .1575 TC3-2.8649 BAU .3884
RDE .1736 RRA -.1209 RC3 1.1434 FAU .60923
FDE -.1523 FRA11.2369 FC-55.9958 BSP 5987
BDE .3017 BRA .1986 BC3 3.0847 FSP 12326

MID-COURSE EXECUTION ACCURACY
SGT 1846.5 SGR 812.0 SG3 3577.9
RRT -.7772 RRF -.8907 RTF .8866
SGB 2017.1 R23 .2396 R13 -.9118
SG1 1958.8 SG2 481.7 THA 159.86

ORBIT DETERMINATION ACCURACY
ST 473.8 SR 333.3 SS 1704.4
CRT .8929 CRS .2697 CST -.1796
LSA 1708.9 MSA 565.1 SSA 29.5
EL1 565.5 EL2 125.7 ALF 34.05

LAUNCH DATE NOV 4 1964 FLIGHT TIME 306.00 ARRIVAL DATE SEP 6 1965

DISTANCE 692.982

EARTH TO MARS

HELIOCENTRIC CONIC
RL 148.35 LAL -.00 LOL 41.61 VL 32.815 GAL -2.71 AZL 88.53 HCA 213.95 SMA 186.29 ECC .20886 INC 1.4664 V1 30.035
RP 222.28 LAP -.82 LOP 255.55 VP 21.948 GAP -4.64 AZP 91.22 TAL 344.20 TAP 198.15 RCA 147.38 APO 225.20 V2 24.737
RC 263.392 GL 15.85 GP 3.45 ZAL 111.33 ZAP 99.28 ETS 178.36 ZAE 133.98 ETE 174.23 ZAC 89.98 ETC 256.72 CLP 99.29

PLANETOCENTRIC CONIC
C3 9.436 VHL 3.072 DLA 24.79 RAL 162.00 RAD 6567.3 VEL 11.438 PTH 1.98 VHP 2.803 DPA 6.56 RAP 177.33 ECC 1.1553

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 18 32	2963.20	-28.15	93.75	19.66	86.84	16 7 56	2363.2	-28.30	85.09
90.00	11 11 16	3781.92	-13.03	148.22	15.57	64.64	12 14 18	3181.9	-16.34	141.11
100.00	17 1 58	2629.68	-29.89	69.28	19.73	89.40	17 45 48	2029.7	-29.65	60.48
100.00	12 10 31	3590.67	-11.48	133.37	14.78	62.21	13 10 22	2990.7	-15.11	126.47
110.00	18 52 34	2283.67	-33.81	42.81	19.54	95.38	19 30 38	1683.7	-32.69	33.75
110.00	12 36 25	3509.44	-8.10	125.20	12.75	56.68	13 34 54	2909.4	-12.43	118.78

DIFFERENTIAL CORRECTIONS
TDE .2471 TRA .2587 TC3-3.3372 BAU .4448
RDE .1785 RRA -.1177 RC3 1.1376 FAU .61425
FDE -.1573 FRA11.3778 FC-56.3568 BSP 7139
BDE .3048 BRA .2842 BC3 3.5258 FSP 12426

MID-COURSE EXECUTION ACCURACY
SGT 2167.6 SGR 811.0 SG3 3609.5
RRT -.8009 RRF -.8839 RTF .9196
SGB 2314.4 R23 .1866 R13 -.9335
SG1 2267.3 SG2 464.3 THA 162.56

ORBIT DETERMINATION ACCURACY
ST 491.6 SR 341.4 SS 1718.1
CRT .8378 CRS .2593 CST -.3001
LSA 1726.9 MSA 571.9 SSA 29.7
EL1 577.1 EL2 158.8 ALF 33.00

LAUNCH DATE NOV 4 1964 FLIGHT TIME 308.00 ARRIVAL DATE SEP 8 1965

DISTANCE 697.002

EARTH TO MARS

HELIOCENTRIC CONIC
RL 148.35 LAL -.00 LOL 41.61 VL 32.813 GAL -2.73 AZL 88.52 HCA 215.05 SMA 186.24 ECC .20876 INC 1.4813 V1 30.035
RP 221.89 LAP -.85 LOP 256.65 VP 21.991 GAP -4.87 AZP 91.21 TAL 344.08 TAP 199.12 RCA 147.36 APO 225.12 V2 24.779
RC 264.895 GL 15.99 GP 3.37 ZAL 111.53 ZAP 97.25 ETS 178.52 ZAE 131.74 ETE 174.66 ZAC 89.70 ETC 256.80 CLP 97.26

PLANETOCENTRIC CONIC
C3 9.457 VHL 3.075 DLA 24.84 RAL 162.28 RAD 6567.3 VEL 11.439 PTH 1.98 VHP 2.795 DPA 6.88 RAP 176.44 ECC 1.1556

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 18 51	2966.42	-28.14	93.99	19.99	86.72	16 8 17	2366.4	-28.30	85.32
90.00	11 13 13	3779.58	-13.10	148.08	15.91	64.67	12 16 12	3179.6	-16.40	140.96
100.00	17 2 27	2632.42	-29.88	69.48	20.06	89.30	17 46 19	2032.4	-29.66	60.68
100.00	12 12 18	3588.82	-11.54	133.27	15.11	62.23	13 12 7	2988.8	-15.17	126.36
110.00	18 53 15	2285.76	-33.82	42.97	19.88	95.29	19 31 21	1685.8	-32.72	33.91
110.00	12 37 59	3508.24	-8.15	125.13	13.08	56.69	13 36 28	2908.2	-12.47	118.71

DIFFERENTIAL CORRECTIONS
TDE .2470 TRA .3632 TC3-3.8208 BAU .5036
RDE .1825 RRA -.1153 RC3 1.1259 FAU .61478
FDE -.1121 FRA11.5572 FC-56.2779 BSP 8349
BDE .3071 BRA .3811 BC3 3.9832 FSP 12619

MID-COURSE EXECUTION ACCURACY
SGT 2508.1 SGR 807.0 SG3 3625.9
RRT -.8139 RRF -.8757 RTF .9400
SGB 2634.7 R23 .1458 R13 -.9480
SG1 2595.4 SG2 453.1 THA 164.85

ORBIT DETERMINATION ACCURACY
ST 516.5 SR 348.0 SS 1737.7
CRT .7741 CRS .2388 CST -.4222
LSA 1753.9 MSA 574.9 SSA 30.1
EL1 592.5 EL2 192.1 ALF 31.19

LAUNCH DATE NOV 4 1964 FLIGHT TIME 310.00 ARRIVAL DATE SEP 10 1965

DISTANCE 701.032

EARTH TO MARS

HELIOCENTRIC CONIC
RL 148.35 LAL -.00 LOL 41.61 VL 32.810 GAL -2.75 AZL 88.50 HCA 216.15 SMA 186.21 ECC .20869 INC 1.4953 V1 30.035
RP 221.51 LAP -.88 LOP 257.75 VP 22.035 GAP -5.09 AZP 91.21 TAL 343.94 TAP 200.09 RCA 147.35 APO 225.06 V2 24.820
RC 266.379 GL 16.12 GP 3.29 ZAL 111.76 ZAP 95.22 ETS 178.67 ZAE 129.49 ETE 175.05 ZAC 89.43 ETC 256.89 CLP 95.23

PLANETOCENTRIC CONIC
C3 9.483 VHL 3.079 DLA 24.86 RAL 162.58 RAD 6567.3 VEL 11.440 PTH 1.98 VHP 2.790 DPA 7.19 RAP 175.56 ECC 1.1561

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 19 35	2968.54	-28.13	94.14	20.34	86.65	16 9 4	2368.5	-28.30	85.48
90.00	11 14 52	3778.54	-13.13	148.02	16.26	64.68	12 17 51	3178.5	-16.43	140.90
100.00	17 3 16	2634.25	-29.88	69.62	20.41	89.22	17 47 11	2034.2	-29.67	60.82
100.00	12 13 52	3588.06	-11.56	133.22	15.46	62.24	13 13 40	2988.1	-15.19	126.31
110.00	18 54 11	2287.23	-33.83	43.08	20.23	95.22	19 32 19	1687.2	-32.74	34.02
110.00	12 39 27	3507.84	-8.16	125.11	13.42	56.69	13 37 54	2907.8	-12.49	118.69

DIFFERENTIAL CORRECTIONS
TDE .2474 TRA .4701 TC3-4.2966 BAU .5629
RDE .1881 RRA -.1114 RC3 1.1189 FAU .61809
FDE -.1643 FRA11.6267 FC-56.4264 BSP 9594
BDE .3108 BRA .4831 BC3 4.4399 FSP 12588

MID-COURSE EXECUTION ACCURACY
SGT 2853.7 SGR 805.9 SG3 3641.4
RRT -.8186 RRF -.8685 RTF .9546
SGB 2965.4 R23 .1169 R13 -.9594
SG1 2930.9 SG2 450.7 THA 166.66

ORBIT DETERMINATION ACCURACY
ST 549.4 SR 357.2 SS 1744.2
CRT .7115 CRS .2394 CST -.5059
LSA 1769.3 MSA 583.3 SSA 30.0
EL1 615.9 EL2 223.9 ALF 29.02

LAUNCH DATE NOV 4 1964 FLIGHT TIME 312.00 ARRIVAL DATE SEP 12 1965

DISTANCE 705.078

EARTH TO MARS

HELIOCENTRIC CONIC
RL 148.35 LAL -.00 LOL 41.61 VL 32.809 GAL -2.78 AZL 88.49 HCA 217.26 SMA 186.17 ECC .20865 INC 1.5086 V1 30.035
RP 221.13 LAP -.91 LOP 258.86 VP 22.079 GAP -5.32 AZP 91.20 TAL 343.79 TAP 201.05 RCA 147.33 APO 225.02 V2 24.862
RC 267.844 GL 16.24 GP 3.22 ZAL 112.01 ZAP 93.19 ETS 178.82 ZAE 127.25 ETE 175.41 ZAC 89.16 ETC 256.98 CLP 93.20

PLANETOCENTRIC CONIC
C3 9.514 VHL 3.084 DLA 24.87 RAL 162.90 RAD 6567.3 VEL 11.441 PTH 1.98 VHP 2.789 DPA 7.50 RAP 174.68 ECC 1.1566

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 20 47	2969.48	-28.13	94.21	20.71	86.61	16 10 16	2369.5	-28.30	85.55
90.00	11 16 14	3778.86	-13.12	148.04	16.62	64.68	12 19 13	3178.9	-16.42	140.92
100.00	17 4 29	2635.14	-29.88	69.68	20.79	89.19	17 48 24	2035.1	-29.68	60.88
100.00	12 15 13	3588.44	-11.55	133.25	15.82	62.24	13 15 2	2988.4	-15.18	126.33
110.00	18 55 25	2288.05	-33.84	43.15	20.61	95.18	19 33 33	1688.0	-32.75	34.08
110.00	12 40 46	3508.29	-8.14	125.14	13.78	56.69	13 39 15	2908.3	-12.47	118.71

DIFFERENTIAL CORRECTIONS
TDE .2466 TRA .5791 TC3-4.7770 BAU .6238
RDE .1935 RRA -.1076 RC3 1.1095 FAU .61925
FDE -.2115 FRA11.6898 FC-56.3505 BSP 10848
BDE .3135 BRA .5890 BC3 4.9042 FSP 12563

MID-COURSE EXECUTION ACCURACY
SGT 3209.3 SGR 803.9 SG3 3646.7
RRT -.8192 RRF -.8608 RTF .9644
SGB 3308.5 R23 .0955 R13 -.9676
SG1 3277.5 SG2 451.4 THA 168.18

ORBIT DETERMINATION ACCURACY
ST 586.6 SR 366.1 SS 1751.2
CRT .6488 CRS .2395 CST -.5786
LSA 1787.6 MSA 590.2 SSA 30.0
EL1 643.1 EL2 254.1 ALF 26.49

LAUNCH DATE NOV 4 1964 FLIGHT TIME 314.00 ARRIVAL DATE SEP 14 1965

HELIOCENTRIC CONIC DISTANCE 709.115 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 32.807 GAL -2.81 AZL 88.48 HCA 218.37 SMA 186.15 ECC .20864 INC 1.5214 V1 30.035
RP 220.75 LAP -.94 LOP 259.97 VP 22.123 GAP -5.53 AZP 91.19 TAL 343.62 TAP 201.99 RCA 147.31 APO 224.98 V2 24.903
RC 269.292 GL 16.35 GP 3.14 ZAL 112.28 ZAP 91.17 ETS 178.96 ZAE 125.00 ETE 175.74 ZAC 88.90 ETC 257.07 CLP 91.17

PLANETOCENTRIC CONIC

C3 9.549 VHL 3.090 DLA 24.85 RAL 163.24 RAD 6567.3 VEL 11.443 PTH 1.98 VHP 2.792 DPA 7.81 RAP 173.81 ECC 1.1572

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 22 24	2969.29	-28.13	94.20	21.10	86.62	16 11 53	2369.3	-28.30	85.53
90.00	11 17 20	3780.51	-13.07	148.14	17.00	64.66	12 20 20	3180.5	-16.38	141.02
100.00	17 6 3	2635.11	-29.88	69.68	21.18	89.19	17 49 58	2035.1	-29.68	60.88
100.00	12 16 22	3589.92	-11.50	133.33	16.20	62.22	13 16 12	2989.9	-15.13	126.42
110.00	18 56 55	2288.24	-33.84	43.16	21.00	95.17	19 35 4	1688.2	-32.75	34.09
110.00	12 41 59	3509.56	-8.10	125.20	14.16	56.68	13 40 28	2909.6	-12.43	118.78

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2450 TRA .6907 TC3-5.2550 BAU .6854 SGT 3570.2 SGR 801.0 SG3 3642.5 ST 628.6 SR 374.8 SS 1758.4
RDE .1989 RRA -.1039 RC3 1.0980 FAU .61852 RRT -.8169 RRF -.8525 RTF .9715 CRT .5882 CRS .2390 CST -.6408
FDE -.2535 FRA11.7454 FC-56.0751 BSP 12125 SGB 3659.0 R23 .0794 R13 -.9736 LSA 1808.6 MSA 596.1 SSA 30.0
BDE .3156 BRA .6984 BC3 5.3685 FSP 12526 SG1 3630.6 SG2 454.3 THA 169.45 EL1 675.2 EL2 282.1 ALF 23.71

LAUNCH DATE NOV 4 1964 FLIGHT TIME 316.00 ARRIVAL DATE SEP 16 1965

HELIOCENTRIC CONIC DISTANCE 713.168 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 32.806 GAL -2.84 AZL 88.47 HCA 219.48 SMA 186.12 ECC .20867 INC 1.5336 V1 30.035
RP 220.37 LAP -.97 LOP 261.09 VP 22.168 GAP -5.75 AZP 91.18 TAL 343.44 TAP 202.93 RCA 147.29 APO 224.96 V2 24.945
RC 270.721 GL 16.45 GP 3.06 ZAL 112.58 ZAP 89.17 ETS 179.09 ZAE 122.77 ETE 176.05 ZAC 88.64 ETC 257.16 CLP 89.16

PLANETOCENTRIC CONIC

C3 9.590 VHL 3.097 DLA 24.82 RAL 163.60 RAD 6567.3 VEL 11.445 PTH 1.99 VHP 2.797 DPA 8.11 RAP 172.96 ECC 1.1578

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 24 27	2968.01	-28.14	94.10	21.52	86.66	16 13 55	2368.0	-28.30	85.44
90.00	11 18 9	3783.45	-12.99	148.31	17.39	64.61	12 21 12	3183.5	-16.30	141.20
100.00	17 7 59	2634.20	-29.88	69.61	21.59	89.23	17 51 53	2034.2	-29.67	60.82
100.00	12 17 18	3592.49	-11.42	133.48	16.59	62.19	13 17 10	2992.5	-15.06	126.57
110.00	18 58 42	2287.82	-33.83	43.13	21.41	95.19	19 36 50	1687.8	-32.75	34.06
110.00	12 43 4	3511.64	-8.02	125.32	14.55	56.66	13 41 36	2911.6	-12.35	118.90

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2421 TRA .8048 TC3-5.7299 BAU .7477 SGT 3935.2 SGR 797.3 SG3 3628.0 ST 674.0 SR 383.4 SS 1764.2
RDE .2043 RRA -.1000 RC3 1.0847 FAU .61598 RRT -.8125 RRF -.8435 RTF .9766 CRT .5304 CRS .2394 CST -.6929
FDE -.2981 FRA11.7810 FC-55.6085 BSP 13411 SGB 4015.2 R23 .0672 R13 -.9781 LSA 1830.7 MSA 601.1 SSA 29.9
BDE .3168 BRA .8110 BC3 5.8317 FSP 12458 SG1 3988.9 SG2 458.6 THA 170.53 EL1 711.7 EL2 307.8 ALF 20.87

LAUNCH DATE NOV 4 1964 FLIGHT TIME 318.00 ARRIVAL DATE SEP 18 1965

HELIOCENTRIC CONIC DISTANCE 717.229 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 32.805 GAL -2.87 AZL 88.45 HCA 220.60 SMA 186.11 ECC .20873 INC 1.5452 V1 30.035
RP 220.00 LAP -1.01 LOP 262.20 VP 22.213 GAP -5.96 AZP 91.17 TAL 343.25 TAP 203.85 RCA 147.26 APO 224.95 V2 24.986
RC 272.134 GL 16.54 GP 2.99 ZAL 112.90 ZAP 87.17 ETS 179.22 ZAE 120.55 ETE 176.34 ZAC 88.39 ETC 257.25 CLP 87.17

PLANETOCENTRIC CONIC

C3 9.635 VHL 3.104 DLA 24.77 RAL 163.98 RAD 6567.3 VEL 11.447 PTH 1.99 VHP 2.806 DPA 8.40 RAP 172.12 ECC 1.1586

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 26 54	2965.67	-28.15	93.93	21.96	86.75	16 16 20	2365.7	-28.30	85.27
90.00	11 18 42	3787.66	-12.86	148.56	17.80	64.55	12 21 50	3187.7	-16.19	141.46
100.00	17 10 16	2632.44	-29.88	69.48	22.02	89.29	17 54 8	2032.4	-29.66	60.69
100.00	12 18 2	3596.12	-11.31	133.69	17.00	62.14	13 17 58	2996.1	-14.95	126.79
110.00	19 0 44	2286.81	-33.83	43.05	21.84	95.24	19 38 51	1686.8	-32.73	33.98
110.00	12 44 3	3514.51	-7.91	125.47	14.96	56.64	13 42 38	2914.5	-12.25	119.05

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2379 TRA .9209 TC3-6.1994 BAU .8104 SGT 4302.2 SGR 793.4 SG3 3604.8 ST 722.1 SR 392.2 SS 1768.5
RDE .2098 RRA -.0960 RC3 1.0702 FAU .61208 RRT -.8063 RRF -.8342 RTF .9804 CRT .4762 CRS .2428 CST -.7348
FDE -.3541 FRA11.7928 FC-54.9954 BSP 14689 SGB 4374.8 R23 .0581 R13 -.9815 LSA 1853.3 MSA 606.1 SSA 29.9
BDE .3172 BRA .9259 BC3 6.2911 FSP 12368 SG1 4350.1 SG2 464.1 THA 171.44 EL1 752.1 EL2 331.1 ALF 18.13

LAUNCH DATE NOV 4 1964 FLIGHT TIME 320.00 ARRIVAL DATE SEP 20 1965

HELIOCENTRIC CONIC DISTANCE 721.297 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 32.804 GAL -2.91 AZL 88.44 HCA 221.72 SMA 186.09 ECC .20883 INC 1.5563 V1 30.035
RP 219.62 LAP -1.04 LOP 263.33 VP 22.258 GAP -6.16 AZP 91.16 TAL 343.04 TAP 204.77 RCA 147.23 APO 224.96 V2 25.027
RC 273.529 GL 16.61 GP 2.92 ZAL 113.25 ZAP 85.20 ETS 179.34 ZAE 118.34 ETE 176.60 ZAC 88.14 ETC 257.34 CLP 85.20

PLANETOCENTRIC CONIC

C3 9.686 VHL 3.112 DLA 24.69 RAL 164.38 RAD 6567.3 VEL 11.449 PTH 1.99 VHP 2.819 DPA 8.68 RAP 171.31 ECC 1.1594

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 29 46	2962.32	-28.16	93.69	22.41	86.87	16 19 8	2362.3	-28.29	85.02
90.00	11 19 1	3793.08	-12.70	148.88	18.22	64.48	12 22 15	3193.1	-16.04	141.79
100.00	17 12 53	2629.86	-29.89	69.29	22.48	89.40	17 56 43	2029.9	-29.65	60.49
100.00	12 18 36	3600.77	-11.16	133.95	17.42	62.09	13 18 36	3000.8	-14.81	127.06
110.00	19 3 2	2285.23	-33.82	42.93	22.29	95.31	19 41 7	1685.2	-32.71	33.87
110.00	12 44 56	3518.17	-7.77	125.66	15.39	56.61	13 43 34	2918.2	-12.11	119.25

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2320 TRA 1.0389 TC3-6.6600 BAU .8732 SGT 4669.0 SGR 789.1 SG3 3573.7 ST 772.4 SR 400.9 SS 1771.9
RDE .2154 RRA -.0919 RC3 1.0545 FAU .60687 RRT -.7989 RRF -.8244 RTF .9834 CRT .4250 CRS .2475 CST -.7696
FDE -.4139 FRA11.7866 FC-54.2413 BSP 15970 SGB 4735.2 R23 .0510 R13 -.9842 LSA 1877.2 MSA 610.4 SSA 29.8
BDE .3165 BRA 1.0430 BC3 6.7429 FSP 12239 SG1 4711.8 SG2 470.3 THA 172.23 EL1 795.8 EL2 352.3 ALF 15.56

LAUNCH DATE NOV 4 1964 FLIGHT TIME 322.00 ARRIVAL DATE SEP 22 1965

HELIOCENTRIC CONIC DISTANCE 725.373 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 32.803 GAL -2.94 AZL 88.43 HCA 222.85 SMA 186.09 ECC .20895 INC 1.5671 V1 30.035
RP 219.25 LAP -1.07 LOP 264.45 VP 22.303 GAP -6.36 AZP 91.15 TAL 342.82 TAP 205.67 RCA 147.20 APO 224.97 V2 25.067
RC 274.906 GL 16.68 GP 2.84 ZAL 113.62 ZAP 83.26 ETS 179.45 ZAE 116.16 ETE 176.85 ZAC 87.90 ETC 257.43 CLP 83.25

PLANETOCENTRIC CONIC

C3 9.742 VHL 3.121 DLA 24.60 RAL 164.79 RAD 6567.4 VEL 11.451 PTH 1.99 VHP 2.834 DPA 8.95 RAP 170.52 ECC 1.1603

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 33 0	2958.02	-28.17	93.37	22.89	87.03	16 22 18	2358.0	-28.29	84.71
90.00	11 19 7	3799.67	-12.51	149.26	18.65	64.39	12 22 26	3199.7	-15.86	142.19
100.00	17 15 50	2626.49	-29.89	69.04	22.95	89.53	17 59 36	2026.5	-29.63	60.24
100.00	12 18 58	3606.43	-10.98	134.28	17.86	62.02	13 19 5	3006.4	-14.64	127.40
110.00	19 5 35	2283.10	-33.80	42.76	22.75	95.41	19 43 38	1683.1	-32.69	33.70
110.00	12 45 42	3522.58	-7.61	125.90	15.84	56.57	13 44 25	2922.6	-11.95	119.50

DIFFERENTIAL CORRECTIONS
TDE .2249 TRA 1.1595 TC3-7.1094 BAU .9358
RDE .2210 RRA -.0876 RC3 1.0374 FAU .60013
FDE -.4787 FRA11.7620 FC-53.3285 BSP 17246
BDE .3153 BRA 1.1629 BC3 7.1847 FSP 12090

MID-COURSE EXECUTION ACCURACY
SGT 5034.6 SGR 784.5 SG3 3533.9
RRT -.7902 RRF -.8140 RTF .9857
SGB 5095.4 R23 .0458 R13 -.9863
SG1 5073.0 SG2 477.1 THA 172.92

ORBIT DETERMINATION ACCURACY
ST 825.4 SR 409.7 SS 1774.5
CRT .3774 CRS .2540 CST -.7980
LSA 1902.4 MSA 614.9 SSA 29.6
EL1 843.4 EL2 371.3 ALF 13.21

LAUNCH DATE NOV 4 1964 FLIGHT TIME 324.00 ARRIVAL DATE SEP 24 1965

HELIOCENTRIC CONIC DISTANCE 729.456 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 32.803 GAL -2.99 AZL 88.42 HCA 223.98 SMA 186.08 ECC .20911 INC 1.5773 V1 30.035
RP 218.89 LAP -1.10 LOP 265.58 VP 22.348 GAP -6.56 AZP 91.14 TAL 342.59 TAP 206.57 RCA 147.17 APO 225.00 V2 25.108
RC 276.266 GL 16.74 GP 2.77 ZAL 114.02 ZAP 81.33 ETS 179.56 ZAE 114.00 ETE 177.08 ZAC 87.67 ETC 257.53 CLP 81.32

PLANETOCENTRIC CONIC

C3 9.804 VHL 3.131 DLA 24.49 RAL 165.23 RAD 6567.4 VEL 11.454 PTH 1.99 VHP 2.853 DPA 9.20 RAP 169.75 ECC 1.1614

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 36 37	2952.81	-28.19	92.99	23.40	87.22	16 25 49	2352.8	-28.28	84.33
90.00	11 18 59	3807.39	-12.28	149.72	19.11	64.28	12 22 26	3207.4	-15.65	142.65
100.00	17 19 6	2622.37	-29.89	68.73	23.45	89.69	18 2 48	2022.4	-29.61	59.94
100.00	12 19 11	3613.06	-10.77	134.65	18.32	61.95	13 19 24	3013.1	-14.44	127.79
110.00	19 8 23	2280.45	-33.79	42.56	23.24	95.53	19 46 24	1680.4	-32.65	33.50
110.00	12 46 23	3527.75	-7.41	126.17	16.30	56.53	13 45 10	2927.7	-11.77	119.78

DIFFERENTIAL CORRECTIONS
TDE .2156 TRA 1.2819 TC3-7.5473 BAU .9982
RDE .2267 RRA -.0833 RC3 1.0193 FAU .59212
FDE -.5455 FRA11.7181 FC-52.2846 BSP 18505
BDE .3129 BRA 1.2846 BC3 7.6158 FSP 11921

MID-COURSE EXECUTION ACCURACY
SGT 5398.0 SGR 779.5 SG3 3486.4
RRT -.7807 RRF -.8031 RTF .9875
SGB 5454.0 R23 .0415 R13 -.9880
SG1 5432.5 SG2 484.0 THA 173.52

ORBIT DETERMINATION ACCURACY
ST 879.6 SR 418.3 SS 1776.0
CRT .3318 CRS .2615 CST -.8222
LSA 1928.6 MSA 618.2 SSA 29.4
EL1 893.1 EL2 388.7 ALF 11.09

LAUNCH DATE NOV 4 1964 FLIGHT TIME 326.00 ARRIVAL DATE SEP 26 1965

HELIOCENTRIC CONIC DISTANCE 733.546 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 32.803 GAL -3.03 AZL 88.41 HCA 225.11 SMA 186.08 ECC .20930 INC 1.5873 V1 30.035
RP 218.52 LAP -1.12 LOP 266.71 VP 22.394 GAP -6.76 AZP 91.12 TAL 342.34 TAP 207.45 RCA 147.14 APO 225.03 V2 25.148
RC 277.609 GL 16.79 GP 2.70 ZAL 114.44 ZAP 79.44 ETS 179.67 ZAE 111.86 ETE 177.29 ZAC 87.45 ETC 257.62 CLP 79.43

PLANETOCENTRIC CONIC

C3 9.872 VHL 3.142 DLA 24.36 RAL 165.68 RAD 6567.4 VEL 11.457 PTH 1.99 VHP 2.874 DPA 9.45 RAP 169.02 ECC 1.1625

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 40 33	2946.76	-28.21	92.55	23.92	87.44	16 29 40	2346.8	-28.27	83.89
90.00	11 18 39	3816.17	-12.02	150.23	19.57	64.17	12 22 15	3216.2	-15.40	143.18
100.00	17 22 40	2617.54	-29.89	68.37	23.96	89.88	18 6 18	2017.5	-29.59	59.58
100.00	12 19 14	3620.62	-10.52	135.08	18.80	61.86	13 19 34	3020.6	-14.21	128.23
110.00	19 11 25	2277.28	-33.77	42.31	23.74	95.67	19 49 23	1677.3	-32.61	33.27
110.00	12 46 58	3533.64	-7.19	126.48	16.78	56.49	13 45 51	2933.6	-11.55	120.10

DIFFERENTIAL CORRECTIONS
TDE .2050 TRA 1.4073 TC3-7.9681 BAU 1.0599
RDE .2324 RRA -.0790 RC3 1.0001 FAU .58278
FDE -.6141 FRA11.6613 FC-51.1065 BSP 19764
BDE .3099 BRA 1.4095 BC3 8.0306 FSP 11733

MID-COURSE EXECUTION ACCURACY
SGT 5757.4 SGR 774.3 SG3 3431.7
RRT -.7702 RRF -.7917 RTF .9890
SGB 5809.2 R23 .0383 R13 -.9893
SG1 5788.4 SG2 491.2 THA 174.04

ORBIT DETERMINATION ACCURACY
ST 936.3 SR 426.9 SS 1777.2
CRT .2891 CRS .2700 CST -.8423
LSA 1957.0 MSA 621.8 SSA 29.2
EL1 946.2 EL2 404.4 ALF 9.20

LAUNCH DATE NOV 4 1964 FLIGHT TIME 328.00 ARRIVAL DATE SEP 28 1965

HELIOCENTRIC CONIC DISTANCE 737.644 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 32.804 GAL -3.08 AZL 88.40 HCA 226.25 SMA 186.09 ECC .20953 INC 1.5969 V1 30.035
RP 218.16 LAP -1.15 LOP 267.85 VP 22.439 GAP -6.95 AZP 91.10 TAL 342.07 TAP 208.32 RCA 147.10 APO 225.08 V2 25.188
RC 278.933 GL 16.83 GP 2.63 ZAL 114.88 ZAP 77.58 ETS 179.76 ZAE 109.75 ETE 177.49 ZAC 87.23 ETC 257.70 CLP 77.57

PLANETOCENTRIC CONIC

C3 9.946 VHL 3.154 DLA 24.21 RAL 166.16 RAD 6567.4 VEL 11.460 PTH 1.99 VHP 2.899 DPA 9.68 RAP 168.32 ECC 1.1637

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 44 50	2939.92	-28.23	92.05	24.46	87.69	16 33 50	2339.9	-28.25	83.39
90.00	11 18 8	3825.97	-11.73	150.80	20.06	64.04	12 21 54	3226.0	-15.13	143.77
100.00	17 26 32	2612.03	-29.89	67.97	24.50	90.09	18 10 4	2012.0	-29.56	59.18
100.00	12 19 8	3629.09	-10.25	135.57	19.29	61.77	13 19 37	3029.1	-13.95	128.72
110.00	19 14 42	2273.62	-33.74	42.03	24.26	95.84	19 52 35	1673.6	-32.57	32.99
110.00	12 47 27	3540.26	-6.94	126.84	17.29	56.45	13 46 27	2940.3	-11.31	120.46

DIFFERENTIAL CORRECTIONS
TDE .1914 TRA 1.5334 TC3-8.3762 BAU 1.1214
RDE .2383 RRA -.0745 RC3 .9806 FAU .57280
FDE -.6929 FRA11.5805 FC-49.8581 BSP 20980
BDE .3057 BRA 1.5352 BC3 8.4334 FSP 11506

MID-COURSE EXECUTION ACCURACY
SGT 6112.7 SGR 769.4 SG3 3371.5
RRT -.7591 RRF -.7800 RTF .9901
SGB 6160.9 R23 .0358 R13 -.9904
SG1 6140.7 SG2 498.5 THA 174.51

ORBIT DETERMINATION ACCURACY
ST 992.9 SR 435.6 SS 1777.3
CRT .2470 CRS .2816 CST -.8591
LSA 1985.7 MSA 624.9 SSA 28.9
EL1 1000.0 EL2 419.1 ALF 7.51

LAUNCH DATE NOV 4 1964 FLIGHT TIME 330.00 ARRIVAL DATE SEP 30 1965

HELIOCENTRIC CONIC DISTANCE 741.748 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 32.804 GAL -3.13 AZL 88.39 HCA 227.39 SMA 186.10 ECC .20978 INC 1.6062 V1 30.035
RP 217.80 LAP -1.18 LOP 268.99 VP 22.485 GAP -7.14 AZP 91.09 TAL 341.79 TAP 209.18 RCA 147.06 APO 225.14 V2 25.228
RC 280.240 GL 16.86 GP 2.56 ZAL 115.35 ZAP 75.76 ETS 179.85 ZAE 107.68 ETE 177.68 ZAC 87.03 ETC 257.79 CLP 75.74

PLANETOCENTRIC CONIC

C3 10.026 VHL 3.166 DLA 24.05 RAL 166.65 RAD 6567.4 VEL 11.464 PTH 1.99 VHP 2.926 DPA 9.89 RAP 167.66 ECC 1.1650

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 49 25	2932.35	-28.25	91.50	25.03	87.96	16 38 17	2332.3	-28.23	82.83
90.00	11 17 28	3836.74	-11.41	151.43	20.56	63.91	12 21 24	3236.7	-14.83	144.42
100.00	17 30 40	2605.89	-29.89	67.51	25.06	90.33	18 14 6	2005.9	-29.52	58.72
100.00	12 18 54	3638.42	-9.95	136.09	19.80	61.67	13 19 32	3038.4	-13.66	129.27
110.00	19 18 11	2269.50	-33.71	41.71	24.81	96.02	19 56 1	1669.5	-32.51	32.68
110.00	12 47 52	3547.58	-6.67	127.22	17.81	56.40	13 46 59	2947.6	-11.04	120.86

DIFFERENTIAL CORRECTIONS
TDE .1766 TRA 1.6625 TC3-8.7638 BAU 1.1817
RDE .2441 RRA -.0700 RC3 .9599 FAU .56137
FDE -.7662 FRA11.4923 FC-48.4727 BSP 22203
BDE .3012 BRA 1.6640 BC3 8.8162 FSP 11282

MID-COURSE EXECUTION ACCURACY
SGT 6461.9 SGR 764.1 SG3 3304.5
RRT -.7472 RRF -.7676 RTF .9911
SGB 6506.9 R23 .0337 R13 -.9913
SG1 6487.2 SG2 505.8 THA 174.92

ORBIT DETERMINATION ACCURACY
ST 1051.9 SR 444.0 SS 1777.5
CRT .2076 CRS .2926 CST -.8737
LSA 2017.1 MSA 627.5 SSA 28.6
EL1 1056.7 EL2 432.3 ALF 6.02

LAUNCH DATE NOV 4 1964 FLIGHT TIME 332.00 ARRIVAL DATE OCT 2 1965

HELIOCENTRIC CONIC DISTANCE 745.858 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 32.805 GAL -3.18 AZL 88.38 HCA 228.54 SMA 186.11 ECC .21007 INC 1.6151 V1 30.035
RP 217.44 LAP -1.21 LOP 270.14 VP 22.530 GAP -7.32 AZP 91.07 TAL 341.50 TAP 210.04 RCA 147.02 APO 225.21 V2 25.268
RC 281.529 GL 16.88 GP 2.49 ZAL 115.84 ZAP 73.97 ETS 179.94 ZAE 105.64 ETE 177.86 ZAC 86.84 ETC 257.87 CLP 73.95

PLANETOCENTRIC CONIC

C3 10.113 VHL 3.180 DLA 23.87 RAL 167.15 RAD 6567.4 VEL 11.467 PTH 1.99 VHP 2.956 DPA 10.09 RAP 167.03 ECC 1.1664

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 54 17	2924.11	-28.27	90.90	25.61	88.27	16 43 1	2324.1	-28.21	82.23
90.00	11 16 38	3848.42	-11.06	152.11	21.08	63.77	12 20 46	3248.4	-14.50	145.12
100.00	17 35 4	2599.17	-29.89	67.01	25.63	90.60	18 18 23	1999.2	-29.48	58.23
100.00	12 18 32	3648.60	-9.62	136.67	20.32	61.56	13 19 21	3048.6	-13.35	129.86
110.00	19 21 54	2264.93	-33.68	41.36	25.36	96.23	19 59 39	1664.9	-32.45	32.34
110.00	12 48 11	3555.59	-6.37	127.65	18.35	56.34	13 47 27	2955.6	-10.75	121.29

DIFFERENTIAL CORRECTIONS
TDE .1589 TRA 1.7934 TC3-9.1337 BAU 1.2414
RDE .2500 RRA -.0654 RC3 .9390 FAU .54938
FDE -.8478 FRA11.3852 FC-47.0300 BSP 23388
BDE .2962 BRA 1.7946 BC3 9.1819 FSP 11030

MID-COURSE EXECUTION ACCURACY
SGT 6805.3 SGR 759.1 SG3 3233.0
RRT -.7348 RRF -.7549 RTF .9919
SGB 6847.5 R23 .0323 R13 -.9921
SG1 6828.3 SG2 513.1 THA 175.29

ORBIT DETERMINATION ACCURACY
ST 1111.7 SR 452.5 SS 1777.2
CRT .1686 CRS .3063 CST -.8858
LSA 2049.7 MSA 630.3 SSA 28.3
EL1 1114.8 EL2 444.7 ALF 4.67

LAUNCH DATE NOV 4 1964 FLIGHT TIME 334.00 ARRIVAL DATE OCT 4 1965

HELIOCENTRIC CONIC DISTANCE 749.972 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 32.806 GAL -3.24 AZL 88.38 HCA 229.68 SMA 186.13 ECC .21038 INC 1.6237 V1 30.035
RP 217.09 LAP -1.24 LOP 271.29 VP 22.575 GAP -7.51 AZP 91.05 TAL 341.19 TAP 210.88 RCA 146.97 APO 225.29 V2 25.307
RC 282.801 GL 16.89 GP 2.43 ZAL 116.35 ZAP 72.22 ETS 180.02 ZAE 103.63 ETE 178.02 ZAC 86.65 ETC 257.94 CLP 72.20

PLANETOCENTRIC CONIC

C3 10.207 VHL 3.195 DLA 23.67 RAL 167.68 RAD 6567.4 VEL 11.472 PTH 1.99 VHP 2.989 DPA 10.27 RAP 166.44 ECC 1.1680

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 59 27	2915.21	-28.28	90.25	26.22	88.59	16 48 2	2315.2	-28.18	81.58
90.00	11 15 39	3861.02	-10.68	152.84	21.62	63.62	12 20 0	3261.0	-14.14	145.87
100.00	17 39 45	2591.84	-29.88	66.46	26.23	90.88	18 22 57	1991.8	-29.44	57.69
100.00	12 18 3	3659.62	-9.26	137.29	20.87	61.45	13 19 3	3059.6	-13.01	130.50
110.00	19 25 50	2259.91	-33.64	40.97	25.94	96.46	20 3 30	1659.9	-32.38	31.96
110.00	12 48 27	3564.31	-6.04	128.11	18.91	56.29	13 47 51	2964.3	-10.43	121.76

DIFFERENTIAL CORRECTIONS
TDE .1494 TRA 1.9383 TC3-9.4458 BAU 1.2949
RDE .2547 RRA -.0620 RC3 .9126 FAU .53235
FDE -.8402 FRA11.3519 FC-45.1532 BSP 24821
BDE .2953 BRA 1.9393 BC3 9.4897 FSP 10946

MID-COURSE EXECUTION ACCURACY
SGT 7134.6 SGR 750.7 SG3 3149.5
RRT -.7204 RRF -.7387 RTF .9924
SGB 7174.0 R23 .0288 R13 -.9926
SG1 7155.2 SG2 519.2 THA 175.64

ORBIT DETERMINATION ACCURACY
ST 1183.6 SR 458.6 SS 1779.6
CRT .1432 CRS .2995 CST -.9006
LSA 2093.5 MSA 628.2 SSA 28.3
EL1 1185.7 EL2 453.1 ALF 3.72

LAUNCH DATE NOV 4 1964 FLIGHT TIME 336.00 ARRIVAL DATE OCT 6 1965

HELIOCENTRIC CONIC DISTANCE 754.098 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 32.807 GAL -3.30 AZL 88.37 HCA 230.84 SMA 186.15 ECC .21073 INC 1.6322 V1 30.035
RP 216.74 LAP -1.27 LOP 272.44 VP 22.621 GAP -7.69 AZP 91.03 TAL 340.87 TAP 211.71 RCA 146.92 APO 225.38 V2 25.346
RC 284.057 GL 16.89 GP 2.36 ZAL 116.88 ZAP 70.50 ETS 180.09 ZAE 101.66 ETE 178.17 ZAC 86.48 ETC 258.02 CLP 70.48

PLANETOCENTRIC CONIC

C3 10.308 VHL 3.211 DLA 23.45 RAL 168.22 RAD 6567.4 VEL 11.476 PTH 1.99 VHP 3.025 DPA 10.43 RAP 165.89 ECC 1.1696

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 4 50	2905.83	-28.30	89.56	26.84	88.94	16 53 16	2305.8	-28.15	80.90
90.00	11 14 34	3874.35	-10.27	153.61	22.17	63.47	12 19 9	3274.4	-13.76	146.66
100.00	17 44 37	2584.07	-29.87	65.89	26.84	91.19	18 27 42	1984.1	-29.39	57.12
100.00	12 17 28	3671.34	-8.88	137.95	21.44	61.34	13 18 39	3071.3	-12.64	131.18
110.00	19 29 57	2254.54	-33.60	40.56	26.54	96.70	20 2 32	1654.5	-32.31	31.56
110.00	12 48 38	3573.64	-5.68	128.60	19.48	56.24	13 48 11	2973.6	-10.08	122.27

DIFFERENTIAL CORRECTIONS
TDE .1227 TRA 2.0689 TC3-9.7891 BAU 1.3546
RDE .2613 RRA -.0569 RC3 .8935 FAU .52090
FDE -.9612 FRA11.1840 FC-43.7496 BSP 25855
BDE .2887 BRA 2.0697 BC3 9.8298 FSP 10593

MID-COURSE EXECUTION ACCURACY
SGT 7467.0 SGR 747.5 SG3 3073.5
RRT -.7076 RRF -.7267 RTF .9930
SGB 7504.3 R23 .0291 R13 -.9932
SG1 7485.8 SG2 526.9 THA 175.93

ORBIT DETERMINATION ACCURACY
ST 1241.5 SR 467.8 SS 1777.2
CRT .1011 CRS .3241 CST -.9077
LSA 2125.6 MSA 632.2 SSA 27.8
EL1 1242.5 EL2 465.0 ALF 2.54

LAUNCH DATE NOV 4 1964 FLIGHT TIME 338.00 ARRIVAL DATE OCT 8 1965

HELIOCENTRIC CONIC DISTANCE 758.229 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 32.809 GAL -3.36 AZL 88.36 HCA 231.99 SMA 186.17 ECC .21112 INC 1.6407 V1 30.035
RP 216.39 LAP -1.29 LOP 273.59 VP 22.666 GAP -7.86 AZP 91.01 TAL 340.54 TAP 212.53 RCA 146.87 APO 225.48 V2 25.385
RC 285.296 GL 16.89 GP 2.36 ZAL 117.43 ZAP 68.83 ETS 180.16 ZAE 99.73 ETE 178.32 ZAC 86.32 ETC 258.08 CLP 68.81

PLANETOCENTRIC CONIC

C3 10.416 VHL 3.227 DLA 23.22 RAL 168.77 RAD 6567.4 VEL 11.481 PTH 2.00 VHP 3.063 DPA 10.58 RAP 165.38 ECC 1.1714

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 10 27	2895.93	-28.31	88.84	27.49	89.30	16 58 43	2295.9	-28.11	80.18
90.00	11 13 23	3888.47	-9.84	154.42	22.75	63.32	12 18 11	3288.5	-13.35	147.50
100.00	17 49 44	2575.82	-29.86	65.23	27.47	91.51	18 32 40	1975.8	-29.33	56.51
100.00	12 16 47	3683.81	-8.47	138.65	22.02	61.23	13 18 11	3083.8	-12.25	131.90
110.00	19 34 16	2248.78	-33.55	40.11	27.15	96.96	20 11 45	1648.8	-32.23	31.13
110.00	12 48 45	3583.61	-5.31	129.12	20.08	56.18	13 48 28	2983.6	-9.71	122.80

DIFFERENTIAL CORRECTIONS
TDE .0940 TRA 2.2023 TC-10.1078 BAU 1.4128
RDE .2677 RRA -.0520 RC3 .8734 FAU .50828
FDE-1.0682 FRA11.0181 FC-42.2455 BSP 26881
BDE .2837 BRA 2.2029 BC310.1455 FSP 10256

MID-COURSE EXECUTION ACCURACY
SGT 7790.7 SGR 744.1 SG3 2993.2
RRT -.6945 RRF -.7142 RTF .9935
SGB 7826.2 R23 .0291 R13 -.9936
SG1 7807.9 SG2 534.2 THA 176.19

ORBIT DETERMINATION ACCURACY
ST 1302.0 SR 476.5 SS 1775.9
CRT .0605 CRS .3463 CST -.9148
LSA 2161.6 MSA 634.6 SSA 27.3
EL1 1302.3 EL2 475.5 ALF 1.46

LAUNCH DATE NOV 4 1964 FLIGHT TIME 340.00 ARRIVAL DATE OCT 10 1965

HELIOCENTRIC CONIC DISTANCE 762.365 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 32.810 GAL -3.42 AZL 88.35 HCA 233.15 SMA 186.20 ECC .21153 INC 1.6482 V1 30.035
RP 216.05 LAP -1.32 LOP 274.75 VP 22.711 GAP -8.04 AZP 90.99 TAL 340.19 TAP 213.34 RCA 146.81 APO 225.59 V2 25.423
RC 286.520 GL 16.87 GP 2.24 ZAL 118.01 ZAP 67.19 ETS 180.23 ZAE 97.84 ETE 178.45 ZAC 86.17 ETC 258.15 CLP 67.18

PLANETOCENTRIC CONIC

C3 10.533 VHL 3.245 DLA 22.97 RAL 169.34 RAD 6567.4 VEL 11.486 PTH 2.00 VHP 3.103 DPA 10.71 RAP 164.91 ECC 1.1733

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 16 17	2885.57	-28.32	88.08	28.15	89.68	17 4 23	2285.6	-28.06	79.42
90.00	11 12 6	3903.32	-9.39	155.28	23.34	63.16	12 17 9	3303.3	-12.92	148.38
100.00	17 55 3	2567.13	-29.84	64.63	28.12	91.85	18 37 50	1967.1	-29.27	55.87
100.00	12 16 1	3697.00	-8.04	139.39	22.62	61.11	13 17 38	3097.0	-11.83	132.66
110.00	19 38 45	2242.67	-33.50	39.64	27.78	97.23	20 16 8	1642.7	-32.14	30.68
110.00	12 48 48	3594.22	-4.91	129.68	20.70	56.13	13 48 42	2994.2	-9.32	123.37

DIFFERENTIAL CORRECTIONS
TDE .0640 TRA 2.3400 TC-10.3989 BAU 1.4692
RDE .2739 RRA -.0473 RC3 .8524 FAU .49454
FDE-1.1617 FRA10.8580 FC-40.6494 BSP 27925
BDE .2813 BRA 2.3404 BC310.4338 FSP 9946

MID-COURSE EXECUTION ACCURACY
SGT 8105.7 SGR 740.5 SG3 2909.3
RRT -.6809 RRF -.7011 RTF .9939
SGB 8139.5 R23 .0290 R13 .9940
SG1 8121.5 SG2 541.2 THA 176.42

ORBIT DETERMINATION ACCURACY
ST 1365.9 SR 484.7 SS 1775.5
CRT .0221 CRS .3661 CST -.9217
LSA 2201.8 MSA 636.0 SSA 26.8
EL1 1365.9 EL2 484.6 ALF .52

LAUNCH DATE NOV 4 1964 FLIGHT TIME 342.00 ARRIVAL DATE OCT 12 1965

HELIOCENTRIC CONIC DISTANCE 766.508 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 32.812 GAL -3.49 AZL 88.34 HCA 234.32 SMA 186.23 ECC .21198 INC 1.6559 V1 30.035
RP 215.71 LAP -1.34 LOP 275.92 VP 22.756 GAP -8.21 AZP 90.97 TAL 339.82 TAP 214.14 RCA 146.75 APO 225.71 V2 25.461
RC 287.729 GL 16.85 GP 2.18 ZAL 118.60 ZAP 65.60 ETS 180.29 ZAE 95.99 ETE 178.58 ZAC 86.03 ETC 258.20 CLP 65.58

PLANETOCENTRIC CONIC

C3 10.657 VHL 3.265 DLA 22.71 RAL 169.93 RAD 6567.4 VEL 11.491 PTH 2.00 VHP 3.147 DPA 10.83 RAP 164.49 ECC 1.1754

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 22 19	2874.80	-28.32	87.29	28.83	90.07	17 10 14	2274.8	-28.01	78.64
90.00	11 10 43	3918.87	-8.91	156.17	23.95	63.01	12 16 2	3318.9	-12.48	149.29
100.00	18 0 34	2558.04	-29.82	63.95	28.79	92.20	18 43 12	1958.0	-29.19	55.20
100.00	12 15 10	3710.86	-7.58	140.17	23.24	61.00	13 17 1	3110.9	-11.40	133.45
110.00	19 43 25	2236.23	-33.44	39.15	28.43	97.51	20 20 42	1636.2	-32.04	30.20
110.00	12 48 48	3605.43	-4.48	130.27	21.33	56.08	13 48 53	3005.4	-8.90	123.98

DIFFERENTIAL CORRECTIONS
TDE .0318 TRA 2.4803 TC-10.6658 BAU 1.5242
RDE .2802 RRA -.0427 RC3 .8315 FAU .48043
FDE-1.2495 FRA10.6904 FC-39.0272 BSP 28939
BDE .2820 BRA 2.4807 BC310.6982 FSP 9627

MID-COURSE EXECUTION ACCURACY
SGT 8412.3 SGR 737.0 SG3 2823.3
RRT -.6672 RRF -.6878 RTF .9942
SGB 8444.5 R23 .0290 R13 -.9944
SG1 8426.7 SG2 548.0 THA 176.64

ORBIT DETERMINATION ACCURACY
ST 1432.1 SR 492.6 SS 1774.9
CRT -.0148 CRS .3854 CST -.9279
LSA 2244.5 MSA 636.9 SSA 26.4
EL1 1432.1 EL2 492.6 ALF 179.67

LAUNCH DATE NOV 4 1964 FLIGHT TIME 344.00 ARRIVAL DATE OCT 14 1965

HELIOCENTRIC CONIC DISTANCE 770.656 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 32.814 GAL -3.56 AZL 88.34 HCA 235.48 SMA 186.27 ECC .21247 INC 1.6635 V1 30.035
RP 215.38 LAP -1.37 LOP 277.08 VP 22.801 GAP -8.38 AZP 90.94 TAL 339.44 TAP 214.92 RCA 146.69 APO 225.84 V2 25.498
RC 288.924 GL 16.82 GP 2.12 ZAL 119.22 ZAP 64.05 ETS 180.34 ZAE 94.18 ETE 178.69 ZAC 85.90 ETC 258.26 CLP 64.03

PLANETOCENTRIC CONIC

C3 10.791 VHL 3.285 DLA 22.42 RAL 170.52 RAD 6567.4 VEL 11.497 PTH 2.00 VHP 3.192 DPA 10.92 RAP 164.11 ECC 1.1776

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 28 32	2863.67	-28.31	86.48	29.53	90.48	17 16 16	2263.7	-27.95	77.83
90.00	11 9 17	3935.06	-8.41	157.09	24.59	62.86	12 14 52	3335.1	-11.98	150.24
100.00	18 6 15	2548.60	-29.79	63.25	29.48	92.57	18 48 44	1948.6	-29.12	54.51
100.00	12 14 15	3725.37	-7.10	140.98	23.88	60.89	13 16 20	3125.4	-10.93	134.28
110.00	19 48 15	2229.48	-33.38	38.63	29.10	97.82	20 25 25	1629.5	-31.94	29.70
110.00	12 48 44	3617.25	-4.03	130.89	21.99	56.03	13 49 1	3017.3	-8.46	124.61

DIFFERENTIAL CORRECTIONS
TDE .0023 TRA 2.6244 TC-10.9049 BAU 1.5775
RDE .2864 RRA -.0383 RC3 .8102 FAU .46557
FDE-1.3303 FRA10.5269 FC-37.3527 BSP 29953
BDE .2864 BRA 2.6247 BC310.9350 FSP 9327

MID-COURSE EXECUTION ACCURACY
SGT 8709.2 SGR 735.5 SG3 2735.1
RRT -.6532 RRF -.6742 RTF .9945
SGB 8740.0 R23 .0290 R13 -.9946
SG1 8722.4 SG2 554.6 THA 176.84

ORBIT DETERMINATION ACCURACY
ST 1501.1 SR 500.3 SS 1775.3
CRT -.0501 CRS .4037 CST -.9336
LSA 2290.9 MSA 637.3 SSA 26.0
EL1 1501.3 EL2 499.6 ALF 178.92

LAUNCH DATE NOV 4 1964 FLIGHT TIME 346.00 ARRIVAL DATE OCT 16 1965

HELIOCENTRIC CONIC DISTANCE 774.809 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 32.816 GAL -3.64 AZL 88.33 HCA 236.65 SMA 186.30 ECC .21298 INC 1.6708 V1 30.035
RP 215.05 LAP -1.40 LOP 278.25 VP 22.846 GAP -8.55 AZP 90.92 TAL 339.05 TAP 215.70 RCA 146.62 APO 225.98 V2 25.535
RC 290.105 GL 16.79 GP 2.06 ZAL 119.86 ZAP 62.55 ETS 180.39 ZAE 92.40 ETE 178.80 ZAC 85.77 ETC 258.30 CLP 62.53

PLANETOCENTRIC CONIC

C3 10.933 VHL 3.307 DLA 22.13 RAL 171.14 RAD 6567.4 VEL 11.503 PTH 2.00 VHP 3.240 DPA 11.01 RAP 163.77 ECC 1.1799

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 34 56	2852.23	-28.30	85.64	30.24	90.90	17 22 28	2252.2	-27.88	77.00
90.00	11 7 47	3951.88	-7.88	158.05	25.24	62.72	12 13 39	3351.9	-11.48	151.22
100.00	18 12 7	2538.83	-29.76	62.53	30.19	92.95	18 54 26	1938.8	-29.03	53.80
100.00	12 13 16	3740.51	-6.60	141.82	24.54	60.78	13 15 37	3140.5	-10.45	135.15
110.00	19 53 15	2222.45	-33.32	38.09	29.78	98.13	20 30 17	1622.5	-31.84	29.18
110.00	12 48 38	3629.65	-3.56	131.54	22.66	55.98	13 49 8	3029.7	-8.00	125.27

DIFFERENTIAL CORRECTIONS

TDE -.0390 TRA 2.7714 TC-11.1198 BAU 1.6295
RDE .2926 RRA -.0339 RC3 .7891 FAU .45062
FDE-1.4047 FRA10.3573 FC-35.6819 BSP 30950
BDE .2952 BRA 2.7716 BC311.1478 FSP 9028

MID-COURSE EXECUTION ACCURACY

SGT 8997.6 SGR 730.4 SG3 2646.3
RRT -.6392 RRF -.6606 RTF .9947
SGB 9027.2 R23 .0289 R13 -.9948
SG1 9009.7 SG2 560.9 THA 177.02

ORBIT DETERMINATION ACCURACY

ST 1572.3 SR 507.7 SS 1775.0
CRT -.0844 CRS .4212 CST -.9389
LSA 2339.7 MSA 636.8 SSA 25.5
EL1 1572.9 EL2 505.7 ALF 178.26

LAUNCH DATE NOV 4 1964 FLIGHT TIME 348.00 ARRIVAL DATE OCT 18 1965

HELIOCENTRIC CONIC DISTANCE 778.968 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 32.818 GAL -3.71 AZL 88.32 HCA 237.83 SMA 186.34 ECC .21353 INC 1.6780 V1 30.035
RP 214.72 LAP -1.42 LOP 279.43 VP 22.890 GAP -8.71 AZP 90.89 TAL 338.64 TAP 216.46 RCA 146.55 APO 226.13 V2 25.572
RC 291.272 GL 16.74 GP 2.01 ZAL 120.51 ZAP 61.08 ETS 180.44 ZAE 90.67 ETE 178.91 ZAC 85.67 ETC 258.34 CLP 61.06

PLANETOCENTRIC CONIC

C3 11.086 VHL 3.330 DLA 21.82 RAL 171.76 RAD 6567.4 VEL 11.510 PTH 2.00 VHP 3.290 DPA 11.07 RAP 163.47 ECC 1.1824

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 41 28	2840.51	-28.29	84.78	30.98	91.33	17 28 49	2240.5	-27.80	76.15
90.00	11 6 13	3969.28	-7.34	159.04	25.91	62.57	12 12 23	3369.3	-10.96	152.23
100.00	18 18 9	2528.78	-29.72	61.78	30.91	93.34	19 0 18	1928.8	-28.94	53.07
100.00	12 12 14	3756.25	-6.08	142.70	25.22	60.68	13 14 50	3156.2	-9.94	136.04
110.00	19 58 23	2215.17	-33.25	37.54	30.48	98.45	20 35 18	1615.2	-31.72	28.64
110.00	12 48 29	3642.62	-3.06	132.22	23.36	55.94	13 49 11	3042.6	-7.51	125.96

DIFFERENTIAL CORRECTIONS

TDE -.0798 TRA 2.9203 TC-11.3143 BAU 1.6807
RDE .2990 RRA -.0297 RC3 .7685 FAU .43571
FDE-1.4812 FRA10.1826 FC-34.0268 BSP 31903
BDE .3095 BRA 2.9205 BC311.3404 FSP 8723

MID-COURSE EXECUTION ACCURACY

SGT 9278.2 SGR 727.8 SG3 2557.4
RRT -.6256 RRF -.6473 RTF .9949
SGB 9306.7 R23 .0290 R13 -.9950
SG1 9289.4 SG2 567.1 THA 177.18

ORBIT DETERMINATION ACCURACY

ST 1645.3 SR 515.0 SS 1775.6
CRT -.1191 CRS .4399 CST -.9437
LSA 2391.7 MSA 635.8 SSA 25.1
EL1 1646.6 EL2 510.9 ALF 177.64

LAUNCH DATE NOV 4 1964 FLIGHT TIME 350.00 ARRIVAL DATE OCT 20 1965

HELIOCENTRIC CONIC DISTANCE 783.131 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 32.821 GAL -3.79 AZL 88.32 HCA 239.00 SMA 186.39 ECC .21412 INC 1.6849 V1 30.035
RP 214.40 LAP -1.44 LOP 280.61 VP 22.934 GAP -8.87 AZP 90.87 TAL 338.21 TAP 217.22 RCA 146.48 APO 226.30 V2 25.608
RC 292.426 GL 16.69 GP 1.95 ZAL 121.18 ZAP 59.65 ETS 180.48 ZAE 88.97 ETE 179.00 ZAC 85.57 ETC 258.38 CLP 59.63

PLANETOCENTRIC CONIC

C3 11.248 VHL 3.354 DLA 21.49 RAL 172.40 RAD 6567.4 VEL 11.517 PTH 2.01 VHP 3.342 DPA 11.12 RAP 163.22 ECC 1.1851

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 48 9	2828.56	-28.27	83.91	31.73	91.77	17 35 17	2228.6	-27.72	75.29
90.00	11 4 38	3987.23	-6.78	160.06	26.60	62.44	12 11 5	3387.2	-10.42	153.27
100.00	18 24 19	2518.48	-29.68	61.02	31.65	93.74	19 6 17	1918.5	-28.84	52.32
100.00	12 11 9	3772.55	-5.53	143.60	25.92	60.58	13 14 1	3172.6	-9.41	136.96
110.00	20 3 40	2207.65	-33.17	36.96	31.20	98.78	20 40 28	1607.6	-31.60	28.09
110.00	12 48 17	3656.14	-2.55	132.93	24.07	55.90	13 49 13	3056.1	-7.01	126.68

DIFFERENTIAL CORRECTIONS

TDE -.1225 TRA 3.0734 TC-11.4820 BAU 1.7303
RDE .3053 RRA -.0255 RC3 .7481 FAU .42066
FDE-1.5512 FRA10.0056 FC-32.3770 BSP 32838
BDE .3290 BRA 3.0735 BC311.5064 FSP 8425

MID-COURSE EXECUTION ACCURACY

SGT 9549.9 SGR 725.3 SG3 2468.3
RRT -.6119 RRF -.6342 RTF .9951
SGB 9577.4 R23 .0293 R13 -.9951
SG1 9560.3 SG2 573.1 THA 177.33

ORBIT DETERMINATION ACCURACY

ST 1721.3 SR 522.0 SS 1775.8
CRT -.1518 CRS .4578 CST -.9479
LSA 2446.5 MSA 634.8 SSA 24.6
EL1 1723.3 EL2 515.4 ALF 177.10

LAUNCH DATE NOV 4 1964 FLIGHT TIME 352.00 ARRIVAL DATE OCT 22 1965

HELIOCENTRIC CONIC DISTANCE 787.300 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 32.824 GAL -3.88 AZL 88.31 HCA 240.19 SMA 186.43 ECC .21474 INC 1.6918 V1 30.035
RP 214.08 LAP -1.47 LOP 281.79 VP 22.978 GAP -9.04 AZP 90.84 TAL 337.77 TAP 217.96 RCA 146.40 APO 226.47 V2 25.644
RC 293.566 GL 16.62 GP 1.90 ZAL 121.87 ZAP 58.27 ETS 180.52 ZAE 87.32 ETE 179.10 ZAC 85.48 ETC 258.40 CLP 58.25

PLANETOCENTRIC CONIC

C3 11.421 VHL 3.380 DLA 21.15 RAL 173.05 RAD 6567.4 VEL 11.524 PTH 2.01 VHP 3.397 DPA 11.15 RAP 163.01 ECC 1.1880

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 54 57	2816.41	-28.24	83.02	32.50	92.21	17 41 54	2216.4	-27.63	74.41
90.00	11 3 0	4005.71	-6.19	161.10	27.31	62.31	12 9 46	3405.7	-9.85	154.34
100.00	18 30 37	2507.95	-29.63	60.24	32.41	94.15	19 12 25	1908.0	-28.74	51.55
100.00	12 10 1	3789.41	-4.97	144.53	26.64	60.49	13 13 11	3189.4	-8.86	137.91
110.00	20 9 4	2199.92	-33.09	36.38	31.94	99.12	20 45 44	1599.9	-31.47	27.52
110.00	12 48 3	3670.20	-2.01	133.66	24.80	55.87	13 49 13	3070.2	-6.48	127.42

DIFFERENTIAL CORRECTIONS

TDE -.1682 TRA 3.2293 TC-11.6273 BAU 1.7789
RDE .3118 RRA -.0216 RC3 .7281 FAU .40562
FDE-1.6175 FRA 9.8291 FC-30.7458 BSP 33757
BDE .3542 BRA 3.2294 BC311.6500 FSP 8132

MID-COURSE EXECUTION ACCURACY

SGT 9813.5 SGR 723.2 SG3 2379.7
RRT -.5986 RRF -.6213 RTF .9952
SGB 9840.1 R23 .0294 R13 -.9952
SG1 9823.1 SG2 578.8 THA 177.47

ORBIT DETERMINATION ACCURACY

ST 1799.5 SR 528.9 SS 1776.4
CRT -.1838 CRS .4753 CST -.9519
LSA 2504.4 MSA 633.2 SSA 24.2
EL1 1802.4 EL2 519.1 ALF 176.63

LAUNCH DATE NOV 4 1964 FLIGHT TIME 354.00 ARRIVAL DATE OCT 24 1965

DISTANCE 791.473

HELIOCENTRIC CONIC

RL 148.35 LAL -.00 LOL 41.61 VL 32.827 GAL -3.96 AZL 88.30 HCA 241.37 SMA 186.48 ECC .21540 INC 1.6985 V1 30.035
RP 213.77 LAP -1.49 LOP 282.97 VP 23.021 GAP -9.19 AZP 90.81 TAL 337.32 TAP 218.69 RCA 146.31 APO 226.65 V2 25.679
RC 294.693 GL 16.55 GP 1.85 ZAL 122.58 ZAP 56.92 ETS 180.56 ZAE 85.70 ETE 179.18 ZAC 85.40 ETC 258.43 CLP 56.90

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 11.606 VHL 3.407 DLA 20.79 RAL 173.71 RAD 6567.4 VEL 11.532 PTH 2.01 VHP 3.453 DPA 11.17 RAP 162.84 ECC 1.1910

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 1 53	2804.10	-28.20	82.12	33.28	92.66	17 48 37	2204.1	-27.53	73.52
90.00	11 1 20	4024.69	-5.59	162.17	28.05	62.20	12 8 25	3424.7	-9.27	155.43
100.00	18 37 2	2497.24	-29.57	59.45	33.18	94.56	19 18 40	1897.2	-28.63	50.77
100.00	12 8 52	3806.78	-4.39	145.49	27.38	60.40	13 12 18	3206.8	-8.29	138.89
110.00	20 14 36	2192.01	-33.00	35.78	32.69	99.47	20 51 8	1592.0	-31.34	26.94
110.00	12 47 47	3684.78	-1.45	134.42	25.56	55.84	13 49 12	3084.8	-5.93	128.19

DIFFERENTIAL CORRECTIONS

TDE -.2177 TRA 3.3880 TC-11.7506 BAU 1.8265
RDE .3183 RRA -.0177 RC3 .7086 FAU .39084
FDE-1.6831 FRA 9.6461 FC-29.1548 BSP 34636
BDE .3856 BRA 3.3880 BC311.7719 FSP 7837

MID-COURSE EXECUTION ACCURACY

SGT10068.9 SGR 721.6 SG3 2292.1
RRT -.5857 RRF -.6090 RTF .9953
SGB10094.7 R23 .0298 R13 -.9953
SG110077.8 SG2 584.4 THA 177.59

ORBIT DETERMINATION ACCURACY

ST 1880.2 SR 535.6 SS 1776.8
CRT -.2154 CRS .4933 CST -.9554
LSA 2565.2 MSA 631.2 SSA 23.8
EL1 1884.0 EL2 522.0 ALF 176.20

LAUNCH DATE NOV 4 1964 FLIGHT TIME 356.00 ARRIVAL DATE OCT 26 1965

DISTANCE 795.651

HELIOCENTRIC CONIC

RL 148.35 LAL -.00 LOL 41.61 VL 32.830 GAL -4.05 AZL 88.29 HCA 242.36 SMA 186.53 ECC .21610 INC 1.7051 V1 30.035
RP 213.46 LAP -1.51 LOP 284.16 VP 23.064 GAP -9.35 AZP 90.79 TAL 336.85 TAP 219.41 RCA 146.22 APO 226.84 V2 25.714
RC 295.805 GL 16.48 GP 1.80 ZAL 123.31 ZAP 55.62 ETS 180.59 ZAE 84.12 ETE 179.27 ZAC 85.33 ETC 258.44 CLP 55.60

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 11.802 VHL 3.435 DLA 20.42 RAL 174.38 RAD 6567.4 VEL 11.541 PTH 2.01 VHP 3.511 DPA 11.17 RAP 162.71 ECC 1.1942

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 8 54	2791.66	-28.16	81.22	34.08	93.11	17 55 26	2191.7	-27.43	72.63
90.00	10 59 39	4044.15	-4.97	163.27	28.80	62.09	12 7 4	3444.2	-8.67	156.54
100.00	18 43 34	2486.38	-29.51	58.65	33.97	94.98	19 25 1	1886.4	-28.51	49.99
100.00	12 7 40	3824.67	-3.78	146.48	28.15	60.33	13 11 25	3224.7	-7.71	139.89
110.00	20 20 14	2183.94	-32.91	35.16	33.46	99.82	20 56 38	1583.9	-31.20	26.36
110.00	12 47 29	3699.87	-.88	135.21	26.34	55.83	13 49 9	3099.9	-5.35	128.98

DIFFERENTIAL CORRECTIONS

TDE -.2703 TRA 3.5498 TC-11.8508 BAU 1.8730
RDE .3249 RRA -.0140 RC3 .6896 FAU .37623
FDE-1.7453 FRA 9.4626 FC-27.5975 BSP 35477
BDE .4227 BRA 3.5498 BC311.8708 FSP 7546

MID-COURSE EXECUTION ACCURACY

SGT10315.7 SGR 720.3 SG3 2205.5
RRT -.5733 RRF -.5972 RTF .9953
SGB10340.8 R23 .0302 R13 -.9954
SG110324.0 SG2 589.7 THA 177.70

ORBIT DETERMINATION ACCURACY

ST 1963.4 SR 542.2 SS 1777.4
CRT -.2461 CRS .5111 CST -.9586
LSA 2629.0 MSA 628.9 SSA 23.3
EL1 1968.2 EL2 524.2 ALF 175.82

LAUNCH DATE NOV 4 1964 FLIGHT TIME 358.00 ARRIVAL DATE OCT 28 1965

DISTANCE 799.832

HELIOCENTRIC CONIC

RL 148.35 LAL -.00 LOL 41.61 VL 32.833 GAL -4.15 AZL 88.29 HCA 243.75 SMA 186.59 ECC .21684 INC 1.7116 V1 30.035
RP 213.16 LAP -1.53 LOP 285.35 VP 23.107 GAP -9.51 AZP 90.76 TAL 336.37 TAP 220.12 RCA 146.13 APO 227.05 V2 25.748
RC 296.904 GL 16.39 GP 1.76 ZAL 124.05 ZAP 54.35 ETS 180.62 ZAE 82.58 ETE 179.34 ZAC 85.27 ETC 258.45 CLP 54.33

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 12.011 VHL 3.466 DLA 20.04 RAL 175.06 RAD 6567.5 VEL 11.550 PTH 2.02 VHP 3.572 DPA 11.16 RAP 162.62 ECC 1.1977

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 16 1	2779.13	-28.11	80.30	34.90	93.57	18 2 20	2179.1	-27.32	71.73
90.00	10 57 57	4064.07	-4.34	164.39	29.58	61.99	12 5 42	3464.1	-8.05	157.68
100.00	18 50 12	2475.39	-29.45	57.84	34.78	95.40	19 31 28	1875.4	-28.39	49.20
100.00	12 6 27	3843.04	-3.16	147.49	28.93	60.26	13 10 30	3243.0	-7.10	140.92
110.00	20 25 59	2175.74	-32.81	34.54	34.24	100.17	21 2 15	1575.7	-31.06	25.76
110.00	12 47 10	3715.46	-.28	136.02	27.13	55.82	13 49 5	3115.5	-4.76	129.80

DIFFERENTIAL CORRECTIONS

TDE -.3257 TRA 3.7158 TC-11.9284 BAU 1.9185
RDE .3317 RRA -.0104 RC3 .6710 FAU .36171
FDE-1.8024 FRA 9.2794 FC-26.0710 BSP 36313
BDE .4649 BRA 3.7158 BC311.9473 FSP 7264

MID-COURSE EXECUTION ACCURACY

SGT10555.2 SGR 719.2 SG3 2120.1
RRT -.5613 RRF -.5858 RTF .9954
SGB10579.6 R23 .0307 R13 -.9954
SG110562.9 SG2 594.8 THA 177.80

ORBIT DETERMINATION ACCURACY

ST 2049.4 SR 548.5 SS 1777.5
CRT -.2754 CRS .5281 CST -.9615
LSA 2695.8 MSA 626.2 SSA 22.9
EL1 2055.3 EL2 525.8 ALF 175.49

LAUNCH DATE NOV 4 1964 FLIGHT TIME 360.00 ARRIVAL DATE OCT 30 1965

DISTANCE 804.017

HELIOCENTRIC CONIC

RL 148.35 LAL -.00 LOL 41.61 VL 32.836 GAL -4.25 AZL 88.28 HCA 244.95 SMA 186.65 ECC .21761 INC 1.7178 V1 30.035
RP 212.87 LAP -1.56 LOP 286.55 VP 23.149 GAP -9.66 AZP 90.73 TAL 335.87 TAP 220.81 RCA 146.03 APO 227.26 V2 25.782
RC 297.989 GL 16.30 GP 1.71 ZAL 124.80 ZAP 53.12 ETS 180.64 ZAE 81.07 ETE 179.42 ZAC 85.22 ETC 258.46 CLP 53.10

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 12.234 VHL 3.498 DLA 19.65 RAL 175.74 RAD 6567.5 VEL 11.559 PTH 2.02 VHP 3.634 DPA 11.13 RAP 162.57 ECC 1.2013

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 23 13	2766.53	-28.05	79.39	35.73	94.03	18 9 19	2166.5	-27.20	70.82
90.00	10 56 15	4084.42	-3.68	165.53	30.38	61.90	12 4 19	3484.4	-7.41	158.83
100.00	18 56 56	2464.31	-29.37	57.02	35.60	95.82	19 38 0	1864.3	-28.25	48.40
100.00	12 5 13	3861.88	-2.53	148.53	29.73	60.20	13 9 35	3261.9	-6.47	141.96
110.00	20 31 50	2167.47	-32.71	33.92	35.04	100.53	21 7 57	1567.4	-30.91	25.16
110.00	12 46 48	3731.53	.33	136.86	27.95	55.82	13 49 0	3131.5	-4.15	130.65

DIFFERENTIAL CORRECTIONS

TDE -.3851 TRA 3.8846 TC-11.9856 BAU 1.9632
RDE .3385 RRA -.0071 RC3 .6529 FAU .34751
FDE-1.8566 FRA 9.0943 FC-24.5924 BSP 37100
BDE .5127 BRA 3.8846 BC312.0033 FSP 6984

MID-COURSE EXECUTION ACCURACY

SGT10786.5 SGR 718.5 SG3 2036.2
RRT -.5499 RRF -.5751 RTF .9954
SGB10810.4 R23 .0311 R13 -.9955
SG110793.8 SG2 599.7 THA 177.90

ORBIT DETERMINATION ACCURACY

ST 2137.8 SR 554.7 SS 1777.3
CRT -.3042 CRS .5450 CST -.9643
LSA 2765.5 MSA 623.0 SSA 22.5
EL1 2144.9 EL2 526.6 ALF 175.20

LAUNCH DATE NOV 4 1964 FLIGHT TIME 362.00 ARRIVAL DATE NOV 1 1965

HELIOCENTRIC CONIC DISTANCE 808.206 EARTH TO MARS

RL	148.35	LAL	-.00	LOL	41.61	VL	32.839	GAL	-4.35	AZL	88.28	HCA	246.14	SMA	186.70	ECC	.21842	INC	1.7241
RP	212.57	LAP	-1.58	LOP	287.75	VP	23.191	GAP	-9.82	AZP	90.70	TAL	335.35	TAP	221.50	RCA	145.92	APO	227.49
RC	299.061	GL	16.20	GP	1.67	ZAL	125.57	ZAP	51.92	ETS	180.66	ZAE	79.60	ETE	179.48	ZAC	85.17	ETC	258.45

V1	30.035	V2	25.815	CLP	51.91	PLANETOCENTRIC CONIC													
C3	12.470	VHL	3.531	DLA	19.24	RAL	176.44	RAD	6567.5	VEL	11.570	PTH	2.02	VHP	3.699	DPA	11.09	RAP	162.55
ECC	1.2052																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 30 29	2753.89	-27.99	78.47	36.58	94.48	18 16 22	2153.9	-27.07	69.92
90.00	10 54 32	4105.19	-3.02	166.69	31.19	61.83	12 2 57	3505.2	-6.76	160.01
100.00	19 3 44	2453.15	-29.29	56.20	36.44	96.25	19 44 37	1853.2	-28.12	47.60
100.00	12 3 57	3881.16	-1.87	149.59	30.56	60.16	13 8 39	3281.2	-5.83	143.03
110.00	20 37 45	2159.01	-32.60	33.28	35.86	100.89	21 13 44	1559.0	-30.76	24.55
110.00	12 46 26	3748.07	.97	137.72	28.79	55.83	13 48 54	3148.1	-3.52	131.51

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.4466	TRA	4.0583	TC	-12.0188	BAU	2.0065	SGT	11009.8	SGR	717.9	SG3	1953.9	ST	2228.8	SR	560.6
RDE	.3454	RRA	-.0039	RC3	.6352	FAU	.33348	RRT	-.5390	RRF	-.5649	RTF	.9954	CRT	-.3311	CRS	.5612
FDE	-1.9061	FRA	8.9104	FC	-23.1523	BSP	37903	SGB	11033.2	R23	.0317	R13	-.9954	LSA	2837.8	MSA	619.9
BDE	.5646	BRA	4.0583	BC	312.0356	FSP	6716	SG	111016.6	SG2	604.3	THA	177.98	EL1	2236.9	EL2	527.1

SS	1776.6																		
CST	-.9666																		
SSA	22.1																		
ALF	174.96																		

LAUNCH DATE NOV 4 1964 FLIGHT TIME 364.00 ARRIVAL DATE NOV 3 1965

HELIOCENTRIC CONIC DISTANCE 812.398 EARTH TO MARS

RL	148.35	LAL	-.00	LOL	41.61	VL	32.843	GAL	-4.45	AZL	88.27	HCA	247.34	SMA	186.77	ECC	.21928	INC	1.7302
RP	212.29	LAP	-1.60	LOP	288.95	VP	23.232	GAP	-9.97	AZP	90.67	TAL	334.82	TAP	222.17	RCA	145.81	APO	227.72
RC	300.120	GL	16.09	GP	1.63	ZAL	126.36	ZAP	50.77	ETS	180.68	ZAE	78.16	ETE	179.55	ZAC	85.14	ETC	258.45

V1	30.035	V2	25.847	CLP	50.75	PLANETOCENTRIC CONIC													
C3	12.721	VHL	3.567	DLA	18.82	RAL	177.14	RAD	6567.5	VEL	11.580	PTH	2.03	VHP	3.765	DPA	11.03	RAP	162.58
ECC	1.2094																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 37 48	2741.23	-27.92	77.55	37.45	94.94	18 23 30	2141.2	-26.94	69.02
90.00	10 52 49	4126.36	-2.34	167.87	32.04	61.77	12 1 35	3526.4	-6.09	161.21
100.00	19 10 37	2441.95	-29.21	55.38	37.30	96.67	19 51 19	1842.0	-27.97	46.80
100.00	12 2 41	3900.88	-1.21	150.67	31.41	60.13	13 7 42	3300.9	-5.17	144.13
110.00	20 43 46	2150.54	-32.49	32.65	36.69	101.25	21 19 36	1550.5	-30.60	23.94
110.00	12 46 2	3765.06	1.62	138.61	29.64	55.85	13 48 47	3165.1	-2.88	132.40

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.5116	TRA	4.2359	TC	-12.0336	BAU	2.0492	SGT	11226.9	SGR	717.7	SG3	1873.7	ST	2322.3	SR	566.4
RDE	.3525	RRA	-.0009	RC3	.6181	FAU	.31984	RRT	-.5288	RRF	-.5553	RTF	.9954	CRT	-.3571	CRS	.5768
FDE	-1.9512	FRA	8.7272	FC	-21.7665	BSP	38653	SGB	11249.8	R23	.0323	R13	-.9954	LSA	2913.0	MSA	616.3
BDE	.6213	BRA	4.2359	BC	312.0495	FSP	6449	SG	111233.3	SG2	608.7	THA	178.06	EL1	2331.6	EL2	526.9

SS	1775.3																		
CST	-.9688																		
SSA	21.7																		
ALF	174.75																		

LAUNCH DATE NOV 4 1964 FLIGHT TIME 366.00 ARRIVAL DATE NOV 5 1965

HELIOCENTRIC CONIC DISTANCE 816.593 EARTH TO MARS

RL	148.35	LAL	-.00	LOL	41.61	VL	32.847	GAL	-4.56	AZL	88.26	HCA	248.55	SMA	186.83	ECC	.22018	INC	1.7363
RP	212.01	LAP	-1.62	LOP	290.15	VP	23.273	GAP	-10.12	AZP	90.64	TAL	334.28	TAP	222.83	RCA	145.69	APO	227.97
RC	301.167	GL	15.98	GP	1.59	ZAL	127.15	ZAP	49.64	ETS	180.70	ZAE	76.75	ETE	179.61	ZAC	85.12	ETC	258.44

V1	30.035	V2	25.879	CLP	49.62	PLANETOCENTRIC CONIC													
C3	12.988	VHL	3.604	DLA	18.39	RAL	177.85	RAD	6567.5	VEL	11.592	PTH	2.03	VHP	3.833	DPA	10.96	RAP	162.64
ECC	1.2137																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 45 11	2728.60	-27.84	76.63	38.33	95.39	18 30 40	2128.6	-26.80	68.12
90.00	10 51 6	4147.92	-1.64	169.08	32.90	61.73	12 0 14	3547.9	-5.41	162.42
100.00	19 17 33	2430.74	-29.11	54.56	38.17	97.09	19 58 4	1830.7	-27.83	45.99
100.00	12 1 25	3921.01	-.52	151.77	32.28	60.11	13 6 46	3321.0	-4.50	145.24
110.00	20 49 50	2142.02	-32.38	32.01	37.55	101.62	21 25 32	1542.0	-30.44	23.33
110.00	12 45 37	3782.49	2.28	139.52	30.52	55.88	13 48 40	3182.5	-2.21	133.31

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.5795	TRA	4.4176	TC	-12.0269	BAU	2.0909	SGT	11435.6	SGR	717.6	SG3	1795.1	ST	2418.0	SR	572.0
RDE	.3597	RRA	.0019	RC3	.6014	FAU	.30642	RRT	-.5192	RRF	-.5464	RTF	.9953	CRT	-.3819	CRS	.5918
FDE	-1.9914	FRA	8.5437	FC	-20.4250	BSP	39389	SGB	11458.1	R23	.0329	R13	-.9954	LSA	2990.2	MSA	612.5
BDE	.6821	BRA	4.4176	BC	312.0419	FSP	6191	SG	111441.7	SG2	612.9	THA	178.13	EL1	2428.3	EL2	526.4

SS	1772.9																		
CST	-.9708																		
SSA	21.4																		
ALF	174.58																		

LAUNCH DATE NOV 4 1964 FLIGHT TIME 368.00 ARRIVAL DATE NOV 7 1965

HELIOCENTRIC CONIC DISTANCE 820.790 EARTH TO MARS

RL	148.35	LAL	-.00	LOL	41.61	VL	32.851	GAL	-4.67	AZL	88.26	HCA	249.76	SMA	186.90	ECC	.22112	INC	1.7422
RP	211.73	LAP	-1.63	LOP	291.36	VP	23.313	GAP	-10.27	AZP	90.60	TAL	333.72	TAP	223.47	RCA	145.57	APO	228.22
RC	302.203	GL	15.86	GP	1.55	ZAL	127.96	ZAP	48.55	ETS	180.72	ZAE	75.38	ETE	179.67	ZAC	85.10	ETC	258.42

V1	30.035	V2	25.911	CLP	48.54	PLANETOCENTRIC CONIC													
C3	13.271	VHL	3.643	DLA	17.95	RAL	178.57	RAD	6567.5	VEL	11.604	PTH	2.03	VHP	3.903	DPA	10.88	RAP	162.73
ECC	1.2184																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 52 37	2716.00	-27.76	75.72	39.23	95.84	18 37 53	2116.0	-26.66	67.22
90.00	10 49 23	4169.84	-.94	170.30	33.78	61.70	11 58 53	3569.8	-4.71	163.65
100.00	19 24 33	2419.53	-29.02	53.74	39.06	97.52	20 4 53	1819.5	-27.67	45.20
100.00	12 0 8	3941.55	.17	152.90	33.17	60.11	13 5 50	3341.5	-3.80	146.37
110.00	20 55 59	2133.49	-32.26	31.37	38.41	101.98	21 31 32	1533.5	-30.27	22.72
110.00	12 45 12	3800.36	2.96	140.45	31.42	55.93	13 48 32	3200.4	-1.53	134.25

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	-.6499	TRA	4.6053	TC	-11.9984	BAU	2.1314	SGT	11637.6	SGR	717.6	SG3	1718.4	ST	2516.1	SR	577.3
RDE	.3670	RRA	.0045	RC3	.5851	FAU	.29322	RRT	-.5102	RRF	-.5380	RTF	.9953	CRT	-.4050	CRS	.6058
FDE	-2.0261	FRA	8.3637	FC	-19.1281	BSP	40133	SGB	11659.7	R23	.0335	R13	-.9953	LSA	3069.9	MSA	608.6
BDE	.7464	BRA	4.6053	BC	312.0127	FSP	5944	SG	111643.4	SG2	616.8	THA	178.19	EL1	2527.4	EL2	525.5

SS	1769.5																		
CST	-.9726																		
SSA	21.0																		
ALF	174.45																		

LAUNCH DATE NOV 4 1964 FLIGHT TIME 370.00 ARRIVAL DATE NOV 9 1965

DISTANCE 824.990

HELIOCENTRIC CONIC

RL 148.35 LAL -.00 LOL 41.61 VL 32.854 GAL -4.79 AZL 88.25 HCA 250.97 SMA 186.97 ECC .22211 INC 1.7481 V1 30.035
RP 211.47 LAP -1.65 LOP 292.57 VP 23.353 GAP -10.42 AZP 90.57 TAL 333.14 TAP 224.11 RCA 145.44 APO 228.49 V2 25.941
RC 303.228 GL 15.73 GP 1.51 ZAL 128.78 ZAP 47.50 ETS 180.73 ZAE 74.04 ETE 179.73 ZAC 85.09 ETC 258.40 CLP 47.48

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 13.572 VHL 3.684 DLA 17.49 RAL 179.29 RAD 6567.5 VEL 11.617 PTH 2.04 VHP 3.975 DPA 10.79 RAP 162.86 ECC 1.2234

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 0 5	2703.47	-27.67	74.81	40.14	96.29	18 45 8	2103.5	-26.51	66.34
90.00	10 47 41	4192.12	-.22	171.54	34.65	61.68	11 57 33	3592.1	-4.00	164.90
100.00	19 31 36	2408.36	-28.92	52.93	39.96	97.93	20 11 44	1808.4	-27.52	44.40
100.00	11 58 51	3962.47	.88	154.05	34.08	60.12	13 4 53	3362.5	-3.10	147.52
110.00	21 2 11	2124.95	-32.14	30.74	39.29	102.33	21 37 36	1525.0	-30.10	22.11
110.00	12 44 45	3818.64	3.66	141.41	32.35	55.99	13 48 24	3218.6	-.83	135.20

DIFFERENTIAL CORRECTIONS

TDE -.7244 TRA 4.7968 TC-11.9537 BAU 2.1714
RDE .3745 RRA .0068 RC3 .5693 FAU .28044
FDE-2.0593 FRA 8.1838 FC-17.8884 BSP 40845
BDE .8155 BRA 4.7968 BC311.9673 FSP 5702

MID-COURSE EXECUTION ACCURACY

SGT11833.3 SGR 717.8 SG3 1644.0
RRT -.5020 RRF -.5305 RTF .9952
SGB11855.1 R23 .0342 R13 -.9952
SG111838.8 SG2 620.5 THA 178.25

ORBIT DETERMINATION ACCURACY

ST 2616.4 SR 582.6 SS 1765.9
CRT -.4276 CRS .6199 CST -.9742
LSA 3152.4 MSA 604.5 SSA 20.7
EL1 2628.8 EL2 524.1 ALF 174.34

LAUNCH DATE NOV 4 1964 FLIGHT TIME 372.00 ARRIVAL DATE NOV 11 1965

DISTANCE 829.191

HELIOCENTRIC CONIC

RL 148.35 LAL -.00 LOL 41.61 VL 32.859 GAL -4.91 AZL 88.25 HCA 252.18 SMA 187.04 ECC .22315 INC 1.7539 V1 30.035
RP 211.20 LAP -1.67 LOP 293.79 VP 23.392 GAP -10.57 AZP 90.54 TAL 332.55 TAP 224.73 RCA 145.30 APO 228.77 V2 25.971
RC 304.242 GL 15.60 GP 1.47 ZAL 129.62 ZAP 46.47 ETS 180.74 ZAE 72.73 ETE 179.78 ZAC 85.09 ETC 258.37 CLP 46.45

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 13.892 VHL 3.727 DLA 17.03 RAL 180.02 RAD 6567.5 VEL 11.631 PTH 2.04 VHP 4.048 DPA 10.68 RAP 163.03 ECC 1.2286

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 7 35	2691.03	-27.57	73.91	41.07	96.73	18 52 26	2091.0	-26.35	65.46
90.00	10 45 59	4214.74	.51	172.80	35.62	61.69	11 56 14	3614.7	-3.27	166.17
100.00	19 38 41	2397.25	-28.81	52.12	40.88	98.35	20 18 38	1797.2	-27.35	43.62
100.00	11 57 34	3983.76	1.61	155.22	35.01	60.15	13 3 58	3383.8	-2.38	148.69
110.00	21 8 26	2116.44	-32.01	30.10	40.19	102.69	21 43 42	1516.4	-29.93	21.51
110.00	12 44 18	3837.33	4.37	142.39	33.29	56.06	13 48 16	3237.3	-.11	136.17

DIFFERENTIAL CORRECTIONS

TDE -.8018 TRA 4.9937 TC-11.8900 BAU 2.2106
RDE .3822 RRA .0089 RC3 .5539 FAU .26798
FDE-2.0881 FRA 8.0043 FC-16.7005 BSP 41529
BDE .8882 BRA 4.9937 BC311.9029 FSP 5466

MID-COURSE EXECUTION ACCURACY

SGT12022.3 SGR 718.2 SG3 1571.7
RRT -.4944 RRF -.5237 RTF .9951
SGB12043.8 R23 .0350 R13 -.9951
SG112027.6 SG2 624.0 THA 178.30

ORBIT DETERMINATION ACCURACY

ST 2718.7 SR 587.6 SS 1761.0
CRT -.4489 CRS .6334 CST -.9757
LSA 3236.8 MSA 600.4 SSA 20.4
EL1 2732.0 EL2 522.5 ALF 174.25

LAUNCH DATE NOV 4 1964 FLIGHT TIME 374.00 ARRIVAL DATE NOV 13 1965

DISTANCE 833.393

HELIOCENTRIC CONIC

RL 148.35 LAL -.00 LOL 41.61 VL 32.863 GAL -5.03 AZL 88.24 HCA 253.40 SMA 187.11 ECC .22423 INC 1.7597 V1 30.035
RP 210.95 LAP -1.69 LOP 295.00 VP 23.430 GAP -10.72 AZP 90.50 TAL 331.94 TAP 225.34 RCA 145.15 APO 229.06 V2 26.001
RC 305.247 GL 15.45 GP 1.44 ZAL 130.46 ZAP 45.48 ETS 180.75 ZAE 71.45 ETE 179.83 ZAC 85.10 ETC 258.34 CLP 45.46

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 14.231 VHL 3.772 DLA 16.56 RAL 180.75 RAD 6567.6 VEL 11.645 PTH 2.04 VHP 4.124 DPA 10.56 RAP 163.22 ECC 1.2342

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 15 6	2678.70	-27.47	73.03	42.01	97.16	18 59 44	2078.7	-26.19	64.59
90.00	10 44 18	4237.69	1.26	174.08	36.57	61.71	11 54 55	3637.7	-2.54	167.45
100.00	19 45 47	2386.22	-28.70	51.32	41.82	98.75	20 25 34	1786.2	-27.19	42.84
100.00	11 56 17	4005.41	2.34	156.40	35.97	60.19	13 3 2	3405.4	-1.65	149.88
110.00	21 14 43	2107.98	-31.88	29.48	41.11	103.04	21 49 51	1508.0	-29.76	20.91
110.00	12 43 51	3856.41	5.10	143.39	34.26	56.15	13 48 7	3256.4	.62	137.17

DIFFERENTIAL CORRECTIONS

TDE -.8819 TRA 5.1954 TC-11.8102 BAU 2.2493
RDE .3900 RRA .0107 RC3 .5389 FAU .25587
FDE-2.1117 FRA 7.8260 FC-15.5656 BSP 42215
BDE .9643 BRA 5.1954 BC311.8225 FSP 5240

MID-COURSE EXECUTION ACCURACY

SGT12205.1 SGR 718.7 SG3 1501.4
RRT -.4876 RRF -.5176 RTF .9950
SGB12226.2 R23 .0357 R13 -.9950
SG112210.1 SG2 627.2 THA 178.35

ORBIT DETERMINATION ACCURACY

ST 2822.3 SR 592.5 SS 1754.6
CRT -.4689 CRS .6461 CST -.9770
LSA 3322.5 MSA 596.1 SSA 20.1
EL1 2836.4 EL2 520.7 ALF 174.18

LAUNCH DATE NOV 4 1964 FLIGHT TIME 376.00 ARRIVAL DATE NOV 15 1965

DISTANCE 837.597

HELIOCENTRIC CONIC

RL 148.35 LAL -.00 LOL 41.61 VL 32.867 GAL -5.16 AZL 88.23 HCA 254.62 SMA 187.18 ECC .22536 INC 1.7653 V1 30.035
RP 210.70 LAP -1.70 LOP 296.22 VP 23.468 GAP -10.87 AZP 90.47 TAL 331.32 TAP 225.94 RCA 145.00 APO 229.37 V2 26.029
RC 306.243 GL 15.31 GP 1.41 ZAL 131.31 ZAP 44.51 ETS 180.75 ZAE 70.20 ETE 179.88 ZAC 85.12 ETC 258.30 CLP 44.49

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 14.591 VHL 3.820 DLA 16.08 RAL 181.48 RAD 6567.6 VEL 11.661 PTH 2.05 VHP 4.201 DPA 10.43 RAP 163.45 ECC 1.2401

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 22 38	2666.50	-27.36	72.15	42.97	97.59	19 7 4	2066.5	-26.03	63.74
90.00	10 42 37	4260.96	2.01	175.38	37.55	61.75	11 53 38	3661.0	-1.79	168.75
100.00	19 52 56	2375.28	-28.58	50.53	42.77	99.15	20 32 31	1775.3	-27.02	42.07
100.00	11 55 0	4027.40	3.08	157.61	36.95	60.25	13 2 8	3427.4	-.90	151.09
110.00	21 21 3	2099.58	-31.75	28.86	42.04	103.38	21 56 2	1499.6	-29.59	20.32
110.00	12 43 23	3875.87	5.83	144.41	35.25	56.26	13 47 58	3275.9	1.36	138.18

DIFFERENTIAL CORRECTIONS

TDE -.9650 TRA 5.4035 TC-11.7111 BAU 2.2867
RDE .3980 RRA .0123 RC3 .5243 FAU .24401
FDE-2.1306 FRA 7.6496 FC-14.4784 BSP 42885
BDE 1.0439 BRA 5.4035 BC311.7228 FSP 5021

MID-COURSE EXECUTION ACCURACY

SGT12381.0 SGR 719.2 SG3 1433.2
RRT -.4813 RRF -.5121 RTF .9948
SGB12401.9 R23 .0365 R13 -.9949
SG112385.9 SG2 630.1 THA 178.39

ORBIT DETERMINATION ACCURACY

ST 2927.6 SR 597.1 SS 1746.7
CRT -.4878 CRS .6581 CST -.9782
LSA 3410.0 MSA 591.7 SSA 19.8
EL1 2942.5 EL2 518.6 ALF 174.14

LAUNCH DATE NOV 4 1964 FLIGHT TIME 378.00 ARRIVAL DATE NOV 17 1965

HELIOCENTRIC CONIC DISTANCE 841.800 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 32.871 GAL -5.29 AZL 88.23 HCA 255.84 SMA 187.26 ECC .22655 INC 1.7710 V1 30.035
RP 210.46 LAP -1.72 LOP 297.45 VP 23.505 GAP -11.02 AZP 90.43 TAL 330.68 TAP 226.52 RCA 144.84 APO 229.68 V2 26.057
RC 307.229 GL 15.15 GP 1.37 ZAL 132.17 ZAP 43.57 ETS 180.76 ZAE 68.98 ETE 179.93 ZAC 85.14 ETC 258.26 CLP 43.56

PLANETOCENTRIC CONIC

C3 14.973 VHL 3.869 DLA 15.59 RAL 182.22 RAD 6567.6 VEL 11.677 PTH 2.05 VHP 4.280 DPA 10.29 RAP 163.70 ECC 1.2464

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 30 10	2654.45	-27.25	71.29	43.95	98.01	19 14 25	2054.4	-25.86	62.89
90.00	10 40 58	4284.52	2.76	176.70	38.55	61.81	11 52 22	3684.5	-1.03	170.07
100.00	20 0 5	2364.47	-28.46	49.74	43.74	99.55	20 39 30	1764.5	-26.85	41.31
100.00	11 53 44	4049.73	3.84	158.84	37.96	60.33	13 1 14	3449.7	-.14	152.32
110.00	21 27 24	2091.27	-31.62	28.25	42.99	103.72	22 2 15	1491.3	-29.41	19.74
110.00	12 42 54	3895.70	6.58	145.46	36.26	56.38	13 47 50	3295.7	2.12	139.22

DIFFERENTIAL CORRECTIONS

TDE-1.0511 TRA 5.6170 TC-11.5987 BAU 2.3240
RDE .4062 RRA .0136 RC3 .5101 FAU .23258
FDE-2.1462 FRA 7.4745 FC-13.4480 BSP 43553
BDE 1.1269 BRA 5.6170 BC311.6099 FSP 4809

MID-COURSE EXECUTION ACCURACY

SGT12552.1 SGR 719.8 SG3 1367.3
RRT -.4758 RRF -.5074 RTF .9947
SGB12572.7 R23 .0374 R13 -.9947
SG112556.8 SG2 632.8 THA 178.43

ORBIT DETERMINATION ACCURACY

ST 3034.1 SR 601.6 SS 1737.7
CRT -.5057 CRS .6698 CST -.9792
LSA 3498.8 MSA 587.3 SSA 19.5
EL1 3049.7 EL2 516.4 ALF 174.10

LAUNCH DATE NOV 4 1964 FLIGHT TIME 380.00 ARRIVAL DATE NOV 19 1965

HELIOCENTRIC CONIC DISTANCE 846.004 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 32.876 GAL -5.43 AZL 88.22 HCA 257.07 SMA 187.34 ECC .22778 INC 1.7766 V1 30.035
RP 210.22 LAP -1.73 LOP 298.67 VP 23.542 GAP -11.17 AZP 90.40 TAL 330.03 TAP 227.09 RCA 144.67 APO 230.01 V2 26.085
RC 308.206 GL 15.00 GP 1.34 ZAL 133.04 ZAP 42.67 ETS 180.76 ZAE 67.78 ETE 179.97 ZAC 85.17 ETC 258.22 CLP 42.65

PLANETOCENTRIC CONIC

C3 15.378 VHL 3.921 DLA 15.09 RAL 182.96 RAD 6567.6 VEL 11.695 PTH 2.06 VHP 4.361 DPA 10.13 RAP 163.98 ECC 1.2531

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 37 43	2642.57	-27.14	70.44	44.94	98.42	19 21 46	2042.6	-25.69	62.07
90.00	10 39 19	4308.39	3.53	178.03	39.57	61.89	11 51 8	3708.4	-.26	171.40
100.00	20 7 15	2353.81	-28.34	48.98	44.72	99.94	20 46 29	1753.8	-26.67	40.57
100.00	11 52 28	4072.38	4.60	160.09	38.98	60.43	13 0 20	3472.4	.63	153.56
110.00	21 33 47	2083.07	-31.49	27.64	43.95	104.06	22 8 30	1483.1	-29.23	19.16
110.00	12 42 26	3915.88	7.34	146.53	37.29	56.52	13 47 42	3315.9	2.89	140.27

DIFFERENTIAL CORRECTIONS

TDE-1.1406 TRA 5.8361 TC-11.4714 BAU 2.3606
RDE .4147 RRA .0147 RC3 .4962 FAU .22141
FDE-2.1578 FRA 7.2997 FC-12.4646 BSP 44191
BDE 1.2137 BRA 5.8361 BC311.4822 FSP 4603

MID-COURSE EXECUTION ACCURACY

SGT12717.8 SGR 720.4 SG3 1303.3
RRT -.4710 RRF -.5033 RTF .9945
SGB12737.3 R23 .0382 R13 -.9945
SG112721.5 SG2 635.3 THA 178.47

ORBIT DETERMINATION ACCURACY

ST 3141.7 SR 606.0 SS 1727.0
CRT -.5227 CRS .6810 CST -.9801
LSA 3588.9 MSA 582.8 SSA 19.2
EL1 3158.0 EL2 513.9 ALF 174.09

LAUNCH DATE NOV 4 1964 FLIGHT TIME 382.00 ARRIVAL DATE NOV 21 1965

HELIOCENTRIC CONIC DISTANCE 850.207 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 32.881 GAL -5.57 AZL 88.22 HCA 258.30 SMA 187.42 ECC .22908 INC 1.7821 V1 30.035
RP 209.99 LAP -1.75 LOP 299.90 VP 23.578 GAP -11.32 AZP 90.36 TAL 329.36 TAP 227.65 RCA 144.49 APO 230.35 V2 26.111
RC 309.174 GL 14.83 GP 1.31 ZAL 133.91 ZAP 41.78 ETS 180.76 ZAE 66.61 ETE 180.02 ZAC 85.21 ETC 258.17 CLP 41.77

PLANETOCENTRIC CONIC

C3 15.808 VHL 3.976 DLA 14.59 RAL 183.70 RAD 6567.6 VEL 11.713 PTH 2.06 VHP 4.444 DPA 9.97 RAP 164.30 ECC 1.2602

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 45 16	2630.89	-27.02	69.60	45.95	98.82	19 29 6	2030.9	-25.52	61.25
90.00	10 37 42	4332.53	4.30	179.38	40.62	61.99	11 49 54	3732.5	.52	172.74
100.00	20 14 26	2343.31	-28.21	48.22	45.72	100.31	20 53 29	1743.3	-26.50	39.84
100.00	11 51 13	4095.34	5.37	161.36	40.03	60.55	12 59 28	3495.3	1.40	154.82
110.00	21 40 11	2075.00	-31.35	27.05	44.93	104.38	22 14 46	1475.0	-29.06	18.60
110.00	12 41 57	3936.41	8.11	147.62	38.35	56.68	13 47 33	3336.4	3.67	141.35

DIFFERENTIAL CORRECTIONS

TDE-1.2333 TRA 6.0610 TC-11.3319 BAU 2.3970
RDE .4233 RRA .0154 RC3 .4828 FAU .21066
FDE-2.1663 FRA 7.1252 FC-11.5370 BSP 44816
BDE 1.3040 BRA 6.0610 BC311.3421 FSP 4402

MID-COURSE EXECUTION ACCURACY

SGT12876.9 SGR 721.1 SG3 1241.5
RRT -.4670 RRF -.5001 RTF .9943
SGB12897.0 R23 .0393 R13 -.9943
SG112881.3 SG2 637.5 THA 178.50

ORBIT DETERMINATION ACCURACY

ST 3250.1 SR 610.2 SS 1715.1
CRT -.5389 CRS .6918 CST -.9809
LSA 3680.0 MSA 578.3 SSA 18.9
EL1 3267.2 EL2 511.3 ALF 174.08

LAUNCH DATE NOV 4 1964 FLIGHT TIME 384.00 ARRIVAL DATE NOV 23 1965

HELIOCENTRIC CONIC DISTANCE 854.410 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 32.885 GAL -5.72 AZL 88.21 HCA 259.53 SMA 187.50 ECC .23043 INC 1.7876 V1 30.035
RP 209.77 LAP -1.76 LOP 301.13 VP 23.613 GAP -11.47 AZP 90.33 TAL 328.67 TAP 228.20 RCA 144.30 APO 230.71 V2 26.137
RC 310.132 GL 14.66 GP 1.28 ZAL 134.79 ZAP 40.93 ETS 180.77 ZAE 65.46 ETE 180.06 ZAC 85.25 ETC 258.12 CLP 40.91

PLANETOCENTRIC CONIC

C3 16.264 VHL 4.033 DLA 14.08 RAL 184.45 RAD 6567.7 VEL 11.732 PTH 2.07 VHP 4.528 DPA 9.79 RAP 164.63 ECC 1.2677

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 52 48	2619.41	-26.89	68.78	46.97	99.21	19 36 27	2019.4	-25.34	60.46
90.00	10 36 6	4356.94	5.08	180.76	41.69	62.11	11 48 43	3756.9	1.31	174.11
100.00	20 21 37	2332.99	-28.08	47.48	46.74	100.68	21 0 30	1733.0	-26.32	39.12
100.00	11 49 58	4118.59	6.14	162.65	41.11	60.69	12 58 37	3518.6	2.19	156.09
110.00	21 46 36	2067.07	-31.21	26.48	45.93	104.70	22 21 3	1467.1	-28.88	18.05
110.00	12 41 28	3957.27	8.89	148.74	39.43	56.86	13 47 26	3357.3	4.46	142.44

DIFFERENTIAL CORRECTIONS

TDE-1.3294 TRA 6.2932 TC-11.1788 BAU 2.4328
RDE .4322 RRA .0159 RC3 .4696 FAU .20019
FDE-2.1709 FRA 6.9530 FC-10.6560 BSP 45440
BDE 1.3979 BRA 6.2932 BC311.1887 FSP 4211

MID-COURSE EXECUTION ACCURACY

SGT13032.0 SGR 721.9 SG3 1181.8
RRT -.4636 RRF -.4976 RTF .9940
SGB13052.0 R23 .0402 R13 -.9941
SG113036.3 SG2 639.4 THA 178.53

ORBIT DETERMINATION ACCURACY

ST 3359.7 SR 614.2 SS 1701.6
CRT -.5542 CRS .7022 CST -.9817
LSA 3772.4 MSA 573.8 SSA 18.7
EL1 3377.3 EL2 508.6 ALF 174.08

LAUNCH DATE NOV 4 1964 FLIGHT TIME 386.00 ARRIVAL DATE NOV 25 1965

HELIOCENTRIC CONIC DISTANCE 858.610 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 32.890 GAL -5.87 AZL 88.21 HCA 260.76 SMA 187.59 ECC .23184 INC 1.7931 V1 30.035
RP 209.55 LAP -1.77 LOP 302.37 VP 23.647 GAP -11.62 AZP 90.29 TAL 327.97 TAP 228.73 RCA 144.10 APO 231.07 V2 26.162
RC 311.080 GL 14.49 GP 1.26 ZAL 135.68 ZAP 40.10 ETS 180.76 ZAE 64.34 ETE 180.10 ZAC 85.30 ETC 258.06 CLP 40.08

PLANETOCENTRIC CONIC

C3 16.748 VHL 4.092 DLA 13.56 RAL 185.19 RAD 6567.7 VEL 11.753 PTH 2.07 VHP 4.615 DPA 9.61 RAP 165.00 ECC 1.2756

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 0 19	2608.15	-26.77	67.98	48.01	99.60	19 43 47	2008.2	-25.17	59.68
90.00	10 34 31	4381.61	5.87	182.14	42.79	62.25	11 47 32	3781.6	2.11	175.48
100.00	20 28 47	2322.86	-27.95	46.76	47.77	101.04	21 7 30	1722.9	-26.15	38.42
100.00	11 48 44	4142.13	6.93	163.96	42.21	60.85	12 57 46	3542.1	2.99	157.39
110.00	21 53 1	2059.30	-31.08	25.91	46.94	105.01	22 27 20	1459.3	-28.71	17.51
110.00	12 41 0	3978.46	9.67	149.87	40.54	57.05	13 47 18	3378.5	5.27	143.56

DIFFERENTIAL CORRECTIONS
TDE-1.4277 TRA 6.5312 TC-11.0139 BAU 2.4681
RDE .4414 RRA .0160 RC3 .4568 FAU .19010
FDE-2.1718 FRA 6.7799 FC3-9.8266 BSP 46043
BDE 1.4944 BRA 6.5312 BC311.0234 FSP 4022

MID-COURSE EXECUTION ACCURACY
SGT13181.1 SGR 722.6 SG3 1124.1
RRT -.4608 RRF -.4958 RTF .9938
SGB13200.9 R23 .0414 R13 -.9938
SG113185.3 SG2 641.1 THA 178.55

ORBIT DETERMINATION ACCURACY
ST 3468.7 SR 618.1 SS 1686.3
CRT -.5684 CRS .7121 CST -.9823
LSA 3864.3 MSA 569.4 SSA 18.4
EL1 3486.8 EL2 505.9 ALF 174.09

LAUNCH DATE NOV 4 1964 FLIGHT TIME 388.00 ARRIVAL DATE NOV 27 1965

HELIOCENTRIC CONIC DISTANCE 862.809 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 32.895 GAL -6.02 AZL 88.20 HCA 262.00 SMA 187.67 ECC .23331 INC 1.7986 V1 30.035
RP 209.34 LAP -1.78 LOP 303.60 VP 23.681 GAP -11.78 AZP 90.25 TAL 327.25 TAP 229.25 RCA 143.89 APO 231.46 V2 26.186
RC 312.019 GL 14.31 GP 1.23 ZAL 136.57 ZAP 39.29 ETS 180.76 ZAE 63.24 ETE 180.14 ZAC 85.36 ETC 258.01 CLP 39.28

PLANETOCENTRIC CONIC

C3 17.261 VHL 4.155 DLA 13.04 RAL 185.94 RAD 6567.7 VEL 11.775 PTH 2.08 VHP 4.703 DPA 9.41 RAP 165.39 ECC 1.2841

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 7 50	2597.14	-26.64	67.20	49.07	99.97	19 51 7	1997.1	-24.99	58.92
90.00	10 32 57	4406.54	6.66	183.55	43.91	62.41	11 46 23	3806.5	2.91	176.88
100.00	20 35 57	2312.96	-27.82	46.05	48.82	101.39	21 14 30	1713.0	-25.97	37.74
100.00	11 47 31	4165.95	7.71	165.29	43.33	61.03	12 56 57	3565.9	3.79	158.70
110.00	21 59 26	2051.71	-30.94	25.36	47.97	105.31	22 33 38	1451.7	-28.53	16.99
110.00	12 40 31	3999.96	10.47	151.03	41.67	57.27	13 47 11	3400.0	6.08	144.69

DIFFERENTIAL CORRECTIONS
TDE-1.5308 TRA 6.7752 TC-10.8425 BAU 2.5042
RDE .4508 RRA .0158 RC3 .4443 FAU .18037
FDE-2.1710 FRA 6.6074 FC3-9.0467 BSP 46623
BDE 1.5958 BRA 6.7753 BC310.8516 FSP 3841

MID-COURSE EXECUTION ACCURACY
SGT13327.2 SGR 723.4 SG3 1068.6
RRT -.4589 RRF -.4948 RTF .9935
SGB13346.8 R23 .0426 R13 -.9936
SG113331.3 SG2 642.5 THA 178.57

ORBIT DETERMINATION ACCURACY
ST 3578.9 SR 621.8 SS 1670.0
CRT -.5824 CRS .7220 CST -.9828
LSA 3957.9 MSA 564.9 SSA 18.2
EL1 3597.6 EL2 502.9 ALF 174.11

LAUNCH DATE NOV 4 1964 FLIGHT TIME 390.00 ARRIVAL DATE NOV 29 1965

HELIOCENTRIC CONIC DISTANCE 867.004 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 32.900 GAL -6.18 AZL 88.20 HCA 263.23 SMA 187.76 ECC .23485 INC 1.8040 V1 30.035
RP 209.14 LAP -1.79 LOP 304.84 VP 23.713 GAP -11.93 AZP 90.21 TAL 326.52 TAP 229.75 RCA 143.66 APO 231.85 V2 26.209
RC 312.950 GL 14.12 GP 1.20 ZAL 137.46 ZAP 38.51 ETS 180.76 ZAE 62.16 ETE 180.17 ZAC 85.43 ETC 257.95 CLP 38.49

PLANETOCENTRIC CONIC

C3 17.806 VHL 4.220 DLA 12.52 RAL 186.68 RAD 6567.7 VEL 11.798 PTH 2.09 VHP 4.794 DPA 9.21 RAP 165.80 ECC 1.2930

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 15 19	2586.38	-26.51	66.44	50.14	100.33	19 58 26	1986.4	-24.82	58.18
90.00	10 31 24	4431.70	7.45	184.98	45.05	62.60	11 45 16	3831.7	3.72	178.28
100.00	20 43 6	2303.29	-27.69	45.36	49.88	101.73	21 21 29	1703.3	-25.79	37.07
100.00	11 46 19	4190.03	8.51	166.64	44.48	61.24	12 56 9	3590.0	4.60	160.03
110.00	22 5 51	2044.32	-30.81	24.83	49.01	105.60	22 39 56	1444.3	-28.36	16.48
110.00	12 40 2	4021.76	11.27	152.21	42.82	57.51	13 47 4	3421.8	6.90	145.84

DIFFERENTIAL CORRECTIONS
TDE-1.6365 TRA 7.0265 TC-10.6593 BAU 2.5395
RDE .4605 RRA .0153 RC3 .4321 FAU .17094
FDE-2.1651 FRA 6.4360 FC3-8.3115 BSP 47195
BDE 1.7001 BRA 7.0266 BC310.6680 FSP 3664

MID-COURSE EXECUTION ACCURACY
SGT13467.5 SGR 724.1 SG3 1014.9
RRT -.4575 RRF -.4944 RTF .9932
SGB13487.0 R23 .0438 R13 -.9932
SG113471.6 SG2 643.7 THA 178.59

ORBIT DETERMINATION ACCURACY
ST 3688.7 SR 625.4 SS 1651.5
CRT -.5954 CRS .7312 CST -.9833
LSA 4051.1 MSA 560.3 SSA 18.0
EL1 3707.8 EL2 499.8 ALF 174.13

LAUNCH DATE NOV 4 1964 FLIGHT TIME 392.00 ARRIVAL DATE DEC 1 1965

HELIOCENTRIC CONIC DISTANCE 871.197 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 32.905 GAL -6.35 AZL 88.19 HCA 264.47 SMA 187.85 ECC .23645 INC 1.8094 V1 30.035
RP 208.94 LAP -1.80 LOP 306.08 VP 23.745 GAP -12.09 AZP 90.17 TAL 325.77 TAP 230.24 RCA 143.43 APO 232.26 V2 26.232
RC 313.871 GL 13.94 GP 1.18 ZAL 138.36 ZAP 37.75 ETS 180.76 ZAE 61.10 ETE 180.21 ZAC 85.50 ETC 257.89 CLP 37.73

PLANETOCENTRIC CONIC

C3 18.383 VHL 4.288 DLA 11.99 RAL 187.43 RAD 6567.7 VEL 11.822 PTH 2.09 VHP 4.886 DPA 8.99 RAP 166.24 ECC 1.3025

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 22 47	2575.89	-26.38	65.70	51.23	100.68	20 5 43	1975.9	-24.64	57.46
90.00	10 29 53	4457.10	8.24	186.42	46.22	62.81	11 44 10	3857.1	4.53	179.71
100.00	20 50 14	2293.86	-27.56	44.69	50.96	102.06	21 28 28	1693.9	-25.62	36.43
100.00	11 45 7	4214.36	9.30	168.01	45.65	61.46	12 55 22	3614.4	5.42	161.37
110.00	22 12 16	2037.15	-30.68	24.31	50.07	105.88	22 46 13	1437.1	-28.20	15.99
110.00	12 39 34	4043.84	12.07	153.42	44.00	57.77	13 46 58	3443.8	7.73	147.01

DIFFERENTIAL CORRECTIONS
TDE-1.7455 TRA 7.2850 TC-10.4677 BAU 2.5747
RDE .4704 RRA .0144 RC3 .4202 FAU .16182
FDE-2.1572 FRA 6.2646 FC3-7.6205 BSP 47734
BDE 1.8077 BRA 7.2850 BC310.4761 FSP 3492

MID-COURSE EXECUTION ACCURACY
SGT13603.5 SGR 724.9 SG3 963.1
RRT -.4568 RRF -.4948 RTF .9928
SGB13622.8 R23 .0453 R13 -.9929
SG113607.5 SG2 644.6 THA 178.60

ORBIT DETERMINATION ACCURACY
ST 3798.3 SR 628.8 SS 1631.8
CRT -.6078 CRS .7403 CST -.9837
LSA 4144.3 MSA 556.0 SSA 17.8
EL1 3817.8 EL2 496.7 ALF 174.16

LAUNCH DATE NOV 4 1964 FLIGHT TIME 394.00 ARRIVAL DATE DEC 3 1965

HELIOCENTRIC CONIC DISTANCE 875.385 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 32.910 GAL -6.52 AZL 88.19 HCA 265.72 SMA 187.94 ECC .23812 INC 1.8148 V1 30.035
RP 208.76 LAP -1.81 LOP 307.33 VP 23.777 GAP -12.25 AZP 90.14 TAL 325.00 TAP 230.72 RCA 143.19 APO 232.69 V2 26.254
RC 314.784 GL 13.74 GP 1.16 ZAL 139.26 ZAP 37.01 ETS 180.75 ZAE 60.07 ETE 180.25 ZAC 85.57 ETC 257.82 CLP 37.00

PLANETOCENTRIC CONIC

C3 18.996 VHL 4.358 DLA 11.45 RAL 188.17 RAD 6567.8 VEL 11.848 PTH 2.10 VHP 4.981 DPA 8.77 RAP 166.70 ECC 1.3126

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 30 13	2565.69	-26.25	64.98	52.33	101.02	20 12 59	1965.7	-24.47	56.77
90.00	10 28 23	4482.72	9.03	187.89	47.42	63.05	11 43 6	3882.7	5.35	181.15
100.00	20 57 21	2284.70	-27.43	44.04	52.06	102.38	21 35 25	1684.7	-25.45	35.80
100.00	11 43 57	4238.94	10.10	169.40	46.85	61.71	12 54 36	3638.9	6.24	162.74
110.00	22 18 41	2030.20	-30.55	23.81	51.15	106.15	22 52 31	1430.2	-28.03	15.52
110.00	12 39 6	4066.21	12.88	154.65	45.20	58.06	13 46 53	3466.2	8.57	148.20

DIFFERENTIAL CORRECTIONS
TDE-1.8585 TRA 7.5502 TC-10.2702 BAU 2.6103
RDE .4807 RRA .0132 RC3 .4086 FAU .15304
FDE-2.1461 FRA 6.0930 FC3-6.9744 BSP 48270
BDE 1.9196 BRA 7.5502 BC310.2783 FSP 3326

MID-COURSE EXECUTION ACCURACY
SGT13735.7 SGR 725.6 SG3 913.2
RRT -.4568 RRF -.4959 RTF .9925
SGB13754.9 R23 .0467 R13 -.9925
SG113739.7 SG2 645.3 THA 178.61

ORBIT DETERMINATION ACCURACY
ST 3907.8 SR 632.0 SS 1610.4
CRT -.6197 CRS .7491 CST -.9840
LSA 4237.8 MSA 551.4 SSA 17.5
EL1 3927.7 EL2 493.5 ALF 174.18

LAUNCH DATE NOV 4 1964 FLIGHT TIME 396.00 ARRIVAL DATE DEC 5 1965

HELIOCENTRIC CONIC DISTANCE 879.568 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 32.916 GAL -6.70 AZL 88.18 HCA 266.96 SMA 188.03 ECC .23987 INC 1.8202 V1 30.035
RP 208.58 LAP -1.82 LOP 308.57 VP 23.807 GAP -12.40 AZP 90.10 TAL 324.22 TAP 231.18 RCA 142.93 APO 233.13 V2 26.274
RC 315.690 GL 13.55 GP 1.13 ZAL 140.17 ZAP 36.30 ETS 180.74 ZAE 59.06 ETE 180.28 ZAC 85.66 ETC 257.76 CLP 36.28

PLANETOCENTRIC CONIC

C3 19.647 VHL 4.432 DLA 10.92 RAL 188.91 RAD 6567.8 VEL 11.876 PTH 2.11 VHP 5.077 DPA 8.54 RAP 167.18 ECC 1.3233

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 37 38	2555.78	-26.12	64.29	53.45	101.34	20 20 13	1955.8	-24.29	56.09
90.00	10 26 55	4508.56	9.83	189.37	48.64	63.31	11 42 3	3908.6	6.17	182.60
100.00	21 4 26	2275.81	-27.30	43.41	53.17	102.69	21 42 22	1675.8	-25.27	35.20
100.00	11 42 47	4263.76	10.89	170.81	48.08	61.99	12 53 51	3663.8	7.06	164.12
110.00	22 25 4	2023.49	-30.42	23.33	52.24	106.40	22 58 48	1423.5	-27.87	15.06
110.00	12 38 39	4088.84	13.69	155.90	46.43	58.37	13 46 48	3488.8	9.41	149.42

DIFFERENTIAL CORRECTIONS
TDE-1.9746 TRA 7.8227 TC-10.0657 BAU 2.6459
RDE .4913 RRA .0116 RC3 .3972 FAU .14453
FDE-2.1323 FRA 5.9210 FC3-6.3689 BSP 48786
BDE 2.0348 BRA 7.8227 BC310.0735 FSP 3164

MID-COURSE EXECUTION ACCURACY
SGT13863.3 SGR 726.3 SG3 865.0
RRT -.4574 RRF -.4977 RTF .9920
SGB13882.3 R23 .0484 R13 -.9921
SG113867.3 SG2 645.7 THA 178.62

ORBIT DETERMINATION ACCURACY
ST 4016.4 SR 635.1 SS 1587.3
CRT -.6310 CRS .7577 CST -.9843
LSA 4330.7 MSA 547.0 SSA 17.3
EL1 4036.6 EL2 490.3 ALF 174.22

LAUNCH DATE NOV 4 1964 FLIGHT TIME 398.00 ARRIVAL DATE DEC 7 1965

HELIOCENTRIC CONIC DISTANCE 883.745 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 32.921 GAL -6.88 AZL 88.17 HCA 268.21 SMA 188.13 ECC .24169 INC 1.8255 V1 30.035
RP 208.40 LAP -1.82 LOP 309.82 VP 23.836 GAP -12.57 AZP 90.06 TAL 323.42 TAP 231.63 RCA 142.66 APO 233.59 V2 26.294
RC 316.588 GL 13.35 GP 1.11 ZAL 141.07 ZAP 35.60 ETS 180.74 ZAE 58.06 ETE 180.31 ZAC 85.74 ETC 257.69 CLP 35.58

PLANETOCENTRIC CONIC

C3 20.337 VHL 4.510 DLA 10.38 RAL 189.66 RAD 6567.8 VEL 11.905 PTH 2.12 VHP 5.176 DPA 8.30 RAP 167.88 ECC 1.3347

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 45 0	2546.17	-25.99	63.61	54.58	101.66	20 27 26	1946.2	-24.12	55.44
90.00	10 25 28	4534.60	10.62	190.87	49.88	63.60	11 41 2	3934.6	6.99	184.08
100.00	21 11 30	2267.20	-27.17	42.81	54.30	102.98	21 49 17	1667.2	-25.11	34.61
100.00	11 41 39	4288.80	11.69	172.24	49.33	62.29	12 53 8	3688.8	7.89	165.52
110.00	22 31 26	2017.03	-30.29	22.87	53.35	106.65	23 5 3	1417.0	-27.72	14.62
110.00	12 38 12	4111.74	14.51	157.17	47.69	58.70	13 46 43	3511.7	10.26	150.65

DIFFERENTIAL CORRECTIONS
TDE-2.0950 TRA 8.1023 TC3-9.8573 BAU 2.6821
RDE .5022 RRA .0096 RC3 .3861 FAU .13636
FDE-2.1159 FRA 5.7487 FC3-5.8049 BSP 49263
BDE 2.1544 BRA 8.1023 BC3 9.8648 FSP 3006

MID-COURSE EXECUTION ACCURACY
SGT13987.4 SGR 727.0 SG3 818.6
RRT -.4587 RRF -.5003 RTF .9916
SGB14006.3 R23 .0501 R13 -.9916
SG113991.4 SG2 645.8 THA 178.63

ORBIT DETERMINATION ACCURACY
ST 4124.7 SR 638.1 SS 1562.8
CRT -.6418 CRS .7661 CST -.9845
LSA 4423.6 MSA 542.5 SSA 17.1
EL1 4145.2 EL2 486.9 ALF 174.25

LAUNCH DATE NOV 4 1964 FLIGHT TIME 400.00 ARRIVAL DATE DEC 9 1965

HELIOCENTRIC CONIC DISTANCE 887.916 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 32.926 GAL -7.07 AZL 88.17 HCA 269.46 SMA 188.22 ECC .24358 INC 1.8309 V1 30.035
RP 208.24 LAP -1.83 LOP 311.07 VP 23.865 GAP -12.73 AZP 90.02 TAL 322.60 TAP 232.06 RCA 142.37 APO 234.07 V2 26.314
RC 317.480 GL 13.15 GP 1.09 ZAL 141.98 ZAP 34.92 ETS 180.73 ZAE 57.09 ETE 180.34 ZAC 85.84 ETC 257.62 CLP 34.91

PLANETOCENTRIC CONIC

C3 21.070 VHL 4.590 DLA 9.84 RAL 190.40 RAD 6567.9 VEL 11.935 PTH 2.12 VHP 5.276 DPA 8.05 RAP 168.20 ECC 1.3468

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 52 20	2536.88	-25.86	62.96	55.73	101.96	20 34 37	1936.9	-23.95	54.81
90.00	10 24 2	4560.83	11.41	192.40	51.16	63.91	11 40 3	3960.8	7.81	185.57
100.00	21 18 32	2258.89	-27.04	42.22	55.44	103.26	21 56 10	1658.9	-24.94	34.05
100.00	11 40 32	4314.06	12.49	173.70	50.60	62.62	12 52 26	3714.1	8.72	166.93
110.00	22 37 48	2010.84	-30.17	22.43	54.48	106.89	23 11 18	1410.8	-27.57	14.20
110.00	12 37 45	4134.88	15.32	158.47	48.97	59.06	13 46 40	3534.9	11.11	151.90

DIFFERENTIAL CORRECTIONS
TDE-2.2199 TRA 8.3899 TC3-9.6452 BAU 2.7189
RDE .5134 RRA .0073 RC3 .3753 FAU .12848
FDE-2.0970 FRA 5.5762 FC3-5.2790 BSP 49713
BDE 2.2785 BRA 8.3899 BC3 9.6525 FSP 2852

MID-COURSE EXECUTION ACCURACY
SGT14108.6 SGR 727.7 SG3 773.9
RRT -.4606 RRF -.5036 RTF .9910
SGB14127.3 R23 .0519 R13 -.9911
SG114112.5 SG2 645.7 THA 178.64

ORBIT DETERMINATION ACCURACY
ST 4232.7 SR 640.9 SS 1536.8
CRT -.6523 CRS .7744 CST -.9846
LSA 4516.5 MSA 537.9 SSA 16.9
EL1 4253.6 EL2 483.4 ALF 174.28

LAUNCH DATE NOV 4 1964 FLIGHT TIME 402.00 ARRIVAL DATE DEC 11 1965

DISTANCE 892.080

EARTH TO MARS

HELIOCENTRIC CONIC
RL 148.35 LAL -.00 LOL 41.61 VL 32.932 GAL -7.26 AZL 88.16 HCA 270.71 SMA 188.32 ECC .24556 INC 1.8363 V1 30.035
RP 208.08 LAP -1.84 LOP 312.32 VP 23.893 GAP -12.90 AZP 89.98 TAL 321.77 TAP 232.48 RCA 142.07 APO 234.56 V2 26.332
RC 318.367 GL 12.94 GP 1.07 ZAL 142.88 ZAP 34.27 ETS 180.72 ZAE 56.14 ETE 180.38 ZAC 85.94 ETC 257.55 CLP 34.25

PLANETOCENTRIC CONIC
C3 21.847 VHL 4.674 DLA 9.29 RAL 191.14 RAD 6567.9 VEL 11.968 PTH 2.13 VHP 5.380 DPA 7.79 RAP 168.74 ECC 1.3595

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 59 38	2527.92	-25.73	62.34	56.90	102.24	20 41 46	1927.9	-23.79	54.21
90.00	10 22 38	4587.26	12.20	193.94	52.46	64.25	11 39 5	3987.3	8.63	187.07
100.00	21 25 31	2250.89	-26.91	41.66	56.60	103.53	22 3 2	1650.9	-24.78	33.51
100.00	11 39 25	4339.52	13.28	175.17	51.91	62.97	12 51 45	3739.5	9.55	168.37
110.00	22 44 7	2004.92	-30.05	22.01	55.62	107.11	23 17 32	1404.9	-27.42	13.81
110.00	12 37 19	4158.26	16.13	159.80	50.29	59.45	13 46 37	3558.3	11.96	153.18

DIFFERENTIAL CORRECTIONS
TDE-2.3486 TRA 8.6843 TC3-9.4309 BAU 2.7566
RDE .5250 RRA .0045 RC3 .3648 FAU .12090
FDE-2.0755 FRA 5.4026 FC3-4.7907 BSP 50130
BDE 2.4065 BRA 8.6843 BC3 9.4379 FSP 2702

MID-COURSE EXECUTION ACCURACY
SGT14225.7 SGR 728.3 SG3 730.9
RRT -.4632 RRF -.5075 RTF .9905
SGB14244.3 R23 .0540 R13 -.9905
SG114229.7 SG2 645.3 THA 178.64

ORBIT DETERMINATION ACCURACY
ST 4339.4 SR 643.6 SS 1509.2
CRT -.6624 CRS .7825 CST -.9847
LSA 4608.4 MSA 533.3 SSA 16.7
EL1 4360.5 EL2 479.8 ALF 174.32

LAUNCH DATE NOV 4 1964 FLIGHT TIME 404.00 ARRIVAL DATE DEC 13 1965

DISTANCE 896.235

EARTH TO MARS

HELIOCENTRIC CONIC
RL 148.35 LAL -.00 LOL 41.61 VL 32.938 GAL -7.46 AZL 88.16 HCA 271.96 SMA 188.42 ECC .24763 INC 1.8417 V1 30.035
RP 207.93 LAP -1.84 LOP 313.58 VP 23.919 GAP -13.07 AZP 89.94 TAL 320.92 TAP 232.88 RCA 141.76 APO 235.07 V2 26.349
RC 319.247 GL 12.73 GP 1.05 ZAL 143.79 ZAP 33.63 ETS 180.71 ZAE 55.20 ETE 180.41 ZAC 86.04 ETC 257.48 CLP 33.62

PLANETOCENTRIC CONIC
C3 22.672 VHL 4.762 DLA 8.75 RAL 191.87 RAD 6567.9 VEL 12.002 PTH 2.14 VHP 5.485 DPA 7.52 RAP 169.30 ECC 1.3731

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 6 53	2519.29	-25.61	61.74	58.08	102.52	20 48 52	1919.3	-23.63	53.63
90.00	10 21 15	4613.86	12.98	195.50	53.79	64.61	11 38 9	4013.9	9.45	188.60
100.00	21 32 29	2243.21	-26.79	41.12	57.77	103.79	22 9 52	1643.2	-24.63	32.99
100.00	11 38 20	4365.18	14.07	176.67	53.24	63.35	12 51 5	3765.2	10.38	169.82
110.00	22 50 26	1999.29	-29.94	21.61	56.78	107.32	23 23 45	1399.3	-27.28	13.43
110.00	12 36 53	4181.86	16.95	161.14	51.63	59.86	13 46 35	3581.9	12.81	154.47

DIFFERENTIAL CORRECTIONS
TDE-2.4808 TRA 8.9876 TC3-9.2124 BAU 2.7944
RDE .5369 RRA .0013 RC3 .3544 FAU .11355
FDE-2.0513 FRA 5.2290 FC3-4.3360 BSP 50548
BDE 2.5383 BRA 8.9876 BC3 9.2192 FSP 2557

MID-COURSE EXECUTION ACCURACY
SGT14339.0 SGR 728.9 SG3 689.4
RRT -.4662 RRF -.5121 RTF .9898
SGB14357.6 R23 .0562 R13 -.9899
SG114343.1 SG2 644.7 THA 178.64

ORBIT DETERMINATION ACCURACY
ST 4444.8 SR 646.1 SS 1480.1
CRT -.6719 CRS .7904 CST -.9847
LSA 4699.4 MSA 528.8 SSA 16.5
EL1 4466.2 EL2 476.2 ALF 174.36

LAUNCH DATE NOV 4 1964 FLIGHT TIME 406.00 ARRIVAL DATE DEC 15 1965

DISTANCE 900.381

EARTH TO MARS

HELIOCENTRIC CONIC
RL 148.35 LAL -.00 LOL 41.61 VL 32.943 GAL -7.67 AZL 88.15 HCA 273.22 SMA 188.52 ECC .24978 INC 1.8471 V1 30.035
RP 207.79 LAP -1.84 LOP 314.83 VP 23.945 GAP -13.24 AZP 89.90 TAL 320.05 TAP 233.27 RCA 141.43 APO 235.60 V2 26.366
RC 320.122 GL 12.53 GP 1.03 ZAL 144.69 ZAP 33.01 ETS 180.70 ZAE 54.28 ETE 180.44 ZAC 86.15 ETC 257.40 CLP 33.00

PLANETOCENTRIC CONIC
C3 23.549 VHL 4.853 DLA 8.20 RAL 192.61 RAD 6568.0 VEL 12.039 PTH 2.15 VHP 5.593 DPA 7.24 RAP 169.88 ECC 1.3876

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 14 6	2511.00	-25.48	61.16	59.28	102.78	20 55 57	1911.0	-23.47	53.07
90.00	10 19 54	4640.64	13.75	197.08	55.14	65.00	11 37 14	4040.6	10.27	190.14
100.00	21 39 25	2235.84	-26.67	40.61	58.97	104.03	22 16 41	1635.8	-24.47	32.50
100.00	11 37 16	4391.02	14.85	178.19	54.60	63.76	12 50 27	3791.0	11.20	171.29
110.00	22 56 42	1993.95	-29.83	21.23	57.95	107.52	23 29 56	1393.9	-27.15	13.07
110.00	12 36 28	4205.68	17.76	162.52	52.99	60.30	13 46 33	3605.7	13.67	155.79

DIFFERENTIAL CORRECTIONS
TDE-2.6174 TRA 9.2991 TC3-8.9937 BAU 2.8335
RDE .5492 RRA -.0024 RC3 .3444 FAU .10649
FDE-2.0245 FRA 5.0544 FC3-3.9149 BSP 50914
BDE 2.6744 BRA 9.2991 BC3 9.0003 FSP 2415

MID-COURSE EXECUTION ACCURACY
SGT14449.8 SGR 729.5 SG3 649.5
RRT -.4699 RRF -.5174 RTF .9891
SGB14468.2 R23 .0586 R13 -.9892
SG114453.8 SG2 643.8 THA 178.64

ORBIT DETERMINATION ACCURACY
ST 4549.1 SR 648.5 SS 1449.5
CRT -.6811 CRS .7981 CST -.9846
LSA 4789.6 MSA 524.3 SSA 16.3
EL1 4570.7 EL2 472.6 ALF 174.39

LAUNCH DATE NOV 4 1964 FLIGHT TIME 408.00 ARRIVAL DATE DEC 17 1965

DISTANCE 904.517

EARTH TO MARS

HELIOCENTRIC CONIC
RL 148.35 LAL -.00 LOL 41.61 VL 32.949 GAL -7.88 AZL 88.15 HCA 274.47 SMA 188.62 ECC .25203 INC 1.8526 V1 30.035
RP 207.66 LAP -1.85 LOP 316.09 VP 23.970 GAP -13.42 AZP 89.86 TAL 319.17 TAP 233.65 RCA 141.08 APO 236.16 V2 26.381
RC 320.992 GL 12.31 GP 1.01 ZAL 145.60 ZAP 32.41 ETS 180.69 ZAE 53.38 ETE 180.47 ZAC 86.27 ETC 257.33 CLP 32.40

PLANETOCENTRIC CONIC
C3 24.479 VHL 4.948 DLA 7.66 RAL 193.34 RAD 6568.0 VEL 12.077 PTH 2.16 VHP 5.703 DPA 6.96 RAP 170.48 ECC 1.4029

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 21 16	2503.05	-25.36	60.61	60.49	103.03	21 2 59	1903.0	-23.32	52.54
90.00	10 18 34	4667.58	14.52	198.69	56.53	65.42	11 36 21	4067.6	11.09	191.70
100.00	21 46 18	2228.81	-26.55	40.12	60.17	104.27	22 23 27	1628.8	-24.33	32.03
100.00	11 36 13	4417.05	15.63	179.73	55.99	64.19	12 49 50	3817.0	12.03	172.79
110.00	23 2 57	1988.91	-29.73	20.87	59.14	107.71	23 36 6	1388.9	-27.02	12.73
110.00	12 36 3	4229.71	18.56	163.91	54.39	60.77	13 46 33	3629.7	14.52	157.13

DIFFERENTIAL CORRECTIONS
TDE-2.7585 TRA 9.6187 TC3-8.7731 BAU 2.8732
RDE .5618 RRA -.0065 RC3 .3345 FAU .09965
FDE-1.9955 FRA 4.8784 FC3-3.5243 BSP 51254
BDE 2.8152 BRA 9.6187 BC3 8.7795 FSP 2277

MID-COURSE EXECUTION ACCURACY
SGT14556.4 SGR 730.0 SG3 610.9
RRT -.4741 RRF -.5233 RTF .9883
SGB14574.6 R23 .0612 R13 -.9884
SG114560.5 SG2 642.6 THA 178.64

ORBIT DETERMINATION ACCURACY
ST 4652.0 SR 650.7 SS 1417.4
CRT -.6900 CRS .8058 CST -.9845
LSA 4878.9 MSA 519.7 SSA 16.1
EL1 4673.9 EL2 468.8 ALF 174.43

LAUNCH DATE NOV 4 1964 FLIGHT TIME 410.00 ARRIVAL DATE DEC 19 1965

HELIOCENTRIC CONIC DISTANCE 908.641 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 32.955 GAL -8.10 AZL 88.14 HCA 275.73 SMA 188.72 ECC .25437 INC 1.8580 V1 30.035
RP 207.54 LAP -1.85 LOP 317.35 VP 23.994 GAP -13.60 AZP 89.81 TAL 318.27 TAP 234.00 RCA 140.72 APO 236.73 V2 26.396
RC 321.856 GL 12.10 GP 1.00 ZAL 146.50 ZAP 31.83 ETS 180.68 ZAE 52.49 ETE 180.49 ZAC 86.39 ETC 257.26 CLP 31.81

PLANETOCENTRIC CONIC

C3 25.467 VHL 5.047 DLA 7.12 RAL 194.07 RAD 6568.0 VEL 12.118 PTH 2.17 VHP 5.815 DPA 6.67 RAP 171.09 ECC 1.4191

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 28 24	2495.45	-25.24	60.08	61.72	103.27	21 9 59	1895.4	-23.17	52.03
90.00	10 17 15	4694.67	15.28	200.31	57.94	65.87	11 35 30	4094.7	11.90	193.27
100.00	21 53 9	2222.11	-26.44	39.65	61.40	104.49	22 30 11	1622.1	-24.19	31.58
100.00	11 35 12	4443.25	16.40	181.29	57.40	64.65	12 49 15	3843.2	12.85	174.30
110.00	23 9 10	1984.18	-29.63	20.54	60.35	107.88	23 42 15	1384.2	-26.90	12.42
110.00	12 35 39	4253.96	19.36	165.34	55.82	61.26	13 46 33	3654.0	15.38	158.49

DIFFERENTIAL CORRECTIONS
TDE-2.9039 TRA 9.9473 TC3-8.5522 BAU 2.9139
RDE .5749 RRA -.0111 RC3 .3249 FAU .09305
FDE-1.9637 FRA 4.7020 FC3-3.1632 BSP 51564
BDE 2.9602 BRA 9.9473 BC3 8.5583 FSP 2144

MID-COURSE EXECUTION ACCURACY
SGT14659.9 SGR 730.5 SG3 573.8
RRT -.4788 RRF -.5298 RTF .9875
SGB14678.1 R23 .0640 R13 -.9875
SG114664.1 SG2 641.2 THA 178.63

ORBIT DETERMINATION ACCURACY
ST 4753.4 SR 652.8 SS 1383.8
CRT -.6985 CRS .8134 CST -.9843
LSA 4966.9 MSA 515.1 SSA 15.9
EL1 4775.5 EL2 465.0 ALF 174.47

LAUNCH DATE NOV 4 1964 FLIGHT TIME 412.00 ARRIVAL DATE DEC 21 1965

HELIOCENTRIC CONIC DISTANCE 912.752 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 32.961 GAL -8.33 AZL 88.14 HCA 276.99 SMA 188.82 ECC .25682 INC 1.8635 V1 30.035
RP 207.42 LAP -1.85 LOP 318.61 VP 24.017 GAP -13.79 AZP 89.77 TAL 317.36 TAP 234.35 RCA 140.33 APO 237.32 V2 26.409
RC 322.714 GL 11.89 GP .98 ZAL 147.40 ZAP 31.26 ETS 180.67 ZAE 51.63 ETE 180.52 ZAC 86.51 ETC 257.18 CLP 31.25

PLANETOCENTRIC CONIC

C3 26.517 VHL 5.149 DLA 6.57 RAL 194.79 RAD 6568.1 VEL 12.161 PTH 2.18 VHP 5.931 DPA 6.37 RAP 171.72 ECC 1.4364

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 35 29	2488.20	-25.13	59.58	62.97	103.50	21 16 57	1888.2	-23.05	51.55
90.00	10 15 58	4721.91	16.03	201.96	59.38	66.34	11 34 40	4121.9	12.70	194.87
100.00	21 59 57	2215.74	-26.33	39.21	62.63	104.69	22 36 53	1615.7	-24.05	31.15
100.00	11 34 11	4469.60	17.16	182.88	58.85	65.14	12 48 41	3869.6	13.67	175.83
110.00	23 15 22	1979.75	-29.54	20.23	61.57	108.04	23 48 21	1379.8	-26.79	12.12
110.00	12 35 16	4278.36	20.15	166.79	57.27	61.79	13 46 34	3678.4	16.22	159.87

DIFFERENTIAL CORRECTIONS
TDE-3.0532 TRA10.2849 TC3-8.3316 BAU 2.9558
RDE .5883 RRA -.0163 RC3 .3155 FAU .08668
FDE-1.9294 FRA 4.5242 FC3-2.8299 BSP 51830
BDE 3.1094 BRA10.2849 BC3 8.3376 FSP 2013

MID-COURSE EXECUTION ACCURACY
SGT14760.1 SGR 731.0 SG3 538.0
RRT -.4839 RRF -.5370 RTF .9865
SGB14778.2 R23 .0671 R13 -.9865
SG114764.4 SG2 639.5 THA 178.62

ORBIT DETERMINATION ACCURACY
ST 4852.8 SR 654.6 SS 1348.6
CRT -.7067 CRS .8209 CST -.9841
LSA 5053.3 MSA 510.5 SSA 15.7
EL1 4875.0 EL2 461.1 ALF 174.51

LAUNCH DATE NOV 4 1964 FLIGHT TIME 414.00 ARRIVAL DATE DEC 23 1965

HELIOCENTRIC CONIC DISTANCE 916.849 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 32.967 GAL -8.56 AZL 88.13 HCA 278.25 SMA 188.93 ECC .25937 INC 1.8691 V1 30.035
RP 207.31 LAP -1.85 LOP 319.87 VP 24.039 GAP -13.98 AZP 89.73 TAL 316.42 TAP 234.68 RCA 139.93 APO 237.93 V2 26.422
RC 323.566 GL 11.67 GP .96 ZAL 148.29 ZAP 30.71 ETS 180.66 ZAE 50.77 ETE 180.55 ZAC 86.65 ETC 257.11 CLP 30.70

PLANETOCENTRIC CONIC

C3 27.633 VHL 5.257 DLA 6.03 RAL 195.52 RAD 6568.1 VEL 12.207 PTH 2.19 VHP 6.049 DPA 6.06 RAP 172.37 ECC 1.4548

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 42 31	2481.31	-25.02	59.11	64.23	103.71	21 23 52	1881.3	-22.89	51.09
90.00	10 14 43	4749.28	16.77	203.63	60.84	66.85	11 33 52	4149.3	13.50	196.49
100.00	22 6 43	2209.72	-26.22	38.80	63.89	104.89	22 43 33	1609.7	-23.92	30.75
100.00	11 33 12	4496.11	17.91	184.49	60.32	65.66	12 48 8	3896.1	14.47	177.38
110.00	23 21 31	1975.64	-29.45	19.94	62.80	108.19	23 54 26	1375.6	-26.68	11.85
110.00	12 34 54	4302.95	20.94	168.27	58.76	62.34	13 46 37	3702.9	17.07	161.28

DIFFERENTIAL CORRECTIONS
TDE-3.2080 TRA10.6317 TC3-8.1121 BAU 2.9990
RDE .6021 RRA -.0219 RC3 .3063 FAU .08053
FDE-1.8930 FRA 4.3450 FC3-2.5229 BSP 52064
BDE 3.2640 BRA10.6318 BC3 8.1179 FSP 1886

MID-COURSE EXECUTION ACCURACY
SGT14857.6 SGR 731.4 SG3 503.6
RRT -.4896 RRF -.5448 RTF .9853
SGB14875.6 R23 .0705 R13 -.9854
SG114861.9 SG2 637.6 THA 178.62

ORBIT DETERMINATION ACCURACY
ST 4951.0 SR 656.4 SS 1312.2
CRT -.7146 CRS .8283 CST -.9837
LSA 5139.0 MSA 505.8 SSA 15.5
EL1 4973.4 EL2 457.1 ALF 174.54

LAUNCH DATE NOV 4 1964 FLIGHT TIME 416.00 ARRIVAL DATE DEC 25 1965

HELIOCENTRIC CONIC DISTANCE 920.931 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 32.973 GAL -8.80 AZL 88.13 HCA 279.52 SMA 189.04 ECC .26203 INC 1.8746 V1 30.035
RP 207.21 LAP -1.85 LOP 321.13 VP 24.061 GAP -14.18 AZP 89.69 TAL 315.47 TAP 234.99 RCA 139.50 APO 238.57 V2 26.434
RC 324.413 GL 11.45 GP .95 ZAL 149.19 ZAP 30.18 ETS 180.65 ZAE 49.94 ETE 180.57 ZAC 86.78 ETC 257.04 CLP 30.17

PLANETOCENTRIC CONIC

C3 28.819 VHL 5.368 DLA 5.49 RAL 196.24 RAD 6568.2 VEL 12.255 PTH 2.20 VHP 6.170 DPA 5.75 RAP 173.03 ECC 1.4743

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 49 30	2474.77	-24.91	58.66	65.50	103.91	21 30 45	1874.8	-22.76	50.65
90.00	10 13 29	4776.79	17.50	205.32	62.34	67.38	11 33 6	4176.8	14.29	198.12
100.00	22 13 26	2204.03	-26.12	38.40	65.16	105.07	22 50 10	1604.0	-23.80	30.38
100.00	11 32 14	4522.76	18.65	186.12	61.82	66.21	12 47 37	3922.8	15.28	178.96
110.00	23 27 38	1971.85	-29.37	19.67	64.06	108.33	24 0 30	1371.8	-26.58	11.60
110.00	12 34 32	4327.70	21.71	169.77	60.27	62.93	13 46 40	3727.7	17.91	162.70

DIFFERENTIAL CORRECTIONS
TDE-3.3669 TRA10.9878 TC3-7.8947 BAU 3.0438
RDE .6163 RRA -.0281 RC3 .2974 FAU .07457
FDE-1.8536 FRA 4.1642 FC3-2.2401 BSP 52263
BDE 3.4228 BRA10.9878 BC3 7.9003 FSP 1762

MID-COURSE EXECUTION ACCURACY
SGT14951.9 SGR 731.8 SG3 470.3
RRT -.4957 RRF -.5531 RTF .9841
SGB14969.8 R23 .0742 R13 -.9842
SG114956.3 SG2 635.4 THA 178.61

ORBIT DETERMINATION ACCURACY
ST 5046.7 SR 657.9 SS 1274.1
CRT -.7222 CRS .8356 CST -.9833
LSA 5222.5 MSA 501.1 SSA 15.3
EL1 5069.2 EL2 453.1 ALF 174.58

LAUNCH DATE NOV 4 1964 FLIGHT TIME 418.00 ARRIVAL DATE DEC 27 1965

HELIOCENTRIC CONIC DISTANCE 924.995 EARTH TO MARS

RL 148.35 LAL -.00 LOL 41.61 VL 32.979 GAL -9.05 AZL 88.12 HCA 280.78 SMA 189.15 ECC .26480 INC 1.8803 V1 30.035
RP 207.12 LAP -1.85 LOP 322.40 VP 24.081 GAP -14.38 AZP 89.65 TAL 314.50 TAP 235.28 RCA 139.06 APO 239.23 V2 26.444
RC 325.253 GL 11.24 GP .93 ZAL 150.08 ZAP 29.66 ETS 180.64 ZAE 49.11 ETE 180.60 ZAC 86.92 ETC 256.96 CLP 29.65

PLANETOCENTRIC CONIC

C3 30.079 VHL 5.484 DLA 4.95 RAL 196.96 RAD 6568.2 VEL 12.307 PTH 2.22 VHP 6.293 DPA 5.43 RAP 173.71 ECC 1.4950

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 56 27	2468.58	-24.81	58.24	66.79	104.10	21 37 35	1868.6	-22.63	50.24
90.00	10 12 16	4804.41	18.22	207.03	63.87	67.94	11 32 21	4204.4	15.07	199.77
100.00	22 20 7	2198.69	-26.03	38.03	66.44	105.25	22 56 46	1598.7	-23.68	30.02
100.00	11 31 17	4549.54	19.38	187.78	63.35	66.78	12 47 7	3949.5	16.07	180.55
110.00	23 33 43	1968.37	-29.29	19.43	65.32	108.46	24 6 31	1368.4	-26.49	11.37
110.00	12 34 11	4352.62	22.48	171.30	61.82	63.54	13 46 44	3752.6	18.74	164.16

DIFFERENTIAL CORRECTIONS
TDE-3.5306 TRA11.3541 TC3-7.6790 BAU 3.0901
RDE .6310 RRA -.0348 RC3 .2886 FAU .06881
FDE-1.8117 FRA 3.9821 FC3-1.9804 BSP 52428
BDE 3.5866 BRA11.3542 BC3 7.6844 FSP 1643

MID-COURSE EXECUTION ACCURACY
SGT15043.5 SGR 732.2 SG3 438.3
RRT -.5023 RRF -.5620 RTF .9826
SGB15061.3 R23 .0782 R13 -.9827
SG115048.0 SG2 632.9 THA 178.60

ORBIT DETERMINATION ACCURACY
ST 5140.6 SR 659.3 SS 1234.6
CRT -.7296 CRS .8429 CST -.9828
LSA 5304.6 MSA 496.3 SSA 15.1
EL1 5163.3 EL2 448.9 ALF 174.61

LAUNCH DATE NOV 5 1964 FLIGHT TIME 180.00 ARRIVAL DATE MAY 4 1965

HELIOCENTRIC CONIC DISTANCE 466.388 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 34.598 GAL -7.01 AZL 87.78 HCA 150.84 SMA 223.92 ECC .35666 INC 2.2224 V1 30.043
RP 243.87 LAP 1.08 LOP 193.48 VP 22.265 GAP 20.29 AZP 91.94 TAL 332.99 TAP 123.84 RCA 144.06 APO 303.78 V2 22.498
RC 135.719 GL 13.12 GP -1.00 ZAL 130.25 ZAP 170.16 ETS 184.46 ZAE 156.15 ETE 355.92 ZAC 87.53 ETC 256.11 CLP 170.21

PLANETOCENTRIC CONIC

C3 34.406 VHL 5.866 DLA 14.33 RAL 179.98 RAD 6568.4 VEL 12.481 PTH 2.26 VHP 9.250 DPA -1.16 RAP 183.50 ECC 1.5662

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 28 48	2810.46	-28.22	82.59	56.55	92.43	19 15 38	2210.5	-27.59	73.98
90.00	10 16 38	4530.18	10.49	190.62	48.38	63.55	11 32 8	3930.2	6.85	183.83
100.00	19 57 47	2523.47	-29.70	61.39	56.46	93.55	20 39 51	1923.5	-28.89	52.68
100.00	11 30 19	4292.41	11.80	172.45	47.70	62.34	12 41 52	3692.4	8.01	165.72
110.00	21 23 9	2256.37	-33.61	40.70	56.05	96.62	22 0 46	1656.4	-32.33	31.70
110.00	12 21 27	4132.27	15.23	158.32	45.72	59.02	13 30 19	3532.3	11.01	151.76

DIFFERENTIAL CORRECTIONS
TDE 1.1909 TRA-2.8924 TC3 .8484 BAU .3937
RDE -.3598 RRA -.0205 RC3 -.1138 FAU .07790
FDE -.6443 FRA 2.4102 FC3-1.9601 BSP 11193
BDE 1.2441 BRA 2.8925 BC3 .8560 FSP 839

MID-COURSE EXECUTION ACCURACY
SGT 3293.5 SGR 376.6 SG3 294.1
RRT -.3882 RRF .3729 RTF -.9014
SGB 3315.0 R23 -.0206 R13 .9015
SG1 3296.8 SG2 346.7 THA 177.43

ORBIT DETERMINATION ACCURACY
ST 1455.8 SR 351.6 SS 771.7
CRT -.7885 CRS -.6392 CST .9760
LSA 1662.9 MSA 269.2 SSA 27.0
EL1 1482.6 EL2 212.3 ALF 168.99

LAUNCH DATE NOV 5 1964 FLIGHT TIME 182.00 ARRIVAL DATE MAY 6 1965

HELIOCENTRIC CONIC DISTANCE 469.056 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 34.517 GAL -6.83 AZL 87.76 HCA 151.76 SMA 221.83 ECC .34991 INC 2.2372 V1 30.043
RP 243.63 LAP 1.06 LOP 194.39 VP 22.164 GAP 19.72 AZP 91.97 TAL 333.29 TAP 125.05 RCA 144.21 APO 299.45 V2 22.522
RC 137.915 GL 13.47 GP -1.05 ZAL 129.79 ZAP 169.67 ETS 184.45 ZAE 156.08 ETE 355.98 ZAC 87.57 ETC 256.09 CLP 169.72

PLANETOCENTRIC CONIC

C3 32.994 VHL 5.744 DLA 14.82 RAL 179.75 RAD 6568.3 VEL 12.424 PTH 2.25 VHP 9.049 DPA -1.38 RAP 183.85 ECC 1.5430

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 23 31	2816.93	-28.24	83.06	55.72	92.19	19 10 28	2216.9	-27.64	74.45
90.00	10 20 3	4502.57	9.64	189.03	47.53	63.25	11 35 5	3902.6	5.98	182.27
100.00	19 52 51	2528.82	-29.72	61.79	55.64	93.34	20 35 0	1928.8	-28.94	53.07
100.00	11 33 24	4265.91	10.96	170.93	46.84	62.02	12 44 29	3665.9	7.13	164.24
110.00	21 18 57	2259.44	-33.64	40.93	55.24	96.48	21 56 36	1659.4	-32.38	31.93
110.00	12 23 47	4108.06	14.38	156.97	44.84	58.65	13 32 15	3508.1	10.12	150.45

DIFFERENTIAL CORRECTIONS
TDE 1.1678 TRA-2.8631 TC3 .9100 BAU .4049
RDE -.3444 RRA -.0111 RC3 -.1204 FAU .08024
FDE -.6444 FRA 2.4664 FC3-2.1054 BSP 11391
BDE 1.2175 BRA 2.8631 BC3 .9180 FSP 885

MID-COURSE EXECUTION ACCURACY
SGT 3343.2 SGR 370.5 SG3 308.4
RRT -.4125 RRF .3979 RTF -.9047
SGB 3363.6 R23 -.0229 R13 .9048
SG1 3346.7 SG2 337.2 THA 177.36

ORBIT DETERMINATION ACCURACY
ST 1464.0 SR 343.6 SS 782.3
CRT -.7898 CRS -.6355 CST .9745
LSA 1673.5 MSA 268.7 SSA 26.8
EL1 1489.5 EL2 207.2 ALF 169.29

LAUNCH DATE NOV 5 1964 FLIGHT TIME 184.00 ARRIVAL DATE MAY 8 1965

HELIOCENTRIC CONIC DISTANCE 471.796 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 34.440 GAL -6.66 AZL 87.75 HCA 152.67 SMA 219.86 ECC .34344 INC 2.2530 V1 30.043
RP 243.38 LAP 1.03 LOP 195.30 VP 22.068 GAP 19.16 AZP 92.00 TAL 333.60 TAP 126.27 RCA 144.36 APO 295.37 V2 22.547
RC 140.134 GL 13.83 GP -1.10 ZAL 129.31 ZAP 169.16 ETS 184.45 ZAE 156.04 ETE 356.03 ZAC 87.60 ETC 256.07 CLP 169.22

PLANETOCENTRIC CONIC

C3 31.663 VHL 5.627 DLA 15.31 RAL 179.51 RAD 6568.3 VEL 12.371 PTH 2.23 VHP 8.852 DPA -1.60 RAP 184.20 ECC 1.5211

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 18 1	2824.29	-28.26	83.60	54.91	91.92	19 5 5	2224.3	-27.69	74.98
90.00	10 23 38	4474.48	8.78	187.42	46.70	62.97	11 38 12	3874.5	5.08	180.68
100.00	19 47 43	2535.00	-29.75	62.24	54.84	93.10	20 29 58	1935.0	-29.00	53.52
100.00	11 36 37	4239.00	10.10	169.40	46.00	61.72	12 47 16	3639.0	6.24	162.74
110.00	21 14 35	2263.19	-33.67	41.22	54.46	96.31	21 52 19	1663.2	-32.43	32.21
110.00	12 26 14	4083.57	13.51	155.61	43.99	58.30	13 34 17	3483.6	9.22	149.13

DIFFERENTIAL CORRECTIONS
TDE 1.1443 TRA-2.8333 TC3 .9742 BAU .4159
RDE -.3295 RRA -.0017 RC3 -.1274 FAU .08267
FDE -.6427 FRA 2.5244 FC3-2.2603 BSP 11584
BDE 1.1908 BRA 2.8333 BC3 .9825 FSP 933

MID-COURSE EXECUTION ACCURACY
SGT 3392.1 SGR 364.8 SG3 323.3
RRT -.4384 RRF .4244 RTF -.9078
SGB 3411.7 R23 -.0252 R13 .9080
SG1 3395.9 SG2 327.5 THA 177.27

ORBIT DETERMINATION ACCURACY
ST 1471.0 SR 335.5 SS 792.4
CRT -.7913 CRS -.6313 CST .9728
LSA 1682.6 MSA 268.8 SSA 26.5
EL1 1495.2 EL2 201.8 ALF 169.58

LAUNCH DATE NOV 5 1964 FLIGHT TIME 186.00 ARRIVAL DATE MAY 10 1965

HELIOCENTRIC CONIC DISTANCE 474.601 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 34.365 GAL -6.49 AZL 87.73 HCA 153.59 SMA 218.01 ECC .33721 INC 2.2698 V1 30.043
RP 243.12 LAP 1.01 LOP 196.22 VP 21.977 GAP 18.61 AZP 92.03 TAL 333.91 TAP 127.49 RCA 144.50 APO 291.53 V2 22.572
RC 142.373 GL 14.20 GP -1.16 ZAL 128.82 ZAP 168.64 ETS 184.47 ZAE 156.05 ETE 356.05 ZAC 87.63 ETC 256.05 CLP 168.70

PLANETOCENTRIC CONIC

C3 30.409 VHL 5.514 DLA 15.82 RAL 179.27 RAD 6568.2 VEL 12.320 PTH 2.22 VHP 8.660 DPA -1.83 RAP 184.55 ECC 1.5005

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 12 17	2832.60	-28.27	84.21	54.12	91.62	18 59 30	2232.6	-27.75	75.58
90.00	10 27 25	4445.86	7.89	185.78	45.90	62.72	11 41 31	3845.9	4.17	179.08
100.00	19 42 23	2542.05	-29.77	62.77	54.05	92.83	20 24 45	1942.0	-29.06	54.03
100.00	11 40 0	4211.65	9.21	167.86	45.19	61.44	12 50 12	3611.7	5.33	161.22
110.00	21 10 4	2267.67	-33.70	41.57	53.69	96.11	21 47 52	1667.7	-32.49	32.55
110.00	12 28 48	4058.79	12.61	154.24	43.17	57.96	13 36 27	3458.8	8.29	147.81

DIFFERENTIAL CORRECTIONS
TDE 1.1212 TRA-2.8021 TC3 1.0418 BAU .4271
RDE -.3150 RRA .0075 RC3 -.1349 FAU .08523
FDE -.6406 FRA 2.5835 FC3-2.4264 BSP 11756
BDE 1.1646 BRA 2.8022 BC3 1.0504 FSP 984

MID-COURSE EXECUTION ACCURACY
SGT 3440.1 SGR 359.6 SG3 338.9
RRT -.4663 RRF .4527 RTF .9109
SGB 3458.9 R23 -.0275 R13 .9111
SG1 3444.2 SG2 317.8 THA 177.19

ORBIT DETERMINATION ACCURACY
ST 1477.3 SR 327.3 SS 802.3
CRT -.7934 CRS -.6274 CST .9708
LSA 1691.2 MSA 269.2 SSA 26.1
EL1 1500.3 EL2 196.2 ALF 169.85

LAUNCH DATE NOV 5 1964 FLIGHT TIME 188.00 ARRIVAL DATE MAY 12 1965

HELIOCENTRIC CONIC DISTANCE 477.468 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 34.294 GAL -6.33 AZL 87.71 HCA 154.50 SMA 216.27 ECC .33122 INC 2.2878 V1 30.043
RP 242.87 LAP .98 LOP 197.14 VP 21.892 GAP 18.05 AZP 92.07 TAL 334.22 TAP 128.72 RCA 144.64 APO 287.90 V2 22.598
RC 144.629 GL 14.58 GP -1.23 ZAL 128.31 ZAP 168.12 ETS 184.51 ZAE 156.11 ETE 356.05 ZAC 87.66 ETC 256.03 CLP 168.18

PLANETOCENTRIC CONIC

C3 29.226 VHL 5.406 DLA 16.35 RAL 179.02 RAD 6568.2 VEL 12.272 PTH 2.21 VHP 8.471 DPA -2.05 RAP 184.88 ECC 1.4810

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 6 17	2841.96	-28.29	84.89	53.34	91.28	18 53 39	2242.0	-27.81	76.26
90.00	10 31 25	4416.62	6.97	184.12	45.12	62.49	11 45 2	3816.6	3.23	177.44
100.00	19 36 49	2550.04	-29.80	63.36	53.28	92.52	20 19 19	1950.0	-29.13	54.62
100.00	11 43 30	4183.77	8.30	166.29	44.40	61.18	12 53 19	3583.8	4.39	159.68
110.00	21 5 23	2272.93	-33.74	41.98	52.94	95.87	21 43 16	1672.9	-32.56	32.94
110.00	12 31 30	4033.65	11.70	152.86	42.36	57.65	13 38 44	3433.6	7.35	146.47

DIFFERENTIAL CORRECTIONS
TDE 1.1117 TRA-2.7557 TC3 1.1324 BAU .4460
RDE -.3014 RRA .0164 RC3 -.1436 FAU .08779
FDE -.6339 FRA 2.6468 FC3-2.6003 BSP 11568
BDE 1.1519 BRA 2.7558 BC3 1.1415 FSP 1042

MID-COURSE EXECUTION ACCURACY
SGT 3485.9 SGR 355.6 SG3 355.2
RRT -.5013 RRF .4815 RTF -.9163
SGB 3504.0 R23 -.0214 R13 .9164
SG1 3490.5 SG2 307.3 THA 177.05

ORBIT DETERMINATION ACCURACY
ST 1491.1 SR 319.5 SS 810.9
CRT -.8007 CRS -.6208 CST .9657
LSA 1705.0 MSA 274.7 SSA 24.8
EL1 1513.2 EL2 188.6 ALF 170.11

LAUNCH DATE NOV 5 1964 FLIGHT TIME 190.00 ARRIVAL DATE MAY 14 1965

HELIOCENTRIC CONIC DISTANCE 480.391 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 34.225 GAL -6.17 AZL 87.69 HCA 155.42 SMA 214.63 ECC .32548 INC 2.3071 V1 30.043
RP 242.60 LAP .96 LOP 198.06 VP 21.812 GAP 17.51 AZP 92.10 TAL 334.54 TAP 129.96 RCA 144.77 APO 284.48 V2 22.624
RC 146.900 GL 14.97 GP -1.30 ZAL 127.80 ZAP 167.58 ETS 184.56 ZAE 156.20 ETE 356.02 ZAC 87.68 ETC 256.01 CLP 167.65

PLANETOCENTRIC CONIC

C3 28.116 VHL 5.302 DLA 16.89 RAL 178.77 RAD 6568.1 VEL 12.227 PTH 2.20 VHP 8.287 DPA -2.28 RAP 185.21 ECC 1.4627

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 0 4	2852.37	-28.30	85.65	52.58	90.90	18 47 36	2252.4	-27.88	77.01
90.00	10 35 39	4386.86	6.03	182.84	44.37	62.28	11 48 46	3786.9	2.28	175.78
100.00	19 31 2	2558.99	-29.82	64.02	52.53	92.17	20 13 41	1959.0	-29.20	55.27
100.00	11 47 21	4155.48	7.37	164.70	43.65	60.95	12 56 37	3555.5	3.44	158.12
110.00	21 0 32	2278.97	-33.78	42.44	52.22	95.60	21 38 31	1679.0	-32.63	33.39
110.00	12 34 21	4008.26	10.77	151.48	41.59	57.36	13 41 9	3408.3	6.39	145.13

DIFFERENTIAL CORRECTIONS
TDE 1.0738 TRA-2.7373 TC3 1.1866 BAU .4496
RDE -.2873 RRA .0260 RC3 -.1517 FAU .09070
FDE -.6310 FRA 2.7071 FC3-2.7927 BSP 12052
BDE 1.1116 BRA 2.7374 BC3 1.1962 FSP 1093

MID-COURSE EXECUTION ACCURACY
SGT 3533.4 SGR 350.9 SG3 372.4
RRT -.5271 RRF .5143 RTF -.9170
SGB 3550.8 R23 -.0323 R13 .9172
SG1 3538.2 SG2 297.8 THA 176.98

ORBIT DETERMINATION ACCURACY
ST 1485.8 SR 310.7 SS 820.7
CRT -.7986 CRS -.6184 CST .9658
LSA 1703.8 MSA 272.3 SSA 25.1
EL1 1506.7 EL2 184.4 ALF 170.37

LAUNCH DATE NOV 5 1964 FLIGHT TIME 192.00 ARRIVAL DATE MAY 16 1965

HELIOCENTRIC CONIC DISTANCE 483.367 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 34.159 GAL -6.02 AZL 87.67 HCA 156.35 SMA 213.08 ECC .31995 INC 2.3278 V1 30.043
RP 242.34 LAP .93 LOP 198.98 VP 21.736 GAP 16.96 AZP 92.13 TAL 334.85 TAP 131.20 RCA 144.90 APO 281.25 V2 22.651
RC 149.184 GL 15.38 GP -1.37 ZAL 127.28 ZAP 167.04 ETS 184.63 ZAE 156.33 ETE 355.97 ZAC 87.68 ETC 256.00 CLP 167.11

PLANETOCENTRIC CONIC

C3 27.070 VHL 5.203 DLA 17.45 RAL 178.51 RAD 6568.1 VEL 12.184 PTH 2.19 VHP 8.107 DPA -2.51 RAP 185.52 ECC 1.4455

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 53 32	2863.99	-28.31	86.50	51.84	90.47	18 41 16	2264.0	-27.95	77.85
90.00	10 40 9	4356.36	5.06	180.72	43.66	62.10	11 52 46	3756.4	1.29	174.07
100.00	19 25 0	2569.02	-29.84	64.77	51.81	91.77	20 7 49	1969.0	-29.28	56.01
100.00	11 51 22	4126.56	6.41	163.09	42.92	60.74	13 0 9	3526.6	2.46	156.53
110.00	20 55 30	2285.89	-33.82	42.98	51.52	95.28	21 33 36	1685.9	-32.72	33.91
110.00	12 37 22	3982.46	9.82	150.09	40.84	57.09	13 43 44	3382.5	5.42	143.77

DIFFERENTIAL CORRECTIONS
TDE 1.0470 TRA-2.7069 TC3 1.2585 BAU .4592
RDE -.2740 RRA .0354 RC3 -.1609 FAU .09363
FDE -.6241 FRA 2.7715 FC3-2.9945 BSP 12268
BDE 1.0823 BRA 2.7072 BC3 1.2688 FSP 1151

MID-COURSE EXECUTION ACCURACY
SGT 3578.8 SGR 347.5 SG 398.4
RRT -.5588 RRF .5476 RTF -.9195
SGB 3595.7 R23 -.0367 R13 .9197
SG1 3584.1 SG2 287.8 THA 176.87

ORBIT DETERMINATION ACCURACY
ST 1486.5 SR 302.1 SS 829.4
CRT -.8010 CRS -.6141 CST .9634
LSA 1706.8 MSA 274.1 SSA 24.5
EL1 1506.4 EL2 178.5 ALF 170.62

LAUNCH DATE NOV 5 1964 FLIGHT TIME 194.00 ARRIVAL DATE MAY 18 1965

HELIOCENTRIC CONIC DISTANCE 486.393 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 34.096 GAL -5.87 AZL 87.65 HCA 157.27 SMA 211.61 ECC .31465 INC 2.3503 V1 30.043
RP 242.06 LAP .91 LOP 199.90 VP 21.665 GAP 16.42 AZP 92.17 TAL 335.17 TAP 132.44 RCA 145.03 APO 278.20 V2 22.678
RC 151.478 GL 15.80 GP -1.46 ZAL 126.74 ZAP 166.48 ETS 184.72 ZAE 156.51 ETE 355.90 ZAC 87.68 ETC 255.99 CLP 166 56

PLANETOCENTRIC CONIC

C3 26.086 VHL 5.107 DLA 18.02 RAL 178.26 RAD 6568.1 VEL 12.143 PTH 2.18 VHP 7.931 DPA -2.74 RAP 185.82 ECC 1.4293

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 46 42	2876.92	-28.32	87.45	51.13	90.00	18 34 39	2276.9	-28.02	78.79
90.00	10 44 58	4325.07	4.07	178.97	42.98	61.95	11 57 3	3725.1	.28	172.33
100.00	19 18 42	2580.23	-29.87	65.60	51.11	91.34	20 1 42	1980.2	-29.36	56.83
100.00	11 55 39	4097.00	5.42	161.45	42.23	60.56	13 3 56	3497.0	1.46	154.91
110.00	20 50 16	2293.74	-33.87	43.59	50.85	94.92	21 28 30	1693.7	-32.82	34.51
110.00	12 40 34	3956.25	8.85	148.68	40.13	56.85	13 46 30	3356.2	4.42	142.39

DIFFERENTIAL CORRECTIONS
TDE 1.0217 TRA-2.6741 TC3 1.3358 BAU .4697
RDE -.2612 RRA .0449 RC3 -.1709 FAU .09670
FDE -.6150 FRA 2.8380 FC3-3.2093 BSP 12429
BDE 1.0546 BRA 2.6744 BC3 1.3467 FSP 1214

MID-COURSE EXECUTION ACCURACY
SGT 3623.1 SGR 345.2 SG3 409.2
RRT -.5927 RRF .5823 RTF -.9222
SGB 3639.5 R23 -.0403 R13 .9224
SG1 3628.9 SG2 277.6 THA 176.75

ORBIT DETERMINATION ACCURACY
ST 1486.9 SR 293.5 SS 837.7
CRT -.8045 CRS -.6094 CST .9601
LSA 1709.2 MSA 277.3 SSA 23.8
EL1 1505.8 EL2 172.1 ALF 170.86

LAUNCH DATE NOV 5 1964 FLIGHT TIME 196.00 ARRIVAL DATE MAY 20 1965

HELIOCENTRIC CONIC DISTANCE 489.467 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 34.036 GAL -5.72 AZL 87.63 HCA 158.20 SMA 210.23 ECC .30955 INC 2.3744 V1 30.043
RP 241.79 LAP .88 LOP 200.03 VP 21.598 GAP 15.89 AZP 92.20 TAL 335.50 TAP 133.69 RCA 145.15 APO 275.30 V2 22.706
RC 153.781 GL 16.24 GP -1.55 ZAL 126.19 ZAP 165.91 ETS 184.82 ZAE 156.72 ETE 355.79 ZAC 87.67 ETC 255.97 CLP 166.00

PLANETOCENTRIC CONIC

C3 25.161 VHL 5.016 DLA 18.61 RAL 178.00 RAD 6568.0 VEL 12.105 PTH 2.17 VHP 7.758 DPA -2.97 RAP 186.12 ECC 1.4141

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 39 30	2891.31	-28.31	88.50	50.44	89.47	18 27 41	2291.3	-28.09	79.84
90.00	10 50 8	4292.84	3.03	177.16	42.33	61.83	12 1 41	3692.8	-.76	170.53
100.00	19 12 5	2592.71	-29.88	66.53	50.43	90.85	19 55 18	1992.7	-29.44	57.75
100.00	12 0 13	4066.67	4.41	159.78	41.57	60.40	13 8 0	3466.7	.43	153.24
110.00	20 44 49	2302.60	-33.92	44.27	50.21	94.52	21 23 12	1702.6	-32.92	35.18
110.00	12 43 59	3929.55	7.85	147.26	39.45	56.62	13 49 29	3329.5	3.41	140.99

DIFFERENTIAL CORRECTIONS
TDE 1.0039 TRA-2.6327 TC3 1.4277 BAU .4841
RDE -.2490 RRA .0542 RC3 -.1823 FAU .09992
FDE -.6042 FRA 2.9062 FC3-3.4380 BSP 12386
BDE 1.0343 BRA 2.6332 BC3 1.4392 FSP 1279

MID-COURSE EXECUTION ACCURACY
SGT 3665.4 SGR 344.4 SG3 428.9
RRT -.6302 RRF .6177 RTF -.9259
SGB 3681.5 R23 -.0401 R13 .9260
SG1 3671.8 SG2 266.9 THA 176.59

ORBIT DETERMINATION ACCURACY
ST 1490.9 SR 285.1 SS 845.6
CRT -.8116 CRS -.6046 CST .9550
LSA 1714.1 MSA 283.9 SSA 22.6
EL1 1509.0 EL2 164.6 ALF 171.07

LAUNCH DATE NOV 5 1964 FLIGHT TIME 198.00 ARRIVAL DATE MAY 22 1965

HELIOCENTRIC CONIC DISTANCE 492.583 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 33.977 GAL -5.58 AZL 87.60 HCA 159.12 SMA 208.92 ECC .30465 INC 2.4007 V1 30.043
RP 241.51 LAP .86 LOP 201.76 VP 21.536 GAP 15.36 AZP 92.24 TAL 335.82 TAP 134.95 RCA 145.27 APO 272.57 V2 22.734
RC 156.092 GL 16.70 GP -1.65 ZAL 125.63 ZAP 165.33 ETS 184.95 ZAE 156.97 ETE 355.65 ZAC 87.65 ETC 255.96 CLP 165.42

PLANETOCENTRIC CONIC

C3 24.294 VHL 4.929 DLA 19.23 RAL 177.75 RAD 6568.0 VEL 12.069 PTH 2.16 VHP 7.590 DPA -3.21 RAP 186.40 ECC 1.3998

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 31 56	2907.26	-28.30	89.67	49.77	88.88	18 20 23	2307.3	-28.15	81.00
90.00	10 55 42	4259.64	1.96	175.31	41.74	61.75	12 6 41	3659.6	-1.83	168.68
100.00	19 5 10	2606.58	-29.89	67.56	49.79	90.31	19 48 37	2006.6	-29.53	58.77
100.00	12 5 8	4035.56	3.36	158.06	40.96	60.28	13 12 24	3435.6	-.62	151.54
110.00	20 39 10	2312.52	-33.97	45.04	49.60	94.07	21 17 42	1712.5	-33.03	35.93
110.00	12 47 38	3902.38	6.83	145.82	38.81	56.43	13 52 41	3302.4	2.37	139.57

DIFFERENTIAL CORRECTIONS
TDE .9695 TRA-2.6071 TC3 1.4948 BAU .4896
RDE -.2366 RRA .0643 RC3 -.1937 FAU .10333
FDE -.5921 FRA 2.9759 FC3-3.6823 BSP 12735
BDE .9980 BRA 2.6079 BC3 1.5073 FSP 1345

MID-COURSE EXECUTION ACCURACY
SGT 3707.1 SGR 344.0 SG3 449.6
RRT -.6629 RRF .6550 RTF -.9271
SGB 3723.1 R23 -.0501 R13 .9274
SG1 3714.2 SG2 257.1 THA 176.46

ORBIT DETERMINATION ACCURACY
ST 1483.0 SR 276.1 SS 853.4
CRT -.8134 CRS -.6012 CST .9528
LSA 1709.3 MSA 285.6 SSA 22.3
EL1 1500.1 EL2 158.7 ALF 171.29

LAUNCH DATE NOV 5 1964 FLIGHT TIME 200.00 ARRIVAL DATE MAY 24 1965

HELIOCENTRIC CONIC DISTANCE 495.741 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 33.922 GAL -5.44 AZL 87.57 HCA 160.06 SMA 207.68 ECC .29995 INC 2.4294 V1 30.043
RP 241.22 LAP .83 LOP 202.69 VP 21.479 GAP 14.84 AZP 92.28 TAL 336.15 TAP 136.20 RCA 145.39 APO 269.97 V2 22.762
RC 158.408 GL 17.18 GP -1.76 ZAL 125.07 ZAP 164.74 ETS 185.09 ZAE 157.25 ETE 355.47 ZAC 87.62 ETC 255.95 CLP 164.84

PLANETOCENTRIC CONIC

C3 23.481 VHL 4.846 DLA 19.86 RAL 177.50 RAD 6568.0 VEL 12.036 PTH 2.15 VHP 7.425 DPA -3.46 RAP 186.67 ECC 1.3864

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 23 54	2925.05	-28.27	90.97	49.14	88.23	18 12 39	2325.1	-28.21	82.30
90.00	11 1 44	4225.18	.85	173.38	41.18	61.69	12 12 9	3625.2	-2.94	166.76
100.00	18 57 53	2622.02	-29.89	68.71	49.17	89.70	19 41 35	2022.0	-29.61	59.91
100.00	12 10 27	4003.45	2.27	156.30	40.39	60.19	13 17 10	3403.4	-1.71	149.78
110.00	20 33 15	2323.65	-34.02	45.91	49.03	93.56	21 11 58	1723.6	-33.15	36.78
110.00	12 51 34	3874.58	5.78	144.35	38.21	56.25	13 56 9	3274.6	1.31	138.12

DIFFERENTIAL CORRECTIONS
TDE .9423 TRA-2.5737 TC3 1.5764 BAU .4991
RDE -.2247 RRA .0744 RC3 -.2067 FAU .10688
FDE -.5767 FRA 3.0487 FC3-3.9406 BSP 12889
BDE .9688 BRA 2.5748 BC3 1.5899 FSP 1417

MID-COURSE EXECUTION ACCURACY
SGT 3747.6 SGR 345.7 SG3 471.2
RRT -.6985 RRF .6922 RTF -.9295
SGB 3763.5 R23 -.0561 R13 .9297
SG1 3755.4 SG2 246.9 THA 176.30

ORBIT DETERMINATION ACCURACY
ST 1478.4 SR 267.3 SS 860.7
CRT -.8189 CRS -.5972 CST .9483
LSA 1706.7 MSA 291.3 SSA 21.4
EL1 1494.7 EL2 151.7 ALF 171.49

LAUNCH DATE NOV 5 1964 FLIGHT TIME 202.00 ARRIVAL DATE MAY 26 1965

HELIOCENTRIC CONIC DISTANCE 498.938 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 33.868 GAL -5.30 AZL 87.54 HCA 160.99 SMA 206.51 ECC .29543 INC 2.4609 V1 30.043
RP 240.93 LAP .80 LOP 203.62 VP 21.425 GAP 14.32 AZP 92.33 TAL 336.48 TAP 137.46 RCA 145.50 APO 267.52 V2 22.791
RC 160.729 GL 17.69 GP -1.89 ZAL 124.49 ZAP 164.13 ETS 185.26 ZAE 157.58 ETE 355.24 ZAC 87.57 ETC 255.94 CLP 164.24

PLANETOCENTRIC CONIC

C3 22.720 VHL 4.767 DLA 20.52 RAL 177.26 RAD 6567.9 VEL 12.004 PTH 2.14 VHP 7.263 DPA -3.71 RAP 186.92 ECC 1.3739

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 15 22	2944.91	-28.22	92.42	48.53	87.51	18 4 27	2344.9	-28.26	83.75
90.00	11 8 20	4189.27	-.31	171.38	40.69	61.68	12 18 10	3589.3	-4.09	164.74
100.00	18 50 10	2639.23	-29.88	69.99	48.59	89.03	19 34 9	2039.2	-29.69	61.19
100.00	12 16 14	3970.18	1.15	154.47	39.88	60.13	13 22 24	3370.2	-2.84	147.95
110.00	20 27 3	2336.09	-34.07	46.88	48.50	92.99	21 6 0	1736.1	-33.28	37.73
110.00	12 55 49	3846.09	4.70	142.85	37.66	56.10	13 59 55	3246.1	.22	136.63

DIFFERENTIAL CORRECTIONS
TDE .9148 TRA-2.5398 TC3 1.6587 BAU .5083
RDE -.2132 RRA .0849 RC3 -.2209 FAU .11059
FDE -.5587 FRA 3.1241 FC3-4.2139 BSP 13038
BDE .9393 BRA 2.5413 BC3 1.6733 FSP 1492

MID-COURSE EXECUTION ACCURACY
SGT 3786.3 SGR 349.2 SG3 493.8
RRT -.7338 RRF .7292 RTF -.9317
SGB 3802.3 R23 -.0630 R13 .9319
SG1 3795.0 SG2 236.7 THA 176.11

ORBIT DETERMINATION ACCURACY
ST 1472.4 SR 258.5 SS 867.8
CRT -.8255 CRS -.5938 CST .9432
LSA 1702.5 MSA 298.1 SSA 20.4
EL1 1487.9 EL2 144.4 ALF 171.68

LAUNCH DATE NOV 5 1964 FLIGHT TIME 204.00 ARRIVAL DATE MAY 28 1965

HELIOCENTRIC CONIC DISTANCE 502.172 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 33.817 GAL -5.17 AZL 87.50 HCA 161.92 SMA 205.40 ECC .29109 INC 2.4956 V1 30.043
RP 240.64 LAP .77 LOP 204.56 VP 21.375 GAP 13.81 AZP 92.37 TAL 336.80 TAP 138.73 RCA 145.61 APO 265.19 V2 22.821
RC 163.052 GL 18.22 GP -2.02 ZAL 123.90 ZAP 163.51 ETS 185.46 ZAE 157.93 ETE 354.96 ZAC 87.51 ETC 255.92 CLP 163.63

PLANETOCENTRIC CONIC

C3 22.009 VHL 4.691 DLA 21.20 RAL 177.03 RAD 6567.9 VEL 11.975 PTH 2.13 VHP 7.105 DPA -3.97 RAP 187.16 ECC 1.3622

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 6 13	2967.21	-28.14	94.04	47.95	86.69	17 55 40	2367.2	-28.30	85.38
90.00	11 15 37	4151.55	-1.53	169.28	40.25	61.72	12 24 48	3551.6	-5.29	162.63
100.00	18 41 57	2658.49	-29.85	71.42	48.04	88.28	19 26 16	2058.5	-29.77	62.61
100.00	12 22 34	3935.51	-.03	152.57	39.42	60.11	13 28 9	3335.5	-4.01	146.04
110.00	20 20 33	2350.01	-34.11	47.96	48.01	92.35	20 59 43	1750.0	-33.41	38.79
110.00	13 0 27	3816.75	3.59	141.31	37.16	55.98	14 4 4	3216.7	-.90	135.10

DIFFERENTIAL CORRECTIONS
TDE .8915 TRA-2.5010 TC3 1.7504 BAU .5197
RDE -.2022 RRA .0957 RC3 -.2370 FAU .11453
FDE -.5387 FRA 3.2008 FC3-4.5051 BSP 13074
BDE .9141 BRA 2.5028 BC3 1.7664 FSP 1569

MID-COURSE EXECUTION ACCURACY
SGT 3823.2 SGR 355.2 SG3 517.6
RRT -.7695 RRF .7653 RTF -.9343
SGB 3839.6 R23 -.0687 R13 .9346
SG1 3832.9 SG2 226.3 THA 175.90

ORBIT DETERMINATION ACCURACY
ST 1467.6 SR 249.9 SS 874.9
CRT -.8348 CRS -.5914 CST .9365
LSA 1699.0 MSA 307.7 SSA 19.2
EL1 1482.5 EL2 136.2 ALF 171.84

LAUNCH DATE NOV 5 1964 FLIGHT TIME 206.00 ARRIVAL DATE MAY 30 1965

HELIOCENTRIC CONIC DISTANCE 505.439 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 33.767 GAL -5.04 AZL 87.47 HCA 162.86 SMA 204.34 ECC .28693 INC 2.5338 V1 30.043
RP 240.34 LAP .75 LOP 205.49 VP 21.329 GAP 13.30 AZP 92.42 TAL 337.13 TAP 139.99 RCA 145.71 APO 262.97 V2 22.851
RC 165.375 GL 18.78 GP -2.18 ZAL 123.29 ZAP 162.87 ETS 185.69 ZAE 158.33 ETE 354.62 ZAC 87.43 ETC 255.91 CLP 163.01

PLANETOCENTRIC CONIC

C3 21.348 VHL 4.620 DLA 21.92 RAL 176.80 RAD 6567.9 VEL 11.947 PTH 2.13 VHP 6.951 DPA -4.24 RAP 187.38 ECC 1.3513

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 56 20	2992.36	-28.03	95.88	47.41	85.78	17 46 12	2392.4	-28.32	87.22
90.00	11 23 43	4111.68	-2.81	167.05	39.88	61.81	12 32 14	3511.7	-6.56	160.38
100.00	18 33 10	2680.10	-29.79	73.02	47.53	87.43	19 17 51	2080.1	-29.83	64.22
100.00	12 29 33	3899.18	-1.26	150.58	39.03	60.13	13 34 32	3299.2	-5.23	144.03
110.00	20 13 42	2365.59	-34.15	49.18	47.58	91.63	20 53 8	1765.6	-33.55	39.99
110.00	13 5 31	3786.45	2.43	139.72	36.72	55.89	14 8 37	3186.4	-2.06	133.52

DIFFERENTIAL CORRECTIONS
TDE .8598 TRA-2.4695 TC3 1.8273 BAU .5266
RDE -.1911 RRA .1074 RC3 -.2543 FAU .11866
FDE -.5154 FRA 3.2805 FC3-4.8119 BSP 13292
BDE .8808 BRA 2.4719 BC3 1.8449 FSP 1650

MID-COURSE EXECUTION ACCURACY
SGT 3858.0 SGR 363.3 SG3 542.4
RRT -.8014 RRF .8005 RTF -.9358
SGB 3875.1 R23 -.0806 R13 .9362
SG1 3869.0 SG2 216.7 THA 175.67

ORBIT DETERMINATION ACCURACY
ST 1456.0 SR 241.0 SS 882.0
CRT -.8427 CRS -.5907 CST .9311
LSA 1690.1 MSA 315.1 SSA 18.3
EL1 1470.2 EL2 128.5 ALF 172.00

LAUNCH DATE NOV 5 1964 FLIGHT TIME 208.00 ARRIVAL DATE JUN 1 1965

DISTANCE 508.739

HELIOCENTRIC CONIC — EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 33.720 GAL -4.92 AZL 87.42 HCA 163.80 SMA 203.34 ECC .28293 INC 2.5769 V1 30.043
RP 240.04 LAP .72 LOP 206.43 VP 21.287 GAP 12.80 AZP 92.47 TAL 337.46 TAP 141.26 RCA 145.81 APO 260.88 V2 22.881
RC 167.697 GL 19.37 GP -2.35 ZAL 122.68 ZAP 162.22 ETS 185.95 ZAE 158.75 ETE 354.19 ZAC 87.32 ETC 255.90 CLP 162.37

PLANETOCENTRIC CONIC

C3 20.735 VHL 4.554 DLA 22.67 RAL 176.59 RAD 6567.8 VEL 11.921 PTH 2.12 VHP 6.800 DPA -4.53 RAP 187.58 ECC 1.3412

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 45 32	3021.05	-27.87	97.96	46.91	84.75	17 35 53	2421.1	-28.30	89.32
90.00	11 32 50	4068.99	-4.18	164.66	39.61	61.97	12 40 39	3469.0	-7.90	157.96
100.00	18 23 42	2704.53	-29.70	74.83	47.07	86.48	19 8 46	2104.5	-29.88	66.03
100.00	12 37 22	3860.74	-2.57	148.47	38.71	60.21	13 41 42	3260.7	-6.51	141.90
110.00	20 6 26	2383.11	-34.17	50.55	47.19	90.82	20 46 9	1783.1	-33.68	41.34
110.00	13 11 7	3754.93	1.23	138.08	36.34	55.84	14 13 42	3154.9	-3.26	131.87

DIFFERENTIAL CORRECTIONS
TDE .8295 TRA-2.4361 TC3 1.9071 BAU .5341
RDE -.1803 RRA .1198 RC3 -.2736 FAU .12286
FDE -.4858 FRA 3.3658 FC3-5.1298 BSP 13460
BDE .8489 BRA 2.4391 BC3 1.9266 FSP 1740

MID-COURSE EXECUTION ACCURACY
SGT 3891.1 SGR 374.4 SG3 568.3
RRT -.8319 RRF .8333 RTF -.9376
SGB 3909.1 R23 -.0920 R13 .9380
SG1 3903.6 SG2 207.1 THA 175.41

ORBIT DETERMINATION ACCURACY
ST 1444.0 SR 232.2 SS 888.8
CRT -.8529 CRS -.5898 CST .9234
LSA 1680.0 MSA 326.1 SSA 17.1
EL1 1457.6 EL2 120.1 ALF 172.14

LAUNCH DATE NOV 5 1964 FLIGHT TIME 210.00 ARRIVAL DATE JUN 3 1965

DISTANCE 512.070

HELIOCENTRIC CONIC — EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 33.675 GAL -4.79 AZL 87.37 HCA 164.74 SMA 202.40 ECC .27910 INC 2.6246 V1 30.043
RP 239.73 LAP .69 LOP 207.37 VP 21.248 GAP 12.30 AZP 92.53 TAL 337.78 TAP 142.53 RCA 145.91 APO 258.88 V2 22.912
RC 170.016 GL 20.01 GP -2.55 ZAL 122.06 ZAP 161.54 ETS 186.25 ZAE 159.21 ETE 353.68 ZAC 87.20 ETC 255.90 CLP 161.72

PLANETOCENTRIC CONIC

C3 20.169 VHL 4.491 DLA 23.45 RAL 176.40 RAD 6567.8 VEL 11.897 PTH 2.11 VHP 6.652 DPA -4.82 RAP 187.76 ECC 1.3319

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 33 32	3054.19	-27.64	100.36	46.44	83.57	17 24 26	2454.2	-28.24	91.74
90.00	11 43 18	4022.62	-5.66	162.06	39.43	62.21	12 50 21	3422.6	-9.33	155.31
100.00	18 13 20	2732.43	-29.57	76.90	46.65	85.41	18 58 52	2132.4	-29.89	68.11
100.00	12 46 12	3819.62	-3.95	146.20	38.49	60.35	13 49 51	3219.6	-7.87	139.61
110.00	19 58 40	2402.89	-34.18	52.09	46.87	89.90	20 38 43	1802.9	-33.82	42.87
110.00	13 17 21	3721.92	-.03	136.36	36.05	55.82	14 19 23	3121.9	-4.52	130.14

DIFFERENTIAL CORRECTIONS
TDE .8040 TRA-2.3979 TC3 1.9953 BAU .5439
RDE -.1700 RRA .1328 RC3 -.2960 FAU .12755
FDE -.4583 FRA 3.4483 FC3-5.4749 BSP 13489
BDE .8217 BRA 2.4016 BC3 2.0171 FSP 1821

MID-COURSE EXECUTION ACCURACY
SGT 3922.3 SGR 389.7 SG3 595.6
RRT -.8603 RRF .8637 RTF -.9396
SGB 3941.6 R23 -.1045 R13 .9400
SG1 3936.6 SG2 197.9 THA 175.10

ORBIT DETERMINATION ACCURACY
ST 1433.8 SR 224.0 SS 896.5
CRT -.8666 CRS -.5944 CST .9152
LSA 1671.9 MSA 338.0 SSA 16.0
EL1 1446.9 EL2 110.8 ALF 172.24

LAUNCH DATE NOV 5 1964 FLIGHT TIME 212.00 ARRIVAL DATE JUN 5 1965

DISTANCE 515.430

HELIOCENTRIC CONIC — EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 33.631 GAL -4.68 AZL 87.32 HCA 165.69 SMA 201.50 ECC .27542 INC 2.6796 V1 30.043
RP 239.42 LAP .66 LOP 208.32 VP 21.213 GAP 11.81 AZP 92.60 TAL 338.11 TAP 143.80 RCA 146.08 APO 256.99 V2 22.943
RC 172.331 GL 20.70 GP -2.77 ZAL 121.42 ZAP 160.85 ETS 186.60 ZAE 159.70 ETE 353.04 ZAC 87.04 ETC 255.89 CLP 161.05

PLANETOCENTRIC CONIC

C3 19.651 VHL 4.433 DLA 24.28 RAL 176.23 RAD 6567.8 VEL 11.876 PTH 2.11 VHP 6.507 DPA -5.14 RAP 187.92 ECC 1.3234

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 19 57	3093.19	-27.31	103.16	46.00	82.20	17 11 30	2493.2	-28.10	94.59
90.00	11 55 33	3971.24	-7.28	159.15	39.38	62.56	13 1 45	3371.2	-10.90	152.34
100.00	18 1 50	2764.67	-29.37	79.27	46.28	84.17	18 47 55	2164.7	-29.87	70.50
100.00	12 56 21	3774.99	-5.45	143.74	38.39	60.56	13 59 16	3175.0	-9.33	137.10
110.00	19 50 18	2425.37	-34.17	53.85	46.63	88.86	20 30 43	1825.4	-33.95	44.61
110.00	13 24 23	3687.05	-1.37	134.54	35.85	55.84	14 25 50	3087.1	-5.84	128.31

DIFFERENTIAL CORRECTIONS
TDE .7736 TRA-2.3638 TC3 2.0731 BAU .5511
RDE -.1594 RRA .1475 RC3 -.3205 FAU .13203
FDE -.4165 FRA 3.5440 FC3-5.8169 BSP 13642
BDE .7898 BRA 2.3684 BC3 2.0978 FSP 1926

MID-COURSE EXECUTION ACCURACY
SGT 3951.2 SGR 408.5 SG3 623.9
RRT -.8853 RRF .8905 RTF -.9415
SGB 3972.3 R23 -.1185 R13 .9420
SG1 3967.8 SG2 189.2 THA 174.76

ORBIT DETERMINATION ACCURACY
ST 1419.1 SR 215.6 SS 904.2
CRT -.8813 CRS -.5966 CST .9038
LSA 1658.9 MSA 354.8 SSA 14.6
EL1 1431.8 EL2 101.0 ALF 172.34

LAUNCH DATE NOV 5 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUN 7 1965

DISTANCE 518.818

HELIOCENTRIC CONIC — EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 33.590 GAL -4.56 AZL 87.26 HCA 166.63 SMA 200.64 ECC .27189 INC 2.7417 V1 30.043
RP 239.11 LAP .63 LOP 209.26 VP 21.181 GAP 11.33 AZP 92.67 TAL 338.43 TAP 145.07 RCA 146.09 APO 255.19 V2 22.975
RC 174.639 GL 21.45 GP -3.03 ZAL 120.77 ZAP 160.14 ETS 187.01 ZAE 160.21 ETE 352.26 ZAC 86.84 ETC 255.88 CLP 160.36

PLANETOCENTRIC CONIC

C3 19.181 VHL 4.380 DLA 25.17 RAL 176.10 RAD 6567.8 VEL 11.856 PTH 2.10 VHP 6.366 DPA -5.49 RAP 188.05 ECC 1.3157

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 4 4	3140.39	-26.83	106.53	45.59	80.57	16 56 24	2540.4	-27.85	98.02
90.00	12 10 21	3912.59	-9.10	155.81	39.50	63.07	13 15 34	3312.6	-12.65	148.92
100.00	17 48 50	2802.60	-29.08	82.05	45.96	82.74	18 35 33	2202.6	-29.78	73.32
100.00	13 8 16	3725.62	-7.10	140.99	38.42	60.89	14 10 21	3125.6	-10.92	134.30
110.00	19 41 10	2451.16	-34.11	55.86	46.46	87.67	20 22 1	1851.2	-34.06	46.61
110.00	13 32 26	3649.82	-2.79	132.60	35.76	55.92	14 33 15	3049.8	-7.24	126.34

DIFFERENTIAL CORRECTIONS
TDE .7405 TRA-2.3312 TC3 2.1440 BAU .5570
RDE -.1489 RRA .1636 RC3 -.3484 FAU .13690
FDE -.3724 FRA 3.6400 FC3-6.1791 BSP 13824
BDE .7553 BRA 2.3369 BC3 2.1721 FSP 2029

MID-COURSE EXECUTION ACCURACY
SGT 3977.4 SGR 432.5 SG3 653.5
RRT -.9062 RRF .9144 RTF -.9428
SGB 4000.9 R23 -.1376 R13 .9435
SG1 3996.7 SG2 182.0 THA 174.36

ORBIT DETERMINATION ACCURACY
ST 1401.3 SR 207.5 SS 913.0
CRT -.8974 CRS -.6050 CST .8929
LSA 1644.1 MSA 370.3 SSA 13.5
EL1 1413.6 EL2 90.8 ALF 172.40

LAUNCH DATE NOV 5 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUN 9 1965

HELIOCENTRIC CONIC DISTANCE 522.232 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 33.550 GAL -4.45 AZL 87.19 HCA 167.58 SMA 199.83 ECC .26850 INC 2.8130 V1 30.043
RP 238.79 LAP .60 LOP 210.21 VP 21.153 GAP 10.85 AZP 92.75 TAL 338.75 TAP 146.34 RCA 146.18 APO 253.49 V2 23.007
RC 176.939 GL 22.27 GP -3.33 ZAL 120.11 ZAP 159.40 ETS 187.49 ZAE 160.75 ETE 351.30 ZAC 86.60 ETC 255.87 CLP 159.66

PLANETOCENTRIC CONIC

C3 18.762 VHL 4.332 DLA 26.12 RAL 176.00 RAD 6567.8 VEL 11.838 PTH 2.10 VHP 6.229 DPA -5.87 RAP 188.15 ECC 1.3088

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 44 31	3200.30	-26.09	110.76	45.17	78.58	16 37 51	2600.3	-27.40	102.34
90.00	12 29 7	3842.27	-11.24	151.75	39.86	63.84	13 33 10	3242.3	-14.67	144.75
100.00	17 33 40	2848.43	-28.64	85.39	45.68	81.03	18 21 8	2248.4	-29.58	76.71
100.00	13 22 40	3669.37	-8.95	137.84	38.65	61.36	14 23 49	3069.4	-12.70	131.07
110.00	19 31 3	2481.12	-34.01	58.19	46.38	86.30	20 12 25	1881.1	-34.15	48.95
110.00	13 41 46	3609.45	-4.33	130.48	35.82	56.06	14 41 55	3009.4	-8.75	124.19

DIFFERENTIAL CORRECTIONS
TDE .7126 TRA-2.2931 TC3 2.2213 BAU .5653
RDE -.1388 RRA .1813 RC3 -.3814 FAU .14225
FDE -.3275 FRA 3.7348 FC3-6.5635 BSP 13870
BDE .7260 BRA 2.3003 BC3 2.2538 FSP 2124

MID-COURSE EXECUTION ACCURACY
SGT 4000.5 SGR 462.8 SG3 684.6
RRT -.9241 RRF .9346 RTF -.9444
SGB 4027.2 R23 -.1575 R13 .9451
SG1 4023.4 SG2 175.8 THA 173.89

ORBIT DETERMINATION ACCURACY
ST 1385.3 SR 200.6 SS 923.0
CRT -.9172 CRS -.6206 CST .8801
LSA 1631.0 MSA 388.4 SSA 12.3
EL1 1397.5 EL2 79.2 ALF 172.41

LAUNCH DATE NOV 5 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUN 11 1965

HELIOCENTRIC CONIC DISTANCE 525.672 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 33.511 GAL -4.34 AZL 87.10 HCA 168.54 SMA 199.06 ECC .26526 INC 2.8967 V1 30.043
RP 238.47 LAP .58 LOP 211.17 VP 21.127 GAP 10.38 AZP 92.84 TAL 339.07 TAP 147.61 RCA 146.26 APO 251.86 V2 23.040
RC 179.231 GL 23.19 GP -3.69 ZAL 119.42 ZAP 158.63 ETS 188.05 ZAE 161.32 ETE 350.11 ZAC 86.31 ETC 255.86 CLP 158.94

PLANETOCENTRIC CONIC

C3 18.398 VHL 4.289 DLA 27.15 RAL 175.95 RAD 6567.7 VEL 11.823 PTH 2.09 VHP 6.094 DPA -6.28 RAP 188.21 ECC 1.3028

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 17 52	3284.13	-24.83	116.58	44.65	75.92	16 12 36	2684.1	-26.52	108.32
90.00	12 55 25	3749.23	-13.98	146.28	40.59	65.12	13 57 54	3149.2	-17.22	139.11
100.00	17 15 5	2906.23	-27.95	89.55	45.43	78.95	18 3 31	2306.2	-29.19	80.96
100.00	13 40 52	3602.36	-11.11	134.04	39.13	62.07	14 40 55	3002.4	-14.76	127.16
110.00	19 19 37	2516.52	-33.82	60.94	46.41	84.68	20 1 34	1916.5	-34.18	51.71
110.00	13 52 50	3564.83	-6.02	128.13	36.06	56.29	14 52 14	2964.8	-10.41	121.79

DIFFERENTIAL CORRECTIONS
TDE .6842 TRA-2.2557 TC3 2.2918 BAU .5730
RDE -.1284 RRA .2016 RC3 -.4192 FAU .14759
FDE -.2706 FRA 3.8393 FC3-6.9453 BSP 13935
BDE .6962 BRA 2.2647 BC3 2.3298 FSP 2235

MID-COURSE EXECUTION ACCURACY
SGT 4020.9 SGR 500.4 SG3 716.9
RRT -.9388 RRF .9512 RTF -.9460
SGB 4051.9 R23 -.1785 R13 .9469
SG1 4048.3 SG2 171.2 THA 173.32

ORBIT DETERMINATION ACCURACY
ST 1367.8 SR 194.4 SS 934.9
CRT -.9390 CRS -.6401 CST .8637
LSA 1616.5 MSA 411.7 SSA 11.0
EL1 1380.0 EL2 66.3 ALF 172.38

LAUNCH DATE NOV 5 1964 FLIGHT TIME 220.00 ARRIVAL DATE JUN 13 1965

HELIOCENTRIC CONIC DISTANCE 529.135 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 33.474 GAL -4.24 AZL 87.00 HCA 169.49 SMA 198.33 ECC .26214 INC 2.9952 V1 30.043
RP 238.14 LAP .55 LOP 212.12 VP 21.105 GAP 9.91 AZP 92.95 TAL 339.39 TAP 148.88 RCA 146.34 APO 250.32 V2 23.073
RC 181.513 GL 24.21 GP -4.11 ZAL 118.71 ZAP 157.83 ETS 188.72 ZAE 161.89 ETE 348.60 ZAC 85.94 ETC 255.85 CLP 158.20

PLANETOCENTRIC CONIC

C3 18.094 VHL 4.254 DLA 28.28 RAL 175.97 RAD 6567.7 VEL 11.810 PTH 2.09 VHP 5.964 DPA -6.76 RAP 188.23 ECC 1.2978

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 18 50	3473.48	-21.10	129.20	43.27	70.67	15 16 44	2873.5	-23.55	121.38
90.00	13 54 36	3552.08	-19.25	134.22	42.54	68.82	14 53 48	2952.1	-21.96	126.59
100.00	16 50 16	2985.18	-26.79	95.13	45.12	76.23	17 40 1	2385.2	-28.42	86.71
100.00	14 5 52	3515.61	-13.82	129.03	40.02	63.23	15 4 27	2915.6	-17.31	121.97
110.00	19 6 19	2559.34	-33.50	64.24	46.56	82.75	19 48 58	1959.3	-34.14	55.06
110.00	14 6 18	3514.22	-7.92	125.45	36.55	56.64	15 4 52	2914.2	-12.26	119.04

DIFFERENTIAL CORRECTIONS
TDE .6544 TRA-2.2189 TC3 2.3539 BAU .5804
RDE -.1179 RRA .2251 RC3 -.4638 FAU .15337
FDE -.2079 FRA 3.9453 FC3-7.3386 BSP 14004
BDE .6650 BRA 2.2303 BC3 2.3992 FSP 2341

MID-COURSE EXECUTION ACCURACY
SGT 4038.1 SGR 547.2 SG3 750.6
RRT -.9497 RRF .9646 RTF -.9473
SGB 4075.0 R23 -.2024 R13 .9484
SG1 4071.5 SG2 169.9 THA 172.65

ORBIT DETERMINATION ACCURACY
ST 1348.1 SR 189.8 SS 948.9
CRT -.9609 CRS -.6687 CST .8465
LSA 1601.2 MSA 435.6 SSA 9.8
EL1 1360.4 EL2 52.1 ALF 172.28

LAUNCH DATE NOV 5 1964 FLIGHT TIME 222.00 ARRIVAL DATE JUN 15 1965

HELIOCENTRIC CONIC DISTANCE 532.621 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 33.439 GAL -4.14 AZL 86.89 HCA 170.45 SMA 197.63 ECC .25916 INC 3.1137 V1 30.043
RP 237.81 LAP .52 LOP 213.08 VP 21.086 GAP 9.45 AZP 93.07 TAL 339.70 TAP 150.15 RCA 146.41 APO 248.85 V2 23.106
RC 183.786 GL 25.39 GP -4.62 ZAL 117.97 ZAP 156.99 ETS 189.52 ZAE 162.47 ETE 346.69 ZAC 85.49 ETC 255.83 CLP 157.44

PLANETOCENTRIC CONIC

C3 17.860 VHL 4.226 DLA 29.54 RAL 176.08 RAD 6567.7 VEL 11.800 PTH 2.09 VHP 5.837 DPA -7.30 RAP 188.19 ECC 1.2939

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
81.21	12 55 13	3742.07	-21.11	148.94	43.16	68.84	13 57 35	3142.1	-23.80	141.20
98.79	15 19 6	3277.43	-21.10	114.80	43.16	68.83	16 13 44	2677.4	-23.79	107.07
100.00	16 6 56	3124.39	-24.18	104.64	44.35	71.87	16 59 0	2524.4	-26.43	96.57
100.00	14 50 4	3370.35	-18.09	120.36	41.82	65.79	15 46 15	2770.3	-21.21	112.95
110.00	18 50 8	2612.95	-32.96	68.33	46.82	80.39	19 33 41	2012.9	-33.94	59.23
110.00	14 23 21	3454.55	-10.14	122.26	37.38	57.18	15 20 56	2854.6	-14.39	115.74

DIFFERENTIAL CORRECTIONS
TDE .6246 TRA-2.1816 TC3 2.4069 BAU .5878
RDE -.1067 RRA .2530 RC3 -.5165 FAU .15931
FDE -.1325 FRA 4.0589 FC3-7.7223 BSP 14053
BDE .6337 BRA 2.1962 BC3 2.4617 FSP 2454

MID-COURSE EXECUTION ACCURACY
SGT 4051.4 SGR 605.7 SG3 785.4
RRT -.9579 RRF .9750 RTF -.9485
SGB 4096.4 R23 -.2255 R13 .9499
SG1 4092.8 SG2 172.1 THA 171.83

ORBIT DETERMINATION ACCURACY
ST 1327.0 SR 187.3 SS 966.3
CRT -.9813 CRS -.7048 CST .8257
LSA 1585.7 MSA 464.3 SSA 8.5
EL1 1339.7 EL2 35.7 ALF 172.11

LAUNCH DATE NOV 5 1964 FLIGHT TIME 224.00 ARRIVAL DATE JUN 17 1965

DISTANCE 536.128

HELIOCENTRIC CONIC — EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 33.406 GAL -4.04 AZL 86.74 HCA 171.41 SMA 196.97 ECC .25631 INC 3.2591 V1 30.043
RP 237.48 LAP .49 LOP 214.04 VP 21.069 GAP 8.99 AZP 93.22 TAL 340.01 TAP 151.42 RCA 146.49 APO 247.46 V2 23.140
RC 186.049 GL 26.75 GP -5.24 ZAL 117.19 ZAP 156.10 ETS 190.50 ZAE 163.04 ETE 344.24 ZAC 84.92 ETC 255.82 CLP 156.65

PLANETOCENTRIC CONIC

C3 17.713 VHL 4.209 DLA 30.97 RAL 176.32 RAD 6567.7 VEL 11.794 PTH 2.09 VHP 5.715 DPA -7.94 RAP 188.09 ECC 1.2915

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
76.91	12 24 0	3842.43	-22.13	156.86	43.68	67.76	13 28 3	3242.4	-24.95	149.11
103.09	15 52 10	3173.22	-22.11	107.46	43.67	67.75	16 45 3	2573.2	-24.94	99.72
76.91	12 24 0	3842.43	-22.13	156.86	43.68	67.76	13 28 3	3242.4	-24.95	149.11
103.09	15 52 10	3173.22	-22.11	107.46	43.67	67.75	16 45 3	2573.2	-24.94	99.72
110.00	18 29 5	2684.01	-32.03	73.67	47.17	77.36	19 13 49	2084.0	-33.43	64.72
110.00	14 46 16	3379.64	-12.87	118.17	38.72	58.06	15 42 36	2779.6	-17.00	111.50

DIFFERENTIAL CORRECTIONS

TDE .5926 TRA-2.1475 TC3 2.4402 BAU .5939
RDE -.0944 RRA .2872 RC3 -.5787 FAU .16525
FDE -.0402 FRA 4.1845 FC3-8.0768 BSP 14187
BDE .6000 BRA 2.1667 BC3 2.5079 FSP 2583

MID-COURSE EXECUTION ACCURACY

SGT 4061.4 SGR 679.5 SG3 821.3
RRT -.9635 RRF .9828 RTF -.9496
SGB 4117.8 R23 -.2469 R13 .9513
SG1 4113.9 SG2 179.6 THA 170.83

ORBIT DETERMINATION ACCURACY

ST 1304.2 SR 188.2 SS 989.6
CRT -.9958 CRS -.7492 CST .8016
LSA 1571.0 MSA 497.5 SSA 7.4
EL1 1317.6 EL2 17.0 ALF 171.82

LAUNCH DATE NOV 5 1964 FLIGHT TIME 226.00 ARRIVAL DATE JUN 19 1965

DISTANCE 539.657

HELIOCENTRIC CONIC — EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 33.373 GAL -3.94 AZL 86.56 HCA 172.37 SMA 196.34 ECC .25357 INC 3.4408 V1 30.043
RP 237.15 LAP .46 LOP 215.00 VP 21.056 GAP 8.54 AZP 93.41 TAL 340.31 TAP 152.68 RCA 146.56 APO 246.13 V2 23.174
RC 188.300 GL 28.38 GP -6.03 ZAL 116.34 ZAP 155.14 ETS 191.73 ZAE 163.56 ETE 341.04 ZAC 84.18 ETC 255.80 CLP 155.84

PLANETOCENTRIC CONIC

C3 17.679 VHL 4.205 DLA 32.61 RAL 176.72 RAD 6567.7 VEL 11.792 PTH 2.09 VHP 5.597 DPA -8.72 RAP 187.90 ECC 1.2910

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
73.10	11 59 35	3923.46	-23.25	163.52	44.56	66.46	13 4 59	3323.5	-26.23	155.76
106.90	16 19 47	3091.30	-23.24	101.76	44.55	66.45	17 11 19	2491.3	-26.22	94.00
73.10	11 59 35	3923.46	-23.25	163.52	44.56	66.46	13 4 59	3323.5	-26.23	155.76
106.90	16 19 47	3091.30	-23.24	101.76	44.55	66.45	17 11 19	2491.3	-26.22	94.00
110.00	17 57 26	2790.40	-30.18	81.40	47.41	73.13	18 43 56	2190.4	-32.19	72.77
110.00	15 21 8	3272.36	-16.65	112.16	41.00	59.71	16 15 40	2672.4	-20.55	105.20

DIFFERENTIAL CORRECTIONS

TDE .5656 TRA-2.1082 TC3 2.4654 BAU .6029
RDE -.0812 RRA .3291 RC3 -.6555 FAU .17173
FDE .0604 FRA 4.3083 FC3-8.4097 BSP 14201
BDE .5714 BRA 2.1337 BC3 2.5510 FSP 2695

MID-COURSE EXECUTION ACCURACY

SGT 4065.0 SGR 774.3 SG3 857.9
RRT -.9671 RRF .9885 RTF -.9506
SGB 4138.1 R23 -.2636 R13 .9529
SG1 4133.5 SG2 193.8 THA 169.54

ORBIT DETERMINATION ACCURACY

ST 1282.5 SR 195.0 SS 1017.2
CRT -.9986 CRS -.8006 CST .7745
LSA 1559.3 MSA 534.7 SSA 6.2
EL1 1297.2 EL2 10.4 ALF 171.37

LAUNCH DATE NOV 5 1964 FLIGHT TIME 228.00 ARRIVAL DATE JUN 21 1965

DISTANCE 543.205

HELIOCENTRIC CONIC — EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 33.342 GAL -3.85 AZL 86.32 HCA 173.33 SMA 195.75 ECC .25095 INC 3.6756 V1 30.043
RP 236.81 LAP .43 LOP 215.96 VP 21.045 GAP 8.10 AZP 93.65 TAL 340.61 TAP 153.95 RCA 146.62 APO 244.87 V2 23.209
RC 190.540 GL 30.36 GP -7.05 ZAL 115.41 ZAP 154.09 ETS 193.28 ZAE 163.98 ETE 336.83 ZAC 83.22 ETC 255.77 CLP 155.00

PLANETOCENTRIC CONIC

C3 17.806 VHL 4.220 DLA 34.56 RAL 177.37 RAD 6567.7 VEL 11.798 PTH 2.09 VHP 5.486 DPA -9.69 RAP 187.58 ECC 1.2930

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
69.30	11 38 37	3997.49	-24.50	169.88	45.97	64.82	12 45 14	3397.5	-27.68	162.12
110.70	16 45 59	3020.59	-24.49	96.90	45.96	64.81	17 36 19	2420.6	-27.67	89.14
69.30	11 38 37	3997.49	-24.50	169.88	45.97	64.82	12 45 14	3397.5	-27.68	162.12
110.70	16 45 59	3020.59	-24.49	96.90	45.96	64.81	17 36 19	2420.6	-27.67	89.14
69.30	11 38 37	3997.49	-24.50	169.88	45.97	64.82	12 45 14	3397.5	-27.68	162.12
110.70	16 45 59	3020.59	-24.49	96.90	45.96	64.81	17 36 19	2420.6	-27.67	89.14

DIFFERENTIAL CORRECTIONS

TDE .5381 TRA-2.0729 TC3 2.4584 BAU .6117
RDE -.0653 RRA .3839 RC3 -.7484 FAU .17810
FDE .1845 FRA 4.4464 FC3-8.6596 BSP 14323
BDE .5420 BRA 2.1081 BC3 2.5698 FSP 2821

MID-COURSE EXECUTION ACCURACY

SGT 4064.5 SGR 898.5 SG3 894.7
RRT -.9689 RRF .9924 RTF -.9513
SGB 4162.6 R23 -.2751 R13 .9544
SG1 4156.9 SG2 217.5 THA 167.88

ORBIT DETERMINATION ACCURACY

ST 1260.6 SR 210.4 SS 1054.5
CRT -.9827 CRS -.8537 CST .7438
LSA 1552.9 MSA 577.8 SSA 5.1
EL1 1277.4 EL2 38.5 ALF 170.68

LAUNCH DATE NOV 5 1964 FLIGHT TIME 230.00 ARRIVAL DATE JUN 23 1965

DISTANCE 546.773

HELIOCENTRIC CONIC — EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 33.313 GAL -3.77 AZL 86.01 HCA 174.30 SMA 195.18 ECC .24845 INC 3.9905 V1 30.043
RP 236.46 LAP .40 LOP 216.93 VP 21.036 GAP 7.66 AZP 93.97 TAL 340.91 TAP 155.21 RCA 146.69 APO 243.67 V2 23.244
RC 192.768 GL 32.86 GP -8.41 ZAL 114.34 ZAP 152.88 ETS 195.31 ZAE 164.20 ETE 331.21 ZAC 81.91 ETC 255.73 CLP 154.13

PLANETOCENTRIC CONIC

C3 18.179 VHL 4.264 DLA 36.95 RAL 178.41 RAD 6567.7 VEL 11.814 PTH 2.09 VHP 5.385 DPA -10.97 RAP 187.08 ECC 1.2992

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
65.21	11 20 2	4070.26	-25.91	176.45	48.18	62.69	12 27 52	3470.3	-29.35	168.71
114.79	17 12 50	2957.50	-25.90	92.65	48.18	62.68	18 2 8	2357.5	-29.34	84.91
65.21	11 20 2	4070.26	-25.91	176.45	48.18	62.69	12 27 52	3470.3	-29.35	168.71
114.79	17 12 50	2957.50	-25.90	92.65	48.18	62.68	18 2 8	2357.5	-29.34	84.91
65.21	11 20 2	4070.26	-25.91	176.45	48.18	62.69	12 27 52	3470.3	-29.35	168.71
114.79	17 12 50	2957.50	-25.90	92.65	48.18	62.68	18 2 8	2357.5	-29.34	84.91

DIFFERENTIAL CORRECTIONS

TDE .5181 TRA-2.0347 TC3 2.4216 BAU .6249
RDE -.0461 RRA .4572 RC3 -.8642 FAU .18458
FDE .3259 FRA 4.5882 FC3-8.7905 BSP 14384
BDE .5202 BRA 2.0854 BC3 2.5712 FSP 2934

MID-COURSE EXECUTION ACCURACY

SGT 4056.3 SGR 1066.8 SG3 930.2
RRT -.9695 RRF .9951 RTF -.9519
SGB 4194.2 R23 -.2800 R13 .9563
SG1 4186.6 SG2 253.3 THA 165.64

ORBIT DETERMINATION ACCURACY

ST 1241.8 SR 239.9 SS 1100.9
CRT -.9443 CRS -.9015 CST .7094
LSA 1555.1 MSA 627.1 SSA 4.1
EL1 1262.3 EL2 77.6 ALF 169.62

LAUNCH DATE NOV 5 1964 FLIGHT TIME 232.00 ARRIVAL DATE JUN 25 1965

HELIOCENTRIC CONIC DISTANCE 550.359 EARTH TO MARS

RL	148.31	LAL	-.00	LOL	42.62	VL	33.284	GAL	-3.68	AZL	85.56	HCA	175.27	SMA	194.64	ECC	.24605	INC	4.4344	V1	30.043
RP	236.12	LAP	.37	LOP	217.90	VP	21.030	GAP	7.23	AZP	94.42	TAL	341.20	TAP	156.47	RCA	146.75	APO	242.53	V2	23.279
RC	194.983	GL	36.14	GP	-10.32	ZAL	113.06	ZAP	151.42	ETS	198.05	ZAE	164.00	ETE	323.74	ZAC	80.06	ETC	255.65	CLP	153.20

PLANETOCENTRIC CONIC

C3	18.977	VHL	4.356	DLA	39.96	RAL	180.08	RAD	6567.8	VEL	11.847	PTH	2.10	VHP	5.299	DPA	-12.72	RAP	186.30	ECC	1.3123

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
60.53	11 3 47	4146.52	-27.50	183.72	51.71	59.77	12 12 54	3546.5	-31.29	176.05
119.47	17 42 27	2901.41	-27.48	88.98	51.70	59.76	18 30 48	2301.4	-31.28	81.31
60.53	11 3 47	4146.52	-27.50	183.72	51.71	59.77	12 12 54	3546.5	-31.29	176.05
119.47	17 42 27	2901.41	-27.48	88.98	51.70	59.76	18 30 48	2301.4	-31.28	81.31
60.53	11 3 47	4146.52	-27.50	183.72	51.71	59.77	12 12 54	3546.5	-31.29	176.05
119.47	17 42 27	2901.41	-27.48	88.98	51.70	59.76	18 30 48	2301.4	-31.28	81.31

DIFFERENTIAL CORRECTIONS

TDE	.5170	TRA	-1.9888	TC3	2.3460	BAU	.6483
RDE	-.0240	RRA	.5594	RC3	-1.0129	FAU	.19165
FDE	.4648	FRA	4.7118	FC3	-8.7429	BSP	14343
BDE	.5175	BRA	2.0660	BC3	2.5553	FSP	2989

MID-COURSE EXECUTION ACCURACY

SGT	4035.8	SGR	1304.3	SG3	961.2		
RRT	-.9691	RRF	.9968	RTF	-.9521		
SGB	4241.3	R23	-.2786	R13	.9587		
SG1	4230.2	SG2	307.0	THA	162.51		

ORBIT DETERMINATION ACCURACY

ST	1230.6	SR	290.9	SS	1150.0
CRT	-.8880	CRS	-.9379	CST	.6735
LSA	1568.5	MSA	679.2	SSA	3.2
EL1	1257.7	EL2	130.9	ALF	168.01

LAUNCH DATE NOV 5 1964 FLIGHT TIME 234.00 ARRIVAL DATE JUN 27 1965

HELIOCENTRIC CONIC DISTANCE 553.962 EARTH TO MARS

RL	148.31	LAL	-.00	LOL	42.62	VL	33.257	GAL	-3.60	AZL	84.89	HCA	176.24	SMA	194.12	ECC	.24376	INC	5.1130	V1	30.043
RP	235.77	LAP	.33	LOP	218.88	VP	21.027	GAP	6.80	AZP	95.10	TAL	341.48	TAP	157.73	RCA	146.80	APO	241.44	V2	23.315
RC	197.185	GL	40.65	GP	-13.18	ZAL	111.41	ZAP	149.45	ETS	201.89	ZAE	162.95	ETE	314.00	ZAC	77.26	ETC	255.51	CLP	152.19

PLANETOCENTRIC CONIC

C3	20.614	VHL	4.540	DLA	43.95	RAL	182.93	RAD	6567.8	VEL	11.916	PTH	2.12	VHP	5.243	DPA	-15.29	RAP	185.01	ECC	1.3393

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
54.86	10 51 4	4232.18	-29.18	192.41	57.56	55.54	12 1 36	3632.2	-33.47	184.92
125.14	18 17 54	2855.05	-29.16	86.14	57.55	55.53	19 5 29	2255.0	-33.46	78.66
54.86	10 51 4	4232.18	-29.18	192.41	57.56	55.54	12 1 36	3632.2	-33.47	184.92
125.14	18 17 54	2855.05	-29.16	86.14	57.55	55.53	19 5 29	2255.0	-33.46	78.66
54.86	10 51 4	4232.18	-29.18	192.41	57.56	55.54	12 1 36	3632.2	-33.47	184.92
125.14	18 17 54	2855.05	-29.16	86.14	57.55	55.53	19 5 29	2255.0	-33.46	78.66

DIFFERENTIAL CORRECTIONS

TDE	.5268	TRA	-1.9637	TC3	2.1388	BAU	.6722
RDE	.0136	RRA	.7281	RC3	-1.1727	FAU	.19389
FDE	.6717	FRA	4.9037	FC3	-8.1431	BSP	15007
BDE	.5270	BRA	2.0944	BC3	2.4392	FSP	3164

MID-COURSE EXECUTION ACCURACY

SGT	4008.0	SGR	1662.3	SG3	982.4		
RRT	-.9682	RRF	.9978	RTF	-.9521		
SGB	4339.0	R23	-.2692	R13	.9624		
SG1	4321.8	SG2	385.9	THA	157.94		

ORBIT DETERMINATION ACCURACY

ST	1229.6	SR	384.6	SS	1233.8
CRT	-.8160	CRS	-.9632	CST	.6308
LSA	1618.0	MSA	751.0	SSA	2.3
EL1	1270.2	EL2	215.2	ALF	165.25

LAUNCH DATE NOV 5 1964 FLIGHT TIME 236.00 ARRIVAL DATE JUN 29 1965

HELIOCENTRIC CONIC DISTANCE 557.580 EARTH TO MARS

RL	148.31	LAL	-.00	LOL	42.62	VL	33.231	GAL	-3.52	AZL	83.73	HCA	177.22	SMA	193.63	ECC	.24156	INC	6.2648	V1	30.043
RP	235.42	LAP	.30	LOP	219.85	VP	21.026	GAP	6.38	AZP	96.26	TAL	341.76	TAP	158.98	RCA	146.86	APO	240.41	V2	23.351
RC	199.372	GL	47.27	GP	-17.88	ZAL	109.07	ZAP	146.34	ETS	207.46	ZAE	160.07	ETE	302.03	ZAC	72.64	ETC	255.19	CLP	150.99

PLANETOCENTRIC CONIC

C3	24.284	VHL	4.928	DLA	49.47	RAL	188.28	RAD	6568.0	VEL	12.069	PTH	2.16	VHP	5.261	DPA	-19.43	RAP	182.67	ECC	1.3997

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
47.58	10 46 18	4337.97	-30.51	203.65	68.04	48.96	11 58 36	3738.0	-35.55	196.65
132.42	19 5 20	2828.72	-30.50	84.84	68.03	48.96	19 52 29	2228.7	-35.54	77.84
47.58	10 46 18	4337.97	-30.51	203.65	68.04	48.96	11 58 36	3738.0	-35.55	196.65
132.42	19 5 20	2828.72	-30.50	84.84	68.03	48.96	19 52 29	2228.7	-35.54	77.84
47.58	10 46 18	4337.97	-30.51	203.65	68.04	48.96	11 58 36	3738.0	-35.55	196.65
132.42	19 5 20	2828.72	-30.50	84.84	68.03	48.96	19 52 29	2228.7	-35.54	77.84

DIFFERENTIAL CORRECTIONS

TDE	.6658	TRA	-1.9058	TC3	1.8414	BAU	.7450
RDE	.0257	RRA	1.0029	RC3	-1.3695	FAU	.19586
FDE	.6587	FRA	4.9431	FC3	-6.9825	BSP	15361
BDE	.6663	BRA	2.1536	BC3	2.2949	FSP	3064

MID-COURSE EXECUTION ACCURACY

SGT	3939.4	SGR	2245.5	SG3	970.4		
RRT	-.9659	RRF	.9984	RTF	-.9504		
SGB	4534.5	R23	-.2501	R13	.9680		
SG1	4505.9	SG2	508.1	THA	150.76		

ORBIT DETERMINATION ACCURACY

ST	1283.9	SR	540.7	SS	1258.8
CRT	-.7631	CRS	-.9748	CST	.5997
LSA	1691.9	MSA	814.0	SSA	1.5
EL1	1353.1	EL2	331.5	ALF	161.00

LAUNCH DATE NOV 5 1964 FLIGHT TIME 238.00 ARRIVAL DATE JUL 1 1965

HELIOCENTRIC CONIC DISTANCE 561.212 EARTH TO MARS

RL	148.31	LAL	-.00	LOL	42.62	VL	33.206	GAL	-3.44	AZL	81.33	HCA	178.19	SMA	193.17	ECC	.23946	INC	8.6701	V1	30.043
RP	235.06	LAP	.27	LOP	220.83	VP	21.027	GAP	5.97	AZP	98.67	TAL	342.03	TAP	160.23	RCA	146.91	APO	239.43	V2	23.387
RC	201.544	GL	57.82	GP	-26.73	ZAL	105.36	ZAP	140.09	ETS	215.43	ZAE	152.91	ETE	288.55	ZAC	63.86	ETC	254.26	CLP	149.18

PLANETOCENTRIC CONIC

C3	34.853	VHL	5.904	DLA	57.18	RAL	200.44	RAD	6568.4	VEL	12.499	PTH	2.26	VHP	5.534	DPA	-26.99	RAP	177.58	ECC	1.5736

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
38.00	11 6 28	4490.73	-29.42	219.04	89.13	38.47	12 21 19	3890.7	-35.54	213.35
142.00	20 22 12	2856.44	-29.41	86.54	89.12	38.47	21 9 48	2256.4	-35.53	80.85
38.00	11 6 28	4490.73	-29.42	219.04	89.13	38.47	12 21 19	3890.7	-35.54	213.35
142.00	20 22 12	2856.44	-29.41	86.54	89.12	38.47	21 9 48	2256.4	-35.53	80.85
38.00	11 6 28	4490.73	-29.42	219.04	89.13	38.47	12 21 19	3890.7	-35.54	213.35
142.00	20 22 12	2856.44	-29.41	86.54	89.12	38.47	21 9 48	2256.4	-35.53	80.85

DIFFERENTIAL CORRECTIONS

TDE	1.2226	TRA	-1.8174	TC3	1.2921	BAU	.9112
RDE	-.2141	RRA	1.5855	RC3	-1.4679	FAU	.18127
FDE	-.0813	FRA	4.7073	FC3	-4.5027	BSP	17112
BDE	1.2412	BRA	2.4118	BC3	1.9556	FSP	2762

MID-COURSE EXECUTION ACCURACY

SGT	3785.3	SGR	3333.1	SG3	861.1		
RRT	-.9616	RRF	.9984	RTF	-.9447		
SGB	5043.6	R23	-.2114	R13	.9774		
SG1	4995.8	SG2	693.2	THA	138.78		

ORBIT DETERMINATION ACCURACY

ST	1537.3	SR	878.3	SS	1212.1
CRT	-.8003	CRS	-.9785	CST	.6595
LSA	1981.1	MSA	824.1	SSA	.7
EL1	1705.7	EL2	474.6	ALF	153.19

LAUNCH DATE NOV 5 1964 FLIGHT TIME 244.00 ARRIVAL DATE JUL 7 1965

HELIOCENTRIC CONIC DISTANCE 572.272 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 33.138 GAL -3.24 AZL 98.61 HCA 181.18 SMA 191.91 ECC .23378 INC 8.6012 V1 30.043
RP 233.98 LAP .18 LOP 223.79 VP 21.044 GAP 4.77 AZP 81.39 TAL 342.74 TAP 163.93 RCA 147.04 APO 236.77 V2 23.498
RC 207.958 GL -58.47 GP 38.68 ZAL 104.40 ZAP 129.28 ETS 137.29 ZAE 140.05 ETE 82.12 ZAC 127.02 ETC 252.25 CLP 144.19

PLANETOCENTRIC CONIC

C3 33.780 VHL 5.812 DLA -45.59 RAL 134.96 RAD 6568.3 VEL 12.456 PTH 2.25 VHP 6.087 DPA 32.68 RAP 205.83 ECC 1.5559

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
14.10	12 41 51	2548.55	-6.55	83.46	329.35	167.54	13 24 19	1948.5	1.26	82.16
14.10	22 56 35	1285.25	73.69	38.70	73.41	130.24	23 18 0	685.2	77.33	10.14
24.10	13 43 13	2483.21	-3.51	78.46	339.46	158.90	14 24 37	1883.2	3.96	76.00
24.10	22 36 34	1306.60	65.07	26.08	55.87	121.51	22 58 21	706.6	68.22	7.84
34.10	14 55 18	2369.14	1.31	71.01	349.60	150.42	15 34 47	1769.1	8.26	67.45
34.10	22 10 58	1347.24	55.36	20.81	44.35	119.75	22 33 25	747.2	58.65	7.80

DIFFERENTIAL CORRECTIONS
TDE 3.1103 TRA-1.1000 TC3 1.4612 BAU 1.2470
RDE 4.0301 RRA -.4929 RC3 2.3430 FAU .15828
FDE-6.8058 FRA .5820 FC3-4.0566 BSP 13981
BDE 5.0907 BRA 1.2054 BC3 2.7613 FSP 1455

MID-COURSE EXECUTION ACCURACY
SGT 3832.4 SGR 4866.6 SG3 712.1
RRT .9589 RRF -.9990 RTF -.9451
SGB 6194.5 R23 -.1536 R13 -.9881
SG1 6134.0 SG2 863.1 THA 52.06

ORBIT DETERMINATION ACCURACY
ST 3101.6 SR 3979.2 SS 3531.6
CRT .9952 CRS .9999 CST .9935
LSA 6151.9 MSA 284.4 SSA .7
EL1 5039.5 EL2 240.0 ALF 52.10

LAUNCH DATE NOV 5 1964 FLIGHT TIME 246.00 ARRIVAL DATE JUL 9 1965

HELIOCENTRIC CONIC DISTANCE 575.957 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 33.118 GAL -3.18 AZL 93.85 HCA 182.17 SMA 191.53 ECC .23204 INC 3.8424 V1 30.043
RP 233.62 LAP .15 LOP 224.78 VP 21.053 GAP 4.38 AZP 86.15 TAL 343.00 TAP 165.16 RCA 147.09 APO 235.97 V2 23.536
RC 210.060 GL -34.16 GP 24.75 ZAL 110.84 ZAP 138.53 ETS 146.97 ZAE 158.64 ETE 76.56 ZAC 114.07 ETC 254.49 CLP 145.59

PLANETOCENTRIC CONIC

C3 15.623 VHL 3.953 DLA -23.10 RAL 146.57 RAD 6567.6 VEL 11.705 PTH 2.06 VHP 4.972 DPA 19.40 RAP 200.61 ECC 1.2571

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	21 37 9	1337.50	6.96	350.78	5.80	117.52	21 59 27	737.5	10.59	343.99
90.00	2 41 40	5620.59	28.10	263.68	11.95	93.65	4 15 20	5020.6	28.31	255.02
100.00	22 40 49	1132.01	5.42	334.84	4.96	119.44	22 59 41	532.0	9.30	328.20
100.00	4 20 41	5301.31	29.85	240.28	12.04	91.68	5 49 3	4701.3	29.76	231.48
110.00	23 13 11	1030.54	1.84	324.93	2.75	124.14	23 30 21	430.5	6.31	318.70
110.00	6 4 49	4975.55	34.05	215.48	11.97	86.80	7 27 44	4375.6	33.23	206.33

DIFFERENTIAL CORRECTIONS
TDE 1.6253 TRA-1.4389 TC3 2.7936 BAU .8310
RDE 1.3087 RRA -.6804 RC3 2.8333 FAU .21198
FDE-5.2548 FRA 2.6074 FC-11.7470 BSP 15671
BDE 2.0867 BRA 1.5916 BC3 3.9789 FSP 3215

MID-COURSE EXECUTION ACCURACY
SGT 3945.7 SGR 3124.9 SG3 1096.8
RRT .9608 RRF -.9997 RTF -.9537
SGB 5033.3 R23 -.1966 R13 -.9805
SG1 4986.[illegible] SG2 685.4 THA 38.12

ORBIT DETERMINATION ACCURACY
ST 2453.1 SR 1925.4 SS 3317.0
CRT .9936 CRS 1.0000 CST .9927
LSA 4546.1 MSA 246.1 SSA 1.2
EL1 3113.7 EL2 171.6 ALF 38.08

LAUNCH DATE NOV 5 1964 FLIGHT TIME 248.00 ARRIVAL DATE JUL 11 1965

HELIOCENTRIC CONIC DISTANCE 579.666 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 33.098 GAL -3.12 AZL 92.06 HCA 183.16 SMA 191.17 ECC .23038 INC 2.0552 V1 30.043
RP 233.25 LAP .11 LOP 225.77 VP 21.065 GAP 4.00 AZP 87.94 TAL 343.23 TAP 166.39 RCA 147.13 APO 235.21 V2 23.574
RC 212.144 GL -19.86 GP 18.04 ZAL 113.07 ZAP 141.23 ETS 154.54 ZAE 160.28 ETE 74.58 ZAC 107.66 ETC 255.15 CLP 145.09

PLANETOCENTRIC CONIC

C3 12.214 VHL 3.495 DLA -9.60 RAL 151.60 RAD 6567.5 VEL 11.559 PTH 2.02 VHP 4.616 DPA 13.16 RAP 198.02 ECC 1.2010

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 41 31	1800.64	-7.85	16.76	4.73	117.29	20 11 32	1200.6	-4.13	10.06
90.00	5 17 28	5049.64	23.70	222.91	7.85	74.03	6 41 37	4449.6	21.28	215.07
100.00	20 58 8	1553.45	-8.75	358.10	4.25	118.70	21 24 2	953.4	-4.85	351.49
100.00	6 43 31	4772.06	24.67	202.18	7.53	72.57	8 3 4	4172.1	22.05	194.36
110.00	21 55 39	1373.38	-11.11	343.02	2.83	122.54	22 18 32	773.4	-6.74	336.66
110.00	8 2 31	4524.90	27.26	182.39	6.51	68.53	9 17 55	3924.9	24.10	174.65

DIFFERENTIAL CORRECTIONS
TDE 1.1043 TRA-1.5105 TC3 3.4080 BAU .6974
RDE .6317 RRA -.5812 RC3 2.5737 FAU .23776
FDE-3.9215 FRA 3.6754 FC-16.8520 BSP 15296
BDE 1.2722 BRA 1.6185 BC3 4.2706 FSP 4088

MID-COURSE EXECUTION ACCURACY
SGT 3906.4 SGR 2289.6 SG3 1274.0
RRT .9601 RRF -.9998 RTF -.9556
SGB 4528.0 R23 -.2255 R13 -.9741
SG1 4493.6 SG2 556.8 THA 29.87

ORBIT DETERMINATION ACCURACY
ST 1962.3 SR 1076.8 SS 2670.0
CRT .9926 CRS 1.0000 CST .9931
LSA 3478.8 MSA 191.6 SSA 3.3
EL1 2235.4 EL2 115.1 ALF 28.66

LAUNCH DATE NOV 5 1964 FLIGHT TIME 250.00 ARRIVAL DATE JUL 13 1965

HELIOCENTRIC CONIC DISTANCE 583.390 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 33.079 GAL -3.06 AZL 91.12 HCA 184.16 SMA 190.83 ECC .22881 INC 1.1109 V1 30.043
RP 232.88 LAP .08 LOP 226.77 VP 21.078 GAP 3.62 AZP 88.88 TAL 343.45 TAP 167.61 RCA 147.17 APO 234.49 V2 23.612
RC 214.210 GL -11.18 GP 14.26 ZAL 113.60 ZAP 141.82 ETS 159.65 ZAE 164.17 ETE 74.92 ZAC 104.00 ETC 255.42 CLP 144.19

PLANETOCENTRIC CONIC

C3 11.118 VHL 3.334 DLA -1.34 RAL 154.33 RAD 6567.4 VEL 11.511 PTH 2.01 VHP 4.420 DPA 9.68 RAP 196.48 ECC 1.1830

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 49 22	2041.84	-15.04	30.83	6.73	114.28	19 23 24	1441.8	-11.63	23.81
90.00	6 31 25	4769.17	17.30	204.85	7.15	67.23	7 50 54	4169.2	14.07	197.67
100.00	20 10 5	1781.46	-15.88	11.28	6.33	115.66	20 39 46	1181.5	-12.29	4.32
100.00	7 53 23	4504.78	18.15	185.02	6.77	65.84	9 8 27	3904.8	14.74	177.89
110.00	21 16 54	1572.33	-18.11	354.18	5.11	119.50	21 43 6	972.3	-14.05	347.43
110.00	9 3 3	4286.68	20.42	167.29	5.59	61.97	10 14 30	3686.7	16.51	160.34

DIFFERENTIAL CORRECTIONS
TDE .8731 TRA-1.4984 TC3 3.7061 BAU .6455
RDE .3880 RRA -.4755 RC3 2.2638 FAU .25988
FDE-3.1745 FRA 4.2187 FC-20.2356 BSP 14333
BDE .9554 BRA 1.5720 BC3 4.3428 FSP 4428

MID-COURSE EXECUTION ACCURACY
SGT 3872.0 SGR 1841.7 SG3 1405.0
RRT .9587 RRF -.9996 RTF -.9563
SGB 4287.6 R23 -.2414 R13 -.9700
SG1 4261.1 SG2 475.9 THA 24.84

ORBIT DETERMINATION ACCURACY
ST 1689.1 SR 711.9 SS 2248.0
CRT .9922 CRS .9996 CST .9951
LSA 2897.2 MSA 140.2 SSA 7.7
EL1 1831.2 EL2 81.6 ALF 22.74

LAUNCH DATE NOV 5 1964 FLIGHT TIME 252.00 ARRIVAL DATE JUL 15 1965

HELIOCENTRIC CONIC DISTANCE 587.129 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 33.061 GAL -3.00 AZL 90.54 HCA 185.16 SMA 190.51 ECC .22731 INC .5360 V1 30.043
RP 232.51 LAP .05 LOP 227.77 VP 21.093 GAP 3.25 AZP 89.46 TAL 343.67 TAP 168.82 RCA 147.20 APO 233.81 V2 23.650
RC 216.258 GL -5.52 GP 11.85 ZAL 113.53 ZAP 141.56 ETS 163.18 ZAE 166.75 ETE 77.35 ZAC 101.65 ETC 255.56 CLP 143.16

PLANETOCENTRIC CONIC

C3 10.645 VHL 3.263 DLA 4.08 RAL 155.99 RAD 6567.4 VEL 11.491 PTH 2.00 VHP 4.278 DPA 7.51 RAP 195.43 ECC 1.1752

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 15 40	2201.37	-19.25	40.65	8.77	111.18	18 52 21	1601.4	-16.20	33.30
90.00	7 18 21	4591.83	12.33	194.21	7.54	64.31	8 34 53	3991.8	8.77	187.33
100.00	19 38 55	1932.84	-20.10	20.53	8.40	112.60	20 11 8	1332.8	-16.86	13.23
100.00	8 37 47	4335.60	13.16	174.94	7.12	62.92	9 50 2	3735.6	9.42	168.15
110.00	20 51 33	1705.51	-22.38	2.16	7.28	116.54	21 19 58	1105.5	-18.64	355.02
110.00	9 41 38	4135.69	15.35	158.52	5.86	59.08	10 50 34	3535.7	11.14	151.95

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .7200 TRA-1.4871 TC3 3.7548 BAU .6032 SGT 3802.1 SGR 1541.3 SG3 1497.2 ST 1490.3 SR 513.4 SS 1923.5
RDE .2646 RRA -.4072 RC3 1.9660 FAU .27392 RRT .9569 RRF -.9992 RTF -.9562 CRT .9922 CRS .9979 CST .9978
FDE-2.5935 FRA 4.6924 FC-22.2769 BSP 14121 SGB 4102.7 R23 -.2512 R13 -.9671 LSA 2485.2 MSA 88.1 SSA 18.3
BDE .7671 BRA 1.5418 BC3 4.2383 FSP 4885 SG1 4081.4 SG2 417.0 THA 21.44 EL1 1575.1 EL2 60.4 ALF 18.90

LAUNCH DATE NOV 5 1964 FLIGHT TIME 254.00 ARRIVAL DATE JUL 17 1965

HELIOCENTRIC CONIC DISTANCE 590.882 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 33.044 GAL -2.95 AZL 90.15 HCA 186.16 SMA 190.20 ECC .22589 INC .1162 V1 30.043
RP 232.14 LAP .02 LOP 228.78 VP 21.110 GAP 2.88 AZP 89.85 TAL 343.87 TAP 170.03 RCA 147.23 APO 233.16 V2 23.689
RC 218.287 GL -1.57 GP 10.20 ZAL 113.24 ZAP 140.89 ETS 165.74 ZAE 168.56 ETE 81.82 ZAC 100.01 ETC 255.64 CLP 142.04

PLANETOCENTRIC CONIC

C3 10.392 VHL 3.224 DLA 7.90 RAL 157.07 RAD 6567.4 VEL 11.480 PTH 2.00 VHP 4.161 DPA 6.05 RAP 194.64 ECC 1.1710

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 50 48	2317.08	-21.92	48.08	10.45	108.39	18 29 25	1717.1	-19.20	40.46
90.00	7 51 48	4466.36	8.53	186.95	8.14	62.90	9 6 14	3866.4	4.83	180.23
100.00	19 15 57	2042.44	-22.81	27.55	10.12	109.86	19 49 59	1442.4	-19.89	19.96
100.00	9 9 20	4216.23	9.36	168.11	7.70	61.48	10 19 36	3616.2	5.48	161.48
110.00	20 32 53	1801.67	-25.18	8.23	9.07	113.93	21 2 54	1201.7	-21.73	.77
110.00	10 8 53	4029.77	11.56	152.65	6.38	57.61	11 16 3	3429.8	7.20	146.27

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .6258 TRA-1.4542 TC3 3.7672 BAU .5774 SGT 3734.4 SGR 1343.8 SG3 1587.9 ST 1362.2 SR 406.2 SS 1727.4
RDE .2013 RRA -.3513 RC3 1.7551 FAU .28902 RRT .9548 RRF -.9984 RTF -.9559 CRT .9915 CRS .9934 CST .9990
FDE-2.2193 FRA 5.0223 FC-24.0791 BSP 13661 SGB 3968.8 R23 -.2565 R13 -.9650 LSA 2236.0 MSA 54.8 SSA 40.0
BDE .6574 BRA 1.4960 BC3 4.1560 FSP 5185 SG1 3950.8 SG2 377.7 THA 19.14 EL1 1420.5 EL2 50.6 ALF 16.49

LAUNCH DATE NOV 5 1964 FLIGHT TIME 256.00 ARRIVAL DATE JUL 19 1965

HELIOCENTRIC CONIC DISTANCE 594.648 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 33.028 GAL -2.90 AZL 89.87 HCA 187.17 SMA 189.91 ECC .22454 INC .1191 V1 30.043
RP 231.76 LAP -.02 LOP 229.78 VP 21.129 GAP 2.52 AZP 90.13 TAL 344.06 TAP 171.23 RCA 147.26 APO 232.55 V2 23.728
RC 220.299 GL 1.33 GP 9.00 ZAL 112.87 ZAP 140.00 ETS 167.66 ZAE 169.83 ETE 88.27 ZAC 98.80 ETC 255.70 CLP 140.86

PLANETOCENTRIC CONIC

C3 10.229 VHL 3.198 DLA 10.73 RAL 157.79 RAD 6567.4 VEL 11.472 PTH 1.99 VHP 4.057 DPA 5.03 RAP 193.98 ECC 1.1683

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 31 3	2406.11	-23.71	53.99	11.78	105.95	18 11 9	1806.1	-21.29	46.15
90.00	8 17 21	4370.98	5.53	181.55	8.74	62.18	9 30 11	3771.0	1.76	174.89
100.00	18 57 45	2126.48	-24.64	33.12	11.48	107.48	19 33 12	1526.5	-22.02	25.30
100.00	9 33 19	4125.84	6.39	163.05	8.27	60.74	10 42 5	3525.8	2.44	156.49
110.00	20 18 9	1874.89	-27.11	13.04	10.50	111.67	20 49 24	1274.9	-23.92	5.32
110.00	10 29 25	3950.20	8.62	148.36	6.90	56.79	11 35 15	3350.2	4.19	142.07

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .5515 TRA-1.4226 TC3 3.7134 BAU .5522 SGT 3653.3 SGR 1198.2 SG3 1669.8 ST 1259.7 SR 337.7 SS 1581.5
RDE .1619 RRA -.3112 RC3 1.5863 FAU .30173 RRT .9523 RRF -.9973 RTF -.9554 CRT .9902 CRS .9838 CST .9977
FDE-1.8970 FRA 5.3496 FC-25.5372 BSP 13403 SGB 3844.8 R23 -.2591 R13 -.9633 LSA 2048.0 MSA 78.1 SSA 36.0
BDE .5748 BRA 1.4563 BC3 4.0380 FSP 5557 SG1 3828.9 SG2 348.9 THA 17.49 EL1 1303.3 EL2 45.6 ALF 14.88

LAUNCH DATE NOV 5 1964 FLIGHT TIME 258.00 ARRIVAL DATE JUL 21 1965

HELIOCENTRIC CONIC DISTANCE 598.428 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 33.013 GAL -2.86 AZL 89.66 HCA 188.18 SMA 189.63 ECC .22326 INC .3386 V1 30.043
RP 231.38 LAP -.05 LOP 230.79 VP 21.149 GAP 2.17 AZP 90.34 TAL 344.24 TAP 172.42 RCA 147.29 APO 231.97 V2 23.768
RC 222.292 GL 3.55 GP 8.08 ZAL 112.47 ZAP 138.97 ETS 169.15 ZAE 170.65 ETE 96.51 ZAC 97.86 ETC 255.74 CLP 139.64

PLANETOCENTRIC CONIC

C3 10.109 VHL 3.179 DLA 12.93 RAL 158.30 RAD 6567.4 VEL 11.467 PTH 1.99 VHP 3.962 DPA 4.29 RAP 193.41 ECC 1.1664

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 14 37	2477.66	-24.96	58.86	12.83	103.82	17 55 54	1877.7	-22.81	50.85
90.00	8 37 48	4294.71	3.09	177.27	9.27	61.84	9 49 23	3694.7	-.70	170.64
100.00	18 42 39	2193.72	-25.94	37.69	12.55	105.40	19 19 13	1593.7	-23.57	29.69
100.00	9 52 27	4053.89	3.98	159.07	8.78	60.35	11 0 0	3453.9	-.00	152.54
110.00	20 5 59	1932.96	-28.51	16.98	11.63	109.72	20 38 12	1333.0	-25.55	9.05
110.00	10 45 36	3887.41	6.27	145.02	7.36	56.33	11 50 23	3287.4	1.80	138.79

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .5048 TRA-1.3747 TC3 3.6809 BAU .5356 SGT 3573.0 SGR 1094.0 SG3 1756.6 ST 1189.0 SR 296.4 SS 1495.4
RDE .1399 RRA -.2768 RC3 1.4680 FAU .31645 RRT .9504 RRF -.9958 RTF -.9555 CRT .9881 CRS .9688 CST .9932
FDE-1.6803 FRA 5.5996 FC-27.1004 BSP 12861 SGB 3736.8 R23 -.2574 R13 -.9624 LSA 1929.3 MSA 121.2 SSA 28.2
BDE .5238 BRA 1.4023 BC3 3.9628 FSP 5824 SG1 3722.5 SG2 326.6 THA 16.35 EL1 1224.6 EL2 44.2 ALF 13.86

LAUNCH DATE NOV 5 1964 FLIGHT TIME 260.00 ARRIVAL DATE JUL 23 1965

HELIOCENTRIC CONIC DISTANCE 602.159 EARTH TO MARS

RL	148.31	LAL	-.00	LOL	42.62	VL	32.998	GAL	-2.82	AZL	89.49	HCA	189.19	SMA	189.37	ECC	.22207	INC	.5074	V1	30.043
RP	231.01	LAP	-.08	LOP	231.81	VP	21.170	GAP	1.83	AZP	90.50	TAL	344.38	TAP	173.57	RCA	147.31	APO	231.42	V2	23.807
RC	224.266	GL	5.31	GP	7.36	ZAL	112.15	ZAP	137.88	ETS	170.33	ZAE	171.06	ETE	105.79	ZAC	97.11	ETC	255.77	CLP	138.41

PLANETOCENTRIC CONIC

C3	10.020	VHL	3.165	DLA	14.67	RAL	158.72	RAD	6567.4	VEL	11.463	PTH	1.99	VHP	3.876	DPA	3.72	RAP	192.92	ECC	1.1649

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 1 0	2536.24	-25.85	62.92	13.72	101.98	17 43 16	1936.2	-23.94	54.77
90.00	8 54 47	4232.61	1.09	173.80	9.80	61.70	10 5 20	3632.6	-2.70	167.17
100.00	18 30 14	2248.49	-26.87	41.49	13.46	103.61	19 7 42	1648.5	-24.73	33.35
100.00	10 8 15	3995.59	2.01	155.87	9.29	60.17	11 14 50	3395.6	-1.98	149.34
110.00	19 56 6	1979.83	-29.54	20.23	12.61	108.04	20 29 5	1379.8	-26.79	12.13
110.00	10 58 52	3837.02	4.36	142.37	7.83	56.06	12 2 49	3237.0	-.13	136.16

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.1050	TRA	-1.6854	TC3	2.1458	BAU	.3307	SGT	3438.7	SGR	958.8	SG3	1761.3	ST	965.7	SR	228.2	SS	1337.6
RDE	.0868	RRA	-.2918	RC3	1.2198	FAU	.29123	RRT	.8495	RRF	-.9925	RTF	-.8817	CRT	.8429	CRS	.8902	CST	.9929
FDE	-.6250	FRA	6.7716	FC	-25.1616	BSP	20946	SGB	3569.9	R23	-.4316	R13	-.8967	LSA	1659.3	MSA	136.2	SSA	46.4
BDE	.1363	BRA	1.7105	BC3	2.4683	FSP	7966	SG1	3535.8	SG2	491.9	THA	13.59	EL1	985.0	EL2	120.4	ALF	11.44

LAUNCH DATE NOV 5 1964 FLIGHT TIME 262.00 ARRIVAL DATE JUL 25 1965

HELIOCENTRIC CONIC DISTANCE 606.019 EARTH TO MARS

RL	148.31	LAL	-.00	LOL	42.62	VL	32.984	GAL	-2.77	AZL	89.36	HCA	190.21	SMA	189.12	ECC	.22090	INC	.6440	V1	30.043
RP	230.62	LAP	-.11	LOP	232.82	VP	21.194	GAP	1.48	AZP	90.63	TAL	344.57	TAP	174.78	RCA	147.34	APO	230.90	V2	23.847
RC	226.222	GL	6.75	GP	6.79	ZAL	111.72	ZAP	136.63	ETS	171.31	ZAE	171.03	ETE	115.94	ZAC	96.49	ETC	255.79	CLP	137.06

PLANETOCENTRIC CONIC

C3	9.928	VHL	3.151	DLA	16.14	RAL	158.91	RAD	6567.4	VEL	11.459	PTH	1.99	VHP	3.789	DPA	3.34	RAP	192.38	ECC	1.1634

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 48 5	2587.64	-26.53	66.53	14.31	100.29	17 31 12	1987.6	-24.84	58.27
90.00	9 9 15	4177.53	-.69	170.73	10.13	61.69	10 18 53	3577.5	-4.47	164.09
100.00	18 18 26	2296.26	-27.59	44.86	14.07	101.98	18 56 42	1696.3	-25.66	36.59
100.00	10 21 35	3944.14	.26	153.04	9.60	60.11	11 27 19	3344.1	-3.72	146.52
110.00	19 46 39	2020.24	-30.36	23.10	13.27	106.53	20 20 19	1420.2	-27.79	14.84
110.00	11 9 51	3792.93	2.68	140.06	8.09	55.91	12 13 4	3192.9	-1.81	133.86

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4144	TRA	-1.2980	TC3	3.4457	BAU	.4886	SGT	3364.5	SGR	948.6	SG3	1923.3	ST	1056.2	SR	247.5	SS	1386.4
RDE	.1148	RRA	-.2299	RC3	1.2958	FAU	.34293	RRT	.9399	RRF	-.9913	RTF	-.9510	CRT	.9763	CRS	.9134	CST	.9766
FDE	-1.2866	FRA	6.1360	FC	-29.9035	BSP	12305	SGB	3495.7	R23	-.2626	R13	-.9575	LSA	1749.0	MSA	197.9	SSA	24.6
BDE	.4301	BRA	1.3182	BC3	3.6812	FSP	6495	SG1	3481.7	SG2	312.9	THA	14.97	EL1	1083.5	EL2	52.2	ALF	12.92

LAUNCH DATE NOV 5 1964 FLIGHT TIME 264.00 ARRIVAL DATE JUL 27 1965

HELIOCENTRIC CONIC DISTANCE 609.834 EARTH TO MARS

RL	148.31	LAL	-.00	LOL	42.62	VL	32.971	GAL	-2.74	AZL	89.24	HCA	191.23	SMA	188.88	ECC	.21981	INC	.7536	V1	30.043
RP	230.24	LAP	-.15	LOP	233.84	VP	21.218	GAP	1.14	AZP	90.74	TAL	344.72	TAP	175.95	RCA	147.37	APO	230.40	V2	23.887
RC	228.159	GL	7.95	GP	6.32	ZAL	111.36	ZAP	135.35	ETS	172.12	ZAE	170.64	ETE	125.43	ZAC	95.95	ETC	255.82	CLP	135.71

PLANETOCENTRIC CONIC

C3	9.853	VHL	3.139	DLA	17.36	RAL	159.10	RAD	6567.4	VEL	11.456	PTH	1.99	VHP	3.709	DPA	3.05	RAP	191.88	ECC	1.1622

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 36 57	2631.64	-27.02	69.65	14.83	98.80	17 20 49	2031.6	-25.53	61.30
90.00	9 21 52	4130.50	-2.20	168.10	10.47	61.76	10 30 42	3530.5	-5.96	161.44
100.00	18 8 21	2336.92	-28.13	47.76	14.61	100.54	18 47 18	1736.9	-26.39	39.39
100.00	10 33 9	3900.46	-1.22	150.65	9.92	60.13	11 38 10	3300.5	-5.19	144.10
110.00	19 38 41	2054.27	-30.99	25.55	13.86	105.21	20 12 55	1454.3	-28.59	17.17
110.00	11 19 19	3755.87	1.26	138.13	8.37	55.84	12 21 54	3155.9	-3.23	131.92

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3891	TRA	-1.2451	TC3	3.3479	BAU	.4704	SGT	3254.5	SGR	901.1	SG3	2012.8	ST	1009.3	SR	235.7	SS	1364.3
RDE	.1100	RRA	-.2109	RC3	1.2430	FAU	.35825	RRT	.9354	RRF	-.9884	RTF	-.9494	CRT	.9694	CRS	.8774	CST	.9647
FDE	-1.1598	FRA	6.3551	FC	-31.4788	BSP	11755	SGB	3377.0	R23	-.2610	R13	-.9559	LSA	1697.2	MSA	233.5	SSA	23.7
BDE	.4043	BRA	1.2628	BC3	3.5712	FSP	6761	SG1	3362.9	SG2	308.3	THA	14.65	EL1	1034.9	EL2	56.4	ALF	12.79

LAUNCH DATE NOV 5 1964 FLIGHT TIME 266.00 ARRIVAL DATE JUL 29 1965

HELIOCENTRIC CONIC DISTANCE 613.659 EARTH TO MARS

RL	148.31	LAL	-.00	LOL	42.62	VL	32.958	GAL	-2.70	AZL	89.15	HCA	192.25	SMA	188.66	ECC	.21879	INC	.8487	V1	30.043
RP	229.86	LAP	-.18	LOP	234.87	VP	21.244	GAP	.81	AZP	90.83	TAL	344.86	TAP	177.12	RCA	147.39	APO	229.94	V2	23.927
RC	230.076	GL	8.96	GP	5.93	ZAL	111.04	ZAP	134.01	ETS	172.82	ZAE	169.93	ETE	133.83	ZAC	95.49	ETC	255.84	CLP	134.31

PLANETOCENTRIC CONIC

C3	9.784	VHL	3.128	DLA	18.40	RAL	159.24	RAD	6567.4	VEL	11.453	PTH	1.99	VHP	3.632	DPA	2.84	RAP	191.38	ECC	1.1610

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 26 53	2670.51	-27.40	72.44	15.25	97.45	17 11 23	2070.5	-26.08	64.02
90.00	9 33 3	4088.86	-3.54	165.78	10.77	61.89	10 41 11	3488.9	-7.28	159.08
100.00	17 59 15	2372.61	-28.55	50.33	15.06	99.25	18 38 48	1772.6	-26.98	41.88
100.00	10 43 21	3861.99	-2.52	148.53	10.20	60.20	11 47 43	3262.0	-6.47	141.97
110.00	19 31 34	2083.81	-31.50	27.70	14.35	104.03	20 6 18	1483.8	-29.25	19.21
110.00	11 27 32	3723.55	.03	136.44	8.61	55.82	12 29 36	3123.5	-4.46	130.23

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3593	TRA	-1.1999	TC3	3.1911	BAU	.4457	SGT	3127.9	SGR	860.8	SG3	2098.4	ST	958.9	SR	226.2	SS	1348.1
RDE	.1060	RRA	-.1967	RC3	1.1952	FAU	.37157	RRT	.9285	RRF	-.9849	RTF	-.9462	CRT	.9602	CRS	.8302	CST	.9489
FDE	-1.0005	FRA	6.6227	FC	-32.8786	BSP	11380	SGB	3244.1	R23	-.2628	R13	-.9530	LSA	1647.6	MSA	269.8	SSA	23.2
BDE	.3746	BRA	1.2159	BC3	3.4076	FSP	7130	SG1	3229.3	SG2	309.5	THA	14.47	EL1	983.3	EL2	61.6	ALF	12.81

LAUNCH DATE NOV 5 1964 FLIGHT TIME 268.00 ARRIVAL DATE JUL 31 1965

HELIOCENTRIC CONIC DISTANCE 617.496 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.947 GAL -2.67 AZL 89.07 HCA 193.28 SMA 188.45 ECC .21782 INC .9270 V1 30.043
RP 229.47 LAP -.21 LOP 235.90 VP 21.271 GAP .48 AZP 90.90 TAL 344.99 TAP 178.27 RCA 147.40 APO 229.50 V2 23.968
RC 231.973 GL 9.84 GP 5.60 ZAL 110.73 ZAP 132.62 ETS 173.41 ZAE 168.96 ETE 140.92 ZAC 95.08 ETC 255.86 CLP 132.87

PLANETOCENTRIC CONIC

C3 9.720 VHL 3.118 DLA 19.30 RAL 159.34 RAD 6567.4 VEL 11.450 PTH 1.99 VHP 3.560 DPA 2.71 RAP 190.87 ECC 1.1600

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 17 39	2705.32	-27.68	74.95	15.59	96.22	17 2 45	2105.3	-26.53	66.47
90.00	9 43 6	4051.48	-4.74	163.68	11.04	62.05	10 50 37	3451.5	-8.44	156.96
100.00	17 50 59	2404.36	-28.88	52.64	15.42	98.08	18 31 4	1804.4	-27.46	44.12
100.00	10 52 27	3827.67	-3.68	146.65	10.45	60.31	11 56 15	3227.7	-7.61	140.06
110.00	19 25 8	2109.80	-31.91	29.61	14.77	102.96	20 0 18	1509.8	-29.80	21.04
110.00	11 34 47	3694.99	-1.06	134.95	8.82	55.83	12 36 22	3095.0	-5.54	128.73

DIFFERENTIAL CORRECTIONS
TDE .3392 TRA-1.1460 TC3 3.0421 BAU .4232
RDE .1049 RRA -.1835 RC3 1.1623 FAU .38674
FDE -.8893 FRA 6.8510 FC-34.4445 BSP 10831
BDE .3551 BRA 1.1606 BC3 3.2565 FSP 7424

MID-COURSE EXECUTION ACCURACY
SGT 2994.5 SGR 830.7 SG3 2189.1
RRT .9215 RRF -.9810 RTF -.9428
SGB 3107.5 R23 -.2642 R13 -.9500
SG1 3091.8 SG2 312.5 THA 14.49

ORBIT DETERMINATION ACCURACY
ST 916.6 SR 221.6 SS 1344.2
CRT .9509 CRS .7825 CST .9323
LSA 1614.0 MSA 300.6 SSA 23.2
EL1 940.6 EL2 66.8 ALF 13.02

LAUNCH DATE NOV 5 1964 FLIGHT TIME 270.00 ARRIVAL DATE AUG 2 1965

HELIOCENTRIC CONIC DISTANCE 621.344 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.935 GAL -2.64 AZL 89.00 HCA 194.31 SMA 188.26 ECC .21691 INC .9945 V1 30.043
RP 229.09 LAP -.25 LOP 236.93 VP 21.300 GAP .16 AZP 90.96 TAL 345.11 TAP 179.42 RCA 147.42 APO 229.09 V2 24.009
RC 233.848 GL 10.59 GP 5.31 ZAL 110.45 ZAP 131.18 ETS 173.93 ZAE 167.79 ETE 146.74 ZAC 94.70 ETC 255.88 CLP 131.40

PLANETOCENTRIC CONIC

C3 9.662 VHL 3.108 DLA 20.09 RAL 159.42 RAD 6567.3 VEL 11.448 PTH 1.99 VHP 3.490 DPA 2.64 RAP 190.35 ECC 1.1590

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 9 10	2736.81	-27.89	77.23	15.87	95.10	16 54 47	2136.8	-26.89	68.70
90.00	9 52 14	4017.60	-5.82	161.77	11.28	62.24	10 59 12	3417.6	-9.49	155.02
100.00	17 43 25	2432.88	-29.13	54.72	15.72	97.01	18 23 58	1832.9	-27.86	46.15
100.00	11 0 40	3796.76	-4.72	144.94	10.68	60.45	12 3 57	3196.8	-8.62	138.33
110.00	19 19 19	2132.87	-32.25	31.33	15.12	102.00	19 54 52	1532.9	-30.26	22.68
110.00	11 41 16	3669.54	-2.04	133.63	9.01	55.87	12 42 25	3069.5	-6.50	127.38

DIFFERENTIAL CORRECTIONS
TDE .3221 TRA-1.0913 TC3 2.8705 BAU .3988
RDE .1050 RRA -.1722 RC3 1.1366 FAU .40204
FDE -.7878 FRA 7.0808 FC-36.0242 BSP 10255
BDE .3388 BRA 1.1048 BC3 3.0874 FSP 7722

MID-COURSE EXECUTION ACCURACY
SGT 2850.4 SGR 806.8 SG3 2280.7
RRT .9130 RRF -.9767 RTF -.9382
SGB 2962.4 R23 -.2678 R13 -.9462
SG1 2945.2 SG2 318.5 THA 14.67

ORBIT DETERMINATION ACCURACY
ST 876.5 SR 219.6 SS 1346.7
CRT .9417 CRS .7323 CST .9139
LSA 1587.8 MSA 329.0 SSA 23.4
EL1 900.7 EL2 71.9 ALF 13.36

LAUNCH DATE NOV 5 1964 FLIGHT TIME 272.00 ARRIVAL DATE AUG 4 1965

HELIOCENTRIC CONIC DISTANCE 625.202 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.925 GAL -2.61 AZL 88.95 HCA 195.35 SMA 188.07 ECC .21605 INC 1.0542 V1 30.043
RP 228.70 LAP -.28 LOP 237.96 VP 21.329 GAP -.15 AZP 91.02 TAL 345.21 TAP 180.56 RCA 147.44 APO 228.70 V2 24.049
RC 235.703 GL 11.26 GP 5.06 ZAL 110.20 ZAP 129.69 ETS 174.39 ZAE 166.46 ETE 151.46 ZAC 94.35 ETC 255.90 CLP 129.88

PLANETOCENTRIC CONIC

C3 9.608 VHL 3.100 DLA 20.79 RAL 159.49 RAD 6567.3 VEL 11.445 PTH 1.99 VHP 3.424 DPA 2.61 RAP 189.81 ECC 1.1581

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 1 19	2765.53	-28.05	79.31	16.11	94.06	16 47 24	2165.5	-27.19	70.75
90.00	10 0 38	3986.66	-6.79	160.03	11.51	62.44	11 7 4	3386.7	-10.43	153.24
100.00	17 36 28	2458.70	-29.33	56.61	15.98	96.04	18 17 27	1858.7	-28.19	48.00
100.00	11 8 10	3768.73	-5.66	143.39	10.89	60.60	12 10 58	3168.7	-9.54	136.75
110.00	19 14 1	2153.52	-32.53	32.87	15.42	101.13	19 49 55	1553.5	-30.66	24.15
110.00	11 47 6	3646.67	-2.91	132.43	9.18	55.93	12 47 53	3046.7	-7.36	126.17

DIFFERENTIAL CORRECTIONS
TDE .3045 TRA-1.0369 TC3 2.6701 BAU .3717
RDE .1055 RRA -.1630 RC3 1.1150 FAU .41670
FDE -.6722 FRA 7.3324 FC-37.5480 BSP 9707
BDE .3222 BRA 1.0496 BC3 2.8935 FSP 8067

MID-COURSE EXECUTION ACCURACY
SGT 2694.3 SGR 787.2 SG3 2371.7
RRT .9027 RRF -.9720 RTF -.9322
SGB 2806.9 R23 -.2738 R13 -.9413
SG1 2787.8 SG2 327.4 THA 14.99

ORBIT DETERMINATION ACCURACY
ST 835.1 SR 218.7 SS 1354.0
CRT .9323 CRS .6768 CST .8918
LSA 1565.4 MSA 356.9 SSA 23.6
EL1 859.9 EL2 76.8 ALF 13.83

LAUNCH DATE NOV 5 1964 FLIGHT TIME 274.00 ARRIVAL DATE AUG 6 1965

HELIOCENTRIC CONIC DISTANCE 629.071 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.915 GAL -2.59 AZL 88.89 HCA 196.39 SMA 187.89 ECC .21525 INC 1.1068 V1 30.043
RP 228.31 LAP -.31 LOP 239.00 VP 21.360 GAP -.46 AZP 91.06 TAL 345.30 TAP 181.69 RCA 147.45 APO 228.34 V2 24.090
RC 237.537 GL 11.85 GP 4.85 ZAL 109.98 ZAP 128.15 ETS 174.80 ZAE 165.00 ETE 155.29 ZAC 94.02 ETC 255.92 CLP 128.31

PLANETOCENTRIC CONIC

C3 9.558 VHL 3.092 DLA 21.40 RAL 159.55 RAD 6567.3 VEL 11.443 PTH 1.98 VHP 3.361 DPA 2.63 RAP 189.24 ECC 1.1573

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 54 2	2791.90	-28.16	81.23	16.32	93.11	16 40 34	2191.9	-27.43	72.64
90.00	10 8 24	3958.25	-7.69	158.41	11.72	62.66	11 14 22	3358.3	-11.29	151.59
100.00	17 30 4	2482.23	-29.49	58.34	16.21	95.14	18 11 27	1882.2	-28.46	49.69
100.00	11 15 2	3743.16	-6.51	141.97	11.09	60.76	12 17 26	3143.2	-10.36	135.30
110.00	19 9 12	2172.11	-32.77	34.27	15.69	100.33	19 45 24	1572.1	-31.00	25.50
110.00	11 52 24	3626.04	-3.70	131.35	9.35	55.99	12 52 50	3026.0	-8.13	125.08

DIFFERENTIAL CORRECTIONS
TDE .2897 TRA -.9805 TC3 2.4537 BAU .3435
RDE .1068 RRA -.1551 RC3 1.0987 FAU .43156
FDE -.5643 FRA 7.5855 FC-39.0901 BSP 9118
BDE .3088 BRA .9927 BC3 2.6884 FSP 8415

MID-COURSE EXECUTION ACCURACY
SGT 2529.7 SGR 771.9 SG3 2464.0
RRT .8907 RRF -.9669 RTF -.9246
SGB 2644.9 R23 -.2823 R13 -.9353
SG1 2623.1 SG2 338.5 THA 15.47

ORBIT DETERMINATION ACCURACY
ST 795.8 SR 219.4 SS 1366.3
CRT .9244 CRS .6210 CST .8672
LSA 1549.6 MSA 382.5 SSA 23.8
EL1 821.5 EL2 81.1 ALF 14.44

LAUNCH DATE NOV 5 1964 FLIGHT TIME 276.00 ARRIVAL DATE AUG 8 1965

HELIOCENTRIC CONIC DISTANCE 632.950 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.905 GAL -2.57 AZL 88.85 HCA 197.43 SMA 187.73 ECC .21450 INC 1.1526 V1 30.043
RP 227.92 LAP -.35 LOP 240.04 VP 21.392 GAP -.77 AZP 91.10 TAL 345.38 TAP 182.81 RCA 147.46 APO 228.00 V2 24.132
RC 239.350 GL 12.38 GP 4.65 ZAL 109.78 ZAP 126.57 ETS 175.17 ZAE 163.43 ETE 158.42 ZAC 93.71 ETC 255.95 CLP 126.71

PLANETOCENTRIC CONIC

C3 9.512 VHL 3.084 DLA 21.96 RAL 159.61 RAD 6567.3 VEL 11.441 PTH 1.98 VHP 3.301 DPA 2.69 RAP 188.65 ECC 1.1565

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 47 16	2816.22	-28.24	83.01	16.50	92.22	16 34 12	2216.2	-27.63	74.40
90.00	10 15 37	3932.05	-8.50	156.92	11.93	62.89	11 21 9	3332.1	-12.07	150.06
100.00	17 24 11	2503.76	-29.61	59.93	16.41	94.31	18 5 54	1903.8	-28.70	51.25
100.00	11 21 24	3719.75	-7.29	140.67	11.28	60.93	12 23 24	3119.8	-11.11	133.96
110.00	19 4 49	2188.92	-32.97	35.54	15.93	99.60	19 41 17	1588.9	-31.29	26.72
110.00	11 57 15	3607.35	-4.41	130.37	9.51	56.07	12 57 23	3007.4	-8.83	124.08

DIFFERENTIAL CORRECTIONS
TDE .2783 TRA -.9206 TC3 2.2170 BAU .3140
RDE .1089 RRA -.1478 RC3 1.0873 FAU .44689
FDE -.4733 FRA 7.8252 FC-40.6720 BSP 8461
BDE .2988 BRA .9323 BC3 2.4693 FSP 8736

MID-COURSE EXECUTION ACCURACY
SGT 2353.1 SGR 760.5 SG3 2557.0
RRT .8759 RRF -.9616 RTF -.9142
SGB 2473.0 R23 -.2951 R13 -.9273
SG1 2447.7 SG2 352.7 THA 16.15

ORBIT DETERMINATION ACCURACY
ST 758.2 SR 221.8 SS 1381.2
CRT .9187 CRS .5684 CST .8406
LSA 1538.5 MSA 405.0 SSA 24.2
EL1 785.5 EL2 84.6 ALF 15.22

LAUNCH DATE NOV 5 1964 FLIGHT TIME 278.00 ARRIVAL DATE AUG 10 1965

HELIOCENTRIC CONIC DISTANCE 636.840 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.896 GAL -2.55 AZL 88.81 HCA 198.47 SMA 187.57 ECC .21380 INC 1.1943 V1 30.043
RP 227.53 LAP -.38 LOP 241.09 VP 21.425 GAP -1.07 AZP 91.13 TAL 345.45 TAP 183.92 RCA 147.47 APO 227.68 V2 24.173
RC 241.142 GL 12.86 GP 4.48 ZAL 109.60 ZAP 124.94 ETS 175.50 ZAE 161.78 ETE 161.00 ZAC 93.41 ETC 255.98 CLP 125.06

PLANETOCENTRIC CONIC

C3 9.471 VHL 3.077 DLA 22.45 RAL 159.67 RAD 6567.3 VEL 11.439 PTH 1.98 VHP 3.244 DPA 2.78 RAP 188.03 ECC 1.1559

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 41 0	2838.73	-28.29	84.65	16.66	91.40	16 28 18	2238.7	-27.79	76.02
90.00	10 22 22	3907.84	-9.25	155.54	12.14	63.12	11 27 30	3307.8	-12.79	148.64
100.00	17 18 45	2523.52	-29.70	61.39	16.59	93.55	18 0 49	1923.5	-28.89	52.68
100.00	11 27 18	3698.28	-8.00	139.47	11.47	61.10	12 28 56	3098.3	-11.79	132.73
110.00	19 0 50	2204.18	-33.13	36.70	16.15	98.94	19 37 34	1604.2	-31.54	27.83
110.00	12 1 43	3590.39	-5.05	129.48	9.66	56.15	13 1 33	2990.4	-9.46	123.17

DIFFERENTIAL CORRECTIONS
TDE .2686 TRA -.8591 TC3 1.9617 BAU .2835
RDE .1112 RRA -.1416 RC3 1.0785 FAU .46188
FDE -.3787 FRA 8.0776 FC-42.2204 BSP 7761
BDE .2907 BRA .8707 BC3 2.2386 FSP 9073

MID-COURSE EXECUTION ACCURACY
SGT 2168.6 SGR 751.6 SG3 2649.8
RRT .8582 RRF -.9561 RTF -.9005
SGB 2295.1 R23 -.3117 R13 -.9172
SG1 2265.2 SG2 369.4 THA 17.03

ORBIT DETERMINATION ACCURACY
ST 721.7 SR 224.9 SS 1399.7
CRT .9159 CRS .5158 CST .8089
LSA 1532.2 MSA 427.1 SSA 24.6
EL1 750.9 EL2 86.8 ALF 16.15

LAUNCH DATE NOV 5 1964 FLIGHT TIME 280.00 ARRIVAL DATE AUG 12 1965

HELIOCENTRIC CONIC DISTANCE 640.739 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.888 GAL -2.53 AZL 88.77 HCA 199.52 SMA 187.43 ECC .21315 INC 1.2311 V1 30.043
RP 227.14 LAP -.41 LOP 242.13 VP 21.459 GAP -1.36 AZP 91.16 TAL 345.50 TAP 185.03 RCA 147.48 APO 227.38 V2 24.214
RC 242.914 GL 13.29 GP 4.33 ZAL 109.45 ZAP 123.27 ETS 175.81 ZAE 160.04 ETE 163.14 ZAC 93.12 ETC 256.01 CLP 123.38

PLANETOCENTRIC CONIC

C3 9.434 VHL 3.071 DLA 22.89 RAL 159.74 RAD 6567.3 VEL 11.438 PTH 1.98 VHP 3.191 DPA 2.91 RAP 187.39 ECC 1.1553

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 35 11	2859.59	-28.31	86.18	16.82	90.63	16 22 50	2259.6	-27.92	77.53
90.00	10 28 42	3885.44	-9.94	154.25	12.35	63.35	11 33 28	3285.4	-13.44	147.32
100.00	17 13 47	2541.68	-29.77	62.74	16.77	92.84	17 56 8	1941.7	-29.06	54.01
100.00	11 32 47	3678.59	-8.64	138.36	11.66	61.27	12 34 6	3078.6	-12.41	131.60
110.00	18 57 13	2218.04	-33.27	37.76	16.37	98.32	19 34 11	1618.0	-31.77	28.85
110.00	12 5 50	3574.99	-5.63	128.67	9.82	56.23	13 5 25	2975.0	-10.03	122.34

DIFFERENTIAL CORRECTIONS
TDE .2604 TRA -.7955 TC3 1.6823 BAU .2516
RDE .1141 RRA -.1361 RC3 1.0726 FAU .47693
FDE -.2951 FRA 8.3229 FC-43.7676 BSP 7054
BDE .2843 BRA .8070 BC3 1.9951 FSP 9404

MID-COURSE EXECUTION ACCURACY
SGT 1974.5 SGR 745.2 SG3 2742.0
RRT .8346 RRF -.9503 RTF -.8809
SGB 2110.4 R23 -.3355 R13 -.9033
SG1 2073.9 SG2 390.8 THA 18.15

ORBIT DETERMINATION ACCURACY
ST 685.9 SR 229.1 SS 1419.7
CRT .9158 CRS .4669 CST .7745
LSA 1529.4 MSA 445.6 SSA 25.0
EL1 717.8 EL2 88.0 ALF 17.28

LAUNCH DATE NOV 5 1964 FLIGHT TIME 282.00 ARRIVAL DATE AUG 14 1965

HELIOCENTRIC CONIC DISTANCE 644.649 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.880 GAL -2.52 AZL 88.73 HCA 200.57 SMA 187.29 ECC .21254 INC 1.2650 V1 30.043
RP 226.75 LAP -.44 LOP 243.19 VP 21.494 GAP -1.65 AZP 91.18 TAL 345.55 TAP 186.12 RCA 147.49 APO 227.10 V2 24.256
RC 244.666 GL 13.68 GP 4.19 ZAL 109.33 ZAP 121.56 ETS 176.10 ZAE 158.24 ETE 164.94 ZAC 92.84 ETC 256.04 CLP 121.65

PLANETOCENTRIC CONIC

C3 9.401 VHL 3.066 DLA 23.28 RAL 159.81 RAD 6567.3 VEL 11.436 PTH 1.98 VHP 3.141 DPA 3.06 RAP 186.72 ECC 1.1547

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 29 48	2878.94	-28.32	87.59	16.97	89.92	16 17 47	2278.9	-28.03	78.94
90.00	10 34 39	3864.72	-10.57	153.05	12.56	63.58	11 39 4	3264.7	-14.03	146.09
100.00	17 9 14	2558.37	-29.82	63.98	16.94	92.19	17 51 52	1958.4	-29.20	55.23
100.00	11 37 55	3660.51	-9.23	137.34	11.85	61.44	12 38 56	3060.5	-12.98	130.55
110.00	18 53 59	2230.64	-33.39	38.72	16.57	97.77	19 31 10	1630.6	-31.96	29.79
110.00	12 9 39	3561.01	-6.16	127.93	9.98	56.31	13 9 0	2961.0	-10.55	121.59

DIFFERENTIAL CORRECTIONS
TDE .2541 TRA -.7294 TC3 1.3847 BAU .2198
RDE .1171 RRA -.1312 RC3 1.0684 FAU .49163
FDE -.2095 FRA 8.5740 FC-45.2763 BSP 6288
BDE .2798 BRA .7411 BC3 1.7489 FSP 9737

MID-COURSE EXECUTION ACCURACY
SGT 1774.4 SGR 740.5 SG3 2833.1
RRT .8039 RRF -.9444 RTF -.8532
SGB 1922.7 R23 -.3663 R13 -.8847
SG1 1877.1 SG2 416.3 THA 19.55

ORBIT DETERMINATION ACCURACY
ST 651.4 SR 233.8 SS 1441.8
CRT .9195 CRS .4195 CST .7330
LSA 1530.3 MSA 463.8 SSA 25.4
EL1 686.5 EL2 87.2 ALF 18.58

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LAUNCH DATE  NOV  5 1964                          FLIGHT TIME 284.00                                  ARRIVAL DATE  AUG 16 1965

  HELIOCENTRIC CONIC                              DISTANCE 648.568                                     EARTH  TO  MARS
   RL  148.31 LAL   -.00 LOL  42.62 VL  32.873 GAL  -2.51 AZL  88.70 HCA 201.63 SMA 187.17 ECC .21198 INC 1.2954 V1  30.043
   RP  226.36 LAP   -.48 LOP 244.24 VP  21.530 GAP  -1.93 AZP  91.20 TAL 345.58 TAP 187.21 RCA 147.49 APO 226.84 V2  24.297
   RC 246.398 GL   14.04 GP    4.06 ZAL 109.23 ZAP 119.80 ETS 176.36 ZAE 156.38 ETE 166.46 ZAC  92.56 ETC 256.08 CLP 119.89
  PLANETOCENTRIC CONIC
   C3   9.372 VHL  3.061 DLA  23.64 RAL 159.89 RAD 6567.3 VEL 11.435 PTH   1.98 VHP  3.094 DPA   3.24 RAP 186.03 ECC 1.1542
   LNCH AZMTH  LNCH TIME  L-I TIME    INJ LAT   INJ LONG  INJ RT ASC  INJ AZMTH  INJ TIME  PO CST TIM  INJ 2 LAT INJ 2 LONG
      90.00    15 24 52   2896.86     -28.31     88.91      17.12      89.26   16 13  9    2296.9     -28.11      80.25
      90.00    10 40 15   3845.59     -11.14    151.94      12.77      63.80   11 44 20    3245.6     -14.58     144.95
     100.00    17  5  6   2573.70     -29.85     65.12      17.10      91.59   17 48  0    1973.7     -29.31      56.35
     100.00    11 42 42   3643.98      -9.77    136.41      12.05      61.61   12 43 26    3044.0     -13.49     129.59
     110.00    18 51  6   2242.08     -33.50     39.60      16.77      97.26   19 28 28    1642.1     -32.13      30.63
     110.00    12 13 12   3548.36      -6.64    127.26      10.15      56.39   13 12 20    2948.4     -11.01     120.90
  DIFFERENTIAL CORRECTIONS                          MID-COURSE EXECUTION ACCURACY          ORBIT DETERMINATION ACCURACY
   TDE  .2500 TRA -.6606 TC3 1.0654 BAU  .1888      SGT 1570.3 SGR  737.5 SG3 2922.6      ST   619.1 SR   239.4 SS  1464.1
   RDE  .1205 RRA -.1268 RC3 1.0661 FAU .50620      RRT  .7605 RRF -.9384 RTF -.8115      CRT  .9271 CRS  .3775 CST  .6857
   FDE -.1379 FRA 8.8165 FC-46.7616 BSP   5510      SGB 1734.9 R23 -.4079 R13 -.8584      LSA 1534.0 MSA  479.9 SSA   25.9
   BDE  .2775 BRA  .6726 BC3 1.5072 FSP  10059      SG1 1675.8 SG2  448.7 THA  21.26      EL1  658.3 EL2   84.4 ALF  20.06

LAUNCH DATE  NOV  5 1964                          FLIGHT TIME 286.00                                  ARRIVAL DATE  AUG 18 1965

  HELIOCENTRIC CONIC                              DISTANCE 652.496                                     EARTH  TO  MARS
   RL  148.31 LAL   -.00 LOL  42.62 VL  32.866 GAL  -2.50 AZL  88.68 HCA 202.69 SMA 187.05 ECC .21146 INC 1.3235 V1  30.043
   RP  225.97 LAP   -.51 LOP 245.30 VP  21.566 GAP  -2.21 AZP  91.22 TAL 345.60 TAP 188.29 RCA 147.50 APO 226.60 V2  24.339
   RC 248.110 GL   14.36 GP    3.94 ZAL 109.16 ZAP 118.01 ETS 176.61 ZAE 154.46 ETE 167.77 ZAC  92.28 ETC 256.12 CLP 118.08
  PLANETOCENTRIC CONIC
   C3   9.347 VHL  3.057 DLA  23.96 RAL 159.98 RAD 6567.3 VEL 11.434 PTH   1.98 VHP  3.050 DPA   3.44 RAP 185.30 ECC 1.1538
   LNCH AZMTH  LNCH TIME  L-I TIME    INJ LAT   INJ LONG  INJ RT ASC  INJ AZMTH  INJ TIME  PO CST TIM  INJ 2 LAT INJ 2 LONG
      90.00    15 20 22   2913.42     -28.29     90.12      17.27      88.66   16  8 56    2313.4     -28.17      81.45
      90.00    10 45 30   3827.98     -11.67    150.92      12.99      64.02   11 49 18    3228.0     -15.07     143.89
     100.00    17  1 23   2587.75     -29.88     66.16      17.27      91.04   17 44 31    1987.7     -29.41      57.39
     100.00    11 47 11   3628.89     -10.26    135.55      12.25      61.77   12 47 40    3028.9     -13.95     128.71
     110.00    18 48 33   2252.46     -33.58     40.40      16.98      96.79   19 26  6    1652.5     -32.28      31.41
     110.00    12 16 30   3536.95      -7.07    126.66      10.32      56.47   13 15 27    2936.9     -11.43     120.28
  DIFFERENTIAL CORRECTIONS                          MID-COURSE EXECUTION ACCURACY          ORBIT DETERMINATION ACCURACY
   TDE  .2465 TRA -.5894 TC3  .7267 BAU  .1610      SGT 1368.1 SGR  735.5 SG3 3009.6      ST   587.5 SR   245.0 SS  1488.2
   RDE  .1239 RRA -.1229 RC3 1.0644 FAU .52013      RRT  .6967 RRF -.9321 RTF -.7472      CRT  .9377 CRS  .3361 CST  .6287
   FDE -.0602 FRA 9.0649 FC-48.1768 BSP   4715      SGB 1553.3 R23 -.4624 R13 -.8208      LSA 1541.0 MSA  494.6 SSA   26.2
   BDE  .2759 BRA  .6020 BC3 1.2888 FSP  10386      SG1 1474.1 SG2  489.7 THA  23.25      EL1  631.6 EL2   79.2 ALF  21.72

LAUNCH DATE  NOV  5 1964                          FLIGHT TIME 288.00                                  ARRIVAL DATE  AUG 20 1965

  HELIOCENTRIC CONIC                              DISTANCE 656.434                                     EARTH  TO  MARS
   RL  148.31 LAL   -.00 LOL  42.62 VL  32.860 GAL  -2.49 AZL  88.65 HCA 203.75 SMA 186.94 ECC .21099 INC 1.3490 V1  30.043
   RP  225.58 LAP   -.54 LOP 246.36 VP  21.604 GAP  -2.48 AZP  91.23 TAL 345.60 TAP 189.35 RCA 147.50 APO 226.38 V2  24.381
   RC 249.803 GL   14.66 GP    3.83 ZAL 109.12 ZAP 116.18 ETS 176.84 ZAE 152.49 ETE 168.91 ZAC  92.01 ETC 256.16 CLP 116.25
  PLANETOCENTRIC CONIC
   C3   9.326 VHL  3.054 DLA  24.24 RAL 160.09 RAD 6567.3 VEL 11.433 PTH   1.98 VHP  3.009 DPA   3.67 RAP 184.55 ECC 1.1535
   LNCH AZMTH  LNCH TIME  L-I TIME    INJ LAT   INJ LONG  INJ RT ASC  INJ AZMTH  INJ TIME  PO CST TIM  INJ 2 LAT INJ 2 LONG
      90.00    15 16 18   2928.68     -28.26     91.23      17.43      88.10   16  5  7    2328.7     -28.22      82.57
      90.00    10 50 26   3811.86     -12.15    149.98      13.22      64.23   11 53 58    3211.9     -15.52     142.92
     100.00    16 58  4   2600.56     -29.89     67.11      17.45      90.54   17 41 25    2000.6     -29.49      58.33
     100.00    11 51 21   3615.21     -10.70    134.78      12.46      61.92   12 51 36    3015.2     -14.37     127.91
     110.00    18 46 20   2261.84     -33.66     41.12      17.18      96.37   19 24  2    1661.8     -32.41      32.11
     110.00    12 19 34   3526.70      -7.45    126.12      10.51      56.54   13 18 21    2926.7     -11.80     119.72
  DIFFERENTIAL CORRECTIONS                          MID-COURSE EXECUTION ACCURACY          ORBIT DETERMINATION ACCURACY
   TDE  .2449 TRA -.5156 TC3  .3674 BAU  .1403      SGT 1177.7 SGR  734.7 SG3 3093.9      ST   559.0 SR   251.5 SS  1511.2
   RDE  .1278 RRA -.1192 RC3 1.0639 FAU .53383      RRT  .5964 RRF -.9259 RTF -.6424      CRT  .9509 CRS  .3007 CST  .5640
   FDE  .0008 FRA 9.3003 FC-49.5561 BSP   3913      SGB 1388.1 R23 -.5360 R13 -.7633      LSA 1549.6 MSA  507.3 SSA   26.7
   BDE  .2763 BRA  .5292 BC3 1.1256 FSP  10679      SG1 1277.1 SG2  543.8 THA  25.31      EL1  608.8 EL2   71.4 ALF  23.51

LAUNCH DATE  NOV  5 1964                          FLIGHT TIME 290.00                                  ARRIVAL DATE  AUG 22 1965

  HELIOCENTRIC CONIC                              DISTANCE 660.382                                     EARTH  TO  MARS
   RL  148.31 LAL   -.00 LOL  42.62 VL  32.854 GAL  -2.49 AZL  88.63 HCA 204.82 SMA 186.84 ECC .21056 INC 1.3728 V1  30.043
   RP  225.19 LAP   -.58 LOP 247.43 VP  21.642 GAP  -2.75 AZP  91.25 TAL 345.59 TAP 190.41 RCA 147.50 APO 226.18 V2  24.423
   RC 251.477 GL   14.94 GP    3.73 ZAL 109.10 ZAP 114.32 ETS 177.06 ZAE 150.47 ETE 169.89 ZAC  91.73 ETC 256.21 CLP 114.37
  PLANETOCENTRIC CONIC
   C3   9.309 VHL  3.051 DLA  24.49 RAL 160.22 RAD 6567.3 VEL 11.432 PTH   1.98 VHP  2.972 DPA   3.91 RAP 183.78 ECC 1.1532
   LNCH AZMTH  LNCH TIME  L-I TIME    INJ LAT   INJ LONG  INJ RT ASC  INJ AZMTH  INJ TIME  PO CST TIM  INJ 2 LAT INJ 2 LONG
      90.00    15 12 40   2942.63     -28.22     92.25      17.59      87.59   16  1 43    2342.6     -28.26      83.59
      90.00    10 55  3   3797.20     -12.58    149.12      13.45      64.42   11 58 20    3197.2     -15.93     142.04
     100.00    16 55  9   2612.20     -29.89     67.98      17.63      90.09   17 38 42    2012.2     -29.56      59.19
     100.00    11 55 14   3602.87     -11.09    134.07      12.68      62.06   12 55 17    3002.9     -14.74     127.19
     110.00    18 44 27   2270.27     -33.72     41.77      17.39      95.99   19 22 17    1670.3     -32.52      32.74
     110.00    12 22 26   3517.56      -7.80    125.63      10.70      56.61   13 21  4    2917.6     -12.14     119.22
  DIFFERENTIAL CORRECTIONS                          MID-COURSE EXECUTION ACCURACY          ORBIT DETERMINATION ACCURACY
   TDE  .2449 TRA -.4390 TC3 -.0087 BAU  .1324      SGT 1015.9 SGR  734.6 SG3 3174.7      ST   534.2 SR   258.2 SS  1534.6
   RDE  .1317 RRA -.1158 RC3 1.0638 FAU .54683      RRT  .4378 RRF -.9195 RTF -.4716      CRT  .9657 CRS  .2681 CST  .4863
   FDE  .0593 FRA 9.5345 FC-50.8552 BSP   3163      SGB 1253.7 R23 -.6365 R13 -.6679      LSA 1560.8 MSA  519.8 SSA   27.1
   BDE  .2781 BRA  .4540 BC3 1.0638 FSP  10967      SG1 1093.1 SG2  613.8 THA  26.50      EL1  590.2 EL2   60.6 ALF  25.31
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LAUNCH DATE NOV 5 1964 FLIGHT TIME 292.00 ARRIVAL DATE AUG 24 1965

HELIOCENTRIC CONIC DISTANCE 664.338 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.849 GAL -2.49 AZL 88.61 HCA 205.89 SMA 186.74 ECC .21017 INC 1.3947 V1 30.043
RP 224.80 LAP -.61 LOP 248.50 VP 21.681 GAP -3.01 AZP 91.25 TAL 345.57 TAP 191.46 RCA 147.50 APO 225.99 V2 24.465
RC 253.132 GL 15.19 GP 3.63 ZAL 109.10 ZAP 112.42 ETS 177.27 ZAE 148.41 ETE 170.76 ZAC 91.46 ETC 256.26 CLP 112.47

PLANETOCENTRIC CONIC

C3 9.296 VHL 3.049 DLA 24.71 RAL 160.35 RAD 6567.3 VEL 11.432 PTH 1.98 VHP 2.938 DPA 4.17 RAP 182.98 ECC 1.1530

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 9 29	2955.31	-28.18	93.18	17.77	87.13	15 58 44	2355.3	-28.28	84.51
90.00	10 59 20	3783.99	-12.97	148.34	13.70	64.61	12 2 24	3184.0	-16.29	141.23
100.00	16 52 39	2622.67	-29.89	68.76	17.83	89.68	17 36 22	2022.7	-29.62	59.96
100.00	11 58 51	3591.86	-11.44	133.44	12.91	62.20	12 58 43	2991.9	-15.07	126.54
110.00	18 42 53	2277.81	-33.77	42.35	17.62	95.65	19 20 51	1677.8	-32.62	33.31
110.00	12 25 7	3509.49	-8.10	125.20	10.91	56.68	13 23 36	2909.5	-12.43	118.78

DIFFERENTIAL CORRECTIONS
TDE .2454 TRA -.3596 TC3 -.4031 BAU .1414
RDE .1357 RRA -.1126 RC3 1.0637 FAU .55910
FDE .1136 FRA 9.7625 FC-52.0671 BSP 2577
BDE .2804 BRA .3769 BC3 1.1375 FSP 11243

MID-COURSE EXECUTION ACCURACY
SGT 909.1 SGR 734.9 SG3 3251.2
RRT .1969 RRF -.9129 RTF -.2082
SGB 1169.0 R23 -.7959 R13 -.4482
SG1 936.9 SG2 699.2 THA 21.28

ORBIT DETERMINATION ACCURACY
ST 512.3 SR 265.2 SS 1557.8
CRT .9794 CRS .2382 CST .3965
LSA 1574.0 MSA 530.2 SSA 27.5
EL1 574.9 EL2 47.7 ALF 27.09

LAUNCH DATE NOV 5 1964 FLIGHT TIME 294.00 ARRIVAL DATE AUG 26 1965

HELIOCENTRIC CONIC DISTANCE 668.304 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.844 GAL -2.49 AZL 88.58 HCA 206.97 SMA 186.66 ECC .20982 INC 1.4151 V1 30.043
RP 224.41 LAP -.64 LOP 249.58 VP 21.721 GAP -3.27 AZP 91.26 TAL 345.54 TAP 192.50 RCA 147.49 APO 225.82 V2 24.506
RC 254.766 GL 15.42 GP 3.54 ZAL 109.14 ZAP 110.50 ETS 177.46 ZAE 146.31 ETE 171.53 ZAC 91.18 ETC 256.31 CLP 110.54

PLANETOCENTRIC CONIC

C3 9.288 VHL 3.048 DLA 24.90 RAL 160.51 RAD 6567.3 VEL 11.431 PTH 1.98 VHP 2.908 DPA 4.44 RAP 182.16 ECC 1.1529

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 6 44	2966.71	-28.14	94.01	17.97	86.71	15 56 11	2366.7	-28.30	85.35
90.00	11 3 19	3772.23	-13.31	147.65	13.95	64.78	12 6 11	3172.2	-16.60	140.52
100.00	16 50 33	2632.02	-29.89	69.45	18.03	89.31	17 34 25	2032.0	-29.66	60.65
100.00	12 2 12	3582.16	-11.75	132.89	13.15	62.32	13 1 54	2982.2	-15.36	125.96
110.00	18 41 38	2284.48	-33.81	42.87	17.85	95.35	19 19 42	1684.5	-32.70	33.81
110.00	12 27 36	3502.46	-8.36	124.83	11.13	56.73	13 25 59	2902.5	-12.68	118.39

DIFFERENTIAL CORRECTIONS
TDE .2470 TRA -.2777 TC3 -.8164 BAU .1665
RDE .1399 RRA -.1096 RC3 1.0634 FAU .57049
FDE .1596 FRA 9.9820 FC-53.1777 BSP 2327
BDE .2839 BRA .2985 BC3 1.3407 FSP 11500

MID-COURSE EXECUTION ACCURACY
SGT 891.4 SGR 735.5 SG3 3322.5
RRT -.1060 RRF -.9062 RTF .1272
SGB 1155.7 R23 .8538 R13 -.3054
SG1 901.3 SG2 723.3 THA 165.63

ORBIT DETERMINATION ACCURACY
ST 495.7 SR 272.5 SS 1580.1
CRT .9896 CRS .2119 CST .2944
LSA 1588.9 MSA 539.8 SSA 27.9
EL1 564.6 EL2 34.4 ALF 28.66

LAUNCH DATE NOV 5 1964 FLIGHT TIME 296.00 ARRIVAL DATE AUG 28 1965

HELIOCENTRIC CONIC DISTANCE 672.276 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.839 GAL -2.50 AZL 88.57 HCA 208.05 SMA 186.58 ECC .20950 INC 1.4341 V1 30.043
RP 224.02 LAP -.67 LOP 250.65 VP 21.761 GAP -3.52 AZP 91.27 TAL 345.49 TAP 193.53 RCA 147.49 APO 225.67 V2 24.548
RC 256.380 GL 15.63 GP 3.45 ZAL 109.20 ZAP 108.55 ETS 177.65 ZAE 144.18 ETE 172.21 ZAC 90.91 ETC 256.37 CLP 108.58

PLANETOCENTRIC CONIC

C3 9.283 VHL 3.047 DLA 25.07 RAL 160.68 RAD 6567.3 VEL 11.431 PTH 1.98 VHP 2.881 DPA 4.73 RAP 181.33 ECC 1.1528

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 4 29	2976.77	-28.10	94.74	18.17	86.35	15 54 6	2376.8	-28.31	86.08
90.00	11 6 58	3761.98	-13.61	147.04	14.22	64.93	12 9 40	3162.0	-16.88	139.89
100.00	16 48 52	2640.21	-29.88	70.06	18.26	88.99	17 32 53	2040.2	-29.70	61.26
100.00	12 5 16	3573.77	-12.01	132.40	13.41	62.42	13 4 50	2973.8	-15.61	125.46
110.00	18 40 43	2290.31	-33.85	43.32	18.09	95.08	19 18 53	1690.3	-32.78	34.25
110.00	12 29 55	3496.44	-8.59	124.50	11.36	56.79	13 28 12	2896.4	-12.90	118.06

DIFFERENTIAL CORRECTIONS
TDE .2462 TRA -.1964 TC3-1.2618 BAU .2045
RDE .1435 RRA -.1077 RC3 1.0592 FAU .57846
FDE .2522 FRA10.2493 FC-53.9460 BSP 2555
BDE .2850 BRA .2239 BC3 1.6474 FSP 11854

MID-COURSE EXECUTION ACCURACY
SGT 985.8 SGR 734.4 SG3 3383.5
RRT -.3871 RRF -.8987 RTF .4357
SGB 1229.3 R23 .6357 R13 -.6423
SG1 1053.3 SG2 633.7 THA 153.83

ORBIT DETERMINATION ACCURACY
ST 479.5 SR 278.7 SS 1611.9
CRT .9930 CRS .1769 CST .1733
LSA 1615.1 MSA 544.3 SSA 28.5
EL1 553.8 EL2 28.5 ALF 30.08

LAUNCH DATE NOV 5 1964 FLIGHT TIME 298.00 ARRIVAL DATE AUG 30 1965

HELIOCENTRIC CONIC DISTANCE 676.262 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.835 GAL -2.51 AZL 88.55 HCA 209.13 SMA 186.51 ECC .20923 INC 1.4517 V1 30.043
RP 223.63 LAP -.71 LOP 251.74 VP 21.802 GAP -3.77 AZP 91.27 TAL 345.43 TAP 194.55 RCA 147.48 APO 225.53 V2 24.590
RC 257.974 GL 15.83 GP 3.36 ZAL 109.28 ZAP 106.57 ETS 177.83 ZAE 142.01 ETE 172.82 ZAC 90.63 ETC 256.44 CLP 106.60

PLANETOCENTRIC CONIC

C3 9.283 VHL 3.047 DLA 25.21 RAL 160.87 RAD 6567.3 VEL 11.431 PTH 1.98 VHP 2.857 DPA 5.03 RAP 180.48 ECC 1.1528

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 2 39	2985.64	-28.06	95.39	18.40	86.02	15 52 24	2385.6	-28.32	86.73
90.00	11 10 19	3753.08	-13.87	146.51	14.49	65.06	12 12 52	3153.1	-17.11	139.34
100.00	16 47 34	2647.39	-29.87	70.59	18.49	88.71	17 31 41	2047.4	-29.73	61.79
100.00	12 8 5	3566.56	-12.24	131.99	13.67	62.52	13 7 32	2966.6	-15.83	125.03
110.00	18 40 4	2295.39	-33.88	43.71	18.35	94.85	19 18 19	1695.4	-32.84	34.63
110.00	12 32 4	3491.33	-8.78	124.23	11.61	56.83	13 30 16	2891.3	-13.08	117.78

DIFFERENTIAL CORRECTIONS
TDE .2541 TRA -.1043 TC3-1.6790 BAU .2466
RDE .1491 RRA -.1035 RC3 1.0631 FAU .59145
FDE .2025 FRA10.3624 FC-55.1613 BSP 3243
BDE .2946 BRA .1470 BC3 1.9873 FSP 11897

MID-COURSE EXECUTION ACCURACY
SGT 1149.8 SGR 738.0 SG3 3449.3
RRT -.5681 RRF -.8927 RTF .6513
SGB 1366.3 R23 .4840 R13 -.7703
SG1 1246.0 SG2 560.4 THA 154.44

ORBIT DETERMINATION ACCURACY
ST 483.2 SR 288.5 SS 1616.9
CRT .9873 CRS .1746 CST .0656
LSA 1618.1 MSA 558.6 SSA 28.4
EL1 561.4 EL2 39.4 ALF 30.68

LAUNCH DATE NOV 5 1964 FLIGHT TIME 300.00 ARRIVAL DATE SEP 1 1965

HELIOCENTRIC CONIC DISTANCE 680.255 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.831 GAL -2.52 AZL 88.53 HCA 210.21 SMA 186.44 ECC .20899 INC 1.4685 V1 30.043
RP 223.24 LAP -.74 LOP 252.82 VP 21.844 GAP -4.02 AZP 91.27 TAL 345.35 TAP 195.57 RCA 147.48 APO 225.41 V2 24.632
RC 259.547 GL 16.01 GP 3.28 ZAL 109.39 ZAP 104.58 ETS 178.00 ZAE 139.82 ETE 173.38 ZAC 90.36 ETC 256.51 CLP 104.60

PLANETOCENTRIC CONIC

C3 9.286 VHL 3.047 DLA 25.32 RAL 161.08 RAD 6567.3 VEL 11.431 PTH 1.98 VHP 2.837 DPA 5.33 RAP 179.61 ECC 1.1528

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 1 19	2993.15	-28.02	95.93	18.64	85.75	15 51 12	2393.1	-28.32	87.28
90.00	11 13 20	3745.73	-14.08	146.08	14.78	65.17	12 15 45	3145.7	-17.31	138.89
100.00	16 46 41	2653.45	-29.86	71.04	18.75	88.47	17 30 54	2053.4	-29.75	62.24
100.00	12 10 39	3560.66	-12.43	131.65	13.95	62.59	13 10 0	2960.7	-16.00	124.68
110.00	18 39 45	2299.68	-33.90	44.05	18.62	94.65	19 18 5	1699.7	-32.89	34.96
110.00	12 34 4	3487.20	-8.93	124.01	11.87	56.87	13 32 11	2887.2	-13.23	117.55

DIFFERENTIAL CORRECTIONS
TDE .2581 TRA -.0138 TC3-2.1330 BAU .2958
RDE .1538 RRA -.1007 RC3 1.0612 FAU .59977
FDE .2194 FRA10.5417 FC-55.9161 BSP 4171
BDE .3005 BRA .1016 BC3 2.3824 FSP 12074

MID-COURSE EXECUTION ACCURACY
SGT 1387.9 SGR 738.8 SG3 3501.4
RRT -.6773 RRF -.8856 RTF .7800
SGB 1572.3 R23 .3714 R13 -.8404
SG1 1488.4 SG2 506.9 THA 157.41

ORBIT DETERMINATION ACCURACY
ST 487.0 SR 296.6 SS 1634.7
CRT .9703 CRS .1586 CST -.0565
LSA 1635.6 MSA 566.8 SSA 28.7
EL1 566.8 EL2 61.6 ALF 30.99

LAUNCH DATE NOV 5 1964 FLIGHT TIME 302.00 ARRIVAL DATE SEP 3 1965

HELIOCENTRIC CONIC DISTANCE 684.255 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.828 GAL -2.53 AZL 88.52 HCA 211.30 SMA 186.38 ECC .20879 INC 1.4840 V1 30.043
RP 222.85 LAP -.77 LOP 253.91 VP 21.886 GAP -4.26 AZP 91.27 TAL 345.26 TAP 196.57 RCA 147.47 APO 225.30 V2 24.674
RC 261.100 GL 16.18 GP 3.20 ZAL 109.53 ZAP 102.57 ETS 178.16 ZAE 137.61 ETE 173.88 ZAC 90.08 ETC 256.58 CLP 102.59

PLANETOCENTRIC CONIC

C3 9.294 VHL 3.049 DLA 25.42 RAL 161.31 RAD 6567.3 VEL 11.432 PTH 1.98 VHP 2.820 DPA 5.64 RAP 178.74 ECC 1.1530

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 0 28	2999.32	-27.99	96.38	18.90	85.53	15 50 27	2399.3	-28.32	87.73
90.00	11 16 0	3739.88	-14.24	145.73	15.07	65.27	12 18 20	3139.9	-17.46	138.53
100.00	16 46 12	2658.42	-29.85	71.41	19.02	88.28	17 30 31	2058.4	-29.77	62.61
100.00	12 12 57	3556.02	-12.57	131.38	14.24	62.66	13 12 13	2956.0	-16.14	124.40
110.00	18 39 44	2303.21	-33.92	44.32	18.90	94.49	19 18 7	1703.2	-32.93	35.22
110.00	12 35 54	3483.99	-9.05	123.84	12.15	56.90	13 33 58	2884.0	-13.35	117.37

DIFFERENTIAL CORRECTIONS
TDE .2615 TRA .0790 TC3-2.5989 BAU .3487
RDE .1586 RRA -.0977 RC3 1.0586 FAU .60703
FDE .2260 FRA10.7021 FC-56.5450 BSP 5219
BDE .3058 BRA .1257 BC3 2.8062 FSP 12215

MID-COURSE EXECUTION ACCURACY
SGT 1667.2 SGR 739.5 SG3 3546.3
RRT -.7379 RRF -.8782 RTF .8549
SGB 1823.8 R23 .2837 R13 -.8858
SG1 1761.6 SG2 472.4 THA 160.41

ORBIT DETERMINATION ACCURACY
ST 496.2 SR 304.9 SS 1650.2
CRT .9424 CRS .1457 CST -.1747
LSA 1653.2 MSA 573.1 SSA 29.0
EL1 575.7 EL2 87.9 ALF 30.87

LAUNCH DATE NOV 5 1964 FLIGHT TIME 304.00 ARRIVAL DATE SEP 5 1965

HELIOCENTRIC CONIC DISTANCE 688.265 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.824 GAL -2.55 AZL 88.50 HCA 212.40 SMA 186.33 ECC .20863 INC 1.4988 V1 30.043
RP 222.47 LAP -.80 LOP 255.00 VP 21.928 GAP -4.49 AZP 91.27 TAL 345.16 TAP 197.56 RCA 147.46 APO 225.20 V2 24.716
RC 262.633 GL 16.33 G 3.13 ZAL 109.69 ZAP 100.55 ETS 178.32 ZAE 135.38 ETE 174.33 ZAC 89.81 ETC 256.66 CLP 100.57

PLANETOCENTRIC CONIC

C3 9.306 VHL 3.051 DLA 25.48 RAL 161.56 RAD 6567.3 VEL 11.432 PTH 1.98 VHP 2.806 DPA 5.96 RAP 177.85 ECC 1.1532

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 0 7	3004.17	-27.96	96.73	19.19	85.36	15 50 11	2404.2	-28.31	88.09
90.00	11 18 21	3735.53	-14.37	146.47	15.38	65.33	12 20 36	3135.5	-17.58	138.26
100.00	16 46 9	2662.33	-29.84	71.70	19.31	88.13	17 30 31	2062.3	-29.78	62.90
100.00	12 15 0	3552.61	-12.68	131.18	14.54	62.70	13 14 13	2952.6	-16.24	124.20
110.00	18 40 2	2306.01	-33.94	44.54	19.20	94.36	19 18 28	1706.0	-32.96	35.44
110.00	12 37 36	3481.69	-9.14	123.72	12.44	56.92	13 35 38	2881.7	-13.43	117.25

DIFFERENTIAL CORRECTIONS
TDE .2656 TRA .1748 TC3-3.0730 BAU .4042
RDE .1635 RRA -.0949 RC3 1.0545 FAU .61264
FDE .2269 FRA10.8527 FC-56.9938 BSP 6361
BDE .3119 BRA .1989 BC3 3.2489 FSP 12340

MID-COURSE EXECUTION ACCURACY
SGT 1973.9 SGR 739.7 SG3 3582.4
RRT -.7704 RRF -.8705 RTF .8995
SGB 2108.0 R23 .2177 R13 -.9161
SG1 2058.9 SG2 452.2 THA 163.06

ORBIT DETERMINATION ACCURACY
ST 513.8 SR 313.3 SS 1665.1
CRT .9048 CRS .1350 CST -.2864
LSA 1672.6 MSA 580.0 SSA 29.2
EL1 590.5 EL2 116.1 ALF 30.18

LAUNCH DATE NOV 5 1964 FLIGHT TIME 306.00 ARRIVAL DATE SEP 7 1965

HELIOCENTRIC CONIC DISTANCE 692.282 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.822 GAL -2.56 AZL 88.49 HCA 213.49 SMA 186.28 ECC .20849 INC 1.5127 V1 30.043
RP 222.08 LAP -.83 LOP 256.10 VP 21.971 GAP -4.72 AZP 91.26 TAL 345.05 TAP 198.54 RCA 147.44 APO 225.12 V2 24.758
RC 264.145 GL 16.47 GP 3.05 ZAL 109.88 ZAP 98.52 ETS 178.47 ZAE 133.14 ETE 174.75 ZAC 89.54 ETC 256.74 CLP 98.53

PLANETOCENTRIC CONIC

C3 9.322 VHL 3.053 DLA 25.53 RAL 161.83 RAD 6567.3 VEL 11.433 PTH 1.98 VHP 2.796 DPA 6.28 RAP 176.97 ECC 1.1534

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 0 15	3007.69	-27.94	96.99	19.49	85.23	15 50 23	2407.7	-28.31	88.34
90.00	11 20 21	3732.69	-14.45	145.30	15.71	65.38	12 22 34	3132.7	-17.65	138.09
100.00	16 46 29	2665.19	-29.83	71.92	19.62	88.01	17 30 54	2065.2	-29.79	63.11
100.00	12 16 48	3550.43	-12.75	131.06	14.85	62.73	13 15 58	2950.4	-16.30	124.07
110.00	18 40 37	2308.10	-33.95	44.70	19.52	94.27	19 19 5	1708.1	-32.98	35.59
110.00	12 39 10	3480.28	-9.19	123.64	12.75	56.93	13 37 10	2880.3	-13.48	117.17

DIFFERENTIAL CORRECTIONS
TDE .2691 TRA .2730 TC3-3.5558 BAU .4620
RDE .1685 RRA -.0919 RC3 1.0494 FAU .61693
FDE .2170 FRA10.9830 FC-57.2931 BSP 7545
BDE .3175 BRA .2880 BC3 3.7074 FSP 12432

MID-COURSE EXECUTION ACCURACY
SGT 2300.4 SGR 739.7 SG3 3610.1
RRT -.7876 RRF -.8624 RTF .9274
SGB 2416.4 R23 .1688 R13 -.9367
SG1 2375.8 SG2 441.3 THA 165.27

ORBIT DETERMINATION ACCURACY
ST 537.0 SR 321.9 SS 1677.8
CRT .8601 CRS .1271 CST -.3865
LSA 1692.0 MSA 585.8 SSA 29.5
EL1 609.1 EL2 144.8 ALF 29.08

LAUNCH DATE NOV 5 1964 FLIGHT TIME 308.00 ARRIVAL DATE SEP 9 1965

HELIOCENTRIC CONIC DISTANCE 696.306 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.819 GAL -2.59 AZL 88.47 HCA 214.60 SMA 186.24 ECC .20840 INC 1.5258 V1 30.043
RP 221.70 LAP -.87 LOP 257.20 VP 22.015 GAP -4.95 AZP 91.26 TAL 344.91 TAP 199.51 RCA 147.43 APO 225.05 V2 24.799
RC 265.639 GL 16.60 GP 2.98 ZAL 110.09 ZAP 96.49 ETS 178.61 ZAE 130.90 ETE 175.13 ZAC 89.27 ETC 256.82 CLP 96.50

PLANETOCENTRIC CONIC

C3 9.343 VHL 3.057 DLA 25.56 RAL 162.12 RAD 6567.3 VEL 11.434 PTH 1.98 VHP 2.790 DPA 6.60 RAP 176.09 ECC 1.1538

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 0 54	3009.85	-27.93	97.15	19.82	85.15	15 51 4	2409.9	-28.31	88.50
90.00	11 22 1	3731.40	-14.48	145.22	16.04	65.40	12 24 13	3131.4	-17.68	138.01
100.00	16 47 15	2666.99	-29.83	72.05	19.95	87.94	17 31 42	2067.0	-29.79	63.24
100.00	12 18 21	3549.50	-12.78	131.00	15.19	62.74	13 17 31	2949.5	-16.33	124.01
110.00	18 41 31	2309.48	-33.95	44.81	19.86	94.21	19 20 0	1709.5	-33.00	35.70
110.00	12 40 35	3479.77	-9.21	123.61	13.07	56.93	13 38 35	2879.8	-13.50	117.14

DIFFERENTIAL CORRECTIONS
TDE .2718 TRA .3740 TC3-4.0453 BAU .5217
RDE .1728 RRA -.0896 RC3 1.0397 FAU .61723
FDE .2598 FRA11.1541 FC-57.1937 BSP 8777
BDE .3220 BRA .3846 BC3 4.1767 FSP 12610

MID-COURSE EXECUTION ACCURACY
SGT 2641.8 SGR 737.3 SG3 3624.5
RRT -.7966 RRF -.8530 RTF .9450
SGB 2742.7 R23 .1310 R13 -.9504
SG1 2708.0 SG2 434.8 THA 167.13

ORBIT DETERMINATION ACCURACY
ST 565.1 SR 329.2 SS 1699.0
CRT .8092 CRS .1081 CST -.4888
LSA 1723.4 MSA 586.0 SSA 29.9
EL1 630.6 EL2 173.3 ALF 27.49

LAUNCH DATE NOV 5 1964 FLIGHT TIME 310.00 ARRIVAL DATE SEP 11 1965

HELIOCENTRIC CONIC DISTANCE 700.341 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.817 GAL -2.61 AZL 88.46 HCA 215.70 SMA 186.20 ECC .20834 INC 1.5383 V1 30.043
RP 221.32 LAP -.90 LOP 258.31 VP 22.058 GAP -5.17 AZP 91.25 TAL 344.77 TAP 200.47 RCA 147.41 APO 225.00 V2 24.841
RC 267.114 GL 16.71 GP 2.90 ZAL 110.33 ZAP 94.46 ETS 178.75 ZAE 128.65 ETE 175.48 ZAC 89.00 ETC 256.91 CLP 94.47

PLANETOCENTRIC CONIC

C3 9.368 VHL 3.061 DLA 25.56 RAL 162.43 RAD 6567.3 VEL 11.435 PTH 1.98 VHP 2.787 DPA 6.92 RAP 175.21 ECC 1.1542

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 2 1	3010.78	-27.93	97.21	20.17	85.12	15 52 11	2410.8	-28.31	88.57
90.00	11 23 22	3731.51	-14.48	145.23	16.39	65.40	12 25 34	3131.5	-17.68	138.01
100.00	16 48 23	2667.83	-29.83	72.11	20.30	87.91	17 32 51	2067.8	-29.80	63.31
100.00	12 19 41	3549.70	-12.77	131.02	15.53	62.74	13 18 50	2949.7	-16.32	124.03
110.00	18 42 41	2310.23	-33.96	44.87	20.21	94.17	19 21 11	1710.2	-33.01	35.76
110.00	12 41 52	3480.06	-9.20	123.63	13.41	56.93	13 39 52	2880.1	-13.49	117.16

DIFFERENTIAL CORRECTIONS
TDE .2752 TRA .4776 TC3-4.5304 BAU .5820
RDE .1784 RRA -.0860 RC3 1.0339 FAU .61996
FDE .1993 FRA11.2143 FC-57.2938 BSP 10036
BDE .3280 BRA .4853 BC3 4.6469 FSP 12565

MID-COURSE EXECUTION ACCURACY
SGT 2989.7 SGR 737.5 SG3 3636.7
RRT -.7981 RRF -.8448 RTF .9577
SGB 3079.4 R23 .1059 R13 -.9611
SG1 3048.4 SG2 435.8 THA 168.63

ORBIT DETERMINATION ACCURACY
ST 600.6 SR 338.8 SS 1702.3
CRT .7596 CRS .1124 CST -.5547
LSA 1737.6 MSA 594.4 SSA 29.9
EL1 659.8 EL2 200.6 ALF 25.75

LAUNCH DATE NOV 5 1964 FLIGHT TIME 312.00 ARRIVAL DATE SEP 13 1965

HELIOCENTRIC CONIC DISTANCE 704.384 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.815 GAL -2.64 AZL 88.45 HCA 216.81 SMA 186.17 ECC .20831 INC 1.5502 V1 30.043
RP 220.94 LAP -.93 LOP 259.42 VP 22.103 GAP -5.39 AZP 91.24 TAL 344.61 TAP 201.42 RCA 147.39 APO 224.96 V2 24.883
RC 268.570 GL 16.82 GP 2.83 ZAL 110.60 ZAP 92.44 ETS 178.88 ZAE 126.40 ETE 175.80 ZAC 88.74 ETC 256.99 CLP 92.44

PLANETOCENTRIC CONIC

C3 9.397 VHL 3.066 DLA 25.55 RAL 162.76 RAD 6567.3 VEL 11.436 PTH 1.98 VHP 2.787 DPA 7.23 RAP 174.34 ECC 1.1547

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 3 36	3010.43	-27.93	97.19	20.54	85.13	15 53 47	2410.4	-28.31	88.54
90.00	11 24 24	3733.10	-14.44	145.32	16.74	65.37	12 26 37	3133.1	-17.64	138.11
100.00	16 49 55	2667.68	-29.83	72.10	20.68	87.92	17 34 23	2067.7	-29.80	63.30
100.00	12 20 46	3551.08	-12.73	131.10	15.89	62.72	13 19 57	2951.1	-16.28	124.11
110.00	18 44 8	2310.31	-33.96	44.87	20.59	94.17	19 22 39	1710.3	-33.01	35.76
110.00	12 43 2	3481.21	-9.15	123.69	13.77	56.92	13 41 3	2881.2	-13.45	117.22

DIFFERENTIAL CORRECTIONS
TDE .2771 TRA .5833 TC3-5.0184 BAU .6435
RDE .1835 RRA -.0825 RC3 1.0260 FAU .62067
FDE .1476 FRA11.2687 FC-57.1787 BSP 11301
BDE .3326 BRA .5891 BC3 5.1222 FSP 12526

MID-COURSE EXECUTION ACCURACY
SGT 3345.9 SGR 737.0 SG3 3639.1
RRT -.7965 RRF -.8359 RTF .9666
SGB 3426.1 R23 .0870 R13 -.9688
SG1 3397.9 SG2 438.8 THA 169.88

ORBIT DETERMINATION ACCURACY
ST 638.8 SR 348.1 SS 1706.6
CRT .7091 CRS .1152 CST -.6138
LSA 1755.1 MSA 600.4 SSA 30.0
EL1 691.2 EL2 226.8 ALF 23.86

LAUNCH DATE NOV 5 1964 FLIGHT TIME 314.00 ARRIVAL DATE SEP 15 1965

HELIOCENTRIC CONIC DISTANCE 708.434 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.814 GAL -2.66 AZL 88.44 HCA 217.92 SMA 186.15 ECC .20831 INC 1.5615 V1 30.043
RP 220.56 LAP -.96 LOP 260.53 VP 22.147 GAP -5.61 AZP 91.23 TAL 344.44 TAP 202.37 RCA 147.37 APO 224.93 V2 24.924
RC 270.009 GL 16.91 GP 2.76 ZAL 110.89 ZAP 90.42 ETS 179.01 ZAE 124.16 ETE 176.10 ZAC 88.49 ETC 257.08 CLP 90.42

PLANETOCENTRIC CONIC

C3 9.432 VHL 3.071 DLA 25.52 RAL 163.11 RAD 6567.3 VEL 11.438 PTH 1.98 VHP 2.791 DPA 7.54 RAP 173.48 ECC 1.1552

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 5 40	3008.84	-27.94	97.07	20.94	85.19	15 55 49	2408.8	-28.31	88.43
90.00	11 25 7	3736.11	-14.35	145.50	17.12	65.32	12 27 23	3136.1	-17.56	138.30
100.00	16 51 50	2666.57	-29.83	72.02	21.07	87.96	17 36 17	2066.6	-29.79	63.21
100.00	12 21 38	3553.61	-12.65	131.24	16.26	62.69	13 20 52	2953.6	-16.21	124.26
110.00	18 45 53	2309.76	-33.96	44.83	20.98	94.19	19 24 23	1709.8	-33.00	35.72
110.00	12 44 5	3483.18	-9.08	123.80	14.15	56.90	13 42 8	2883.2	-13.37	117.33

DIFFERENTIAL CORRECTIONS
TDE .2778 TRA .6914 TC3-5.5053 BAU .7059
RDE .1894 RRA -.0791 RC3 1.0160 FAU .61921
FDE .0972 FRA11.3169 FC-56.8367 BSP 12576
BDE .3362 BRA .6959 BC3 5.5983 FSP 12477

MID-COURSE EXECUTION ACCURACY
SGT 3707.6 SGR 735.6 SG3 3631.0
RRT -.7923 RRF -.8264 RTF .9729
SGB 3779.8 R23 .0728 R13 -.9744
SG1 3753.8 SG2 443.3 THA 170.94

ORBIT DETERMINATION ACCURACY
ST 680.3 SR 357.3 SS 1711.6
CRT .6593 CRS .1182 CST -.6647
LSA 1775.5 MSA 605.5 SSA 30.0
EL1 726.0 EL2 251.7 ALF 21.86

LAUNCH DATE NOV 5 1964 FLIGHT TIME 316.00 ARRIVAL DATE SEP 17 1965

HELIOCENTRIC CONIC DISTANCE 712.491 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.813 GAL -2.70 AZL 88.43 HCA 219.04 SMA 186.13 ECC .20835 INC 1.5724 V1 30.043
RP 220.18 LAP -.99 LOP 261.64 VP 22.192 GAP -5.82 AZP 91.22 TAL 344.26 TAP 203.30 RCA 147.35 APO 224.91 V2 24.965
RC 271.430 GL 16.99 GP 2.69 ZAL 111.20 ZAP 88.42 ETS 179.12 ZAE 121.93 ETE 176.37 ZAC 88.24 ETC 257.18 CLP 88.42

PLANETOCENTRIC CONIC

C3 9.471 VHL 3.077 DLA 25.46 RAL 163.48 RAD 6567.3 VEL 11.439 PTH 1.98 VHP 2.798 DPA 7.84 RAP 172.63 ECC 1.1559

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 8 12	3006.07	-27.95	96.87	21.36	85.29	15 58 18	2406.1	-28.31	88.22
90.00	11 25 32	3740.49	-14.23	145.76	17.50	65.26	12 27 53	3140.5	-17.45	138.57
100.00	16 54 8	2664.54	-29.83	71.87	21.48	88.04	17 38 32	2064.5	-29.79	63.06
100.00	12 22 17	3557.26	-12.53	131.45	16.65	62.64	13 21 34	2957.3	-16.10	124.48
110.00	18 47 54	2308.59	-33.95	44.74	21.39	94.25	19 26 23	1708.6	-32.99	35.63
110.00	12 45 0	3485.97	-8.98	123.94	14.54	56.88	13 43 6	2886.0	-13.27	117.48

DIFFERENTIAL CORRECTIONS
TDE .2778 TRA .8021 TC3-5.9848 BAU .7684
RDE .1949 RRA -.0755 RC3 1.0044 FAU .61607
FDE .0440 FRA11.3470 FC-56.3155 BSP 13869
BDE .3394 BRA .8057 BC3 6.0685 FSP 12399

MID-COURSE EXECUTION ACCURACY
SGT 4070.9 SGR 733.6 SG3 3613.3
RRT -.7860 RRF -.8163 RTF .9776
SGB 4136.5 R23 .0623 R13 -.9786
SG1 4112.0 SG2 449.0 THA 171.84

ORBIT DETERMINATION ACCURACY
ST 725.3 SR 366.3 SS 1715.4
CRT .6114 CRS .1222 CST -.7073
LSA 1797.0 MSA 610.4 SSA 30.0
EL1 764.6 EL2 275.0 ALF 19.83

LAUNCH DATE NOV 5 1964 FLIGHT TIME 318.00 ARRIVAL DATE SEP 19 1965

HELIOCENTRIC CONIC DISTANCE 716.557 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.812 GAL -2.73 AZL 88.42 HCA 220.16 SMA 186.11 ECC .20841 INC 1.5827 V1 30.043
RP 219.81 LAP -1.02 LOP 262.76 VP 22.236 GAP -6.03 AZP 91.21 TAL 344.06 TAP 204.22 RCA 147.33 APO 224.90 V2 25.006
RC 272.833 GL 17.07 GP 2.63 ZAL 111.54 ZAP 86.44 ETS 179.24 ZAE 119.71 ETE 176.63 ZAC 87.99 ETC 257.27 CLP 86.44

PLANETOCENTRIC CONIC

C3 9.515 VHL 3.085 DLA 25.39 RAL 163.87 RAD 6567.3 VEL 11.441 PTH 1.98 VHP 2.808 DPA 8.14 RAP 171.81 ECC 1.1566

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 11 9	3002.17	-27.98	96.59	21.80	85.43	16 1 12	2402.2	-28.32	87.94
90.00	11 25 41	3746.20	-14.06	146.10	17.90	65.17	12 28 7	3146.2	-17.30	138.92
100.00	16 56 47	2661.61	-29.84	71.65	21.92	88.15	17 41 9	2061.6	-29.78	62.85
100.00	12 22 44	3561.99	-12.39	131.73	17.06	62.58	13 22 6	2962.0	-15.96	124.76
110.00	18 50 11	2306.82	-33.94	44.60	21.82	94.33	19 28 38	1706.8	-32.97	35.50
110.00	12 45 49	3489.55	-8.84	124.14	14.95	56.85	13 43 59	2889.5	-13.15	117.68

DIFFERENTIAL CORRECTIONS
TDE .2761 TRA .9151 TC3-6.4583 BAU .8311
RDE .2005 RRA -.0720 RC3 .9920 FAU .61171
FDE -.0162 FRA11.3610 FC-55.6589 BSP 15152
BDE .3412 BRA .9179 BC3 6.5340 FSP 12297

MID-COURSE EXECUTION ACCURACY
SGT 4435.9 SGR 731.5 SG3 3588.1
RRT -.7784 RRF -.8059 RTF .9811
SGB 4495.8 R23 .0542 R13 -.9819
SG1 4472.7 SG2 455.4 THA 172.61

ORBIT DETERMINATION ACCURACY
ST 771.9 SR 375.4 SS 1718.3
CRT .5648 CRS .1283 CST -.7432
LSA 1819.5 MSA 614.7 SSA 29.9
EL1 805.4 EL2 296.9 ALF 17.87

LAUNCH DATE NOV 5 1964 FLIGHT TIME 320.00 ARRIVAL DATE SEP 21 1965

HELIOCENTRIC CONIC DISTANCE 720.630 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.811 GAL -2.77 AZL 88.41 HCA 221.28 SMA 186.10 ECC .20851 INC 1.5926 V1 30.043
RP 219.44 LAP -1.05 LOP 263.89 VP 22.282 GAP -6.23 AZP 91.20 TAL 343.85 TAP 205.13 RCA 147.30 APO 224.91 V2 25.047
RC 274.220 GL 17.13 GP 2.56 ZAL 111.91 ZAP 84.48 ETS 179.35 ZAE 117.52 ETE 176.87 ZAC 87.76 ETC 257.36 CLP 84.47

PLANETOCENTRIC CONIC

C3 9.564 VHL 3.093 DLA 25.30 RAL 164.27 RAD 6567.3 VEL 11.443 PTH 1.99 VHP 2.821 DPA 8.42 RAP 171.01 ECC 1.1574

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 14 32	2997.22	-28.00	96.23	22.27	85.61	16 4 29	2397.2	-28.32	87.58
90.00	11 25 34	3753.18	-13.86	146.52	18.32	65.06	12 28 7	3153.2	-17.11	139.35
100.00	16 59 48	2657.85	-29.85	71.37	22.38	88.30	17 44 6	2057.8	-29.77	62.57
100.00	12 22 59	3567.78	-12.20	132.06	17.48	62.50	13 22 27	2967.8	-15.79	125.11
110.00	18 52 44	2304.48	-33.93	44.42	22.27	94.43	19 31 9	1704.5	-32.94	35.32
110.00	12 46 32	3493.91	-8.68	124.37	15.38	56.81	13 44 46	2893.9	-12.99	117.92

DIFFERENTIAL CORRECTIONS
TDE .2726 TRA 1.0296 TC3-6.9251 BAU .8942
RDE .2061 RRA -.0682 RC3 .9783 FAU .60587
FDE -.0858 FRA11.3506 FC-54.8454 BSP 16424
BDE .3417 BRA 1.0318 BC3 6.9939 FSP 12160

MID-COURSE EXECUTION ACCURACY
SGT 4801.3 SGR 729.0 SG3 3553.7
RRT -.7696 RRF -.7949 RTF .9838
SGB 4856.3 R23 .0481 R13 -.9844
SG1 4834.3 SG2 462.4 THA 173.27

ORBIT DETERMINATION ACCURACY
ST 819.8 SR 384.6 SS 1719.3
CRT .5200 CRS .1370 CST -.7725
LSA 1841.8 MSA 618.9 SSA 29.9
EL1 848.1 EL2 317.6 ALF 16.01

LAUNCH DATE NOV 5 1964 FLIGHT TIME 322.00 ARRIVAL DATE SEP 23 1965

HELIOCENTRIC CONIC DISTANCE 724.710 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.811 GAL -2.81 AZL 88.40 HCA 222.41 SMA 186.10 ECC .20865 INC 1.6021 V1 30.043
RP 219.07 LAP -1.08 LOP 265.02 VP 22.327 GAP -6.43 AZP 91.18 TAL 343.62 TAP 206.03 RCA 147.27 APO 224.93 V2 25.088
RC 275.589 GL 17.18 GP 2.49 ZAL 112.30 ZAP 82.54 ETS 179.45 ZAE 115.34 ETE 177.09 ZAC 87.53 ETC 257.45 CLP 82.54

PLANETOCENTRIC CONIC

C3 9.618 VHL 3.101 DLA 25.19 RAL 164.70 RAD 6567.3 VEL 11.446 PTH 1.99 VHP 2.838 DPA 8.69 RAP 170.23 ECC 1.1583

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 18 18	2991.27	-28.03	95.80	22.76	85.82	16 8 10	2391.3	-28.32	87.14
90.00	11 25 13	3761.35	-13.63	147.00	18.75	64.94	12 27 54	3161.3	-16.89	139.85
100.00	17 3 9	2653.27	-29.86	71.03	22.86	88.48	17 47 22	2053.3	-29.75	62.23
100.00	12 23 4	3574.58	-11.99	132.45	17.92	62.41	13 22 38	2974.6	-15.59	125.51
110.00	18 55 33	2301.59	-33.91	44.19	22.73	94.57	19 33 55	1701.6	-32.91	35.10
110.00	12 47 8	3499.03	-8.49	124.64	15.83	56.76	13 45 27	2899.0	-12.81	118.20

DIFFERENTIAL CORRECTIONS
TDE .2678 TRA 1.1469 TC3-7.3774 BAU .9567
RDE .2118 RRA -.0645 RC3 .9634 FAU .59863
FDE -.1547 FRA11.3306 FC-53.8834 BSP 17700
BDE .3414 BRA 1.1487 BC3 7.4400 FSP 12011

MID-COURSE EXECUTION ACCURACY
SGT 5163.9 SGR 726.3 SG3 3511.9
RRT -.7597 RRF -.7834 RTF .9860
SGB 5214.8 R23 .0433 R13 -.9865
SG1 5193.6 SG2 469.6 THA 173.85

ORBIT DETERMINATION ACCURACY
ST 870.1 SR 393.6 SS 1720.5
CRT .4770 CRS .1462 CST -.7978
LSA 1866.4 MSA 622.7 SSA 29.8
EL1 893.6 EL2 336.9 ALF 14.24

LAUNCH DATE NOV 5 1964 FLIGHT TIME 324.00 ARRIVAL DATE SEP 25 1965

HELIOCENTRIC CONIC DISTANCE 728.798 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.811 GAL -2.85 AZL 88.39 HCA 223.54 SMA 186.10 ECC .20881 INC 1.6113 V1 30.043
RP 218.70 LAP -1.11 LOP 266.15 VP 22.372 GAP -6.63 AZP 91.17 TAL 343.38 TAP 206.92 RCA 147.24 APO 224.96 V2 25.128
RC 276.940 GL 17.23 GP 2.43 ZAL 112.71 ZAP 80.63 ETS 179.54 ZAE 113.19 ETE 177.30 ZAC 87.31 ETC 257.54 CLP 80.62

PLANETOCENTRIC CONIC

C3 9.678 VHL 3.111 DLA 25.06 RAL 165.15 RAD 6567.3 VEL 11.448 PTH 1.99 VHP 2.857 DPA 8.94 RAP 169.49 ECC 1.1593

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 22 27	2984.40	-28.07	95.30	23.27	86.07	16 12 11	2384.4	-28.31	86.64
90.00	11 24 38	3770.66	-13.36	147.55	19.19	64.80	12 27 29	3170.7	-16.65	140.42
100.00	17 6 49	2647.94	-29.87	70.63	23.36	88.69	17 50 56	2047.9	-29.73	61.83
100.00	12 22 58	3582.35	-11.74	132.90	18.37	62.31	13 22 40	2982.4	-15.36	125.97
110.00	18 58 36	2298.16	-33.89	43.93	23.22	94.72	19 36 55	1698.2	-32.87	34.84
110.00	12 47 39	3504.90	-8.27	124.96	16.30	56.71	13 46 4	2904.9	-12.59	118.53

DIFFERENTIAL CORRECTIONS
TDE .2612 TRA 1.2661 TC3-7.8183 BAU 1.0190
RDE .2175 RRA -.0606 RC3 .9475 FAU .59000
FDE -.2294 FRA11.2901 FC-52.7789 BSP 18963
BDE .3399 BRA 1.2676 BC3 7.8755 FSP 11834

MID-COURSE EXECUTION ACCURACY
SGT 5524.5 SGR 723.3 SG3 3461.8
RRT -.7488 RRF -.7714 RTF .9877
SGB 5571.7 R23 .0396 R13 -.9880
SG1 5551.2 SG2 477.1 THA 174.36

ORBIT DETERMINATION ACCURACY
ST 921.5 SR 402.6 SS 1720.4
CRT .4355 CRS .1572 CST -.8188
LSA 1891.5 MSA 626.5 SSA 29.7
EL1 940.8 EL2 355.0 ALF 12.59

LAUNCH DATE NOV 5 1964 FLIGHT TIME 326.00 ARRIVAL DATE SEP 27 1965

HELIOCENTRIC CONIC DISTANCE 732.893 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.811 GAL -2.90 AZL 88.38 HCA 224.68 SMA 186.10 ECC .20900 INC 1.6200 V1 30.043
RP 218.34 LAP -1.14 LOP 267.28 VP 22.418 GAP -6.82 AZP 91.15 TAL 343.12 TAP 207.80 RCA 147.20 APO 225.00 V2 25.168
RC 278.273 GL 17.27 GP 2.36 ZAL 113.15 ZAP 78.75 ETS 179.64 ZAE 111.06 ETE 177.49 ZAC 87.10 ETC 257.63 CLP 78.74

PLANETOCENTRIC CONIC

C3 9.743 VHL 3.121 DLA 24.91 RAL 165.62 RAD 6567.4 VEL 11.451 PTH 1.99 VHP 2.880 DPA 9.19 RAP 168.77 ECC 1.1603

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 26 56	2976.69	-28.10	94.73	23.80	86.35	16 16 33	2376.7	-28.31	86.08
90.00	11 23 52	3781.03	-13.06	148.17	19.66	64.65	12 26 53	3181.0	-16.37	141.05
100.00	17 10 47	2641.89	-29.87	70.19	23.88	88.92	17 54 49	2041.9	-29.70	61.38
100.00	12 22 42	3591.06	-11.47	133.40	18.84	62.21	13 22 33	2991.1	-15.10	126.49
110.00	19 1 55	2294.22	-33.87	43.62	23.73	94.90	19 40 9	1694.2	-32.82	34.54
110.00	12 48 4	3511.50	-8.02	125.31	16.78	56.66	13 46 36	2911.5	-12.35	118.89

DIFFERENTIAL CORRECTIONS
TDE .2520 TRA 1.3874 TC3-8.2442 BAU 1.0807
RDE .2233 RRA -.0566 RC3 .9311 FAU .58048
FDE -.3133 FRA11.2303 FC-51.5787 BSP 20197
BDE .3367 BRA 1.3885 BC3 8.2966 FSP 11632

MID-COURSE EXECUTION ACCURACY
SGT 5881.1 SGR 720.4 SG3 3405.7
RRT -.7373 RRF -.7591 RTF .9890
SGB 5925.0 R23 .0369 R13 -.9893
SG1 5905.2 SG2 484.7 THA 174.80

ORBIT DETERMINATION ACCURACY
ST 973.4 SR 411.7 SS 1719.4
CRT .3942 CRS .1711 CST -.8365
LSA 1917.1 MSA 630.2 SSA 29.5
EL1 989.1 EL2 372.3 ALF 11.05

LAUNCH DATE NOV 5 1964 FLIGHT TIME 328.00 ARRIVAL DATE SEP 29 1965

HELIOCENTRIC CONIC DISTANCE 736.995 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.812 GAL -2.94 AZL 88.37 HCA 225.82 SMA 186.11 ECC .20923 INC 1.6285 V1 30.043
RP 217.98 LAP -1.17 LOP 268.42 VP 22.463 GAP -7.01 AZP 91.14 TAL 342.85 TAP 208.67 RCA 147.17 APO 225.05 V2 25.288
RC 279.589 GL 17.29 GP 2.30 ZAL 113.61 ZAP 76.91 ETS 179.72 ZAE 108.97 ETE 177.67 ZAC 86.89 ETC 257.71 CLP 76.90

PLANETOCENTRIC CONIC

C3 9.815 VHL 3.133 DLA 24.75 RAL 166.10 RAD 6567.4 VEL 11.454 PTH 1.99 VHP 2.905 DPA 9.42 RAP 168.09 ECC 1.1615

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 31 46	2968.20	-28.14	94.12	24.35	86.66	16 21 14	2368.2	-28.30	85.45
90.00	11 22 55	3792.41	-12.72	148.84	20.14	64.49	12 26 7	3192.4	-16.06	141.74
100.00	17 15 3	2635.17	-29.88	69.69	24.42	89.19	17 58 58	2035.2	-29.68	60.89
100.00	12 22 18	3600.67	-11.16	133.95	19.33	62.09	13 22 19	3000.7	-14.81	127.06
110.00	19 5 27	2289.79	-33.85	43.28	24.25	95.10	19 43 36	1689.8	-32.77	34.21
110.00	12 48 24	3518.82	-7.75	125.70	17.28	56.60	13 47 3	2918.8	-12.09	119.29

DIFFERENTIAL CORRECTIONS
TDE .2409 TRA 1.5110 TC3-8.6532 BAU 1.1417
RDE .2291 RRA -.0526 RC3 .9137 FAU .56979
FDE -.3960 FRA11.1594 FC-50.2605 BSP 21420
BDE .3324 BRA 1.5119 BC3 8.7013 FSP 11412

MID-COURSE EXECUTION ACCURACY
SGT 6233.0 SGR 717.3 SG3 3343.2
RRT -.7251 RRF -.7463 RTF .9901
SGB 6274.1 R23 .0346 R13 -.9904
SG1 6254.8 SG2 492.3 THA 175.20

ORBIT DETERMINATION ACCURACY
ST 1026.6 SR 420.5 SS 1718.5
CRT .3539 CRS .1855 CST -.8521
LSA 1944.8 MSA 633.1 SSA 29.3
EL1 1039.1 EL2 388.6 ALF 9.60

LAUNCH DATE NOV 5 1964 FLIGHT TIME 330.00 ARRIVAL DATE OCT 1 1965

HELIOCENTRIC CONIC DISTANCE 741.103 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.812 GAL -2.99 AZL 88.36 HCA 226.96 SMA 186.12 ECC .20949 INC 1.6367 V1 30.043
RP 217.62 LAP -1.20 LOP 269.56 VP 22.509 GAP -7.20 AZP 91.12 TAL 342.57 TAP 209.53 RCA 147.13 APO 225.11 V2 25.248
RC 280.887 GL 17.31 GP 2.24 ZAL 114.09 ZAP 75.10 ETS 179.80 ZAE 106.90 ETE 177.84 ZAC 86.70 ETC 257.79 CLP 75.08

PLANETOCENTRIC CONIC

C3 9.892 VHL 3.145 DLA 24.56 RAL 166.60 RAD 6567.4 VEL 11.458 PTH 1.99 VHP 2.934 DPA 9.63 RAP 167.45 ECC 1.1628

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 36 53	2959.00	-28.17	93.45	24.93	86.99	16 26 12	2359.0	-28.29	84.78
90.00	11 21 48	3804.73	-12.36	149.56	20.63	64.32	12 25 13	3204.7	-15.72	142.49
100.00	17 19 36	2627.82	-29.89	69.14	24.99	89.48	18 3 24	2027.8	-29.64	60.34
100.00	12 21 46	3611.14	-10.83	134.54	19.84	61.97	13 21 57	3011.1	-14.49	127.67
110.00	19 9 12	2284.90	-33.82	42.90	24.79	95.33	19 47 17	1684.9	-32.71	33.84
110.00	12 48 39	3526.83	-7.45	126.12	17.81	56.54	13 47 26	2926.8	-11.80	119.73

DIFFERENTIAL CORRECTIONS
TDE .2268 TRA 1.6362 TC3-9.0458 BAU 1.2022
RDE .2350 RRA -.0485 RC3 .8961 FAU .55843
FDE -.4865 FRA11.0678 FC-48.8721 BSP 22611
BDE .3266 BRA 1.6369 BC3 9.0901 FSP 11168

MID-COURSE EXECUTION ACCURACY
SGT 6579.4 SGR 714.5 SG3 3275.6
RRT -.7125 RRF -.7333 RTF .9911
SGB 6618.1 R23 .0329 R13 -.9913
SG1 6599.2 SG2 499.9 THA 175.55

ORBIT DETERMINATION ACCURACY
ST 1080.1 SR 429.4 SS 1716.5
CRT .3134 CRS .2025 CST -.8654
LSA 1972.8 MSA 636.1 SSA 29.0
EL1 1089.8 EL2 404.2 ALF 8.24

LAUNCH DATE NOV 5 1964 FLIGHT TIME 332.00 ARRIVAL DATE OCT 3 1965

HELIOCENTRIC CONIC DISTANCE 745.219 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.813 GAL -3.05 AZL 88.36 HCA 228.11 SMA 186.13 ECC .20978 INC 1.6446 V1 30.043
RP 217.27 LAP -1.22 LOP 270.71 VP 22.554 GAP -7.38 AZP 91.10 TAL 342.27 TAP 210.37 RCA 147.09 APO 225.18 V2 25.287
RC 282.167 GL 17.32 GP 2.18 ZAL 114.60 ZAP 73.32 ETS 179.88 ZAE 104.88 ETE 178.00 ZAC 86.52 ETC 257.87 CLP 73.31

PLANETOCENTRIC CONIC

C3 9.976 VHL 3.159 DLA 24.37 RAL 167.12 RAD 6567.4 VEL 11.461 PTH 1.99 VHP 2.965 DPA 9.83 RAP 166.84 ECC 1.1642

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 42 17	2949.16	-28.20	92.73	25.52	87.35	16 31 26	2349.2	-28.27	84.06
90.00	11 20 33	3817.93	-11.97	150.33	21.15	64.15	12 24 11	3217.9	-15.35	143.29
100.00	17 24 24	2619.89	-29.89	68.55	25.57	89.79	18 8 4	2019.9	-29.60	59.76
100.00	12 21 7	3622.43	-10.47	135.19	20.37	61.84	13 21 29	3022.4	-14.15	128.34
110.00	19 13 11	2279.56	-33.78	42.49	25.36	95.57	19 51 11	1679.6	-32.64	33.44
110.00	12 48 50	3535.53	-7.12	126.58	18.35	56.48	13 47 45	2935.5	-11.48	120.20

DIFFERENTIAL CORRECTIONS
TDE .2108 TRA 1.7639 TC3-9.4176 BAU 1.2615
RDE .2409 RRA -.0444 RC3 .8780 FAU .54615
FDE -.5733 FRA10.9670 FC-47.3948 BSP 23786
BDE .3201 BRA 1.7645 BC3 9.4584 FSP 10914

MID-COURSE EXECUTION ACCURACY
SGT 6919.3 SGR 711.6 SG3 3203.1
RRT -.6993 RRF -.7199 RTF .9919
SGB 6955.8 R23 .0316 R13 -.9920
SG1 6937.3 SG2 507.4 THA 175.86

ORBIT DETERMINATION ACCURACY
ST 1135.2 SR 438.1 SS 1714.7
CRT .2738 CRS .2194 CST -.8773
LSA 2003.1 MSA 638.3 SSA 28.7
EL1 1142.5 EL2 418.7 ALF 6.97

LAUNCH DATE NOV 5 1964 FLIGHT TIME 334.00 ARRIVAL DATE OCT 5 1965

HELIOCENTRIC CONIC DISTANCE 749.398 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.814 GAL -3.11 AZL 88.35 HCA 229.26 SMA 186.15 ECC .21010 INC 1.6522 V1 30.043
RP 216.91 LAP -1.25 LOP 271.86 VP 22.599 GAP -7.56 AZP 91.08 TAL 341.95 TAP 211.21 RCA 147.04 APO 225.26 V2 25.327
RC 283.431 GL 17.32 GP 2.12 ZAL 115.13 ZAP 71.59 ETS 179.95 ZAE 102.89 ETE 178.14 ZAC 86.34 ETC 257.95 CLP 71.57

PLANETOCENTRIC CONIC

C3 10.067 VHL 3.173 DLA 24.15 RAL 167.66 RAD 6567.4 VEL 11.465 PTH 1.99 VHP 2.998 DPA 10.01 RAP 166.27 ECC 1.1657

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 47 58	2938.69	-28.23	91.96	26.14	87.73	16 36 56	2338.7	-28.25	83.30
90.00	11 19 11	3832.02	-11.55	151.16	21.68	63.97	12 23 3	3232.0	-14.96	144.14
100.00	17 29 29	2611.38	-29.89	67.92	26.17	90.12	18 13 0	2011.4	-29.56	59.13
100.00	12 20 21	3634.56	-10.08	135.88	20.91	61.71	13 20 55	3034.6	-13.78	129.04
110.00	19 17 23	2273.77	-33.74	42.04	25.94	95.83	19 55 17	1673.8	-32.57	33.00
110.00	12 48 56	3544.93	-6.77	127.08	18.91	56.41	13 48 0	2944.9	-11.14	120.71

DIFFERENTIAL CORRECTIONS
TDE .2037 TRA 1.9064 TC3-9.7274 BAU 1.3142
RDE .2457 RRA -.0415 RC3 .8546 FAU .52863
FDE -.5736 FRA10.9434 FC-45.4608 BSP 25236
BDE .3192 BRA 1.9069 BC3 9.7649 FSP 10838

MID-COURSE EXECUTION ACCURACY
SGT 7243.8 SGR 705.5 SG3 3118.0
RRT -.6836 RRF -.7023 RTF .9923
SGB 7278.0 R23 .0281 R13 -.9925
SG1 7259.9 SG2 513.8 THA 176.17

ORBIT DETERMINATION ACCURACY
ST 1204.5 SR 444.8 SS 1719.1
CRT .2471 CRS .2147 CST -.8924
LSA 2049.1 MSA 635.5 SSA 28.8
EL1 1210.2 EL2 428.9 ALF 5.97

LAUNCH DATE NOV 5 1964 FLIGHT TIME 336.00 ARRIVAL DATE OCT 7 1965

HELIOCENTRIC CONIC DISTANCE 753.468 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.816 GAL -3.17 AZL 88.34 HCA 230.41 SMA 186.18 ECC .21045 INC 1.6596 V1 30.043
RP 216.57 LAP -1.28 LOP 273.02 VP 22.645 GAP -7.74 AZP 91.06 TAL 341.62 TAP 212.04 RCA 146.99 APO 225.36 V2 25.365
RC 284.679 GL 17.32 GP 2.06 ZAL 115.68 ZAP 69.89 ETS 180.01 ZAE 100.93 ETE 178.28 ZAC 86.18 ETC 258.02 CLP 69.88

PLANETOCENTRIC CONIC

C3 10.165 VHL 3.188 DLA 23.92 RAL 168.22 RAD 6567.4 VEL 11.470 PTH 1.99 VHP 3.035 DPA 10.17 RAP 165.74 ECC 1.1673

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 53 51	2927.79	-28.26	91.17	26.77	88.13	16 42 38	2327.8	-28.22	82.50
90.00	11 17 42	3846.78	-11.11	152.01	22.23	63.79	12 21 49	3246.8	-14.54	145.02
100.00	17 34 45	2602.45	-29.89	67.25	26.79	90.47	18 18 8	2002.4	-29.50	58.47
100.00	12 19 29	3647.36	-9.66	136.60	21.47	61.57	13 20 16	3047.4	-13.39	129.79
110.00	19 21 46	2267.64	-33.70	41.57	26.54	96.11	19 59 34	1667.6	-32.49	32.54
110.00	12 48 58	3554.93	-6.39	127.61	19.49	56.35	13 48 12	2954.9	-10.77	121.26

DIFFERENTIAL CORRECTIONS
TDE .1779 TRA 2.0334 TC-10.0730 BAU 1.3736
RDE .2522 RRA -.0368 RC3 .8380 FAU .51707
FDE -.7037 FRA10.7794 FC-44.0393 BSP 26238
BDE .3086 BRA 2.0337 BC310.1078 FSP 10474

MID-COURSE EXECUTION ACCURACY
SGT 7572.1 SGR 704.4 SG3 3041.5
RRT -.6705 RRF -.6901 RTF .9929
SGB 7604.8 R23 .0285 R13 -.9931
SG1 7586.9 SG2 521.6 THA 176.41

ORBIT DETERMINATION ACCURACY
ST 1256.0 SR 454.1 SS 1713.9
CRT .2030 CRS .2442 CST -.8992
LSA 2076.2 MSA 639.8 SSA 28.2
EL1 1259.8 EL2 443.3 ALF 4.79

LAUNCH DATE NOV 5 1964 FLIGHT TIME 338.00 ARRIVAL DATE OCT 9 1965

HELIOCENTRIC CONIC DISTANCE 757.603 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.817 GAL -3.23 AZL 88.33 HCA 231.57 SMA 186.20 ECC .21084 INC 1.6668 V1 30.043
RP 216.22 LAP -1.31 LOP 274.17 VP 22.690 GAP -7.91 AZP 91.04 TAL 341.28 TAP 212.85 RCA 146.94 APO 225.46 V2 25.404
RC 285.910 GL 17.30 GP 2.01 ZAL 116.26 ZAP 68.23 ETS 180.07 ZAE 99.02 ETE 178.41 ZAC 86.03 ETC 258.08 CLP 68.22

PLANETOCENTRIC CONIC

C3 10.270 VHL 3.205 DLA 23.67 RAL 168.79 RAD 6567.4 VEL 11.474 PTH 1.99 VHP 3.074 DPA 10.32 RAP 165.25 ECC 1.1690

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 59 57	2916.42	-28.28	90.34	27.42	88.55	16 48 34	2316.4	-28.18	81.67
90.00	11 16 8	3862.28	-10.64	152.91	22.81	63.60	12 20 31	3262.3	-14.10	145.95
100.00	17 40 15	2593.05	-29.88	66.55	27.43	90.84	18 23 28	1993.1	-29.45	57.78
100.00	12 18 32	3660.88	-9.22	137.36	22.06	61.44	13 19 33	3060.9	-12.97	130.58
110.00	19 26 20	2261.15	-33.65	41.07	27.15	96.40	20 4 1	1661.1	-32.40	32.06
110.00	12 48 56	3565.57	-5.99	128.17	20.09	56.28	13 48 21	2965.6	-10.38	121.83

DIFFERENTIAL CORRECTIONS
TDE .1507 TRA 2.1643 TC-10.3931 BAU 1.4314
RDE .2586 RRA -.0325 RC3 .8205 FAU .50431
FDE -.8184 FRA10.6223 FC-42.5127 BSP 27258
BDE .2993 BRA 2.1645 BC310.4254 FSP 10137

MID-COURSE EXECUTION ACCURACY
SGT 7892.6 SGR 703.1 SG3 2961.1
RRT -.6571 RRF -.6773 RTF .9934
SGB 7923.9 R23 .0286 R13 -.9935
SG1 7906.2 SG2 529.1 THA 176.63

ORBIT DETERMINATION ACCURACY
ST 1311.1 SR 462.9 SS 1710.9
CRT .1603 CRS .2708 CST -.9061
LSA 2108.6 MSA 642.8 SSA 27.8
EL1 1313.5 EL2 456.1 ALF 3.68

LAUNCH DATE NOV 5 1964 FLIGHT TIME 340.00 ARRIVAL DATE OCT 11 1965

HELIOCENTRIC CONIC DISTANCE 761.745 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.819 GAL -3.29 AZL 88.33 HCA 232.73 SMA 186.23 ECC .21125 INC 1.6739 V1 30.043
RP 215.88 LAP -1.33 LOP 275.33 VP 22.735 GAP -8.09 AZP 91.01 TAL 340.93 TAP 213.66 RCA 146.89 APO 225.57 V2 25.442
RC 287.127 GL 17.28 GP 1.95 ZAL 116.85 ZAP 66.62 ETS 180.13 ZAE 97.14 ETE 178.53 ZAC 85.89 ETC 258.14 CLP 66.60

PLANETOCENTRIC CONIC

C3 10.383 VHL 3.222 DLA 23.40 RAL 169.37 RAD 6567.4 VEL 11.479 PTH 2.00 VHP 3.115 DPA 10.45 RAP 164.81 ECC 1.1709

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 6 16	2904.63	-28.30	89.47	28.09	88.98	16 54 41	2304.6	-28.14	80.81
90.00	11 14 30	3878.47	-10.15	158.85	23.40	63.42	12 19 8	3278.5	-13.64	146.91
100.00	17 45 57	2583.25	-29.87	65.83	28.09	91.22	18 29 0	1983.2	-29.38	57.06
100.00	12 17 30	3675.09	-8.76	138.16	22.66	61.31	13 18 45	3075.1	-12.52	131.40
110.00	19 31 6	2254.27	-33.60	40.54	27.79	96.71	20 8 40	1654.3	-32.30	31.54
110.00	12 48 50	3576.83	-5.56	128.77	20.71	56.22	13 48 27	2976.8	-9.96	122.44

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .1220 TRA 2.2994 TC-10.6839 BAU 1.4872 SGT 8203.6 SGR 701.4 SG3 2876.8 ST 1369.6 SR 471.4 SS 1709.6
RDE .2648 RRA -.0283 RC3 .8022 FAU .49042 RRT -.6433 RRF -.6640 RTF .9938 CRT .1192 CRS .2953 CST -.9128
FDE -.9222 FRA10.4703 FC-40.8919 BSP 28288 SGB 8233.6 R23 .0287 R13 -.9939 LSA 2145.8 MSA 644.9 SSA 27.3
BDE .2915 BRA 2.2995 BC310.7139 FSP 9824 SG1 8216.1 SG2 536.2 THA 176.84 EL1 1370.9 EL2 467.6 ALF 2.66

LAUNCH DATE NOV 5 1964 FLIGHT TIME 342.00 ARRIVAL DATE OCT 13 1965

HELIOCENTRIC CONIC DISTANCE 765.892 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.821 GAL -3.36 AZL 88.32 HCA 233.90 SMA 186.26 ECC .21170 INC 1.6806 V1 30.043
RP 215.54 LAP -1.36 LOP 276.50 VP 22.780 GAP -8.26 AZP 90.99 TAL 340.55 TAP 214.45 RCA 146.83 APO 225.70 V2 25.480
RC 288.329 GL 17.25 GP 1.90 ZAL 117.47 ZAP 65.04 ETS 180.18 ZAE 95.30 ETE 178.64 ZAC 85.76 ETC 258.20 CLP 65.03

PLANETOCENTRIC CONIC

C3 10.504 VHL 3.241 DLA 23.12 RAL 169.97 RAD 6567.4 VEL 11.484 PTH 2.00 VHP 3.159 DPA 10.56 RAP 164.40 ECC 1.1729

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 12 46	2892.49	-28.31	88.59	28.78	89.42	17 0 56	2292.5	-28.09	79.93
90.00	11 12 47	3895.30	-9.64	154.82	24.01	63.24	12 17 43	3295.3	-13.15	147.90
100.00	17 51 50	2573.07	-29.85	65.07	28.77	91.62	18 34 43	1973.1	-29.31	56.31
100.00	12 16 24	3689.96	-8.27	139.00	23.28	61.17	13 17 54	3090.0	-12.06	132.25
110.00	19 36 1	2247.09	-33.54	39.98	28.44	97.03	20 13 28	1647.1	-32.20	31.01
110.00	12 48 42	3588.70	-5.11	129.39	21.34	56.16	13 48 31	2988.7	-9.53	123.08

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .0904 TRA 2.4369 TC-10.9518 BAU 1.5419 SGT 8506.6 SGR 700.0 SG3 2790.8 ST 1430.3 SR 479.6 SS 1708.7
RDE .2710 RRA -.0241 RC3 .7839 FAU .47616 RRT -.6295 RRF -.6506 RTF .9941 CRT .0784 CRS .3191 CST -.9193
FDE-1.0195 FRA10.3127 FC-39.2450 BSP 29287 SGB 8535.3 R23 .0287 R13 -.9942 LSA 2185.8 MSA 645.8 SSA 26.9
BDE .2857 BRA 2.4370 BC310.9799 FSP 9511 SG1 8518.0 SG2 543.2 THA 177.02 EL1 1430.8 EL2 477.9 ALF 1.70

LAUNCH DATE NOV 5 1964 FLIGHT TIME 344.00 ARRIVAL DATE OCT 15 1965

HELIOCENTRIC CONIC DISTANCE 770.045 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.823 GAL -3.43 AZL 88.31 HCA 235.06 SMA 186.30 ECC .21219 INC 1.6872 V1 30.043
RP 215.21 LAP -1.38 LOP 277.67 VP 22.825 GAP -8.42 AZP 90.97 TAL 340.17 TAP 215.23 RCA 146.77 APO 225.83 V2 25.517
RC 289.516 GL 17.21 GP 1.85 ZAL 118.10 ZAP 63.51 ETS 180.23 ZAE 93.51 ETE 178.75 ZAC 85.64 ETC 258.25 CLP 63.50

PLANETOCENTRIC CONIC

C3 10.634 VHL 3.261 DLA 22.82 RAL 170.59 RAD 6567.4 VEL 11.490 PTH 2.00 VHP 3.205 DPA 10.66 RAP 164.04 ECC 1.1750

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 19 26	2880.04	-28.32	87.67	29.49	89.88	17 7 26	2280.0	-28.03	79.02
90.00	11 11 1	3912.73	-9.10	155.82	24.64	63.07	12 16 14	3312.7	-12.64	148.93
100.00	17 57 53	2562.56	-29.83	64.29	29.46	92.03	18 40 36	1962.6	-29.23	55.54
100.00	12 15 15	3705.44	-7.76	139.87	23.92	61.04	13 17 0	3105.4	-11.57	133.14
110.00	19 41 7	2239.61	-33.47	39.41	29.11	97.37	20 18 27	1639.6	-32.09	30.45
110.00	12 48 31	3601.16	-4.64	130.05	22.00	56.10	13 48 32	3001.2	-9.06	123.75

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .0572 TRA 2.5781 TC-11.1921 BAU 1.5948 SGT 8800.2 SGR 698.5 SG3 2703.4 ST 1493.9 SR 487.5 SS 1708.7
RDE .2772 RRA -.0202 RC3 .7654 FAU .46142 RRT -.6156 RRF -.6371 RTF .9944 CRT .0393 CRS .3414 CST -.9253
FDE-1.1087 FRA10.1578 FC-37.5662 BSP 30286 SGB 8827.8 R23 .0287 R13 -.9945 LSA 2229.5 MSA 646.3 SSA 26.5
BDE .2831 BRA 2.5782 BC311.2182 FSP 9207 SG1 8810.7 SG2 549.9 THA 177.19 EL1 1494.0 EL2 487.1 ALF .82

LAUNCH DATE NOV 5 1964 FLIGHT TIME 346.00 ARRIVAL DATE OCT 17 1965

HELIOCENTRIC CONIC DISTANCE 774.203 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.825 GAL -3.51 AZL 88.31 HCA 236.24 SMA 186.34 ECC .21270 INC 1.6937 V1 30.043
RP 214.88 LAP -1.41 LOP 278.84 VP 22.869 GAP -8.59 AZP 90.94 TAL 339.77 TAP 216.00 RCA 146.70 APO 225.97 V2 25.554
RC 290.691 GL 17.16 GP 1.80 ZAL 118.76 ZAP 62.02 ETS 180.27 ZAE 91.75 ETE 178.85 ZAC 85.53 ETC 258.29 CLP 62.01

PLANETOCENTRIC CONIC

C3 10.772 VHL 3.282 DLA 22.51 RAL 171.21 RAD 6567.4 VEL 11.496 PTH 2.00 VHP 3.253 DPA 10.74 RAP 163.73 ECC 1.1773

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 26 15	2867.32	-28.32	86.74	30.22	90.35	17 14 2	2267.3	-27.97	78.10
90.00	11 9 13	3930.73	-8.54	156.85	25.29	62.90	12 14 44	3330.7	-12.11	149.98
100.00	18 4 7	2551.75	-29.80	63.49	30.18	92.45	18 46 38	1951.8	-29.14	54.74
100.00	12 14 2	3721.53	-7.23	140.77	24.58	60.92	13 16 4	3121.5	-11.06	134.06
110.00	19 46 22	2231.86	-33.41	38.81	29.80	97.71	20 23 34	1631.9	-31.98	29.88
110.00	12 48 16	3614.19	-4.15	130.73	22.68	56.04	13 48 31	3014.2	-8.58	124.44

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .0205 TRA 2.7223 TC-11.4083 BAU 1.6465 SGT 9085.4 SGR 697.4 SG3 2615.1 ST 1559.9 SR 495.2 SS 1709.2
RDE .2835 RRA -.0163 RC3 .7471 FAU .44652 RRT -.6018 RRF -.6238 RTF .9946 CRT .0002 CRS .3638 CST -.9310
FDE-1.1953 FRA 9.9979 FC-35.8847 BSP 31256 SGB 9112.1 R23 .0287 R13 -.9947 LSA 2276.4 MSA 645.9 SSA 26.0
BDE .2842 BRA 2.7224 BC311.4328 FSP 8905 SG1 9095.1 SG2 556.4 THA 177.35 EL1 1559.9 EL2 495.2 ALF .00

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LAUNCH DATE  NOV  5 1964                          FLIGHT TIME 348.00                                  ARRIVAL DATE  OCT 19 1965

  HELIOCENTRIC CONIC                                  DISTANCE 778.366                                   EARTH  TO  MARS
   RL  148.31 LAL   -.00 LOL  42.62 VL  32.827 GAL  -3.59 AZL  88.30 HCA 237.41 SMA 186.38 ECC .21325 INC 1.7000 V1  30.043
   RP  214.56 LAP  -1.43 LOP 280.02 VP  22.913 GAP  -8.75 AZP  90.92 TAL 339.35 TAP 216.76 RCA 146.63 APO 226.13 V2  25.590
   RC 291.851 GL   17.11 GP    1.75 ZAL 119.43 ZAP  60.57 ETS 180.31 ZAE  90.03 ETE 178.94 ZAC  85.43 ETC 258.33 CLP  60.56
  PLANETOCENTRIC CONIC
   C3  10.921 VHL  3.305 DLA  22.18 RAL 171.85 RAD 6567.4 VEL 11.503 PTH   2.00 VHP  3.304 DPA  10.80 RAP 163.45 ECC 1.1797
   LNCH AZMTH  LNCH TIME  L-I TIME    INJ LAT    INJ LONG  INJ RT ASC  INJ AZMTH  INJ TIME  PO CST TIM  INJ 2 LAT INJ 2 LONG
      90.00    16 33 12   2854.37     -28.31      85.80      30.96       90.82   17 20 46    2254.4     -27.89      77.16
      90.00    11  7 22   3949.26      -7.97     157.90      25.96       62.74   12 13 12    3349.3     -11.56     151.07
     100.00    18 10 29   2540.69     -29.77      62.67      30.91       92.88   18 52 50    1940.7     -29.05      53.94
     100.00    12 12 47   3738.17      -6.68     141.69      25.26       60.80   13 15  5    3138.2     -10.52     135.01
     110.00    19 51 45   2223.86     -33.33      38.20      30.51       98.07   20 28 49    1623.9     -31.86      29.28
     110.00    12 48  0   3627.77      -3.63     131.44      23.38       55.99   13 48 27    3027.8      -8.07     125.17
  DIFFERENTIAL CORRECTIONS                          MID-COURSE EXECUTION ACCURACY                ORBIT DETERMINATION ACCURACY
   TDE -.0183 TRA 2.8700 TC-11.5997 BAU 1.6969       SGT 9362.3 SGR  696.4 SG3 2526.3            ST  1628.7 SR   502.7 SS  1709.7
   RDE  .2898 RRA -.0125 RC3  .7288 FAU .43146       RRT -.5882 RRF -.6106 RTF  .9948            CRT -.0373 CRS  .3856 CST -.9361
   FDE-1.2768 FRA 9.8344 FC-34.2038 BSP  32213       SGB 9388.2 R23  .0289 R13 -.9949            LSA 2326.2 MSA  645.4 SSA   25.6
   BDE  .2904 BRA 2.8701 BC311.6225 FSP   8605       SG1 9371.3 SG2  562.7 THA 177.49            EL1 1628.8 EL2  502.3 ALF 179.27

LAUNCH DATE  NOV  5 1964                          FLIGHT TIME 350.00                                  ARRIVAL DATE  OCT 21 1965

  HELIOCENTRIC CONIC                                  DISTANCE 782.534                                   EARTH  TO  MARS
   RL  148.31 LAL   -.00 LOL  42.62 VL  32.830 GAL  -3.67 AZL  88.29 HCA 238.59 SMA 186.43 ECC .21384 INC 1.7061 V1  30.043
   RP  214.24 LAP  -1.46 LOP 281.20 VP  22.957 GAP  -8.91 AZP  90.89 TAL 338.92 TAP 217.51 RCA 146.56 APO 226.29 V2  25.626
   RC 292.998 GL   17.04 GP    1.70 ZAL 120.13 ZAP  59.16 ETS 180.35 ZAE  88.35 ETE 179.03 ZAC  85.34 ETC 258.36 CLP  59.15
  PLANETOCENTRIC CONIC
   C3  11.079 VHL  3.329 DLA  21.83 RAL 172.51 RAD 6567.4 VEL 11.509 PTH   2.00 VHP  3.357 DPA  10.85 RAP 163.22 ECC 1.1823
   LNCH AZMTH  LNCH TIME  L-I TIME    INJ LAT    INJ LONG  INJ RT ASC  INJ AZMTH  INJ TIME  PO CST TIM  INJ 2 LAT INJ 2 LONG
      90.00    16 40 17   2841.24     -28.29      84.84      31.72       91.30   17 27 38    2241.2     -27.81      76.20
      90.00    11  5 30   3968.30      -7.37     158.99      26.65       62.58   12 11 39    3368.3     -10.99     152.17
     100.00    18 16 59   2529.41     -29.72      61.83      31.65       93.32   18 59  9    1929.4     -28.95      53.11
     100.00    12 11 29   3755.37      -6.11     142.65      25.97       60.68   13 14  4    3155.4      -9.97     135.99
     110.00    19 57 17   2215.64     -33.25      37.57      31.23       98.43   20 34 12    1615.6     -31.73      28.68
     110.00    12 47 41   3641.90      -3.09     132.18      24.10       55.94   13 48 23    3041.9      -7.54     125.92
  DIFFERENTIAL CORRECTIONS                          MID-COURSE EXECUTION ACCURACY                ORBIT DETERMINATION ACCURACY
   TDE -.0610 TRA 3.0201 TC-11.7693 BAU 1.7464       SGT 9631.3 SGR  695.8 SG3 2438.2            ST  1699.8 SR   510.0 SS  1710.9
   RDE  .2961 RRA -.0009 RC3  .7110 FAU .41653       RRT -.5751 RRF -.5979 RTF  .9949            CRT -.0752 CRS  .4075 CST -.9409
   FDE-1.3563 FRA 9.6682 FC-32.5489 BSP  33133       SGB 9656.4 R23  .0290 R13 -.9950            LSA 2379.3 MSA  644.1 SSA   25.2
   BDE  .3023 BRA 3.0201 BC311.7908 FSP   8311       SG1 9639.6 SG2  568.7 THA 177.61            EL1 1700.2 EL2  508.4 ALF 178.58

LAUNCH DATE  NOV  5 1964                          FLIGHT TIME 352.00                                  ARRIVAL DATE  OCT 23 1965

  HELIOCENTRIC CONIC                                  DISTANCE 786.708                                   EARTH  TO  MARS
   RL  148.31 LAL   -.00 LOL  42.62 VL  32.833 GAL  -3.75 AZL  88.29 HCA 239.78 SMA 186.47 ECC .21446 INC 1.7121 V1  30.043
   RP  213.93 LAP  -1.48 LOP 282.38 VP  23.001 GAP  -9.07 AZP  90.86 TAL 338.47 TAP 218.25 RCA 146.48 APO 226.46 V2  25.662
   RC 294.131 GL   16.97 GP    1.66 ZAL 120.84 ZAP  57.79 ETS 180.38 ZAE  86.71 ETE 179.12 ZAC  85.26 ETC 258.38 CLP  57.78
  PLANETOCENTRIC CONIC
   C3  11.248 VHL  3.354 DLA  21.48 RAL 173.17 RAD 6567.4 VEL 11.517 PTH   2.01 VHP  3.411 DPA  10.88 RAP 163.02 ECC 1.1851
   LNCH AZMTH  LNCH TIME  L-I TIME    INJ LAT    INJ LONG  INJ RT ASC  INJ AZMTH  INJ TIME  PO CST TIM  INJ 2 LAT INJ 2 LONG
      90.00    16 47 28   2827.96     -28.27      83.87      32.50       91.79   17 34 36    2228.0     -27.72      75.24
      90.00    11  3 37   3987.83      -6.76     160.09      27.37       62.44   12 10  5    3387.8     -10.40     153.30
     100.00    18 23 37   2517.93     -29.68      60.98      32.42       93.76   19  5 35    1917.9     -28.84      52.28
     100.00    12 10  9   3773.08      -5.52     143.63      26.69       60.57   13 13  2    3173.1      -9.40     136.99
     110.00    20  2 56   2207.22     -33.16      36.93      31.97       98.80   20 39 43    1607.2     -31.59      28.06
     110.00    12 47 20   3656.56      -2.53     132.95      24.84       55.90   13 48 16    3056.6      -6.99     126.70
  DIFFERENTIAL CORRECTIONS                          MID-COURSE EXECUTION ACCURACY                ORBIT DETERMINATION ACCURACY
   TDE -.1068 TRA 3.1733 TC-11.9132 BAU 1.7945       SGT 9890.7 SGR  695.4 SG3 2350.2            ST  1773.5 SR   517.1 SS  1712.0
   RDE  .3026 RRA -.0053 RC3  .6934 FAU .40158       RRT -.5623 RRF -.5856 RTF  .9950            CRT -.1121 CRS  .4290 CST -.9454
   FDE-1.4320 FRA 9.4987 FC-30.9093 BSP  34026       SGB 9915.2 R23  .0292 R13 -.9951            LSA 2435.3 MSA  642.2 SSA   24.7
   BDE  .3209 BRA 3.1733 BC311.9334 FSP   8016       SG1 9898.5 SG2  574.6 THA 177.73            EL1 1774.5 EL2  513.5 ALF 177.96

LAUNCH DATE  NOV  5 1964                          FLIGHT TIME 354.00                                  ARRIVAL DATE  OCT 25 1965

  HELIOCENTRIC CONIC                                  DISTANCE 790.886                                   EARTH  TO  MARS
   RL  148.31 LAL   -.00 LOL  42.62 VL  32.836 GAL  -3.84 AZL  88.28 HCA 240.96 SMA 186.52 ECC .21512 INC 1.7180 V1  30.043
   RP  213.62 LAP  -1.50 LOP 283.57 VP  23.044 GAP  -9.23 AZP  90.83 TAL 338.01 TAP 218.97 RCA 146.40 APO 226.65 V2  25.697
   RC 295.251 GL   16.89 GP    1.61 ZAL 121.57 ZAP  56.46 ETS 180.41 ZAE  85.11 ETE 179.19 ZAC  85.19 ETC 258.40 CLP  56.45
  PLANETOCENTRIC CONIC
   C3  11.428 VHL  3.381 DLA  21.10 RAL 173.85 RAD 6567.4 VEL 11.525 PTH   2.01 VHP  3.468 DPA  10.89 RAP 162.87 ECC 1.1881
   LNCH AZMTH  LNCH TIME  L-I TIME    INJ LAT    INJ LONG  INJ RT ASC  INJ AZMTH  INJ TIME  PO CST TIM  INJ 2 LAT INJ 2 LONG
      90.00    16 54 46   2814.56     -28.23      82.09      33.29       92.28   17 41 40    2214.6     -27.62      74.28
      90.00    11  1 43   4007.80      -6.13     161.22      28.11       62.30   12  8 31    3407.8      -9.79     154.46
     100.00    18 30 21   2506.30     -29.62      60.12      33.20       94.21   19 12  8    1906.3     -28.72      51.43
     100.00    12  8 48   3791.29      -4.91     144.64      27.44       60.48   13 12  0    3191.3      -8.80     138.02
     110.00    20  8 42   2190.63     -33.07      36.28      32.72       99.18   20 45 21    1598.6     -31.45      27.43
     110.00    12 46 57   3671.73      -1.95     133.74      25.60       55.87   13 48  9    3071.7      -6.42     127.50
  DIFFERENTIAL CORRECTIONS                          MID-COURSE EXECUTION ACCURACY                ORBIT DETERMINATION ACCURACY
   TDE -.1555 TRA 3.3304 TC-12.0354 BAU 1.8417       SGT10143.5 SGR  695.3 SG3 2263.5            ST  1850.3 SR   524.0 SS  1713.5
   RDE  .3091 RRA -.0019 RC3  .6763 FAU .38687       RRT -.5501 RRF -.5739 RTF  .9951            CRT -.1478 CRS  .4500 CST -.9494
   FDE-1.5037 FRA 9.3283 FC-29.3084 BSP  34890       SGB10167.3 R23  .0296 R13 -.9952            LSA 2494.8 MSA  640.1 SSA   24.3
   BDE  .3460 BRA 3.3304 BC312.0544 FSP   7725       SG110150.8 SG2  580.3 THA 177.83            EL1 1852.1 EL2  517.8 ALF 177.40
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LAUNCH DATE NOV 5 1964 FLIGHT TIME 356.00 ARRIVAL DATE OCT 27 1965

HELIOCENTRIC CONIC DISTANCE 795.068 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.839 GAL -3.93 AZL 88.28 HCA 242.15 SMA 186.58 ECC .21581 INC 1.7238 V1 30.043
RP 213.31 LAP -1.52 LOP 284.76 VP 23.087 GAP -9.38 AZP 90.81 TAL 337.54 TAP 219.69 RCA 146.31 APO 226.84 V2 25.731
RC 296.356 GL 16.81 GP 1.57 ZAL 122.31 ZAP 55.17 ETS 180.44 ZAE 83.54 ETE 179.27 ZAC 85.13 ETC 258.42 CLP 55.16

PLANETOCENTRIC CONIC

C3 11.620 VHL 3.409 DLA 20.72 RAL 174.53 RAD 6567.4 VEL 11.533 PTH 2.01 VHP 3.527 DPA 10.89 RAP 162.76 ECC 1.1912

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 2 8	2801.07	-28.19	81.90	34.10	92.77	17 48 49	2201.1	-27.51	73.30
90.00	10 59 49	4028.22	-5.48	162.37	28.86	62.18	12 6 57	3428.2	-9.16	155.63
100.00	18 37 12	2494.54	-29.56	59.25	34.00	94.66	19 18 47	1894.5	-28.60	50.58
100.00	12 7 26	3809.98	-4.28	145.67	28.20	60.39	13 10 56	3210.0	-8.19	139.07
110.00	20 14 35	2189.89	-32.98	35.61	33.50	99.56	20 51 5	1589.9	-31.31	26.79
110.00	12 46 33	3687.40	-1.35	134.56	26.38	55.84	13 48 0	3087.4	-5.83	128.33

DIFFERENTIAL CORRECTIONS
TDE -.2076 TRA 3.4908 TC-12.1321 BAU 1.8874
RDE .3157 RRA .0014 RC3 .6594 FAU .37223
FDE-1.5722 FRA 9.1562 FC-27.7338 BSP 35736
BDE .3778 BRA 3.4908 BC312.1501 FSP 7439

MID-COURSE EXECUTION ACCURACY
SGT10386.8 SGR 695.4 SG3 2177.6
RRT -.5382 RRF -.5626 RTF .9952
SGB10410.0 R23 .0300 R13 -.9953
SG110393.5 SG2 585.7 THA 177.93

ORBIT DETERMINATION ACCURACY
ST 1930.1 SR 530.8 SS 1715.0
CRT -.1827 CRS .4707 CST -.9531
LSA 2557.6 MSA 637.5 SSA 23.9
EL1 1932.7 EL2 521.1 ALF 176.90

LAUNCH DATE NOV 5 1964 FLIGHT TIME 358.00 ARRIVAL DATE OCT 29 1965

HELIOCENTRIC CONIC DISTANCE 799.254 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.842 GAL -4.03 AZL 88.27 HCA 243.34 SMA 186.63 ECC .21654 INC 1.7295 V1 30.043
RP 213.01 LAP -1.55 LOP 285.95 VP 23.129 GAP -9.54 AZP 90.78 TAL 337.05 TAP 220.39 RCA 146.22 APO 227.05 V2 25.765
RC 297.448 GL 16.71 GP 1.53 ZAL 123.07 ZAP 53.92 ETS 180.46 ZAE 82.01 ETE 179.34 ZAC 85.08 ETC 258.42 CLP 53.91

PLANETOCENTRIC CONIC

C3 11.824 VHL 3.439 DLA 20.32 RAL 175.23 RAD 6567.5 VEL 11.542 PTH 2.01 VHP 3.588 DPA 10.88 RAP 162.69 ECC 1.1946

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 9 36	2787.53	-28.14	80.91	34.92	93.26	17 56 3	2187.5	-27.39	72.33
90.00	10 57 54	4049.05	-4.82	163.54	29.64	62.06	12 5 23	3449.1	-8.52	156.82
100.00	18 44 8	2482.68	-29.49	58.38	34.81	95.12	19 25 31	1882.7	-28.47	49.72
100.00	12 6 3	3829.13	-3.63	146.73	28.99	60.31	13 9 52	3229.1	-7.56	140.14
110.00	20 20 33	2181.02	-32.87	34.94	34.29	99.95	20 56 54	1581.0	-31.15	26.14
110.00	12 46 7	3703.56	-.74	135.40	27.18	55.82	13 47 50	3103.6	-5.22	129.18

DIFFERENTIAL CORRECTIONS
TDE -.2627 TRA 3.6545 TC-12.2089 BAU 1.9326
RDE .3224 RRA .0045 RC3 .6430 FAU .35783
FDE-1.6367 FRA 8.9828 FC-26.2001 BSP 36554
BDE .4158 BRA 3.6545 BC312.2258 FSP 7159

MID-COURSE EXECUTION ACCURACY
SGT10623.2 SGR 695.8 SG3 2093.0
RRT -.5270 RRF -.5520 RTF .9952
SGB10646.0 R23 .0304 R13 -.9953
SG110629.6 SG2 591.0 THA 178.02

ORBIT DETERMINATION ACCURACY
ST 2012.4 SR 537.3 SS 1716.4
CRT -.2162 CRS .4909 CST -.9565
LSA 2623.2 MSA 634.7 SSA 23.5
EL1 2016.0 EL2 523.7 ALF 176.46

LAUNCH DATE NOV 5 1964 FLIGHT TIME 360.00 ARRIVAL DATE OCT 31 1965

HELIOCENTRIC CONIC DISTANCE 803.444 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.846 GAL -4.13 AZL 88.26 HCA 244.54 SMA 186.69 ECC .21731 INC 1.7351 V1 30.043
RP 212.72 LAP -1.57 LOP 287.15 VP 23.171 GAP -9.60 AZP 90.75 TAL 336.54 TAP 222.08 RCA 146.12 APO 227.26 V2 25.798
RC 298.526 GL 16.61 GP 1.49 ZAL 123.85 ZAP 52.71 ETS 180.48 ZAE 80.52 ETE 179.41 ZAC 85.03 ETC 258.43 CLP 52.69

PLANETOCENTRIC CONIC

C3 12.041 VHL 3.470 DLA 19.91 RAL 175.93 RAD 6567.5 VEL 11.551 PTH 2.02 VHP 3.651 DPA 10.85 RAP 162.66 ECC 1.1982

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 17 7	2773.96	-28.09	79.93	35.76	93.76	18 3 21	2174.0	-27.27	71.36
90.00	10 55 59	4070.29	-4.14	164.74	30.44	61.96	12 3 50	3470.3	-7.86	158.03
100.00	18 51 9	2470.75	-29.41	57.50	35.64	95.58	19 32 20	1870.8	-28.33	48.86
100.00	12 4 39	3848.72	-2.97	147.80	29.80	60.24	13 8 47	3248.7	-6.91	141.23
110.00	20 26 37	2172.06	-32.77	34.27	35.09	100.33	21 2 50	1572.1	-30.99	25.49
110.00	12 45 40	3720.18	-.10	136.27	28.01	55.82	13 47 40	3120.2	-4.58	130.05

DIFFERENTIAL CORRECTIONS
TDE -.3209 TRA 3.8231 TC-12.2598 BAU 1.9761
RDE .3291 RRA .0075 RC3 .6268 FAU .34360
FDE-1.6958 FRA 8.8107 FC-24.7046 BSP 37367
BDE .4597 BRA 3.8231 BC312.2758 FSP 6888

MID-COURSE EXECUTION ACCURACY
SGT10851.1 SGR 696.3 SG3 2010.0
RRT -.5163 RRF -.5419 RTF .9953
SGB10873.4 R23 .0308 R13 -.9953
SG110857.1 SG2 595.9 THA 178.10

ORBIT DETERMINATION ACCURACY
ST 2098.2 SR 543.6 SS 1717.4
CRT -.2484 CRS .5101 CST -.9596
LSA 2692.3 MSA 631.3 SSA 23.0
EL1 2102.9 EL2 525.4 ALF 176.07

LAUNCH DATE NOV 5 1964 FLIGHT TIME 362.00 ARRIVAL DATE NOV 2 1965

HELIOCENTRIC CONIC DISTANCE 807.638 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.849 GAL -4.23 AZL 88.26 HCA 245.74 SMA 186.75 ECC .21813 INC 1.7405 V1 30.043
RP 212.43 LAP -1.59 LOP 288.35 VP 23.213 GAP -9.84 AZP 90.72 TAL 336.02 TAP 221.76 RCA 146.02 APO 227.49 V2 25.831
RC 299.592 GL 16.50 GP 1.45 ZAL 124.64 ZAP 51.53 ETS 180.50 ZAE 79.06 ETE 179.47 ZAC 85.00 ETC 258.42 CLP 51.51

PLANETOCENTRIC CONIC

C3 12.272 VHL 3.503 DLA 19.48 RAL 176.64 RAD 6567.5 VEL 11.561 PTH 2.02 VHP 3.715 DPA 10.81 RAP 162.66 ECC 1.2020

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 24 43	2760.39	-28.02	78.94	36.62	94.25	18 10 43	2160.4	-27.14	70.38
90.00	10 54 5	4091.90	-3.45	165.95	31.27	61.88	12 2 17	3491.9	-7.18	159.26
100.00	18 58 14	2458.78	-29.33	56.62	36.49	96.03	19 39 13	1858.8	-28.19	48.00
100.00	12 3 14	3868.74	-2.29	148.91	30.63	60.19	13 7 43	3268.7	-6.25	142.35
110.00	20 32 47	2163.02	-32.65	33.58	35.92	100.72	21 8 50	1563.0	-30.83	24.84
110.00	12 45 11	3737.27	.55	137.16	28.85	55.82	13 47 29	3137.3	-3.93	130.95

DIFFERENTIAL CORRECTIONS
TDE -.3826 TRA 3.9946 TC-12.2933 BAU 2.0194
RDE .3361 RRA .0103 RC3 .6112 FAU .32976
FDE-1.7526 FRA 8.6363 FC-23.2627 BSP 38128
BDE .5093 BRA 3.9946 BC312.3085 FSP 6618

MID-COURSE EXECUTION ACCURACY
SGT11072.7 SGR 697.0 SG3 1928.8
RRT -.5064 RRF -.5326 RTF .9952
SGB11094.6 R23 .0314 R13 -.9953
SG111078.3 SG2 600.7 THA 178.17

ORBIT DETERMINATION ACCURACY
ST 2186.5 SR 549.8 SS 1718.4
CRT -.2796 CRS .5292 CST -.9624
LSA 2764.3 MSA 627.9 SSA 22.6
EL1 2192.2 EL2 526.5 ALF 175.73

LAUNCH DATE NOV 5 1964 FLIGHT TIME 372.00 ARRIVAL DATE NOV 12 1965

DISTANCE 828.646

HELIOCENTRIC CONIC EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.869 GAL -4.79 AZL 88.23 HCA 251.79 SMA 187.09 ECC .22282 INC 1.7666 V1 30.043
RP 211.08 LAP -1.68 LOP 294.40 VP 23.413 GAP -10.59 AZP 90.55 TAL 333.18 TAP 224.97 RCA 145.40 APO 228.78 V2 25.986
RC 304.746 GL 15.85 GP 1.28 ZAL 128.80 ZAP 46.14 ETS 180.56 ZAE 72.26 ETE 179.74 ZAC 84.96 ETC 258.33 CLP 46.12

PLANETOCENTRIC CONIC

C3 13.666 VHL 3.697 DLA 17.19 RAL 180.30 RAD 6567.5 VEL 11.621 PTH 2.04 VHP 4.066 DPA 10.39 RAP 163.21 ECC 1.2249

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 3 14	2693.39	-27.59	74.08	41.14	96.64	18 48 7	2093.4	-26.38	65.63
90.00	10 44 45	4205.21	.21	172.27	35.73	61.68	11 54 50	3605.2	-3.58	165.64
100.00	19 34 28	2399.16	-28.83	52.26	40.96	98.27	20 14 27	1799.2	-27.38	43.75
100.00	11 56 11	3974.67	1.30	154.72	35.12	60.13	13 2 26	3374.7	-2.69	148.20
110.00	21 4 30	2117.48	-32.03	30.18	40.28	102.64	21 39 47	1517.5	-29.95	21.58
110.00	12 42 39	3829.12	4.06	141.96	33.40	56.03	13 46 28	3229.1	-.43	135.75

DIFFERENTIAL CORRECTIONS

TDE -.7375 TRA 4.9236 TC-12.1471 BAU 2.2214
RDE .3728 RRA .0214 RC3 .5382 FAU .26485
FDE-1.9635 FRA 7.7792 FC-16.7787 BSP 41733
BDE .8264 BRA 4.9236 BC312.1590 FSP 5390

MID-COURSE EXECUTION ACCURACY

SGT12073.5 SGR 702.4 SG3 1551.4
RRT -.4667 RRF -.4961 RTF .9949
SGB12093.9 R23 .0346 R13 -.9950
SG112078.0 SG2 621.0 THA 178.44

ORBIT DETERMINATION ACCURACY

ST 2668.7 SR 577.9 SS 1711.3
CRT -.4141 CRS .6120 CST -.9731
LSA 3164.9 MSA 606.5 SSA 20.8
EL1 2679.8 EL2 523.9 ALF 174.67

LAUNCH DATE NOV 5 1964 FLIGHT TIME 374.00 ARRIVAL DATE NOV 14 1965

DISTANCE 832.853

HELIOCENTRIC CONIC EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.873 GAL -4.92 AZL 88.23 HCA 253.01 SMA 187.16 ECC .22390 INC 1.7716 V1 30.043
RP 210.82 LAP -1.69 LOP 295.61 VP 23.451 GAP -10.74 AZP 90.52 TAL 332.57 TAP 225.58 RCA 145.26 APO 229.07 V2 26.015
RC 305.746 GL 15.70 GP 1.25 ZAL 129.66 ZAP 45.16 ETS 180.57 ZAE 70.99 ETE 179.79 ZAC 84.97 ETC 258.29 CLP 45.14

PLANETOCENTRIC CONIC

C3 13.999 VHL 3.741 DLA 16.70 RAL 181.05 RAD 6567.6 VEL 11.635 PTH 2.04 VHP 4.141 DPA 10.27 RAP 163.42 ECC 1.2304

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 11 0	2680.32	-27.48	73.14	42.10	97.11	18 55 40	2080.3	-26.21	64.71
90.00	10 42 56	4228.82	.97	173.59	36.69	61.70	11 53 25	3628.8	-2.82	166.96
100.00	19 41 49	2387.45	-28.71	51.41	41.90	98.71	20 21 36	1787.5	-27.21	42.93
100.00	11 54 48	3996.92	2.05	155.94	36.08	60.17	13 1 25	3396.9	-1.93	149.42
110.00	21 10 59	2108.46	-31.89	29.51	41.20	103.02	21 46 8	1508.5	-29.77	20.94
110.00	12 42 7	3848.68	4.80	142.98	34.37	56.12	13 46 16	3248.7	.32	136.77

DIFFERENTIAL CORRECTIONS

TDE -.8179 TRA 5.1249 TC-12.0620 BAU 2.2595
RDE .3806 RRA .0229 RC3 .5246 FAU .25286
FDE-1.9930 FRA 7.6100 FC-15.6379 BSP 42412
BDE .9021 BRA 5.1250 BC312.0734 FSP 5167

MID-COURSE EXECUTION ACCURACY

SGT12254.6 SGR 703.7 SG3 1482.2
RRT -.4608 RRF -.4910 RTF .9948
SGB12274.8 R23 .0354 R13 -.9949
SG112258.9 SG2 624.3 THA 178.48

ORBIT DETERMINATION ACCURACY

ST 2772.1 SR 583.1 SS 1707.0
CRT -.4369 CRS .6266 CST -.9747
LSA 3252.0 MSA 601.9 SSA 20.5
EL1 2784.2 EL2 522.2 ALF 174.56

LAUNCH DATE NOV 5 1964 FLIGHT TIME 376.00 ARRIVAL DATE NOV 16 1965

DISTANCE 837.062

HELIOCENTRIC CONIC EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.877 GAL -5.05 AZL 88.22 HCA 254.23 SMA 187.24 ECC .22502 INC 1.7766 V1 30.043
RP 210.58 LAP -1.71 LOP 296.84 VP 23.488 GAP -10.88 AZP 90.48 TAL 331.94 TAP 226.17 RCA 145.11 APO 229.37 V2 26.043
RC 306.737 GL 15.55 GP 1.22 ZAL 130.53 ZAP 44.20 ETS 180.57 ZAE 69.75 ETE 179.83 ZAC 85.00 ETC 258.26 CLP 44.19

PLANETOCENTRIC CONIC

C3 14.352 VHL 3.788 DLA 16.20 RAL 181.80 RAD 6567.6 VEL 11.651 PTH 2.05 VHP 4.218 DPA 10.14 RAP 163.66 ECC 1.2362

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 18 47	2667.41	-27.37	72.21	43.06	97.56	19 3 14	2067.4	-26.04	63.80
90.00	10 41 8	4252.71	1.74	174.92	37.67	61.73	11 52 1	3652.7	-2.05	168.29
100.00	19 49 11	2375.87	-28.59	50.57	42.86	99.13	20 28 47	1775.9	-27.03	42.11
100.00	11 53 25	4019.51	2.82	157.18	37.07	60.23	13 0 25	3419.5	-1.17	150.66
110.00	21 17 30	2099.52	-31.75	28.85	42.13	103.39	21 52 30	1499.5	-29.58	20.31
110.00	12 41 35	3868.62	5.56	144.03	35.37	56.22	13 46 4	3268.6	1.08	137.81

DIFFERENTIAL CORRECTIONS

TDE -.9013 TRA 5.3312 TC-11.9605 BAU 2.2970
RDE .3886 RRA .0242 RC3 .5114 FAU .24119
FDE-2.0173 FRA 7.4417 FC-14.5486 BSP 43063
BDE .9815 BRA 5.3313 BC311.9715 FSP 4949

MID-COURSE EXECUTION ACCURACY

SGT12429.2 SGR 705.0 SG3 1414.9
RRT -.4556 RRF -.4866 RTF .9947
SGB12449.2 R23 .0362 R13 -.9947
SG112433.3 SG2 627.4 THA 178.52

ORBIT DETERMINATION ACCURACY

ST 2877.0 SR 588.0 SS 1701.0
CRT -.4585 CRS .6402 CST -.9761
LSA 3340.5 MSA 597.1 SSA 20.1
EL1 2890.0 EL2 520.2 ALF 174.47

LAUNCH DATE NOV 5 1964 FLIGHT TIME 378.00 ARRIVAL DATE NOV 18 1965

DISTANCE 841.270

HELIOCENTRIC CONIC EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.882 GAL -5.18 AZL 88.22 HCA 255.45 SMA 187.32 ECC .22620 INC 1.7815 V1 30.043
RP 210.34 LAP -1.72 LOP 298.06 VP 23.525 GAP -11.03 AZP 90.45 TAL 331.30 TAP 226.75 RCA 144.95 APO 229.69 V2 26.071
RC 307.719 GL 15.38 GP 1.19 ZAL 131.41 ZAP 43.28 ETS 180.57 ZAE 68.53 ETE 179.88 ZAC 85.03 ETC 258.21 CLP 43.26

PLANETOCENTRIC CONIC

C3 14.727 VHL 3.838 DLA 15.70 RAL 182.55 RAD 6567.6 VEL 11.667 PTH 2.05 VHP 4.297 DPA 9.99 RAP 163.92 ECC 1.2424

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 26 33	2654.68	-27.25	71.30	44.05	98.00	19 10 48	2054.7	-25.86	62.91
90.00	10 39 22	4276.93	2.52	176.27	38.68	61.79	11 50 39	3676.9	-1.27	169.64
100.00	19 56 33	2364.43	-28.46	49.74	43.84	99.55	20 35 58	1764.4	-26.85	41.31
100.00	11 52 3	4042.40	3.59	158.44	38.09	60.30	12 59 25	3442.4	-.39	151.91
110.00	21 24 3	2090.69	-31.61	28.20	43.09	103.75	21 58 53	1490.7	-29.40	19.69
110.00	12 41 3	3888.91	6.33	145.10	36.39	56.34	13 45 52	3288.9	1.86	138.87

DIFFERENTIAL CORRECTIONS

TDE -.9879 TRA 5.5440 TC-11.8434 BAU 2.3339
RDE .3969 RRA .0252 RC3 .4984 FAU .22986
FDE-2.0383 FRA 7.2748 FC-13.5120 BSP 43721
BDE 1.0646 BRA 5.5440 BC311.8539 FSP 4740

MID-COURSE EXECUTION ACCURACY

SGT12598.7 SGR 706.3 SG3 1349.9
RRT -.4511 RRF -.4829 RTF .9945
SGB12618.5 R23 .0371 R13 -.9946
SG112602.8 SG2 630.2 THA 178.55

ORBIT DETERMINATION ACCURACY

ST 2983.8 SR 592.7 SS 1693.9
CRT -.4788 CRS .6534 CST -.9773
LSA 3431.1 MSA 592.3 SSA 19.8
EL1 2997.6 EL2 518.0 ALF 174.40

LAUNCH DATE NOV 5 1964 FLIGHT TIME 364.00 ARRIVAL DATE NOV 4 1965

HELIOCENTRIC CONIC DISTANCE 811.834 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.853 GAL -4.33 AZL 88.25 HCA 246.94 SMA 186.82 ECC .21898 INC 1.7459 V1 30.043
RP 212.15 LAP -1.61 LOP 289.55 VP 23.254 GAP -9.99 AZP 90.68 TAL 335.48 TAP 222.43 RCA 145.91 APO 227.72 V2 25.863
RC 300.645 GL 16.39 GP 1.42 ZAL 125.45 ZAP 50.38 ETS 180.52 ZAE 77.64 ETE 179.53 ZAC 84.97 ETC 258.41 CLP 50.37

PLANETOCENTRIC CONIC

C3 12.518 VHL 3.538 DLA 19.05 RAL 177.36 RAD 6567.5 VEL 11.572 PTH 2.02 VHP 3.782 DPA 10.75 RAP 162.70 ECC 1.2060

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 32 21	2746.84	-27.95	77.95	37.49	94.74	18 18 7	2146.8	-27.00	69.42
90.00	10 52 11	4113.88	-2.74	167.18	32.11	61.80	12 0 45	3513.9	-6.49	160.50
100.00	19 5 24	2446.79	-29.24	55.74	37.35	96.49	19 46 10	1846.8	-28.04	47.14
100.00	12 1 49	3889.17	-1.60	150.03	31.48	60.15	13 6 39	3289.2	-5.56	143.48
110.00	20 39 0	2153.92	-32.54	32.90	36.76	101.11	21 14 54	1553.9	-30.66	24.18
110.00	12 44 42	3754.80	1.22	138.07	29.72	55.84	13 47 17	3154.8	-3.27	131.87

DIFFERENTIAL CORRECTIONS

TDE -.4477 TRA 4.1703 TC-12.3044 BAU 2.0616
RDE .3431 RRA .0129 RC3 .5959 FAU .31622
FDE-1.8044 FRA 8.4619 FC-21.8695 BSP 38870
BDE .5640 BRA 4.1703 BC312.3188 FSP 6357

MID-COURSE EXECUTION ACCURACY

SGT11286.2 SGR 697.9 SG3 1849.4
RRT -.4972 RRF -.5240 RTF .9952
SGB11307.8 R23 .0320 R13 -.9953
SG111291.6 SG2 605.3 THA 178.23

ORBIT DETERMINATION ACCURACY

ST 2277.7 SR 555.8 SS 1718.6
CRT -.3095 CRS .5475 CST -.9650
LSA 2839.1 MSA 624.0 SSA 22.2
EL1 2284.5 EL2 527.0 ALF 175.44

LAUNCH DATE NOV 5 1964 FLIGHT TIME 366.00 ARRIVAL DATE NOV 6 1965

HELIOCENTRIC CONIC DISTANCE 816.034 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.857 GAL -4.44 AZL 88.25 HCA 248.15 SMA 186.88 ECC .21987 INC 1.7511 V1 30.043
RP 211.87 LAP -1.63 LOP 290.76 VP 23.294 GAP -10.14 AZP 90.65 TAL 334.93 TAP 223.08 RCA 145.79 APO 227.97 V2 25.895
RC 301.687 GL 16.26 GP 1.38 ZAL 126.27 ZAP 49.27 ETS 180.53 ZAE 76.24 ETE 179.59 ZAC 84.96 ETC 258.40 CLP 49.26

PLANETOCENTRIC CONIC

C3 12.779 VHL 3.575 DLA 18.60 RAL 178.09 RAD 6567.5 VEL 11.583 PTH 2.03 VHP 3.850 DPA 10.68 RAP 162.78 ECC 1.2103

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 40 1	2733.35	-27.87	76.97	38.38	95.22	18 25 35	2133.3	-26.85	68.46
90.00	10 50 18	4136.21	-2.02	168.42	32.98	61.75	11 59 14	3536.2	-5.78	161.76
100.00	19 12 36	2434.81	-29.15	54.86	38.23	96.94	19 53 11	1834.8	-27.88	46.29
100.00	12 0 25	3909.98	-.90	151.17	32.36	60.12	13 5 35	3310.0	-4.87	144.63
110.00	20 45 18	2144.80	-32.42	32.22	37.61	101.50	21 21 2	1544.8	-30.49	23.53
110.00	12 44 12	3772.76	1.91	139.01	30.60	55.86	13 47 5	3172.8	-2.58	132.81

DIFFERENTIAL CORRECTIONS

TDE -.5161 TRA 4.3515 TC-12.2946 BAU 2.1029
RDE .3503 RRA .0154 RC3 .5810 FAU .30292
FDE-1.8525 FRA 8.2903 FC-20.5208 BSP 39611
BDE .6238 BRA 4.3515 BC312.3083 FSP 6104

MID-COURSE EXECUTION ACCURACY

SGT11493.5 SGR 698.9 SG3 1772.0
RRT -.4886 RRF -.5161 RTF .9952
SGB11514.8 R23 .0326 R13 -.9952
SG111498.6 SG2 609.6 THA 178.29

ORBIT DETERMINATION ACCURACY

ST 2372.2 SR 561.7 SS 1718.7
CRT -.3381 CRS .5650 CST -.9673
LSA 2917.5 MSA 619.9 SSA 21.8
EL1 2380.2 EL2 526.8 ALF 175.19

LAUNCH DATE NOV 5 1964 FLIGHT TIME 368.00 ARRIVAL DATE NOV 8 1965

HELIOCENTRIC CONIC DISTANCE 820.236 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.860 GAL -4.56 AZL 88.24 HCA 249.36 SMA 186.95 ECC .22081 INC 1.7564 V1 30.043
RP 211.60 LAP -1.64 LOP 291.97 VP 23.334 GAP -10.29 AZP 90.62 TAL 334.36 TAP 223.72 RCA 145.67 APO 228.23 V2 25.926
RC 302.717 GL 16.13 GP 1.35 ZAL 127.10 ZAP 48.20 ETS 180.54 ZAE 74.89 ETE 179.64 ZAC 84.95 ETC 258.38 CLP 48.18

PLANETOCENTRIC CONIC

C3 13.057 VHL 3.613 DLA 18.14 RAL 178.82 RAD 6567.5 VEL 11.595 PTH 2.03 VHP 3.920 DPA 10.60 RAP 162.89 ECC 1.2149

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 47 44	2719.93	-27.78	76.00	39.29	95.70	18 33 4	2119.9	-26.70	67.50
90.00	10 48 26	4158.89	-1.29	169.69	33.87	61.71	11 57 45	3558.9	-5.06	163.04
100.00	19 19 51	2422.86	-29.05	53.99	39.12	97.39	20 0 14	1822.9	-27.72	45.43
100.00	11 59 0	3931.18	-.18	152.33	33.26	60.11	13 4 31	3331.2	-4.15	145.80
110.00	20 51 39	2135.67	-32.29	31.53	38.48	101.88	21 27 14	1535.7	-30.32	22.88
110.00	12 43 42	3791.14	2.61	139.97	31.51	55.90	13 46 53	3191.1	-1.88	133.77

DIFFERENTIAL CORRECTIONS

TDE -.5866 TRA 4.5372 TC-12.2653 BAU 2.1433
RDE .3576 RRA .0176 RC3 .5664 FAU .28996
FDE-1.8939 FRA 8.1189 FC-19.2252 BSP 40331
BDE .6870 BRA 4.5372 BC312.2783 FSP 5856

MID-COURSE EXECUTION ACCURACY

SGT11694.0 SGR 700.0 SG3 1696.6
RRT -.4806 RRF -.5088 RTF .9951
SGB11714.9 R23 .0333 R13 -.9952
SG111698.8 SG2 613.6 THA 178.35

ORBIT DETERMINATION ACCURACY

ST 2468.6 SR 567.3 SS 1717.2
CRT -.3647 CRS .5814 CST -.9694
LSA 2997.5 MSA 615.7 SSA 21.5
EL1 2477.7 EL2 526.3 ALF 174.98

LAUNCH DATE NOV 5 1964 FLIGHT TIME 370.00 ARRIVAL DATE NOV 10 1965

HELIOCENTRIC CONIC DISTANCE 824.440 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.864 GAL -4.67 AZL 88.24 HCA 250.57 SMA 187.02 ECC .22179 INC 1.7615 V1 30.043
RP 211.33 LAP -1.66 LOP 293.18 VP 23.374 GAP -10.44 AZP 90.59 TAL 333.78 TAP 224.35 RCA 145.54 APO 228.50 V2 25.956
RC 303.736 GL 16.00 GP 1.31 ZAL 127.94 ZAP 47.15 ETS 180.55 ZAE 73.56 ETE 179.69 ZAC 84.95 ETC 258.36 CLP 47.14

PLANETOCENTRIC CONIC

C3 13.352 VHL 3.654 DLA 17.67 RAL 179.56 RAD 6567.5 VEL 11.608 PTH 2.03 VHP 3.992 DPA 10.50 RAP 163.03 ECC 1.2197

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 55 28	2706.60	-27.69	75.04	40.21	96.18	18 40 35	2106.6	-26.55	66.56
90.00	10 46 35	4181.89	-.55	170.97	34.79	61.69	11 56 17	3581.9	-4.33	164.33
100.00	19 27 9	2410.97	-28.94	53.12	40.03	97.84	20 7 20	1811.0	-27.55	44.59
100.00	11 57 36	3952.75	.55	153.51	34.18	60.11	13 3 28	3352.7	-3.43	146.99
110.00	20 58 3	2126.55	-32.16	30.86	39.37	102.27	21 33 30	1526.6	-30.14	22.23
110.00	12 43 11	3809.93	3.33	140.95	32.44	55.96	13 46 41	3209.9	-1.16	134.75

DIFFERENTIAL CORRECTIONS

TDE -.6610 TRA 4.7276 TC-12.2159 BAU 2.1829
RDE .3651 RRA .0196 RC3 .5522 FAU .27724
FDE-1.9318 FRA 7.9483 FC-17.9757 BSP 41037
BDE .7552 BRA 4.7276 BC312.2284 FSP 5620

MID-COURSE EXECUTION ACCURACY

SGT11887.0 SGR 701.2 SG3 1622.9
RRT -.4733 RRF -.5022 RTF .9950
SGB11907.7 R23 .0339 R13 -.9951
SG111891.7 SG2 617.4 THA 178.40

ORBIT DETERMINATION ACCURACY

ST 2567.7 SR 572.7 SS 1715.1
CRT -.3904 CRS .5973 CST -.9714
LSA 3080.4 MSA 611.0 SSA 21.1
EL1 2577.9 EL2 525.2 ALF 174.81

LAUNCH DATE NOV 5 1964 FLIGHT TIME 380.00 ARRIVAL DATE NOV 20 1965

HELIOCENTRIC CONIC DISTANCE 845.479 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.886 GAL -5.32 AZL 88.21 HCA 256.68 SMA 187.40 ECC .22743 INC 1.7864 V1 30.043
RP 210.10 LAP -1.74 LOP 299.29 VP 23.561 GAP -11.18 AZP 90.41 TAL 330.64 TAP 227.31 RCA 144.78 APO 230.02 V2 26.098
RC 308.691 GL 15.22 GP 1.17 ZAL 132.30 ZAP 42.38 ETS 180.57 ZAE 67.35 ETE 179.92 ZAC 85.06 ETC 258.17 CLP 42.37

PLANETOCENTRIC CONIC

C3 15.126 VHL 3.889 DLA 15.19 RAL 183.31 RAD 6567.6 VEL 11.684 PTH 2.05 VHP 4.378 DPA 9.84 RAP 164.22 ECC 1.2489

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 34 20	2642.14	-27.13	70.40	45.04	98.44	19 18 22	2042.1	-25.69	62.04
90.00	10 37 37	4301.39	3.31	177.64	39.71	61.86	11 49 18	3701.4	-.48	171.01
100.00	20 3 56	2353.16	-28.33	48.93	44.83	99.96	20 43 9	1753.2	-26.66	40.52
100.00	11 50 41	4065.61	4.37	159.72	39.12	60.40	12 58 27	3465.6	.40	153.19
110.00	21 30 36	2081.97	-31.47	27.56	44.05	104.10	22 5 18	1482.0	-29.21	19.09
110.00	12 40 31	3909.56	7.10	146.20	37.44	56.47	13 45 40	3309.6	2.65	139.94

DIFFERENTIAL CORRECTIONS
TDE-1.0767 TRA 5.7633 TC-11.7091 BAU 2.3698
RDE .4053 RRA .0260 RC3 .4856 FAU .21877
FDE-2.0534 FRA 7.1093 FC-12.5215 BSP 44367
BDE 1.1504 BRA 5.7634 BC311.7192 FSP 4539

MID-COURSE EXECUTION ACCURACY
SGT12762.0 SGR 707.6 SG3 1286.7
RRT -.4472 RRF -.4796 RTF .9943
SGB12781.6 R23 .0379 R13 -.9944
SG112765.9 SG2 632.7 THA 178.58

ORBIT DETERMINATION ACCURACY
ST 3091.4 SR 597.3 SS 1684.8
CRT -.4976 CRS .6656 CST -.9784
LSA 3522.3 MSA 587.6 SSA 19.6
EL1 3106.0 EL2 515.7 ALF 174.35

LAUNCH DATE NOV 5 1964 FLIGHT TIME 382.00 ARRIVAL DATE NOV 22 1965

HELIOCENTRIC CONIC DISTANCE 849.687 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.891 GAL -5.46 AZL 88.21 HCA 257.91 SMA 187.48 ECC .22872 INC 1.7913 V1 30.043
RP 209.88 LAP -1.75 LOP 300.52 VP 23.597 GAP -11.33 AZP 90.38 TAL 329.96 TAP 227.87 RCA 144.60 APO 230.36 V2 26.124
RC 309.654 GL 15.04 GP 1.14 ZAL 133.20 ZAP 41.51 ETS 180.57 ZAE 66.18 ETE 179.96 ZAC 85.11 ETC 258.12 CLP 41.49

PLANETOCENTRIC CONIC

C3 15.549 VHL 3.943 DLA 14.67 RAL 184.06 RAD 6567.6 VEL 11.702 PTH 2.06 VHP 4.461 DPA 9.67 RAP 164.54 ECC 1.2559

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 42 5	2629.82	-27.01	69.52	46.06	98.86	19 25 55	2029.8	-25.50	61.18
90.00	10 35 53	4326.12	4.10	179.03	40.77	61.96	11 48 0	3726.1	.32	172.39
100.00	20 11 19	2342.07	-28.20	48.13	45.83	100.36	20 50 21	1742.1	-26.48	39.75
100.00	11 49 21	4089.10	5.16	161.02	40.18	60.52	12 57 30	3489.1	1.19	154.47
110.00	21 37 11	2073.40	-31.32	26.94	45.04	104.44	22 11 44	1473.4	-29.02	18.49
110.00	12 39 58	3930.54	7.89	147.31	38.50	56.63	13 45 29	3330.5	3.45	141.04

DIFFERENTIAL CORRECTIONS
TDE-1.1700 TRA 5.9872 TC-11.5654 BAU 2.4061
RDE .4140 RRA .0265 RC3 .4733 FAU .20817
FDE-2.0668 FRA 6.9430 FC-11.5907 BSP 44982
BDE 1.2410 BRA 5.9872 BC311.5750 FSP 4342

MID-COURSE EXECUTION ACCURACY
SGT12920.8 SGR 709.0 SG3 1225.9
RRT -.4441 RRF -.4774 RTF .9941
SGB12940.2 R23 .0389 R13 -.9942
SG112924.6 SG2 635.1 THA 178.60

ORBIT DETERMINATION ACCURACY
ST 3200.4 SR 601.7 SS 1674.8
CRT -.5158 CRS .6778 CST -.9794
LSA 3615.2 MSA 582.7 SSA 19.3
EL1 3215.9 EL2 513.0 ALF 174.32

LAUNCH DATE NOV 5 1964 FLIGHT TIME 384.00 ARRIVAL DATE NOV 24 1965

HELIOCENTRIC CONIC DISTANCE 853.894 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.896 GAL -5.61 AZL 88.20 HCA 259.14 SMA 187.56 ECC .23006 INC 1.7961 V1 30.043
RP 209.66 LAP -1.76 LOP 301.75 VP 23.632 GAP -11.48 AZP 90.34 TAL 329.27 TAP 228.41 RCA 144.41 APO 230.72 V2 26.149
RC 310.607 GL 14.87 GP 1.12 ZAL 134.10 ZAP 40.66 ETS 180.57 ZAE 65.05 ETE 180.00 ZAC 85.16 ETC 258.07 CLP 40.65

PLANETOCENTRIC CONIC

C3 15.997 VHL 4.000 DLA 14.14 RAL 184.82 RAD 6567.6 VEL 11.721 PTH 2.07 VHP 4.546 DPA 9.50 RAP 164.89 ECC 1.2633

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 49 50	2617.73	-26.88	68.66	47.09	99.27	19 33 28	2017.7	-25.32	60.34
90.00	10 34 12	4351.09	4.90	180.43	41.85	62.08	11 46 43	3751.1	1.12	173.78
100.00	20 18 41	2331.18	-28.06	47.35	46.85	100.75	20 57 32	1731.2	-26.29	39.00
100.00	11 48 1	4112.88	5.95	162.33	41.27	60.65	12 56 34	3512.9	2.00	155.78
110.00	21 43 46	2064.98	-31.18	26.32	46.04	104.78	22 18 11	1465.0	-28.84	17.91
110.00	12 39 26	3951.84	8.69	148.45	39.59	56.81	13 45 18	3351.8	4.26	142.16

DIFFERENTIAL CORRECTIONS
TDE-1.2654 TRA 6.2183 TC-11.4065 BAU 2.4415
RDE .4229 RRA .0267 RC3 .4611 FAU .19783
FDE-2.0755 FRA 6.7780 FC-10.7060 BSP 45596
BDE 1.3342 BRA 6.2184 BC311.4158 FSP 4151

MID-COURSE EXECUTION ACCURACY
SGT13073.9 SGR 710.3 SG3 1167.0
RRT -.4410 RRF -.4758 RTF .9939
SGB13093.2 R23 .0399 R13 -.9939
SG113077.6 SG2 637.1 THA 178.62

ORBIT DETERMINATION ACCURACY
ST 3309.9 SR 606.0 SS 1663.0
CRT -.5327 CRS .6892 CST -.9802
LSA 3708.6 MSA 578.0 SSA 19.0
EL1 3326.0 EL2 510.4 ALF 174.29

LAUNCH DATE NOV 5 1964 FLIGHT TIME 386.00 ARRIVAL DATE NOV 26 1965

HELIOCENTRIC CONIC DISTANCE 858.099 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.901 GAL -5.76 AZL 88.20 HCA 260.37 SMA 187.65 ECC .23146 INC 1.8009 V1 30.043
RP 209.44 LAP -1.78 LOP 302.99 VP 23.666 GAP -11.63 AZP 90.30 TAL 328.56 TAP 228.93 RCA 144.22 APO 231.08 V2 26.174
RC 311.551 GL 14.68 GP 1.09 ZAL 135.01 ZAP 39.84 ETS 180.57 ZAE 63.93 ETE 180.03 ZAC 85.21 ETC 258.01 CLP 39.83

PLANETOCENTRIC CONIC

C3 16.474 VHL 4.059 DLA 13.61 RAL 185.58 RAD 6567.7 VEL 11.741 PTH 2.07 VHP 4.632 DPA 9.31 RAP 165.27 ECC 1.2711

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 57 34	2605.89	-26.74	67.82	48.14	99.67	19 41 0	2005.9	-25.13	59.52
90.00	10 32 31	4376.31	5.70	181.85	42.95	62.22	11 45 27	3776.3	1.94	175.19
100.00	20 26 3	2320.51	-27.92	46.59	47.89	101.13	21 4 44	1720.5	-26.10	38.26
100.00	11 46 43	4136.93	6.75	163.67	42.37	60.81	12 55 40	3536.9	2.81	157.10
110.00	21 50 21	2056.75	-31.03	25.73	47.06	105.11	22 24 38	1456.7	-28.65	17.34
110.00	12 38 54	3973.45	9.49	149.60	40.71	57.01	13 45 8	3373.5	5.08	143.29

DIFFERENTIAL CORRECTIONS
TDE-1.3644 TRA 6.4555 TC-11.2372 BAU 2.4768
RDE .4320 RRA .0266 RC3 .4492 FAU .18787
FDE-2.0808 FRA 6.6131 FC3-9.8729 BSP 46192
BDE 1.4312 BRA 6.4556 BC311.2461 FSP 3967

MID-COURSE EXECUTION ACCURACY
SGT13222.3 SGR 711.6 SG3 1110.2
RRT -.4398 RRF -.4749 RTF .9936
SGB13241.5 R23 .0410 R13 -.9937
SG113226.0 SG2 638.9 THA 178.64

ORBIT DETERMINATION ACCURACY
ST 3420.1 SR 610.1 SS 1649.6
CRT -.5488 CRS .7002 CST -.9810
LSA 3802.8 MSA 573.3 SSA 18.7
EL1 3436.8 EL2 507.5 ALF 174.28

LAUNCH DATE NOV 5 1964 FLIGHT TIME 388.00 ARRIVAL DATE NOV 28 1965

HELIOCENTRIC CONIC DISTANCE 862.303 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.906 GAL -5.91 AZL 88.19 HCA 261.61 SMA 187.74 ECC .23292 INC 1.8056 V1 30.043
RP 209.24 LAP -1.79 LOP 304.22 VP 23.699 GAP -11.78 AZP 90.26 TAL 327.83 TAP 229.45 RCA 144.01 APO 231.47 V2 26.198
RC 312.486 GL 14.49 GP 1.07 ZAL 135.92 ZAP 39.04 ETS 180.57 ZAE 62.84 ETE 180.07 ZAC 85.28 ETC 257.96 CLP 39.03

PLANETOCENTRIC CONIC

C3 16.979 VHL 4.121 DLA 13.07 RAL 186.34 RAD 6567.7 VEL 11.763 PTH 2.08 VHP 4.720 DPA 9.12 RAP 165.67 ECC 1.2794

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 5 16	2594.31	-26.61	67.00	49.20	100.06	19 48 30	1994.3	-24.95	58.73
90.00	10 30 52	4401.77	6.50	183.28	44.08	62.38	11 44 14	3801.8	2.76	176.61
100.00	20 33 24	2310.08	-27.78	45.84	48.95	101.50	21 11 54	1710.1	-25.92	37.54
100.00	11 45 25	4161.24	7.56	165.03	43.51	60.99	12 54 47	3561.2	3.63	158.44
110.00	21 56 56	2048.71	-30.89	25.14	48.09	105.42	22 31 4	1448.7	-28.47	16.78
110.00	12 38 23	3995.37	10.30	150.78	41.85	57.22	13 44 58	3395.4	5.91	144.45

DIFFERENTIAL CORRECTIONS
TDE-1.4669 TRA 6.6995 TC-11.0574 BAU 2.5120
RDE .4415 RRA .0262 RC3 .4375 FAU .17820
FDE-2.0823 FRA 6.4485 FC3-9.0859 BSP 46778
BDE 1.5319 BRA 6.6995 BC311.0660 FSP 3789

MID-COURSE EXECUTION ACCURACY
SGT13366.2 SGR 712.9 SG3 1055.3
RRT -.4387 RRF -.4746 RTF .9933
SGB13385.2 R23 .0422 R13 -.9934
SG113369.9 SG2 640.5 THA 178.66

ORBIT DETERMINATION ACCURACY
ST 3530.7 SR 614.0 SS 1634.4
CRT -.5640 CRS .7107 CST -.9817
LSA 3897.5 MSA 568.4 SSA 18.5
EL1 3548.0 EL2 504.6 ALF 174.28

LAUNCH DATE NOV 5 1964 FLIGHT TIME 390.00 ARRIVAL DATE NOV 30 1965

HELIOCENTRIC CONIC DISTANCE 866.503 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.911 GAL -6.07 AZL 88.19 HCA 262.85 SMA 187.83 ECC .23445 INC 1.8103 V1 30.043
RP 209.04 LAP -1.80 LOP 305.46 VP 23.731 GAP -11.93 AZP 90.23 TAL 327.09 TAP 229.95 RCA 143.79 APO 231.86 V2 26.221
RC 313.411 GL 14.30 GP 1.05 ZAL 136.83 ZAP 38.27 ETS 180.56 ZAE 61.77 ETE 180.11 ZAC 85.35 ETC 257.90 CLP 38.26

PLANETOCENTRIC CONIC

C3 17.516 VHL 4.185 DLA 12.53 RAL 187.10 RAD 6567.7 VEL 11.786 PTH 2.08 VHP 4.811 DPA 8.91 RAP 166.09 ECC 1.2883

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 12 56	2583.01	-26.47	66.20	50.28	100.44	19 55 59	1983.0	-24.76	57.95
90.00	10 29 15	4427.44	7.31	184.74	45.24	62.57	11 43 2	3827.4	3.58	178.05
100.00	20 40 44	2299.89	-27.64	45.12	50.02	101.85	21 19 4	1699.9	-25.73	36.84
100.00	11 44 9	4185.80	8.37	166.40	44.67	61.20	12 53 55	3585.8	4.46	159.79
110.00	22 3 30	2040.88	-30.75	24.58	49.14	105.73	22 37 31	1440.9	-28.28	16.25
110.00	12 37 52	4017.58	11.12	151.99	43.01	57.46	13 44 49	3417.6	6.75	145.62

DIFFERENTIAL CORRECTIONS
TDE-1.5730 TRA 6.9501 TC-10.8692 BAU 2.5472
RDE .4512 RRA .0255 RC3 .4261 FAU .16890
FDE-2.0819 FRA 6.2830 FC3-8.3481 BSP 47341
BDE 1.6365 BRA 6.9501 BC310.8776 FSP 3614

MID-COURSE EXECUTION ACCURACY
SGT13506.0 SGR 714.1 SG3 1002.4
RRT -.4382 RRF -.4753 RTF .9930
SGB13524.9 R23 .0435 R13 -.9931
SG113509.6 SG2 641.8 THA 178.67

ORBIT DETERMINATION ACCURACY
ST 3641.7 SR 617.9 SS 1618.0
CRT -.5785 CRS .7211 CST -.9822
LSA 3993.0 MSA 563.8 SSA 18.2
EL1 3659.6 EL2 501.5 ALF 174.29

LAUNCH DATE NOV 5 1964 FLIGHT TIME 392.00 ARRIVAL DATE DEC 2 1965

HELIOCENTRIC CONIC DISTANCE 870.700 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.916 GAL -6.24 AZL 88.18 HCA 264.09 SMA 187.92 ECC .23604 INC 1.8151 V1 30.043
RP 208.85 LAP -1.81 LOP 306.71 VP 23.763 GAP -12.09 AZP 90.19 TAL 326.34 TAP 230.43 RCA 143.56 APO 232.27 V2 26.243
RC 314.329 GL 14.11 GP 1.02 ZAL 137.75 ZAP 37.52 ETS 180.55 ZAE 60.72 ETE 180.14 ZAC 85.42 ETC 257.83 CLP 37.50

PLANETOCENTRIC CONIC

C3 18.085 VHL 4.253 DLA 11.98 RAL 187.86 RAD 6567.7 VEL 11.810 PTH 2.09 VHP 4.903 DPA 8.70 RAP 166.54 ECC 1.2976

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 20 35	2572.01	-26.33	65.43	51.37	100.81	20 3 27	1972.0	-24.57	57.20
90.00	10 27 39	4453.34	8.12	186.21	46.42	62.78	11 41 53	3853.3	4.41	179.50
100.00	20 48 2	2289.98	-27.50	44.42	51.10	102.20	21 26 12	1690.0	-25.55	36.16
100.00	11 42 54	4210.60	9.18	167.80	45.85	61.43	12 53 4	3610.6	5.29	161.16
110.00	22 10 4	2033.27	-30.60	24.03	50.21	106.03	22 43 58	1433.3	-28.11	15.73
110.00	12 37 21	4040.07	11.94	153.21	44.20	57.73	13 44 41	3440.1	7.59	146.81

DIFFERENTIAL CORRECTIONS
TDE-1.6821 TRA 7.2082 TC-10.6710 BAU 2.5820
RDE .4612 RRA .0244 RC3 .4148 FAU .15984
FDE-2.0768 FRA 6.1188 FC3-7.6516 BSP 47893
BDE 1.7441 BRA 7.2082 BC310.6791 FSP 3446

MID-COURSE EXECUTION ACCURACY
SGT13640.9 SGR 715.3 SG3 951.2
RRT -.4383 RRF -.4764 RTF .9927
SGB13659.6 R23 .0449 R13 -.9927
SG113644.5 SG2 642.8 THA 178.68

ORBIT DETERMINATION ACCURACY
ST 3752.4 SR 621.5 SS 1599.6
CRT -.5921 CRS .7308 CST -.9827
LSA 4088.1 MSA 559.1 SSA 18.0
EL1 3770.7 EL2 498.4 ALF 174.30

LAUNCH DATE NOV 5 1964 FLIGHT TIME 394.00 ARRIVAL DATE DEC 4 1965

HELIOCENTRIC CONIC DISTANCE 874.893 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.921 GAL -6.41 AZL 88.18 HCA 265.34 SMA 188.01 ECC .23770 INC 1.8198 V1 30.043
RP 208.67 LAP -1.81 LOP 307.95 VP 23.794 GAP -12.24 AZP 90.15 TAL 325.56 TAP 230.90 RCA 143.32 APO 232.70 V2 26.264
RC 315.238 GL 13.91 GP 1.00 ZAL 138.67 ZAP 36.79 ETS 180.55 ZAE 59.70 ETE 180.17 ZAC 85.50 ETC 257.77 CLP 36.78

PLANETOCENTRIC CONIC

C3 18.689 VHL 4.323 DLA 11.44 RAL 188.61 RAD 6567.8 VEL 11.835 PTH 2.10 VHP 4.997 DPA 8.47 RAP 167.01 ECC 1.3076

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 28 12	2561.30	-26.19	64.67	52.48	101.16	20 10 53	1961.3	-24.39	56.47
90.00	10 26 5	4479.44	8.93	187.70	47.62	63.02	11 40 45	3879.4	5.24	180.96
100.00	20 55 19	2280.34	-27.36	43.73	52.21	102.53	21 33 19	1680.3	-25.36	35.50
100.00	11 41 40	4235.63	9.99	169.21	47.06	61.68	12 52 15	3635.6	6.13	162.55
110.00	22 16 37	2025.91	-30.47	23.50	51.29	106.31	22 50 23	1425.9	-27.93	15.23
110.00	12 36 50	4062.82	12.76	154.46	45.42	58.02	13 44 33	3462.8	8.44	148.02

DIFFERENTIAL CORRECTIONS
TDE-1.7955 TRA 7.4721 TC-10.4684 BAU 2.6176
RDE .4715 RRA .0230 RC3 .4039 FAU .15118
FDE-2.0698 FRA 5.9532 FC3-7.0029 BSP 48404
BDE 1.8563 BRA 7.4721 BC310.4761 FSP 3281

MID-COURSE EXECUTION ACCURACY
SGT13772.0 SGR 716.5 SG3 902.0
RRT -.4391 RRF -.4783 RTF .9923
SGB13790.7 R23 .0464 R13 -.9923
SG113775.6 SG2 643.5 THA 178.69

ORBIT DETERMINATION ACCURACY
ST 3863.1 SR 625.0 SS 1579.8
CRT -.6053 CRS .7404 CST -.9831
LSA 4183.6 MSA 554.3 SSA 17.8
EL1 3881.9 EL2 495.1 ALF 174.31

LAUNCH DATE NOV 5 1964 FLIGHT TIME 396.00 ARRIVAL DATE DEC 6 1965

HELIOCENTRIC CONIC DISTANCE 879.082 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.927 GAL -6.59 AZL 88.18 HCA 266.58 SMA 188.10 ECC .23944 INC 1.8245 V1 30.043
RP 208.49 LAP -1.82 LOP 309.20 VP 23.824 GAP -12.40 AZP 90.11 TAL 324.78 TAP 231.36 RCA 143.06 APO 233.14 V2 26.285
RC 316.140 GL 13.70 GP .98 ZAL 139.59 ZAP 36.08 ETS 180.54 ZAE 58.69 ETE 180.20 ZAC 85.59 ETC 257.70 CLP 36.07

PLANETOCENTRIC CONIC

C3 19.331 VHL 4.397 DLA 10.89 RAL 189.37 RAD 6567.8 VEL 11.862 PTH 2.10 VHP 5.093 DPA 8.24 RAP 167.50 ECC 1.3181

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 35 46	2550.91	-26.05	63.94	53.61	101.50	20 18 17	1950.9	-24.21	55.76
90.00	10 24 33	4505.74	9.74	189.21	48.86	63.28	11 39 39	3905.7	6.08	182.44
100.00	21 2 33	2271.00	-27.22	43.07	53.32	102.85	21 40 24	1671.0	-25.18	34.87
100.00	11 40 27	4260.89	10.80	170.65	48.30	61.96	12 51 28	3660.9	6.97	163.96
110.00	22 23 9	2018.81	-30.33	22.99	52.39	106.58	22 56 48	1418.8	-27.76	14.74
110.00	12 36 20	4085.84	13.59	155.73	46.66	58.33	13 44 26	3485.8	9.30	149.26

DIFFERENTIAL CORRECTIONS
TDE-1.9115 TRA 7.7447 TC-10.2568 BAU 2.6527
RDE .4821 RRA .0212 RC3 .3931 FAU .14276
FDE-2.0586 FRA 5.7883 FC3-6.3935 BSP 48928
BDE 1.9713 BRA 7.7447 BC310.2643 FSP 3122

MID-COURSE EXECUTION ACCURACY
SGT13898.8 SGR 717.6 SG3 854.5
RRT -.4404 RRF -.4808 RTF .9918
SGB13917.3 R23 .0479 R13 -.9919
SG113902.4 SG2 644.1 THA 178.69

ORBIT DETERMINATION ACCURACY
ST 3972.9 SR 628.3 SS 1558.0
CRT -.6175 CRS .7496 CST -.9834
LSA 4278.3 MSA 549.7 SSA 17.6
EL1 3992.1 EL2 491.9 ALF 174.34

LAUNCH DATE NOV 5 1964 FLIGHT TIME 398.00 ARRIVAL DATE DEC 8 1965

HELIOCENTRIC CONIC DISTANCE 883.264 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.932 GAL -6.77 AZL 88.17 HCA 267.83 SMA 188.20 ECC .24124 INC 1.8292 V1 30.043
RP 208.32 LAP -1.83 LOP 310.45 VP 23.853 GAP -12.56 AZP 90.07 TAL 323.97 TAP 231.80 RCA 142.80 APO 233.60 V2 26.304
RC 317.035 GL 13.49 GP .97 ZAL 140.52 ZAP 35.39 ETS 180.53 ZAE 57.71 ETE 180.24 ZAC 85.68 ETC 257.64 CLP 35.38

PLANETOCENTRIC CONIC

C3 20.012 VHL 4.473 DLA 10.33 RAL 190.12 RAD 6567.8 VEL 11.891 PTH 2.11 VHP 5.191 DPA 7.99 RAP 168.01 ECC 1.3293

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 43 18	2540.85	-25.92	63.24	54.75	101.83	20 25 39	1940.9	-24.03	55.08
90.00	10 23 2	4532.23	10.55	190.74	50.12	63.57	11 38 34	3932.2	6.91	183.94
100.00	21 9 46	2261.96	-27.08	42.44	54.46	103.16	21 47 28	1662.0	-25.00	34.26
100.00	11 39 15	4286.35	11.61	172.10	49.56	62.26	12 50 41	3686.3	7.81	165.38
110.00	22 29 40	2011.97	-30.19	22.51	53.51	106.84	23 3 12	1412.0	-27.59	14.28
110.00	12 35 51	4109.11	14.41	157.03	47.93	58.66	13 44 20	3509.1	10.16	150.51

DIFFERENTIAL CORRECTIONS
TDE-2.0320 TRA 8.0235 TC-10.0438 BAU 2.6890
RDE .4930 RRA .0191 RC3 .3826 FAU .13470
FDE-2.0452 FRA 5.6220 FC3-5.8274 BSP 49392
BDE 2.0910 BRA 8.0235 BC310.0510 FSP 2966

MID-COURSE EXECUTION ACCURACY
SGT14022.8 SGR 718.7 SG3 808.7
RRT -.4425 RRF -.4841 RTF .9914
SGB14041.2 R23 .0496 R13 -.9914
SG114026.4 SG2 644.3 THA 178.70

ORBIT DETERMINATION ACCURACY
ST 4082.5 SR 631.6 SS 1534.8
CRT -.6294 CRS .7586 CST -.9837
LSA 4373.1 MSA 544.9 SSA 17.3
EL1 4102.1 EL2 488.4 ALF 174.36

LAUNCH DATE NOV 5 1964 FLIGHT TIME 400.00 ARRIVAL DATE DEC 10 1965

HELIOCENTRIC CONIC DISTANCE 887.440 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.937 GAL -6.96 AZL 88.17 HCA 269.08 SMA 188.29 ECC .24313 INC 1.8339 V1 30.043
RP 208.16 LAP -1.83 LOP 311.70 VP 23.881 GAP -12.72 AZP 90.03 TAL 323.15 TAP 232.23 RCA 142.51 APO 234.07 V2 26.323
RC 317.924 GL 13.28 GP .95 ZAL 141.44 ZAP 34.72 ETS 180.52 ZAE 56.74 ETE 180.27 ZAC 85.78 ETC 257.57 CLP 34.71

PLANETOCENTRIC CONIC

C3 20.734 VHL 4.554 DLA 9.78 RAL 190.88 RAD 6567.8 VEL 11.921 PTH 2.12 VHP 5.292 DPA 7.74 RAP 168.54 ECC 1.3412

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 50 47	2531.12	-25.78	62.56	55.91	102.14	20 32 59	1931.1	-23.85	54.42
90.00	10 21 33	4558.90	11.35	192.28	51.40	63.88	11 37 32	3958.9	7.75	185.46
100.00	21 16 57	2253.24	-26.95	41.83	55.61	103.45	21 54 30	1653.2	-24.83	33.67
100.00	11 38 5	4312.02	12.42	173.58	50.85	62.59	12 49 57	3712.0	8.65	166.82
110.00	22 36 9	2005.41	-30.06	22.04	54.64	107.09	23 9 34	1405.4	-27.43	13.84
110.00	12 35 22	4132.61	15.24	158.34	49.23	59.03	13 44 15	3532.6	11.02	151.78

DIFFERENTIAL CORRECTIONS
TDE-2.1557 TRA 8.3108 TC3-9.8243 BAU 2.7252
RDE .5042 RRA .0165 RC3 .3722 FAU .12688
FDE-2.0289 FRA 5.4558 FC3-5.2975 BSP 49854
BDE 2.2139 BRA 8.3108 BC3 9.8314 FSP 2816

MID-COURSE EXECUTION ACCURACY
SGT14142.4 SGR 719.7 SG3 764.6
RRT -.4450 RRF -.4880 RTF .9908
SGB14160.7 R23 .0515 R13 -.9909
SG114146.0 SG2 644.3 THA 178.70

ORBIT DETERMINATION ACCURACY
ST 4190.9 SR 634.6 SS 1509.9
CRT -.6406 CRS .7673 CST -.9838
LSA 4467.0 MSA 540.3 SSA 17.1
EL1 4210.8 EL2 485.0 ALF 174.39

LAUNCH DATE NOV 5 1964 FLIGHT TIME 402.00 ARRIVAL DATE DEC 12 1965

HELIOCENTRIC CONIC DISTANCE 891.609 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.943 GAL -7.15 AZL 88.16 HCA 270.33 SMA 188.39 ECC .24510 INC 1.8385 V1 30.043
RP 208.01 LAP -1.84 LOP 312.95 VP 23.908 GAP -12.89 AZP 89.99 TAL 322.31 TAP 232.65 RCA 142.22 APO 234.57 V2 26.341
RC 318.808 GL 13.07 GP .93 ZAL 142.36 ZAP 34.07 ETS 180.51 ZAE 55.79 ETE 180.29 ZAC 85.89 ETC 257.50 CLP 34.06

PLANETOCENTRIC CONIC

C3 21.502 VHL 4.637 DLA 9.22 RAL 191.63 RAD 6567.9 VEL 11.953 PTH 2.13 VHP 5.395 DPA 7.48 RAP 169.09 ECC 1.3539

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 58 14	2521.74	-25.64	61.91	57.08	102.44	20 40 16	1921.7	-23.67	53.79
90.00	10 20 6	4585.75	12.15	193.85	52.71	64.23	11 36 31	3985.7	8.58	186.99
100.00	21 24 5	2244.84	-26.81	41.24	56.78	103.73	22 1 30	1644.8	-24.66	33.10
100.00	11 36 55	4337.88	13.23	175.08	52.17	62.95	12 49 13	3737.9	9.50	168.28
110.00	22 42 36	1999.14	-29.94	21.60	55.79	107.33	23 15 55	1399.1	-27.28	13.42
110.00	12 34 54	4156.34	16.07	159.69	50.55	59.42	13 44 10	3556.3	11.89	153.07

DIFFERENTIAL CORRECTIONS
TDE-2.2844 TRA 8.6056 TC3-9.6029 BAU 2.7624
RDE .5159 RRA .0136 RC3 .3621 FAU .11937
FDE-2.0105 FRA 5.2884 FC3-4.8061 BSP 50283
BDE 2.3419 BRA 8.6056 BC3 9.6097 FSP 2668

MID-COURSE EXECUTION ACCURACY
SGT14259.2 SGR 720.6 SG3 722.2
RRT -.4483 RRF -.4926 RTF .9902
SGB14277.4 R23 .0535 R13 -.9903
SG114262.9 SG2 644.0 THA 178.70

ORBIT DETERMINATION ACCURACY
ST 4299.2 SR 637.5 SS 1483.7
CRT -.6514 CRS .7759 CST -.9840
LSA 4561.1 MSA 535.7 SSA 16.9
EL1 4319.4 EL2 481.4 ALF 174.41

LAUNCH DATE NOV 5 1964 FLIGHT TIME 404.00 ARRIVAL DATE DEC 14 1965

HELIOCENTRIC CONIC DISTANCE 895.769 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.949 GAL -7.35 AZL 88.16 HCA 271.59 SMA 188.49 ECC .24715 INC 1.8433 V1 30.043
RP 207.86 LAP -1.84 LOP 314.20 VP 23.934 GAP -13.06 AZP 89.95 TAL 321.46 TAP 233.04 RCA 141.91 APO 235.08 V2 26.357
RC 319.685 GL 12.86 GP .91 ZAL 143.29 ZAP 33.44 ETS 180.50 ZAE 54.86 ETE 180.32 ZAC 86.00 ETC 257.42 CLP 33.43

PLANETOCENTRIC CONIC

C3 22.316 VHL 4.724 DLA 8.66 RAL 192.38 RAD 6567.9 VEL 11.987 PTH 2.14 VHP 5.500 DPA 7.21 RAP 169.65 ECC 1.3673

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 5 38	2512.71	-25.51	61.28	58.27	102.73	20 47 31	1912.7	-23.50	53.18
90.00	10 18 40	4612.76	12.95	195.44	54.05	64.59	11 35 33	4012.8	9.42	188.53
100.00	21 31 11	2236.78	-26.68	40.68	57.96	104.00	22 8 28	1636.8	-24.49	32.56
100.00	11 35 48	4363.93	14.03	176.60	53.51	63.33	12 48 32	3763.9	10.34	169.75
110.00	22 49 2	1993.17	-29.82	21.17	56.95	107.55	23 22 15	1393.2	-27.13	13.02
110.00	12 34 26	4180.29	16.89	161.05	51.90	59.83	13 44 7	3580.3	12.76	154.38

DIFFERENTIAL CORRECTIONS
TDE-2.4168 TRA 8.9082 TC3-9.3790 BAU 2.8002
RDE .5278 RRA .0102 RC3 .3521 FAU .11211
FDE-1.9890 FRA 5.1199 FC3-4.3493 BSP 50670
BDE 2.4738 BRA 8.9082 BC3 9.3856 FSP 2524

MID-COURSE EXECUTION ACCURACY
SGT14372.2 SGR 721.6 SG3 681.2
RRT -.4520 RRF -.4979 RTF .9896
SGB14390.3 R23 .0557 R13 -.9896
SG114376.0 SG2 643.5 THA 178.70

ORBIT DETERMINATION ACCURACY
ST 4406.0 SR 640.3 SS 1455.7
CRT -.6618 CRS .7843 CST -.9840
LSA 4654.0 MSA 530.9 SSA 16.7
EL1 4426.6 EL2 477.8 ALF 174.44

LAUNCH DATE NOV 5 1964 FLIGHT TIME 406.00 ARRIVAL DATE DEC 16 1965

HELIOCENTRIC CONIC DISTANCE 899.920 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.954 GAL -7.56 AZL 88.15 HCA 272.84 SMA 188.59 ECC .24929 INC 1.8480 V1 30.043
RP 207.73 LAP -1.85 LOP 315.46 VP 23.960 GAP -13.23 AZP 89.91 TAL 320.59 TAP 233.43 RCA 141.58 APO 235.61 V2 26.373
RC 320.558 GL 12.64 GP .90 ZAL 144.21 ZAP 32.83 ETS 180.49 ZAE 53.95 ETE 180.35 ZAC 86.11 ETC 257.35 CLP 32.82

PLANETOCENTRIC CONIC

C3 23.182 VHL 4.815 DLA 8.11 RAL 193.12 RAD 6567.9 VEL 12.023 PTH 2.15 VHP 5.607 DPA 6.94 RAP 170.24 ECC 1.3815

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 12 59	2504.04	-25.38	60.68	59.48	103.00	20 54 43	1904.0	-23.34	52.60
90.00	10 17 16	4639.93	13.73	197.04	55.42	64.99	11 34 35	4039.9	10.25	190.10
100.00	21 38 15	2229.05	-26.55	40.14	59.16	104.26	22 15 24	1629.0	-24.33	32.04
100.00	11 34 41	4390.15	14.82	178.14	54.88	63.74	12 47 51	3790.1	11.18	171.24
110.00	22 55 26	1987.51	-29.70	20.77	58.14	107.76	23 28 33	1387.5	-26.98	12.64
110.00	12 33 59	4204.45	17.71	162.44	53.28	60.28	13 44 4	3604.4	13.63	155.72

DIFFERENTIAL CORRECTIONS
TDE-2.5532 TRA 9.2192 TC3-9.1532 BAU 2.8387
RDE .5401 RRA .0064 RC3 .3424 FAU .10511
FDE-1.9651 FRA 4.9507 FC3-3.9253 BSP 51042
BDE 2.6097 BRA 9.2192 BC3 9.1596 FSP 2384

MID-COURSE EXECUTION ACCURACY
SGT14481.9 SGR 722.4 SG3 641.7
RRT -.4563 RRF -.5038 RTF .9889
SGB14499.9 R23 .0581 R13 -.9889
SG114485.6 SG2 642.7 THA 178.69

ORBIT DETERMINATION ACCURACY
ST 4511.5 SR 642.8 SS 1426.3
CRT -.6716 CRS .7926 CST -.9840
LSA 4746.0 MSA 526.3 SSA 16.5
EL1 4532.4 EL2 474.1 ALF 174.47

LAUNCH DATE NOV 5 1964 FLIGHT TIME 408.00 ARRIVAL DATE DEC 18 1965

HELIOCENTRIC CONIC DISTANCE 904.061 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.960 GAL -7.77 AZL 88.15 HCA 274.10 SMA 188.70 ECC .25152 INC 1.8527 V1 30.043
RP 207.60 LAP -1.85 LOP 316.72 VP 23.984 GAP -13.41 AZP 89.87 TAL 319.70 TAP 233.80 RCA 141.23 APO 236.16 V2 26.388
RC 321.425 GL 12.42 GP .88 ZAL 145.13 ZAP 32.23 ETS 180.48 ZAE 53.05 ETE 180.38 ZAC 86.23 ETC 257.28 CLP 32.22

PLANETOCENTRIC CONIC

C3 24.100 VHL 4.909 DLA 7.55 RAL 193.86 RAD 6568.0 VEL 12.061 PTH 2.16 VHP 5.717 DPA 6.65 RAP 170.84 ECC 1.3966

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 20 18	2495.72	-25.25	60.10	60.70	103.26	21 1 53	1895.7	-23.17	52.05
90.00	10 15 53	4667.25	14.51	198.67	56.82	65.42	11 33 40	4067.2	11.08	191.68
100.00	21 45 16	2221.67	-26.43	39.62	60.37	104.50	22 22 17	1621.7	-24.18	31.55
100.00	11 33 36	4416.54	15.61	179.70	56.28	64.18	12 47 12	3816.5	12.01	172.76
110.00	23 1 48	1982.17	-29.59	20.40	59.33	107.96	23 34 50	1382.2	-26.85	12.28
110.00	12 33 33	4228.80	18.53	163.86	54.69	60.75	13 44 2	3628.8	14.49	157.07

DIFFERENTIAL CORRECTIONS
TDE-2.6930 TRA 9.5389 TC3-8.9254 BAU 2.8778
RDE .5528 RRA .0022 RC3 .3328 FAU .09833
FDE-1.9378 FRA 4.7805 FC3-3.5323 BSP 51398
BDE 2.7492 BRA 9.5389 BC3 8.9316 FSP 2250

MID-COURSE EXECUTION ACCURACY
SGT14587.5 SGR 723.2 SG3 603.7
RRT -.4609 RRF -.5102 RTF .9881
SGB14605.4 R23 .0607 R13 -.9881
SG114591.3 SG2 641.6 THA 178.69

ORBIT DETERMINATION ACCURACY
ST 4615.0 SR 645.3 SS 1394.9
CRT -.6810 CRS .8005 CST -.9839
LSA 4836.1 MSA 521.7 SSA 16.3
EL1 4636.1 EL2 470.4 ALF 174.50

LAUNCH DATE NOV 5 1964 FLIGHT TIME 410.00 ARRIVAL DATE DEC 20 1965

HELIOCENTRIC CONIC DISTANCE 908.191 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.966 GAL -7.99 AZL 88.14 HCA 275.36 SMA 188.80 ECC .25385 INC 1.8574 V1 30.043
RP 207.48 LAP -1.85 LOP 317.98 VP 24.008 GAP -13.59 AZP 89.83 TAL 318.79 TAP 234.15 RCA 140.87 APO 236.73 V2 26.402
RC 322.286 GL 12.20 GP .86 ZAL 146.05 ZAP 31.66 ETS 180.47 ZAE 52.17 ETE 180.40 ZAC 86.35 ETC 257.21 CLP 31.65

PLANETOCENTRIC CONIC

C3 25.077 VHL 5.008 DLA 7.00 RAL 194.60 RAD 6568.0 VEL 12.102 PTH 2.17 VHP 5.829 DPA 6.36 RAP 171.46 ECC 1.4127

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 27 33	2487.78	-25.12	59.56	61.93	103.51	21 9 0	1887.8	-23.02	51.52
90.00	10 14 32	4694.71	15.28	200.32	58.24	65.87	11 32 47	4094.7	11.90	193.28
100.00	21 52 14	2214.64	-26.31	39.14	61.60	104.73	22 29 9	1614.6	-24.03	31.08
100.00	11 32 32	4443.09	16.39	181.28	57.71	64.65	12 46 35	3843.1	12.85	174.29
110.00	23 8 7	1977.14	-29.48	20.05	60.54	108.14	23 41 4	1377.1	-26.72	11.95
110.00	12 33 8	4253.43	19.34	165.30	56.13	61.25	13 44 1	3653.4	15.35	158.45

DIFFERENTIAL CORRECTIONS
TDE-2.8382 TRA 9.8665 TC3-8.6991 BAU 2.9184
RDE .5659 RRA -.0026 RC3 .3235 FAU .09181
FDE-1.9087 FRA 4.6086 FC3-3.1696 BSP 51690
BDE 2.8941 BRA 9.8665 BC3 8.7052 FSP 2117

MID-COURSE EXECUTION ACCURACY
SGT14690.5 SGR 724.0 SG3 567.0
RRT -.4662 RRF -.5173 RTF .9872
SGB14708.4 R23 .0635 R13 -.9872
SG114694.4 SG2 640.3 THA 178.68

ORBIT DETERMINATION ACCURACY
ST 4717.7 SR 647.5 SS 1362.4
CRT -.6901 CRS .8085 CST -.9837
LSA 4925.9 MSA 516.9 SSA 16.1
EL1 4739.0 EL2 466.5 ALF 174.54

LAUNCH DATE NOV 5 1964 FLIGHT TIME 412.00 ARRIVAL DATE DEC 22 1965

HELIOCENTRIC CONIC DISTANCE 912.308 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.972 GAL -8.22 AZL 88.14 HCA 276.62 SMA 188.90 ECC .25628 INC 1.8622 V1 30.043
RP 207.36 LAP -1.85 LOP 319.24 VP 24.031 GAP -13.77 AZP 89.79 TAL 317.87 TAP 234.49 RCA 140.49 APO 237.32 V2 26.416
RC 323.141 GL 11.98 GP .85 ZAL 146.96 ZAP 31.10 ETS 180.46 ZAE 51.31 ETE 180.43 ZAC 86.48 ETC 257.13 CLP 31.09

PLANETOCENTRIC CONIC

C3 26.114 VHL 5.110 DLA 6.44 RAL 195.34 RAD 6568.1 VEL 12.145 PTH 2.18 VHP 5.944 DPA 6.06 RAP 172.10 ECC 1.4298

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 34 45	2480.20	-25.00	59.03	63.19	103.75	21 16 5	1880.2	-22.87	51.01
90.00	10 13 13	4722.31	16.04	201.99	59.70	66.35	11 31 55	4122.3	12.71	194.89
100.00	21 59 9	2207.96	-26.19	38.67	62.85	104.95	22 35 57	1608.0	-23.88	30.64
100.00	11 31 29	4469.78	17.16	182.89	59.17	65.15	12 45 59	3869.8	13.67	175.84
110.00	23 14 25	1972.44	-29.38	19.72	61.77	108.31	23 47 17	1372.4	-26.60	11.64
110.00	12 32 43	4278.07	20.14	166.77	57.60	61.78	13 44 1	3678.1	16.21	159.85

DIFFERENTIAL CORRECTIONS
TDE-2.9872 TRA10.2041 TC3-8.4731 BAU 2.9601
RDE .5793 RRA -.0078 RC3 .3143 FAU .08550
FDE-1.8766 FRA 4.4360 FC3-2.8345 BSP 51978
BDE 3.0428 BRA10.2041 BC3 8.4789 FSP 1988

MID-COURSE EXECUTION ACCURACY
SGT14791.0 SGR 724.7 SG3 531.7
RRT -.4719 RRF -.5250 RTF .9861
SGB14808.8 R23 .0666 R13 -.9862
SG114795.0 SG2 638.8 THA 178.67

ORBIT DETERMINATION ACCURACY
ST 4818.3 SR 649.6 SS 1328.2
CRT -.6987 CRS .8163 CST -.9835
LSA 5013.9 MSA 512.3 SSA 15.9
EL1 4839.8 EL2 462.7 ALF 174.57

LAUNCH DATE NOV 5 1964 FLIGHT TIME 414.00 ARRIVAL DATE DEC 24 1965

HELIOCENTRIC CONIC DISTANCE 916.410 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.978 GAL -8.45 AZL 88.13 HCA 277.88 SMA 189.01 ECC .25881 INC 1.8670 V1 30.043
RP 207.26 LAP -1.85 LOP 320.50 VP 24.052 GAP -13.96 AZP 89.74 TAL 316.93 TAP 234.81 RCA 140.09 APO 237.93 V2 26.428
RC 323.990 GL 11.75 GP .84 ZAL 147.87 ZAP 30.55 ETS 180.44 ZAE 50.46 ETE 180.45 ZAC 86.62 ETC 257.06 CLP 30.54

PLANETOCENTRIC CONIC

C3 27.216 VHL 5.217 DLA 5.89 RAL 196.08 RAD 6568.1 VEL 12.190 PTH 2.19 VHP 6.061 DPA 5.75 RAP 172.75 ECC 1.4479

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 41 54	2473.00	-24.88	58.54	64.45	103.97	21 23 7	1873.0	-22.72	50.54
90.00	10 11 55	4750.03	16.79	203.68	61.18	66.86	11 31 5	4150.0	13.52	196.53
100.00	22 6 2	2201.63	-26.08	38.24	64.11	105.15	22 42 44	1601.6	-23.75	30.22
100.00	11 30 28	4496.62	17.92	184.52	60.66	65.67	12 45 25	3896.6	14.49	177.41
110.00	23 20 40	1968.06	-29.29	19.41	63.02	108.47	23 53 28	1368.1	-26.49	11.35
110.00	12 32 19	4302.96	20.94	168.27	59.10	62.34	13 44 2	3703.0	17.07	161.28

DIFFERENTIAL CORRECTIONS
TDE-3.1409 TRA10.5506 TC3-8.2475 BAU 3.0029
RDE .5932 RRA -.0135 RC3 .3054 FAU .07939
FDE-1.8423 FRA 4.2615 FC3-2.5254 BSP 52211
BDE 3.1965 BRA10.5506 BC3 8.2531 FSP 1863

MID-COURSE EXECUTION ACCURACY
SGT14887.9 SGR 725.4 SG3 497.6
RRT -.4781 RRF -.5333 RTF .9850
SGB14905.5 R23 .0700 R13 -.9851
SG114891.9 SG2 636.9 THA 178.66

ORBIT DETERMINATION ACCURACY
ST 4917.3 SR 651.6 SS 1292.6
CRT -.7071 CRS .8240 CST -.9832
LSA 5100.7 MSA 507.6 SSA 15.7
EL1 4939.0 EL2 458.7 ALF 174.60

LAUNCH DATE NOV 5 1964 FLIGHT TIME 416.00 ARRIVAL DATE DEC 26 1965

HELIOCENTRIC CONIC DISTANCE 920.498 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.984 GAL -8.70 AZL 88.13 HCA 279.14 SMA 189.12 ECC .26145 INC 1.8718 V1 30.043
RP 207.16 LAP -1.85 LOP 321.76 VP 24.073 GAP -14.15 AZP 89.70 TAL 315.98 TAP 235.12 RCA 139.67 APO 238.56 V2 26.439
RC 324.833 GL 11.53 GP .82 ZAL 148.78 ZAP 30.03 ETS 180.43 ZAE 49.63 ETE 180.48 ZAC 86.76 ETC 256.99 CLP 30.01

PLANETOCENTRIC CONIC

C3 28.387 VHL 5.328 DLA 5.34 RAL 196.81 RAD 6568.1 VEL 12.238 PTH 2.20 VHP 6.181 DPA 5.44 RAP 173.42 ECC 1.4672

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 49 0	2466.16	-24.77	58.07	65.74	104.18	21 30 6	1866.2	-22.58	50.08
90.00	10 10 39	4777.86	17.53	205.39	62.69	67.40	11 30 17	4177.9	14.32	198.18
100.00	22 12 52	2195.67	-25.97	37.83	65.39	105.34	22 49 27	1595.7	-23.61	29.82
100.00	11 29 28	4523.59	18.67	186.17	62.17	66.22	12 44 52	3923.6	15.30	179.00
110.00	23 26 53	1964.02	-29.20	19.13	64.27	108.62	23 59 37	1364.0	-26.38	11.08
110.00	12 31 56	4328.00	21.72	169.79	60.63	62.93	13 44 4	3728.0	17.92	162.72

DIFFERENTIAL CORRECTIONS
TDE-3.2994 TRA10.9069 TC3-8.0234 BAU 3.0471
RDE .6074 RRA -.0198 RC3 .2966 FAU .07349
FDE-1.8052 FRA 4.0855 FC3-2.2412 BSP 52404
BDE 3.3548 BRA10.9069 BC3 8.0289 FSP 1741

MID-COURSE EXECUTION ACCURACY
SGT14981.8 SGR 726.0 SG3 464.8
RRT -.4847 RRF -.5421 RTF .9837
SGB14999.4 R23 .0737 R13 -.9838
SG114986.0 SG2 634.8 THA 178.65

ORBIT DETERMINATION ACCURACY
ST 5014.4 SR 653.3 SS 1255.4
CRT -.7151 CRS .8316 CST -.9828
LSA 5185.9 MSA 502.8 SSA 15.4
EL1 5036.3 EL2 454.7 ALF 174.63

LAUNCH DATE NOV 5 1964 FLIGHT TIME 418.00 ARRIVAL DATE DEC 28 1965

HELIOCENTRIC CONIC DISTANCE 924.569 EARTH TO MARS

RL 148.31 LAL -.00 LOL 42.62 VL 32.990 GAL -8.94 AZL 88.12 HCA 280.41 SMA 189.23 ECC .26421 INC 1.8767 V1 30.043
RP 207.08 LAP -1.85 LOP 323.03 VP 24.093 GAP -14.35 AZP 89.66 TAL 315.00 TAP 235.41 RCA 139.23 APO 239.22 V2 26.449
RC 325.671 GL 11.31 GP .81 ZAL 149.69 ZAP 29.51 ETS 180.42 ZAE 48.81 ETE 180.50 ZAC 86.90 ETC 256.92 CLP 29.50

PLANETOCENTRIC CONIC

C3 29.633 VHL 5.444 DLA 4.79 RAL 197.53 RAD 6568.2 VEL 12.288 PTH 2.21 VHP 6.305 DPA 5.12 RAP 174.10 ECC 1.4877

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 56 3	2459.69	-24.66	57.63	67.03	104.37	21 37 3	1859.7	-22.45	49.66
90.00	10 9 24	4805.81	18.25	207.12	64.22	67.97	11 29 30	4205.8	15.11	199.86
100.00	22 19 39	2190.06	-25.87	37.44	66.68	105.52	22 56 9	1590.1	-23.49	29.45
100.00	11 28 30	4550.68	19.41	187.85	63.72	66.81	12 44 20	3950.7	16.10	180.62
110.00	23 33 3	1960.30	-29.12	18.87	65.55	108.75	24 5 44	1360.3	-26.28	10.83
110.00	12 31 34	4353.19	22.49	171.34	62.19	63.55	13 44 7	3753.2	18.76	164.19

DIFFERENTIAL CORRECTIONS
TDE-3.4620 TRA11.2728 TC3-7.8017 BAU 3.0929
RDE .6221 RRA -.0266 RC3 .2880 FAU .06776
FDE-1.7655 FRA 3.9078 FC3-1.9797 BSP 52579
BDE 3.5175 BRA11.2728 BC3 7.8070 FSP 1623

MID-COURSE EXECUTION ACCURACY
SGT15072.8 SGR 726.5 SG3 433.2
RRT -.4916 RRF -.5514 RTF .9822
SGB15090.3 R23 .0777 R13 -.9823
SG115077.1 SG2 632.5 THA 178.64

ORBIT DETERMINATION ACCURACY
ST 5109.0 SR 654.9 SS 1216.8
CRT -.7228 CRS .8392 CST -.9823
LSA 5269.1 MSA 498.0 SSA 15.2
EL1 5131.1 EL2 450.6 ALF 174.66

LAUNCH DATE NOV 6 1964 FLIGHT TIME 180.00 ARRIVAL DATE MAY 5 1965

HELIOCENTRIC CONIC DISTANCE 465.181 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 34.584 GAL -6.77 AZL 87.84 HCA 150.30 SMA 223.37 ECC .35405 INC 2.1610 V1 30.050
RP 243.75 LAP 1.07 LOP 193.93 VP 22.244 GAP 20.09 AZP 91.88 TAL 333.80 TAP 124.09 RCA 144.29 APO 302.46 V2 22.510
RC 136.814 GL 12.98 GP -.84 ZAL 129.27 ZAP 170.09 ETS 183.50 ZAE 155.96 ETE 356.38 ZAC 87.76 ETC 256.09 CLP 170.12

PLANETOCENTRIC CONIC

C3 33.232 VHL 5.765 DLA 14.23 RAL 179.88 RAD 6568.3 VEL 12.434 PTH 2.25 VHP 9.188 DPA -1.17 RAP 183.89 ECC 1.5469

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 25 23	2797.95	-28.18	81.68	55.71	92.89	19 12 1	2198.0	-27.48	73.08
90.00	10 11 19	4525.18	10.33	190.33	47.72	63.49	11 26 44	3925.2	6.69	183.54
100.00	19 54 18	2511.20	-29.65	60.48	55.61	94.02	20 36 10	1911.2	-28.77	51.79
100.00	11 25 5	4287.16	11.64	172.15	47.04	62.27	12 36 32	3687.2	7.84	165.42
110.00	21 19 31	2244.60	-33.52	39.79	55.17	97.14	21 56 55	1644.6	-32.17	30.82
110.00	12 16 22	4126.53	15.03	158.00	45.08	58.93	13 25 8	3526.5	10.80	151.45

DIFFERENTIAL CORRECTIONS
TDE 1.1497 TRA-2.8233 TC3 .8921 BAU .3995
RDE -.3555 RRA -.0317 RC3 -.1118 FAU .07840
FDE -.6234 FRA 2.3695 FC3-2.0425 BSP 11147
BDE 1.2034 BRA 2.8235 BC3 .8991 FSP 850

MID-COURSE EXECUTION ACCURACY
SGT 3277.8 SGR 377.5 SG3 297.2
RRT -.3574 RRF .3415 RTF -.9014
SGB 3299.5 R23 -.0167 R13 .9015
SG1 3280.6 SG2 352.2 THA 177.62

ORBIT DETERMINATION ACCURACY
ST 1435.6 SR 353.4 SS 761.4
CRT -.7792 CRS -.6255 CST .9754
LSA 1640.1 MSA 273.5 SSA 27.4
EL1 1462.4 EL2 217.5 ALF 168.89

LAUNCH DATE NOV 6 1964 FLIGHT TIME 182.00 ARRIVAL DATE MAY 7 1965

HELIOCENTRIC CONIC DISTANCE 467.871 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 34.503 GAL -6.59 AZL 87.83 HCA 151.21 SMA 221.31 ECC .34737 INC 2.1732 V1 30.050
RP 243.50 LAP 1.05 LOP 194.85 VP 22.144 GAP 19.53 AZP 91.90 TAL 334.10 TAP 125.31 RCA 144.43 APO 298.19 V2 22.535
RC 139.022 GL 13.31 GP -.88 ZAL 128.79 ZAP 169.59 ETS 183.49 ZAE 155.91 ETE 356.45 ZAC 87.81 ETC 256.07 CLP 169.62

PLANETOCENTRIC CONIC

C3 31.861 VHL 5.645 DLA 14.70 RAL 179.62 RAD 6568.3 VEL 12.379 PTH 2.23 VHP 8.987 DPA -1.38 RAP 184.25 ECC 1.5243

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 20 5	2804.10	-28.20	82.12	54.86	92.66	19 6 49	2204.1	-27.53	73.52
90.00	10 14 33	4497.80	9.50	188.75	46.85	63.20	11 29 31	3897.8	5.83	182.00
100.00	19 49 20	2516.26	-29.67	60.86	54.76	93.83	20 31 16	1916.3	-28.82	52.15
100.00	11 27 59	4260.88	10.80	170.65	46.16	61.96	12 39 0	3660.9	6.97	163.96
110.00	21 15 15	2247.41	-33.54	40.01	54.33	97.02	21 52 43	1647.4	-32.21	31.03
110.00	12 18 33	4102.48	14.18	156.66	44.18	58.57	13 26 55	3502.5	9.92	150.15

DIFFERENTIAL CORRECTIONS
TDE 1.1264 TRA-2.7935 TC3 .9565 BAU .4105
RDE -.3401 RRA -.0229 RC3 -.1179 FAU .08077
FDE -.6223 FRA 2.4236 FC3-2.1948 BSP 11347
BDE 1.1766 BRA 2.7936 BC3 .9637 FSP 896

MID-COURSE EXECUTION ACCURACY
SGT 3326.8 SGR 370.8 SG3 311.6
RRT -.3795 RRF .3642 RTF -.9046
SGB 3347.4 R23 -.0185 R13 .9047
SG1 3329.8 SG2 342.7 THA 177.55

ORBIT DETERMINATION ACCURACY
ST 1442.8 SR 345.3 SS 771.3
CRT -.7798 CRS -.6206 CST .9738
LSA 1649.5 MSA 273.1 SSA 27.2
EL1 1468.3 EL2 212.5 ALF 169.20

LAUNCH DATE NOV 6 1964 FLIGHT TIME 184.00 ARRIVAL DATE MAY 9 1965

HELIOCENTRIC CONIC DISTANCE 470.631 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 34.426 GAL -6.42 AZL 87.81 HCA 152.12 SMA 219.37 ECC .34096 INC 2.1862 V1 30.050
RP 243.25 LAP 1.02 LOP 195.76 VP 22.050 GAP 18.97 AZP 91.93 TAL 334.42 TAP 126.54 RCA 144.58 APO 294.17 V2 22.560
RC 141.251 GL 13.65 GP -.93 ZAL 128.30 ZAP 169.07 ETS 183.49 ZAE 155.90 ETE 356.51 ZAC 87.85 ETC 256.05 CLP 169.11

PLANETOCENTRIC CONIC

C3 30.568 VHL 5.529 DLA 15.19 RAL 179.35 RAD 6568.2 VEL 12.326 PTH 2.22 VHP 8.791 DPA -1.59 RAP 184.60 ECC 1.5031

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 14 34	2811.08	-28.22	82.63	54.01	92.41	19 1 25	2211.1	-27.59	74.02
90.00	10 17 56	4470.01	8.64	187.16	45.99	62.93	11 32 26	3870.0	4.94	180.43
100.00	19 44 11	2522.08	-29.69	61.29	53.92	93.60	20 26 13	1922.1	-28.88	52.58
100.00	11 31 1	4234.23	9.94	169.13	45.29	61.66	12 41 35	3634.2	6.08	162.47
110.00	21 10 52	2250.88	-33.57	40.28	53.51	96.86	21 48 22	1650.9	-32.26	31.29
110.00	12 20 49	4078.21	13.31	155.31	43.30	58.22	13 28 48	3478.2	9.02	148.85

DIFFERENTIAL CORRECTIONS
TDE 1.1025 TRA-2.7634 TC3 1.0237 BAU .4214
RDE -.3252 RRA -.0141 RC3 -.1245 FAU .08323
FDE -.6198 FRA 2.4801 FC3-2.3573 BSP 11527
BDE 1.1495 BRA 2.7635 BC3 1.0312 FSP 945

MID-COURSE EXECUTION ACCURACY
SGT 3375.3 SGR 364.4 SG3 326.7
RRT -.4032 RRF .3882 RTF -.9078
SGB 3394.9 R23 -.0203 R13 .9079
SG1 3378.5 SG2 333.1 THA 177.48

ORBIT DETERMINATION ACCURACY
ST 1448.8 SR 337.1 SS 780.9
CRT -.7805 CRS -.6151 CST .9720
LSA 1657.5 MSA 273.2 SSA 26.9
EL1 1473.0 EL2 207.3 ALF 169.50

LAUNCH DATE NOV 6 1964 FLIGHT TIME 186.00 ARRIVAL DATE MAY 11 1965

HELIOCENTRIC CONIC DISTANCE 473.455 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 34.353 GAL -6.26 AZL 87.80 HCA 153.04 SMA 217.55 ECC .33479 INC 2.2000 V1 30.050
RP 243.00 LAP 1.00 LOP 196.68 VP 21.961 GAP 18.41 AZP 91.96 TAL 334.73 TAP 127.77 RCA 144.71 APO 290.38 V2 22.585
RC 143.499 GL 14.00 GP -.98 ZAL 127.80 ZAP 168.56 ETS 183.50 ZAE 155.93 ETE 356.55 ZAC 87.89 ETC 256.04 CLP 168.60

PLANETOCENTRIC CONIC

C3 29.351 VHL 5.418 DLA 15.69 RAL 179.08 RAD 6568.2 VEL 12.277 PTH 2.21 VHP 8.599 DPA -1.80 RAP 184.95 ECC 1.4830

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 8 50	2818.95	-28.24	83.21	53.18	92.12	18 55 49	2218.9	-27.65	74.59
90.00	10 21 30	4441.76	7.76	185.55	45.15	62.68	11 35 32	3841.8	4.04	178.85
100.00	19 38 50	2528.72	-29.72	61.76	53.10	93.34	20 20 59	1928.7	-28.94	53.06
100.00	11 34 12	4207.21	9.07	167.61	44.45	61.39	12 44 19	3607.2	5.18	160.98
110.00	21 6 19	2255.02	-33.60	40.59	52.70	96.68	21 43 54	1655.0	-32.31	31.60
110.00	12 23 12	4083.69	12.43	153.96	42.45	57.90	13 30 46	3453.7	8.10	147.54

DIFFERENTIAL CORRECTIONS
TDE 1.0785 TRA-2.7325 TC3 1.0940 BAU .4324
RDE -.3107 RRA -.0055 RC3 -.1315 FAU .08583
FDE -.6154 FRA 2.5372 FC3-2.5317 BSP 11713
BDE 1.1224 BRA 2.7325 BC3 1.1019 FSP 997

MID-COURSE EXECUTION ACCURACY
SGT 3422.9 SGR 358.2 SG3 342.5
RRT -.4286 RRF .4141 RTF -.9109
SGB 3441.6 R23 -.0224 R13 .9110
SG1 3426.4 SG2 323.3 THA 177.41

ORBIT DETERMINATION ACCURACY
ST 1453.6 SR 328.7 SS 790.1
CRT -.7815 CRS -.6096 CST .9700
LSA 1664.3 MSA 273.6 SSA 26.6
EL1 1476.6 EL2 201.9 ALF 169.79

LAUNCH DATE NOV 6 1964 FLIGHT TIME 188.00 ARRIVAL DATE MAY 13 1965

HELIOCENTRIC CONIC DISTANCE 476.341 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 34.282 GAL -6.10 AZL 87.79 HCA 153.96 SMA 215.83 ECC .32887 INC 2.2148 V1 30.050
RP 242.74 LAP .97 LOP 197.60 VP 21.876 GAP 17.86 AZP 91.99 TAL 335.05 TAP 129.01 RCA 144.85 APO 286.80 V2 22.611
RC 145.763 GL 14.36 GP -1.03 ZAL 127.28 ZAP 168.03 ETS 183.53 ZAE 156.00 ETE 356.57 ZAC 87.93 ETC 256.02 CLP 168.07

PLANETOCENTRIC CONIC

C3 28.202 VHL 5.311 DLA 16.21 RAL 178.80 RAD 6568.1 VEL 12.230 PTH 2.20 VHP 8.412 DPA -2.02 RAP 185.28 ECC 1.4641

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 2 52	2827.79	-28.26	83.85	52.37	91.80	18 50 0	2227.8	-27.72	75.23
90.00	10 25 16	4412.97	6.86	183.92	44.34	62.46	11 38 49	3813.0	3.12	177.24
100.00	19 33 16	2536.24	-29.75	62.34	52.30	93.05	20 15 32	1936.2	-29.01	53.61
100.00	11 37 32	4179.75	8.17	166.06	43.63	61.15	12 47 12	3579.7	4.26	159.46
110.00	21 1 36	2259.89	-33.64	40.97	51.92	96.46	21 39 16	1659.9	-32.38	31.96
110.00	12 25 42	4028.87	11.53	152.60	41.61	57.59	13 32 51	3428.9	7.17	146.22

DIFFERENTIAL CORRECTIONS
TDE 1.0664 TRA-2.6884 TC3 1.1846 BAU .4497
RDE -.2971 RRA .0027 RC3 -.1394 FAU .08846
FDE -.6094 FRA 2.5977 FC3-2.7154 BSP 11589
BDE 1.1070 BRA 2.6884 BC3 1.1928 FSP 1055

MID-COURSE EXECUTION ACCURACY
SGT 3468.5 SGR 353.1 SG3 359.0
RRT -.4608 RRF .4408 RTF -.9159
SGB 3486.4 R23 -.0172 R13 .9160
SG1 3472.4 SG2 313.0 THA 177.29

ORBIT DETERMINATION ACCURACY
ST 1465.0 SR 320.5 SS 798.3
CRT -.7874 CRS -.6019 CST .9652
LSA 1675.8 MSA 278.1 SSA 25.4
EL1 1487.0 EL2 194.7 ALF 170.05

LAUNCH DATE NOV 6 1964 FLIGHT TIME 190.00 ARRIVAL DATE MAY 15 1965

HELIOCENTRIC CONIC DISTANCE 479.280 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 34.214 GAL -5.94 AZL 87.77 HCA 154.88 SMA 214.21 ECC .32318 INC 2.2306 V1 30.050
RP 242.47 LAP .95 LOP 198.52 VP 21.797 GAP 17.31 AZP 92.02 TAL 335.37 TAP 130.26 RCA 144.98 APO 283.43 V2 22.638
RC 148.041 GL 14.73 GP -1.09 ZAL 126.75 ZAP 167.49 ETS 183.56 ZAE 156.12 ETE 356.57 ZAC 87.95 ETC 256.00 CLP 167.54

PLANETOCENTRIC CONIC

C3 27.124 VHL 5.208 DLA 16.73 RAL 178.52 RAD 6568.1 VEL 12.186 PTH 2.19 VHP 8.228 DPA -2.23 RAP 185.61 ECC 1.4464

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 56 40	2837.59	-28.28	84.57	51.57	91.44	18 43 58	2237.6	-27.78	75.94
90.00	10 29 13	4383.74	5.93	182.27	43.56	62.26	11 42 17	3783.7	2.18	175.60
100.00	19 27 31	2544.64	-29.78	62.96	51.51	92.73	20 9 56	1944.6	-29.08	54.22
100.00	11 41 4	4151.93	7.25	164.51	42.84	60.92	12 50 16	3551.9	3.32	157.93
110.00	20 56 44	2265.48	-33.68	41.40	51.15	96.21	21 34 30	1665.5	-32.46	32.38
110.00	12 28 19	4003.86	10.61	151.24	40.81	57.31	13 35 3	3403.9	6.23	144.89

DIFFERENTIAL CORRECTIONS
TDE 1.0306 TRA-2.6676 TC3 1.2445 BAU .4544
RDE -.2831 RRA .0116 RC3 -.1469 FAU .09138
FDE -.6050 FRA 2.6566 FC3-2.9166 BSP 12025
BDE 1.0687 BRA 2.6676 BC3 1.2532 FSP 1108

MID-COURSE EXECUTION ACCURACY
SGT 3515.2 SGR 347.3 SG3 376.5
RRT -.4851 RRF .4710 RTF -.9170
SGB 3532.3 R23 -.0261 R13 .9171
SG1 3519.3 SG2 303.3 THA 177.24

ORBIT DETERMINATION ACCURACY
ST 1460.2 SR 311.5 SS 807.3
CRT -.7848 CRS -.5975 CST .9648
LSA 1674.5 MSA 276.5 SSA 25.6
EL1 1480.8 EL2 190.4 ALF 170.33

LAUNCH DATE NOV 6 1964 FLIGHT TIME 192.00 ARRIVAL DATE MAY 17 1965

HELIOCENTRIC CONIC DISTANCE 482.273 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 34.149 GAL -5.79 AZL 87.75 HCA 155.81 SMA 212.67 ECC .31771 INC 2.2474 V1 30.050
RP 242.20 LAP .92 LOP 199.44 VP 21.723 GAP 16.77 AZP 92.05 TAL 335.70 TAP 131.51 RCA 145.10 APO 280.24 V2 22.664
RC 150.330 GL 15.11 GP -1.15 ZAL 126.22 ZAP 166.94 ETS 183.62 ZAE 156.27 ETE 356.55 ZAC 87.97 ETC 255.99 CLP 166.99

PLANETOCENTRIC CONIC

C3 26.107 VHL 5.109 DLA 17.28 RAL 178.23 RAD 6568.1 VEL 12.144 PTH 2.18 VHP 8.049 DPA -2.45 RAP 185.92 ECC 1.4297

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 50 12	2848.52	-28.30	85.37	50.80	91.04	18 37 41	2248.5	-27.86	76.73
90.00	10 33 25	4353.86	4.99	180.58	42.80	62.09	11 45 59	3753.9	1.21	173.93
100.00	19 21 31	2554.05	-29.81	63.66	50.75	92.36	20 4 5	1954.0	-29.16	54.91
100.00	11 44 47	4123.57	6.31	162.93	42.08	60.72	12 53 31	3523.6	2.36	156.37
110.00	20 51 42	2271.88	-33.73	41.89	50.41	95.92	21 29 34	1671.9	-32.54	32.86
110.00	12 31 5	3978.50	9.68	149.87	40.03	57.05	13 37 24	3378.5	5.27	143.56

DIFFERENTIAL CORRECTIONS
TDE 1.0119 TRA-2.6286 TC3 1.3330 BAU .4684
RDE -.2701 RRA .0199 RC3 -.1558 FAU .09437
FDE -.5970 FRA 2.7185 FC3-3.1295 BSP 12026
BDE 1.0473 BRA 2.6287 BC3 1.3421 FSP 1168

MID-COURSE EXECUTION ACCURACY
SGT 3559.7 SGR 343.0 SG3 394.7
RRT -.5181 RRF .5019 RTF -.9206
SGB 3576.2 R23 -.0253 R13 .9207
SG1 3564.2 SG2 293.0 THA 177.12

ORBIT DETERMINATION ACCURACY
ST 1465.2 SR 303.0 SS 815.3
CRT -.7892 CRS -.5909 CST .9608
LSA 1680.5 MSA 280.4 SSA 24.7
EL1 1484.9 EL2 183.6 ALF 170.59

LAUNCH DATE NOV 6 1964 FLIGHT TIME 194.00 ARRIVAL DATE MAY 19 1965

HELIOCENTRIC CONIC DISTANCE 485.315 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 34.086 GAL -5.64 AZL 87.73 HCA 156.73 SMA 211.23 ECC .31247 INC 2.2656 V1 30.050
RP 241.93 LAP .89 LOP 200.37 VP 21.653 GAP 16.24 AZP 92.08 TAL 336.03 TAP 132.76 RCA 145.23 APO 277.23 V2 22.692
RC 152.629 GL 15.51 GP -1.22 ZAL 125.67 ZAP 166.38 ETS 183.68 ZAE 156.47 ETE 356.51 ZAC 87.99 ETC 255.98 CLP 166.43

PLANETOCENTRIC CONIC

C3 25.152 VHL 5.015 DLA 17.83 RAL 177.95 RAD 6568.0 VEL 12.105 PTH 2.17 VHP 7.873 DPA -2.66 RAP 186.23 ECC 1.4139

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 43 28	2860.59	-28.31	86.25	50.04	90.59	18 31 8	2260.6	-27.93	77.61
90.00	10 37 52	4323.37	4.01	178.87	42.08	61.95	11 49 55	3723.4	.23	172.23
100.00	19 15 17	2564.48	-29.83	64.43	50.00	91.95	19 58 2	1964.5	-29.24	55.68
100.00	11 48 44	4094.72	5.35	161.33	41.35	60.55	12 56 58	3494.7	1.38	154.78
110.00	20 46 30	2279.11	-33.78	42.45	49.70	95.59	21 24 29	1679.1	-32.64	33.40
110.00	12 34 0	3952.85	8.72	148.50	39.28	56.82	13 39 53	3352.8	4.30	142.21

DIFFERENTIAL CORRECTIONS
TDE .9796 TRA-2.6026 TC3 1.4028 BAU .4749
RDE -.2571 RRA .0286 RC3 -.1646 FAU .09753
FDE -.5881 FRA 2.7817 FC3-3.3572 BSP 12361
BDE 1.0128 BRA 2.6027 BC3 1.4125 FSP 1230

MID-COURSE EXECUTION ACCURACY
SGT 3603.9 SGR 338.7 SG3 413.8
RRT -.5476 RRF .5352 RTF -.9222
SGB 3619.8 R23 -.0323 R13 .9224
SG1 3608.7 SG2 283.0 THA 177.04

ORBIT DETERMINATION ACCURACY
ST 1460.3 SR 293.9 SS 823.3
CRT -.7888 CRS -.5852 CST .9589
LSA 1678.3 MSA 281.1 SSA 24.4
EL1 1478.8 EL2 178.4 ALF 170.84

LAUNCH DATE NOV 6 1964 FLIGHT TIME 196.00 ARRIVAL DATE MAY 21 1965

DISTANCE 488.403

EARTH TO MARS

HELIOCENTRIC CONIC
RL 148.27 LAL -.00 LOL 43.62 VL 34.026 GAL -5.49 AZL 87.71 HCA 157.66 SMA 209.86 ECC .30742 INC 2.2854 V1 30.050
RP 241.65 LAP .87 LOP 201.29 VP 21.588 GAP 15.70 AZP 92.11 TAL 336.36 TAP 134.02 RCA 145.35 APO 274.38 V2 22.720
RC 154.936 GL 15.92 GP -1.30 ZAL 125.11 ZAP 165.81 ETS 183.76 ZAE 156.70 ETE 356.44 ZAC 87.99 ETC 255.96 CLP 165.87

PLANETOCENTRIC CONIC
C3 24.252 VHL 4.925 DLA 18.41 RAL 177.66 RAD 6568.0 VEL 12.068 PTH 2.16 VHP 7.702 DPA -2.88 RAP 186.52 ECC 1.3991

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 36 23	2873.98	-28.32	87.23	49.30	90.10	18 24 17	2274.0	-28.00	78.58
90.00	10 42 38	4292.06	3.01	177.12	41.39	61.83	11 54 10	3692.1	-.78	170.49
100.00	19 8 46	2576.07	-29.86	65.29	49.28	91.50	19 51 42	1976.1	-29.33	56.53
100.00	11 52 56	4065.20	4.36	159.70	40.65	60.40	13 0 41	3465.2	.38	153.16
110.00	20 41 5	2287.26	-33.83	43.08	49.00	95.22	21 19 12	1687.3	-32.74	34.02
110.00	12 37 6	3926.78	7.75	147.11	38.55	56.60	13 42 33	3326.8	3.30	140.84

DIFFERENTIAL CORRECTIONS
TDE .9633 TRA-2.5593 TC3 1.5021 BAU .4903
RDE -.2449 RRA .0370 RC3 -.1750 FAU .10078
FDE -.5754 FRA 2.8481 FC3-3.5976 BSP 12270
BDE .9939 BRA 2.5596 BC3 1.5123 FSP 1297

MID-COURSE EXECUTION ACCURACY
SGT 3646.0 SGR 336.1 SG3 433.7
RRT -.5848 RRF .5690 RTF -.9262
SGB 3661.4 R23 -.0299 R13 .9263
SG1 3651.3 SG2 272.2 THA 176.90

ORBIT DETERMINATION ACCURACY
ST 1464.4 SR 285.3 SS 830.
CRT -.7955 CRS -.5774 CST .9530
LSA 1682.7 MSA 288.5 SSA 23.1
EL1 1482.1 EL2 170.8 ALF 171.07

LAUNCH DATE NOV 6 1964 FLIGHT TIME 198.00 ARRIVAL DATE MAY 23 1965

DISTANCE 491.532

EARTH TO MARS

HELIOCENTRIC CONIC
RL 148.27 LAL -.00 LOL 43.62 VL 33.968 GAL -5.35 AZL 87.69 HCA 158.59 SMA 208.57 ECC .30258 INC 2.3067 V1 30.050
RP 241.36 LAP .84 LOP 202.22 VP 21.527 GAP 15.18 AZP 92.15 TAL 336.69 TAP 135.28 RCA 145.46 APO 271.68 V2 22.748
RC 157.250 GL 16.34 GP -1.38 ZAL 124.54 ZAP 165.22 ETS 183.86 ZAE 156.97 ETE 356.35 ZAC 87.99 ETC 255.95 CLP 165.29

PLANETOCENTRIC CONIC
C3 23.409 VHL 4.838 DLA 18.99 RAL 177.37 RAD 6568.0 VEL 12.033 PTH 2.15 VHP 7.534 DPA -3.10 RAP 186.81 ECC 1.3852

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 29 0	2888.74	-28.31	88.31	48.59	89.56	18 17 9	2288.7	-28.07	79.65
90.00	10 47 43	4259.99	1.97	175.33	40.74	61.75	11 58 43	3660.0	-1.82	168.70
100.00	19 2 0	2588.87	-29.88	66.24	48.58	91.00	19 45 9	1988.9	-29.42	57.47
100.00	11 57 25	4035.09	3.34	158.04	39.98	60.28	13 4 40	3435.1	-.64	151.51
110.00	20 35 30	2296.34	-33.88	43.79	48.34	94.81	21 13 46	1696.3	-32.85	34.70
110.00	12 40 24	3900.38	6.76	145.71	37.87	56.41	13 45 25	3300.4	2.30	139.46

DIFFERENTIAL CORRECTIONS
TDE .9254 TRA-2.5371 TC3 1.5668 BAU .4937
RDE -.2324 RRA .0461 RC3 -.1851 FAU .10424
FDE -.5624 FRA 2.9152 FC3-3.8552 BSP 12694
BDE .9541 BRA 2.5375 BC3 1.5777 FSP 1365

MID-COURSE EXECUTION ACCURACY
SGT 3687.2 SGR 333.4 SG3 454.7
RRT -.6154 RRF .6055 RTF -.9270
SGB 3702.3 R23 -.0407 R13 .9272
SG1 3693.0 SG2 262.3 THA 176.80

ORBIT DETERMINATION ACCURACY
ST 1453.2 SR 275.8 SS 837.6
CRT -.7943 CRS -.5716 CST .9514
LSA 1674.9 MSA 288.9 SSA 23.0
EL1 1469.8 EL2 165.6 ALF 171.32

LAUNCH DATE NOV 6 1964 FLIGHT TIME 200.00 ARRIVAL DATE MAY 25 1965

DISTANCE 494.703

EARTH TO MARS

HELIOCENTRIC CONIC
RL 148.27 LAL -.00 LOL 43.62 VL 33.913 GAL -5.22 AZL 87.67 HCA 159.52 SMA 207.35 ECC .29794 INC 2.3299 V1 30.050
RP 241.08 LAP .82 LOP 203.15 VP 21.470 GAP 14.65 AZP 92.18 TAL 337.02 TAP 136.54 RCA 145.57 APO 269.12 V2 22.777
RC 159.568 GL 16.78 GP -1.47 ZAL 123.97 ZAP 164.63 ETS 183.98 ZAE 157.28 ETE 356.22 ZAC 87.97 ETC 255.94 CLP 164.70

PLANETOCENTRIC CONIC
C3 22.617 VHL 4.756 DLA 19.60 RAL 177.08 RAD 6567.9 VEL 12.000 PTH 2.14 VHP 7.369 DPA -3.33 RAP 187.08 ECC 1.3722

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 21 13	2905.09	-28.30	89.51	47.91	88.96	18 9 38	2305.1	-28.14	80.85
90.00	10 53 13	4226.86	.91	173.48	40.13	61.70	12 3 40	3626.9	-2.88	166.85
100.00	18 54 53	2603.05	-29.89	67.30	47.91	90.44	19 38 16	2003.0	-29.51	58.51
100.00	12 2 14	4004.14	2.30	156.34	39.36	60.19	13 8 58	3404.1	-1.69	149.81
110.00	20 29 41	2306.48	-33.94	44.57	47.72	94.34	21 8 7	1706.5	-32.97	35.47
110.00	12 43 56	3873.47	5.74	144.29	37.22	56.24	13 48 29	3273.5	1.27	138.06

DIFFERENTIAL CORRECTIONS
TDE .8983 TRA-2.5030 TC3 1.6531 BAU .5034
RDE -.2205 RRA .0550 RC3 -.1968 FAU .10788
FDE -.5467 FRA 2.9846 FC3-4.1294 BSP 12835
BDE .9250 BRA 2.5037 BC3 1.6648 FSP 1437

MID-COURSE EXECUTION ACCURACY
SGT 3727.1 SGR 332.5 SG3 476.6
RRT -.6512 RRF .6425 RTF -.9294
SGB 3741.9 R23 -.0455 R13 .9295
SG1 3733.4 SG2 251.9 THA 176.66

ORBIT DETERMINATION ACCURACY
ST 1447.7 SR 266.6 SS 844.4
CRT -.7983 CRS -.5652 CST .9469
LSA 1671.2 MSA 294.1 SSA 22.1
EL1 1463.5 EL2 158.8 ALF 171.54

LAUNCH DATE NOV 6 1964 FLIGHT TIME 202.00 ARRIVAL DATE MAY 27 1965

DISTANCE 497.913

EARTH TO MARS

HELIOCENTRIC CONIC
RL 148.27 LAL -.00 LOL 43.62 VL 33.860 GAL -5.08 AZL 87.64 HCA 160.45 SMA 206.19 ECC .29347 INC 2.3554 V1 30.050
RP 240.79 LAP .79 LOP 204.09 VP 21.417 GAP 14.14 AZP 92.22 TAL 337.35 TAP 137.81 RCA 145.68 APO 266.70 V2 22.806
RC 161.890 GL 17.24 GP -1.57 ZAL 123.38 ZAP 164.02 ETS 184.11 ZAE 157.62 ETE 356.05 ZAC 87.95 ETC 255.93 CLP 164.09

PLANETOCENTRIC CONIC
C3 21.874 VHL 4.677 DLA 20.23 RAL 176.80 RAD 6567.9 VEL 11.969 PTH 2.13 VHP 7.209 DPA -3.56 RAP 187.34 ECC 1.3600

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 13 0	2923.22	-28.27	90.83	47.24	88.30	18 1 43	2323.2	-28.21	82.17
90.00	10 59 10	4192.56	-.20	171.57	39.57	61.68	12 9 3	3592.6	-3.99	164.93
100.00	18 47 25	2618.75	-29.89	68.47	47.27	89.83	19 31 4	2018.7	-29.60	59.67
100.00	12 7 26	3972.26	1.22	154.58	38.78	60.13	13 13 38	3372.3	-2.77	148.06
110.00	20 23 37	2317.76	-33.99	45.45	47.12	93.83	21 2 15	1717.8	-33.09	36.33
110.00	12 47 43	3846.01	4.70	142.84	36.61	56.10	13 51 49	3246.0	.22	136.63

DIFFERENTIAL CORRECTIONS
TDE .8722 TRA-2.4677 TC3 1.7419 BAU .5131
RDE -.2091 RRA .0641 RC3 -.2095 FAU .11166
FDE -.5282 FRA 3.0566 FC3-4.4193 BSP 12953
BDE .8969 BRA 2.4686 BC3 1.7544 FSP 1513

MID-COURSE EXECUTION ACCURACY
SGT 3765.2 SGR 333.2 SG3 499.6
RRT -.6877 RRF .6800 RTF -.9317
SGB 3779.9 R23 -.0504 R13 .9319
SG1 3772.2 SG2 241.4 THA 176.50

ORBIT DETERMINATION ACCURACY
ST 1441.7 SR 257.4 SS 851.1
CRT -.8037 CRS -.5587 CST .9414
LSA 1666.7 MSA 301.0 SSA 21.1
EL1 1456.6 EL2 151.6 ALF 171.74

LAUNCH DATE NOV 6 1964 FLIGHT TIME 204.00 ARRIVAL DATE MAY 29 1965

HELIOCENTRIC CONIC DISTANCE 501.158 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 33.809 GAL -4.95 AZL 87.62 HCA 161.39 SMA 205.09 ECC .28919 INC 2.3831 V1 30.050
RP 240.49 LAP .76 LOP 205.02 VP 21.368 GAP 13.63 AZP 92.26 TAL 337.69 TAP 139.08 RCA 145.78 APO 264.40 V2 22.836
RC 164.213 GL 17.72 GP -1.69 ZAL 122.78 ZAP 163.39 ETS 184.26 ZAE 158.00 ETE 355.84 ZAC 87.91 ETC 255.92 CLP 163.47

PLANETOCENTRIC CONIC

C3 21.180 VHL 4.602 DLA 20.88 RAL 176.52 RAD 6567.9 VEL 11.940 PTH 2.12 VHP 7.051 DPA -3.79 RAP 187.58 ECC 1.3486

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 4 15	2943.40	-28.22	92.31	46.61	87.56	17 53 19	2343.4	-28.26	83.64
90.00	11 5 41	4156.82	-1.36	169.57	39.06	61.71	12 14 58	3556.8	-5.13	162.92
100.00	18 39 32	2636.18	-29.88	69.76	46.67	89.15	19 23 28	2036.2	-29.68	60.96
100.00	12 13 5	3939.27	.10	152.78	38.25	60.11	13 18 45	3339.3	-3.88	146.25
110.00	20 17 18	2330.31	-34.05	46.43	46.56	93.25	20 56 8	1730.3	-33.22	37.28
110.00	12 51 49	3817.90	3.63	141.37	36.04	55.99	13 55 27	3217.9	-.86	135.16

DIFFERENTIAL CORRECTIONS
TDE .8495 TRA-2.4281 TC3 1.8388 BAU .5245
RDE -.1981 RRA .0734 RC3 -.2239 FAU .11574
FDE -.5093 FRA 3.1284 FC3-4.7310 BSP 12970
BDE .8723 BRA 2.4292 BC3 1.8523 FSP 1588

MID-COURSE EXECUTION ACCURACY
SGT 3801.3 SGR 335.9 SG3 523.7
RRT -.7252 RRF .7178 RTF -.9343
SGB 3816.1 R23 -.0548 R13 .9345
SG1 3809.1 SG2 230.8 THA 176.32

ORBIT DETERMINATION ACCURACY
ST 1436.3 SR 248.4 SS 857.9
CRT -.8116 CRS -.5542 CST .9349
LSA 1662.7 MSA 309.6 SSA 20.0
EL1 1450.6 EL2 143.7 ALF 171.93

LAUNCH DATE NOV 6 1964 FLIGHT TIME 206.00 ARRIVAL DATE MAY 31 1965

HELIOCENTRIC CONIC DISTANCE 504.436 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 33.760 GAL -4.82 AZL 87.59 HCA 162.33 SMA 204.05 ECC .28508 INC 2.4142 V1 30.050
RP 240.19 LAP .73 LOP 205.96 VP 21.324 GAP 13.12 AZP 92.30 TAL 338.02 TAP 140.35 RCA 145.88 APO 262.22 V2 22.866
RC 166.536 GL 18.22 GP -1.81 ZAL 122.18 ZAP 162.75 ETS 184.44 ZAE 158.41 ETE 355.58 ZAC 87.85 ETC 255.91 CLP 162.84

PLANETOCENTRIC CONIC

C3 20.532 VHL 4.531 DLA 21.55 RAL 176.25 RAD 6567.8 VEL 11.913 PTH 2.12 VHP 6.897 DPA -4.04 RAP 187.81 ECC 1.3379

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 54 55	2965.93	-28.14	93.95	46.01	86.74	17 44 21	2365.9	-28.30	85.29
90.00	11 12 51	4119.39	-2.56	167.48	38.61	61.79	12 21 30	3519.4	-6.31	160.81
100.00	18 31 11	2655.56	-29.85	71.20	46.09	88.39	19 15 26	2055.6	-29.76	62.40
100.00	12 19 16	3904.99	-1.07	150.90	37.78	60.12	13 24 21	3305.0	-5.03	144.35
110.00	20 10 41	2344.25	-34.10	47.51	46.05	92.61	20 49 45	1744.3	-33.36	38.35
110.00	12 56 15	3789.06	2.53	139.86	35.53	55.90	13 59 25	3189.1	-1.96	133.66

DIFFERENTIAL CORRECTIONS
TDE .8150 TRA-2.3993 TC3 1.9151 BAU .5297
RDE -.1868 RRA .0836 RC3 -.2388 FAU .11982
FDE -.4827 FRA 3.2075 FC3-5.0524 BSP 13247
BDE .8361 BRA 2.4008 BC3 1.9299 FSP 1676

MID-COURSE EXECUTION ACCURACY
SGT 3835.8 SGR 339.9 SG3 548.8
RRT -.7590 RRF .7551 RTF -.9357
SGB 3850.9 R23 -.0654 R13 .9359
SG1 3844.5 SG2 220.8 THA 176.14

ORBIT DETERMINATION ACCURACY
ST 1422.1 SR 238.8 SS 864.1
CRT -.8162 CRS -.5478 CST .9293
LSA 1650.9 MSA 316.7 SSA 19.1
EL1 1435.5 EL2 136.7 ALF 172.13

LAUNCH DATE NOV 6 1964 FLIGHT TIME 208.00 ARRIVAL DATE JUN 2 1965

HELIOCENTRIC CONIC DISTANCE 507.747 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 33.714 GAL -4.70 AZL 87.55 HCA 163.27 SMA 203.07 ECC .28113 INC 2.4486 V1 30.050
RP 239.88 LAP .70 LOP 206.90 VP 21.282 GAP 12.62 AZP 92.34 TAL 338.35 TAP 141.62 RCA 145.98 APO 260.16 V2 22.897
RC 168.857 GL 18.76 GP -1.95 ZAL 121.57 ZAP 162.10 ETS 184.65 ZAE 158.85 ETE 355.26 ZAC 87.78 ETC 255.90 CLP 162.20

PLANETOCENTRIC CONIC

C3 19.928 VHL 4.464 DLA 22.25 RAL 175.99 RAD 6567.8 VEL 11.887 PTH 2.11 VHP 6.747 DPA -4.29 RAP 188.02 ECC 1.3280

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 44 51	2991.32	-28.03	95.80	45.44	85.82	17 34 42	2391.3	-28.32	87.15
90.00	11 20 49	4079.77	-3.83	165.27	38.23	61.92	12 28 49	3479.8	-7.56	158.57
100.00	18 22 15	2677.26	-29.80	72.81	45.56	87.54	19 6 52	2077.3	-29.82	64.01
100.00	12 26 7	3869.06	-2.28	148.92	37.37	60.19	13 30 36	3269.1	-6.23	142.36
110.00	20 3 43	2359.81	-34.14	48.73	45.58	91.89	20 43 3	1759.8	-33.50	39.54
110.00	13 1 8	3759.28	1.39	138.31	35.07	55.84	14 3 47	3159.3	-3.10	132.10

DIFFERENTIAL CORRECTIONS
TDE .7872 TRA-2.3638 TC3 2.0037 BAU .5382
RDE -.1761 RRA .0940 RC3 -.2560 FAU .12418
FDE -.4543 FRA 3.2880 FC3-5.3945 BSP 13358
BDE .8066 BRA 2.3657 BC3 2.0200 FSP 1765

MID-COURSE EXECUTION ACCURACY
SGT 3868.6 SGR 346.8 SG3 575.2
RRT -.7933 RRF .7911 RTF -.9377
SGB 3884.1 R23 -.0739 R13 .9380
SG1 3878.4 SG2 210.6 THA 175.92

ORBIT DETERMINATION ACCURACY
ST 1410.9 SR 229.5 SS 870.8
CRT -.8252 CRS -.5433 CST .9213
LSA 1641.4 MSA 327.5 SSA 18.0
EL1 1423.7 EL2 128.5 ALF 172.29

LAUNCH DATE NOV 6 1964 FLIGHT TIME 210.00 ARRIVAL DATE JUN 4 1965

HELIOCENTRIC CONIC DISTANCE 511.088 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 33.669 GAL -4.58 AZL 87.51 HCA 164.21 SMA 202.13 ECC .27735 INC 2.4868 V1 30.050
RP 239.58 LAP .68 LOP 207.85 VP 21.245 GAP 12.12 AZP 92.39 TAL 338.68 TAP 142.90 RCA 146.07 APO 258.19 V2 22.928
RC 171.174 GL 19.32 GP -2.11 ZAL 120.95 ZAP 161.42 ETS 184.89 ZAE 159.33 ETE 354.85 ZAC 87.68 ETC 255.89 CLP 161.54

PLANETOCENTRIC CONIC

C3 19.369 VHL 4.401 DLA 22.98 RAL 175.74 RAD 6567.8 VEL 11.864 PTH 2.10 VHP 6.599 DPA -4.55 RAP 188.21 ECC 1.3188

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 33 52	3020.19	-27.87	97.90	44.90	84.78	17 24 12	2420.2	-28.30	89.26
90.00	11 29 50	4037.39	-5.19	162.89	37.93	62.12	12 37 7	3437.4	-8.88	156.15
100.00	18 12 38	2701.71	-29.72	74.62	45.06	86.59	18 57 40	2101.7	-29.87	65.82
100.00	12 33 45	3831.09	-3.57	146.83	37.04	60.30	13 37 36	3231.1	-7.49	140.25
110.00	19 56 22	2377.20	-34.17	50.08	45.17	91.09	20 35 59	1777.2	-33.64	40.88
110.00	13 6 30	3728.37	.21	136.69	34.68	55.82	14 8 39	3128.4	-4.27	130.48

DIFFERENTIAL CORRECTIONS
TDE .7582 TRA-2.3283 TC3 2.0918 BAU .5463
RDE -.1656 RRA .1051 RC3 -.2752 FAU .12885
FDE -.4237 FRA 3.3693 FC3-5.7592 BSP 13464
BDE .7761 BRA 2.3307 BC3 2.1099 FSP 1854

MID-COURSE EXECUTION ACCURACY
SGT 3899.3 SGR 356.7 SG3 602.9
RRT -.8254 RRF .8255 RTF -.9395
SGB 3915.5 R23 -.0850 R13 .9398
SG1 3910.4 SG2 200.8 THA 175.67

ORBIT DETERMINATION ACCURACY
ST 1397.5 SR 220.2 SS 877.8
CRT -.8357 CRS -.5418 CST .9131
LSA 1630.1 MSA 338.4 SSA 16.9
EL1 1409.7 EL2 119.9 ALF 172.44

LAUNCH DATE NOV 6 1964 FLIGHT TIME 212.00 ARRIVAL DATE JUN 6 1965

HELIOCENTRIC CONIC DISTANCE 514.458 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 33.626 GAL -4.46 AZL 87.47 HCA 165.16 SMA 201.24 ECC .27372 INC 2.5300 V1 30.050
RP 239.26 LAP .65 LOP 208.79 VP 21.210 GAP 11.64 AZP 92.45 TAL 339.01 TAP 144.17 RCA 146.16 APO 256.33 V2 22.959
RC 173.485 GL 19.93 GP -2.30 ZAL 120.32 ZAP 160.73 ETS 185.16 ZAE 159.85 ETE 354.36 ZAC 87.57 ETC 255.88 CLP 160.86

PLANETOCENTRIC CONIC

C3 18.852 VHL 4.342 DLA 23.74 RAL 175.51 RAD 6567.8 VEL 11.842 PTH 2.10 VHP 6.455 DPA -4.83 RAP 188.38 ECC 1.3103

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 21 41	3053.49	-27.64	100.31	44.40	83.59	17 12 35	2453.5	-28.24	91.69
90.00	11 40 10	3991.32	-6.65	160.29	37.73	62.41	12 46 41	3391.3	-10.29	153.51
100.00	18 2 10	2729.55	-29.59	76.68	44.61	85.52	18 47 39	2129.5	-29.89	67.89
100.00	12 42 23	3790.50	-4.93	144.59	36.79	60.48	13 45 33	3190.5	-8.83	137.97
110.00	19 48 32	2396.77	-34.18	51.61	44.82	90.19	20 28 28	1796.8	-33.78	42.39
110.00	13 12 30	3696.05	-1.02	135.01	34.36	55.83	14 14 6	3096.0	-5.50	128.78

DIFFERENTIAL CORRECTIONS
TDE .7319 TRA-2.2899 TC3 2.1820 BAU .5550
RDE -.1553 RRA .1169 RC3 -.2971 FAU .13369
FDE -.3885 FRA 3.4542 FC3-6.1393 BSP 13506
BDE .7482 BRA 2.2928 BC3 2.2022 FSP 1948

MID-COURSE EXECUTION ACCURACY
SGT 3926.9 SGR 370.1 SG3 631.8
RRT -.8553 RRF .8570 RTF -.9414
SGB 3944.3 R23 -.0963 R13 .9418
SG1 3939.6 SG2 191.1 THA 175.38

ORBIT DETERMINATION ACCURACY
ST 1384.5 SR 211.2 SS 885.4
CRT -.8495 CRS -.5422 CST .9026
LSA 1618.8 MSA 352.9 BSA 15.6
EL1 1396.1 EL2 110.5 ALF 172.57

LAUNCH DATE NOV 6 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUN 8 1965

HELIOCENTRIC CONIC DISTANCE 517.855 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 33.584 GAL -4.35 AZL 87.42 HCA 166.11 SMA 200.40 ECC .27024 INC 2.5792 V1 30.050
RP 238.95 LAP .62 LOP 209.74 VP 21.180 GAP 11.15 AZP 92.50 TAL 339.34 TAP 145.45 RCA 146.24 APO 254.56 V2 22.991
RC 175.790 GL 20.58 GP -2.50 ZAL 119.68 ZAP 160.02 ETS 185.48 ZAE 160.39 ETE 353.75 ZAC 87.42 ETC 255.88 CLP 160.17

PLANETOCENTRIC CONIC

C3 18.379 VHL 4.287 DLA 24.55 RAL 175.30 RAD 6567.7 VEL 11.822 PTH 2.09 VHP 6.314 DPA -5.13 RAP 188.53 ECC 1.3025

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 7 54	3092.66	-27.31	103.13	43.93	82.22	16 59 27	2492.7	-28.11	94.55
90.00	11 52 18	3940.22	-8.25	157.39	37.66	62.82	12 57 58	3340.2	-11.83	150.54
100.00	17 50 34	2761.64	-29.39	79.05	44.21	84.29	18 36 36	2161.6	-29.87	70.28
100.00	12 52 19	3746.48	-6.40	142.16	36.66	60.74	13 54 45	3146.5	-10.26	135.49
110.00	19 40 7	2418.92	-34.17	53.34	44.53	89.16	20 20 26	1818.9	-33.91	44.11
110.00	13 19 16	3661.96	-2.33	133.23	34.14	55.89	14 20 18	3062.0	-6.79	126.98

DIFFERENTIAL CORRECTIONS
TDE .6986 TRA-2.2576 TC3 2.2565 BAU .5601
RDE -.1448 RRA .1301 RC3 -.3212 FAU .13864
FDE -.3451 FRA 3.5456 FC3-6.5303 BSP 13690
BDE .7135 BRA 2.2613 BC3 2.2793 FSP 2052

MID-COURSE EXECUTION ACCURACY
SGT 3952.0 SGR 387.1 SG3 662.0
RRT -.8809 RRF .8857 RTF -.9427
SGB 3970.9 R23 -.1131 R13 .9432
SG1 3966.7 SG2 182.5 THA 175.06

ORBIT DETERMINATION ACCURACY
ST 1365.8 SR 202.1 SS 893.7
CRT -.8634 CRS -.5446 CST .8919
LSA 1603.1 MSA 367.1 SSA 14.5
EL1 1376.9 EL2 101.1 ALF 172.68

LAUNCH DATE NOV 6 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUN 10 1965

HELIOCENTRIC CONIC DISTANCE 521.279 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 33.545 GAL -4.24 AZL 87.36 HCA 167.06 SMA 199.60 ECC .26690 INC 2.6355 V1 30.050
RP 238.63 LAP .59 LOP 210.69 VP 21.152 GAP 10.67 AZP 92.57 TAL 339.67 TAP 146.73 RCA 146.33 APO 252.87 V2 23.024
RC 178.086 GL 21.29 GP -2.75 ZAL 119.02 ZAP 159.29 ETS 185.85 ZAE 160.96 ETE 352.99 ZAC 87.24 ETC 255.87 CLP 159.46

PLANETOCENTRIC CONIC

C3 17.950 VHL 4.237 DLA 25.41 RAL 175.12 RAD 6567.7 VEL 11.804 PTH 2.09 VHP 6.177 DPA -5.45 RAP 188.65 ECC 1.2954

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 51 45	3140.20	-26.83	106.52	43.47	80.58	16 44 5	2540.2	-27.86	98.00
90.00	12 7 2	3881.65	-10.05	154.03	37.75	63.39	13 11 44	3281.6	-13.55	147.10
100.00	17 37 28	2799.39	-29.10	81.82	43.85	82.86	18 24 7	2199.4	-29.79	73.08
100.00	13 4 0	3697.70	-8.02	139.43	36.66	61.11	14 5 38	3097.7	-11.81	132.70
110.00	19 30 58	2444.28	-34.13	55.32	44.32	87.99	20 11 42	1844.3	-34.03	46.08
110.00	13 27 0	3625.56	-3.71	131.33	34.02	55.99	14 27 25	3025.6	-8.15	125.05

DIFFERENTIAL CORRECTIONS
TDE .6711 TRA-2.2191 TC3 2.3420 BAU .5683
RDE -.1347 RRA .1444 RC3 -.3496 FAU .14401
FDE -.2992 FRA 3.6376 FC3-6.9456 BSP 13725
BDE .6845 BRA 2.2238 BC3 2.3679 FSP 2154

MID-COURSE EXECUTION ACCURACY
SGT 3974.9 SGR 409.5 SG3 693.7
RRT -.9040 RRF .9108 RTF -.9444
SGB 3995.9 R23 -.1295 R13 .9450
SG1 3992.1 SG2 174.3 THA 174.67

ORBIT DETERMINATION ACCURACY
ST 1349.3 SR 193.6 SS 903.2
CRT -.8824 CRS -.5531 CST .8785
LSA 1589.1 MSA 385.3 SSA 13.2
EL1 1360.1 EL2 90.4 ALF 172.75

LAUNCH DATE NOV 6 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUN 12 1965

HELIOCENTRIC CONIC DISTANCE 524.727 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 33.507 GAL -4.14 AZL 87.30 HCA 168.01 SMA 198.84 ECC .26370 INC 2.7007 V1 30.050
RP 238.31 LAP .56 LOP 211.64 VP 21.128 GAP 10.20 AZP 92.64 TAL 339.99 TAP 148.00 RCA 146.40 APO 251.27 V2 23.056
RC 180.373 GL 22.07 GP -3.03 ZAL 118.36 ZAP 158.53 ETS 186.29 ZAE 161.56 ETE 352.04 ZAC 87.01 ETC 255.86 CLP 158.74

PLANETOCENTRIC CONIC

C3 17.568 VHL 4.191 DLA 26.33 RAL 174.98 RAD 6567.7 VEL 11.788 PTH 2.08 VHP 6.042 DPA -5.80 RAP 188.74 ECC 1.2891

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 31 47	3200.91	-26.08	110.81	43.01	78.56	16 25 8	2600.9	-27.40	102.39
90.00	12 25 53	3810.92	-12.18	149.92	38.07	64.24	13 29 24	3210.9	-15.55	142.87
100.00	17 22 11	2845.02	-28.67	85.14	43.53	81.16	18 9 36	2245.0	-29.60	76.46
100.00	13 18 11	3642.04	-9.83	136.30	36.85	61.63	14 18 53	3042.0	-13.55	129.48
110.00	19 20 51	2473.69	-34.04	57.61	44.20	86.64	20 2 5	1873.7	-34.13	48.37
110.00	13 35 59	3586.14	-5.21	129.26	34.04	56.17	14 35 46	2986.1	-9.62	122.94

DIFFERENTIAL CORRECTIONS
TDE .6404 TRA-2.1836 TC3 2.4164 BAU .5746
RDE -.1244 RRA .1606 RC3 -.3821 FAU .14957
FDE -.2449 FRA 3.7360 FC3-7.3707 BSP 13816
BDE .6524 BRA 2.1895 BC3 2.4464 FSP 2264

MID-COURSE EXECUTION ACCURACY
SGT 3995.2 SGR 437.6 SG3 726.8
RRT -.9228 RRF .9322 RTF -.9458
SGB 4019.1 R23 -.1501 R13 .9465
SG1 4015.6 SG2 167.8 THA 174.22

ORBIT DETERMINATION ACCURACY
ST 1329.8 SR 185.5 SS 914.6
CRT -.9034 CRS -.5671 CST .8639
LSA 1573.3 MSA 404.8 SSA 11.9
EL1 1340.4 EL2 78.9 ALF 172.79

LAUNCH DATE NOV 6 1964 FLIGHT TIME 220.00 ARRIVAL DATE JUN 14 1965

HELIOCENTRIC CONIC DISTANCE 528.198 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 33.470 GAL -4.03 AZL 87.22 HCA 168.97 SMA 198.12 ECC .26064 INC 2.7772 V1 30.050
RP 237.98 LAP .53 LOP 212.60 VP 21.106 GAP 9.74 AZP 92.73 TAL 340.31 TAP 149.28 RCA 146.48 APO 249.75 V2 23.089
RC 182.651 GL 22.94 GP -3.36 ZAL 117.68 ZAP 157.75 ETS 186.81 ZAE 162.18 ETE 350.84 ZAC 86.73 ETC 255.85 CLP 157.99

PLANETOCENTRIC CONIC

C3 17.234 VHL 4.151 DLA 27.33 RAL 174.89 RAD 6567.7 VEL 11.774 PTH 2.08 VHP 5.912 DPA -6.19 RAP 188.79 ECC 1.2836

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 4 5	3287.50	-24.77	116.81	42.43	75.82	15 58 53	2687.5	-26.48	108.56
90.00	12 52 52	3715.46	-14.93	144.27	38.78	65.66	13 54 48	3115.5	-18.10	137.02
100.00	17 3 26	2902.74	-28.00	89.30	43.23	79.07	17 51 49	2302.7	-29.22	80.71
100.00	13 36 12	3575.45	-11.96	132.50	37.29	62.40	14 35 48	2975.5	-15.56	125.56
110.00	19 9 27	2508.41	-33.87	60.31	44.18	85.05	19 51 15	1908.4	-34.18	51.08
110.00	13 46 41	3542.54	-6.86	126.96	34.24	56.43	14 45 43	2942.5	-11.22	120.58

DIFFERENTIAL CORRECTIONS
TDE .6112 TRA-2.1466 TC3 2.4874 BAU .5812
RDE -.1141 RRA .1789 RC3 -.4204 FAU .15547
FDE -.1852 FRA 3.8366 FC3-7.8098 BSP 13870
BDE .6218 BRA 2.1540 BC3 2.5226 FSP 2374

MID-COURSE EXECUTION ACCURACY
SGT 4012.1 SGR 473.2 SG3 761.3
RRT -.9380 RRF .9499 RTF -.9471
SGB 4040.0 R23 -.1731 R13 .9479
SG1 4036.7 SG2 163.1 THA 173.68

ORBIT DETERMINATION ACCURACY
ST 1310.1 SR 178.5 SS 927.9
CRT -.9276 CRS -.5902 CST .8473
LSA 1557.8 MSA 426.8 SSA 10.7
EL1 1320.5 EL2 66.2 ALF 172.78

LAUNCH DATE NOV 6 1964 FLIGHT TIME 222.00 ARRIVAL DATE JUN 16 1965

HELIOCENTRIC CONIC DISTANCE 531.693 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 33.436 GAL -3.93 AZL 87.13 HCA 169.92 SMA 197.43 ECC .25770 INC 2.8688 V1 30.050
RP 237.65 LAP .50 LOP 213.56 VP 21.088 GAP 9.28 AZP 92.82 TAL 340.63 TAP 150.55 RCA 146.55 APO 248.31 V2 23.123
RC 184.919 GL 23.92 GP -3.76 ZAL 116.98 ZAP 156.93 ETS 187.43 ZAE 162.81 ETE 349.32 ZAC 86.39 ETC 255.85 CLP 157.22

PLANETOCENTRIC CONIC

C3 16.956 VHL 4.118 DLA 28.43 RAL 174.87 RAD 6567.7 VEL 11.762 PTH 2.08 VHP 5.784 DPA -6.63 RAP 188.80 ECC 1.2791

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
87.40	13 36 36	3568.30	-20.63	135.96	40.82	70.00	14 36 5	2968.3	-23.17	128.20
92.60	14 20 10	3427.16	-20.62	125.63	40.82	69.99	15 17 17	2827.2	-23.16	117.87
100.00	16 38 12	2982.39	-26.84	94.94	42.87	76.32	17 27 55	2382.4	-28.45	86.51
100.00	14 1 15	3488.30	-14.65	127.43	38.14	63.65	14 59 24	2888.3	-18.08	120.31
110.00	18 56 11	2550.45	-33.57	63.56	44.28	83.15	19 38 42	1950.5	-34.15	54.36
110.00	13 59 45	3493.00	-8.71	124.32	34.67	56.81	14 57 58	2893.0	-13.02	117.87

DIFFERENTIAL CORRECTIONS
TDE .5786 TRA-2.1110 TC3 2.5452 BAU .5865
RDE -.1030 RRA .2007 RC3 -.4648 FAU .16136
FDE -.1082 FRA 3.9487 FC3-8.2385 BSP 13967
BDE .5877 BRA 2.1205 BC3 2.5873 FSP 2501

MID-COURSE EXECUTION ACCURACY
SGT 4024.6 SGR 517.6 SG3 797.0
RRT -.9497 RRF .9640 RTF -.9484
SGB 4057.8 R23 -.1974 R13 .9494
SG1 4054.6 SG2 160.9 THA 173.03

ORBIT DETERMINATION ACCURACY
ST 1286.9 SR 172.5 SS 945.2
CRT -.9531 CRS -.6206 CST .8267
LSA 1540.5 MSA 454.0 SSA 9.5
EL1 1297.4 EL2 51.8 ALF 172.71

LAUNCH DATE NOV 6 1964 FLIGHT TIME 224.00 ARRIVAL DATE JUN 18 1965

HELIOCENTRIC CONIC DISTANCE 535.208 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 33.402 GAL -3.84 AZL 87.02 HCA 170.89 SMA 196.78 ECC .25489 INC 2.9796 V1 30.050
RP 237.31 LAP .47 LOP 214.52 VP 21.072 GAP 8.82 AZP 92.94 TAL 340.94 TAP 151.82 RCA 146.62 APO 246.93 V2 23.157
RC 187.176 GL 25.05 GP -4.25 ZAL 116.25 ZAP 156.07 ETS 188.18 ZAE 163.45 ETE 347.36 ZAC 85.95 ETC 255.83 CLP 156.43

PLANETOCENTRIC CONIC

C3 16.743 VHL 4.092 DLA 29.65 RAL 174.94 RAD 6567.7 VEL 11.753 PTH 2.07 VHP 5.660 DPA -7.14 RAP 188.75 ECC 1.2756

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
80.82	12 43 39	3736.90	-21.55	148.74	41.03	69.13	13 45 56	3136.9	-24.20	140.96
99.18	15 13 38	3252.74	-21.54	113.15	41.02	69.11	16 7 51	2652.7	-24.19	105.38
100.00	15 51 52	3130.52	-24.05	105.05	41.99	71.69	16 44 2	2530.5	-26.33	96.99
100.00	14 48 7	3334.36	-19.08	118.14	39.96	66.54	15 43 41	2734.4	-22.09	110.64
110.00	18 40 5	2603.23	-33.07	67.60	44.50	80.81	19 23 28	2003.2	-33.99	58.48
110.00	14 16 24	3434.40	-10.88	121.17	35.44	57.39	15 13 38	2834.4	-15.11	114.61

DIFFERENTIAL CORRECTIONS
TDE .5437 TRA-2.0786 TC3 2.5851 BAU .5901
RDE -.0911 RRA .2268 RC3 -.5174 FAU .16740
FDE -.0179 FRA 4.0702 FC3-8.6555 BSP 14129
BDE .5513 BRA 2.0909 BC3 2.6364 FSP 2638

MID-COURSE EXECUTION ACCURACY
SGT 4033.8 SGR 573.7 SG3 834.0
RRT -.9580 RRF .9749 RTF -.9494
SGB 4074.4 R23 -.2230 R13 .9506
SG1 4071.1 SG2 163.1 THA 172.23

ORBIT DETERMINATION ACCURACY
ST 1262.2 SR 168.7 SS 967.8
CRT -.9773 CRS -.6638 CST .8044
LSA 1524.6 MSA 483.6 SSA 8.3
EL1 1272.9 EL2 35.4 ALF 172.55

LAUNCH DATE NOV 6 1964 FLIGHT TIME 226.00 ARRIVAL DATE JUN 20 1965

HELIOCENTRIC CONIC DISTANCE 538.745 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 33.370 GAL -3.75 AZL 86.88 HCA 171.85 SMA 196.16 ECC .25220 INC 3.1160 V1 30.050
RP 236.98 LAP .44 LOP 215.48 VP 21.059 GAP 8.38 AZP 93.09 TAL 341.24 TAP 153.09 RCA 146.69 APO 245.63 V2 23.191
RC 189.421 GL 26.37 GP -4.85 ZAL 115.49 ZAP 155.17 ETS 189.11 ZAE 164.08 ETE 344.80 ZAC 85.39 ETC 255.82 CLP 155.62

PLANETOCENTRIC CONIC

C3 16.610 VHL 4.076 DLA 31.05 RAL 175.12 RAD 6567.7 VEL 11.747 PTH 2.07 VHP 5.541 DPA -7.76 RAP 188.63 ECC 1.2734

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
76.71	12 13 52	3832.20	-22.56	156.28	41.50	68.09	13 17 44	3232.2	-25.33	148.48
103.29	15 44 56	3153.79	-22.55	106.19	41.49	68.07	16 37 30	2553.8	-25.32	98.40
76.71	12 13 52	3832.20	-22.56	156.28	41.50	68.09	13 17 44	3232.2	-25.33	148.48
103.29	15 44 56	3153.79	-22.55	106.19	41.49	68.07	16 37 30	2553.8	-25.32	98.40
110.00	18 19 2	2673.65	-32.18	72.90	44.82	77.79	19 3 35	2073.6	-33.52	63.92
110.00	14 38 57	3360.34	-13.57	117.11	36.73	58.32	15 34 57	2760.3	-17.66	110.39

DIFFERENTIAL CORRECTIONS
TDE .5179 TRA-2.0375 TC3 2.6326 BAU .5988
RDE -.0791 RRA .2578 RC3 -.5837 FAU .17432
FDE .0733 FRA 4.1844 FC3-9.0856 BSP 14059
BDE .5239 BRA 2.0537 BC3 2.6966 FSP 2749

MID-COURSE EXECUTION ACCURACY
SGT 4038.9 SGR 646.3 SG3 872.6
RRT -.9640 RRF .9831 RTF -.9505
SGB 4090.2 R23 -.2450 R13 .9521
SG1 4086.7 SG2 169.9 THA 171.22

ORBIT DETERMINATION ACCURACY
ST 1241.1 SR 169.3 SS 993.0
CRT -.9953 CRS -.7207 CST .7789
LSA 1512.5 MSA 516.9 SSA 7.1
EL1 1252.5 EL2 16.2 ALF 172.27

LAUNCH DATE NOV 6 1964 FLIGHT TIME 228.00 ARRIVAL DATE JUN 22 1965

HELIOCENTRIC CONIC DISTANCE 542.301 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 33.340 GAL -3.66 AZL 86.71 HCA 172.82 SMA 195.57 ECC .24962 INC 3.2907 V1 30.050
RP 236.64 LAP .41 LOP 216.45 VP 21.049 GAP 7.93 AZP 93.26 TAL 341.55 TAP 154.36 RCA 146.75 APO 244.39 V2 23.226
RC 191.655 GL 27.96 GP -5.62 ZAL 114.67 ZAP 154.20 ETS 190.29 ZAE 164.66 ETE 341.39 ZAC 84.67 ETC 255.80 CLP 154.78

PLANETOCENTRIC CONIC

C3 16.584 VHL 4.072 DLA 32.67 RAL 175.49 RAD 6567.7 VEL 11.746 PTH 2.07 VHP 5.426 DPA -8.51 RAP 188.43 ECC 1.2729

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
72.98	11 49 55	3911.31	-23.69	162.79	42.34	66.81	12 55 6	3311.3	-26.62	154.99
107.02	16 11 47	3073.96	-23.68	100.64	42.34	66.80	17 3 1	2474.0	-26.61	92.83
72.98	11 49 55	3911.31	-23.69	162.79	42.34	66.81	12 55 6	3311.3	-26.62	154.99
107.02	16 11 47	3073.96	-23.68	100.64	42.34	66.80	17 3 1	2474.0	-26.61	92.83
110.00	17 47 6	2780.32	-30.38	80.68	45.05	73.51	18 33 27	2180.3	-32.33	72.01
110.00	15 13 46	3252.94	-17.31	111.04	38.94	60.06	16 7 59	2652.9	-21.16	104.03

DIFFERENTIAL CORRECTIONS
TDE .4826 TRA-2.0056 TC3 2.6381 BAU .6030
RDE -.0637 RRA .2986 RC3 -.6615 FAU .18044
FDE .2059 FRA 4.3302 FC3-9.4194 BSP 14221
BDE .4868 BRA 2.0277 BC3 2.7198 FSP 2910

MID-COURSE EXECUTION ACCURACY
SGT 4039.2 SGR 739.8 SG3 911.6
RRT -.9676 RRF .9889 RTF -.9515
SGB 4106.4 R23 -.2627 R13 .9536
SG1 4102.3 SG2 184.0 THA 169.93

ORBIT DETERMINATION ACCURACY
ST 1215.1 SR 175.2 SS 1032.5
CRT -.9978 CRS -.7846 CST .7479
LSA 1503.6 MSA 558.9 SSA 5.9
EL1 1227.7 EL2 11.6 ALF 171.81

LAUNCH DATE NOV 6 1964 FLIGHT TIME 230.00 ARRIVAL DATE JUN 24 1965

HELIOCENTRIC CONIC DISTANCE 545.875 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 33.310 GAL -3.57 AZL 86.48 HCA 173.79 SMA 195.01 ECC .24716 INC 3.5183 V1 30.050
RP 236.29 LAP .38 LOP 217.42 VP 21.042 GAP 7.50 AZP 93.50 TAL 341.84 TAP 155.63 RCA 146.81 APO 243.20 V2 23.261
RC 193.877 GL 29.94 GP -6.64 ZAL 113.77 ZAP 153.14 ETS 191.81 ZAE 165.13 ETE 336.80 ZAC 83.70 ETC 255.78 CLP 153.91

PLANETOCENTRIC CONIC

C3 16.713 VHL 4.088 DLA 34.63 RAL 176.11 RAD 6567.7 VEL 11.751 PTH 2.07 VHP 5.317 DPA -9.47 RAP 188.09 ECC 1.2751

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
69.19	11 29 0	3984.85	-24.96	169.12	43.74	65.19	12 35 25	3384.8	-28.09	161.31
110.81	16 37 40	3003.98	-24.95	95.83	43.73	65.18	17 27 44	2404.0	-28.08	88.02
69.19	11 29 0	3984.85	-24.96	169.12	43.74	65.19	12 35 25	3384.8	-28.09	161.31
110.81	16 37 40	3003.98	-24.95	95.83	43.73	65.18	17 27 44	2404.0	-28.08	88.02
69.19	11 29 0	3984.85	-24.96	169.12	43.74	65.19	12 35 25	3384.8	-28.09	161.31
110.81	16 37 40	3003.98	-24.95	95.83	43.73	65.18	17 27 44	2404.0	-28.08	88.02

DIFFERENTIAL CORRECTIONS
TDE .4561 TRA-1.9666 TC3 2.6329 BAU .6125
RDE -.0470 RRA .3502 RC3 -.7629 FAU .18784
FDE .3361 FRA 4.4594 FC3-9.7297 BSP 14221
BDE .4586 BRA 1.9976 BC3 2.7412 FSP 3019

MID-COURSE EXECUTION ACCURACY
SGT 4032.6 SGR 865.6 SG3 951.2
RRT -.9691 RRF .9929 RTF -.9520
SGB 4124.4 R23 -.2751 R13 .9550
SG1 4119.1 SG2 208.9 THA 168.22

ORBIT DETERMINATION ACCURACY
ST 1192.7 SR 191.6 SS 1074.5
CRT -.9764 CRS -.8506 CST .7183
LSA 1501.7 MSA 599.0 SSA 4.8
EL1 1207.3 EL2 40.9 ALF 171.08

LAUNCH DATE NOV 6 1964 FLIGHT TIME 232.00 ARRIVAL DATE JUN 26 1965

HELIOCENTRIC CONIC DISTANCE 549.469 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 33.282 GAL -3.49 AZL 86.17 HCA 174.76 SMA 194.47 ECC .24480 INC 3.8311 V1 30.050
RP 235.94 LAP .35 LOP 218.39 VP 21.037 GAP 7.07 AZP 93.82 TAL 342.13 TAP 156.89 RCA 146.87 APO 242.08 V2 23.297
RC 196.086 GL 32.49 GP -8.02 ZAL 112.74 ZAP 151.92 ETS 193.86 ZAE 165.37 ETE 330.54 ZAC 82.36 ETC 255.74 CLP 153.01

PLANETOCENTRIC CONIC

C3 17.089 VHL 4.134 DLA 37.06 RAL 177.15 RAD 6567.7 VEL 11.767 PTH 2.08 VHP 5.218 DPA -10.76 RAP 187.56 ECC 1.2812

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
65.03	11 10 8	4058.71	-26.43	175.81	46.00	63.02	12 17 46	3458.7	-29.82	168.00
114.97	17 4 50	2940.34	-26.42	91.55	45.99	63.01	17 53 51	2340.3	-29.81	83.75
65.03	11 10 8	4058.71	-26.43	175.81	46.00	63.02	12 17 46	3458.7	-29.82	168.00
114.97	17 4 50	2940.34	-26.42	91.55	45.99	63.01	17 53 51	2340.3	-29.81	83.75
65.03	11 10 8	4058.71	-26.43	175.81	46.00	63.02	12 17 46	3458.7	-29.82	168.00
114.97	17 4 50	2940.34	-26.42	91.55	45.99	63.01	17 53 51	2340.3	-29.81	83.75

DIFFERENTIAL CORRECTIONS
TDE .4379 TRA-1.9234 TC3 2.5976 BAU .6276
RDE -.0261 RRA .4210 RC3 -.8930 FAU .19544
FDE .4884 FRA 4.5928 FC3-9.9010 BSP 14141
BDE .4387 BRA 1.9690 BC3 2.7468 FSP 3111

MID-COURSE EXECUTION ACCURACY
SGT 4017.5 SGR 1039.7 SG3 989.2
RRT -.9696 RRF .9956 RTF -.9526
SGB 4149.8 R23 -.2798 R13 .9569
SG1 4142.5 SG2 246.7 THA 165.86

ORBIT DETERMINATION ACCURACY
ST 1173.4 SR 223.4 SS 1126.7
CRT -.9278 CRS -.9060 CST .6831
LSA 1509.2 MSA 646.8 SSA 3.8
EL1 1191.6 EL2 82.1 ALF 169.93

LAUNCH DATE NOV 6 1964 FLIGHT TIME 234.00 ARRIVAL DATE JUN 28 1965

HELIOCENTRIC CONIC DISTANCE 553.079 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 33.256 GAL -3.41 AZL 85.71 HCA 175.73 SMA 193.97 ECC .24255 INC 4.2894 V1 30.050
RP 235.59 LAP .32 LOP 219.36 VP 21.034 GAP 6.64 AZP 94.28 TAL 342.42 TAP 158.15 RCA 146.92 APO 241.01 V2 23.333
RC 198.280 GL 35.92 GP -10.04 ZAL 111.48 ZAP 150.44 ETS 196.71 ZAE 165.12 ETE 322.04 ZAC 80.40 ETC 255.66 CLP 152.05

PLANETOCENTRIC CONIC

C3 17.910 VHL 4.232 DLA 40.23 RAL 178.91 RAD 6567.7 VEL 11.802 PTH 2.09 VHP 5.135 DPA -12.59 RAP 186.70 ECC 1.2948

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
60.14	10 53 24	4137.93	-28.12	183.41	49.74	59.96	12 2 22	3537.9	-31.89	175.67
119.86	17 35 35	2882.88	-28.11	87.82	49.73	59.95	18 23 38	2282.9	-31.87	80.08
60.14	10 53 24	4137.93	-28.12	183.41	49.74	59.96	12 2 22	3537.9	-31.89	175.67
119.86	17 35 35	2882.88	-28.11	87.82	49.73	59.95	18 23 38	2282.9	-31.87	80.08
60.14	10 53 24	4137.93	-28.12	183.41	49.74	59.96	12 2 22	3537.9	-31.89	175.67
119.86	17 35 35	2882.88	-28.11	87.82	49.73	59.95	18 23 38	2282.9	-31.87	80.08

DIFFERENTIAL CORRECTIONS
TDE .4155 TRA-1.8956 TC3 2.4633 BAU .6410
RDE .0074 RRA .5304 RC3-1.0485 FAU .20063
FDE .7117 FRA 4.7779 FC3-9.6977 BSP 14501
BDE .4155 BRA 1.9685 BC3 2.6772 FSP 3275

MID-COURSE EXECUTION ACCURACY
SGT 3995.3 SGR 1293.2 SG3 1022.6
RRT -.9690 RRF .9972 RTF -.9527
SGB 4199.4 R23 -.2776 R13 .9593
SG1 4188.3 SG2 305.0 THA 162.49

ORBIT DETERMINATION ACCURACY
ST 1156.4 SR 283.6 SS 1210.9
CRT -.8556 CRS -.9475 CST .6453
LSA 1545.2 MSA 704.6 SSA 2.8
EL1 1181.9 EL2 143.6 ALF 167.97

LAUNCH DATE NOV 6 1964 FLIGHT TIME 236.00 ARRIVAL DATE JUN 30 1965

HELIOCENTRIC CONIC DISTANCE 556.707 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 33.230 GAL -3.33 AZL 84.98 HCA 176.71 SMA 193.49 ECC .24040 INC 5.0166 V1 30.050
RP 235.24 LAP .29 LOP 220.34 VP 21.034 GAP 6.23 AZP 95.01 TAL 342.70 TAP 159.41 RCA 146.97 APO 240.00 V2 23.369
RC 200.460 GL 40.86 GP -13.20 ZAL 109.81 ZAP 148.37 ETS 200.89 ZAE 163.79 ETE 310.87 ZAC 77.30 ETC 255.51 CLP 150.99

PLANETOCENTRIC CONIC

C3 19.684 VHL 4.437 DLA 44.59 RAL 182.07 RAD 6567.8 VEL 11.877 PTH 2.11 VHP 5.086 DPA -15.42 RAP 185.25 ECC 1.3239

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
54.00	10 40 19	4230.02	-29.97	192.84	56.28	55.30	11 50 49	3630.0	-34.28	185.30
126.00	18 13 51	2835.19	-29.96	84.97	56.27	55.29	19 1 6	2235.2	-34.27	77.43
54.00	10 40 19	4230.02	-29.97	192.84	56.28	55.30	11 50 49	3630.0	-34.28	185.30
126.00	18 13 51	2835.19	-29.96	84.97	56.27	55.29	19 1 6	2235.2	-34.27	77.43
54.00	10 40 19	4230.02	-29.97	192.84	56.28	55.30	11 50 49	3630.0	-34.28	185.30
126.00	18 13 51	2835.19	-29.96	84.97	56.27	55.29	19 1 6	2235.2	-34.27	77.43

DIFFERENTIAL CORRECTIONS
TDE .4727 TRA-1.8225 TC3 2.3169 BAU .6962
RDE .0364 RRA .6901 RC3-1.2774 FAU .20970
FDE .8103 FRA 4.8274 FC3-9.2231 BSP 13911
BDE .4741 BRA 1.9487 BC3 2.6458 FSP 3133

MID-COURSE EXECUTION ACCURACY
SGT 3939.5 SGR 1689.1 SG3 1039.3
RRT -.9674 RRF .9981 RTF -.9520
SGB 4286.4 R23 -.2675 R13 .9631
SG1 4268.1 SG2 395.1 THA 157.27

ORBIT DETERMINATION ACCURACY
ST 1165.9 SR 379.9 SS 1247.0
CRT -.7802 CRS -.9680 CST .5985
LSA 1572.7 MSA 765.0 SSA 2.0
EL1 1204.4 EL2 230.0 ALF 165.18

LAUNCH DATE NOV 6 1964 FLIGHT TIME 238.00 ARRIVAL DATE JUL 2 1965

HELIOCENTRIC CONIC DISTANCE 560.350 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 33.206 GAL -3.25 AZL 83.63 HCA 177.69 SMA 193.03 ECC .23834 INC 6.3724 V1 30.050
RP 234.89 LAP .26 LOP 221.32 VP 21.036 GAP 5.81 AZP 96.37 TAL 342.97 TAP 160.66 RCA 147.02 APO 239.03 V2 23.405
RC 202.623 GL 48.57 GP -18.80 ZAL 107.30 ZAP 144.82 ETS 207.35 ZAE 159.97 ETE 297.35 ZAC 71.79 ETC 255.12 CLP 149.70

PLANETOCENTRIC CONIC

C3 24.071 VHL 4.906 DLA 50.95 RAL 188.57 RAD 6568.0 VEL 12.060 PTH 2.16 VHP 5.134 DPA -20.33 RAP 182.41 ECC 1.3961

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
45.70	10 37 30	4350.00	-31.34	205.74	68.97	47.54	11 50 0	3750.0	-36.54	198.82
134.30	19 8 35	2812.36	-31.33	84.03	68.96	47.53	19 55 27	2212.4	-36.53	77.11
45.70	10 37 30	4350.00	-31.34	205.74	68.97	47.54	11 50 0	3750.0	-36.54	198.82
134.30	19 8 35	2812.36	-31.33	84.03	68.96	47.53	19 55 27	2212.4	-36.53	77.11
45.70	10 37 30	4350.00	-31.34	205.74	68.97	47.54	11 50 0	3750.0	-36.54	198.82
134.30	19 8 35	2812.36	-31.33	84.03	68.96	47.53	19 55 27	2212.4	-36.53	77.11

DIFFERENTIAL CORRECTIONS
TDE .5911 TRA-1.8100 TC3 1.8403 BAU .7549
RDE .0909 RRA 1.0401 RC3-1.4545 FAU .20206
FDE .9585 FRA 5.0342 FC3-7.2673 BSP 15681
BDE .5980 BRA 2.0876 BC3 2.3457 FSP 3342

MID-COURSE EXECUTION ACCURACY
SGT 3872.1 SGR 2401.0 SG3 1019.3
RRT -.9650 RRF .9986 RTF -.9503
SGB 4556.1 R23 -.2413 R13 .9703
SG1 4524.1 SG2 538.7 THA 148.61

ORBIT DETERMINATION ACCURACY
ST 1221.6 SR 589.6 SS 1340.8
CRT -.7097 CRS -.9804 CST .5569
LSA 1703.9 MSA 857.0 SSA 1.2
EL1 1299.0 EL2 390.7 ALF 159.12

LAUNCH DATE NOV 6 1964 FLIGHT TIME 246.00 ARRIVAL DATE JUL 10 1965

HELIOCENTRIC CONIC DISTANCE 575.106 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 33.118 GAL -2.99 AZL 94.47 HCA 181.66 SMA 191.41 ECC .23105 INC 4.4683 V1 30.050
RP 233.44 LAP .13 LOP 225.28 VP 21.064 GAP 4.23 AZP 85.53 TAL 343.94 TAP 165.60 RCA 147.19 APO 235.64 V2 23.555
RC 211.104 GL -38.84 GP 27.22 ZAL 108.49 ZAP 136.73 ETS 145.25 ZAE 151.31 ETE 78.82 ZAC 116.44 ETC 254.18 CLP 144.97

PLANETOCENTRIC CONIC

C3 16.905 VHL 4.112 DLA -27.22 RAL 144.11 RAD 6567.7 VEL 11.760 PTH 2.08 VHP 5.052 DPA 21.66 RAP 201.67 ECC 1.2782

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
34.38	14 15 46	2542.87	-9.02	76.07	346.46	149.78	14 58 9	1942.9	-2.09	72.47
34.38	0 0 59	833.59	56.54	318.08	7.06	64.36	0 14 53	233.6	52.46	306.62
44.38	15 9 33	2432.04	-5.30	68.55	351.97	141.80	15 50 5	1832.0	1.00	64.03
44.38	0 2 25	830.64	50.35	321.61	10.93	74.77	0 16 15	230.6	47.65	310.53
54.38	16 16 13	2267.73	-.92	57.41	356.85	134.30	16 54 0	1667.7	4.67	52.09
54.38	0 4 25	825.69	43.91	322.95	12.75	83.35	0 18 11	225.7	42.46	312.57

DIFFERENTIAL CORRECTIONS
TDE 1.7561 TRA-1.3565 TC3 2.5280 BAU .8640
RDE 1.5863 RRA -.6739 RC3 2.8679 FAU .20228
FDE-5.5806 FRA 2.2104 FC-10.3591 BSP 16788
BDE 2.3664 BRA 1.5147 BC3 3.8230 FSP 3229

MID-COURSE EXECUTION ACCURACY
SGT 3850.8 SGR 3400.5 SG3 1040.5
RRT .9589 RRF -.9996 RTF -.9510
SGB 5137.4 R23 -.1878 R13 -.9822
SG1 5085.2 SG2 730.3 THA 41.30

ORBIT DETERMINATION ACCURACY
ST 2529.6 SR 2234.3 SS 3426.6
CRT .9937 CRS 1.0000 CST .9925
LSA 4802.8 MSA 257.4 SSA .6
EL1 3369.8 EL2 188.7 ALF 41.43

LAUNCH DATE NOV 6 1964 FLIGHT TIME 248.00 ARRIVAL DATE JUL 12 1965

HELIOCENTRIC CONIC DISTANCE 578.819 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 33.099 GAL -2.93 AZL 92.10 HCA 182.65 SMA 191.06 ECC .22943 INC 2.0951 V1 30.050
RP 233.07 LAP .10 LOP 226.27 VP 21.077 GAP 3.85 AZP 87.90 TAL 344.18 TAP 166.83 RCA 147.22 APO 234.89 V2 23.593
RC 213.179 GL -20.50 GP 18.40 ZAL 111.48 ZAP 140.74 ETS 154.44 ZAE 160.03 ETE 76.05 ZAC 108.03 ETC 255.11 CLP 144.69

PLANETOCENTRIC CONIC

C3 11.996 VHL 3.464 DLA -9.99 RAL 150.82 RAD 6567.5 VEL 11.549 PTH 2.02 VHP 4.588 DPA 13.43 RAP 198.27 ECC 1.1974

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 37 35	1784.10	-7.33	15.82	3.72	117.43	20 7 20	1184.1	-3.60	9.13
90.00	5 7 16	5058.57	23.87	223.51	6.92	74.29	6 31 34	4458.6	21.48	215.65
100.00	20 54 0	1537.61	-8.23	357.22	3.24	118.84	21 19 37	937.6	-4.32	350.61
100.00	6 33 33	4780.30	24.84	202.73	6.60	72.81	7 53 13	4180.3	22.25	194.89
110.00	21 51 1	1359.05	-10.58	342.25	1.82	122.69	22 13 40	759.0	-6.20	335.90
110.00	7 53 1	4531.63	27.43	182.85	5.60	68.75	9 8 32	3931.6	24.29	175.08

DIFFERENTIAL CORRECTIONS
TDE 1.1060 TRA-1.4252 TC3 3.5113 BAU .7131
RDE .6534 RRA -.5459 RC3 2.7274 FAU .24356
FDE-4.0291 FRA 3.3880 FC-17.5766 BSP 14798
BDE 1.2845 BRA 1.5262 BC3 4.4461 FSP 3971

MID-COURSE EXECUTION ACCURACY
SGT 3872.3 SGR 2361.9 SG3 1296.2
RRT .9587 RRF -.9998 RTF -.9542
SGB 4535.8 R23 -.2247 R13 -.9743
SG1 4498.7 SG2 578.3 THA 30.88

ORBIT DETERMINATION ACCURACY
ST 1966.8 SR 1116.7 SS 2731.4
CRT .9921 CRS 1.0000 CST .9923
LSA 3540.4 MSA 203.4 SSA 2.5
EL1 2258.4 EL2 121.7 ALF 29.49

LAUNCH DATE NOV 6 1964 FLIGHT TIME 250.00 ARRIVAL DATE JUL 14 1965

HELIOCENTRIC CONIC DISTANCE 582.551 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 33.080 GAL -2.88 AZL 91.02 HCA 183.65 SMA 190.72 ECC .22789 INC 1.0207 V1 30.050
RP 232.70 LAP .07 LOP 227.27 VP 21.091 GAP 3.47 AZP 88.98 TAL 344.40 TAP 168.05 RCA 147.26 APO 234.19 V2 23.631
RC 215.236 GL -10.34 GP 13.93 ZAL 112.08 ZAP 141.57 ETS 160.27 ZAE 164.57 ETE 76.20 ZAC 103.71 ETC 255.44 CLP 143.82

PLANETOCENTRIC CONIC

C3 10.788 VHL 3.285 DLA -.34 RAL 154.06 RAD 6567.4 VEL 11.497 PTH 2.00 VHP 4.376 DPA 9.34 RAP 196.45 ECC 1.1775

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 36 57	2066.67	-15.73	32.33	6.21	113.85	19 11 24	1466.7	-12.37	25.26
90.00	6 33 50	4731.97	16.31	202.57	6.31	66.53	7 52 42	4132.0	12.99	195.46
100.00	19 58 8	1804.80	-16.56	12.67	5.81	115.25	20 28 13	1204.8	-13.02	5.67
100.00	7 55 20	4469.08	17.14	182.85	5.92	65.13	9 9 49	3869.1	13.65	175.80
110.00	21 6 1	1592.32	-18.78	355.35	4.62	119.10	21 32 33	992.3	-14.76	348.54
110.00	9 3 56	4254.34	19.37	165.36	4.74	61.27	10 14 51	3654.3	15.39	158.51

DIFFERENTIAL CORRECTIONS
TDE .8093 TRA-1.4492 TC3 3.7509 BAU .6318
RDE .3477 RRA -.4516 RC3 2.2626 FAU .26119
FDE-2.9609 FRA 4.1570 FC-20.9598 BSP 14536
BDE .8808 BRA 1.5180 BC3 4.3804 FSP 4667

MID-COURSE EXECUTION ACCURACY
SGT 3802.0 SGR 1788.2 SG3 1416.6
RRT .9575 RRF -.9997 RTF -.9553
SGB 4201.6 R23 -.2453 R13 -.9691
SG1 4175.3 SG2 469.4 THA 24.58

ORBIT DETERMINATION ACCURACY
ST 1604.3 SR 652.5 SS 2124.9
CRT .9924 CRS .9996 CST .9952
LSA 2738.1 MSA 131.2 SSA 7.6
EL1 1730.3 EL2 74.4 ALF 22.02

LAUNCH DATE NOV 6 1964 FLIGHT TIME 252.00 ARRIVAL DATE JUL 16 1965

HELIOCENTRIC CONIC DISTANCE 586.295 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 33.063 GAL -2.82 AZL 90.40 HCA 184.65 SMA 190.40 ECC .22642 INC .3887 V1 30.050
RP 232.32 LAP .03 LOP 228.27 VP 21.106 GAP 3.10 AZP 89.60 TAL 344.61 TAP 169.27 RCA 147.29 APO 233.51 V2 23.670
RC 217.275 GL -4.15 GP 11.28 ZAL 111.96 ZAP 141.33 ETS 164.08 ZAE 167.38 ETE 78.83 ZAC 101.12 ETC 255.59 CLP 142.77

PLANETOCENTRIC CONIC

C3 10.348 VHL 3.217 DLA 5.58 RAL 155.91 RAD 6567.4 VEL 11.478 PTH 2.00 VHP 4.233 DPA 6.95 RAP 195.29 ECC 1.1703

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 0 3	2242.78	-20.24	43.28	8.64	110.23	18 37 26	1642.8	-17.31	35.83
90.00	7 25 26	4538.98	10.75	191.13	7.00	63.65	8 41 5	3939.0	7.13	184.33
100.00	19 24 2	1971.90	-21.10	23.00	8.29	111.68	19 56 54	1371.9	-17.97	15.60
100.00	8 44 8	4285.10	11.57	172.03	6.57	62.25	9 55 33	3685.1	7.77	165.31
110.00	20 38 20	1739.39	-23.40	4.26	7.20	115.66	21 7 19	1139.4	-19.75	357.02
110.00	9 46 20	4090.37	13.75	155.98	5.30	58.39	10 54 31	3490.4	9.47	149.50

DIFFERENTIAL CORRECTIONS
TDE .6669 TRA-1.4222 TC3 3.8604 BAU .5976
RDE .2287 RRA -.3696 RC3 1.9384 FAU .27999
FDE-2.3887 FRA 4.5596 FC-23.4240 BSP 13772
BDE .7050 BRA 1.4695 BC3 4.3197 FSP 4951

MID-COURSE EXECUTION ACCURACY
SGT 3749.3 SGR 1469.3 SG3 1525.6
RRT .9557 RRF -.9993 RTF -.9554
SGB 4027.0 R23 -.2561 R13 -.9659
SG1 4006.6 SG2 404.7 THA 20.75

ORBIT DETERMINATION ACCURACY
ST 1414.0 SR 454.6 SS 1802.9
CRT .9926 CRS .9976 CST .9980
LSA 2334.5 MSA 77.4 SSA 20.0
EL1 1484.3 EL2 52.4 ALF 17.72

LAUNCH DATE NOV 6 1964 FLIGHT TIME 254.00 ARRIVAL DATE JUL 18 1965

HELIOCENTRIC CONIC DISTANCE 590.053 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 33.046 GAL -2.77 AZL 90.00 HCA 185.66 SMA 190.10 ECC .22503 INC .0000 V1 30.050
RP 231.95 LAP .00 LOP 229.28 VP 21.124 GAP 2.74 AZP 90.00 TAL 344.81 TAP 170.47 RCA 147.32 APO 232.88 V2 23.709
RC 219.295 GL -.03 GP 9.54 ZAL 111.62 ZAP 140.64 ETS 166.70 ZAE 169.26 ETE 83.85 ZAC 99.39 ETC 255.67 CLP 141.63

PLANETOCENTRIC CONIC

C3 10.137 VHL 3.184 DLA 9.57 RAL 157.05 RAD 6567.4 VEL 11.468 PTH 1.99 VHP 4.118 DPA 5.41 RAP 194.45 ECC 1.1668

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 33 37	2365.96	-22.93	51.30	10.56	107.08	18 13 3	1766.0	-20.38	43.56
90.00	8 0 59	4407.51	6.69	183.61	7.84	62.42	9 14 27	3807.5	2.94	176.93
100.00	18 59 39	2088.45	-23.84	30.58	10.24	108.59	19 34 28	1488.4	-21.08	22.87
100.00	9 17 38	4160.25	7.53	164.97	7.39	60.99	10 26 58	3560.3	3.60	158.39
110.00	20 18 36	1841.43	-26.25	10.82	9.24	112.73	20 49 17	1241.4	-22.94	3.22
110.00	10 15 11	3980.04	9.73	149.96	6.05	57.07	11 21 31	3380.0	5.33	143.64

DIFFERENTIAL CORRECTIONS
TDE .5654 TRA-1.3976 TC3 3.8288 BAU .5670
RDE .1658 RRA -.3147 RC3 1.6861 FAU .29429
FDE-1.9494 FRA 4.9181 FC-25.1336 BSP 13468
BDE .5892 BRA 1.4326 BC3 4.1836 FSP 5310

MID-COURSE EXECUTION ACCURACY
SGT 3672.2 SGR 1253.6 SG3 1614.1
RRT .9527 RRF -.9985 RTF -.9545
SGB 3880.3 R23 -.2638 R13 -.9631
SG1 3863.4 SG2 362.0 THA 18.18

ORBIT DETERMINATION ACCURACY
ST 1275.2 SR 346.1 SS 1582.5
CRT .9921 CRS .9914 CST .9987
LSA 2060.5 MSA 52.4 SSA 41.8
EL1 1320.7 EL2 42.0 ALF 15.08

LAUNCH DATE NOV 6 1964 FLIGHT TIME 256.00 ARRIVAL DATE JUL 20 1965

HELIOCENTRIC CONIC DISTANCE 593.825 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 33.030 GAL -2.73 AZL 89.72 HCA 186.67 SMA 189.81 ECC .22371 INC .2806 V1 30.050
RP 231.57 LAP -.03 LOP 230.29 VP 21.143 GAP 2.38 AZP 90.28 TAL 345.00 TAP 171.67 RCA 147.35 APO 232.28 V2 23.748
RC 221.297 GL 2.90 GP 8.30 ZAL 111.21 ZAP 139.72 ETS 168.62 ZAE 170.51 ETE 91.17 ZAC 98.14 ETC 255.72 CLP 140.44

PLANETOCENTRIC CONIC

C3 10.008 VHL 3.164 DLA 12.43 RAL 157.79 RAD 6567.4 VEL 11.463 PTH 1.99 VHP 4.016 DPA 4.37 RAP 193.77 ECC 1.1647

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 12 57	2458.58	-24.64	57.55	12.01	104.41	17 53 56	1858.6	-22.42	49.58
90.00	8 27 34	4309.79	3.58	178.11	8.60	61.89	9 39 24	3709.8	-.21	171.48
100.00	18 40 41	2175.66	-25.61	36.45	11.72	105.98	19 16 56	1575.7	-23.17	28.50
100.00	9 42 32	4067.94	4.45	159.85	8.12	60.41	10 50 20	3467.9	.48	153.31
110.00	20 3 19	1917.07	-28.14	15.89	10.80	110.26	20 35 16	1317.1	-25.12	8.02
110.00	10 36 22	3899.29	6.72	145.65	6.72	56.40	11 41 22	3299.3	2.25	139.41

DIFFERENTIAL CORRECTIONS
TDE .4946 TRA-1.3652 TC3 3.7626 BAU .5419
RDE .1300 RRA -.2746 RC3 1.4986 FAU .30695
FDE-1.5992 FRA 5.2451 FC-26.5522 BSP 13160
BDE .5114 BRA 1.3925 BC3 4.0500 FSP 5695

MID-COURSE EXECUTION ACCURACY
SGT 3588.9 SGR 1101.8 SG3 1695.8
RRT .9503 RRF -.9973 RTF -.9542
SGB 3754.2 R23 -.2657 R13 -.9614
SG1 3739.7 SG2 329.1 THA 16.39

ORBIT DETERMINATION ACCURACY
ST 1176.6 SR 282.1 SS 1437.3
CRT .9911 CRS .9774 CST .9945
LSA 1875.7 MSA 104.1 SSA 27.5
EL1 1209.4 EL2 36.5 ALF 13.38

LAUNCH DATE NOV 6 1964 FLIGHT TIME 258.00 ARRIVAL DATE JUL 22 1965

HELIOCENTRIC CONIC DISTANCE 597.609 EARTH TO MARS

RL	148.27	LAL	-.00	LOL	43.62	VL	33.015	GAL	-2.68	AZL	89.51	HCA	187.68	SMA	189.54	ECC	.22246	INC	.4856	V1	30.050
RP	231.20	LAP	-.06	LOP	231.30	VP	21.163	GAP	2.03	AZP	90.48	TAL	345.18	TAP	172.87	RCA	147.38	APO	231.71	V2	23.788
RC	223.281	GL	5.10	GP	7.39	ZAL	110.80	ZAP	138.65	ETS	170.07	ZAE	171.24	ETE	100.40	ZAC	97.20	ETC	255.76	CLP	139.20

PLANETOCENTRIC CONIC

C3	9.914	VHL	3.149	DLA	14.60	RAL	158.29	RAD	6567.4	VEL	11.459	PTH	1.99	VHP	3.922	DPA	3.63	RAP	193.18	ECC	1.1632

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 55 56	2531.88	-25.79	62.61	13.11	102.12	17 38 8	1931.9	-23.86	54.47
90.00	8 48 34	4232.73	1.10	173.81	9.24	61.70	9 59 7	3632.7	-2.70	167.18
100.00	18 25 7	2244.27	-26.80	41.20	12.85	103.75	19 2 31	1644.3	-24.65	33.06
100.00	10 2 4	3995.57	2.01	155.86	8.73	60.17	11 8 40	3395.6	-1.98	149.34
110.00	19 50 53	1975.91	-29.46	19.96	11.99	108.18	20 23 49	1375.9	-26.69	11.87
110.00	10 52 48	3836.70	4.35	142.35	7.27	56.06	11 56 44	3236.7	-.14	136.14

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4481	TRA	-1.3208	TC3	3.7034	BAU	.5234	SGT	3503.2	SGR	995.4	SG3	1782.8	ST	1106.7	SR	245.4	SS	1358.2
RDE	.1114	RRA	-.2410	RC3	1.3701	FAU	.32178	RRT	.9472	RRF	-.9955	RTF	-.9535	CRT	.9880	CRS	.9549	CST	.9860
FDE	-1.3680	FRA	5.4877	FC	-28.0985	BSP	12663	SGB	3641.8	R23	-.2660	R13	-.9599	LSA	1762.4	MSA	153.0	SSA	23.1
BDE	.4617	BRA	1.3426	BC3	3.9487	FSP	5963	SG1	3628.8	SG2	308.1	THA	15.18	EL1	1133.0	EL2	37.0	ALF	12.37

LAUNCH DATE NOV 6 1964 FLIGHT TIME 260.00 ARRIVAL DATE JUL 24 1965

HELIOCENTRIC CONIC DISTANCE 601.499 EARTH TO MARS

RL	148.27	LAL	-.00	LOL	43.62	VL	33.000	GAL	-2.63	AZL	89.35	HCA	188.70	SMA	189.28	ECC	.22124	INC	.6475	V1	30.050
RP	230.82	LAP	-.10	LOP	232.31	VP	21.186	GAP	1.67	AZP	90.64	TAL	345.41	TAP	174.11	RCA	147.41	APO	231.16	V2	23.827
RC	225.247	GL	6.82	GP	6.69	ZAL	110.29	ZAP	137.42	ETS	171.21	ZAE	171.47	ETE	111.14	ZAC	96.45	ETC	255.79	CLP	137.85

PLANETOCENTRIC CONIC

C3	9.824	VHL	3.134	DLA	16.36	RAL	158.53	RAD	6567.4	VEL	11.455	PTH	1.99	VHP	3.830	DPA	3.13	RAP	192.59	ECC	1.1617

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 40 32	2593.55	-26.60	66.95	13.84	100.09	17 23 45	1993.6	-24.93	58.67
90.00	9 5 51	4167.43	-1.01	170.16	9.66	61.70	10 15 19	3567.4	-4.79	163.52
100.00	18 11 3	2301.61	-27.67	45.24	13.61	101.79	18 49 25	1701.6	-25.76	36.96
100.00	10 18 1	3934.61	-.06	152.52	9.13	60.11	11 23 35	3334.6	-4.04	145.99
110.00	19 39 39	2024.44	-30.44	23.40	12.82	106.37	20 13 23	1424.4	-27.89	15.13
110.00	11 5 55	3784.54	2.36	139.62	7.61	55.89	12 9 0	3184.5	-2.13	133.42

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.9653	TRA	-.7262	TC3	5.9181	BAU	.8015	SGT	4334.9	SGR	1020.1	SG3	2066.2	ST	1816.2	SR	296.0	SS	1750.5
RDE	.1535	RRA	-.1572	RC3	1.4896	FAU	.39829	RRT	.9892	RRF	-.9956	RTF	-.9751	CRT	.9963	CRS	.9846	CST	.9665
FDE	-2.5413	FRA	4.2713	FC	-35.0991	BSP	2205	SGB	4453.3	R23	-.2047	R13	-.9767	LSA	2518.7	MSA	326.6	SSA	3.7
BDE	.9775	BRA	.7430	BC3	6.1027	FSP	3319	SG1	4450.9	SG2	145.7	THA	13.12	EL1	1840.0	EL2	25.0	ALF	9.22

LAUNCH DATE NOV 6 1964 FLIGHT TIME 262.00 ARRIVAL DATE JUL 26 1965

HELIOCENTRIC CONIC DISTANCE 605.211 EARTH TO MARS

RL	148.27	LAL	-.00	LOL	43.62	VL	32.986	GAL	-2.60	AZL	89.23	HCA	189.72	SMA	189.04	ECC	.22016	INC	.7738	V1	30.050
RP	230.43	LAP	-.13	LOP	233.33	VP	21.209	GAP	1.34	AZP	90.76	TAL	345.51	TAP	175.23	RCA	147.42	APO	230.66	V2	23.867
RC	227.193	GL	8.19	GP	6.13	ZAL	110.03	ZAP	136.23	ETS	172.12	ZAE	171.33	ETE	121.18	ZAC	95.84	ETC	255.81	CLP	136.58

PLANETOCENTRIC CONIC

C3	9.767	VHL	3.125	DLA	17.71	RAL	158.87	RAD	6567.4	VEL	11.452	PTH	1.99	VHP	3.753	DPA	2.72	RAP	192.13	ECC	1.1607

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 28 39	2643.10	-27.14	70.47	14.60	98.40	17 12 42	2043.1	-25.70	62.10
90.00	9 20 29	4115.59	-2.68	167.27	10.22	61.80	10 29 5	3515.6	-6.43	160.60
100.00	18 0 21	2347.37	-28.26	48.51	14.39	100.17	18 39 28	1747.4	-26.57	40.12
100.00	10 31 28	3886.56	-1.69	149.88	9.66	60.15	11 36 15	3286.6	-5.65	143.33
110.00	19 31 19	2062.74	-31.14	26.16	13.65	104.87	20 5 42	1462.7	-28.78	17.75
110.00	11 16 59	3743.95	.81	137.51	8.10	55.83	12 19 23	3144.0	-3.68	131.30

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3660	TRA	-1.2434	TC3	3.4540	BAU	.4771	SGT	3292.0	SGR	851.5	SG3	1951.5	ST	984.8	SR	204.5	SS	1273.9
RDE	.0922	RRA	-.1955	RC3	1.1917	FAU	.34897	RRT	.9354	RRF	-.9902	RTF	-.9488	CRT	.9729	CRS	.8736	CST	.9579
FDE	-.9614	FRA	5.9978	FC	-30.9318	BSP	12043	SGB	3400.3	R23	-.2704	R13	-.9547	LSA	1605.3	MSA	238.5	SSA	21.2
BDE	.3774	BRA	1.2587	BC3	3.6538	FSP	6623	SG1	3387.7	SG2	292.5	THA	13.71	EL1	1004.7	EL2	46.4	ALF	11.45

LAUNCH DATE NOV 6 1964 FLIGHT TIME 264.00 ARRIVAL DATE JUL 28 1965

HELIOCENTRIC CONIC DISTANCE 609.032 EARTH TO MARS

RL	148.27	LAL	-.00	LOL	43.62	VL	32.974	GAL	-2.56	AZL	89.12	HCA	190.74	SMA	188.81	ECC	.21910	INC	.8773	V1	30.050
RP	230.05	LAP	-.16	LOP	234.36	VP	21.234	GAP	1.01	AZP	90.86	TAL	345.66	TAP	176.40	RCA	147.44	APO	230.18	V2	23.907
RC	229.120	GL	9.32	GP	5.67	ZAL	109.68	ZAP	134.93	ETS	172.88	ZAE	170.78	ETE	130.68	ZAC	95.32	ETC	255.83	CLP	135.21

PLANETOCENTRIC CONIC

C3	9.703	VHL	3.115	DLA	18.87	RAL	159.04	RAD	6567.3	VEL	11.450	PTH	1.99	VHP	3.674	DPA	2.45	RAP	191.62	ECC	1.1597

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 17 14	2687.28	-27.54	73.64	15.09	96.86	17 2 2	2087.3	-26.30	65.20
90.00	9 33 12	4068.82	-4.18	164.65	10.59	61.97	10 41 1	3468.8	-7.90	157.95
100.00	17 50 6	2387.85	-28.71	51.44	14.91	98.69	18 29 54	1787.9	-27.21	42.95
100.00	10 43 2	3843.48	-3.15	147.52	10.02	60.26	11 47 6	3243.5	-7.08	140.94
110.00	19 23 20	2096.15	-31.70	28.60	14.23	103.52	19 58 16	1496.1	-29.51	20.08
110.00	11 26 17	3707.95	-.57	135.63	8.41	55.82	12 28 5	3108.0	-5.05	129.41

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3450	TRA	-1.1909	TC3	3.3467	BAU	.4585	SGT	3179.3	SGR	804.6	SG3	2040.6	ST	942.7	SR	195.3	SS	1261.2
RDE	.0892	RRA	-.1778	RC3	1.1361	FAU	.36418	RRT	.9304	RRF	-.9866	RTF	-.9471	CRT	.9639	CRS	.8212	CST	.9384
FDE	-.8238	FRA	6.2110	FC	-32.4917	BSP	11448	SGB	3279.5	R23	-.2680	R13	-.9528	LSA	1561.8	MSA	279.0	SSA	20.7
BDE	.3563	BRA	1.2041	BC3	3.5343	FSP	6894	SG1	3266.9	SG2	287.1	THA	13.35	EL1	961.4	EL2	51.0	ALF	11.33

LAUNCH DATE NOV 6 1964 FLIGHT TIME 266.00 ARRIVAL DATE JUL 30 1965

HELIOCENTRIC CONIC DISTANCE 612.862 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.961 GAL -2.53 AZL 89.04 HCA 191.76 SMA 188.59 ECC .21810 INC .9634 V1 30.050
RP 229.67 LAP -.20 LOP 235.38 VP 21.261 GAP .68 AZP 90.94 TAL 345.80 TAP 177.56 RCA 147.46 APO 229.72 V2 23.948
RC 231.027 GL 10.27 GP 5.30 ZAL 109.35 ZAP 133.56 ETS 173.52 ZAE 169.92 ETE 138.75 ZAC 94.87 ETC 255.85 CLP 133.79

PLANETOCENTRIC CONIC

C3 9.644 VHL 3.105 DLA 19.85 RAL 159.15 RAD 6567.3 VEL 11.447 PTH 1.99 VHP 3.600 DPA 2.27 RAP 191.12 ECC 1.1587

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 6 55	2726.23	-27.83	76.46	15.48	95.48	16 52 22	2126.2	-26.78	67.95
90.00	9 44 28	4027.44	-5.50	162.33	10.91	62.18	10 51 35	3427.4	-9.19	155.58
100.00	17 40 53	2423.25	-29.05	54.01	15.33	97.38	18 21 16	1823.3	-27.73	45.46
100.00	10 53 11	3805.66	-4.42	145.43	10.32	60.41	11 56 37	3205.7	-8.33	138.82
110.00	19 16 13	2124.97	-32.14	30.74	14.71	102.33	19 51 38	1525.0	-30.11	22.11
110.00	11 34 20	3676.70	-1.76	134.00	8.66	55.86	12 35 37	3076.7	-6.23	127.76

DIFFERENTIAL CORRECTIONS
TDE .3221 TRA-1.1419 TC3 3.1924 BAU .4350
RDE .0877 RRA -.1636 RC3 1.0907 FAU .37864
FDE -.6821 FRA 6.4399 FC-33.9904 BSP 10980
BDE .3338 BRA 1.1536 BC3 3.3736 FSP 7213

MID-COURSE EXECUTION ACCURACY
SGT 3049.9 SGR 766.8 SG3 2128.4
RRT .9227 RRF -.9824 RTF -.9437
SGB 3144.8 R23 -.2692 R13 -.9497
SG1 3131.6 SG2 287.9 THA 13.17

ORBIT DETERMINATION ACCURACY
ST 899.0 SR 189.4 SS 1257.5
CRT .9518 CRS .7592 CST .9167
LSA 1525.2 MSA 314.2 SSA 20.7
EL1 916.9 EL2 57.0 ALF 11.38

LAUNCH DATE NOV 6 1964 FLIGHT TIME 268.00 ARRIVAL DATE AUG 1 1965

HELIOCENTRIC CONIC DISTANCE 616.704 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.950 GAL -2.50 AZL 88.96 HCA 192.79 SMA 188.39 ECC .21716 INC 1.0359 V1 30.050
RP 229.28 LAP -.23 LOP 236.41 VP 21.288 GAP .36 AZP 91.01 TAL 345.92 TAP 178.71 RCA 147.48 APO 229.30 V2 23.988
RC 232.913 GL 11.09 GP 4.98 ZAL 109.05 ZAP 132.14 ETS 174.06 ZAE 168.82 ETE 145.33 ZAC 94.47 ETC 255.87 CLP 132.34

PLANETOCENTRIC CONIC

C3 9.588 VHL 3.096 DLA 20.69 RAL 159.24 RAD 6567.3 VEL 11.445 PTH 1.99 VHP 3.528 DPA 2.16 RAP 190.60 ECC 1.1578

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 57 29	2761.08	-28.03	78.99	15.79	94.22	16 43 30	2161.1	-27.15	70.43
90.00	9 54 35	3990.31	-6.68	160.23	11.20	62.42	11 1 5	3390.3	-10.32	153.45
100.00	17 32 31	2454.65	-29.30	56.31	15.66	96.19	18 13 25	1854.7	-28.14	47.70
100.00	11 2 14	3771.97	-5.55	143.57	10.59	60.58	12 5 6	3172.0	-9.43	136.93
110.00	19 9 50	2150.18	-32.49	32.62	15.09	101.27	19 45 40	1550.2	-30.59	23.91
110.00	11 41 25	3649.20	-2.81	132.56	8.89	55.92	12 42 14	3049.2	-7.27	126.31

DIFFERENTIAL CORRECTIONS
TDE .3031 TRA-1.0919 TC3 3.0268 BAU .4109
RDE .0877 RRA -.1515 RC3 1.0564 FAU .39362
FDE -.5554 FRA 6.6682 FC-35.5415 BSP 10451
BDE .3155 BRA 1.1024 BC3 3.2058 FSP 7525

MID-COURSE EXECUTION ACCURACY
SGT 2914.3 SGR 737.7 SG3 2218.8
RRT .9139 RRF -.9776 RTF -.9396
SGB 3006.2 R23 -.2713 R13 -.9461
SG1 2992.0 SG2 291.7 THA 13.15

ORBIT DETERMINATION ACCURACY
ST 858.8 SR 186.6 SS 1262.5
CRT .9385 CRS .6930 CST .8934
LSA 1498.8 MSA 345.4 SSA 21.0
EL1 876.6 EL2 63.1 ALF 11.59

LAUNCH DATE NOV 6 1964 FLIGHT TIME 270.00 ARRIVAL DATE AUG 3 1965

HELIOCENTRIC CONIC DISTANCE 620.557 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.939 GAL -2.47 AZL 88.90 HCA 193.83 SMA 188.19 ECC .21627 INC 1.0988 V1 30.050
RP 228.89 LAP -.26 LOP 237.44 VP 21.317 GAP .04 AZP 91.07 TAL 346.03 TAP 179.86 RCA 147.49 APO 228.89 V2 24.029
RC 234.778 GL 11.79 GP 4.71 ZAL 108.78 ZAP 130.67 ETS 174.53 ZAE 167.55 ETE 150.61 ZAC 94.11 ETC 255.89 CLP 130.84

PLANETOCENTRIC CONIC

C3 9.535 VHL 3.088 DLA 21.43 RAL 159.30 RAD 6567.3 VEL 11.442 PTH 1.98 VHP 3.460 DPA 2.11 RAP 190.07 ECC 1.1569

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 48 47	2792.61	-28.16	81.29	16.04	93.08	16 35 20	2192.6	-27.44	72.69
90.00	10 3 48	3956.62	-7.74	158.32	11.46	62.68	11 9 44	3356.6	-11.34	151.50
100.00	17 24 52	2482.81	-29.49	58.39	15.93	95.12	18 6 15	1882.8	-28.47	49.73
100.00	11 10 24	3741.65	-6.56	141.89	10.82	60.77	12 12 46	3141.7	-10.41	135.21
110.00	19 4 3	2172.47	-32.77	34.30	15.41	100.31	19 40 16	1572.5	-31.00	25.52
110.00	11 47 42	3624.75	-3.74	131.28	9.08	56.00	12 48 7	3024.8	-8.18	125.01

DIFFERENTIAL CORRECTIONS
TDE .2874 TRA-1.0402 TC3 2.8355 BAU .3845
RDE .0886 RRA -.1416 RC3 1.0283 FAU .40812
FDE -.4288 FRA 6.9076 FC-37.0533 BSP 9914
BDE .3008 BRA 1.0498 BC3 3.0162 FSP 7868

MID-COURSE EXECUTION ACCURACY
SGT 2765.9 SGR 714.1 SG3 2308.5
RRT .9037 RRF -.9722 RTF -.9343
SGB 2856.6 R23 -.2754 R13 -.9414
SG1 2841.1 SG2 297.7 THA 13.28

ORBIT DETERMINATION ACCURACY
ST 821.1 SR 185.8 SS 1274.3
CRT .9261 CRS .6232 CST .8658
LSA 1480.0 MSA 376.6 SSA 21.2
EL1 839.0 EL2 68.6 ALF 11.92

LAUNCH DATE NOV 6 1964 FLIGHT TIME 272.00 ARRIVAL DATE AUG 5 1965

HELIOCENTRIC CONIC DISTANCE 624.420 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.928 GAL -2.44 AZL 88.85 HCA 194.86 SMA 188.01 ECC .21544 INC 1.1525 V1 30.050
RP 228.51 LAP -.30 LOP 238.48 VP 21.347 GAP -.27 AZP 91.11 TAL 346.13 TAP 181.00 RCA 147.51 APO 228.52 V2 24.070
RC 236.623 GL 12.41 GP 4.48 ZAL 108.53 ZAP 129.16 ETS 174.95 ZAE 166.12 ETE 154.83 ZAC 93.77 ETC 255.91 CLP 129.30

PLANETOCENTRIC CONIC

C3 9.487 VHL 3.080 DLA 22.08 RAL 159.36 RAD 6567.3 VEL 11.440 PTH 1.98 VHP 3.396 DPA 2.10 RAP 189.52 ECC 1.1561

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 40 44	2821.39	-28.25	83.39	16.25	92.03	16 27 46	2221.4	-27.67	74.77
90.00	10 12 15	3925.82	-8.70	156.57	11.69	62.95	11 17 41	3325.8	-12.26	149.70
100.00	17 17 51	2508.27	-29.63	60.27	16.16	94.14	17 59 39	1908.3	-28.74	51.57
100.00	11 17 50	3714.17	-7.47	140.35	11.04	60.97	12 19 44	3114.2	-11.29	133.64
110.00	18 58 50	2192.35	-33.00	35.80	15.69	99.45	19 35 22	1592.4	-31.35	26.97
110.00	11 53 21	3602.86	-4.58	130.14	9.26	56.09	12 53 23	3002.9	-9.00	123.84

DIFFERENTIAL CORRECTIONS
TDE .2734 TRA -.9861 TC3 2.6302 BAU .3572
RDE .0903 RRA -.1328 RC3 1.0081 FAU .42336
FDE -.3151 FRA 7.1373 FC-38.6358 BSP 9326
BDE .2879 BRA .9950 BC3 2.8168 FSP 8193

MID-COURSE EXECUTION ACCURACY
SGT 2608.1 SGR 696.4 SG3 2400.7
RRT .8916 RRF -.9663 RTF -.9276
SGB 2699.5 R23 -.2819 R13 -.9357
SG1 2682.0 SG2 306.7 THA 13.57

ORBIT DETERMINATION ACCURACY
ST 783.4 SR 187.0 SS 1289.8
CRT .9136 CRS .5541 CST .8378
LSA 1466.4 MSA 401.8 SSA 21.7
EL1 801.9 EL2 74.3 ALF 12.41

LAUNCH DATE NOV 6 1964 FLIGHT TIME 274.00 ARRIVAL DATE AUG 7 1965

HELIOCENTRIC CONIC DISTANCE 628.294 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.918 GAL -2.42 AZL 88.80 HCA 195.90 SMA 187.84 ECC .21466 INC 1.1993 V1 30.050
RP 228.12 LAP -.33 LOP 239.52 VP 21.378 GAP -.58 AZP 91.15 TAL 346.22 TAP 182.13 RCA 147.52 APO 228.16 V2 24.111
RC 238.446 GL 12.95 GP 4.28 ZAL 108.31 ZAP 127.60 ETS 175.32 ZAE 164.59 ETE 158.22 ZAC 93.45 ETC 255.94 CLP 127.72

PLANETOCENTRIC CONIC

C3 9.441 VHL 3.073 DLA 22.65 RAL 159.40 RAD 6567.3 VEL 11.438 PTH 1.98 VHP 3.334 DPA 2.14 RAP 188.94 ECC 1.1554

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 33 16	2847.85	-28.30	85.32	16.42	91.06	16 20 44	2247.8	-27.85	76.68
90.00	10 20 6	3897.48	-9.57	154.94	11.92	63.22	11 25 3	3297.5	-13.09	148.03
100.00	17 11 24	2531.44	-29.73	61.98	16.35	93.24	17 53 35	1931.4	-28.97	53.26
100.00	11 24 39	3689.13	-8.30	138.95	11.24	61.18	12 26 8	3089.1	-12.08	132.21
110.00	18 54 5	2210.18	-33.20	37.16	15.93	98.67	19 30 55	1610.2	-31.64	28.28
110.00	11 58 27	3583.15	-5.32	129.10	9.42	56.18	12 58 11	2983.1	-9.73	122.78

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2634 TRA -.9292 TC3 2.4043 BAU .3283 SGT 2439.1 SGR 682.8 SG3 2493.3 ST 748.6 SR 189.8 SS 1308.2
RDE .0928 RRA -.1250 RC3 .9930 FAU .43877 RRT .8773 RRF -.9600 RTF -.9186 CRT .9043 CRS .4886 CST .8069
FDE -.2148 FRA 7.3621 FC-40.2343 BSP 8685 SGB 2532.9 R23 -.2920 R13 -.9283 LSA 1458.3 MSA 425.0 SSA 22.2
BDE .2792 BRA .9376 BC3 2.6013 FSP 8509 SG1 2512.8 SG2 318.1 THA 14.03 EL1 768.2 EL2 79.0 ALF 13.05

LAUNCH DATE NOV 6 1964 FLIGHT TIME 276.00 ARRIVAL DATE AUG 9 1965

HELIOCENTRIC CONIC DISTANCE 632.178 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.909 GAL -2.40 AZL 88.76 HCA 196.95 SMA 187.68 ECC .21393 INC 1.2413 V1 30.050
RP 227.73 LAP -.36 LOP 240.56 VP 21.411 GAP -.88 AZP 91.19 TAL 346.30 TAP 183.25 RCA 147.53 APO 227.83 V2 24.152
RC 240.248 GL 13.44 GP 4.10 ZAL 108.12 ZAP 125.99 ETS 175.65 ZAE 162.96 ETE 160.97 ZAC 93.15 ETC 255.96 CLP 126.10

PLANETOCENTRIC CONIC

C3 9.399 VHL 3.066 DLA 23.16 RAL 159.45 RAD 6567.3 VEL 11.436 PTH 1.98 VHP 3.276 DPA 2.22 RAP 188.34 ECC 1.1547

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 26 19	2872.28	-28.32	87.11	16.56	90.17	16 14 11	2272.3	-27.99	78.46
90.00	10 27 25	3871.31	-10.37	153.43	12.13	63.50	11 31 56	3271.3	-13.84	146.48
100.00	17 5 28	2552.61	-29.80	63.55	16.53	92.41	17 48 0	1952.6	-29.15	54.81
100.00	11 30 57	3666.22	-9.05	137.66	11.44	61.39	12 32 3	3066.2	-12.80	130.88
110.00	18 49 47	2226.24	-33.35	38.38	16.15	97.96	19 26 53	1626.2	-31.89	29.46
110.00	12 3 7	3565.35	-6.00	128.16	9.58	56.28	13 2 33	2965.3	-10.39	121.82

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2537 TRA -.8728 TC3 2.1531 BAU .2973 SGT 2261.6 SGR 672.0 SG3 2585.3 ST 713.8 SR 193.2 SS 1332.1
RDE .0954 RRA -.1187 RC3 .9807 FAU .45354 RRT .8596 RRF -.9533 RTF -.9065 CRT .8972 CRS .4225 CST .7712
FDE -.1033 FRA 7.6089 FC-41.7749 BSP 8043 SGB 2359.3 R23 -.3068 R13 -.9185 LSA 1456.4 MSA 446.7 SSA 22.7
+ BDE .2710 BRA .8808 BC3 2.3660 FSP 8862 SG1 2335.8 SG2 332.4 THA 14.63 EL1 734.8 EL2 82.9 ALF 13.83 +

LAUNCH DATE NOV 6 1964 FLIGHT TIME 278.00 ARRIVAL DATE AUG 11 1965

HELIOCENTRIC CONIC DISTANCE 636.072 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.901 GAL -2.38 AZL 88.72 HCA 197.99 SMA 187.53 ECC .21325 INC 1.2780 V1 30.050
RP 227.34 LAP -.39 LOP 241.61 VP 21.444 GAP -1.18 AZP 91.22 TAL 346.36 TAP 184.36 RCA 147.54 APO 227.52 V2 24.193
RC 242.030 GL 13.87 GP 3.94 ZAL 107.96 ZAP 124.34 ETS 175.95 ZAE 161.25 ETE 163.22 ZAC 92.86 ETC 255.99 CLP 124.44

PLANETOCENTRIC CONIC

C3 9.361 VHL 3.060 DLA 23.61 RAL 159.50 RAD 6567.3 VEL 11.435 PTH 1.98 VHP 3.220 DPA 2.33 RAP 187.72 ECC 1.1541

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 19 52	2894.93	-28.31	88.76	16.70	89.33	16 8 6	2294.9	-28.10	80.10
90.00	10 34 16	3847.07	-11.10	152.03	12.35	63.78	11 38 23	3247.1	-14.54	145.04
100.00	17 0 1	2572.02	-29.85	64.99	16.68	91.66	17 42 53	1972.0	-29.30	56.23
100.00	11 36 48	3645.22	-9.73	136.48	11.63	61.60	12 37 33	3045.2	-13.45	129.67
110.00	18 45 53	2240.76	-33.48	39.50	16.35	97.31	19 23 14	1640.8	-32.11	30.54
110.00	12 7 24	3549.24	-6.61	127.31	9.73	56.38	13 6 33	2949.2	-10.98	120.95

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2475 TRA -.8120 TC3 1.8899 BAU .2660 SGT 2075.2 SGR 664.7 SG3 2678.6 ST 681.1 SR 198.0 SS 1354.8
RDE .0986 RRA -.1128 RC3 .9732 FAU .46909 RRT .8386 RRF -.9464 RTF -.8904 CRT .8945 CRS .3643 CST .7332
FDE -.0144 FRA 7.8350 FC-43.3833 BSP 7316 SGB 2179.0 R23 -.3263 R13 -.9060 LSA 1456.7 MSA 464.8 SSA 23.2
BDE .2664 BRA .8198 BC3 2.1257 FSP 9174 SG1 2150.8 SG2 349.4 THA 15.45 EL1 704.1 EL2 85.6 ALF 14.80

LAUNCH DATE NOV 6 1964 FLIGHT TIME 280.00 ARRIVAL DATE AUG 13 1965

HELIOCENTRIC CONIC DISTANCE 639.976 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.892 GAL -2.37 AZL 88.69 HCA 199.04 SMA 187.39 ECC .21261 INC 1.3113 V1 30.050
RP 226.95 LAP -.43 LOP 242.66 VP 21.478 GAP -1.47 AZP 91.24 TAL 346.41 TAP 185.46 RCA 147.54 APO 227.23 V2 24.235
RC 243.792 GL 14.26 GP 3.80 ZAL 107.82 ZAP 122.65 ETS 176.22 ZAE 159.47 ETE 165.09 ZAC 92.58 ETC 256.02 CLP 122.73

PLANETOCENTRIC CONIC

C3 9.326 VHL 3.054 DLA 24.01 RAL 159.55 RAD 6567.3 VEL 11.433 PTH 1.98 VHP 3.168 DPA 2.48 RAP 187.06 ECC 1.1535

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 13 52	2915.95	-28.28	90.30	16.82	88.56	16 2 28	2315.9	-28.18	81.64
90.00	10 40 41	3824.61	-11.77	150.72	12.56	64.06	11 44 26	3224.6	-15.17	143.69
100.00	16 55 1	2589.82	-29.88	66.31	16.83	90.96	17 38 11	1989.8	-29.43	57.54
100.00	11 42 14	3625.97	-10.35	135.39	11.82	61.80	12 42 39	3026.0	-14.04	128.54
110.00	18 42 24	2253.89	-33.59	40.51	16.53	96.73	19 19 58	1653.9	-32.30	31.51
110.00	12 11 20	3534.66	-7.15	126.54	9.89	56.48	13 10 15	2934.7	-11.51	120.16

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2430 TRA -.7503 TC3 1.5984 BAU .2329 SGT 1880.4 SGR 659.2 SG3 2769.7 ST 649.9 SR 203.3 SS 1380.8
RDE .1020 RRA -.1077 RC3 .9671 FAU .48386 RRT .8108 RRF -.9392 RTF -.8672 CRT .8963 CRS .3087 CST .6883
FDE .0787 FRA 8.0742 FC-44.9154 BSP 6570 SGB 1992.6 R23 -.3543 R13 -.8884 LSA 1461.9 MSA 482.3 SSA 23.7
BDE .2635 BRA .7580 BC3 1.8682 FSP 9505 SG1 1957.8 SG2 370.6 THA 16.47 EL1 675.4 EL2 86.7 ALF 15.93

LAUNCH DATE NOV 6 1964 FLIGHT TIME 282.00 ARRIVAL DATE AUG 15 1965

HELIOCENTRIC CONIC DISTANCE 643.890 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.885 GAL -2.36 AZL 88.66 HCA 200.10 SMA 187.25 ECC .21202 INC 1.3414 V1 30.050
RP 226.56 LAP -.46 LOP 243.71 VP 21.514 GAP -1.76 AZP 91.26 TAL 346.45 TAP 186.55 RCA 147.55 APO 226.96 V2 24.277
RC 245.534 GL 14.62 GP 3.67 ZAL 107.70 ZAP 120.92 ETS 176.48 ZAE 157.63 ETE 166.67 ZAC 92.30 ETC 256.05 CLP 120.99

PLANETOCENTRIC CONIC

C3 9.296 VHL 3.049 DLA 24.37 RAL 159.62 RAD 6567.3 VEL 11.432 PTH 1.98 VHP 3.119 DPA 2.65 RAP 186.39 ECC 1.1530

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 8 20	2935.45	-28.24	91.73	16.94	87.85	15 57 16	2335.5	-28.24	83.06
90.00	10 46 44	3803.82	-12.39	149.51	12.77	64.33	11 50 8	3203.8	-15.74	142.44
100.00	16 50 29	2606.15	-29.89	67.53	16.97	90.32	17 33 55	2006.2	-29.53	58.74
100.00	11 47 17	3608.35	-10.92	134.39	12.01	62.00	12 47 26	3008.4	-14.58	127.51
110.00	18 39 16	2265.77	-33.68	41.42	16.72	96.19	19 17 2	1665.8	-32.46	32.40
110.00	12 14 59	3521.49	-7.65	125.84	10.04	56.58	13 13 40	2921.5	-11.99	119.44

DIFFERENTIAL CORRECTIONS
TDE .2405 TRA -.6858 TC3 1.2903 BAU .2001
RDE .1056 RRA -.1032 RC3 .9634 FAU .49862
FDE .1646 FRA 8.3105 FC-46.4393 BSP 5798
BDE .2627 BRA .6935 BC3 1.6103 FSP 9835

MID-COURSE EXECUTION ACCURACY
SGT 1680.8 SGR 655.6 SG3 2860.2
RRT .7742 RRF -.9319 RTF -.8338
SGB 1804.1 R23 -.3913 R13 -.8642
SG1 1760.1 SG2 396.3 THA 17.73

ORBIT DETERMINATION ACCURACY
ST 620.5 SR 209.2 SS 1407.3
CRT .9030 CRS .2583 CST .6368
LSA 1470.0 MSA 498.0 SSA 24.2
EL1 649.1 EL2 85.9 ALF 17.24

LAUNCH DATE NOV 6 1964 FLIGHT TIME 284.00 ARRIVAL DATE AUG 17 1965

HELIOCENTRIC CONIC DISTANCE 647.814 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.878 GAL -2.35 AZL 88.63 HCA 201.16 SMA 187.13 ECC .21148 INC 1.3687 V1 30.050
RP 226.17 LAP -.49 LOP 244.77 VP 21.550 GAP -2.04 AZP 91.28 TAL 346.48 TAP 187.64 RCA 147.56 APO 226.70 V2 24.318
RC 247.256 GL 14.94 GP 3.55 ZAL 107.62 ZAP 119.15 ETS 176.71 ZAE 155.73 ETE 168.00 ZAC 92.03 ETC 256.09 CLP 119.21

PLANETOCENTRIC CONIC

C3 9.268 VHL 3.044 DLA 24.69 RAL 159.69 RAD 6567.3 VEL 11.431 PTH 1.98 VHP 3.073 DPA 2.84 RAP 185.68 ECC 1.1525

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 3 16	2953.53	-28.19	93.05	17.06	87.19	15 52 29	2353.5	-28.28	84.38
90.00	10 52 26	3784.60	-12.95	148.38	12.99	64.60	11 55 30	3184.6	-16.27	141.27
100.00	16 46 22	2621.10	-29.89	68.64	17.11	89.74	17 30 3	2021.1	-29.61	59.85
100.00	11 52 0	3592.27	-11.43	133.47	12.21	62.19	12 51 53	2992.3	-15.06	126.56
110.00	18 36 31	2276.51	-33.76	42.25	16.90	95.71	19 14 27	1676.5	-32.60	33.21
110.00	12 18 21	3509.62	-8.09	125.21	10.21	56.68	13 16 51	2909.6	-12.42	118.79

DIFFERENTIAL CORRECTIONS
TDE .2386 TRA -.6189 TC3 .9585 BAU .1682
RDE .1093 RRA -.0992 RC3 .9610 FAU .51286
FDE .2503 FRA 8.5451 FC-47.9048 BSP 4986
BDE .2625 BRA .6268 BC3 1.3573 FSP 10154

MID-COURSE EXECUTION ACCURACY
SGT 1478.5 SGR 653.4 SG3 2948.1
RRT .7217 RRF -.9243 RTF -.7830
SGB 1616.4 R23 -.4417 R13 -.8290
SG1 1558.4 SG2 429.1 THA 19.20

ORBIT DETERMINATION ACCURACY
ST 591.5 SR 215.5 SS 1434.5
CRT .9132 CRS .2111 CST .5777
LSA 1480.7 MSA 510.9 SSA 24.7
EL1 624.0 EL2 83.2 ALF 18.75

LAUNCH DATE NOV 6 1964 FLIGHT TIME 286.00 ARRIVAL DATE AUG 19 1965

HELIOCENTRIC CONIC DISTANCE 651.747 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.871 GAL -2.34 AZL 88.61 HCA 202.22 SMA 187.01 ECC .21098 INC 1.3934 V1 30.050
RP 225.78 LAP -.53 LOP 245.83 VP 21.587 GAP -2.31 AZP 91.29 TAL 346.49 TAP 188.71 RCA 147.56 APO 226.47 V2 24.360
RC 248.959 GL 15.23 GP 3.44 ZAL 107.56 ZAP 117.34 ETS 176.93 ZAE 153.78 ETE 169.14 ZAC 91.76 ETC 256.13 CLP 117.39

PLANETOCENTRIC CONIC

C3 9.245 VHL 3.041 DLA 24.97 RAL 159.78 RAD 6567.3 VEL 11.430 PTH 1.98 VHP 3.031 DPA 3.06 RAP 184.95 ECC 1.1521

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 58 38	2970.23	-28.13	94.26	17.19	86.58	15 48 8	2370.2	-28.30	85.60
90.00	10 57 47	3766.93	-13.47	147.33	13.21	64.85	12 0 33	3166.9	-16.75	140.19
100.00	16 42 41	2634.73	-29.88	69.65	17.26	89.20	17 26 36	2034.7	-29.67	60.85
100.00	11 56 24	3577.66	-11.89	132.63	12.41	62.37	12 56 2	2977.7	-15.50	125.69
110.00	18 34 6	2286.17	-33.82	43.00	17.08	95.27	19 12 12	1686.2	-32.72	33.94
110.00	12 21 29	3498.98	-8.49	124.64	10.38	56.76	13 19 48	2899.0	-12.81	118.20

DIFFERENTIAL CORRECTIONS
TDE .2396 TRA -.5501 TC3 .6085 BAU .1405
RDE .1134 RRA -.0955 RC3 .9603 FAU .52693
FDE .3181 FRA 8.7751 FC-49.3431 BSP 4167
BDE .2650 BRA .5583 BC3 1.1368 FSP 10460

MID-COURSE EXECUTION ACCURACY
SGT 1283.9 SGR 652.7 SG3 3034.4
RRT .6437 RRF -.9167 RTF -.7028
SGB 1440.3 R23 -.5103 R13 -.7757
SG1 1361.1 SG2 471.2 THA 20.72

ORBIT DETERMINATION ACCURACY
ST 567.1 SR 222.5 SS 1460.7
CRT .9278 CRS .1720 CST .5111
LSA 1493.5 MSA 523.0 SSA 25.2
EL1 604.2 EL2 77.9 ALF 20.36

LAUNCH DATE NOV 6 1964 FLIGHT TIME 288.00 ARRIVAL DATE AUG 21 1965

HELIOCENTRIC CONIC DISTANCE 655.690 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.865 GAL -2.34 AZL 88.58 HCA 203.28 SMA 186.91 ECC .21053 INC 1.4163 V1 30.050
RP 225.38 LAP -.56 LOP 246.90 VP 21.625 GAP -2.58 AZP 91.30 TAL 346.49 TAP 189.78 RCA 147.56 APO 226.26 V2 24.402
RC 250.643 GL 15.50 GP 3.34 ZAL 107.53 ZAP 115.49 ETS 177.14 ZAE 151.77 ETE 170.13 ZAC 91.49 ETC 256.17 CLP 115.54

PLANETOCENTRIC CONIC

C3 9.225 VHL 3.037 DLA 25.22 RAL 159.89 RAD 6567.3 VEL 11.429 PTH 1.98 VHP 2.992 DPA 3.29 RAP 184.19 ECC 1.1518

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 54 27	2985.56	-28.06	95.38	17.32	86.03	15 44 13	2385.6	-28.32	86.72
90.00	11 2 47	3750.76	-13.93	146.38	13.44	65.10	12 5 18	3150.8	-17.18	139.20
100.00	16 39 26	2647.10	-29.87	70.57	17.42	88.72	17 23 33	2047.1	-29.73	61.77
100.00	12 0 29	3564.46	-12.31	131.87	12.62	62.54	12 59 54	2964.5	-15.89	124.91
110.00	18 32 2	2294.83	-33.88	43.67	17.27	94.87	19 10 17	1694.8	-32.83	34.59
110.00	12 24 23	3489.49	-8.85	124.13	10.56	56.85	13 22 33	2889.5	-13.15	117.68

DIFFERENTIAL CORRECTIONS
TDE .2409 TRA -.4784 TC3 .2382 BAU .1220
RDE .1174 RRA -.0922 RC3 .9597 FAU .54009
FDE .3941 FRA 9.0073 FC-50.6833 BSP 3367
BDE .2680 BRA .4872 BC3 .9888 FSP 10769

MID-COURSE EXECUTION ACCURACY
SGT 1105.8 SGR 652.6 SG3 3116.7
RRT .5221 RRF -.9089 RTF -.5730
SGB 1284.0 R23 -.6031 R13 -.6896
SG1 1171.6 SG2 525.3 THA 21.70

ORBIT DETERMINATION ACCURACY
ST 544.2 SR 229.5 SS 1488.3
CRT .9446 CRS .1335 CST .4317
LSA 1509.6 MSA 533.3 SSA 25.7
EL1 586.4 EL2 69.9 ALF 22.05

LAUNCH DATE NOV 6 1964 FLIGHT TIME 290.00 ARRIVAL DATE AUG 23 1965

HELIOCENTRIC CONIC DISTANCE 659.642 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.859 GAL -2.34 AZL 88.56 HCA 204.35 SMA 186.81 ECC .21011 INC 1.4372 V1 30.050
RP 224.99 LAP -.59 LOP 247.97 VP 21.663 GAP -2.85 AZP 91.31 TAL 346.48 TAP 190.83 RCA 147.56 APO 226.06 V2 24.444
RC 252.307 GL 15.75 GP 3.24 ZAL 107.52 ZAP 113.62 ETS 177.33 ZAE 149.73 ETE 170.99 ZAC 91.22 ETC 256.22 CLP 113.66

PLANETOCENTRIC CONIC

C3 9.210 VHL 3.035 DLA 25.45 RAL 160.01 RAD 6567.3 VEL 11.428 PTH 1.98 VHP 2.956 DPA 3.55 RAP 183.41 ECC 1.1516

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 50 45	2999.55	-27.99	96.40	17.47	85.52	15 40 44	2399.5	-28.32	87.75
90.00	11 7 27	3736.11	-14.35	145.50	13.68	65.32	12 9 44	3136.1	-17.56	138.30
100.00	16 36 37	2658.24	-29.85	71.40	17.58	88.29	17 20 55	2058.2	-29.77	62.60
100.00	12 4 16	3552.66	-12.68	131.19	12.84	62.70	13 3 29	2952.7	-16.24	124.20
110.00	18 30 18	2302.55	-33.92	44.27	17.47	94.52	19 8 40	1702.5	-32.92	35.17
110.00	12 27 5	3481.11	-9.16	123.68	10.75	56.92	13 25 6	2881.1	-13.45	117.22

DIFFERENTIAL CORRECTIONS
TDE .2439 TRA -.4041 TC3 -.1496 BAU .1196
RDE .1216 RRA -.0890 RC3 .9601 FAU .55289
FDE .4549 FRA 9.2282 FC-51.9742 BSP 2636
BDE .2726 BRA .4138 BC3 .9717 FSP 11055

MID-COURSE EXECUTION ACCURACY
SGT 966.5 SGR 653.4 SG3 3195.8
RRT .3327 RRF -.9010 RTF -.3648
SGB 1166.7 R23 -.7328 R13 -.5287
SG1 1004.9 SG2 592.6 THA 19.82

ORBIT DETERMINATION ACCURACY
ST 525.7 SR 237.0 SS 1513.8
CRT .9622 CRS .1015 CST .3430
LSA 1526.2 MSA 542.5 SSA 26.2
EL1 573.6 EL2 59.2 ALF 23.72

LAUNCH DATE NOV 6 1964 FLIGHT TIME 292.00 ARRIVAL DATE AUG 25 1965

HELIOCENTRIC CONIC DISTANCE 663.604 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.854 GAL -2.34 AZL 88.54 HCA 205.43 SMA 186.72 ECC .20974 INC 1.4564 V1 30.050
RP 224.60 LAP -.63 LOP 249.04 VP 21.702 GAP -3.11 AZP 91.32 TAL 346.45 TAP 191.88 RCA 147.56 APO 225.88 V2 24.486
RC 253.951 GL 15.97 GP 3.16 ZAL 107.54 ZAP 111.71 ETS 177.51 ZAE 147.65 ETE 171.75 ZAC 90.95 ETC 256.27 CLP 111.74

PLANETOCENTRIC CONIC

C3 9.198 VHL 3.033 DLA 25.64 RAL 160.15 RAD 6567.3 VEL 11.427 PTH 1.98 VHP 2.923 DPA 3.82 RAP 182.61 ECC 1.1514

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 47 31	3012.17	-27.92	97.31	17.63	85.07	15 37 43	2412.2	-28.31	88.67
90.00	11 11 47	3722.99	-14.72	144.72	13.92	65.54	12 13 50	3123.0	-17.90	137.49
100.00	16 34 13	2668.17	-29.83	72.14	17.76	87.90	17 18 41	2068.2	-29.80	63.33
100.00	12 7 46	3542.22	-13.00	130.58	13.07	62.84	13 6 48	2942.2	-16.54	123.58
110.00	18 28 54	2309.36	-33.95	44.80	17.67	94.21	19 7 23	1709.4	-33.00	35.69
110.00	12 29 35	3473.79	-9.43	123.29	10.96	56.99	13 27 28	2873.8	-13.71	116.81

DIFFERENTIAL CORRECTIONS
TDE .2481 TRA -.3272 TC3 -.5554 BAU .1365
RDE .1261 RRA -.0860 RC3 .9610 FAU .56511
FDE .5038 FRA 9.4369 FC-53.1918 BSP 2127
+ BDE .2783 BRA .3383 BC3 1.1099 FSP 11309

MID-COURSE EXECUTION ACCURACY
SGT [illegible].3 SGR 654.9 SG3 3270.6
RRT .0862 RRF -.8931 RTF -.0661
SGB 1110.1 R23 -.8833 R13 -.1322
SG1 898.6 SG2 651.9 THA 5.86

ORBIT DETERMINATION ACCURACY
ST 512.0 SR 244.9 SS 1537.1
CRT .9778 CRS .0744 CST .2453
LSA 1543.0 MSA 550.6 SSA 26.7
EL1 565.7 EL2 46.4 ALF 25.24

LAUNCH DATE NOV 6 1964 FLIGHT TIME 294.00 ARRIVAL DATE AUG 27 1965

HELIOCENTRIC CONIC DISTANCE 667.574 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.849 GAL -2.34 AZL 88.53 HCA 206.50 SMA 186.64 ECC .20940 INC 1.4745 V1 30.050
RP 224.21 LAP -.66 LOP 250.11 VP 21.742 GAP -3.37 AZP 91.32 TAL 346.41 TAP 192.92 RCA 147.55 APO 225.72 V2 24.527
RC 255.576 GL 16.18 GP 3.07 ZAL 107.58 ZAP 109.77 ETS 177.69 ZAE 145.53 ETE 172.42 ZAC 90.68 ETC 256.33 CLP 109.80

PLANETOCENTRIC CONIC

C3 9.189 VHL 3.031 DLA 25.80 RAL 160.30 RAD 6567.3 VEL 11.427 PTH 1.98 VHP 2.894 DPA 4.10 RAP 181.79 ECC 1.1512

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 44 47	3023.40	-27.85	98.13	17.80	84.66	15 35 10	2423.4	-28.30	89.49
90.00	11 15 46	3711.41	-15.05	144.02	14.18	65.73	12 17 37	3111.4	-18.20	136.77
100.00	16 32 15	2676.90	-29.80	72.79	17.96	87.56	17 16 52	2076.9	-29.82	63.98
100.00	12 10 59	3533.14	-13.28	130.06	13.30	62.97	13 9 52	2933.1	-16.80	123.03
110.00	18 27 50	2315.30	-33.98	45.26	17.89	93.94	19 6 25	1715.3	-33.06	36.14
110.00	12 31 54	3467.50	-9.66	122.95	11.17	57.05	13 29 41	2867.5	-13.93	116.46

DIFFERENTIAL CORRECTIONS
TDE .2532 TRA -.2476 TC3 -.9792 BAU .1686
RDE .1305 RRA -.0833 RC3 .9611 FAU .57598
FDE .5534 FRA 9.6474 FC-54.2631 BSP 2090
BDE .2849 BRA .2612 BC3 1.3720 FSP 11567

MID-COURSE EXECUTION ACCURACY
SGT 922.9 SGR 656.5 SG3 3339.1
RRT -.2261 RRF -.8850 RTF .2665
SGB 1132.5 R23 .7794 R13 -.4246
SG1 944.6 SG2 624.7 THA 163.46

ORBIT DETERMINATION ACCURACY
ST 503.7 SR 252.8 SS 1561.3
CRT .9890 CRS .0493 CST .1364
LSA 1563.1 MSA 558.0 SSA 27.1
EL1 562.6 EL2 33.5 ALF 26.50

LAUNCH DATE NOV 6 1964 FLIGHT TIME 296.00 ARRIVAL DATE AUG 29 1965

HELIOCENTRIC CONIC DISTANCE 671.551 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.845 GAL -2.35 AZL 88.51 HCA 207.58 SMA 186.56 ECC .20910 INC 1.4911 V1 30.050
RP 223.82 LAP -.69 LOP 251.19 VP 21.783 GAP -3.62 AZP 91.32 TAL 346.36 TAP 193.94 RCA 147.55 APO 225.57 V2 24.569
RC 257.180 GL 16.37 GP 2.99 ZAL 107.66 ZAP 107.81 ETS 177.85 ZAE 143.38 ETE 173.02 ZAC 90.42 ETC 256.39 CLP 107.83

PLANETOCENTRIC CONIC

C3 9.185 VHL 3.031 DLA 25.94 RAL 160.48 RAD 6567.3 VEL 11.427 PTH 1.98 VHP 2.868 DPA 4.40 RAP 180.95 ECC 1.1512

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 42 34	3033.15	-27.79	98.84	18.00	84.32	15 33 8	2433.2	-28.28	90.21
90.00	11 19 23	3701.48	-15.32	143.43	14.44	65.89	12 21 4	3101.5	-18.45	136.15
100.00	16 30 45	2684.42	-29.78	73.34	18.17	87.27	17 15 29	2084.4	-29.84	64.54
100.00	12 13 53	3525.44	-13.52	129.61	13.56	63.08	13 12 39	2925.4	-17.02	122.57
110.00	18 27 6	2320.39	-34.01	45.66	18.12	93.71	19 5 46	1720.4	-33.12	36.53
110.00	12 34 2	3462.24	-9.86	122.67	11.40	57.10	13 31 44	2862.2	-14.12	116.17

DIFFERENTIAL CORRECTIONS
TDE .2556 TRA -.1684 TC3-1.4340 BAU .2118
RDE .1344 RRA -.0813 RC3 .9585 FAU .58378
FDE .6438 FRA 9.8955 FC-55.0237 BSP 2554
BDE .2888 BRA .1870 BC3 1.7248 FSP 11899

MID-COURSE EXECUTION ACCURACY
SGT 1055.6 SGR 656.7 SG3 3397.9
RRT -.4640 RRF -.8759 RTF .5350
SGB 1243.2 R23 .5922 R13 -.6614
SG1 1114.4 SG2 551.1 THA 158.36

ORBIT DETERMINATION ACCURACY
ST 495.4 SR 259.8 SS 1595.3
CRT .9927 CRS .0168 CST .0153
LSA 1595.3 MSA 558.7 SSA 27.8
EL1 558.7 EL2 27.8 ALF 27.58

LAUNCH DATE NOV 6 1964 FLIGHT TIME 298.00 ARRIVAL DATE AUG 31 1965

HELIOCENTRIC CONIC DISTANCE 675.542 EARTH TO MARS
RL 148.27 LAL -.00 LOL 43.62 VL 32.841 GAL -2.36 AZL 88.49 HCA 208.67 SMA 186.49 ECC .20884 INC 1.5068 V1 30.050
RP 223.44 LAP -.72 LOP 252.28 VP 21.824 GAP -3.86 AZP 91.32 TAL 346.29 TAP 194.96 RCA 147.54 APO 225.44 V2 24.611
RC 258.763 GL 16.54 GP 2.91 ZAL 107.75 ZAP 105.82 ETS 178.01 ZAE 141.19 ETE 173.56 ZAC 90.15 ETC 256.46 CLP 105.84

PLANETOCENTRIC CONIC
C3 9.184 VHL 3.031 DLA 26.06 RAL 160.67 RAD 6567.3 VEL 11.427 PTH 1.98 VHP 2.846 DPA 4.71 RAP 180.09 ECC 1.1512

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 40 50	3041.58	-27.73	99.45	18.21	84.02	15 31 32	2441.6	-28.27	90.82
90.00	11 22 38	3693.03	-15.56	142.92	14.72	66.04	12 24 11	3093.0	-18.67	135.62
100.00	16 29 38	2690.86	-29.76	73.82	18.39	87.02	17 14 29	2090.9	-29.85	65.02
100.00	12 16 32	3518.98	-13.72	129.23	13.81	63.18	13 15 11	2919.0	-17.21	122.18
110.00	18 26 39	2324.73	-34.02	45.99	18.37	93.51	19 5 24	1724.7	-33.16	36.86
110.00	12 36 0	3457.87	-10.02	122.44	11.64	57.15	13 33 38	2857.9	-14.28	115.92

DIFFERENTIAL CORRECTIONS
TDE .2668 TRA -.0798 TC3-1.8642 BAU .2576
RDE .1400 RRA -.0777 RC3 .9619 FAU .59580
FDE .6013 FRA10.0106 FC-56.1605 BSP 3454
BDE .3013 BRA .1114 BC3 2.0977 FSP 11955

MID-COURSE EXECUTION ACCURACY
SGT 1248.7 SGR 660.9 SG3 3460.1
RRT -.6032 RRF -.8687 RTF .7099
SGB 1412.8 R23 .4463 R13 -.7808
SG1 1322.2 SG2 497.8 THA 159.22

ORBIT DETERMINATION ACCURACY
ST 508.1 SR 269.8 SS 1598.9
CRT .9879 CRS .0154 CST -.0877
LSA 1599.6 MSA 572.6 SSA 27.8
EL1 574.1 EL2 37.1 ALF 27.81

LAUNCH DATE NOV 6 1964 FLIGHT TIME 300.00 ARRIVAL DATE SEP 2 1965

HELIOCENTRIC CONIC DISTANCE 679.539 EARTH TO MARS
RL 148.27 LAL -.00 LOL 43.62 VL 32.837 GAL -2.37 AZL 88.48 HCA 209.76 SMA 186.43 ECC .20861 INC 1.5213 V1 30.050
RP 223.05 LAP -.75 LOP 253.37 VP 21.866 GAP -4.11 AZP 91.32 TAL 346.21 TAP 195.97 RCA 147.53 APO 225.32 V2 24.653
RC 260.326 GL 16.70 GP 2.84 ZAL 107.88 ZAP 103.82 ETS 178.16 ZAE 138.99 ETE 174.05 ZAC 89.88 ETC 256.53 CLP 103.84

PLANETOCENTRIC CONIC
C3 9.188 VHL 3.031 DLA 26.15 RAL 160.88 RAD 6567.3 VEL 11.427 PTH 1.98 VHP 2.827 DPA 5.02 RAP 179.23 ECC 1.1512

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 39 41	3048.45	-27.68	99.94	18.44	83.77	15 30 29	2448.5	-28.25	91.32
90.00	11 25 30	3686.30	-15.74	142.51	15.00	66.16	12 26 57	3086.3	-18.83	135.20
100.00	16 28 59	2696.08	-29.74	74.21	18.64	86.81	17 13 55	2096.1	-29.86	65.41
100.00	12 18 53	3513.90	-13.88	128.93	14.09	63.26	13 17 27	2913.9	-17.35	121.87
110.00	18 26 32	2328.25	-34.04	46.27	18.63	93.35	19 5 21	1728.3	-33.20	37.13
110.00	12 37 49	3454.49	-10.14	122.25	11.90	57.18	13 35 24	2854.5	-14.40	115.74

DIFFERENTIAL CORRECTIONS
TDE .2736 TRA .0075 TC3-2.3273 BAU .3093
RDE .1449 RRA -.0750 RC3 .9615 FAU .60406
FDE .6117 FRA10.1722 FC-56.9175 BSP 4471
+ BDE .3096 BRA .0754 BC3 2.5181 FSP 12108

MID-COURSE EXECUTION ACCURACY
SGT 1502.8 SGR 663.1 SG3 3510.4
RRT -.6856 RRF -.8603 RTF .8127
SGB 1642.6 R23 .3356 R13 -.8492
SG1 1576.9 SG2 460.1 THA 161.54

ORBIT DETERMINATION ACCURACY
ST 519.0 SR 278.6 SS 1614.8
CRT .9734 CRS .0031 CST -.1960
LSA 1618.3 MSA 578.5 SSA 28.2
EL1 586.3 EL2 56.5 ALF 27.87

LAUNCH DATE NOV 6 1964 FLIGHT TIME 302.00 ARRIVAL DATE SEP 4 1965

HELIOCENTRIC CONIC DISTANCE 683.544 EARTH TO MARS
RL 148.27 LAL -.00 LOL 43.62 VL 32.834 GAL -2.38 AZL 88.47 HCA 210.85 SMA 186.37 ECC .20842 INC 1.5349 V1 30.050
RP 222.66 LAP -.79 LOP 254.46 VP 21.908 GAP -4.34 AZP 91.32 TAL 346.12 TAP 196.97 RCA 147.53 APO 225.21 V2 24.695
RC 261.869 GL 16.85 GP 2.77 ZAL 108.03 ZAP 101.81 ETS 178.30 ZAE 136.77 ETE 174.49 ZAC 89.61 ETC 256.60 CLP 101.82

PLANETOCENTRIC CONIC
C3 9.195 VHL 3.032 DLA 26.22 RAL 161.12 RAD 6567.3 VEL 11.427 PTH 1.98 VHP 2.812 DPA 5.34 RAP 178.35 ECC 1.1513

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 39 4	3053.81	-27.64	100.33	18.70	83.58	15 29 58	2453.8	-28.24	91.72
90.00	11 27 59	3681.25	-15.88	142.20	15.29	66.25	12 29 20	3081.2	-18.96	134.88
100.00	16 28 46	2700.15	-29.72	74.51	18.90	86.65	17 13 46	2100.1	-29.87	65.71
100.00	12 20 58	3510.14	-13.99	128.71	14.37	63.31	13 19 28	2910.1	-17.46	121.64
110.00	18 26 45	2331.01	-34.05	46.48	18.91	93.22	19 5 36	1731.0	-33.23	37.34
110.00	12 39 29	3452.04	-10.23	122.12	12.18	57.21	13 37 1	2852.0	-14.48	115.60

DIFFERENTIAL CORRECTIONS
TDE .2806 TRA .0976 TC3-2.8042 BAU .3644
RDE .1499 RRA -.0723 RC3 .9596 FAU .61051
FDE .6151 FRA10.3246 FC-57.4795 BSP 5585
BDE .3182 BRA .1215 BC3 2.9638 FSP 12247

MID-COURSE EXECUTION ACCURACY
SGT 1793.2 SGR 664.9 SG3 3551.2
RRT -.7304 RRF -.8515 RTF .8734
SGB 1912.6 R23 .2530 R13 -.8925
SG1 1861.9 SG2 437.4 THA 163,94

ORBIT DETERMINATION ACCURACY
ST 536.3 SR 287.4 SS 1629.6
CRT .9503 CRS -.0066 CST -.2980
LSA 1638.3 MSA 583.9 SSA 28.6
EL1 603.2 EL2 79.6 ALF 27.51

LAUNCH DATE NOV 6 1964 FLIGHT TIME 304.00 ARRIVAL DATE SEP 6 1965

HELIOCENTRIC CONIC DISTANCE 687.558 EARTH TO MARS
RL 148.27 LAL -.00 LOL 43.62 VL 32.831 GAL -2.40 AZL 88.45 HCA 211.94 SMA 186.32 ECC .20827 INC 1.5478 V1 30.050
RP 222.28 LAP -.82 LOP 255.55 VP 21.951 GAP -4.58 AZP 91.31 TAL 346.01 TAP 197.95 RCA 147.51 APO 225.12 V2 24.737
RC 263.392 GL 16.98 GP 2.70 ZAL 108.21 ZAP 99.78 ETS 178.44 ZAE 134.54 ETE 174.89 ZAC 89.35 ETC 256.68 CLP 99.79

PLANETOCENTRIC CONIC
C3 9.207 VHL 3.034 DLA 26.26 RAL 161.37 RAD 6567.3 VEL 11.428 PTH 1.98 VHP 2.800 DPA 5.67 RAP 177.47 ECC 1.1515

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 39 1	3057.65	-27.61	100.61	18.98	83.45	15 29 58	2457.6	-28.23	92.00
90.00	11 30 4	3677.89	-15.97	142.00	15.60	66.30	12 31 22	3077.9	-19.04	134.67
100.00	16 29 0	2703.07	-29.71	74.73	19.19	86.54	17 14 3	2103.1	-29.87	65.92
100.00	12 22 46	3507.70	-14.07	128.57	14.67	63.35	13 21 14	2907.7	-17.53	121.49
110.00	18 27 16	2333.03	-34.06	46.64	19.20	93.13	19 6 9	1733.0	-33.25	37.49
110.00	12 41 0	3450.50	-10.29	122.04	12.47	57.22	13 38 30	2850.5	-14.54	115.51

DIFFERENTIAL CORRECTIONS
TDE .2874 TRA .1901 TC3-3.2869 BAU .4214
RDE .1549 RRA -.0696 RC3 .9573 FAU .61594
FDE .6121 FRA10.4620 FC-57.9192 BSP 6764
BDE .3265 BRA .2025 BC3 3.4235 FSP 12347

MID-COURSE EXECUTION ACCURACY
SGT 2105.6 SGR 666.8 SG3 3585.4
RRT -.7541 RRF -.8425 RTF .9105
SGB 2208.6 R23 .1926 R13 -.9210
SG1 2167.3 SG2 425.4 THA 166.02

ORBIT DETERMINATION ACCURACY
ST 559.0 SR 296.3 SS 1642.8
CRT .9201 CRS -.0144 CST -.3909
LSA 1658.9 MSA 588.5 SSA 28.9
EL1 624.1 EL2 104.0 ALF 26.81

LAUNCH DATE NOV 6 1964 FLIGHT TIME 306.00 ARRIVAL DATE SEP 8 1965

HELIOCENTRIC CONIC DISTANCE 691.580 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.828 GAL -2.42 AZL 88.44 HCA 213.04 SMA 186.27 ECC .20815 INC 1.5599 V1 30.050
RP 221.89 LAP -.85 LOP 256.65 VP 21.994 GAP -4.81 AZP 91.31 TAL 345.89 TAP 198.93 RCA 147.50 APO 225.05 V2 24.779
RC 264.895 GL 17.10 GP 2.63 ZAL 108.41 ZAP 97.75 ETS 178.57 ZAE 132.29 ETE 175.25 ZAC 89.08 ETC 256.76 CLP 97.76

PLANETOCENTRIC CONIC

C3 9.222 VHL 3.037 DLA 26.29 RAL 161.65 RAD 6567.3 VEL 11.429 PTH 1.98 VHP 2.791 DPA 5.99 RAP 176.59 ECC 1.1518

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 39 31	3059.95	-27.59	100.77	19.28	83.36	15 30 31	2460.0	-28.22	92.16
90.00	11 31 45	3676.24	-16.02	141.90	15.91	66.33	12 33 1	3076.2	-19.09	134.57
100.00	16 29 40	2704.87	-29.70	74.86	19.50	86.47	17 14 45	2104.9	-29.88	66.06
100.00	12 24 18	3506.55	-14.10	128.50	14.98	63.37	13 22 44	2906.6	-17.56	121.42
110.00	18 28 5	2334.33	-34.06	46.74	19.52	93.07	19 6 59	1734.3	-33.26	37.59
110.00	12 42 22	3449.85	-10.31	122.00	12.77	57.23	13 39 52	2849.9	-14.56	115.48

DIFFERENTIAL CORRECTIONS
TDE .2943 TRA .2854 TC3-3.7771 BAU .4803
RDE .1601 RRA -.0669 RC3 .9536 FAU .61964
FDE .5959 FRA10.5821 FC-58.1695 BSP 7982
BDE .3350 BRA .2931 BC3 3.8956 FSP 12423

MID-COURSE EXECUTION ACCURACY
SGT 2435.5 SGR 668.2 SG3 3609.6
RRT -.7654 RRF -.8332 RTF .9341
SGB 2525.5 R23 .1494 R13 -.9402
SG1 2490.2 SG2 420.6 THA 167.79

ORBIT DETERMINATION ACCURACY
ST 587.7 SR 305.4 SS 1653.5
CRT .8850 CRS -.0186 CST -.4716
LSA 1679.2 MSA 593.6 SSA 29.2
EL1 649.7 EL2 128.7 ALF 25.78

LAUNCH DATE NOV 6 1964 FLIGHT TIME 308.00 ARRIVAL DATE SEP 10 1965

HELIOCENTRIC CONIC DISTANCE 695.609 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.826 GAL -2.44 AZL 88.43 HCA 214.14 SMA 186.24 ECC .20806 INC 1.5716 V1 30.050
RP 221.51 LAP -.88 LOP 257.75 VP 22.038 GAP -5.03 AZP 91.30 TAL 345.75 TAP 199.90 RCA 147.49 APO 224.98 V2 24.820
RC 266.379 GL 17.21 GP 2.57 ZAL 108.64 ZAP 95.72 ETS 178.70 ZAE 130.04 ETE 175.59 ZAC 88.82 ETC 256.84 CLP 95.73

PLANETOCENTRIC CONIC

C3 9.242 VHL 3.040 DLA 26.29 RAL 161.94 RAD 6567.3 VEL 11.429 PTH 1.98 VHP 2.786 DPA 6.32 RAP 175.72 ECC 1.1521

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 40 37	3060.69	-27.59	100.83	19.61	83.34	15 31 37	2460.7	-28.22	92.22
90.00	11 33 2	3676.33	-16.02	141.90	16.24	66.33	12 34 19	3076.3	-19.08	134.57
100.00	16 30 47	2705.53	-29.70	74.91	19.83	86.45	17 15 52	2105.5	-29.88	66.11
100.00	12 25 33	3506.72	-14.10	128.51	15.31	63.36	13 24 0	2906.7	-17.56	121.43
110.00	18 29 14	2334.91	-34.06	46.79	19.85	93.04	19 8 9	1734.9	-33.27	37.64
110.00	12 43 36	3450.11	-10.30	122.02	13.10	57.23	13 41 6	2850.1	-14.55	115.49

DIFFERENTIAL CORRECTIONS
TDE .3007 TRA .3836 TC3-4.2752 BAU .5410
RDE .1645 RRA -.0650 RC3 .9453 FAU .61875
FDE .6389 FRA10.7550 FC-57.9623 BSP 9238
BDE .3428 BRA .3890 BC3 4.3784 FSP 12608

MID-COURSE EXECUTION ACCURACY
SGT 2779.9 SGR 667.1 SG3 3619.1
RRT -.7702 RRF -.8219 RTF .9491
SGB 2858.8 R23 .1160 R13 -.9527
SG1 2828.1 SG2 418.3 THA 169.29

ORBIT DETERMINATION ACCURACY
ST 621.1 SR 313.2 SS 1677.6
CRT .8454 CRS -.0354 CST -.5557
LSA 1716.5 MSA 592.4 SSA 29.6
EL1 678.5 EL2 153.1 ALF 24.41

LAUNCH DATE NOV 6 1964 FLIGHT TIME 310.00 ARRIVAL DATE SEP 12 1965

HELIOCENTRIC CONIC DISTANCE 699.648 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.824 GAL -2.46 AZL 88.42 HCA 215.25 SMA 186.20 ECC .20801 INC 1.5823 V1 30.050
RP 221.13 LAP -.91 LOP 258.86 VP 22.082 GAP -5.25 AZP 91.29 TAL 345.61 TAP 200.86 RCA 147.47 APO 224.93 V2 24.862
RC 267.844 GL 17.31 GP 2.50 ZAL 108.89 ZAP 93.70 ETS 178.82 ZAE 127.79 ETE 175.90 ZAC 88.57 ETC 256.92 CLP 93.70

PLANETOCENTRIC CONIC

C3 9.266 VHL 3.044 DLA 26.28 RAL 162.26 RAD 6567.3 VEL 11.430 PTH 1.98 VHP 2.784 DPA 6.64 RAP 174.84 ECC 1.1525

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 42 13	3060.04	-27.59	100.78	19.96	83.36	15 33 13	2460.0	-28.22	92.17
90.00	11 33 57	3677.98	-15.97	142.00	16.58	66.30	12 35 15	3078.0	-19.04	134.67
100.00	16 32 17	2705.17	-29.70	74.88	20.18	86.46	17 17 23	2105.2	-29.88	66.08
100.00	12 26 34	3508.08	-14.05	128.59	15.65	63.34	13 25 2	2908.1	-17.52	121.52
110.00	18 30 39	2334.84	-34.06	46.78	20.20	93.04	19 9 34	1734.8	-33.27	37.63
110.00	12 44 42	3451.18	-10.26	122.07	13.43	57.21	13 42 13	2851.2	-14.51	115.55

DIFFERENTIAL CORRECTIONS
TDE .3058 TRA .4834 TC3-4.7686 BAU .6021
RDE .1702 RRA -.0616 RC3 .9415 FAU .62143
FDE .5708 FRA10.7998 FC-58.0636 BSP 10492
BDE .3500 BRA .4873 BC3 4.8607 FSP 12541

MID-COURSE EXECUTION ACCURACY
SGT 3128.7 SGR 669.3 SG3 3629.5
RRT -.7693 RRF -.8127 RTF .9605
SGB 3199.5 R23 .0941 R13 -.9629
SG1 3171.6 SG2 421.8 THA 170.49

ORBIT DETERMINATION ACCURACY
ST 657.0 SR 323.2 SS 1675.9
CRT .8060 CRS -.0276 CST -.6076
LSA 1727.7 MSA 598.9 SSA 29.8
EL1 710.5 EL2 176.9 ALF 23.14

LAUNCH DATE NOV 6 1964 FLIGHT TIME 312.00 ARRIVAL DATE SEP 14 1965

HELIOCENTRIC CONIC DISTANCE 703.696 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.822 GAL -2.49 AZL 88.41 HCA 216.36 SMA 186.17 ECC .20799 INC 1.5927 V1 30.050
RP 220.75 LAP -.94 LOP 259.97 VP 22.126 GAP -5.47 AZP 91.28 TAL 345.44 TAP 201.80 RCA 147.45 APO 224.90 V2 24.903
RC 269.292 GL 17.40 GP 2.44 ZAL 109.17 ZAP 91.68 ETS 178.94 ZAE 125.54 ETE 176.18 ZAC 88.31 ETC 257.01 CLP 91.68

PLANETOCENTRIC CONIC

C3 9.294 VHL 3.049 DLA 26.24 RAL 162.60 RAD 6567.3 VEL 11.432 PTH 1.98 VHP 2.786 DPA 6.96 RAP 173.98 ECC 1.1530

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 44 21	3057.94	-27.61	100.63	20.34	83.44	15 35 19	2457.9	-28.23	92.02
90.00	11 34 30	3681.26	-15.88	142.20	16.93	66.24	12 35 51	3081.3	-18.96	134.88
100.00	16 34 13	2703.76	-29.71	74.78	20.55	86.51	17 19 17	2103.8	-29.87	65.98
100.00	12 27 19	3510.68	-13.97	128.75	16.00	63.30	13 25 50	2910.7	-17.45	121.67
110.00	18 32 22	2334.10	-34.06	46.72	20.57	93.08	19 11 16	1734.1	-33.26	37.57
110.00	12 45 40	3453.09	-10.19	122.18	13.79	57.19	13 43 13	2853.1	-14.45	115.66

DIFFERENTIAL CORRECTIONS
TDE .3109 TRA .5861 TC3-5.2613 BAU .6640
RDE .1757 RRA -.0585 RC3 .9350 FAU .62120
FDE .5137 FRA10.8559 FC-57.8658 BSP 11782
BDE .3572 BRA .5890 BC3 5.3438 FSP 12493

MID-COURSE EXECUTION ACCURACY
SGT 3484.3 SGR 670.2 SG3 3628.0
RRT -.7650 RRF -.8026 RTF .9684
SGB 3548.2 R23 .0783 R13 -.9700
SG1 3522.4 SG2 426.9 THA 171.50

ORBIT DETERMINATION ACCURACY
ST 697.5 SR 332.7 SS 1678.3
CRT .7661 CRS -.0214 CST -.6539
LSA 1745.5 MSA 605.0 SSA 29.8
EL1 746.5 EL2 199.8 ALF 21.71

LAUNCH DATE NOV 6 1964 FLIGHT TIME 314.00 ARRIVAL DATE SEP 16 1965

HELIOCENTRIC CONIC DISTANCE 707.750 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.821 GAL -2.52 AZL 88.40 HCA 217.48 SMA 186.15 ECC .20800 INC 1.6026 V1 30.050
RP 220.37 LAP -.97 LOP 261.09 VP 22.170 GAP -5.68 AZP 91.27 TAL 345.27 TAP 202.74 RCA 147.43 APO 224.87 V2 24.945
RC 270.721 GL 17.47 GP 2.37 ZAL 109.48 ZAP 89.67 ETS 179.05 ZAE 123.30 ETE 176.45 ZAC 88.07 ETC 257.10 CLP 89.67

PLANETOCENTRIC CONIC

C3 9.327 VHL 3.054 DLA 26.19 RAL 162.96 RAD 6567.3 VEL 11.433 PTH 1.98 VHP 2.790 DPA 7.27 RAP 173.13 ECC 1.1535

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 47 1	3054.48	-27.63	100.38	20.74	83.56	15 37 56	2454.5	-28.24	91.76
90.00	11 34 42	3686.09	-15.75	142.50	17.29	66.16	12 36 8	3086.1	-18.84	135.18
100.00	16 36 34	2701.33	-29.72	74.60	20.95	86.61	17 21 35	2101.3	-29.87	65.80
100.00	12 27 51	3514.47	-13.86	128.97	16.37	63.25	13 26 25	2914.5	-17.34	121.90
110.00	18 34 22	2332.72	-34.06	46.62	20.96	93.14	19 13 15	1732.7	-33.25	37.47
110.00	12 46 31	3455.84	-10.09	122.33	14.16	57.17	13 44 7	2855.8	-14.35	115.81

DIFFERENTIAL CORRECTIONS
TDE .3146 TRA .6908 TC3-5.7535 BAU .7266
RDE .1812 RRA -.0554 RC3 .9272 FAU .61924
FDE .4564 FRA10.8947 FC-57.4811 BSP 13060
BDE .3631 BRA .6930 BC3 5.8277 FSP 12429

MID-COURSE EXECUTION ACCURACY
SGT 3844.9 SGR 670.6 SG3 3616.7
RRT -.7588 RRF -.7918 RTF .9741
SGB 3903.0 R23 .0663 R13 -.9752
SG1 3878.9 SG2 432.9 THA 172.37

ORBIT DETERMINATION ACCURACY
ST 739.7 SR 342.2 SS 1679.7
CRT .7263 CRS -.0151 CST -.6941
LSA 1764.4 MSA 609.8 SSA 29.9
EL1 784.3 EL2 221.9 ALF 20.26

LAUNCH DATE NOV 6 1964 FLIGHT TIME 316.00 ARRIVAL DATE SEP 18 1965

HELIOCENTRIC CONIC DISTANCE 711.813 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.820 GAL -2.55 AZL 88.39 HCA 218.60 SMA 186.13 ECC .20804 INC 1.6119 V1 30.050
RP 220.00 LAP -1.01 LOP 262.20 VP 22.215 GAP -5.89 AZP 91.26 TAL 345.07 TAP 203.67 RCA 147.41 APO 224.86 V2 24.986
RC 272.134 GL 17.54 GP 2.31 ZAL 109.81 ZAP 87.67 ETS 179.15 ZAE 121.08 ETE 176.69 ZAC 87.83 ETC 257.19 CLP 87.67

PLANETOCENTRIC CONIC

C3 9.364 VHL 3.060 DLA 26.12 RAL 163.34 RAD 6567.3 VEL 11.435 PTH 1.98 VHP 2.799 DPA 7.58 RAP 172.30 ECC 1.1541

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 50 10	3049.73	-27.67	100.03	21.17	83.73	15 41 0	2449.7	-28.25	91.42
90.00	11 34 34	3692.39	-15.58	142.88	17.67	66.05	12 36 7	3092.4	-18.68	135.58
100.00	16 39 17	2697.95	-29.73	74.35	21.37	86.74	17 24 15	2097.9	-29.87	65.54
100.00	12 28 8	3519.41	-13.71	129.26	16.75	63.17	13 26 48	2919.4	-17.20	122.20
110.00	18 36 39	2330.72	-34.05	46.46	21.37	93.23	19 15 30	1730.7	-33.23	37.32
110.00	12 47 16	3459.40	-9.96	122.52	14.55	57.13	13 44 55	2859.4	-14.22	116.01

DIFFERENTIAL CORRECTIONS
TDE .3166 TRA .7976 TC3-6.2411 BAU .7897
RDE .1868 RRA -.0522 RC3 .9183 FAU .61587
FDE .3921 FRA10.9204 FC-56.9399 BSP 14342
BDE .3676 BRA ,7993 BC3 6.3082 FSP 12341

MID-COURSE EXECUTION ACCURACY
SGT 4208.0 SGR 670.8 SG3 3597.3
RRT -.7511 RRF -.7807 RTF .9784
SGB 4261.1 R23 .0572 R13 -.9792
SG1 4238.4 SG2 439.7 THA 173.10

ORBIT DETERMINATION ACCURACY
ST 783.3 SR 351.7 SS 1680.5
CRT .6866 CRS -.0066 CST -.7281
LSA 1784.2 MSA 614.1 SSA 30.0
EL1 823.5 EL2 243.2 ALF 18.84

LAUNCH DATE NOV 6 1964 FLIGHT TIME 318.00 ARRIVAL DATE SEP 20 1965

HELIOCENTRIC CONIC DISTANCE 715.883 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.819 GAL -2.59 AZL 88.38 HCA 219.72 SMA 186.12 ECC .20812 INC 1.6209 V1 30.050
RP 219.62 LAP -1.04 LOP 263.33 VP 22.260 GAP -6.10 AZP 91.25 TAL 344.87 TAP 204.59 RCA 147.39 APO 224.86 V2 25.027
RC 273.529 GL 17.60 GP 2.25 ZAL 110.17 ZAP 85.70 ETS 179.25 ZAE 118.87 ETE 176.92 ZAC 87.59 ETC 257.28 CLP 85.70

PLANETOCENTRIC CONIC

C3 9.406 VHL 3.067 DLA 26.02 RAL 163.73 RAD 6567.3 VEL 11.437 PTH 1.98 VHP 2.810 DPA 7.87 RAP 171.49 ECC 1.1548

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 53 47	3043.79	-27.71	99.61	21.62	83.94	15 44 31	2443.8	-28.26	90.98
90.00	11 34 9	3700.09	-15.36	143.34	18.06	65.92	12 35 49	3100.1	-18.49	136.06
100.00	16 42 24	2693.64	-29.75	74.03	21.81	86.91	17 27 17	2093.6	-29.86	65.22
100.00	12 28 13	3525.46	-13.52	129.61	17.15	63.08	13 26 59	2925.5	-17.02	122.57
110.00	18 39 13	2328.12	-34.04	46.26	21.80	93.35	19 18 1	1728.1	-33.20	37.12
110.00	12 47 53	3463.75	-9.80	122.75	14.96	57.09	13 45 37	2863.8	-14.07	116.25

DIFFERENTIAL CORRECTIONS
TDE .3175 TRA .9069 TC3-6.7199 BAU .8527
RDE .1924 RRA -.0489 RC3 .9080 FAU .61083
FDE .3197 FRA10.9310 FC-56.2214 BSP 15620
BDE .3712 BRA .9082 BC3 6.7809 FSP 12221

MID-COURSE EXECUTION ACCURACY
SGT 4571.2 SGR 670.6 SG3 3568.7
RRT -.7419 RRF -.7691 RTF .9816
SGB 4620.1 R23 .0504 R13 -.9822
SG1 4598.5 SG2 447.0 THA 173.73

ORBIT DETERMINATION ACCURACY
ST 828.8 SR 361.2 SS 1680.4
CRT .6476 CRS .0043 CST -.7562
LSA 1804.8 MSA 618.9 SSA 30.0
EL1 864.8 EL2 263.7 ALF 17.43

LAUNCH DATE NOV 6 1964 FLIGHT TIME 320.00 ARRIVAL DATE SEP 22 1965

HELIOCENTRIC CONIC DISTANCE 719.961 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.819 GAL -2.63 AZL 88.37 HCA 220.84 SMA 186.11 ECC .20822 INC 1.6294 V1 30.050
RP 219.25 LAP -1.07 LOP 264.45 VP 22.305 GAP -6.30 AZP 91.23 TAL 344.65 TAP 205.49 RCA 147.36 APO 224.87 V2 25.067
RC 274.906 GL 17.65 GP 2.19 ZAL 110.55 ZAP 83.75 ETS 179.34 ZAE 116.68 ETE 177.13 ZAC 87.37 ETC 257.37 CLP 83.74

PLANETOCENTRIC CONIC

C3 9.453 VHL 3.075 DLA 25.91 RAL 164.15 RAD 6567.3 VEL 11.439 PTH 1.98 VHP 2.824 DPA 8.15 RAP 170.71 ECC 1.1556

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 57 50	3036.74	-27.76	99.10	22.10	84.19	15 48 27	2436.7	-28.28	90.47
90.00	11 33 27	3709.08	-15.11	143.88	18.46	65.76	12 35 16	3109.1	-18.26	136.62
100.00	16 45 52	2688.47	-29.77	73.64	22.27	87.11	17 30 40	2088.5	-29.85	64.84
100.00	12 28 6	3532.59	-13.30	130.02	17.56	62.98	13 26 59	2932.6	-16.82	123.00
110.00	18 42 3	2324.94	-34.03	46.01	22.25	93.50	19 20 48	1724.9	-33.17	36.87
110.00	12 48 24	3468.88	-9.61	123.03	15.39	57.04	13 46 13	2860.9	-13.89	116.54

DIFFERENTIAL CORRECTIONS
TDE .3163 TRA 1.0184 TC3-7.1900 BAU .9157
RDE .1981 RRA -.0456 RC3 .8969 FAU .60453
FDE .2450 FRA10.9235 FC-55.3652 BSP 16894
BDE .3732 BRA 1.0195 BC3 7.2457 FSP 12083

MID-COURSE EXECUTION ACCURACY
SGT 4934.2 SGR 670.3 SG3 3532.3
RRT -.7317 RRF -.7571 RTF .9842
SGB 4979.6 R23 .0451 R13 -.9847
SG1 4958.8 SG2 454.6 THA 174.28

ORBIT DETERMINATION ACCURACY
ST 875.1 SR 370.5 SS 1679.2
CRT .6089 CRS .0161 CST -.7809
LSA 1826.0 MSA 622.6 SSA 30.0
EL1 907.0 EL2 283.6 ALF 16.07

LAUNCH DATE NOV 6 1964 FLIGHT TIME 322.00 ARRIVAL DATE SEP 24 1965

HELIOCENTRIC CONIC DISTANCE 724.046 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.819 GAL -2.67 AZL 88.36 HCA 221.97 SMA 186.11 ECC .20836 INC 1.6377 V1 30.050
RP 218.89 LAP -1.10 LOP 265.58 VP 22.351 GAP -6.50 AZP 91.22 TAL 344.42 TAP 206.39 RCA 147.33 APO 224.89 V2 25.108
RC 276.266 GL 17.69 GP 2.14 ZAL 110.96 ZAP 81.82 ETS 179.43 ZAE 114.51 ETE 177.32 ZAC 87.15 ETC 257.46 CLP 81.82

PLANETOCENTRIC CONIC

C3 9.505 VHL 3.083 DLA 25.78 RAL 164.60 RAD 6567.3 VEL 11.441 PTH 1.98 VHP 2.842 DPA 8.42 RAP 169.95 ECC 1.1564

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 2 17	3028.68	-27.82	98.51	22.60	84.48	15 52 46	2428.7	-28.29	89.88
90.00	11 32 31	3719.29	-14.83	144.50	18.88	65.60	12 34 30	3119.3	-18.00	137.26
100.00	16 49 40	2682.48	-29.78	73.20	22.76	87.34	17 34 23	2082.5	-29.84	64.39
100.00	12 27 48	3540.73	-13.05	130.50	18.00	62.87	13 26 49	2940.7	-16.58	123.49
110.00	18 45 8	2321.20	-34.01	45.72	22.71	93.67	19 23 50	1721.2	-33.13	36.59
110.00	12 48 50	3474.77	-9.39	123.34	15.84	56.98	13 46 44	2874.8	-13.68	116.86

DIFFERENTIAL CORRECTIONS
TDE .3134 TRA 1.1322 TC3-7.6479 BAU .9783
RDE .2037 RRA -.0422 RC3 .8845 FAU .59667
FDE .1634 FRA10.8990 FC-54.3460 BSP 18157
BDE .3738 BRA 1.1330 BC3 7.6989 FSP 11919

MID-COURSE EXECUTION ACCURACY
SGT 5295.1 SGR 669.7 SG3 3487.2
RRT -.7206 RRF -.7445 RTF .9862
SGB 5337.3 R23 .0410 R13 -.9866
SG1 5317.2 SG2 462.4 THA 174.75

ORBIT DETERMINATION ACCURACY
ST 922.4 SR 379.9 SS 1677.0
CRT .5705 CRS .0301 CST -.8016
LSA 1847.8 MSA 626.5 SSA 30.0
EL1 950.5 EL2 302.8 ALF 14.75

LAUNCH DATE NOV 6 1964 FLIGHT TIME 324.00 ARRIVAL DATE SEP 26 1965

HELIOCENTRIC CONIC DISTANCE 728.138 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.819 GAL -2.71 AZL 88.35 HCA 223.11 SMA 186.11 ECC .20853 INC 1.6457 V1 30.050
RP 218.52 LAP -1.12 LOP 266.71 VP 22.396 GAP -6.69 AZP 91.20 TAL 344.17 TAP 207.27 RCA 147.30 APO 224.92 V2 25.148
RC 277.609 GL 17.73 GP 2.08 ZAL 111.39 ZAP 79.93 ETS 179.52 ZAE 112.37 ETE 177.51 ZAC 86.94 ETC 257.55 CLP 79.92

PLANETOCENTRIC CONIC

C3 9.562 VHL 3.092 DLA 25.64 RAL 165.05 RAD 6567.3 VEL 11.443 PTH 1.98 VHP 2.863 DPA 8.68 RAP 169.22 ECC 1.1574

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 7 6	3019.72	-27.87	97.86	23.12	84.80	15 57 26	2419.7	-28.30	89.22
90.00	11 31 21	3730.62	-14.51	145.17	19.32	65.41	12 33 32	3130.6	-17.70	137.96
100.00	16 53 48	2675.73	-29.81	72.70	23.27	87.60	17 38 24	2075.7	-29.82	63.89
100.00	12 27 20	3549.84	-12.76	131.02	18.45	62.74	13 26 30	2949.8	-16.32	124.04
110.00	18 48 29	2316.93	-33.99	45.39	23.20	93.87	19 27 6	1716.9	-33.08	36.27
110.00	12 49 9	3481.41	-9.15	123.70	16.30	56.92	13 47 11	2881.4	-13.44	117.23

DIFFERENTIAL CORRECTIONS
TDE .3093 TRA 1.2485 TC3-8.0895 BAU 1.0401
RDE .2094 RRA -.0388 RC3 .8713 FAU .58758
FDE .0828 FRA10.8639 FC-53.1967 BSP 19421
BDE .3736 BRA 1.2491 BC3 8.1362 FSP 11746

MID-COURSE EXECUTION ACCURACY
SGT 5651.8 SGR 668.8 SG3 3435.4
RRT -.7086 RRF -.7315 RTF .9878
SGB 5691.2 R23 .0378 R13 -.9881
SG1 5671.8 SG2 470.3 THA 175.17

ORBIT DETERMINATION ACCURACY
ST 971.4 SR 389.1 SS 1675.0
CRT .5332 CRS .0443 CST -.8197
LSA 1871.5 MSA 630.3 SSA 29.9
EL1 996.0 EL2 321.0 ALF 13.48

LAUNCH DATE NOV 6 1964 FLIGHT TIME 326.00 ARRIVAL DATE SEP 28 1965

HELIOCENTRIC CONIC DISTANCE 732.238 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.819 GAL -2.76 AZL 88.35 HCA 224.24 SMA 186.12 ECC .20873 INC 1.6533 V1 30.050
RP 218.16 LAP -1.15 LOP 267.85 VP 22.441 GAP -6.88 AZP 91.18 TAL 343.90 TAP 208.15 RCA 147.27 APO 224.96 V2 25.188
RC 278.933 GL 17.75 GP 2.02 ZAL 111.84 ZAP 78.06 ETS 179.60 ZAE 110.25 ETE 177.68 ZAC 86.74 ETC 257.64 CLP 78.05

PLANETOCENTRIC CONIC

C3 9.625 VHL 3.102 DLA 25.47 RAL 165.53 RAD 6567.3 VEL 11.446 PTH 1.99 VHP 2.886 DPA 8.93 RAP 168.52 ECC 1.1584

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 12 16	3009.94	-27.93	97.15	23.66	85.15	16 2 26	2409.9	-28.31	88.51
90.00	11 30 1	3742.98	-14.15	145.91	19.77	65.22	12 32 24	3143.0	-17.38	138.72
100.00	16 58 15	2668.26	-29.83	72.14	23.79	87.89	17 42 43	2068.3	-29.80	63.34
100.00	12 26 43	3559.88	-12.45	131.60	18.91	62.60	13 26 3	2959.9	-16.02	124.64
110.00	18 52 4	2312.15	-33.97	45.01	23.71	94.08	19 30 36	1712.2	-33.03	35.90
110.00	12 49 23	3488.76	-8.87	124.09	16.79	56.85	13 47 32	2888.8	-13.17	117.64

DIFFERENTIAL CORRECTIONS
TDE .3019 TRA 1.3666 TC3-8.5190 BAU 1.1018
RDE .2152 RRA -.0353 RC3 .8577 FAU .57770
FDE -.0089 FRA10.8070 FC-51.9603 BSP 20647
BDE .3708 BRA 1.3671 BC3 8.5621 FSP 11529

MID-COURSE EXECUTION ACCURACY
SGT 6005.7 SGR 668.1 SG3 3377.6
RRT -.6962 RRF -.7183 RTF .9891
SGB 6042.7 R23 .0353 R13 -.9894
SG1 6023.8 SG2 478.2 THA 175.54

ORBIT DETERMINATION ACCURACY
ST 1019.5 SR 398.3 SS 1671.4
CRT .4947 CRS .0620 CST -.8351
LSA 1894.5 MSA 633.7 SSA 29.7
EL1 1040.7 EL2 339.1 ALF 12.26

LAUNCH DATE NOV 6 1964 FLIGHT TIME 328.00 ARRIVAL DATE SEP 30 1965

HELIOCENTRIC CONIC DISTANCE 736.344 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.819 GAL -2.81 AZL 88.34 HCA 225.39 SMA 186.13 ECC .20896 INC 1.6606 V1 30.050
RP 217.80 LAP -1.18 LOP 268.99 VP 22.487 GAP -7.07 AZP 91.17 TAL 343.63 TAP 209.01 RCA 147.23 APO 225.02 V2 25.228
RC 280.240 GL 17.76 GP 1.97 ZAL 112.32 ZAP 76.23 ETS 179.67 ZAE 108.17 ETE 177.84 ZAC 86.55 ETC 257.72 CLP 76.22

PLANETOCENTRIC CONIC

C3 9.694 VHL 3.114 DLA 25.29 RAL 166.03 RAD 6567.3 VEL 11.449 PTH 1.99 VHP 2.913 DPA 9.15 RAP 167.86 ECC 1.1595

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 17 45	2999.42	-27.99	96.39	24.23	85.53	16 7 44	2399.4	-28.32	87.74
90.00	11 28 31	3756.29	-13.77	146.70	20.24	65.01	12 31 7	3156.3	-17.03	139.54
100.00	17 2 59	2660.14	-29.84	71.54	24.34	88.21	17 47 19	2060.1	-29.77	62.74
100.00	12 25 58	3570.81	-12.11	132.23	19.40	62.46	13 25 28	2970.8	-15.70	125.29
110.00	18 55 53	2306.89	-33.94	44.61	24.24	94.32	19 34 20	1706.9	-32.97	35.50
110.00	12 49 32	3496.83	-8.57	124.52	17.29	56.78	13 47 49	2896.8	-12.88	118.08

DIFFERENTIAL CORRECTIONS
TDE .2922 TRA 1.4866 TC3-8.9303 BAU 1.1625
RDE .2211 RRA -.0317 RC3 .8433 FAU .56674
FDE -.1077 FRA10.7347 FC-50.6132 BSP 21856
BDE .3664 BRA 1.4869 BC3 8.9700 FSP 11296

MID-COURSE EXECUTION ACCURACY
SGT 6353.5 SGR 667.4 SG3 3313.4
RRT -.6831 RRF -.7049 RTF .9902
SGB 6388.5 R23 .0335 R13 -.9904
SG1 6370.0 SG2 486.1 THA 175.87

ORBIT DETERMINATION ACCURACY
ST 1068.2 SR 407.6 SS 1667.3
CRT .4562 CRS .0824 CST -.8479
LSA 1918.1 MSA 637.8 SSA 29.5
EL1 1086.2 EL2 356.7 ALF 11.08

LAUNCH DATE NOV 6 1964 FLIGHT TIME 330.00 ARRIVAL DATE OCT 2 1965

HELIOCENTRIC CONIC DISTANCE 740.458 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.820 GAL -2.86 AZL 88.33 HCA 226.53 SMA 186.14 ECC .20922 INC 1.6676 V1 30.050
RP 217.44 LAP -1.21 LOP 270.14 VP 22.532 GAP -7.25 AZP 91.15 TAL 343.34 TAP 209.87 RCA 147.20 APO 225.08 V2 25.268
RC 281.529 GL 17.77 GP 1.91 ZAL 112.82 ZAP 74.43 ETS 179.74 ZAE 106.12 ETE 177.99 ZAC 86.36 ETC 257.80 CLP 74.42

PLANETOCENTRIC CONIC

C3 9.769 VHL 3.125 DLA 25.09 RAL 166.55 RAD 6567.4 VEL 11.452 PTH 1.99 VHP 2.942 DPA 9.37 RAP 167.23 ECC 1.1608

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 23 30	2988.26	-28.05	95.58	24.81	85.93	16 13 19	2388.3	-28.32	86.92
90.00	11 26 52	3770.49	-13.36	147.54	20.73	64.80	12 29 42	3170.5	-16.65	140.41
100.00	17 7 59	2651.42	-29.86	70.89	24.91	88.55	17 52 10	2051.4	-29.74	62.09
100.00	12 25 4	3582.56	-11.74	132.91	19.90	62.31	13 24 47	2982.6	-15.35	125.99
110.00	18 59 56	2301.16	-33.91	44.16	24.78	94.59	19 38 17	1701.2	-32.90	35.07
110.00	12 49 37	3505.58	-8.24	124.99	17.81	56.71	13 48 2	2905.6	-12.57	118.56

DIFFERENTIAL CORRECTIONS
TDE .2804 TRA 1.6087 TC3-9.3243 BAU 1.2225
RDE .2269 RRA -.0281 RC3 .8287 FAU .55517
FDE -.2026 FRA10.6507 FC-49.2009 BSP 23038
BDE .3607 BRA 1.6090 BC3 9.3611 FSP 11056

MID-COURSE EXECUTION ACCURACY
SGT 6696.3 SGR 666.8 SG3 3245.3
RRT -.6698 RRF -.6913 RTF .9911
SGB 6729.4 R23 .0320 R13 -.9912
SG1 6711.3 SG2 494.0 THA 176.16

ORBIT DETERMINATION ACCURACY
ST 1117.6 SR 416.6 SS 1663.3
CRT .4175 CRS .1024 CST -.8599
LSA 1943.6 MSA 640.7 SSA 29.3
EL1 1132.7 EL2 373.5 ALF 9.94

LAUNCH DATE NOV 6 1964 FLIGHT TIME 332.00 ARRIVAL DATE OCT 4 1965

HELIOCENTRIC CONIC DISTANCE 744.578 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.821 GAL -2.92 AZL 88.33 HCA 227.68 SMA 186.16 ECC .20951 INC 1.6745 V1 30.050
RP 217.09 LAP -1.24 LOP 271.29 VP 22.578 GAP -7.44 AZP 91.13 TAL 343.03 TAP 210.71 RCA 147.15 APO 225.16 V2 25.307
RC 282.801 GL 17.77 GP 1.86 ZAL 113.35 ZAP 72.67 ETS 179.81 ZAE 104.11 ETE 178.13 ZAC 86.19 ETC 257.88 CLP 72.66

PLANETOCENTRIC CONIC

C3 9.850 VHL 3.138 DLA 24.87 RAL 167.08 RAD 6567.4 VEL 11.456 PTH 1.99 VHP 2.974 DPA 9.56 RAP 166.64 ECC 1.1621

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 29 32	2976.51	-28.10	94.72	25.42	86.36	16 19 8	2376.5	-28.31	86.06
90.00	11 25 6	3785.51	-12.93	148.43	21.24	64.59	12 28 12	3185.5	-16.24	141.33
100.00	17 13 15	2642.13	-29.87	70.20	25.50	88.92	17 57 17	2042.1	-29.71	61.40
100.00	12 24 5	3595.12	-11.34	133.63	20.42	62.16	13 24 0	2995.1	-14.98	126.73
110.00	19 4 12	2295.00	-33.88	43.68	25.35	94.87	19 42 27	1695.0	-32.83	34.60
110.00	12 49 37	3515.02	-7.89	125.49	18.35	56.63	13 48 12	2915.0	-12.23	119.08

DIFFERENTIAL CORRECTIONS
TDE .2664 TRA 1.7337 TC3-9.6970 BAU 1.2814
RDE .2327 RRA -.0245 RC3 .8133 FAU .54241
FDE -.2980 FRA10.5584 FC-47.6755 BSP 24216
+ BDE .3538 BRA 1.7339 BC3 9.7310 FSP 10804 +

MID-COURSE EXECUTION ACCURACY
SGT 7032.4 SGR 666.0 SG3 3171.3
RRT -.6560 RRF -.6772 RTF .9918
SGB 7063.9 R23 .0308 R13 -.9919
SG1 7046.1 SG2 501.7 THA 176.43

ORBIT DETERMINATION ACCURACY
ST 1168.5 SR 425.4 SS 1659.8
CRT .3790 CRS .1234 CST -.8705
LSA 1971.3 MSA 643.7 SSA 29.1
EL1 1180.9 EL2 389.5 ALF 8.82 +

LAUNCH DATE NOV 6 1964 FLIGHT TIME 334.00 ARRIVAL DATE OCT 6 1965

HELIOCENTRIC CONIC DISTANCE 748.701 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.822 GAL -2.97 AZL 88.32 HCA 228.83 SMA 186.18 ECC .20983 INC 1.6811 V1 30.050
RP 216.74 LAP -1.27 LOP 272.44 VP 22.623 GAP -7.61 AZP 91.11 TAL 342.71 TAP 211.54 RCA 147.11 APO 225.24 V2 25.346
RC 284.057 GL 17.76 GP 1.81 ZAL 113.90 ZAP 70.96 ETS 179.87 ZAE 102.14 ETE 178.26 ZAC 86.03 ETC 257.95 CLP 70.95

PLANETOCENTRIC CONIC

C3 9.937 VHL 3.152 DLA 24.64 RAL 167.64 RAD 6567.4 VEL 11.460 PTH 1.99 VHP 3.008 DPA 9.74 RAP 166.10 ECC 1.1635

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 35 49	2964.21	-28.15	93.83	26.05	86.80	16 25 13	2364.2	-28.30	85.16
90.00	11 23 14	3801.33	-12.46	149.36	21.76	64.37	12 26 36	3201.3	-15.81	142.29
100.00	17 18 46	2632.30	-29.89	69.47	26.12	89.30	18 2 38	2032.3	-29.66	60.67
100.00	12 22 58	3608.48	-10.91	134.39	20.96	62.00	13 23 7	3008.5	-14.57	127.52
110.00	19 8 41	2288.39	-33.84	43.17	25.93	95.17	19 46 50	1688.4	-32.75	34.10
110.00	12 49 33	3525.14	-7.51	126.03	18.92	56.55	13 48 18	2925.1	-11.86	119.64

DIFFERENTIAL CORRECTIONS
TDE .2604 TRA 1.8735 TC-10.0068 BAU 1.3336
RDE .2377 RRA -.0218 RC3 .7936 FAU .52480
FDE -.3097 FRA10.5387 FC-45.7200 BSP 25644
BDE .3526 BRA 1.8737 BC310.0382 FSP 10716

MID-COURSE EXECUTION ACCURACY
SGT 7352.7 SGR 662.5 SG3 3085.4
RRT -.6396 RRF -.6587 RTF .9922
SGB 7382.5 R23 .0274 R13 -.9924
SG1 7365.0 SG2 508.4 THA 176.69

ORBIT DETERMINATION ACCURACY
ST 1234.1 SR 432.5 SS 1665.0
CRT .3502 CRS .1223 CST -.8858
LSA 2018.0 MSA 639.6 SSA 29.1
EL1 1244.4 EL2 401.8 ALF 7.82

LAUNCH DATE NOV 6 1964 FLIGHT TIME 336.00 ARRIVAL DATE OCT 8 1965

HELIOCENTRIC CONIC DISTANCE 752.836 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.824 GAL -3.03 AZL 88.31 HCA 229.99 SMA 186.20 ECC .21019 INC 1.6875 V1 30.050
RP 216.39 LAP -1.29 LOP 273.59 VP 22.668 GAP -7.79 AZP 91.09 TAL 342.38 TAP 212.36 RCA 147.06 APO 225.34 V2 25.385
RC 285.296 GL 17.74 GP 1.76 ZAL 114.47 ZAP 69.28 ETS 179.92 ZAE 100.20 ETE 178.38 ZAC 85.88 ETC 258.02 CLP 69.27

PLANETOCENTRIC CONIC

C3 10.032 VHL 3.167 DLA 24.39 RAL 168.20 RAD 6567.4 VEL 11.464 PTH 1.99 VHP 3.046 DPA 9.90 RAP 165.59 ECC 1.1651

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT-ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 42 17	2951.55	-28.20	92.90	26.69	87.26	16 31 29	2351.5	-28.28	84.24
90.00	11 21 18	3817.76	-11.98	150.32	22.31	64.15	12 24 56	3217.8	-15.36	143.28
100.00	17 24 28	2622.07	-29.89	68.71	26.74	89.70	18 8 11	2022.1	-29.61	59.92
100.00	12 21 48	3622.47	-10.46	135.19	21.52	61.84	13 22 10	3022.5	-14.15	128.34
110.00	19 13 21	2281.45	-33.79	42.63	26.54	95.48	19 51 22	1681.5	-32.67	33.58
110.00	12 49 25	3535.85	-7.11	126.60	19.50	56.48	13 48 21	2935.9	-11.47	120.22

DIFFERENTIAL CORRECTIONS
TDE .2358 TRA 1.9975 TC-10.3553 BAU 1.3927
RDE .2441 RRA -.0177 RC3 .7798 FAU .51308
FDE -.4493 FRA10.3834 FC-44.2784 BSP 26639
BDE .3394 BRA 1.9975 BC310.3846 FSP 10355

MID-COURSE EXECUTION ACCURACY
SGT 7678.0 SGR 663.5 SG3 3008.8
RRT -.6265 RRF -.6466 RTF .9928
SGB 7706.6 R23 .0279 R13 -.9929
SG1 7689.3 SG2 516.4 THA 176.89

ORBIT DETERMINATION ACCURACY
ST 1279.6 SR 441.9 SS 1656.9
CRT .3057 CRS .1570 CST -.8915
LSA 2039.8 MSA 645.1 SSA 28.7
EL1 1287.5 EL2 418.2 ALF 6.74

LAUNCH DATE NOV 6 1964 FLIGHT TIME 338.00 ARRIVAL DATE OCT 10 1965

HELIOCENTRIC CONIC DISTANCE 756.976 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.825 GAL -3.10 AZL 88.31 HCA 231.15 SMA 186.23 ECC .21057 INC 1.6936 V1 30.050
RP 216.05 LAP -1.32 LOP 274.75 VP 22.714 GAP -7.96 AZP 91.06 TAL 342.03 TAP 213.17 RCA 147.01 APO 225.44 V2 25.423
RC 286.520 GL 17.72 GP 1.71 ZAL 115.06 ZAP 67.64 ETS 179.98 ZAE 98.30 ETE 178.49 ZAC 85.74 ETC 258.08 CLP 67.63

PLANETOCENTRIC CONIC

C3 10.133 VHL 3.183 DLA 24.12 RAL 168.79 RAD 6567.4 VEL 11.468 PTH 1.99 VHP 3.085 DPA 10.05 RAP 165.12 ECC 1.1668

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 48 57	2938.49	-28.23	91.95	27.36	87.74	16 37 55	2338.5	-28.25	83.28
90.00	11 19 18	3834.85	-11.47	151.32	22.88	63.93	12 23 13	3234.8	-14.88	144.31
100.00	17 30 24	2611.42	-29.89	67.92	27.39	90.12	18 13 55	2011.4	-29.56	59.13
100.00	12 20 32	3637.15	-9.99	136.02	22.10	61.68	13 21 9	3037.2	-13.70	129.20
110.00	19 18 12	2274.14	-33.74	42.07	27.16	95.81	19 56 6	1674.1	-32.57	33.03
110.00	12 49 13	3547.19	-6.68	127.20	20.10	56.40	13 48 21	2947.2	-11.05	120.84

DIFFERENTIAL CORRECTIONS
TDE .2093 TRA 2.1254 TC-10.6764 BAU 1.4501
RDE .2504 RRA -.0139 RC3 .7650 FAU .50004
FDE -.5766 FRA10.2339 FC-42.7199 BSP 27640
BDE .3263 BRA 2.1254 BC310.7037 FSP 10018

MID-COURSE EXECUTION ACCURACY
SGT 7994.5 SGR 664.1 SG3 2927.6
RRT -.6131 RRF -.6339 RTF .9933
SGB 8022.1 R23 .0282 R13 -.9934
SG1 8004.9 SG2 524.0 THA 177.07

ORBIT DETERMINATION ACCURACY
ST 1328.4 SR 451.0 SS 1651.9
CRT .2612 CRS .1894 CST -.8976
LSA 2067.5 MSA 649.2 SSA 28.2
EL1 1334.2 EL2 433.4 ALF 5.67

LAUNCH DATE NOV 6 1964 FLIGHT TIME 340.00 ARRIVAL DATE OCT 12 1965

HELIOCENTRIC CONIC DISTANCE 761.123 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.827 GAL -3.17 AZL 88.30 HCA 232.31 SMA 186.26 ECC .21099 INC 1.6997 V1 30.050
RP 215.71 LAP -1.34 LOP 275.92 VP 22.759 GAP -8.13 AZP 91.04 TAL 341.66 TAP 213.97 RCA 146.96 APO 225.56 V2 25.461
RC 287.729 GL 17.68 GP 1.66 ZAL 115.68 ZAP 66.04 ETS 180.03 ZAE 96.44 ETE 178.60 ZAC 85.61 ETC 258.14 CLP 66.03

PLANETOCENTRIC CONIC

C3 10.243 VHL 3.200 DLA 23.84 RAL 169.39 RAD 6567.4 VEL 11.473 PTH 1.99 VHP 3.127 DPA 10.18 RAP 164.70 ECC 1.1686

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 55 48	2925.10	-28.27	90.97	28.04	88.23	16 44 33	2325.1	-28.21	82.30
90.00	11 17 14	3852.54	-10.94	152.35	23.46	63.72	12 21 27	3252.5	-14.38	145.36
100.00	17 36 30	2600.39	-29.89	67.10	28.06	90.55	18 19 51	2000.4	-29.49	58.32
100.00	12 19 13	3652.49	-9.50	136.89	22.70	61.52	13 20 5	3052.5	-13.23	130.09
110.00	19 23 14	2266.49	-33.69	41.48	27.80	96.16	20 1 0	1666.5	-32.47	32.46
110.00	12 48 59	3559.15	-6.23	127.83	20.72	56.32	13 48 18	2959.1	-10.62	121.48

DIFFERENTIAL CORRECTIONS
TDE .1815 TRA 2.2571 TC-10.9689 BAU 1.5055
RDE .2566 RRA -.0101 RC3 .7497 FAU .48619
FDE -.6886 FRA10.0883 FC-41.0934 BSP 28644
BDE .3142 BRA 2.2571 BC310.9945 FSP 9700

MID-COURSE EXECUTION ACCURACY
SGT 8301.6 SGR 664.6 SG3 2843.7
RRT -.5995 RRF -.6209 RTF .9937
SGB 8328.1 R23 .0283 R13 -.9938
SG1 8311.2 SG2 531.3 THA 177.24

ORBIT DETERMINATION ACCURACY
ST 1380.7 SR 459.6 SS 1648.7
CRT .2180 CRS .2185 CST -.9041
LSA 2100.0 MSA 651.7 SSA 27.8
EL1 1384.7 EL2 447.2 ALF 4.63

LAUNCH DATE NOV 6 1964 FLIGHT TIME 342.00 ARRIVAL DATE OCT 14 1965

HELIOCENTRIC CONIC DISTANCE 765.274 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.829 GAL -3.23 AZL 88.29 HCA 233.48 SMA 186.29 ECC .21144 INC 1.7055 V1 30.050
RP 215.38 LAP -1.37 LOP 277.08 VP 22.804 GAP -8.30 AZP 91.02 TAL 341.29 TAP 214.76 RCA 146.90 APO 225.69 V2 25.498
RC 288.924 GL 17.64 GP 1.62 ZAL 116.31 ZAP 64.48 ETS 180.07 ZAE 94.62 ETE 178.70 ZAC 85.49 ETC 258.19 CLP 64.47

PLANETOCENTRIC CONIC

C3 10.360 VHL 3.219 DLA 23.54 RAL 170.00 RAD 6567.4 VEL 11.478 PTH 2.00 VHP 3.172 DPA 10.29 RAP 164.32 ECC 1.1705

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 2 48	2911.42	-28.29	89.97	28.74	88.73	16 51 20	2311.4	-28.17	81.31
90.00	11 15 9	3870.81	-10.38	153.41	24.07	63.51	12 19 39	3270.8	-13.86	146.45
100.00	17 42 48	2589.02	-29.88	66.25	28.74	90.99	18 25 57	1989.0	-29.42	57.48
100.00	12 17 50	3668.44	-8.98	137.79	23.32	61.37	13 18 59	3068.4	-12.73	131.01
110.00	19 28 26	2258.53	-33.63	40.86	28.45	96.52	20 6 5	1658.5	-32.36	31.86
110.00	12 48 41	3571.69	-5.76	128.50	21.36	56.25	13 48 13	2971.7	-10.15	122.16

DIFFERENTIAL CORRECTIONS
TDE .1516 TRA 2.3926 TC-11.2360 BAU 1.5596
RDE .2627 RRA -.0065 RC3 .7342 FAU .47177
FDE -.7924 FRA 9.9434 FC-39.4232 BSP 29642
BDE .3033 BRA 2.3926 BC311.2599 FSP 9389

MID-COURSE EXECUTION ACCURACY
SGT 8600.7 SGR 665.0 SG3 2757.8
RRT -.5859 RRF -.6077 RTF .9940
SGB 8626.4 R23 .0284 R13 -.9941
SG1 8609.6 SG2 538.3 THA 177.40

ORBIT DETERMINATION ACCURACY
ST 1436.0 SR 467.9 SS 1646.9
CRT .1753 CRS .2462 CST -.9104
LSA 2136.8 MSA 653.3 SSA 27.4
EL1 1438.7 EL2 459.8 ALF 3.64

LAUNCH DATE NOV 6 1964 FLIGHT TIME 344.00 ARRIVAL DATE OCT 16 1965

HELIOCENTRIC CONIC DISTANCE 769.432 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.831 GAL -3.31 AZL 88.29 HCA 234.65 SMA 186.33 ECC .21193 INC 1.7112 V1 30.050
RP 215.05 LAP -1.40 LOP 278.25 VP 22.848 GAP -8.47 AZP 90.99 TAL 340.89 TAP 215.54 RCA 146.84 APO 225.82 V2 25.535
RC 290.105 GL 17.59 GP 1.57 ZAL 116.97 ZAP 62.97 ETS 180.11 ZAE 92.84 ETE 178.80 ZAC 85.38 ETC 258.24 CLP 62.96

PLANETOCENTRIC CONIC

C3 10.486 VHL 3.238 DLA 23.22 RAL 170.63 RAD 6567.4 VEL 11.484 PTH 2.00 VHP 3.218 DPA 10.39 RAP 163.98 ECC 1.1726

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 9 58	2897.50	-28.31	88.95	29.46	89.24	16 56 15	2297.5	-28.11	80.29
90.00	11 13 1	3889.60	-9.81	154.49	24.70	63.30	12 17 51	3289.6	-13.32	147.57
100.00	17 49 15	2577.36	-29.86	65.39	29.44	91.45	18 32 12	1977.4	-29.34	56.62
100.00	12 16 25	3684.97	-8.44	138.72	23.97	61.22	13 17 50	3085.0	-12.21	131.97
110.00	19 33 48	2250.28	-33.56	40.23	29.13	96.89	20 11 18	1650.3	-32.25	31.24
110.00	12 48 21	3584.82	-5.26	129.19	22.02	56.18	13 48 6	2984.8	-9.67	122.87

DIFFERENTIAL CORRECTIONS
TDE .1183 TRA 2.5310 TC-11.4780 BAU 1.6122
RDE .2689 RRA -.0030 RC3 .7186 FAU .45711
FDE -.8935 FRA 9.7953 FC-37.7391 BSP 30619
BDE .2937 BRA 2.5310 BC311.5004 FSP 9084

MID-COURSE EXECUTION ACCURACY
SGT 8891.0 SGR 665.6 SG3 2670.8
RRT -.5725 RRF -.5947 RTF .9943
SGB 8915.8 R23 .0284 R13 -.9943
SG1 8899.2 SG2 545.2 THA 177.54

ORBIT DETERMINATION ACCURACY
ST 1493.6 SR 476.0 SS 1646.3
CRT .1321 CRS .2740 CST -.9165
LSA 2176.9 MSA 654.2 SSA 27.0
EL1 1495.0 EL2 471.3 ALF 2.68

LAUNCH DATE NOV 6 1964 FLIGHT TIME 346.00 ARRIVAL DATE OCT 18 1965

HELIOCENTRIC CONIC DISTANCE 773.594 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.834 GAL -3.38 AZL 88.28 HCA 235.82 SMA 186.37 ECC .21244 INC 1.7168 V1 30.050
RP 214.72 LAP -1.42 LOP 279.43 VP 22.893 GAP -8.63 AZP 90.96 TAL 340.49 TAP 216.31 RCA 146.78 APO 225.97 V2 25.572
RC 291.272 GL 17.54 GP 1.53 ZAL 117.65 ZAP 61.49 ETS 180.15 ZAE 91.09 ETE 178.89 ZAC 85.28 ETC 258.28 CLP 61.48

PLANETOCENTRIC CONIC

C3 10.621 VHL 3.259 DLA 22.89 RAL 171.28 RAD 6567.4 VEL 11.490 PTH 2.00 VHP 3.267 DPA 10.46 RAP 163.68 ECC 1.1748

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 17 15	2883.38	-28.32	87.92	30.19	89.76	17 5 18	2283.4	-28.05	79.26
90.00	11 10 52	3908.90	-9.22	155.60	25.35	63.11	12 16 1	3308.9	-12.75	148.70
100.00	17 55 51	2565.44	-29.84	64.50	30.16	91.91	18 38 37	1965.4	-29.25	55.75
100.00	12 14 57	3702.07	-7.87	139.68	24.63	61.07	13 16 39	3102.1	-11.67	132.95
110.00	19 39 19	2241.77	-33.49	39.58	29.82	97.27	20 16 40	1641.8	-32.13	30.61
110.00	12 47 59	3598.50	-4.74	129.91	22.70	56.11	13 47 57	2998.5	-9.16	123.60

DIFFERENTIAL CORRECTIONS
TDE .0827 TRA 2.6729 TC-11.6940 BAU 1.6634
RDE .2751 RRA .0005 RC3 .7030 FAU .44219
FDE -.9873 FRA 9.6446 FC-36.0447 BSP 31580
BDE .2872 BRA 2.6729 BC311.7151 FSP 8784

MID-COURSE EXECUTION ACCURACY
SGT 9172.6 SGR 666.2 SG3 2583.0
RRT -.5593 RRF -.5818 RTF .9945
SGB 9196.8 R23 .0285 R13 -.9945
SG1 9180.2 SG2 551.8 THA 177.67

ORBIT DETERMINATION ACCURACY
ST 1554.1 SR 483.8 SS 1646.1
CRT .0899 CRS .3005 CST -.9224
LSA 2220.4 MSA 654.2 SSA 26.6
EL1 1554.8 EL2 481.6 ALF 1.77

LAUNCH DATE NOV 6 1964 FLIGHT TIME 348.00 ARRIVAL DATE OCT 20 1965

HELIOCENTRIC CONIC DISTANCE 777.763 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.836 GAL -3.46 AZL 88.28 HCA 237.00 SMA 186.42 ECC .21299 INC 1.7222 V1 30.050
RP 214.40 LAP -1.44 LOP 280.61 VP 22.937 GAP -8.79 AZP 90.94 TAL 340.06 TAP 217.06 RCA 146.71 APO 226.12 V2 25.608
RC 292.426 GL 17.47 GP 1.49 ZAL 118.34 ZAP 60.06 ETS 180.18 ZAE 89.39 ETE 178.97 ZAC 85.19 ETC 258.31 CLP 60.05

PLANETOCENTRIC CONIC

C3 10.765 VHL 3.281 DLA 22.55 RAL 171.94 RAD 6567.4 VEL 11.496 PTH 2.00 VHP 3.318 DPA 10.53 RAP 163.42 ECC 1.1772

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 24 39	2869.10	-28.32	86.87	30.94	90.28	17 12 28	2269.1	-27.98	78.23
90.00	11 8 42	3928.66	-8.61	156.73	26.02	62.92	12 14 11	3328.7	-12.17	149.86
100.00	18 2 36	2553.30	-29.81	63.60	30.90	92.39	18 45 9	1953.3	-29.16	54.86
100.00	12 13 27	3719.69	-7.29	140.66	25.31	60.93	13 15 27	3119.7	-11.11	133.96
110.00	19 44 58	2233.02	-33.42	38.90	30.53	97.66	20 22 11	1633.0	-32.00	29.96
110.00	12 47 34	3612.73	-4.20	130.65	23.41	56.04	13 47 47	3012.7	-8.63	124.37

DIFFERENTIAL CORRECTIONS
TDE .0446 TRA 2.8186 TC-11.8837 BAU 1.7131
RDE .2813 RRA .0038 RC3 .6874 FAU .42707
FDE-1.0760 FRA 9.4934 FC-34.3465 BSP 32530
BDE .2848 BRA 2.8186 BC311.9036 FSP 8489

MID-COURSE EXECUTION ACCURACY
SGT 9445.5 SGR 666.9 SG3 2494.7
RRT -.5463 RRF -.5692 RTF .9946
SGB 9469.1 R23 .0286 R13 -.9947
SG1 9452.6 SG2 558.2 THA 177.78

ORBIT DETERMINATION ACCURACY
ST 1617.7 SR 491.4 SS 1646.7
CRT .0484 CRS .3262 CST -.9279
LSA 2267.6 MSA 653.8 SSA 26.1
EL1 1617.9 EL2 490.8 ALF .93

LAUNCH DATE NOV 6 1964 FLIGHT TIME 350.00 ARRIVAL DATE OCT 22 1965

HELIOCENTRIC CONIC DISTANCE 781.936 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.839 GAL -3.55 AZL 88.27 HCA 238.18 SMA 186.46 ECC .21357 INC 1.7274 V1 30.050
RP 214.08 LAP -1.47 LOP 281.79 VP 22.980 GAP -8.95 AZP 90.91 TAL 339.63 TAP 217.81 RCA 146.64 APO 226.29 V2 25.644
RC 293.566 GL 17.40 GP 1.45 ZAL 119.06 ZAP 58.67 ETS 180.21 ZAE 87.73 ETE 179.05 ZAC 85.11 ETC 258.34 CLP 58.66

PLANETOCENTRIC CONIC

C3 10.919 VHL 3.304 DLA 22.19 RAL 172.60 RAD 6567.4 VEL 11.502 PTH 2.00 VHP 3.372 DPA 10.57 RAP 163.21 ECC 1.1797

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 32 10	2854.69	-28.31	85.82	31.71	90.81	17 19 44	2254.7	-27.89	77.18
90.00	11 6 32	3948.87	-7.98	157.88	26.71	62.74	12 12 21	3348.9	-11.57	151.04
100.00	18 9 27	2540.97	-29.77	62.69	31.66	92.87	18 51 48	1941.0	-29.05	53.96
100.00	12 11 56	3737.82	-6.69	141.67	26.02	60.80	13 14 13	3137.8	-10.53	134.99
110.00	19 50 45	2224.07	-33.33	38.22	31.26	98.06	20 27 49	1624.1	-31.86	29.30
110.00	12 47 7	3627.49	-3.64	131.43	24.13	55.99	13 47 35	3027.5	-8.08	125.15

DIFFERENTIAL CORRECTIONS
TDE .0023 TRA 2.9665 TC-12.0518 BAU 1.7620
RDE .2876 RRA .0070 RC3 .6722 FAU .41213
FDE-1.1641 FRA 9.3360 FC-32.6776 BSP 33438
BDE .2876 BRA 2.9665 BC312.0705 FSP 8196

MID-COURSE EXECUTION ACCURACY
SGT 9710.5 SGR 668.0 SG3 2407.0
RRT -.5339 RRF -.5573 RTF .9948
SGB 9733.5 R23 .0288 R13 -.9949
SG1 9717.1 SG2 564.4 THA 177.89

ORBIT DETERMINATION ACCURACY
ST 1683.5 SR 498.9 SS 1647.9
CRT .0064 CRS .3524 CST -.9331
LSA 2317.8 MSA 652.7 SSA 25.8
EL1 1683.6 EL2 498.9 ALF .12

LAUNCH DATE NOV 6 1964 FLIGHT TIME 352.00 ARRIVAL DATE OCT 24 1965

HELIOCENTRIC CONIC DISTANCE 786.114 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.842 GAL -3.63 AZL 88.27 HCA 239.37 SMA 186.51 ECC .21419 INC 1.7326 V1 30.050
RP 213.77 LAP -1.49 LOP 282.97 VP 23.024 GAP -9.11 AZP 90.88 TAL 339.17 TAP 218.54 RCA 146.56 APO 226.46 V2 25.679
RC 294.693 GL 17.32 GP 1.41 ZAL 119.79 ZAP 57.32 ETS 180.24 ZAE 86.10 ETE 179.13 ZAC 85.04 ETC 258.36 CLP 57.31

PLANETOCENTRIC CONIC

C3 11.083 VHL 3.329 DLA 21.81 RAL 173.29 RAD 6567.4 VEL 11.510 PTH 2.00 VHP 3.427 DPA 10.60 RAP 163.04 ECC 1.1824

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 39 46	2840.19	-28.29	84.76	32.50	91.34	17 27 6	2240.2	-27.80	76.13
90.00	11 4 22	3969.50	-7.33	159.05	27.43	62.57	12 10 32	3369.5	-10.95	152.24
100.00	18 16 26	2528.49	-29.72	61.76	32.43	93.35	18 58 34	1928.5	-28.94	53.05
100.00	12 10 23	3756.44	-6.07	142.71	26.74	60.67	13 12 59	3156.4	-9.93	136.05
110.00	19 56 39	2214.93	-33.24	37.52	32.00	98.46	20 33 34	1614.9	-31.72	28.63
110.00	12 46 39	3642.77	-3.06	132.23	24.88	55.94	13 47 22	3042.8	-7.51	125.97

DIFFERENTIAL CORRECTIONS
TDE -.0428 TRA 3.1180 TC-12.1946 BAU 1.8095
RDE .2940 RRA .0102 RC3 .6571 FAU .39726
FDE-1.2479 FRA 9.1777 FC-31.0309 BSP 34317
BDE .2971 BRA 3.1180 BC312.2123 FSP 7902

MID-COURSE EXECUTION ACCURACY
SGT 9966.9 SGR 669.2 SG3 2319.9
RRT -.5219 RRF -.5458 RTF .9949
SGB 9989.3 R23 .0291 R13 -.9950
SG1 9973.0 SG2 570.4 THA 177.99

ORBIT DETERMINATION ACCURACY
ST 1752.6 SR 506.2 SS 1649.7
CRT -.0345 CRS .3780 CST -.9379
LSA 2371.6 MSA 651.2 SSA 25.3
EL1 1752.6 EL2 505.8 ALF 179.38

LAUNCH DATE NOV 6 1964 FLIGHT TIME 354.00 ARRIVAL DATE OCT 26 1965

HELIOCENTRIC CONIC DISTANCE 790.296 EARTH TO MARS

RL	148.27	LAL	-.00	LOL	43.62	VL	32.845	GAL	-3.72	AZL	88.26	HCA	240.55	SMA	186.57	ECC	.21485	INC	1.7377	V1	30.050
RP	213.46	LAP	-1.51	LOP	284.16	VP	23.067	GAP	-9.26	AZP	90.85	TAL	338.71	TAP	219.26	RCA	146.48	APO	226.65	V2	25.714
RC	295.805	GL	17.23	GP	1.37	ZAL	120.54	ZAP	56.00	ETS	180.27	ZAE	84.52	ETE	179.20	ZAC	84.98	ETC	258.38	CLP	55.99

PLANETOCENTRIC CONIC

C3	11.258	VHL	3.355	DLA	21.42	RAL	173.98	RAD	6567.4	VEL	11.517	PTH	2.01	VHP	3.484	DPA	10.62	RAP	162.91	ECC	1.1853

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 47 27	2825.63	-28.26	83.70	33.30	91.87	17 34 32	2225.6	-27.70	75.08
90.00	11 2 12	3990.54	-6.67	160.25	28.17	62.42	12 8 43	3390.5	-10.32	153.46
100.00	18 23 31	2515.88	-29.67	60.83	33.22	93.84	19 5 26	1915.9	-28.82	52.13
100.00	12 8 50	3775.52	-5.43	143.77	27.49	60.56	13 11 45	3175.5	-9.32	137.13
110.00	20 2 41	2205.63	-33.15	36.81	32.76	98.87	20 39 26	1605.6	-31.57	27.94
110.00	12 46 9	3658.54	-2.46	133.05	25.64	55.89	13 47 8	3058.5	-6.92	126.80

DIFFERENTIAL CORRECTIONS

TDE	-.0913	TRA	3.2727	TC-12.3162	BAU	1.8563	
RDE	.3004	RRA	.0132	RC3 .6424	FAU	.38259	
FDE	-1.3266	FRA	9.0177	FC-29.4195	BSP	35176	
BDE	.3140	BRA	3.2727	BC312.3330	FSP	7616	

MID-COURSE EXECUTION ACCURACY

SGT10216.3	SGR	670.5	SG3	2233.9			
RRT -.5106	RRF	-.5349	RTF	.9950			
SGB10238.3	R23	.0293	R13	-.9950			
SG110222.1	SG2	576.2	THA	178.07			

ORBIT DETERMINATION ACCURACY

ST	1824.6	SR	513.2	SS	1651.7		
CRT	-.0749	CRS	.4026	CST	-.9426		
LSA	2428.8	MSA	648.8	SSA	24.9		
EL1	1825.0	EL2	511.7	ALF	178.69		

LAUNCH DATE NOV 6 1964 FLIGHT TIME 356.00 ARRIVAL DATE OCT 28 1965

HELIOCENTRIC CONIC DISTANCE 794.483 EARTH TO MARS

RL	148.27	LAL	-.00	LOL	43.62	VL	32.848	GAL	-3.81	AZL	88.26	HCA	241.74	SMA	186.62	ECC	.21554	INC	1.7426	V1	30.050
RP	213.16	LAP	-1.53	LOP	285.35	VP	23.110	GAP	-9.42	AZP	90.83	TAL	338.22	TAP	219.97	RCA	146.40	APO	226.84	V2	25.748
RC	296.904	GL	17.13	GP	1.34	ZAL	121.31	ZAP	54.73	ETS	180.29	ZAE	82.96	ETE	179.27	ZAC	84.93	ETC	258.39	CLP	54.72

PLANETOCENTRIC CONIC

C3	11.445	VHL	3.383	DLA	21.02	RAL	174.68	RAD	6567.4	VEL	11.525	PTH	2.01	VHP	3.543	DPA	10.62	RAP	162.81	ECC	1.1884

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 55 12	2811.04	-28.22	82.63	34.11	92.41	17 42 3	2211.0	-27.59	74.02
90.00	11 0 3	4011.97	-6.00	161.46	28.93	62.27	12 6 55	3412.0	-9.66	154.69
100.00	18 30 41	2503.18	-29.61	59.89	34.02	94.33	19 12 24	1903.2	-28.69	51.21
100.00	12 7 16	3795.06	-4.78	144.85	28.26	60.46	13 10 31	3195.1	-8.68	138.23
110.00	20 8 48	2196.20	-33.05	36.09	33.54	99.28	20 45 24	1596.2	-31.41	27.25
110.00	12 45 38	3674.80	-1.84	133.90	26.43	55.86	13 46 53	3074.8	-6.30	127.66

DIFFERENTIAL CORRECTIONS

TDE	-.1427	TRA	3.4315	TC-12.4116	BAU	1.9016	
RDE	.3070	RRA	.0161	RC3 .6279	FAU	.36805	
FDE	-1.4019	FRA	8.8552	FC-27.8391	BSP	36012	
BDE	.3385	BRA	3.4315	BC312.4275	FSP	7335	

MID-COURSE EXECUTION ACCURACY

SGT10456.7	SGR	672.0	SG3	2148.8			
RRT -.4998	RRF	-.5246	RTF	.9951			
SGB10478.3	R23	.0298	R13	-.9951			
SG110462.1	SG2	581.8	THA	178.15			

ORBIT DETERMINATION ACCURACY

ST	1900.0	SR	520.1	SS	1653.9		
CRT	-.1139	CRS	.4269	CST	-.9467		
LSA	2489.5	MSA	646.4	SSA	24.4		
EL1	1901.0	EL2	516.5	ALF	178.07		

LAUNCH DATE NOV 6 1964 FLIGHT TIME 358.00 ARRIVAL DATE OCT 30 1965

HELIOCENTRIC CONIC DISTANCE 798.674 EARTH TO MARS

RL	148.27	LAL	-.00	LOL	43.62	VL	32.852	GAL	-3.91	AZL	88.25	HCA	242.94	SMA	186.68	ECC	.21627	INC	1.7475	V1	30.050
RP	212.87	LAP	-1.56	LOP	286.55	VP	23.152	GAP	-9.57	AZP	90.80	TAL	337.73	TAP	220.67	RCA	146.30	APO	227.05	V2	25.782
RC	297.989	GL	17.03	GP	1.30	ZAL	122.09	ZAP	53.49	ETS	180.31	ZAE	81.45	ETE	179.33	ZAC	84.88	ETC	258.39	CLP	53.48

PLANETOCENTRIC CONIC

C3	11.645	VHL	3.412	DLA	20.60	RAL	175.39	RAD	6567.4	VEL	11.534	PTH	2.01	VHP	3.604	DPA	10.60	RAP	162.76	ECC	1.1916

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 3 1	2796.44	-28.18	81.56	34.95	92.94	17 49 38	2196.4	-27.47	72.97
90.00	10 57 55	4033.76	-5.30	162.68	29.71	62.14	12 5 8	3433.8	-8.99	155.95
100.00	18 37 56	2490.41	-29.54	58.95	34.84	94.82	19 19 26	1890.4	-28.55	50.28
100.00	12 5 42	3815.02	-4.11	145.95	29.05	60.37	13 9 17	3215.0	-8.02	139.35
110.00	20 15 1	2186.65	-32.94	35.37	34.33	99.70	20 51 28	1586.7	-31.25	26.55
110.00	12 45 5	3691.54	-1.20	134.77	27.24	55.84	13 46 37	3091.5	-5.67	128.55

DIFFERENTIAL CORRECTIONS

TDE	-.1977	TRA	3.5938	TC-12.4861	BAU	1.9462	
RDE	.3136	RRA	.0188	RC3 .6137	FAU	.35376	
FDE	-1.4740	FRA	8.6937	FC-26.3006	BSP	36817	
BDE	.3708	BRA	3.5939	BC312.5012	FSP	7057	

MID-COURSE EXECUTION ACCURACY

SGT10690.4	SGR	673.7	SG3	2065.5			
RRT -.4896	RRF	-.5151	RTF	.9951			
SGB10711.6	R23	.0302	R13	-.9951			
SG110695.5	SG2	587.1	THA	178.23			

ORBIT DETERMINATION ACCURACY

ST	1978.8	SR	526.9	SS	1656.7		
CRT	-.1520	CRS	.4505	CST	-.9506		
LSA	2554.0	MSA	643.5	SSA	24.0		
EL1	1980.5	EL2	520.3	ALF	177.51		

LAUNCH DATE NOV 6 1964 FLIGHT TIME 360.00 ARRIVAL DATE NOV 1 1965

HELIOCENTRIC CONIC DISTANCE 802.869 EARTH TO MARS

RL	148.27	LAL	-.00	LOL	43.62	VL	32.855	GAL	-4.01	AZL	88.25	HCA	244.14	SMA	186.74	ECC	.21704	INC	1.7522	V1	30.050
RP	212.57	LAP	-1.58	LOP	287.75	VP	23.194	GAP	-9.72	AZP	90.76	TAL	337.21	TAP	221.35	RCA	146.21	APO	227.27	V2	25.815
RC	299.061	GL	16.92	GP	1.27	ZAL	122.89	ZAP	52.29	ETS	180.32	ZAE	79.97	ETE	179.39	ZAC	84.85	ETC	258.39	CLP	52.28

PLANETOCENTRIC CONIC

C3	11.857	VHL	3.443	DLA	20.17	RAL	176.11	RAD	6567.5	VEL	11.543	PTH	2.01	VHP	3.667	DPA	10.57	RAP	162.75	ECC	1.1951

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 10 54	2781.85	-28.12	80.50	35.80	93.47	17 57 15	2181.9	-27.34	71.92
90.00	10 55 47	4055.91	-4.60	163.93	30.51	62.03	12 3 23	3455.9	-8.30	157.21
100.00	18 45 15	2477.60	-29.46	58.00	35.68	95.32	19 26 32	1877.6	-28.41	49.36
100.00	12 4 7	3835.39	-3.42	147.07	29.86	60.29	13 8 3	3235.4	-7.35	140.49
110.00	20 21 19	2177.02	-32.83	34.64	35.15	100.12	20 57 36	1577.0	-31.08	25.85
110.00	12 44 32	3708.74	-.54	135.67	28.07	55.82	13 46 21	3108.7	-5.02	129.45

DIFFERENTIAL CORRECTIONS

TDE	-.2561	TRA	3.7599	TC-12.5389	BAU	1.9899	
RDE	.3204	RRA	.0214	RC3 .5998	FAU	.33976	
FDE	-1.5400	FRA	8.5301	FC-24.8072	BSP	37610	
BDE	.4102	BRA	3.7600	BC312.5533	FSP	6789	

MID-COURSE EXECUTION ACCURACY

SGT10916.7	SGR	675.5	SG3	1983.6			
RRT -.4802	RRF	-.5061	RTF	.9951			
SGB10937.5	R23	.0306	R13	-.9952			
SG110921.5	SG2	592.2	THA	178.29			

ORBIT DETERMINATION ACCURACY

ST	2060.8	SR	533.4	SS	1658.8		
CRT	-.1889	CRS	.4730	CST	-.9543		
LSA	2621.7	MSA	639.8	SSA	23.6		
EL1	2063.4	EL2	523.1	ALF	177.01		

LAUNCH DATE NOV 6 1964 FLIGHT TIME 362.00 ARRIVAL DATE NOV 3 1965

HELIOCENTRIC CONIC DISTANCE 807.067 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.859 GAL -4.11 AZL 88.24 HCA 245.34 SMA 186.80 ECC .21784 INC 1.7570 V1 30.050
RP 212.29 LAP -1.60 LOP 288.95 VP 23.235 GAP -9.87 AZP 90.73 TAL 336.69 TAP 222.02 RCA 146.11 APO 227.49 V2 25.847
RC 300.120 GL 16.80 GP 1.23 ZAL 123.71 ZAP 51.13 ETS 180.34 ZAE 78.53 ETE 179.45 ZAC 84.82 ETC 258.39 CLP 51.12

PLANETOCENTRIC CONIC

C3 12.083 VHL 3.476 DLA 19.73 RAL 176.84 RAD 6567.5 VEL 11.553 PTH 2.02 VHP 3.732 DPA 10.52 RAP 162.77 ECC 1.1989

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 18 49	2767.31	-28.06	79.44	36.66	94.00	18 4 56	2167.3	-27.21	70.88
90.00	10 53 41	4078.40	-3.88	165.19	31.34	61.93	12 1 39	3478.4	-7.60	158.49
100.00	18 52 38	2464.78	-29.37	57.06	36.53	95.81	19 33 42	1864.8	-28.26	48.43
100.00	12 2 33	3856.16	-2.72	148.21	30.70	60.22	13 6 49	3256.2	-6.66	141.65
110.00	20 27 42	2167.33	-32.71	33.91	35.97	100.54	21 3 49	1567.3	-30.91	25.15
110.00	12 43 58	3726.38	.14	136.59	28.92	55.82	13 46 4	3126.4	-4.35	130.38

DIFFERENTIAL CORRECTIONS
TDE -.3171 TRA 3.9310 TC-12.5663 BAU 2.0321
RDE .3273 RRA .0239 RC3 .5861 FAU .32595
FDE-1.6016 FRA 8.3675 FC-23.3543 BSP 38375
BDE .4557 BRA 3.9311 BC312.5800 FSP 6523

MID-COURSE EXECUTION ACCURACY
SGT11134.6 SGR 677.3 SG3 1903.3
RRT -.4713 RRF -.4978 RTF .9951
SGB11155.2 R23 .0312 R13 -.9952
SG111139.2 SG2 597.1 THA 178.35

ORBIT DETERMINATION ACCURACY
ST 2146.3 SR 539.7 SS 1660.8
CRT -.2238 CRS .4946 CST -.9575
LSA 2692.8 MSA 636.1 SSA 23.1
EL1 2149.9 EL2 525.1 ALF 176.57

LAUNCH DATE NOV 6 1964 FLIGHT TIME 364.00 ARRIVAL DATE NOV 5 1965

HELIOCENTRIC CONIC DISTANCE 811.269 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.862 GAL -4.22 AZL 88.24 HCA 246.54 SMA 186.86 ECC .21869 INC 1.7615 V1 30.050
RP 212.01 LAP -1.62 LOP 290.15 VP 23.276 GAP -10.02 AZP 90.70 TAL 336.14 TAP 222.69 RCA 146.00 APO 227.73 V2 25.879
RC 301.167 GL 16.68 GP 1.20 ZAL 124.53 ZAP 50.00 ETS 180.35 ZAE 77.11 ETE 179.50 ZAC 84.81 ETC 258.38 CLP 49.99

PLANETOCENTRIC CONIC

C3 12.323 VHL 3.510 DLA 19.28 RAL 177.58 RAD 6567.5 VEL 11.563 PTH 2.02 VHP 3.799 DPA 10.47 RAP 162.83 ECC 1.2028

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 26 46	2752.83	-27.98	78.39	37.54	94.52	18 12 39	2152.8	-27.06	69.84
90.00	10 51 36	4101.22	-3.15	166.47	32.19	61.84	11 59 57	3501.2	-6.89	159.79
100.00	19 0 4	2451.97	-29.28	56.12	37.40	96.29	19 40 56	1852.0	-28.10	47.51
100.00	12 0 59	3877.32	-2.00	149.38	31.56	60.17	13 5 37	3277.3	-5.96	142.82
110.00	20 34 9	2157.59	-32.58	33.18	36.82	100.95	21 10 7	1557.6	-30.73	24.45
110.00	12 43 23	3744.46	.83	137.53	29.79	55.83	13 45 48	3144.5	-3.66	131.33

DIFFERENTIAL CORRECTIONS
TDE -.3819 TRA 4.1059 TC-12.5740 BAU 2.0737
RDE .3343 RRA .0261 RC3 .5728 FAU .31247
FDE-1.6600 FRA 8.2050 FC-21.9511 BSP 39127
BDE .5075 BRA 4.1059 BC312.5870 FSP 6268

MID-COURSE EXECUTION ACCURACY
SGT11345.7 SGR 679.3 SG3 1824.9
RRT -.4631 RRF -.4903 RTF .9951
SGB11366.0 R23 .0317 R13 -.9951
SG111350.1 SG2 601.8 THA 178.41

ORBIT DETERMINATION ACCURACY
ST 2234.9 SR 545.9 SS 1662.9
CRT -.2577 CRS .5156 CST -.9605
LSA 2767.3 MSA 632.0 SSA 22.7
EL1 2239.6 EL2 526.3 ALF 176.19

LAUNCH DATE NOV 6 1964 FLIGHT TIME 366.00 ARRIVAL DATE NOV 7 1965

HELIOCENTRIC CONIC DISTANCE 815.473 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.866 GAL -4.33 AZL 88.23 HCA 247.75 SMA 186.93 ECC .21958 INC 1.7661 V1 30.050
RP 211.73 LAP -1.63 LOP 291.36 VP 23.316 GAP -10.17 AZP 90.67 TAL 335.58 TAP 223.34 RCA 145.88 APO 227.98 V2 25.911
RC 302.203 GL 16.55 GP 1.17 ZAL 125.37 ZAP 48.90 ETS 180.36 ZAE 75.74 ETE 179.55 ZAC 84.80 ETC 258.36 CLP 48.89

PLANETOCENTRIC CONIC

C3 12.579 VHL 3.547 DLA 18.81 RAL 178.32 RAD 6567.5 VEL 11.574 PTH 2.02 VHP 3.867 DPA 10.39 RAP 162.92 ECC 1.2070

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 34 45	2738.44	-27.90	77.34	38.44	95.04	18 20 23	2138.4	-26.91	68.82
90.00	10 49 33	4124.36	-2.40	167.76	33.07	61.78	11 58 17	3524.4	-6.16	161.09
100.00	19 7 33	2439.19	-29.18	55.18	38.29	96.78	19 48 12	1839.2	-27.94	46.60
100.00	11 59 26	3898.84	-1.27	150.56	32.44	60.13	13 4 25	3298.8	-5.24	144.01
110.00	20 40 40	2147.84	-32.46	32.44	37.68	101.37	21 16 28	1547.8	-30.55	23.75
110.00	12 42 48	3762.96	1.54	138.50	30.68	55.85	13 45 31	3163.0	-2.96	132.29

DIFFERENTIAL CORRECTIONS
TDE -.4499 TRA 4.2852 TC-12.5612 BAU 2.1145
RDE .3414 RRA .0282 RC3 .5597 FAU .29929
FDE-1.7132 FRA 8.0414 FC-20.5981 BSP 39844
BDE .5648 BRA 4.2853 BC312.5737 FSP 6017

MID-COURSE EXECUTION ACCURACY
SGT11550.1 SGR 681.3 SG3 1748.4
RRT -.4557 RRF -.4835 RTF .9950
SGB11570.1 R23 .0324 R13 -.9951
SG111554.2 SG2 606.2 THA 178.46

ORBIT DETERMINATION ACCURACY
ST 2326.6 SR 551.9 SS 1664.0
CRT -.2900 CRS .5357 CST -.9633
LSA 2844.7 MSA 627.7 SSA 22.3
EL1 2332.4 EL2 526.8 ALF 175.85

LAUNCH DATE NOV 6 1964 FLIGHT TIME 368.00 ARRIVAL DATE NOV 9 1965

HELIOCENTRIC CONIC DISTANCE 819.680 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.870 GAL -4.44 AZL 88.23 HCA 248.96 SMA 187.00 ECC .22051 INC 1.7705 V1 30.050
RP 211.47 LAP -1.65 LOP 292.57 VP 23.356 GAP -10.31 AZP 90.64 TAL 335.01 TAP 223.97 RCA 145.76 APO 228.24 V2 25.941
RC 303.228 GL 16.41 GP 1.14 ZAL 126.23 ZAP 47.84 ETS 180.37 ZAE 74.39 ETE 179.60 ZAC 84.80 ETC 258.34 CLP 47.83

PLANETOCENTRIC CONIC

C3 12.851 VHL 3.585 DLA 18.33 RAL 179.07 RAD 6567.5 VEL 11.586 PTH 2.03 VHP 3.937 DPA 10.31 RAP 163.04 ECC 1.2115

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 42 45	2724.16	-27.81	76.31	39.35	95.55	18 28 9	2124.2	-26.75	67.80
90.00	10 47 31	4147.80	-1.65	169.07	33.96	61.73	11 56 38	3547.8	-5.41	162.42
100.00	19 15 4	2426.48	-29.08	54.25	39.19	97.25	19 55 30	1826.5	-27.77	45.69
100.00	11 57 53	3920.72	-.53	151.76	33.34	60.11	13 3 14	3320.7	-4.51	145.22
110.00	20 47 14	2138.10	-32.32	31.72	38.55	101.78	21 22 52	1538.1	-30.36	23.05
110.00	12 42 12	3781.86	2.26	139.48	31.60	55.88	13 45 14	3181.9	-2.23	133.28

DIFFERENTIAL CORRECTIONS
TDE -.5204 TRA 4.4701 TC-12.5277 BAU 2.1544
RDE .3487 RRA .0301 RC3 .5468 FAU .28640
FDE-1.7602 FRA 7.8807 FC-19.2934 BSP 40567
BDE .6264 BRA 4.4702 BC312.5396 FSP 5776

MID-COURSE EXECUTION ACCURACY
SGT11748.0 SGR 683.3 SG3 1673.9
RRT -.4489 RRF -.4773 RTF .9950
SGB11767.9 R23 .0330 R13 -.9950
SG111752.1 SG2 610.4 THA 178.50

ORBIT DETERMINATION ACCURACY
ST 2421.3 SR 557.7 SS 1664.3
CRT -.3202 CRS .5543 CST -.9658
LSA 2924.9 MSA 623.1 SSA 22.0
EL1 2428.2 EL2 526.8 ALF 175.57

LAUNCH DATE NOV 6 1964 FLIGHT TIME 370.00 ARRIVAL DATE NOV 11 1965

HELIOCENTRIC CONIC DISTANCE 823.889 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.874 GAL -4.56 AZL 88.23 HCA 250.18 SMA 187.07 ECC .22149 INC 1.7750 V1 30.050
RP 211.20 LAP -1.67 LOP 293.79 VP 23.395 GAP -10.46 AZP 90.60 TAL 334.42 TAP 224.60 RCA 145.64 APO 228.51 V2 25.971
RC 304.242 GL 16.26 GP 1.12 ZAL 127.09 ZAP 46.81 ETS 180.37 ZAE 73.07 ETE 179.65 ZAC 84.81 ETC 258.31 CLP 46.80

PLANETOCENTRIC CONIC

C3 13.140 VHL 3.625 DLA 17.85 RAL 179.82 RAD 6567.5 VEL 11.599 PTH 2.03 VHP 4.009 DPA 10.21 RAP 163.20 ECC 1.2163

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 50 46	2710.01	-27.71	75.29	40.28	96.06	18 35 56	2110.0	-26.59	66.80
90.00	10 45 30	4171.54	-.88	170.39	34.88	61.70	11 55 2	3571.5	-4.66	163.75
100.00	19 22 37	2413.85	-28.97	53.33	40.10	97.73	20 2 50	1813.8	-27.59	44.79
100.00	11 56 21	3942.94	.22	152.98	34.27	60.11	13 2 4	3342.9	-3.76	146.45
110.00	20 53 51	2128.39	-32.19	30.99	39.45	102.19	21 29 19	1528.4	-30.17	22.36
110.00	12 41 36	3801.17	2.99	140.49	32.54	55.93	13 44 57	3201.2	-1.50	134.29

DIFFERENTIAL CORRECTIONS

TDE -.5950 TRA 4.6593 TC-12.4756 BAU 2.1937
RDE .3562 RRA .0318 RC3 .5342 FAU .27388
FDE-1.8042 FRA 7.7188 FC-18.0443 BSP 41259
BDE .6935 BRA 4.6594 BC312.4870 FSP 5541

MID-COURSE EXECUTION ACCURACY

SGT11939.4 SGR 685.4 SG3 1601.4
RRT -.4428 RRF -.4719 RTF .9949
SGB11959.1 R23 .0336 R13 -.9949
SG111943.3 SG2 614.3 THA 178.54

ORBIT DETERMINATION ACCURACY

ST 2519.0 SR 563.3 SS 1664.0
CRT -.3494 CRS .5725 CST -.9681
LSA 3008.2 MSA 618.1 SSA 21.6
EL1 2527.1 EL2 526.1 ALF 175.33

LAUNCH DATE NOV 6 1964 FLIGHT TIME 372.00 ARRIVAL DATE NOV 13 1965

HELIOCENTRIC CONIC DISTANCE 828.100 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.879 GAL -4.68 AZL 88.22 HCA 251.39 SMA 187.15 ECC .22251 INC 1.7793 V1 30.050
RP 210.95 LAP -1.69 LOP 295.00 VP 23.433 GAP -10.61 AZP 90.57 TAL 333.82 TAP 225.21 RCA 145.50 APO 228.79 V2 26.001
RC 305.247 GL 16.11 GP 1.09 ZAL 127.97 ZAP 45.81 ETS 180.38 ZAE 71.79 ETE 179.70 ZAC 84.82 ETC 258.28 CLP 45.80

PLANETOCENTRIC CONIC

C3 13.448 VHL 3.667 DLA 17.35 RAL 180.58 RAD 6567.5 VEL 11.612 PTH 2.03 VHP 4.083 DPA 10.10 RAP 163.40 ECC 1.2213

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 58 48	2696.01	-27.61	74.27	41.22	96.55	18 43 44	2096.0	-26.41	65.81
90.00	10 43 32	4195.57	-.10	171.73	35.83	61.68	11 53 27	3595.6	-3.89	165.10
100.00	19 30 11	2401.32	-28.85	52.42	41.04	98.19	20 10 12	1801.3	-27.41	43.91
100.00	11 54 50	3965.50	.99	154.21	35.22	60.12	13 0 55	3365.5	-3.00	147.69
110.00	21 0 30	2118.73	-32.04	30.27	40.36	102.59	21 35 49	1518.7	-29.98	21.67
110.00	12 41 0	3820.86	3.74	141.52	33.50	56.00	13 44 41	3220.9	-.74	135.32

DIFFERENTIAL CORRECTIONS

TDE -.6725 TRA 4.8533 TC-12.4055 BAU 2.2323
RDE .3638 RRA .0333 RC3 .5219 FAU .26172
FDE-1.8434 FRA 7.5569 FC-16.8491 BSP 41932
BDE .7646 BRA 4.8534 BC312.4165 FSP 5311

MID-COURSE EXECUTION ACCURACY

SGT12124.4 SGR 687.5 SG3 1531.1
RRT -.4375 RRF -.4673 RTF .9948
SGB12143.9 R23 .0344 R13 -.9948
SG112128.1 SG2 618.0 THA 178.58

ORBIT DETERMINATION ACCURACY

ST 2618.9 SR 568.8 SS 1662.4
CRT -.3768 CRS .5898 CST -.9701
LSA 3093.4 MSA 613.2 SSA 21.2
EL1 2628.0 EL2 525.0 ALF 175.13

LAUNCH DATE NOV 6 1964 FLIGHT TIME 374.00 ARRIVAL DATE NOV 15 1965

HELIOCENTRIC CONIC DISTANCE 832.312 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.883 GAL -4.80 AZL 88.22 HCA 252.61 SMA 187.22 ECC .22358 INC 1.7836 V1 30.050
RP 210.70 LAP -1.70 LOP 296.22 VP 23.471 GAP -10.75 AZP 90.53 TAL 333.20 TAP 225.81 RCA 145.36 APO 229.08 V2 26.029
RC 306.243 GL 15.95 GP 1.06 ZAL 128.85 ZAP 44.83 ETS 180.38 ZAE 70.53 ETE 179.74 ZAC 84.84 ETC 258.25 CLP 44.82

PLANETOCENTRIC CONIC

C3 13.774 VHL 3.711 DLA 16.85 RAL 181.34 RAD 6567.5 VEL 11.626 PTH 2.04 VHP 4.159 DPA 9.98 RAP 163.62 ECC 1.2267

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 6 50	2682.18	-27.50	73.28	42.18	97.04	18 51 32	2082.2	-26.24	64.84
90.00	10 41 35	4219.87	.68	173.09	36.80	61.69	11 51 55	3619.9	-3.11	166.46
100.00	19 37 46	2388.92	-28.72	51.51	41.99	98.65	20 17 35	1788.9	-27.23	43.03
100.00	11 53 19	3988.37	1.76	155.47	36.20	60.15	12 59 48	3388.4	-2.22	148.95
110.00	21 7 11	2109.14	-31.90	29.56	41.28	102.99	21 42 20	1509.1	-29.78	20.99
110.00	12 40 23	3840.92	4.51	142.58	34.48	56.08	13 44 24	3240.9	.02	136.36

DIFFERENTIAL CORRECTIONS

TDE -.7528 TRA 5.0542 TC-12.3143 BAU 2.2696
RDE .3716 RRA .0346 RC3 .5097 FAU .24980
FDE-1.8771 FRA 7.3976 FC-15.7000 BSP 42609
BDE .8395 BRA 5.0543 BC312.3248 FSP 5093

MID-COURSE EXECUTION ACCURACY

SGT12303.0 SGR 689.5 SG3 1462.7
RRT -.4327 RRF -.4632 RTF .9947
SGB12322.3 R23 .0351 R13 -.9947
SG112306.6 SG2 621.4 THA 178.61

ORBIT DETERMINATION ACCURACY

ST 2721.6 SR 574.1 SS 1659.7
CRT -.4025 CRS .6059 CST -.9720
LSA 3181.3 MSA 608.2 SSA 20.9
EL1 2731.8 EL2 523.5 ALF 174.96

LAUNCH DATE NOV 6 1964 FLIGHT TIME 376.00 ARRIVAL DATE NOV 17 1965

HELIOCENTRIC CONIC DISTANCE 836.525 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.887 GAL -4.93 AZL 88.21 HCA 253.84 SMA 187.30 ECC .22470 INC 1.7879 V1 30.050
RP 210.46 LAP -1.72 LOP 297.45 VP 23.508 GAP -10.90 AZP 90.50 TAL 332.56 TAP 226.40 RCA 145.21 APO 229.39 V2 26.057
RC 307.229 GL 15.79 GP 1.04 ZAL 129.75 ZAP 43.89 ETS 180.38 ZAE 69.30 ETE 179.78 ZAC 84.87 ETC 258.21 CLP 43.88

PLANETOCENTRIC CONIC

C3 14.121 VHL 3.758 DLA 16.33 RAL 182.11 RAD 6567.6 VEL 11.641 PTH 2.04 VHP 4.236 DPA 9.85 RAP 163.87 ECC 1.2324

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 14 51	2668.54	-27.38	72.30	43.15	97.52	18 59 20	2068.5	-26.06	63.88
90.00	10 39 40	4244.44	1.47	174.46	37.79	61.72	11 50 24	3644.4	-2.32	167.83
100.00	19 45 22	2376.67	-28.60	50.63	42.95	99.10	20 24 58	1776.7	-27.04	42.17
100.00	11 51 50	4011.55	2.55	156.74	37.19	60.21	12 58 42	3411.5	-1.44	150.22
110.00	21 13 54	2099.65	-31.75	28.86	42.22	103.38	21 48 54	1499.6	-29.59	20.32
110.00	12 39 47	3861.34	5.28	143.65	35.49	56.18	13 44 9	3261.3	.80	137.43

DIFFERENTIAL CORRECTIONS

TDE -.8359 TRA 5.2596 TC-12.2098 BAU 2.3070
RDE .3796 RRA .0356 RC3 .4979 FAU .23829
FDE-1.9061 FRA 7.2377 FC-14.6089 BSP 43260
BDE .9181 BRA 5.2598 BC312.2199 FSP 4879

MID-COURSE EXECUTION ACCURACY

SGT12476.6 SGR 691.5 SG3 1396.5
RRT -.4287 RRF -.4598 RTF .9945
SGB12495.7 R23 .0359 R13 -.9946
SG112480.1 SG2 624.6 THA 178.64

ORBIT DETERMINATION ACCURACY

ST 2825.8 SR 579.2 SS 1655.3
CRT -.4266 CRS .6212 CST -.9736
LSA 3270.6 MSA 603.0 SSA 20.5
EL1 2837.0 EL2 521.7 ALF 174.83

LAUNCH DATE NOV 6 1964 FLIGHT TIME 378.00 ARRIVAL DATE NOV 19 1965

DISTANCE 840.738

HELIOCENTRIC CONIC

```
RL  148.27 LAL   -.00 LOL  43.62 VL  32.892 GAL  -5.07 AZL  88.21 HCA 255.06 SMA 187.38 ECC .22587 INC 1.7920 V1  30.050
RP  210.22 LAP  -1.73 LOP 298.67 VP  23.545 GAP -11.05 AZP  90.46 TAL 331.91 TAP 226.97 RCA 145.05 APO 229.70 V2  26.085
RC 308.206 GL   15.61 GP    1.01 ZAL 130.65 ZAP  42.98 ETS 180.38 ZAE  68.09 ETE 179.82 ZAC  84.91 ETC 258.17 CLP  42.97
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EARTH TO MARS

PLANETOCENTRIC CONIC

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C3  14.490 VHL  3.807 DLA  15.81 RAL 182.88 RAD 6567.6 VEL 11.657 PTH   2.05 VHP  4.315 DPA   9.70 RAP 164.15 ECC 1.2385
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LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 22 52	2655.11	-27.26	71.33	44.14	97.99	19 7 7	2055.1	-25.87	62.94
90.00	10 37 46	4269.27	2.27	175.84	38.80	61.77	11 48 55	3669.3	-1.52	169.22
100.00	19 52 58	2364.58	-28.46	49.75	43.93	99.54	20 32 22	1764.6	-26.85	41.32
100.00	11 50 22	4035.03	3.34	158.03	38.21	60.28	12 57 37	3435.0	-.64	151.51
110.00	21 20 38	2090.27	-31.60	28.17	43.18	103.76	21 55 28	1490.3	-29.39	19.67
110.00	12 39 11	3882.10	6.07	144.74	36.52	56.30	13 43 53	3282.1	1.60	138.51

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DIFFERENTIAL CORRECTIONS                    MID-COURSE EXECUTION ACCURACY                ORBIT DETERMINATION ACCURACY
 TDE -.9229 TRA 5.4716 TC-12.0880 BAU 2.3436   SGT12644.7 SGR  693.6 SG3 1332.3          ST  2932.6 SR   584.1 SS  1650.1
 RDE  .3879 RRA  .0364 RC3  .4861 FAU .22705   RRT -.4253 RRF -.4572 RTF  .9944          CRT -.4496 CRS  .6359 CST -.9751
 FDE-1.9316 FRA 7.0797 FC-13.5656 BSP  43896   SGB12663.7 R23  .0367 R13 -.9944         LSA 3362.5 MSA  597.8 SSA   20.2
 BDE 1.0011 BRA 5.4717 BC312.0978 FSP   4672   SG112648.1 SG2  627.5 THA 178.66        EL1 2944.7 EL2  519.6 ALF 174.72
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LAUNCH DATE NOV 6 1964 FLIGHT TIME 380.00 ARRIVAL DATE NOV 21 1965

DISTANCE 844.951

HELIOCENTRIC CONIC

```
RL  148.27 LAL   -.00 LOL  43.62 VL  32.897 GAL  -5.21 AZL  88.20 HCA 256.29 SMA 187.46 ECC .22710 INC 1.7962 V1  30.050
RP  209.99 LAP  -1.75 LOP 299.90 VP  23.581 GAP -11.19 AZP  90.43 TAL 331.24 TAP 227.53 RCA 144.89 APO 230.03 V2  26.111
RC 309.174 GL   15.44 GP     .99 ZAL 131.56 ZAP  42.09 ETS 180.38 ZAE  66.91 ETE 179.86 ZAC  84.95 ETC 258.12 CLP  42.08
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EARTH TO MARS

PLANETOCENTRIC CONIC

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C3  14.882 VHL  3.858 DLA  15.28 RAL 183.65 RAD 6567.6 VEL 11.673 PTH   2.05 VHP  4.396 DPA   9.55 RAP 164.46 ECC 1.2449
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LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 30 52	2641.90	-27.13	70.39	45.15	98.44	19 14 54	2041.9	-25.68	62.02
90.00	10 35 55	4294.35	3.08	177.25	39.84	61.84	11 47 29	3694.3	-.71	170.62
100.00	20 0 33	2352.69	-28.32	48.89	44.93	99.98	20 39 46	1752.7	-26.66	40.49
100.00	11 48 55	4058.79	4.14	159.34	39.26	60.37	12 56 34	3458.8	.16	152.81
110.00	21 27 23	2081.03	-31.45	27.50	44.16	104.14	22 2 4	1481.0	-29.19	19.02
110.00	12 38 35	3903.21	6.86	145.86	37.58	56.43	13 43 38	3303.2	2.40	139.61

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DIFFERENTIAL CORRECTIONS                    MID-COURSE EXECUTION ACCURACY                ORBIT DETERMINATION ACCURACY
 TDE-1.0123 TRA 5.6891 TC-11.9496 BAU 2.3793   SGT12805.7 SGR  695.5 SG3 1270.1          ST  3040.2 SR   588.9 SS  1643.1
 RDE  .3963 RRA  .0369 RC3  .4746 FAU .21616   RRT -.4225 RRF -.4552 RTF  .9942          CRT -.4709 CRS  .6498 CST -.9764
 FDE-1.9525 FRA 6.9207 FC-12.5754 BSP  44534   SGB12824.6 R23  .0377 R13 -.9942         LSA 3455.0 MSA  592.8 SSA   19.9
 BDE 1.0871 BRA 5.6892 BC311.9590 FSP   4472   SG112809.1 SG2  630.2 THA 178.68        EL1 3053.2 EL2  517.3 ALF 174.63
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LAUNCH DATE NOV 6 1964 FLIGHT TIME 382.00 ARRIVAL DATE NOV 23 1965

DISTANCE 849.164

HELIOCENTRIC CONIC

```
RL  148.27 LAL   -.00 LOL  43.62 VL  32.901 GAL  -5.35 AZL  88.20 HCA 257.52 SMA 187.54 ECC .22837 INC 1.8004 V1  30.050
RP  209.77 LAP  -1.76 LOP 301.13 VP  23.616 GAP -11.34 AZP  90.39 TAL 330.56 TAP 228.08 RCA 144.71 APO 230.37 V2  26.137
RC 310.132 GL   15.26 GP     .97 ZAL 132.48 ZAP  41.23 ETS 180.38 ZAE  65.76 ETE 179.90 ZAC  85.00 ETC 258.07 CLP  41.22
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EARTH TO MARS

PLANETOCENTRIC CONIC

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C3  15.297 VHL  3.911 DLA  14.74 RAL 184.42 RAD 6567.6 VEL 11.691 PTH   2.06 VHP  4.479 DPA   9.38 RAP 164.79 ECC 1.2518
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LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 38 52	2628.93	-27.00	69.46	46.17	98.89	19 22 40	2028.9	-25.49	61.12
90.00	10 34 5	4319.66	3.89	178.66	40.91	61.93	11 46 5	3719.7	.11	172.03
100.00	20 8 9	2341.00	-28.18	48.05	45.94	100.40	20 47 10	1741.0	-26.46	39.68
100.00	11 47 29	4082.83	4.95	160.67	40.33	60.48	12 55 32	3482.8	.98	154.13
110.00	21 34 8	2071.95	-31.30	26.83	45.15	104.50	22 8 40	1472.0	-28.99	18.39
110.00	12 37 59	3924.64	7.67	147.00	38.65	56.59	13 43 24	3324.6	3.22	140.73

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DIFFERENTIAL CORRECTIONS                    MID-COURSE EXECUTION ACCURACY                ORBIT DETERMINATION ACCURACY
 TDE-1.1049 TRA 5.9133 TC-11.7988 BAU 2.4149   SGT12963.0 SGR  697.4 SG3 1210.0          ST  3149.3 SR   593.6 SS  1634.4
 RDE  .4049 RRA  .0372 RC3  .4633 FAU .20561   RRT -.4203 RRF -.4538 RTF  .9940          CRT -.4910 CRS  .6630 CST -.9776
 FDE-1.9689 FRA 6.7631 FC-11.6365 BSP  45166   SGB12981.8 R23  .0386 R13 -.9940         LSA 3549.1 MSA  587.6 SSA   19.6
 BDE 1.1768 BRA 5.9134 BC311.8079 FSP   4280   SG112966.3 SG2  632.7 THA 178.70        EL1 3163.1 EL2  514.8 ALF 174.57
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LAUNCH DATE NOV 6 1964 FLIGHT TIME 384.00 ARRIVAL DATE NOV 25 1965

DISTANCE 853.376

HELIOCENTRIC CONIC

```
RL  148.27 LAL   -.00 LOL  43.62 VL  32.906 GAL  -5.50 AZL  88.20 HCA 258.75 SMA 187.63 ECC .22971 INC 1.8044 V1  30.050
RP  209.55 LAP  -1.77 LOP 302.37 VP  23.650 GAP -11.49 AZP  90.35 TAL 329.86 TAP 228.62 RCA 144.53 APO 230.73 V2  26.162
RC 311.080 GL   15.07 GP     .95 ZAL 133.40 ZAP  40.39 ETS 180.38 ZAE  64.63 ETE 179.93 ZAC  85.06 ETC 258.02 CLP  40.38
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EARTH TO MARS

PLANETOCENTRIC CONIC

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C3  15.739 VHL  3.967 DLA  14.20 RAL 185.19 RAD 6567.6 VEL 11.710 PTH   2.06 VHP  4.563 DPA   9.20 RAP 165.15 ECC 1.2590
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LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 46 49	2616.22	-26.86	68.56	47.21	99.32	19 30 25	2016.2	-25.30	60.24
90.00	10 32 17	4345.21	4.71	180.10	42.00	62.05	11 44 43	3745.2	.93	173.45
100.00	20 15 43	2329.53	-28.04	47.23	46.97	100.81	20 54 32	1729.5	-26.26	38.88
100.00	11 46 5	4107.14	5.76	162.02	41.42	60.62	12 54 32	3507.1	1.80	155.46
110.00	21 40 53	2063.04	-31.14	26.18	46.16	104.86	22 15 16	1463.0	-28.79	17.77
110.00	12 37 24	3946.39	8.48	148.15	39.75	56.76	13 43 10	3346.4	4.05	141.87

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DIFFERENTIAL CORRECTIONS                    MID-COURSE EXECUTION ACCURACY                ORBIT DETERMINATION ACCURACY
 TDE-1.2011 TRA 6.1432 TC-11.6365 BAU 2.4503   SGT13115.4 SGR  699.3 SG3 1152.0          ST  3259.5 SR   598.0 SS  1624.4
 RDE  .4139 RRA  .0372 RC3  .4521 FAU .19543   RRT -.4189 RRF -.4532 RTF  .9937          CRT -.5100 CRS  .6757 CST -.9786
 FDE-1.9823 FRA 6.6054 FC-10.7499 BSP  45761   SGB13134.0 R23  .0396 R13 -.9938         LSA 3644.3 MSA  582.5 SSA   19.3
 BDE 1.2704 BRA 6.1433 BC311.6453 FSP   4093   SG113118.7 SG2  634.8 THA 178.72        EL1 3274.1 EL2  512.1 ALF 174.52
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LAUNCH DATE NOV 6 1964 FLIGHT TIME 386.00 ARRIVAL DATE NOV 27 1965

HELIOCENTRIC CONIC DISTANCE 857.586 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.911 GAL -5.65 AZL 88.19 HCA 259.99 SMA 187.71 ECC .23110 INC 1.8085 V1 30.050
RP 209.34 LAP -1.78 LOP 303.60 VP 23.684 GAP -11.64 AZP 90.31 TAL 329.15 TAP 229.14 RCA 144.33 APO 231.09 V2 26.186
RC 312.019 GL 14.88 GP .93 ZAL 134.33 ZAP 39.58 ETS 180.37 ZAE 63.53 ETE 179.97 ZAC 85.12 ETC 257.96 CLP 39.57

PLANETOCENTRIC CONIC

C3 16.208 VHL 4.026 DLA 13.65 RAL 185.96 RAD 6567.6 VEL 11.730 PTH 2.07 VHP 4.649 DPA 9.02 RAP 165.54 ECC 1.2667

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 54 45	2603.78	-26.72	67.67	48.26	99.74	19 38 9	2003.8	-25.10	59.38
90.00	10 30 32	4370.98	5.53	181.55	43.11	62.18	11 43 23	3771.0	1.76	174.89
100.00	20 23 16	2318.30	-27.89	46.43	48.01	101.21	21 1 55	1718.3	-26.06	38.11
100.00	11 44 41	4131.70	6.58	163.38	42.54	60.78	12 53 33	3531.7	2.64	156.81
110.00	21 47 38	2054.33	-30.99	25.55	47.18	105.20	22 21 53	1454.3	-28.59	17.17
110.00	12 36 49	3968.44	9.30	149.33	40.88	56.96	13 42 57	3368.4	4.89	143.03

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.3000 TRA 6.3801 TC-11.4601 BAU 2.4850 SGT13262.0 SGR 701.1 SG3 1095.9 ST 3370.2 SR 602.4 SS 1612.4
RDE .4230 RRA .0369 RC3 .4411 FAU .18553 RRT -.4180 RRF -.4532 RTF .9935 CRT -.5278 CRS .6876 CST -.9795
FDE-1.9908 FRA 6.4483 FC3-9.9103 BSP 46361 SGB13280.6 R23 .0407 R13 -.9935 LSA 3739.9 MSA 577.4 SSA 19.1
BDE 1.3671 BRA 6.3802 BC311.4685 FSP 3912 SG113265.3 SG2 636.7 THA 178.73 EL1 3385.5 EL2 509.3 ALF 174.49

LAUNCH DATE NOV 6 1964 FLIGHT TIME 388.00 ARRIVAL DATE NOV 29 1965

HELIOCENTRIC CONIC DISTANCE 861.795 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.916 GAL -5.80 AZL 88.19 HCA 261.23 SMA 187.80 ECC .23255 INC 1.8126 V1 30.050
RP 209.14 LAP -1.79 LOP 304.84 VP 23.717 GAP -11.78 AZP 90.28 TAL 328.42 TAP 229.65 RCA 144.13 APO 231.48 V2 26.209
RC 312.950 GL 14.68 GP .91 ZAL 135.26 ZAP 38.79 ETS 180.37 ZAE 62.44 ETE 180.00 ZAC 85.19 ETC 257.91 CLP 38.78

PLANETOCENTRIC CONIC

C3 16.705 VHL 4.087 DLA 13.10 RAL 186.74 RAD 6567.7 VEL 11.751 PTH 2.07 VHP 4.738 DPA 8.82 RAP 165.95 ECC 1.2749

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 2 39	2591.63	-26.58	66.81	49.33	100.15	19 45 51	1991.6	-24.90	58.54
90.00	10 28 48	4396.97	6.35	183.01	44.25	62.35	11 42 5	3797.0	2.60	176.34
100.00	20 30 49	2307.33	-27.75	45.65	49.08	101.59	21 9 16	1707.3	-25.87	37.35
100.00	11 43 19	4156.51	7.40	164.76	43.68	60.96	12 52 36	3556.5	3.47	158.18
110.00	21 54 23	2045.82	-30.84	24.93	48.22	105.54	22 28 29	1445.8	-28.40	16.58
110.00	12 36 14	3990.78	10.13	150.54	42.03	57.18	13 42 45	3390.8	5.73	144.20

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.4030 TRA 6.6236 TC-11.2749 BAU 2.5199 SGT13405.1 SGR 702.9 SG3 1041.8 ST 3482.0 SR 606.5 SS 1599.1
RDE .4325 RRA .0362 RC3 .4303 FAU .17599 RRT -.4179 RRF -.4539 RTF .9932 CRT -.5448 CRS .6992 CST -.9803
FDE-1.9966 FRA 6.2906 FC3-9.1204 BSP 46932 SGB13423.6 R23 .0418 R13 -.9932 LSA 3836.9 MSA 572.2 SSA 18.8
BDE 1.4682 BRA 6.6237 BC311.2831 FSP 3735 SG113408.4 SG2 638.4 THA 178.74 EL1 3498.0 EL2 506.3 ALF 174.46

LAUNCH DATE NOV 6 1964 FLIGHT TIME 390.00 ARRIVAL DATE DEC 1 1965

HELIOCENTRIC CONIC DISTANCE 866.000 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.921 GAL -5.97 AZL 88.18 HCA 262.47 SMA 187.89 ECC .23407 INC 1.8166 V1 30.050
RP 208.94 LAP -1.80 LOP 306.08 VP 23.749 GAP -11.94 AZP 90.24 TAL 327.67 TAP 230.14 RCA 143.91 APO 231.87 V2 26.232
RC 313.871 GL 14.48 GP .89 ZAL 136.20 ZAP 38.03 ETS 180.36 ZAE 61.38 ETE 180.03 ZAC 85.27 ETC 257.85 CLP 38.02

PLANETOCENTRIC CONIC

C3 17.234 VHL 4.151 DLA 12.55 RAL 187.51 RAD 6567.7 VEL 11.774 PTH 2.08 VHP 4.828 DPA 8.61 RAP 166.38 ECC 1.2836

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 10 31	2579.78	-26.43	65.97	50.41	100.55	19 53 31	1979.8	-24.71	57.73
90.00	10 27 6	4423.17	7.18	184.49	45.42	62.53	11 40 49	3823.2	3.44	177.81
100.00	20 38 19	2296.63	-27.60	44.89	50.15	101.97	21 16 36	1696.6	-25.67	36.62
100.00	11 41 59	4181.55	8.23	166.16	44.85	61.16	12 51 40	3581.5	4.32	159.56
110.00	22 1 7	2037.54	-30.68	24.34	49.28	105.86	22 35 5	1437.5	-28.21	16.02
110.00	12 35 40	4013.40	10.96	151.76	43.21	57.42	13 42 34	3413.4	6.59	145.40

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.5089 TRA 6.8738 TC-11.0803 BAU 2.5547 SGT13543.6 SGR 704.6 SG3 989.6 ST 3593.6 SR 610.6 SS 1584.2
RDE .4422 RRA .0353 RC3 .4197 FAU .16679 RRT -.4183 RRF -.4554 RTF .9928 CRT -.5606 CRS .7103 CST -.9810
FDE-1.9993 FRA 6.1328 FC3-8.3785 BSP 47498 SGB13561.9 R23 .0431 R13 -.9929 LSA 3933.7 MSA 567.4 SSA 18.5
BDE 1.5723 BRA 6.8739 BC311.0882 FSP 3564 SG113546.8 SG2 639.8 THA 178.75 EL1 3610.2 EL2 503.3 ALF 174.45

LAUNCH DATE NOV 6 1964 FLIGHT TIME 392.00 ARRIVAL DATE DEC 3 1965

HELIOCENTRIC CONIC DISTANCE 870.202 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.927 GAL -6.13 AZL 88.18 HCA 263.71 SMA 187.98 ECC .23565 INC 1.8206 V1 30.050
RP 208.76 LAP -1.81 LOP 307.33 VP 23.780 GAP -12.09 AZP 90.20 TAL 326.91 TAP 230.62 RCA 143.69 APO 232.28 V2 26.254
RC 314.784 GL 14.27 GP .87 ZAL 137.14 ZAP 37.28 ETS 180.35 ZAE 60.34 ETE 180.07 ZAC 85.35 ETC 257.78 CLP 37.28

PLANETOCENTRIC CONIC

C3 17.795 VHL 4.218 DLA 11.99 RAL 188.28 RAD 6567.7 VEL 11.797 PTH 2.09 VHP 4.920 DPA 8.40 RAP 166.84 ECC 1.2929

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 18 21	2568.24	-26.28	65.16	51.51	100.93	20 1 9	1968.2	-24.51	56.94
90.00	10 25 25	4449.56	8.00	185.99	46.61	62.75	11 39 35	3849.6	4.29	179.28
100.00	20 45 48	2286.21	-27.45	44.15	51.25	102.33	21 23 54	1686.2	-25.47	35.90
100.00	11 40 40	4206.82	9.05	167.58	46.05	61.39	12 50 47	3606.8	5.17	160.96
110.00	22 7 50	2029.51	-30.53	23.76	50.35	106.17	22 41 40	1429.5	-28.02	15.47
110.00	12 35 7	4036.89	11.80	153.01	44.41	57.68	13 42 23	3436.3	7.45	146.61

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE-1.6185 TRA 7.1309 TC-10.8778 BAU 2.5897 SGT13678.2 SGR 706.2 SG3 939.3 ST 3705.7 SR 614.5 SS 1567.5
RDE .4522 RRA .0341 RC3 .4092 FAU .15790 RRT -.4193 RRF -.4575 RTF .9925 CRT -.5757 CRS .7211 CST -.9815
FDE-1.9986 FRA 5.9744 FC3-7.6822 BSP 48031 SGB13696.4 R23 .0445 R13 -.9925 LSA 4031.1 MSA 562.4 SSA 18.3
BDE 1.6805 BRA 7.1310 BC310.8855 FSP 3397 SG113681.4 SG2 640.9 THA 178.76 EL1 3722.8 EL2 500.1 ALF 174.45

LAUNCH DATE NOV 6 1964 FLIGHT TIME 394.00 ARRIVAL DATE DEC 5 1965

HELIOCENTRIC CONIC DISTANCE 874.400 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.932 GAL -6.30 AZL 88.18 HCA 264.96 SMA 188.08 ECC .23730 INC 1.8247 V1 30.050
RP 208.58 LAP -1.82 LOP 308.57 VP 23.810 GAP -12.24 AZP 90.16 TAL 326.13 TAP 231.09 RCA 143.45 APO 232.71 V2 26.274
RC 315.690 GL 14.07 GP .85 ZAL 138.08 ZAP 36.56 ETS 180.34 ZAE 59.33 ETE 180.10 ZAC 85.43 ETC 257.72 CLP 36.55

PLANETOCENTRIC CONIC

C3 18.390 VHL 4.288 DLA 11.42 RAL 189.05 RAD 6567.7 VEL 11.823 PTH 2.09 VHP 5.014 DPA 8.17 RAP 167.32 ECC 1.3027

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 26 8	2557.03	-26.14	64.37	52.63	101.30	20 8 45	1957.0	-24.31	56.18
90.00	10 23 47	4476.14	8.83	187.51	47.83	62.99	11 38 23	3876.1	5.14	180.78
100.00	20 53 15	2276.10	-27.30	43.43	52.36	102.68	21 31 11	1676.1	-25.28	35.22
100.00	11 39 22	4232.30	9.88	169.02	47.27	61.64	12 49 54	3632.3	6.02	162.37
110.00	22 14 32	2021.73	-30.39	23.20	51.44	106.47	22 48 14	1421.7	-27.83	14.94
110.00	12 34 34	4059.44	12.64	154.27	45.64	57.97	13 42 13	3459.4	8.32	147.84

DIFFERENTIAL CORRECTIONS
TDE-1.7314 TRA 7.3952 TC-10.6666 BAU 2.6244
RDE .4625 RRA .0325 RC3 .3989 FAU .14926
FDE-1.9938 FRA 5.8163 FC3-7.0266 BSP 48560
BDE 1.7921 BRA 7.3952 BC310.6741 FSP 3236

MID-COURSE EXECUTION ACCURACY
SGT13807.7 SGR 707.7 SG3 890.7
RRT -.4209 RRF -.4601 RTF .9921
SGB13825.9 R23 .0459 R13 -.9921
SG113811.0 SG2 641.8 THA 178.76

ORBIT DETERMINATION ACCURACY
ST 3817.2 SR 618.2 SS 1548.9
CRT -.5899 CRS .7313 CST -.9820
LSA 4128.1 MSA 557.4 SSA 18.1
EL1 3834.9 EL2 496.8 ALF 174.45

LAUNCH DATE NOV 6 1964 FLIGHT TIME 396.00 ARRIVAL DATE DEC 7 1965

HELIOCENTRIC CONIC DISTANCE 878.593 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.937 GAL -6.48 AZL 88.17 HCA 266.20 SMA 188.17 ECC .23902 INC 1.8286 V1 30.050
RP 208.40 LAP -1.82 LOP 309.82 VP 23.840 GAP -12.40 AZP 90.12 TAL 325.33 TAP 231.54 RCA 143.19 APO 233.15 V2 26.294
RC 316.588 GL 13.85 GP .84 ZAL 139.02 ZAP 35.86 ETS 180.33 ZAE 58.33 ETE 180.13 ZAC 85.53 ETC 257.65 CLP 35.85

PLANETOCENTRIC CONIC

C3 19.023 VHL 4.362 DLA 10.86 RAL 189.82 RAD 6567.8 VEL 11.849 PTH 2.10 VHP 5.110 DPA 7.94 RAP 167.82 ECC 1.3131

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 33 53	2546.16	-25.99	63.61	53.77	101.66	20 16 19	1946.2	-24.12	55.44
90.00	10 22 11	4502.91	9.65	189.05	49.07	63.25	11 37 14	3902.9	5.99	182.29
100.00	21 0 39	2266.30	-27.15	42.74	53.48	103.01	21 38 25	1666.3	-25.09	34.55
100.00	11 38 6	4258.01	10.71	170.48	48.52	61.92	12 49 4	3658.0	6.87	163.80
110.00	22 21 12	2014.22	-30.24	22.67	52.55	106.76	22 54 47	1414.2	-27.65	14.43
110.00	12 34 2	4082.84	13.48	155.57	46.89	58.29	13 42 4	3482.8	9.19	149.09

DIFFERENTIAL CORRECTIONS
TDE-1.8483 TRA 7.6665 TC-10.4525 BAU 2.6601
RDE .4731 RRA .0305 RC3 .3888 FAU .14100
FDE-1.9868 FRA 5.6569 FC3-6.4170 BSP 49053
BDE 1.9079 BRA 7.6666 BC310.4597 FSP 3078

MID-COURSE EXECUTION ACCURACY
SGT13935.1 SGR 709.2 SG3 843.9
RRT -.4232 RRF -.4636 RTF .9916
SGB13953.2 R23 .0475 R13 -.9917
SG113938.4 SG2 642.4 THA 178.76

ORBIT DETERMINATION ACCURACY
ST 3928.7 SR 621.8 SS 1528.8
CRT -.6035 CRS .7413 CST -.9824
LSA 4225.3 MSA 552.5 SSA 17.8
EL1 3946.8 EL2 493.5 ALF 174.46

LAUNCH DATE NOV 6 1964 FLIGHT TIME 398.00 ARRIVAL DATE DEC 9 1965

HELIOCENTRIC CONIC DISTANCE 882.780 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.943 GAL -6.66 AZL 88.17 HCA 267.45 SMA 188.27 ECC .24082 INC 1.8327 V1 30.050
RP 208.24 LAP -1.83 LOP 311.07 VP 23.869 GAP -12.56 AZP 90.08 TAL 324.52 TAP 231.98 RCA 142.93 APO 233.61 V2 26.314
RC 317.480 GL 13.64 GP .82 ZAL 139.96 ZAP 35.18 ETS 180.32 ZAE 57.35 ETE 180.16 ZAC 85.62 ETC 257.58 CLP 35.17

PLANETOCENTRIC CONIC

C3 19.694 VHL 4.438 DLA 10.29 RAL 190.59 RAD 6567.8 VEL 11.878 PTH 2.11 VHP 5.208 DPA 7.69 RAP 168.33 ECC 1.3241

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 41 34	2535.63	-25.84	62.88	54.91	102.00	20 23 50	1935.6	-23.93	54.73
90.00	10 20 36	4529.85	10.48	190.60	50.34	63.54	11 36 6	3929.9	6.84	183.81
100.00	21 8 1	2256.82	-27.00	42.08	54.62	103.33	21 45 38	1656.8	-24.90	33.91
100.00	11 36 51	4283.89	11.53	171.96	49.79	62.23	12 48 15	3683.9	7.73	165.24
110.00	22 27 51	2007.00	-30.10	22.15	53.67	107.03	23 1 18	1407.0	-27.47	13.95
110.00	12 33 30	4106.48	14.32	156.88	48.17	58.62	13 41 56	3506.5	10.06	150.37

DIFFERENTIAL CORRECTIONS
TDE-1.9682 TRA 7.9457 TC-10.2306 BAU 2.6955
RDE .4841 RRA .0282 RC3 .3788 FAU .13298
FDE-1.9759 FRA 5.4973 FC3-5.8457 BSP 49529
BDE 2.0269 BRA 7.9457 BC310.2376 FSP 2927

MID-COURSE EXECUTION ACCURACY
SGT14057.5 SGR 710.6 SG3 798.7
RRT -.4259 RRF -.4675 RTF .9911
SGB14075.4 R23 .0492 R13 -.9912
SG114060.8 SG2 642.8 THA 178.76

ORBIT DETERMINATION ACCURACY
ST 4039.1 SR 625.2 SS 1506.8
CRT -.6163 CRS .7508 CST -.9828
LSA 4321.5 MSA 547.7 SSA 17.6
EL1 4057.7 EL2 490.1 ALF 174.47

LAUNCH DATE NOV 6 1964 FLIGHT TIME 400.00 ARRIVAL DATE DEC 11 1965

HELIOCENTRIC CONIC DISTANCE 886.961 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.948 GAL -6.85 AZL 88.16 HCA 268.71 SMA 188.37 ECC .24269 INC 1.8367 V1 30.050
RP 208.08 LAP -1.84 LOP 312.32 VP 23.896 GAP -12.72 AZP 90.04 TAL 323.70 TAP 232.40 RCA 142.65 APO 234.08 V2 26.332
RC 318.367 GL 13.42 GP .80 ZAL 140.90 ZAP 34.52 ETS 180.31 ZAE 56.39 ETE 180.18 ZAC 85.73 ETC 257.51 CLP 34.51

PLANETOCENTRIC CONIC

C3 20.407 VHL 4.517 DLA 9.72 RAL 191.35 RAD 6567.8 VEL 11.907 PTH 2.12 VHP 5.308 DPA 7.44 RAP 168.87 ECC 1.3359

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 49 13	2525.46	-25.70	62.17	56.08	102.32	20 31 19	1925.5	-23.74	54.04
90.00	10 19 4	4556.96	11.29	192.17	51.64	63.86	11 35 1	3957.0	7.69	185.35
100.00	21 15 21	2247.67	-26.86	41.44	55.78	103.64	21 52 49	1647.7	-24.72	33.29
100.00	11 35 37	4309.98	12.36	173.46	51.09	62.56	12 47 27	3710.0	8.59	166.70
110.00	22 34 29	2000.06	-29.96	21.66	54.81	107.29	23 7 49	1400.1	-27.30	13.48
110.00	12 32 59	4130.35	15.16	158.22	49.48	58.99	13 41 49	3530.4	10.94	151.66

DIFFERENTIAL CORRECTIONS
TDE-2.0918 TRA 8.2325 TC-10.0050 BAU 2.7315
RDE .4954 RRA .0255 RC3 .3689 FAU .12526
FDE-1.9622 FRA 5.3366 FC3-5.3140 BSP 49991
BDE 2.1497 BRA 8.2325 BC310.0118 FSP 2778

MID-COURSE EXECUTION ACCURACY
SGT14176.4 SGR 712.0 SG3 755.2
RRT -.4292 RRF -.4721 RTF .9906
SGB14194.3 R23 .0511 R13 -.9907
SG114179.7 SG2 642.9 THA 178.76

ORBIT DETERMINATION ACCURACY
ST 4148.8 SR 628.4 SS 1483.0
CRT -.6284 CRS .7601 CST -.9830
LSA 4417.2 MSA 542.9 SSA 17.4
EL1 4167.8 EL2 486.6 ALF 174.49

LAUNCH DATE NOV 6 1964 FLIGHT TIME 402.00 ARRIVAL DATE DEC 13 1965

HELIOCENTRIC CONIC DISTANCE 891.135 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.954 GAL -7.05 AZL 88.16 HCA 269.96 SMA 188.47 ECC .24465 INC 1.8406 V1 30.050
RP 207.93 LAP -1.84 LOP 313.58 VP 23.923 GAP -12.88 AZP 90.00 TAL 322.85 TAP 232.81 RCA 142.36 APO 234.57 V2 26.349
RC 319.247 GL 13.20 GP .79 ZAL 141.84 ZAP 33.88 ETS 180.30 ZAE 55.44 ETE 180.21 ZAC 85.84 ETC 257.44 CLP 33.87

PLANETOCENTRIC CONIC

C3 21.165 VHL 4.601 DLA 9.15 RAL 192.12 RAD 6567.9 VEL 11.939 PTH 2.12 VHP 5.410 DPA 7.18 RAP 169.43 ECC 1.3483

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 56 49	2515.65	-25.55	61.48	57.26	102.64	20 38 45	1915.6	-23.56	53.38
90.00	10 17 33	4584.23	12.11	193.76	52.97	64.21	11 33 57	3984.2	8.54	186.90
100.00	21 22 38	2238.87	-26.72	40.82	56.96	103.93	21 59 57	1638.9	-24.54	32.70
100.00	11 34 25	4336.24	13.18	174.98	52.42	62.92	12 46 41	3736.2	9.44	168.18
110.00	22 41 4	1993.44	-29.82	21.19	55.96	107.54	23 14 17	1393.4	-27.13	13.03
110.00	12 32 29	4154.44	16.00	159.58	50.81	59.38	13 41 43	3554.4	11.82	152.97

DIFFERENTIAL CORRECTIONS
TDE-2.2204 TRA 8.5264 TC3-9.7773 BAU 2.7684
RDE .5070 RRA .0224 RC3 .3592 FAU .11782
FDE-1.9466 FRA 5.1749 FC3-4.8193 BSP 50419
BDE 2.2776 BRA 8.5264 BC3 9.7839 FSP 2633

MID-COURSE EXECUTION ACCURACY
SGT14292.1 SGR 713.3 SG3 713.3
RRT -.4331 RRF -.4775 RTF .9900
SGB14309.9 R23 .0531 R13 -.9900
SG114295.5 SG2 642.7 THA 178.76

ORBIT DETERMINATION ACCURACY
ST 4258.2 SR 631.6 SS 1458.1
CRT -.6401 CRS .7692 CST -.9832
LSA 4513.0 MSA 538.0 SSA 17.1
EL1 4277.6 EL2 483.0 ALF 174.51

LAUNCH DATE NOV 6 1964 FLIGHT TIME 404.00 ARRIVAL DATE DEC 15 1965

HELIOCENTRIC CONIC DISTANCE 895.301 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.960 GAL -7.25 AZL 88.16 HCA 271.21 SMA 188.57 ECC .24668 INC 1.8446 V1 30.050
RP 207.79 LAP -1.84 LOP 314.83 VP 23.949 GAP -13.05 AZP 89.96 TAL 321.99 TAP 233.21 RCA 142.05 APO 235.08 V2 26.366
RC 320.122 GL 12.98 GP .77 ZAL 142.78 ZAP 33.25 ETS 180.29 ZAE 54.52 ETE 180.24 ZAC 85.95 ETC 257.37 CLP 33.24

PLANETOCENTRIC CONIC

C3 21.969 VHL 4.687 DLA 8.58 RAL 192.88 RAD 6567.9 VEL 11.973 PTH 2.13 VHP 5.515 DPA 6.91 RAP 170.08 ECC 1.3616

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 4 22	2506.21	-25.41	60.83	58.46	102.93	20 46 8	1906.2	-23.38	52.75
90.00	10 16 4	4611.66	12.91	195.37	54.32	64.58	11 32 56	4011.7	9.38	188.47
100.00	21 29 52	2230.42	-26.58	40.23	58.15	104.21	22 7 3	1630.4	-24.36	32.13
100.00	11 33 15	4362.68	13.99	176.52	53.78	63.31	12 45 57	3762.7	10.30	169.68
110.00	22 47 37	1987.13	-29.69	20.75	57.13	107.77	23 20 44	1387.1	-26.98	12.61
110.00	12 31 59	4178.73	16.84	160.96	52.18	59.80	13 41 38	3578.7	12.70	154.30

DIFFERENTIAL CORRECTIONS
TDE-2.3522 TRA 8.8291 TC3-9.5459 BAU 2.8055
RDE .5190 RRA .0189 RC3 .3497 FAU .11064
FDE-1.9274 FRA 5.0120 FC3-4.3601 BSP 50811
BDE 2.4088 BRA 8.8291 BC3 9.5523 FSP 2491

MID-COURSE EXECUTION ACCURACY
SGT14404.2 SGR 714.5 SG3 672.9
RRT -.4375 RRF -.4834 RTF .9893
SGB14421.9 R23 .0553 R13 -.9894
SG114407.6 SG2 642.3 THA 178.75

ORBIT DETERMINATION ACCURACY
ST 4366.0 SR 634.5 SS 1431.1
CRT -.6511 CRS .7781 CST -.9833
LSA 4607.4 MSA 533.2 SSA 16.9
EL1 4385.8 EL2 479.4 ALF 174.53

LAUNCH DATE NOV 6 1964 FLIGHT TIME 406.00 ARRIVAL DATE DEC 17 1965

HELIOCENTRIC CONIC DISTANCE 899.457 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.966 GAL -7.45 AZL 88.15 HCA 272.47 SMA 188.67 ECC .24881 INC 1.8487 V1 30.050
RP 207.66 LAP -1.85 LOP 316.09 VP 23.974 GAP -13.22 AZP 89.92 TAL 321.12 TAP 233.59 RCA 141.73 APO 235.61 V2 26.381
RC 320.992 GL 12.75 GP .76 ZAL 143.72 ZAP 32.65 ETS 180.28 ZAE 53.61 ETE 180.26 ZAC 86.07 ETC 257.30 CLP 32.64

PLANETOCENTRIC CONIC

C3 22.823 VHL 4.777 DLA 8.01 RAL 193.63 RAD 6567.9 VEL 12.008 PTH 2.14 VHP 5.622 DPA 6.63 RAP 170.60 ECC 1.3756

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 11 51	2497.15	-25.27	60.20	59.67	103.22	20 53 28	1897.1	-23.20	52.14
90.00	10 14 37	4639.22	13.71	197.00	55.70	64.98	11 31 56	4039.2	10.23	190.06
100.00	21 37 4	2222.32	-26.44	39.67	59.35	104.48	22 14 6	1622.3	-24.19	31.59
100.00	11 32 6	4389.28	14.80	178.09	55.16	63.73	12 45 15	3789.3	11.15	171.20
110.00	22 54 8	1981.14	-29.57	20.33	58.32	107.99	23 27 9	1381.1	-26.82	12.21
110.00	12 31 31	4203.23	17.67	162.37	53.57	60.25	13 41 34	3603.2	13.58	155.65

DIFFERENTIAL CORRECTIONS
TDE-2.4879 TRA 9.1397 TC3-9.3137 BAU 2.8437
RDE .5313 RRA .0150 RC3 .3403 FAU .10370
FDE-1.9056 FRA 4.8481 FC3-3.9338 BSP 51185
BDE 2.5440 BRA 9.1397 BC3 9.3199 FSP 2354

MID-COURSE EXECUTION ACCURACY
SGT14513.0 SGR 715.6 SG3 633.9
RRT -.4423 RRF -.4898 RTF .9886
SGB14530.6 R23 .0577 R13 -.9887
SG114516.4 SG2 641.6 THA 178.75

ORBIT DETERMINATION ACCURACY
ST 4472.4 SR 637.3 SS 1402.6
CRT -.6616 CRS .7867 CST -.9833
LSA 4700.6 MSA 528.4 SSA 16.7
EL1 4492.4 EL2 475.7 ALF 174.55

LAUNCH DATE NOV 6 1964 FLIGHT TIME 408.00 ARRIVAL DATE DEC 19 1965

HELIOCENTRIC CONIC DISTANCE 903.603 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.971 GAL -7.67 AZL 88.15 HCA 273.73 SMA 188.77 ECC .25103 INC 1.8527 V1 30.050
RP 207.54 LAP -1.85 LOP 317.35 VP 23.998 GAP -13.39 AZP 89.88 TAL 320.22 TAP 233.95 RCA 141.39 APO 236.16 V2 26.396
RC 321.856 GL 12.53 GP .75 ZAL 144.66 ZAP 32.06 ETS 180.26 ZAE 52.72 ETE 180.29 ZAC 86.19 ETC 257.23 CLP 32.05

PLANETOCENTRIC CONIC

C3 23.730 VHL 4.871 DLA 7.44 RAL 194.39 RAD 6568.0 VEL 12.046 PTH 2.15 VHP 5.731 DPA 6.35 RAP 171.21 ECC 1.3905

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 19 17	2488.47	-25.13	59.60	60.90	103.49	21 0 46	1888.5	-23.03	51.56
90.00	10 13 12	4666.93	14.50	198.65	57.11	65.41	11 30 59	4066.9	11.07	191.66
100.00	21 44 12	2214.59	-26.31	39.13	60.57	104.73	22 21 7	1614.6	-24.03	31.08
100.00	11 30 58	4416.04	15.60	179.67	56.58	64.17	12 44 34	3816.0	12.00	172.73
110.00	23 0 37	1975.48	-29.45	19.93	59.52	108.20	23 33 32	1375.5	-26.68	11.84
110.00	12 31 3	4227.91	18.50	163.81	54.99	60.73	13 41 31	3627.9	14.46	157.02

DIFFERENTIAL CORRECTIONS
TDE-2.6279 TRA 9.4596 TC3-9.0801 BAU 2.8826
RDE .5440 RRA .0106 RC3 .3310 FAU .09699
FDE-1.8814 FRA 4.6833 FC3-3.5383 BSP 51529
BDE 2.6837 BRA 9.4596 BC3 9.0861 FSP 2221

MID-COURSE EXECUTION ACCURACY
SGT14619.1 SGR 716.7 SG3 596.3
RRT -.4476 RRF -.4969 RTF .9878
SGB14636.7 R23 .0603 R13 -.9878
SG114622.6 SG2 640.7 THA 178.74

ORBIT DETERMINATION ACCURACY
ST 4577.7 SR 639.9 SS 1372.6
CRT -.6717 CRS .7952 CST -.9832
LSA 4793.2 MSA 523.7 SSA 16.5
EL1 4598.1 EL2 472.0 ALF 174.58

LAUNCH DATE NOV 6 1964 FLIGHT TIME 410.00 ARRIVAL DATE DEC 21 1965

HELIOCENTRIC CONIC DISTANCE 907.738 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.977 GAL -7.89 AZL 88.14 HCA 274.99 SMA 188.88 ECC .25334 INC 1.8567 V1 30.050
RP 207.42 LAP -1.85 LOP 318.61 VP 24.021 GAP -13.57 AZP 89.84 TAL 319.31 TAP 234.30 RCA 141.03 APO 236.73 V2 26.409
RC 322.714 GL 12.30 GP .73 ZAL 145.59 ZAP 31.49 ETS 180.25 ZAE 51.85 ETE 180.31 ZAC 86.32 ETC 257.16 CLP 31.48

PLANETOCENTRIC CONIC

C3 24.694 VHL 4.969 DLA 6.88 RAL 195.14 RAD 6568.0 VEL 12.086 PTH 2.16 VHP 5.843 DPA 6.05 RAP 171.83 ECC 1.4064

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 26 40	2480.17	-25.00	59.03	62.14	103.75	21 8 1	1880.2	-22.86	51.01
90.00	10 11 48	4694.76	15.29	200.32	58.55	65.87	11 30 3	4094.8	11.90	193.28
100.00	21 51 18	2207.22	-26.18	38.62	61.81	104.97	22 28 5	1607.2	-23.87	30.59
100.00	11 29 52	4442.94	16.39	181.28	58.02	64.65	12 43 55	3842.9	12.84	174.28
110.00	23 7 3	1970.16	-29.33	19.56	60.74	108.39	23 39 53	1370.2	-26.54	11.49
110.00	12 30 36	4252.73	19.32	165.27	56.45	61.24	13 41 29	3652.7	15.33	158.42

DIFFERENTIAL CORRECTIONS
TDE-2.7728 TRA 9.7868 TC3-8.8484 BAU 2.9231
RDE .5571 RRA .0058 RC3 .3220 FAU .09054
FDE-1.8545 FRA 4.5164 FC3-3.1743 BSP 51826
BDE 2.8282 BRA 9.7868 BC3 8.8542 FSP 2090

MID-COURSE EXECUTION ACCURACY
SGT14722.0 SGR 717.7 SG3 560.2
RRT -.4535 RRF -.5046 RTF .9868
SGB14739.5 R23 .0631 R13 -.9869
SG114725.6 SG2 639.5 THA 178.73

ORBIT DETERMINATION ACCURACY
ST 4681.5 SR 642.4 SS 1341.0
CRT -.6814 CRS .8035 CST -.9831
LSA 4884.5 MSA 518.9 SSA 16.3
EL1 4702.1 EL2 468.1 ALF 174.60

LAUNCH DATE NOV 6 1964 FLIGHT TIME 412.00 ARRIVAL DATE DEC 23 1965

HELIOCENTRIC CONIC DISTANCE 911.860 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.983 GAL -8.11 AZL 88.14 HCA 276.~~85~~ SMA 188.98 ECC .25575 INC 1.8608 V1 30.050
RP 207.31 LAP -1.85 LOP 319.87 VP 24.044 GAP -13.76 AZP 89.80 TAL 318.39 TAP 234.63 RCA 140.65 APO 237.32 V2 26.422
RC 323.566 GL 12.07 GP .72 ZAL 146.52 ZAP 30.93 ETS 180.24 ZAE 50.99 ETE 180.34 ZAC 86.46 ETC 257.08 CLP 30.92

PLANETOCENTRIC CONIC

C3 25.719 VHL 5.071 DLA 6.31 RAL 195.89 RAD 6568.0 VEL 12.128 PTH 2.17 VHP 5.957 DPA 5.75 RAP 172.47 ECC 1.4233

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 34 0	2472.26	-24.87	58.49	63.40	103.99	21 15 12	1872.3	-22.70	50.49
90.00	10 10 26	4722.71	16.06	202.01	60.01	66.36	11 29 9	4122.7	12.72	194.92
100.00	21 58 20	2200.23	-26.05	38.14	63.06	105.20	22 35 1	1600.2	-23.71	30.12
100.00	11 28 47	4469.98	17.17	182.90	59.49	65.15	12 43 17	3870.0	13.68	175.85
110.00	23 13 27	1965.17	-29.23	19.21	61.98	108.57	23 46 12	1365.2	-26.41	11.16
110.00	12 30 10	4277.80	20.13	166.76	57.93	61.77	13 41 28	3677.8	16.20	159.84

DIFFERENTIAL CORRECTIONS
TDE-2.9214 TRA10.1236 TC3-8.6149 BAU 2.9641
RDE .5706 RRA .0004 RC3 .3131 FAU .08429
FDE-1.8249 FRA 4.3482 FC3-2.8373 BSP 52102
BDE 2.9766 BRA10.1236 BC3 8.6205 FSP 1963

MID-COURSE EXECUTION ACCURACY
SGT14820.9 SGR 718.6 SG3 525.3
RRT -.4598 RRF -.5128 RTF .9858
SGB14838.3 R23 .0662 R13 -.9859
SG114824.6 SG2 638.0 THA 178.72

ORBIT DETERMINATION ACCURACY
ST 4783.3 SR 644.7 SS 1307.8
CRT -.6906 CRS .8117 CST -.9829
LSA 4974.0 MSA 514.1 SSA 16.0
EL1 4804.1 EL2 464.3 ALF 174.63

LAUNCH DATE NOV 6 1964 FLIGHT TIME 414.00 ARRIVAL DATE DEC 25 1965

HELIOCENTRIC CONIC DISTANCE 915.969 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.989 GAL -8.35 AZL 88.14 HCA 277.51 SMA 189.09 ECC .25827 INC 1.8649 V1 30.050
RP 207.21 LAP -1.85 LOP 321.13 VP 24.065 GAP -13.94 AZP 89.76 TAL 317.44 TAP 234.95 RCA 140.26 APO 237.93 V2 26.434
RC 324.413 GL 11.84 GP .71 ZAL 147.45 ZAP 30.39 ETS 180.22 ZAE 50.15 ETE 180.36 ZAC 86.59 ETC 257.01 CLP 30.38

PLANETOCENTRIC CONIC

C3 26.808 VHL 5.178 DLA 5.75 RAL 196.63 RAD 6568.1 VEL 12.173 PTH 2.18 VHP 6.074 DPA 5.44 RAP 173.13 ECC 1.4412

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 41 16	2464.74	-24.75	57.97	64.68	104.22	21 22 21	1864.7	-22.55	49.99
90.00	10 9 6	4750.78	16.81	203.72	61.51	66.88	11 28 17	4150.8	13.54	196.57
100.00	22 5 20	2193.60	-25.94	37.68	64.33	105.41	22 41 54	1593.6	-23.57	29.68
100.00	11 27 44	4497.15	17.94	184.55	60.99	65.68	12 42 41	3897.1	14.51	177.44
110.00	23 19 48	1960.53	-29.12	18.88	63.23	108.74	23 52 29	1360.5	-26.29	10.85
110.00	12 29 45	4302.98	20.94	168.27	59.44	62.34	13 41 28	3703.0	17.07	161.28

DIFFERENTIAL CORRECTIONS
TDE-3.0736 TRA10.4701 TC3-8.3833 BAU 3.0065
RDE .5845 RRA -.0054 RC3 .3043 FAU .07824
FDE-1.7921 FRA 4.1786 FC3-2.5267 BSP 52362
BDE 3.1287 BRA10.4701 BC3 8.3888 FSP 1841

MID-COURSE EXECUTION ACCURACY
SGT14917.5 SGR 719.5 SG3 491.6
RRT -.4664 RRF -.5215 RTF .9846
SGB14934.8 R23 .0695 R13 -.9847
SG114921.2 SG2 636.3 THA 178.71

ORBIT DETERMINATION ACCURACY
ST 4882.7 SR 646.8 SS 1272.8
CRT -.6993 CRS .8196 CST -.9826
LSA 5061.5 MSA 509.4 SSA 15.8
EL1 4903.8 EL2 460.4 ALF 174.66

LAUNCH DATE NOV 6 1964 FLIGHT TIME 416.00 ARRIVAL DATE DEC 27 1965

HELIOCENTRIC CONIC DISTANCE 920.062 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 32.996 GAL -8.59 AZL 88.13 HCA 278.77 SMA 189.20 ECC .26089 INC 1.8690 V1 30.050
RP 207.12 LAP -1.85 LOP 322.40 VP 24.085 GAP -14.13 AZP 89.71 TAL 316.48 TAP 235.26 RCA 139.84 APO 238.56 V2 26.444
RC 325.253 GL 11.61 GP .70 ZAL 148.37 ZAP 29.87 ETS 180.21 ZAE 49.32 ETE 180.38 ZAC 86.74 ETC 256.94 CLP 29.86

PLANETOCENTRIC CONIC

C3 27.965 VHL 5.288 DLA 5.19 RAL 197.37 RAD 6568.1 VEL 12.220 PTH 2.20 VHP 6.194 DPA 5.13 RAP 173.81 ECC 1.4602

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 48 29	2457.60	-24.63	57.48	65.97	104.44	21 29 27	1857.6	-22.40	49.52
90.00	10 7 48	4778.95	17.56	205.45	63.03	67.42	11 27 27	4179.0	14.35	198.25
100.00	22 12 16	2187.35	-25.82	37.25	65.62	105.61	22 48 44	1587.4	-23.43	29.27
100.00	11 26 42	4524.43	18.70	186.23	62.52	66.24	12 42 7	3924.4	15.33	179.05
110.00	23 26 7	1956.23	-29.03	18.59	64.49	108.90	23 58 43	1356.2	-26.18	10.57
110.00	12 29 21	4328.31	21.73	169.81	60.98	62.94	13 41 29	3728.3	17.93	162.74

DIFFERENTIAL CORRECTIONS
TDE-3.2318 TRA10.8251 TC3-8.1543 BAU 3.0507
RDE .5988 RRA -.0118 RC3 .2957 FAU .07240
FDE-1.7575 FRA 4.0071 FC3-2.2414 BSP 52542
BDE 3.2868 BRA10.8251 BC3 8.1597 FSP 1720

MID-COURSE EXECUTION ACCURACY
SGT15011.0 SGR 720.3 SG3 459.2
RRT -.4735 RRF -.5309 RTF .9833
SGB15028.3 R23 .0732 R13 -.9834
SG115014.9 SG2 634.3 THA 178.70

ORBIT DETERMINATION ACCURACY
ST 4980.9 SR 648.8 SS 1236.7
CRT -.7078 CRS .8276 CST -.9822
LSA 5148.3 MSA 504.6 SSA 15.6
EL1 5002.2 EL2 456.4 ALF 174.69

LAUNCH DATE NOV 6 1964 FLIGHT TIME 418.00 ARRIVAL DATE DEC 29 1965

HELIOCENTRIC CONIC DISTANCE 924.139 EARTH TO MARS

RL 148.27 LAL -.00 LOL 43.62 VL 33.002 GAL -8.84 AZL 88.13 HCA 280.04 SMA 189.31 ECC .26363 INC 1.8731 V1 30.050
RP 207.04 LAP -1.84 LOP 323.66 VP 24.104 GAP -14.33 AZP 89.67 TAL 315.50 TAP 235.54 RCA 139.40 APO 239.22 V2 26.454
RC 326.088 GL 11.38 GP .69 ZAL 149.29 ZAP 29.36 ETS 180.19 ZAE 48.51 ETE 180.40 ZAC 86.88 ETC 256.87 CLP 29.36

PLANETOCENTRIC CONIC

C3 29.196 VHL 5.403 DLA 4.63 RAL 198.11 RAD 6568.2 VEL 12.271 PTH 2.21 VHP 6.316 DPA 4.81 RAP 174.49 ECC 1.4805

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 55 39	2450.85	-24.51	57.02	67.28	104.64	21 36 29	1850.8	-22.26	49.07
90.00	10 6 32	4807.22	18.29	207.21	64.58	68.00	11 26 39	4207.2	15.14	199.94
100.00	22 19 10	2181.47	-25.71	36.85	66.92	105.79	22 55 31	1581.5	-23.30	28.88
100.00	11 25 42	4551.83	19.44	187.92	64.08	66.83	12 41 34	3951.8	16.14	180.69
110.00	23 32 23	1952.28	-28.94	18.31	65.78	109.04	24 4 56	1352.3	-26.07	10.31
110.00	12 28 57	4353.78	22.51	171.37	62.56	63.57	13 41 31	3753.8	18.78	164.23

DIFFERENTIAL CORRECTIONS
TDE-3.3934 TRA11.1918 TC3-7.9261 BAU 3.0958
RDE .6135 RRA -.0187 RC3 .2873 FAU .06673
FDE-1.7199 FRA 3.8339 FC3-1.9788 BSP 52731
BDE 3.4484 BRA11.1918 BC3 7.9313 FSP 1604

MID-COURSE EXECUTION ACCURACY
SGT15102.1 SGR 721.1 SG3 428.0
RRT -.4809 RRF -.5407 RTF .9818
SGB15119.3 R23 .0773 R13 -.9818
SG115106.1 SG2 632.1 THA 178.68

ORBIT DETERMINATION ACCURACY
ST 5076.6 SR 650.6 SS 1199.0
CRT -.7159 CRS .8355 CST -.9817
LSA 5232.8 MSA 499.9 SSA 15.4
EL1 5098.1 EL2 452.4 ALF 174.72

LAUNCH DATE NOV 7 1964 FLIGHT TIME 180.00 ARRIVAL DATE MAY 6 1965

HELIOCENTRIC CONIC DISTANCE 463.971 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 34.569 GAL -6.52 AZL 87.90 HCA 149.75 SMA 222.82 ECC .35145 INC 2.1017 V1 30.058
RP 243.63 LAP 1.06 LOP 194.39 VP 22.224 GAP 19.90 AZP 91.82 TAL 334.61 TAP 124.36 RCA 144.51 APO 301.14 V2 22.522
RC 137.915 GL 12.85 GP -.68 ZAL 128.25 ZAP 170.00 ETS 182.57 ZAE 155.79 ETE 356.82 ZAC 87.99 ETC 256.07 CLP 170.02

PLANETOCENTRIC CONIC

C3 32.093 VHL 5.665 DLA 14.14 RAL 179.74 RAD 6568.3 VEL 12.388 PTH 2.24 VHP 9.124 DPA -1.18 RAP 184.28 ECC 1.5282

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 21 43	2786.03	-28.14	80.81	54.86	93.32	19 8 9	2186.0	-27.38	72.22
90.00	10 6 2	4519.53	10.16	190.00	47.04	63.43	11 21 22	3919.5	6.51	183.22
100.00	19 50 34	2499.48	-29.59	59.62	54.74	94.47	20 32 13	1899.5	-28.65	50.94
100.00	11 19 52	4281.31	11.45	171.81	46.36	62.20	12 31 13	3681.3	7.64	165.10
110.00	21 15 38	2233.30	-33.42	38.93	54.27	97.65	21 52 51	1633.3	-32.00	29.98
110.00	12 11 17	4120.26	14.81	157.65	44.42	58.83	13 19 57	3520.3	10.57	151.11

DIFFERENTIAL CORRECTIONS
TDE 1.1087 TRA-2.7539 TC3 .9379 BAU .4051
RDE -.3512 RRA -.0422 RC3 -.1095 FAU .07892
FDE -.6018 FRA 2.3274 FC3-2.1290 BSP 11099
BDE 1.1630 BRA 2.7543 BC3 .9443 FSP 860

MID-COURSE EXECUTION ACCURACY
SGT 3261.4 SGR 378.8 SG3 300.3
RRT -.3269 RRF .3104 RTF -.9014
SGB 3283.3 R23 -.0130 R13 .9014
SG1 3263.8 SG2 357.8 THA 177.80

ORBIT DETERMINATION ACCURACY
ST 1414.5 SR 355.5 SS 750.4
CRT -.7698 CRS -.6114 CST .9747
LSA 1616.2 MSA 278.0 SSA 27.7
EL1 1441.4 EL2 222.7 ALF 168.78

LAUNCH DATE NOV 7 1964 FLIGHT TIME 182.00 ARRIVAL DATE MAY 8 1965

HELIOCENTRIC CONIC DISTANCE 466.683 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 34.489 GAL -6.35 AZL 87.89 HCA 150.66 SMA 220.79 ECC .34484 INC 2.1114 V1 30.058
RP 243.38 LAP 1.03 LOP 195.30 VP 22.125 GAP 19.33 AZP 91.84 TAL 334.93 TAP 125.59 RCA 144.65 APO 296.93 V2 22.547
RC 140.134 GL 13.16 GP -.72 ZAL 127.75 ZAP 169.50 ETS 182.56 ZAE 155.75 ETE 356.91 ZAC 88.05 ETC 256.06 CLP 169.52

PLANETOCENTRIC CONIC

C3 30.762 VHL 5.546 DLA 14.61 RAL 179.45 RAD 6568.2 VEL 12.334 PTH 2.22 VHP 8.925 DPA -1.38 RAP 184.64 ECC 1.5063

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 16 22	2791.89	-28.16	81.23	53.97	93.11	19 2 54	2191.9	-27.43	72.64
90.00	10 9 6	4492.37	9.33	188.44	46.13	63.14	11 23 59	3892.4	5.65	181.69
100.00	19 45 33	2504.28	-29.61	59.97	53.86	94.29	20 27 17	1904.3	-28.70	51.28
100.00	11 22 36	4255.24	10.62	170.32	45.45	61.89	12 33 31	3655.2	6.78	163.64
110.00	21 11 20	2235.89	-33.44	39.12	53.40	97.53	21 48 36	1635.9	-32.04	30.17
110.00	12 13 19	4096.37	13.96	156.32	43.49	58.48	13 21 35	3496.4	9.69	149.82

DIFFERENTIAL CORRECTIONS
TDE 1.0856 TRA-2.7239 TC3 1.0052 BAU .4161
RDE -.3359 RRA -.0339 RC3 -.1153 FAU .08132
FDE -.5999 FRA 2.3801 FC3-2.2886 BSP 11297
BDE 1.1364 BRA 2.7241 BC3 1.0118 FSP 908

MID-COURSE EXECUTION ACCURACY
SGT 3310.1 SGR 371.6 SG3 314.9
RRT -.3468 RRF .3306 RTF -.9046
SGB 3330.9 R23 -.0143 R13 .9047
SG1 3312.6 SG2 348.3 THA 177.75

ORBIT DETERMINATION ACCURACY
ST 1421.2 SR 347.2 SS 759.8
CRT -.7697 CRS -.6053 CST .9730
LSA 1624.7 MSA 277.6 SSA 27.6
EL1 1446.7 EL2 217.8 ALF 169.10

LAUNCH DATE NOV 7 1964 FLIGHT TIME 184.00 ARRIVAL DATE MAY 10 1965

HELIOCENTRIC CONIC DISTANCE 469.463 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 34.413 GAL -6.19 AZL 87.88 HCA 151.58 SMA 218.88 ECC .33848 INC 2.1218 V1 30.058
RP 243.12 LAP 1.01 LOP 196.22 VP 22.032 GAP 18.77 AZP 91.87 TAL 335.25 TAP 126.82 RCA 144.79 APO 292.96 V2 22.572
RC 142.373 GL 13.48 GP -.76 ZAL 127.25 ZAP 168.98 ETS 182.55 ZAE 155.76 ETE 356.98 ZAC 88.10 ETC 256.04 CLP 169.01

PLANETOCENTRIC CONIC

C3 29.508 VHL 5.432 DLA 15.09 RAL 179.16 RAD 6568.2 VEL 12.283 PTH 2.21 VHP 8.729 DPA -1.58 RAP 184.99 ECC 1.4856

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 10 50	2798.54	-28.18	81.72	53.09	92.86	18 57 28	2198.5	-27.49	73.12
90.00	10 12 18	4464.85	8.48	186.87	45.24	62.88	11 26 43	3864.8	4.78	180.14
100.00	19 40 22	2509.79	-29.64	60.38	52.99	94.08	20 22 12	1909.8	-28.76	51.69
100.00	11 25 27	4228.83	9.77	168.83	44.56	61.61	12 35 56	3628.8	5.90	162.17
110.00	21 6 53	2239.09	-33.47	39.37	52.54	97.39	21 44 12	1639.1	-32.09	30.41
110.00	12 15 26	4072.29	13.10	154.98	42.59	58.14	13 23 18	3472.3	8.80	148.53

DIFFERENTIAL CORRECTIONS
TDE 1.0620 TRA-2.6928 TC3 1.0764 BAU .4273
RDE -.3211 RRA -.0258 RC3 -.1214 FAU .08385
FDE -.5969 FRA 2.4336 FC3-2.4601 BSP 11466
BDE 1.1095 BRA 2.6929 BC3 1.0832 FSP 957

MID-COURSE EXECUTION ACCURACY
SGT 3357.9 SGR 364.6 SG3 330.2
RRT -.3683 RRF .3523 RTF -.9078
SGB 3377.7 R23 -.0157 R13 .9079
SG1 3360.6 SG2 338.7 THA 177.69

ORBIT DETERMINATION ACCURACY
ST 1426.5 SR 338.8 SS 768.8
CRT -.7698 CRS -.5989 CST .9711
LSA 1631.8 MSA 277.6 SSA 27.3
EL1 1450.6 EL2 212.7 ALF 169.41

LAUNCH DATE NOV 7 1964 FLIGHT TIME 186.00 ARRIVAL DATE MAY 12 1965

HELIOCENTRIC CONIC DISTANCE 472.307 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 34.340 GAL -6.02 AZL 87.87 HCA 152.50 SMA 217.08 ECC .33238 INC 2.1327 V1 30.058
RP 242.87 LAP .98 LOP 197.14 VP 21.944 GAP 18.22 AZP 91.89 TAL 335.57 TAP 128.07 RCA 144.92 APO 289.23 V2 22.598
RC 144.629 GL 13.81 GP -.80 ZAL 126.73 ZAP 168.46 ETS 182.56 ZAE 155.82 ETE 357.04 ZAC 88.15 ETC 256.02 CLP 168.48

PLANETOCENTRIC CONIC

C3 28.327 VHL 5.322 DLA 15.58 RAL 178.86 RAD 6568.1 VEL 12.235 PTH 2.20 VHP 8.539 DPA -1.78 RAP 185.34 ECC 1.4662

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 5 5	2806.02	-28.21	82.26	52.23	92.59	18 51 51	2206.0	-27.55	73.66
90.00	10 15 40	4436.94	7.61	185.28	44.38	62.64	11 29 37	3836.9	3.88	178.58
100.00	19 35 0	2516.08	-29.67	60.84	52.14	93.83	20 16 56	1916.1	-28.82	52.14
100.00	11 28 26	4202.12	8.90	167.32	43.69	61.35	12 38 28	3602.1	5.01	160.70
110.00	21 2 17	2242.93	-33.50	39.66	51.70	97.22	21 39 40	1642.9	-32.14	30.70
110.00	12 17 38	4048.02	12.22	153.65	41.70	57.83	13 25 6	3448.0	7.89	147.24

DIFFERENTIAL CORRECTIONS
TDE 1.0385 TRA-2.6612 TC3 1.1509 BAU .4385
RDE -.3068 RRA -.0178 RC3 -.1279 FAU .08651
FDE -.5929 FRA 2.4885 FC3-2.6439 BSP 11631
BDE 1.0828 BRA 2.6612 BC3 1.1580 FSP 1008

MID-COURSE EXECUTION ACCURACY
SGT 3405.2 SGR 357.7 SG3 346.3
RRT -.3915 RRF .3757 RTF -.9110
SGB 3424.0 R23 -.0171 R13 .9110
SG1 3408.2 SG2 328.9 THA 177.62

ORBIT DETERMINATION ACCURACY
ST 1430.8 SR 330.3 SS 777.4
CRT -.7702 CRS -.5922 CST .9689
LSA 1637.9 MSA 278.0 SSA 27.0
EL1 1453.7 EL2 207.3 ALF 169.71

LAUNCH DATE NOV 7 1964 FLIGHT TIME 188.00 ARRIVAL DATE MAY 14 1965

HELIOCENTRIC CONIC DISTANCE 475.210 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 34.270 GAL -5.87 AZL 87.86 HCA 153.42 SMA 215.38 ECC .32652 INC 2.1445 V1 30.058
RP 242.60 LAP .96 LOP 198.06 VP 21.861 GAP 17.67 AZP 91.92 TAL 335.90 TAP 129.31 RCA 145.05 APO 285.70 V2 22.624
RC 146.900 GL 14.15 GP -.84 ZAL 126.20 ZAP 167.92 ETS 182.58 ZAE 155.91 ETE 357.08 ZAC 88.19 ETC 256.01 CLP 167.95

PLANETOCENTRIC CONIC

C3 27.213 VHL 5.217 DLA 16.08 RAL 178.55 RAD 6568.1 VEL 12.190 PTH 2.19 VHP 8.352 DPA -1.99 RAP 185.67 ECC 1.4479

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 59 7	2814.39	-28.23	82.88	51.38	92.29	18 46 2	2214.4	-27.62	74.26
90.00	10 19 11	4408.59	6.72	183.67	43.54	62.43	11 32 39	3808.6	2.97	176.99
100.00	19 29 25	2523.17	-29.70	61.37	51.30	93.56	20 11 29	1923.2	-28.89	52.66
100.00	11 31 34	4175.04	8.01	165.80	42.84	61.11	12 41 9	3575.0	4.10	159.20
110.00	20 57 33	2247.45	-33.54	40.01	50.88	97.02	21 35 0	1647.4	-32.21	31.03
110.00	12 19 56	4023.53	11.33	152.31	40.84	57.53	13 26 59	3423.5	6.97	145.93

DIFFERENTIAL CORRECTIONS
TDE 1.0217 TRA-2.6214 TC3 1.2390 BAU .4534
RDE -.2930 RRA -.0100 RC3 -.1350 FAU .08917
FDE -.5849 FRA 2.5470 FC3-2.8369 BSP 11611
BDE 1.0629 BRA 2.6214 BC3 1.2463 FSP 1067

MID-COURSE EXECUTION ACCURACY
SGT 3451.0 SGR 351.5 SG3 363.0
RRT -.4195 RRF .3997 RTF -.9154
SGB 3468.8 R23 -.0137 R13 .9154
SG1 3454.1 SG2 318.8 THA 177.53

ORBIT DETERMINATION ACCURACY
ST 1438.4 SR 321.9 SS 785.0
CRT -.7737 CRS -.5829 CST .9647
LSA 1645.8 MSA 281.5 SSA 26.1
EL1 1460.2 EL2 200.9 ALF 169.99

LAUNCH DATE NOV 7 1964 FLIGHT TIME 190.00 ARRIVAL DATE MAY 16 1965

HELIOCENTRIC CONIC DISTANCE 478.167 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 34.202 GAL -5.71 AZL 87.84 HCA 154.34 SMA 213.78 ECC .32089 INC 2.1568 V1 30.058
RP 242.34 LAP .93 LOP 198.98 VP 21.783 GAP 17.12 AZP 91.94 TAL 336.22 TAP 130.56 RCA 145.18 APO 282.38 V2 22.651
RC 149.184 GL 14.50 GP -.89 ZAL 125.66 ZAP 167.38 ETS 182.60 ZAE 156.05 ETE 357.10 ZAC 88.23 ETC 255.99 CLP 167.41

PLANETOCENTRIC CONIC

C3 26.167 VHL 5.115 DLA 16.60 RAL 178.24 RAD 6568.1 VEL 12.147 PTH 2.18 VHP 8.169 DPA -2.19 RAP 186.00 ECC 1.4306

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 52 57	2823.66	-28.26	83.55	50.55	91.95	18 40 1	2223.7	-27.69	74.93
90.00	10 22 53	4379.85	5.81	182.05	42.72	62.24	11 35 52	3779.9	2.05	175.38
100.00	19 23 41	2531.08	-29.73	61.95	50.47	93.25	20 5 52	1931.1	-28.96	53.23
100.00	11 34 50	4147.67	7.11	164.27	42.01	60.89	12 43 58	3547.7	3.18	157.69
110.00	20 52 40	2252.64	-33.58	40.41	50.08	96.78	21 30 13	1652.6	-32.28	31.42
110.00	12 22 20	3998.87	10.43	150.97	40.00	57.26	13 28 59	3398.9	6.04	144.63

DIFFERENTIAL CORRECTIONS
TDE .9893 TRA-2.5967 TC3 1.3071 BAU .4600
RDE -.2792 RRA -.0020 RC3 -.1420 FAU .09218
FDE -.5800 FRA 2.6028 FC3-3.0497 BSP 11961
BDE 1.0279 BRA 2.5967 BC3 1.3148 FSP 1121

MID-COURSE EXECUTION ACCURACY
SGT 3496.7 SGR 344.9 SG3 380.7
RRT -.4425 RRF .4272 RTF -.9169
SGB 3513.7 R23 -.0204 R13 .9169
SG1 3500.1 SG2 309.0 THA 177.48

ORBIT DETERMINATION ACCURACY
ST 1434.7 SR 312.8 SS 793.5
CRT -.7712 CRS -.5772 CST .9639
LSA 1645.2 MSA 280.4 SSA 26.1
EL1 1455.3 EL2 196.3 ALF 170.28

LAUNCH DATE NOV 7 1964 FLIGHT TIME 192.00 ARRIVAL DATE MAY 18 1965

HELIOCENTRIC CONIC DISTANCE 481.176 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 34.138 GAL -5.56 AZL 87.83 HCA 155.26 SMA 212.27 ECC .31549 INC 2.1702 V1 30.058
RP 242.06 LAP .91 LOP 199.90 VP 21.710 GAP 16.58 AZP 91.97 TAL 336.56 TAP 131.82 RCA 145.30 APO 279.24 V2 22.678
RC 151.478 GL 14.86 GP -.94 ZAL 125.11 ZAP 166.83 ETS 182.64 ZAE 156.23 ETE 357.11 ZAC 88.26 ETC 255.98 CLP 166.86

PLANETOCENTRIC CONIC

C3 25.181 VHL 5.018 DLA 17.13 RAL 177.93 RAD 6568.0 VEL 12.106 PTH 2.17 VHP 7.991 DPA -2.39 RAP 186.32 ECC 1.4144

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 46 32	2833.93	-28.28	84.30	49.73	91.57	18 33 46	2233.9	-27.76	75.68
90.00	10 26 46	4350.60	4.88	180.40	41.93	62.07	11 39 17	3750.6	1.11	173.75
100.00	19 17 43	2539.89	-29.76	62.61	49.67	92.91	20 0 3	1939.9	-29.04	53.88
100.00	11 38 17	4119.88	6.19	162.72	41.21	60.70	12 46 57	3519.9	2.24	156.16
110.00	20 47 38	2258.56	-33.63	40.87	49.29	96.52	21 25 16	1658.6	-32.36	31.86
110.00	12 24 51	3973.97	9.51	149.63	39.19	57.01	13 31 5	3374.0	5.10	143.32

DIFFERENTIAL CORRECTIONS
TDE .9633 TRA-2.5686 TC3 1.3882 BAU .4700
RDE -.2660 RRA .0058 RC3 -.1496 FAU .09521
FDE -.5707 FRA 2.6626 FC3-3.2734 BSP 12134
BDE .9994 BRA 2.5646 BC3 1.3963 FSP 1182

MID-COURSE EXECUTION ACCURACY
SGT 3541.2 SGR 338.9 SG3 399.1
RRT -.4703 RRF .4556 RTF -.9196
SGB 3557.3 R23 -.0226 R13 .9196
SG1 3544.8 SG2 298.8 THA 177.40

ORBIT DETERMINATION ACCURACY
ST 1434.1 SR 303.8 SS 800.7
CRT -.7717 CRS -.5686 CST .9609
LSA 1646.1 MSA 282.5 SSA 25.6
EL1 1453.4 EL2 190.7 ALF 170.55

LAUNCH DATE NOV 7 1964 FLIGHT TIME 194.00 ARRIVAL DATE MAY 20 1965

HELIOCENTRIC CONIC DISTANCE 484.233 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 34.076 GAL -5.41 AZL 87.82 HCA 156.19 SMA 210.84 ECC .31030 INC 2.1847 V1 30.058
RP 241.79 LAP .88 LOP 200.83 VP 21.641 GAP 16.04 AZP 92.00 TAL 336.89 TAP 133.08 RCA 145.42 APO 276.27 V2 22.706
RC 153.781 GL 15.22 GP -.99 ZAL 124.55 ZAP 166.26 ETS 182.69 ZAE 156.44 ETE 357.10 ZAC 88.28 ETC 255.97 CLP 166.30

PLANETOCENTRIC CONIC

C3 24.253 VHL 4.925 DLA 17.67 RAL 177.61 RAD 6568.0 VEL 12.068 PTH 2.16 VHP 7.816 DPA -2.59 RAP 186.63 ECC 1.3991

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 39 51	2845.26	-28.30	85.13	48.94	91.16	18 27 16	2245.3	-27.84	76.50
90.00	10 30 54	4320.80	3.93	178.73	41.16	61.93	11 42 55	3720.8	.14	172.09
100.00	19 11 31	2549.64	-29.80	63.33	48.88	92.53	19 54 1	1949.6	-29.13	54.59
100.00	11 41 55	4091.65	5.24	161.16	40.44	60.53	12 50 6	3491.7	1.28	154.61
110.00	20 42 25	2265.24	-33.68	41.38	48.53	96.22	21 20 11	1665.2	-32.45	32.36
110.00	12 27 30	3948.82	8.57	148.28	38.40	56.78	13 33 19	3348.8	4.14	142.00

DIFFERENTIAL CORRECTIONS
TDE .9381 TRA-2.5311 TC3 1.4730 BAU .4803
RDE -.2533 RRA .0135 RC3 -.1579 FAU .09840
FDE -.5605 FRA 2.7237 FC3-3.5125 BSP 12283
BDE .9717 BRA 2.5311 BC3 1.4814 FSP 1245

MID-COURSE EXECUTION ACCURACY
SGT 3584.3 SGR 333.6 SG3 418.4
RRT -.5003 RRF .4859 RTF -.9222
SGB 3599.8 R23 -.0248 R13 .9223
SG1 3588.2 SG2 288.5 THA 177.32

ORBIT DETERMINATION ACCURACY
ST 1432.7 SR 294.7 SS 807.9
CRT -.7729 CRS -.5603 CST .9575
LSA 1646.3 MSA 285.2 SSA 25.0
EL1 1451.0 EL2 184.7 ALF 170.82

LAUNCH DATE NOV 7 1964 FLIGHT TIME 196.00 ARRIVAL DATE MAY 22 1965

HELIOCENTRIC CONIC DISTANCE 487.336 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 34.016 GAL -5.27 AZL 87.80 HCA 157.12 SMA 209.49 ECC .30531 INC 2.2001 V1 30.058
RP 241.51 LAP .86 LOP 201.76 VP 21.577 GAP 15.51 AZP 92.03 TAL 337.23 TAP 134.35 RCA 145.53 APO 273.45 V2 22.734
RC 156.092 GL 15.60 GP -1.05 ZAL 123.98 ZAP 165.69 ETS 182.75 ZAE 156.69 ETE 357.08 ZAC 88.30 ETC 255.95 CLP 165.73

PLANETOCENTRIC CONIC

C3 23.379 VHL 4.835 DLA 18.22 RAL 177.28 RAD 6567.9 VEL 12.032 PTH 2.15 VHP 7.645 DPA -2.79 RAP 186.92 ECC 1.3848

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 32 53	2857.76	-28.31	86.04	48.16	90.70	18 20 31	2257.8	-27.91	77.40
90.00	10 35 16	4290.34	2.95	177.02	40.43	61.82	11 46 47	3690.3	-.84	170.39
100.00	19 5 5	2560.44	-29.82	64.13	48.11	92.11	19 47 46	1960.4	-29.21	55.38
100.00	11 45 46	4062.90	4.28	159.57	39.70	60.39	12 53 28	3462.9	.30	153.04
110.00	20 37 2	2272.75	-33.73	41.96	47.79	95.88	21 14 55	1672.8	-32.55	32.93
110.00	12 30 18	3923.35	7.62	146.93	37.64	56.58	13 35 41	3323.3	3.17	140.66

DIFFERENTIAL CORRECTIONS
TDE .9254 TRA-2.4836 TC3 1.5833 BAU .4976
RDE -.2412 RRA .0208 RC3 -.1674 FAU .10174
FDE -.5475 FRA 2.7864 FC3-3.7675 BSP 12103
BDE .9563 BRA 2.4837 BC3 1.5921 FSP 1312

MID-COURSE EXECUTION ACCURACY
SGT 3625.8 SGR 329.5 SG3 438.7
RRT -.5372 RRF .5174 RTF -.9267
SGB 3640.7 R23 -.0197 R13 .9268
SG1 3630.1 SG2 277.6 THA 177.19

ORBIT DETERMINATION ACCURACY
ST 1438.2 SR 286.0 SS 814.4
CRT -.7802 CRS -.5505 CST .9506
LSA 1651.4 MSA 293.4 SSA 23.5
EL1 1455.7 EL2 176.7 ALF 171.05

LAUNCH DATE NOV 7 1964 FLIGHT TIME 198.00 ARRIVAL DATE MAY 24 1965

HELIOCENTRIC CONIC DISTANCE 490.479 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 33.959 GAL -5.13 AZL 87.78 HCA 158.05 SMA 208.22 ECC .30053 INC 2.2170 V1 30.058
RP 241.22 LAP .83 LOP 202.69 VP 21.517 GAP 14.99 AZP 92.06 TAL 337.56 TAP 135.61 RCA 145.64 APO 270.80 V2 22.762
RC 158.408 GL 15.99 GP -1.12 ZAL 123.40 ZAP 165.10 ETS 182.82 ZAE 156.98 ETE 357.02 ZAC 88.31 ETC 255.94 CLP 165.14

PLANETOCENTRIC CONIC

C3 22.560 VHL 4.750 DLA 18.79 RAL 176.96 RAD 6567.9 VEL 11.997 PTH 2.14 VHP 7.478 DPA -3.00 RAP 187.21 ECC 1.3713

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 25 39	2871.43	-28.32	87.05	47.40	90.20	18 13 31	2271.4	-27.99	78.39
90.00	10 39 56	4259.31	1.95	175.29	39.73	61.74	11 50 55	3659.3	-1.84	168.66
100.00	18 58 26	2572.26	-29.85	65.01	47.37	91.65	19 41 18	1972.3	-29.30	56.25
100.00	11 49 50	4033.71	3.30	157.96	38.99	60.27	12 57 4	3433.7	-.69	151.44
110.00	20 31 30	2281.07	-33.79	42.60	47.08	95.50	21 9 31	1681.1	-32.66	33.55
110.00	12 33 15	3897.67	6.66	145.57	36.91	56.39	13 38 13	3297.7	2.19	139.32

DIFFERENTIAL CORRECTIONS
TDE .8843 TRA-2.4649 TC3 1.6458 BAU .4992
RDE -.2287 RRA .0291 RC3 -.1761 FAU .10526
FDE -.5337 FRA 2.8511 FC3-4.0395 BSP 12603
BDE .9133 BRA 2.4651 BC3 1.6552 FSP 1382

MID-COURSE EXECUTION ACCURACY
SGT 3666.9 SGR 324.7 SG3 459.9
RRT -.5645 RRF .5520 RTF -.9270
SGB 3681.2 R23 -.0314 R13 .9272
SG1 3671.5 SG2 267.7 THA 177.12

ORBIT DETERMINATION ACCURACY
ST 1424.0 SR 276.1 SS 821.1
CRT -.7756 CRS -.5422 CST .9498
LSA 1640.8 MSA 292.5 SSA 23.7
EL1 1440.2 EL2 172.3 ALF 171.32

LAUNCH DATE NOV 7 1964 FLIGHT TIME 200.00 ARRIVAL DATE MAY 26 1965

HELIOCENTRIC CONIC DISTANCE 493.663 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 33.904 GAL -4.99 AZL 87.76 HCA 158.98 SMA 207.01 ECC .29594 INC 2.2353 V1 30.058
RP 240.93 LAP .80 LOP 203.62 VP 21.461 GAP 14.47 AZP 92.09 TAL 337.90 TAP 136.89 RCA 145.75 APO 268.27 V2 22.791
RC 160.729 GL 16.39 GP -1.19 ZAL 122.82 ZAP 164.50 ETS 182.91 ZAE 157.30 ETE 356.95 ZAC 88.32 ETC 255.93 CLP 164.54

PLANETOCENTRIC CONIC

C3 21.790 VHL 4.668 DLA 19.37 RAL 176.63 RAD 6567.9 VEL 11.965 PTH 2.13 VHP 7.314 DPA -3.21 RAP 187.49 ECC 1.3586

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 18 4	2886.50	-28.31	88.15	46.66	89.64	18 6 11	2286.5	-28.06	79.49
90.00	10 44 55	4227.42	.92	173.51	39.07	61.70	11 55 22	3627.4	-2.87	166.88
100.00	18 51 28	2585.31	-29.87	65.98	46.65	91.14	19 34 34	1985.3	-29.40	57.21
100.00	11 54 12	4003.84	2.29	156.32	38.31	60.19	13 0 56	3403.8	-1.70	149.80
110.00	20 25 45	2290.32	-33.85	43.32	46.40	95.08	21 3 56	1690.3	-32.78	34.25
110.00	12 36 24	3871.60	5.67	144.19	36.21	56.23	13 40 55	3271.6	1.20	137.96

DIFFERENTIAL CORRECTIONS
TDE .8580 TRA-2.4302 TC3 1.7359 BAU .5086
RDE -.2169 RRA .0369 RC3 -.1864 FAU .10895
FDE -.5175 FRA 2.9174 FC3-4.3286 BSP 12739
BDE .8849 BRA 2.4305 BC3 1.7459 FSP 1455

MID-COURSE EXECUTION ACCURACY
SGT 3705.7 SGR 321.7 SG3 482.2
RRT -.5993 RRF .5876 RTF -.9294
SGB 3719.7 R23 -.0349 R13 .9295
SG1 3710.8 SG2 257.2 THA 177.01

ORBIT DETERMINATION ACCURACY
ST 1418.1 SR 266.7 SS 827.5
CRT -.7782 CRS -.5331 CST .9450
LSA 1636.4 MSA 297.6 SSA 22.8
EL1 1433.4 EL2 165.7 ALF 171.56

LAUNCH DATE NOV 7 1964 FLIGHT TIME 202.00 ARRIVAL DATE MAY 28 1965

HELIOCENTRIC CONIC DISTANCE 496.884 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 33.852 GAL -4.86 AZL 87.74 HCA 159.92 SMA 205.87 ECC .29153 INC 2.2551 V1 30.058
RP 240.64 LAP .77 LOP 204.56 VP 21.410 GAP 13.95 AZP 92.12 TAL 338.24 TAP 138.16 RCA 145.85 APO 265.89 V2 22.821
RC 163.052 GL 16.81 GP -1.27 ZAL 122.22 ZAP 163.89 ETS 183.01 ZAE 157.67 ETE 356.84 ZAC 88.31 ETC 255.92 CLP 163.93

PLANETOCENTRIC CONIC

C3 21.068 VHL 4.590 DLA 19.96 RAL 176.31 RAD 6567.9 VEL 11.935 PTH 2.12 VHP 7.154 DPA -3.41 RAP 187.75 ECC 1.3467

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 10 7	2903.08	-28.30	89.36	45.95	89.04	17 58 30	2303.1	-28.14	80.70
90.00	10 50 17	4194.59	-.14	171.68	38.45	61.68	12 0 11	3594.6	-3.92	165.04
100.00	18 44 13	2599.65	-29.89	67.04	45.96	90.58	19 27 32	1999.6	-29.49	58.26
100.00	11 58 52	3973.26	1.25	154.64	37.68	60.13	13 5 5	3373.3	-2.73	148.12
110.00	20 19 49	2300.55	-33.91	44.11	45.74	94.61	20 58 9	1700.5	-32.90	35.02
110.00	12 39 45	3845.12	4.67	142.80	35.55	56.10	13 43 50	3245.1	.18	136.58

DIFFERENTIAL CORRECTIONS
TDE .8315 TRA-2.3948 TC3 1.8296 BAU .5183
RDE -.2055 RRA .0449 RC3 -.1976 FAU .11286
FDE -.4988 FRA 2.9853 FC3-4.6376 BSP 12861
BDE .8565 BRA 2.3952 BC3 1.8403 FSP 1531

MID-COURSE EXECUTION ACCURACY
SGT 3743.5 SGR 319.8 SG3 505.5
RRT -.6354 RRF .6246 RTF -.9317
SGB 3757.1 R23 -.0388 R13 .9319
SG1 3749.0 SG2 246.5 THA 176.88

ORBIT DETERMINATION ACCURACY
ST 1410.8 SR 257.2 SS 833.6
CRT -.7816 CRS -.5239 CST .9396
LSA 1630.5 MSA 303.8 SSA 21.9
EL1 1425.2 EL2 158.8 ALF 171.79

LAUNCH DATE NOV 7 1964 FLIGHT TIME 204.00 ARRIVAL DATE MAY 30 1965

HELIOCENTRIC CONIC DISTANCE 500.141 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 33.801 GAL -4.73 AZL 87.72 HCA 160.86 SMA 204.79 ECC .28730 INC 2.2770 V1 30.058
RP 240.34 LAP .75 LOP 205.49 VP 21.362 GAP 13.44 AZP 92.15 TAL 338.58 TAP 139.44 RCA 145.95 APO 263.62 V2 22.851
RC 165.375 GL 17.24 GP -1.36 ZAL 121.62 ZAP 163.26 ETS 183.13 ZAE 158.06 ETE 356.69 ZAC 88.29 ETC 255.91 CLP 163.31

PLANETOCENTRIC CONIC

C3 20.390 VHL 4.516 DLA 20.58 RAL 175.99 RAD 6567.8 VEL 11.907 PTH 2.12 VHP 6.997 DPA -3.63 RAP 188.00 ECC 1.3356

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 1 43	2921.38	-28.27	90.70	45.26	88.37	17 50 25	2321.4	-28.20	82.03
90.00	10 56 5	4160.64	-1.23	169.79	37.87	61.71	12 5 26	3560.6	-5.00	163.14
100.00	18 36 36	2615.45	-29.89	68.22	45.29	89.96	19 20 11	2015.4	-29.58	59.43
100.00	12 3 54	3941.80	.18	152.91	37.08	60.11	13 9 36	3341.8	-3.80	146.39
110.00	20 13 38	2311.86	-33.97	44.99	45.12	94.10	20 52 10	1711.9	-33.03	35.88
110.00	12 43 21	3818.16	3.64	141.38	34.92	55.99	13 46 59	3218.2	-.85	135.18

DIFFERENTIAL CORRECTIONS
TDE .8077 TRA-2.3558 TC3 1.9288 BAU .5289
RDE -.1944 RRA .0530 RC3 -.2100 FAU .11690
FDE -.4770 FRA 3.0558 FC3-4.9635 BSP 12882
BDE .8307 BRA 2.3564 BC3 1.9402 FSP 1611

MID-COURSE EXECUTION ACCURACY
SGT 3778.8 SGR 319.3 SG3 529.9
RRT -.6732 RRF .6621 RTF -.9343
SGB 3792.2 R23 -.0415 R13 .9345
SG1 3784.9 SG2 235.7 THA 176.73

ORBIT DETERMINATION ACCURACY
ST 1403.7 SR 247.6 SS 839.5
CRT -.7873 CRS -.5141 CST .9324
LSA 1624.3 MSA 312.7 SSA 20.7
EL1 1417.4 EL2 151.2 ALF 172.00

LAUNCH DATE NOV 7 1964 FLIGHT TIME 206.00 ARRIVAL DATE JUN 1 1965

HELIOCENTRIC CONIC DISTANCE 503.431 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 33.753 GAL -4.61 AZL 87.70 HCA 161.80 SMA 203.76 ECC .28324 INC 2.3011 V1 30.058
RP 240.04 LAP .72 LOP 206.43 VP 21.318 GAP 12.94 AZP 92.19 TAL 338.92 TAP 140.72 RCA 146.05 APO 261.47 V2 22.881
RC 167.697 GL 17.69 GP -1.46 ZAL 121.01 ZAP 162.61 ETS 183.26 ZAE 158.50 ETE 356.51 ZAC 88.26 ETC 255.90 CLP 162.67

PLANETOCENTRIC CONIC

C3 19.757 VHL 4.445 DLA 21.21 RAL 175.67 RAD 6567.8 VEL 11.880 PTH 2.11 VHP 6.844 DPA -3.84 RAP 188.23 ECC 1.3252

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 52 52	2941.60	-28.23	92.18	44.60	87.63	17 41 53	2341.6	-28.26	83.51
90.00	11 2 25	4125.40	-2.37	167.82	37.34	61.77	12 11 10	3525.4	-6.12	161.15
100.00	18 28 37	2632.85	-29.88	69.51	44.65	89.28	19 12 30	2032.9	-29.66	60.72
100.00	12 9 21	3909.38	-.92	151.14	36.53	60.12	13 14 30	3309.4	-4.89	144.60
110.00	20 7 14	2324.32	-34.02	45.96	44.53	93.53	20 45 58	1724.3	-33.16	36.83
110.00	12 47 13	3790.67	2.59	139.94	34.34	55.90	13 50 24	3190.7	-1.90	133.74

DIFFERENTIAL CORRECTIONS
TDE .7738 TRA-2.3267 TC3 2.0100 BAU .5342
RDE -.1832 RRA .0616 RC3 -.2229 FAU .12115
FDE -.4519 FRA 3.1296 FC3-5.3084 BSP 13155
BDE .7952 BRA 2.3275 BC3 2.0223 FSP 1698

MID-COURSE EXECUTION ACCURACY
SGT 3812.8 SGR 319.9 SG3 555.5
RRT -.7082 RRF .7008 RTF -.9356
SGB 3826.2 R23 -.0509 R13 .9358
SG1 3819.5 SG2 225.4 THA 176.59

ORBIT DETERMINATION ACCURACY
ST 1388.9 SR 237.7 SS 845.5
CRT -.7894 CRS -.5050 CST .9272
LSA 1612.0 MSA 318.5 SSA 20.0
EL1 1401.7 EL2 144.6 ALF 172.22

LAUNCH DATE NOV 7 1964 FLIGHT TIME 208.00 ARRIVAL DATE JUN 3 1965

HELIOCENTRIC CONIC DISTANCE 506.752 EARTH TO MARS

RL	148.24	LAL	-.00	LOL	44.62	VL	33.707	GAL	-4.49	AZL	87.67	HCA	162.74	SMA	202.79	ECC	.27935	INC	2.3278	V1	30.058
RP	239.73	LAP	.69	LOP	207.37	VP	21.278	GAP	12.44	AZP	92.22	TAL	339.26	TAP	142.00	RCA	146.14	APO	259.44	V2	22.912
RC	170.016	GL	18.17	GP	-1.57	ZAL	120.39	ZAP	161.96	ETS	183.42	ZAE	158.96	ETE	356.28	ZAC	88.21	ETC	255.90	CLP	162.02

PLANETOCENTRIC CONIC

C3	19.166	VHL	4.378	DLA	21.86	RAL	175.36	RAD	6567.8	VEL	11.855	PTH	2.10	VHP	6.694	DPA	-4.07	RAP	188.45	ECC	1.3154

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 43 24	2964.12	-28.15	93.82	43.97	86.81	17 32 48	2364.1	-28.30	85.16
90.00	11 9 23	4088.49	-3.55	165.75	36.87	61.89	12 17 31	3488.5	-7.29	159.06
100.00	18 20 10	2652.14	-29.86	70.95	44.05	88.52	19 4 22	2052.1	-29.74	62.14
100.00	12 15 19	3875.70	-2.06	149.29	36.04	60.17	13 19 54	3275.7	-6.01	142.73
110.00	20 0 32	2338.11	-34.08	47.04	43.99	92.89	20 39 30	1738.1	-33.30	37.88
110.00	12 51 26	3762.49	1.52	138.47	33.81	55.85	13 54 8	3162.5	-2.97	132.27

DIFFERENTIAL CORRECTIONS

TDE	.7447	TRA	-2.2919	TC3	2.1011	BAU	.5418
RDE	-.1725	RRA	.0704	RC3	-.2375	FAU	.12558
FDE	-.4231	FRA	3.2058	FC3	-5.6726	BSP	13288
BDE	.7644	BRA	2.2930	BC3	2.1145	FSP	1788

MID-COURSE EXECUTION ACCURACY

SGT	3844.5	SGR	322.6	SG3	582.2		
RRT	-.7446	RRF	.7391	RTF	-.9375		
SGB	3858.0	R23	-.0582	R13	.9377		
SG1	3852.0	SG2	214.9	THA	176.41		

ORBIT DETERMINATION ACCURACY

ST	1375.9	SR	227.8	SS	851.5		
CRT	-.7953	CRS	-.4959	CST	.9195		
LSA	1600.7	MSA	328.0	SSA	18.9		
EL1	1387.9	EL2	136.9	ALF	172.42		

LAUNCH DATE NOV 7 1964 FLIGHT TIME 210.00 ARRIVAL DATE JUN 5 1965

HELIOCENTRIC CONIC DISTANCE 510.103 EARTH TO MARS

RL	148.24	LAL	-.00	LOL	44.62	VL	33.662	GAL	-4.37	AZL	87.64	HCA	163.68	SMA	201.86	ECC	.27562	INC	2.3576	V1	30.058
RP	239.42	LAP	.66	LOP	208.32	VP	21.241	GAP	11.94	AZP	92.26	TAL	339.60	TAP	143.28	RCA	146.23	APO	257.50	V2	22.943
RC	172.331	GL	18.66	GP	-1.70	ZAL	119.77	ZAP	161.28	ETS	183.60	ZAE	159.46	ETE	355.99	ZAC	88.15	ETC	255.89	CLP	161.36

PLANETOCENTRIC CONIC

C3	18.616	VHL	4.315	DLA	22.54	RAL	175.05	RAD	6567.8	VEL	11.832	PTH	2.10	VHP	6.547	DPA	-4.30	RAP	188.65	ECC	1.3064

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 33 15	2989.37	-28.04	95.66	43.37	85.89	17 23 4	2389.4	-28.32	87.00
90.00	11 17 8	4049.51	-4.80	163.57	36.46	62.06	12 24 38	3449.5	-8.50	156.85
100.00	18 11 10	2673.61	-29.81	72.54	43.48	87.69	18 55 44	2073.6	-29.81	63.74
100.00	12 21 53	3840.50	-3.25	147.35	35.61	60.27	13 25 54	3240.5	-7.18	140.77
110.00	19 53 32	2353.39	-34.12	48.23	43.49	92.19	20 32 45	1753.4	-33.44	39.05
110.00	12 56 1	3733.49	.41	136.96	33.33	55.82	13 58 15	3133.5	-4.08	130.75

DIFFERENTIAL CORRECTIONS

TDE	.7154	TRA	-2.2573	TC3	2.1905	BAU	.5488
RDE	-.1620	RRA	.0797	RC3	-.2537	FAU	.13020
FDE	-.3901	FRA	3.2860	FC3	-6.0549	BSP	13419
BDE	.7335	BRA	2.2587	BC3	2.2051	FSP	1885

MID-COURSE EXECUTION ACCURACY

SGT	3874.2	SGR	327.6	SG3	610.3		
RRT	-.7801	RRF	.7765	RTF	-.9393		
SGB	3888.0	R23	-.0666	R13	.9395		
SG1	3882.6	SG2	204.5	THA	176.22		

ORBIT DETERMINATION ACCURACY

ST	1361.6	SR	217.9	SS	858.2		
CRT	-.8028	CRS	-.4876	CST	.9106		
LSA	1588.2	MSA	339.2	SSA	17.8		
EL1	1372.8	EL2	128.9	ALF	172.61		

LAUNCH DATE NOV 7 1964 FLIGHT TIME 212.00 ARRIVAL DATE JUN 7 1965

HELIOCENTRIC CONIC DISTANCE 513.483 EARTH TO MARS

RL	148.24	LAL	-.00	LOL	44.62	VL	33.620	GAL	-4.25	AZL	87.61	HCA	164.63	SMA	200.99	ECC	.27204	INC	2.3910	V1	30.058
RP	239.11	LAP	.63	LOP	209.26	VP	21.208	GAP	11.46	AZP	92.31	TAL	339.93	TAP	144.56	RCA	146.31	APO	255.66	V2	22.975
RC	174.639	GL	19.19	GP	-1.84	ZAL	119.14	ZAP	160.59	ETS	183.81	ZAE	160.00	ETE	355.62	ZAC	88.07	ETC	255.88	CLP	160.67

PLANETOCENTRIC CONIC

C3	18.105	VHL	4.255	DLA	23.24	RAL	174.76	RAD	6567.7	VEL	11.810	PTH	2.09	VHP	6.403	DPA	-4.54	RAP	188.83	ECC	1.2980

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 22 11	3017.99	-27.88	97.74	42.79	84.86	17 12 29	2418.0	-28.30	89.10
90.00	11 25 52	4007.86	-6.13	161.22	36.14	62.30	12 32 40	3407.9	-9.79	154.46
100.00	18 1 31	2697.70	-29.73	74.33	42.95	86.75	18 46 29	2097.7	-29.87	65.53
100.00	12 29 13	3803.38	-4.50	145.31	35.24	60.42	13 32 37	3203.4	-8.41	138.70
110.00	19 46 9	2370.39	-34.16	49.55	43.03	91.41	20 25 39	1770.4	-33.59	40.36
110.00	13 1 5	3703.45	-.74	135.39	32.90	55.82	14 2 49	3103.5	-5.22	129.17

DIFFERENTIAL CORRECTIONS

TDE	.6900	TRA	-2.2184	TC3	2.2883	BAU	.5578
RDE	-.1518	RRA	.0894	RC3	-.2722	FAU	.13515
FDE	-.3554	FRA	3.3665	FC3	-6.4627	BSP	13432
BDE	.7065	BRA	2.2202	BC3	2.3044	FSP	1980

MID-COURSE EXECUTION ACCURACY

SGT	3901.9	SGR	335.6	SG3	639.7		
RRT	-.8149	RRF	.8123	RTF	-.9413		
SGB	3916.3	R23	-.0748	R13	.9416		
SG1	3911.5	SG2	194.0	THA	175.98		

ORBIT DETERMINATION ACCURACY

ST	1348.3	SR	208.2	SS	865.4		
CRT	-.8143	CRS	-.4824	CST	.8998		
LSA	1576.5	MSA	353.1	SSA	16.5		
EL1	1359.0	EL2	119.9	ALF	172.78		

LAUNCH DATE NOV 7 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUN 9 1965

HELIOCENTRIC CONIC DISTANCE 516.890 EARTH TO MARS

RL	148.24	LAL	-.00	LOL	44.62	VL	33.579	GAL	-4.14	AZL	87.57	HCA	165.58	SMA	200.15	ECC	.26861	INC	2.4286	V1	30.058
RP	238.79	LAP	.60	LOP	210.21	VP	21.178	GAP	10.97	AZP	92.35	TAL	340.26	TAP	145.84	RCA	146.39	APO	253.92	V2	23.007
RC	176.939	GL	19.75	GP	-2.01	ZAL	118.50	ZAP	159.88	ETS	184.05	ZAE	160.56	ETE	355.17	ZAC	87.97	ETC	255.88	CLP	159.97

PLANETOCENTRIC CONIC

C3	17.633	VHL	4.199	DLA	23.98	RAL	174.49	RAD	6567.7	VEL	11.790	PTH	2.08	VHP	6.263	DPA	-4.79	RAP	188.99	ECC	1.2902

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 9 59	3050.85	-27.66	100.12	42.25	83.69	17 0 50	2450.9	-28.25	91.50
90.00	11 35 54	3962.70	-7.55	158.67	35.90	62.63	12 41 56	3362.7	-11.16	151.85
100.00	17 51 4	2724.97	-29.61	76.35	42.46	85.69	18 36 29	2125.0	-29.89	67.55
100.00	12 37 30	3763.82	-5.83	143.12	34.97	60.63	13 40 14	3163.8	-9.70	136.47
110.00	19 38 19	2389.39	-34.18	51.04	42.64	90.53	20 18 9	1789.4	-33.73	41.82
110.00	13 6 44	3672.16	-1.94	133.76	32.55	55.87	14 7 56	3072.2	-6.40	127.52

DIFFERENTIAL CORRECTIONS

TDE	.6572	TRA	-2.1852	TC3	2.3691	BAU	.5627
RDE	-.1415	RRA	.1000	RC3	-.2926	FAU	.14028
FDE	-.3141	FRA	3.4513	FC3	-6.8875	BSP	13607
BDE	.6723	BRA	2.1875	BC3	2.3871	FSP	2083

MID-COURSE EXECUTION ACCURACY

SGT	3925.8	SGR	346.3	SG3	670.4		
RRT	-.8454	RRF	.8462	RTF	-.9426		
SGB	3941.0	R23	-.0891	R13	.9429		
SG1	3936.7	SG2	184.5	THA	175.73		

ORBIT DETERMINATION ACCURACY

ST	1328.9	SR	198.3	SS	873.3		
CRT	-.8250	CRS	-.4791	CST	.8898		
LSA	1560.2	MSA	365.5	SSA	15.4		
EL1	1339.0	EL2	111.2	ALF	172.93		

LAUNCH DATE NOV 7 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUN 11 1965

HELIOCENTRIC CONIC DISTANCE 520.323 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 33.540 GAL -4.03 AZL 87.53 HCA 166.53 SMA 199.36 ECC .26532 INC 2.4716 V1 30.058
RP 238.47 LAP .58 LOP 211.17 VP 21.151 GAP 10.50 AZP 92.40 TAL 340.59 TAP 147.12 RCA 146.47 APO 252.26 V2 23.040
RC 179.231 GL 20.36 GP -2.19 ZAL 117.86 ZAP 159.15 ETS 184.33 ZAE 161.16 ETE 354.60 ZAC 87.84 ETC 255.87 CLP 159.26

PLANETOCENTRIC CONIC

C3 17.200 VHL 4.147 DLA 24.76 RAL 174.24 RAD 6567.7 VEL 11.772 PTH 2.08 VHP 6.125 DPA -5.06 RAP 189.13 ECC 1.2831

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 56 12	3089.47	-27.34	102.90	41.74	82.33	16 47 41	2489.5	-28.12	94.32
90.00	11 47 40	3912.58	-9.10	155.81	35.79	63.07	12 52 53	3312.6	-12.65	148.92
100.00	17 39 31	2756.34	-29.43	78.66	42.01	84.49	18 25 28	2156.3	-29.88	69.88
100.00	12 47 2	3720.94	-7.25	140.73	34.79	60.92	13 49 3	3120.9	-11.07	134.03
110.00	19 29 57	2410.84	-34.18	52.71	42.30	89.54	20 10 8	1810.8	-33.87	43.48
110.00	13 13 5	3639.21	-3.19	132.04	32.29	55.95	14 13 45	3039.2	-7.64	125.78

DIFFERENTIAL CORRECTIONS
TDE .6333 TRA-2.1439 TC3 2.4678 BAU .5721
RDE -.1316 RRA .1113 RC3 -.3167 FAU .14583
FDE -.2713 FRA 3.5370 FC3-7.3402 BSP 13553
BDE .6469 BRA 2.1468 BC3 2.4881 FSP 2184

MID-COURSE EXECUTION ACCURACY
SGT 3948.9 SGR 361.6 SG3 702.8
RRT -.8747 RRF .8767 RTF -.9446
SGB 3965.4 R23 -.1008 R13 .9450
SG1 3961.6 SG2 174.7 THA 175.41

ORBIT DETERMINATION ACCURACY
ST 1314.1 SR 188.9 SS 882.4
CRT -.8428 CRS -.4811 CST .8757
LSA 1547.2 MSA 383.5 SSA 14.1
EL1 1323.7 EL2 100.9 ALF 173.05

LAUNCH DATE NOV 7 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUN 13 1965

HELIOCENTRIC CONIC DISTANCE 523.779 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 33.502 GAL -3.93 AZL 87.48 HCA 167.49 SMA 198.61 ECC .26217 INC 2.5212 V1 30.058
RP 238.14 LAP .55 LOP 212.12 VP 21.128 GAP 10.03 AZP 92.46 TAL 340.92 TAP 148.41 RCA 146.54 APO 250.69 V2 23.073
RC 181.513 GL 21.02 GP -2.41 ZAL 117.21 ZAP 158.39 ETS 184.66 ZAE 161.79 ETE 353.88 ZAC 87.67 ETC 255.86 CLP 158.52

PLANETOCENTRIC CONIC

C3 16.808 VHL 4.100 DLA 25.58 RAL 174.02 RAD 6567.7 VEL 11.755 PTH 2.07 VHP 5.991 DPA -5.35 RAP 189.24 ECC 1.2766

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 40 7	3136.19	-26.87	106.24	41.24	80.72	16 32 23	2536.2	-27.88	97.71
90.00	12 1 58	3855.21	-10.85	152.50	35.83	63.69	13 6 14	3255.2	-14.30	145.52
100.00	17 26 33	2793.06	-29.16	81.36	41.61	83.09	18 13 6	2193.1	-29.81	72.61
100.00	12 58 14	3673.58	-8.81	138.08	34.75	61.32	13 59 27	3073.6	-12.57	131.31
110.00	19 20 54	2435.25	-34.15	54.62	42.04	88.41	20 1 30	1835.3	-33.99	45.38
110.00	13 20 21	3604.15	-4.53	130.20	32.13	56.08	14 20 25	3004.1	-8.95	123.91

DIFFERENTIAL CORRECTIONS
TDE .6012 TRA-2.1105 TC3 2.5429 BAU .5766
RDE -.1214 RRA .1241 RC3 -.3436 FAU .15147
FDE -.2189 FRA 3.6301 FC3-7.8021 BSP 13689
BDE .6133 BRA 2.1142 BC3 2.5660 FSP 2297

MID-COURSE EXECUTION ACCURACY
SGT 3968.2 SGR 380.9 SG3 736.4
RRT -.8988 RRF .9040 RTF -.9457
SGB 3986.4 R23 -.1198 R13 .9462
SG1 3982.9 SG2 166.4 THA 175.06

ORBIT DETERMINATION ACCURACY
ST 1293.2 SR 179.4 SS 893.2
CRT -.8606 CRS -.4872 CST .8624
LSA 1530.4 MSA 400.2 SSA 12.9
EL1 1302.4 EL2 90.7 ALF 173.16

LAUNCH DATE NOV 7 1964 FLIGHT TIME 220.00 ARRIVAL DATE JUN 15 1965

HELIOCENTRIC CONIC DISTANCE 527.259 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 33.466 GAL -3.83 AZL 87.42 HCA 168.44 SMA 197.90 ECC .25915 INC 2.5793 V1 30.058
RP 237.81 LAP .52 LOP 213.08 VP 21.107 GAP 9.56 AZP 92.53 TAL 341.24 TAP 149.69 RCA 146.61 APO 249.19 V2 23.106
RC 183.786 GL 21.74 GP -2.67 ZAL 116.55 ZAP 157.62 ETS 185.05 ZAE 162.44 ETE 352.97 ZAC 87.47 ETC 255.86 CLP 157.77

PLANETOCENTRIC CONIC

C3 16.456 VHL 4.057 DLA 26.46 RAL 173.83 RAD 6567.7 VEL 11.741 PTH 2.07 VHP 5.860 DPA -5.66 RAP 189.32 ECC 1.2708

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 20 15	3195.90	-26.15	110.46	40.73	78.72	16 13 31	2595.9	-27.44	102.03
90.00	12 20 20	3785.82	-12.92	148.45	36.09	64.58	13 23 26	3185.8	-16.24	141.34
100.00	17 11 28	2837.34	-28.75	84.58	41.24	81.44	17 58 46	2237.3	-29.63	75.89
100.00	13 11 48	3619.61	-10.56	135.03	34.87	61.87	14 12 8	3019.6	-14.24	128.17
110.00	19 10 58	2463.47	-34.08	56.82	41.87	87.11	19 52 1	1863.5	-34.10	47.57
110.00	13 28 48	3566.24	-5.96	128.21	32.09	56.28	14 28 15	2966.2	-10.36	121.87

DIFFERENTIAL CORRECTIONS
TDE .5672 TRA-2.0771 TC3 2.6114 BAU .5804
RDE -.1110 RRA .1386 RC3 -.3745 FAU .15720
FDE -.1541 FRA 3.7316 FC3-8.2703 BSP 13846
BDE .5780 BRA 2.0817 BC3 2.6381 FSP 2425

MID-COURSE EXECUTION ACCURACY
SGT 3983.6 SGR 405.8 SG3 771.5
RRT -.9191 RRF .9273 RTF -.9469
SGB 4004.2 R23 -.1410 R13 .9475
SG1 4001.0 SG2 159.2 THA 174.64

ORBIT DETERMINATION ACCURACY
ST 1269.8 SR 170.1 SS 906.8
CRT -.8823 CRS -.4982 CST .8459
LSA 1512.0 MSA 420.9 SSA 11.7
EL1 1278.6 EL2 79.5 ALF 173.23

LAUNCH DATE NOV 7 1964 FLIGHT TIME 222.00 ARRIVAL DATE JUN 17 1965

HELIOCENTRIC CONIC DISTANCE 530.761 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 33.432 GAL -3.73 AZL 87.35 HCA 169.40 SMA 197.22 ECC .25626 INC 2.6475 V1 30.058
RP 237.48 LAP .49 LOP 214.04 VP 21.090 GAP 9.11 AZP 92.60 TAL 341.56 TAP 150.96 RCA 146.68 APO 247.77 V2 23.140
RC 186.049 GL 22.55 GP -2.97 ZAL 115.88 ZAP 156.81 ETS 185.51 ZAE 163.12 ETE 351.81 ZAC 87.21 ETC 255.85 CLP 156.99

PLANETOCENTRIC CONIC

C3 16.149 VHL 4.019 DLA 27.41 RAL 173.69 RAD 6567.6 VEL 11.727 PTH 2.07 VHP 5.733 DPA -6.02 RAP 189.36 ECC 1.2658

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 52 39	3281.46	-24.87	116.40	40.11	76.01	15 47 21	2681.5	-26.55	108.13
90.00	12 46 50	3691.66	-15.60	142.83	36.72	66.06	13 48 21	3091.7	-18.70	135.53
100.00	16 53 5	2893.22	-28.12	88.62	40.90	79.41	17 41 19	2293.2	-29.29	80.01
100.00	13 29 5	3555.13	-12.60	131.33	35.24	62.67	14 28 20	2955.1	-16.16	124.35
110.00	18 59 48	2496.71	-33.93	59.40	41.79	85.58	19 41 24	1896.7	-34.17	50.17
110.00	13 38 52	3524.41	-7.54	125.99	32.22	56.56	14 37 36	2924.4	-11.89	119.60

DIFFERENTIAL CORRECTIONS
TDE .5376 TRA-2.0400 TC3 2.6830 BAU .5860
RDE -.1006 RRA .1549 RC3 -.4118 FAU .16353
FDE -.0880 FRA 3.8312 FC3-8.7668 BSP 13876
BDE .5469 BRA 2.0458 BC3 2.7144 FSP 2542

MID-COURSE EXECUTION ACCURACY
SGT 3996.4 SGR 438.2 SG3 808.3
RRT -.9357 RRF .9466 RTF -.9481
SGB 4020.4 R23 -.1647 R13 .9488
SG1 4017.4 SG2 153.7 THA 174.13

ORBIT DETERMINATION ACCURACY
ST 1248.1 SR 162.0 SS 922.4
CRT -.9097 CRS -.5231 CST .8279
LSA 1496.0 MSA 443.3 SSA 10.5
EL1 1256.8 EL2 66.8 ALF 173.25

LAUNCH DATE NOV 7 1964 FLIGHT TIME 224.00 ARRIVAL DATE JUN 19 1965

HELIOCENTRIC CONIC DISTANCE 534.285 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 33.399 GAL -3.64 AZL 87.27 HCA 170.36 SMA 196.58 ECC .25350 INC 2.7299 V1 30.058
RP 237.15 LAP .46 LOP 215.00 VP 21.075 GAP 8.65 AZP 92.69 TAL 341.88 TAP 152.24 RCA 146.75 APO 246.41 V2 23.174
RC 188.300 GL 23.47 GP -3.34 ZAL 115.19 ZAP 155.98 ETS 186.07 ZAE 163.81 ETE 350.31 ZAC 86.89 ETC 255.84 CLP 156.20

PLANETOCENTRIC CONIC

C3 15.891 VHL 3.986 DLA 28.46 RAL 173.61 RAD 6567.6 VEL 11.716 PTH 2.06 VHP 5.608 DPA -6.42 RAP 189.36 ECC 1.2615

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
87.07	13 24 57	3562.26	-20.99	135.66	38.56	70.34	14 24 19	2962.3	-23.48	127.86
92.93	14 13 56	3403.54	-20.98	124.04	38.55	70.33	15 10 39	2803.5	-23.47	116.24
100.00	16 28 29	2970.12	-27.03	94.08	40.51	76.73	17 17 59	2370.1	-28.59	85.62
100.00	13 53 5	3470.92	-15.18	126.41	35.98	63.93	14 50 56	2870.9	-18.56	119.25
110.00	18 46 52	2536.88	-33.68	62.51	41.83	83.76	19 29 9	1936.9	-34.17	53.31
110.00	13 51 10	3476.92	-9.31	123.46	32.58	56.96	14 49 7	2876.9	-13.60	116.98

DIFFERENTIAL CORRECTIONS
TDE .5064 TRA-2.0042 TC3 2.7416 BAU .5905
RDE -.0897 RRA .1742 RC3 -.4557 FAU .16987
FDE -.0062 FRA 3.9425 FC3-9.2541 BSP 13940
BDE .5143 BRA 2.0117 BC3 2.7792 FSP 2677

MID-COURSE EXECUTION ACCURACY
SGT 4005.3 SGR 479.3 SG3 846.4
RRT -.9486 RRF .9620 RTF -.9493
SGB 4033.8 R23 -.1902 R13 .9501
SG1 4031.0 SG2 150.7 THA 173.52

ORBIT DETERMINATION ACCURACY
ST 1224.8 SR 155.0 SS 943.0
CRT -.9401 CRS -.5592 CST .8061
LSA 1480.4 MSA 470.8 SSA 9.2
EL1 1233.4 EL2 52.5 ALF 173.20

LAUNCH DATE NOV 7 1964 FLIGHT TIME 226.00 ARRIVAL DATE JUN 21 1965

HELIOCENTRIC CONIC DISTANCE 537.829 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 33.367 GAL -3.54 AZL 87.17 HCA 171.33 SMA 195.97 ECC .25085 INC 2.8305 V1 30.058
RP 236.81 LAP .43 LOP 215.96 VP 21.063 GAP 8.21 AZP 92.80 TAL 342.19 TAP 153.52 RCA 146.81 APO 245.13 V2 23.209
RC 190.540 GL 24.53 GP -3.79 ZAL 114.49 ZAP 155.11 ETS 186.76 ZAE 164.52 ETE 348.34 ZAC 86.48 ETC 255.84 CLP 155.38

PLANETOCENTRIC CONIC

C3 15.692 VHL 3.961 DLA 29.63 RAL 173.62 RAD 6567.6 VEL 11.708 PTH 2.06 VHP 5.487 DPA -6.90 RAP 189.30 ECC 1.2583

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
80.90	12 35 8	3720.06	-21.89	147.62	38.70	69.52	13 37 8	3120.1	-24.48	139.81
99.10	15 3 49	3240.03	-21.88	112.35	38.69	69.51	15 57 49	2640.0	-24.47	104.53
100.00	15 44 15	3110.75	-24.47	103.73	39.67	72.27	16 36 6	2510.8	-26.66	95.62
100.00	14 37 23	3324.57	-19.34	117.54	37.60	66.76	15 32 48	2724.6	-22.32	110.01
110.00	18 31 15	2587.31	-33.24	66.38	42.00	81.51	19 14 22	1987.3	-34.05	57.24
110.00	14 6 53	3420.78	-11.38	120.43	33.25	57.55	15 3 53	2820.8	-15.58	113.84

DIFFERENTIAL CORRECTIONS
TDE .4738 TRA-1.9686 TC3 2.7885 BAU .5947
RDE -.0779 RRA .1974 RC3 -.5088 FAU .17649
FDE .0902 FRA 4.0608 FC3-9.7368 BSP 14003
BDE .4802 BRA 1.9785 BC3 2.8345 FSP 2817

MID-COURSE EXECUTION ACCURACY
SGT 4010.0 SGR 532.0 SG3 886.1
RRT -.9579 RRF .9739 RTF -.9504
SGB 4045.1 R23 -.2167 R13 .9514
SG1 4042.3 SG2 151.5 THA 172.75

ORBIT DETERMINATION ACCURACY
ST 1199.9 SR 150.2 SS 969.2
CRT -.9704 CRS -.6118 CST .7818
LSA 1466.3 MSA 501.5 SSA 8.0
EL1 1208.7 EL2 36.0 ALF 173.07

LAUNCH DATE NOV 7 1964 FLIGHT TIME 228.00 ARRIVAL DATE JUN 23 1965

HELIOCENTRIC CONIC DISTANCE 541.392 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 33.337 GAL -3.46 AZL 87.04 HCA 172.30 SMA 195.39 ECC .24832 INC 2.9558 V1 30.058
RP 236.46 LAP .40 LOP 216.93 VP 21.054 GAP 7.77 AZP 92.93 TAL 342.49 TAP 154.79 RCA 146.87 APO 243.90 V2 23.244
RC 192.768 GL 25.78 GP -4.36 ZAL 113.75 ZAP 154.19 ETS 187.62 ZAE 165.21 ETE 345.70 ZAC 85.95 ETC 255.83 CLP 154.54

PLANETOCENTRIC CONIC

C3 15.566 VHL 3.945 DLA 30.97 RAL 173.75 RAD 6567.6 VEL 11.703 PTH 2.06 VHP 5.370 DPA -7.47 RAP 189.18 ECC 1.2562

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
76.91	12 5 52	3813.00	-22.88	154.97	39.09	68.54	13 9 25	3213.0	-25.59	147.13
103.09	15 34 8	3143.44	-22.87	105.55	39.09	68.53	16 26 32	2543.4	-25.58	97.71
76.91	12 5 52	3813.00	-22.88	154.97	39.09	68.54	13 9 25	3213.0	-25.59	147.13
103.09	15 34 8	3143.44	-22.87	105.55	39.09	68.53	16 26 32	2543.4	-25.58	97.71
110.00	18 10 57	2654.52	-32.45	71.47	42.27	78.60	18 55 12	2054.5	-33.68	62.45
110.00	14 28 13	3349.91	-13.94	116.53	34.40	58.47	15 24 3	2749.9	-18.01	109.78

DIFFERENTIAL CORRECTIONS
TDE .4446 TRA-1.9300 TC3 2.8281 BAU .6006
RDE -.0655 RRA .2255 RC3 -.5755 FAU .18387
FDE .1919 FRA 4.1760 FC-10.2265 BSP 13977
BDE .4494 BRA 1.9432 BC3 2.8861 FSP 2939

MID-COURSE EXECUTION ACCURACY
SGT 4010.2 SGR 601.0 SG3 927.4
RRT -.9641 RRF .9828 RTF -.9513
SGB 4055.0 R23 -.2419 R13 .9526
SG1 4052.0 SG2 158.0 THA 171.77

ORBIT DETERMINATION ACCURACY
ST 1176.0 SR 149.5 SS 999.3
CRT -.9934 CRS -.6832 CST .7569
LSA 1456.0 MSA 532.9 SSA 6.8
EL1 1185.3 EL2 17.0 ALF 172.80

LAUNCH DATE NOV 7 1964 FLIGHT TIME 230.00 ARRIVAL DATE JUN 25 1965

HELIOCENTRIC CONIC DISTANCE 544.975 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 33.308 GAL -3.37 AZL 86.88 HCA 173.27 SMA 194.83 ECC .24590 INC 3.1185 V1 30.058
RP 236.12 LAP .37 LOP 217.90 VP 21.047 GAP 7.33 AZP 93.10 TAL 342.79 TAP 156.06 RCA 146.93 APO 242.74 V2 23.279
RC 194.983 GL 27.32 GP -5.10 ZAL 112.96 ZAP 153.21 ETS 188.72 ZAE 165.86 ETE 342.11 ZAC 85.25 ETC 255.81 CLP 153.67

PLANETOCENTRIC CONIC

C3 15.538 VHL 3.942 DLA 32.55 RAL 174.06 RAD 6567.6 VEL 11.701 PTH 2.06 VHP 5.258 DPA -8.18 RAP 188.96 ECC 1.2557

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
73.24	11 42 1	3891.12	-24.00	161.39	39.86	67.32	12 46 52	3291.1	-26.86	153.53
106.76	16 0 26	3064.51	-23.98	100.06	39.85	67.31	16 51 30	2464.5	-26.84	92.20
73.24	11 42 1	3891.12	-24.00	161.39	39.86	67.32	12 46 52	3291.1	-26.86	153.53
106.76	16 0 26	3064.51	-23.98	100.06	39.85	67.31	16 51 30	2464.5	-26.84	92.20
110.00	17 40 33	2755.82	-30.84	78.92	42.53	74.46	18 26 28	2155.8	-32.66	70.18
110.00	15 1 4	3247.80	-17.49	110.75	36.43	60.15	15 55 12	2647.8	-21.33	103.72

DIFFERENTIAL CORRECTIONS
TDE .4112 TRA-1.8956 TC3 2.8361 BAU .6047
RDE -.0502 RRA .2625 RC3 -.6571 FAU .19084
FDE .3292 FRA 4.3153 FC-10.6331 BSP 14043
BDE .4142 BRA 1.9137 BC3 2.9112 FSP 3093

MID-COURSE EXECUTION ACCURACY
SGT 4005.1 SGR 691.7 SG3 969.3
RRT -.9678 RRF .9890 RTF -.9521
SGB 4064.4 R23 -.2618 R13 .9539
SG1 4060.8 SG2 171.8 THA 170.49

ORBIT DETERMINATION ACCURACY
ST 1150.3 SR 154.9 SS 1043.4
CRT -.9976 CRS -.7648 CST .7267
LSA 1452.0 MSA 572.4 SSA 5.6
EL1 1160.7 EL2 10.5 ALF 172.35

LAUNCH DATE NOV 7 1964 FLIGHT TIME 232.00 ARRIVAL DATE JUN 27 1965

HELIOCENTRIC CONIC DISTANCE 548.575 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 33.280 GAL -3.29 AZL 86.66 HCA 174.24 SMA 194.31 ECC .24358 INC 3.3357 V1 30.058
RP 235.77 LAP .33 LOP 218.88 VP 21.043 GAP 6.91 AZP 93.32 TAL 343.08 TAP 157.32 RCA 146.98 APO 241.64 V2 23.315
RC 197.185 GL 29.25 GP -6.09 ZAL 112.10 ZAP 152.15 ETS 190.18 ZAE 166.40 ETE 337.14 ZAC 84.30 ETC 255.79 CLP 152.77

PLANETOCENTRIC CONIC

C3 15.656 VHL 3.957 DLA 34.47 RAL 174.63 RAD 6567.6 VEL 11.706 PTH 2.06 VHP 5.151 DPA -9.11 RAP 188.61 ECC 1.2577

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
69.46	11 20 48	3965.02	-25.28	167.73	41.19	65.74	12 26 53	3365.0	-28.34	159.86
110.54	16 26 13	2994.02	-25.27	95.21	41.18	65.73	17 16 7	2394.0	-28.32	87.34
69.46	11 20 48	3965.02	-25.28	167.73	41.19	65.74	12 26 53	3365.0	-28.34	159.86
110.54	16 26 13	2994.02	-25.27	95.21	41.18	65.73	17 16 7	2394.0	-28.32	87.34
69.46	11 20 48	3965.02	-25.28	167.73	41.19	65.74	12 26 53	3365.0	-28.34	159.86
110.54	16 26 13	2994.02	-25.27	95.21	41.18	65.73	17 16 7	2394.0	-28.32	87.34

DIFFERENTIAL CORRECTIONS
TDE .3020 TRA-1.8573 TC3 2.8243 BAU .6124
RDE -.0320 RRA .3111 RC3 -.7634 FAU .19849
FDE .4836 FRA 4.4542 FC-10.9760 BSP 14024
BDE .3834 BRA 1.8832 BC3 2.9257 FSP 3225

MID-COURSE EXECUTION ACCURACY
SGT 3993.1 SGR 815.9 SG3 1011.8
RRT -.9695 RRF .9932 RTF -.9527
SGB 4075.6 R23 -.2747 R13 .9554
SG1 4070.9 SG2 196.2 THA 168.77

ORBIT DETERMINATION ACCURACY
ST 1126.3 SR 171.3 SS 1096.3
CRT -.9707 CRS -.8462 CST .6947
LSA 1456.8 MSA 614.3 SSA 4.6
EL1 1138.5 EL2 40.7 ALF 171.59

LAUNCH DATE NOV 7 1964 FLIGHT TIME 234.00 ARRIVAL DATE JUN 29 1965

HELIOCENTRIC CONIC DISTANCE 552.193 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 33.254 GAL -3.21 AZL 86.36 HCA 175.22 SMA 193.81 ECC .24137 INC 3.6424 V1 30.058
RP 235.42 LAP .30 LOP 219.85 VP 21.041 GAP 6.48 AZP 93.63 TAL 343.37 TAP 158.59 RCA 147.03 APO 240.59 V2 23.351
RC 199.372 GL 31.81 GP -7.49 ZAL 111.12 ZAP 150.93 ETS 192.20 ZAE 166.68 ETE 330.14 ZAC 82.95 ETC 255.75 CLP 151.83

PLANETOCENTRIC CONIC

C3 16.015 VHL 4.002 DLA 36.93 RAL 175.65 RAD 6567.6 VEL 11.722 PTH 2.07 VHP 5.054 DPA -10.39 RAP 188.05 ECC 1.2636

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
65.23	11 1 16	4040.70	-26.80	174.55	43.43	63.58	12 8 37	3440.7	-30.12	166.69
114.77	16 53 50	2928.63	-26.79	90.81	43.43	63.57	17 42 39	2328.6	-30.11	82.95
65.23	11 1 16	4040.70	-26.80	174.55	43.43	63.58	12 8 37	3440.7	-30.12	166.69
114.77	16 53 50	2928.63	-26.79	90.81	43.43	63.57	17 42 39	2328.6	-30.11	82.95
65.23	11 1 16	4040.70	-26.80	174.55	43.43	63.58	12 8 37	3440.7	-30.12	166.69
114.77	16 53 50	2928.63	-26.79	90.81	43.43	63.57	17 42 39	2328.6	-30.11	82.95

DIFFERENTIAL CORRECTIONS
TDE .3562 TRA-1.8194 TC3 2.7687 BAU .6235
RDE -.0075 RRA .3804 RC3 -.9021 FAU .20604
FDE .6757 FRA 4.6082 FC-11.1379 BSP 14020
BDE .3562 BRA 1.8587 BC3 2.9119 FSP 3355

MID-COURSE EXECUTION ACCURACY
SGT 3973.8 SGR 992.8 SG3 1053.0
RRT -.9698 RRF .9959 RTF -.9531
SGB 4095.7 R23 -.2799 R13 .9571
SG1 4088.9 SG2 235.5 THA 166.33

ORBIT DETERMINATION ACCURACY
ST 1104.6 SR 205.8 SS 1166.7
CRT -.9092 CRS -.9121 CST .6591
LSA 1478.2 MSA 662.1 SSA 3.5
EL1 1120.4 EL2 84.5 ALF 170.33

LAUNCH DATE NOV 7 1964 FLIGHT TIME 236.00 ARRIVAL DATE JUL 1 1965

HELIOCENTRIC CONIC DISTANCE 555.827 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 33.229 GAL -3.14 AZL 85.89 HCA 176.20 SMA 193.33 ECC .23926 INC 4.1066 V1 30.058
RP 235.06 LAP .27 LOP 220.83 VP 21.041 GAP 6.07 AZP 94.10 TAL 343.65 TAP 159.85 RCA 147.08 APO 239.59 V2 23.387
RC 201.544 GL 35.40 GP -9.59 ZAL 109.90 ZAP 149.43 ETS 195.14 ZAE 166.38 ETE 320.39 ZAC 80.89 ETC 255.68 CLP 150.84

PLANETOCENTRIC CONIC

C3 16.836 VHL 4.103 DLA 40.25 RAL 177.46 RAD 6567.7 VEL 11.757 PTH 2.08 VHP 4.973 DPA -12.30 RAP 187.13 ECC 1.2771

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
60.11	10 43 33	4124.02	-28.62	182.55	47.34	60.40	11 52 17	3524.0	-32.32	174.73
119.89	17 26 1	2868.18	-28.61	86.89	47.33	60.39	18 13 49	2268.2	-32.31	79.08
60.11	10 43 33	4124.02	-28.62	182.55	47.34	60.40	11 52 17	3524.0	-32.32	174.73
119.89	17 26 1	2868.18	-28.61	86.89	47.33	60.39	18 13 49	2268.2	-32.31	79.08
60.11	10 43 33	4124.02	-28.62	182.55	47.34	60.40	11 52 17	3524.0	-32.32	174.73
119.89	17 26 1	2868.18	-28.61	86.89	47.33	60.39	18 13 49	2268.2	-32.31	79.08

DIFFERENTIAL CORRECTIONS
TDE .3455 TRA-1.7743 TC3 2.6543 BAU .6461
RDE .0261 RRA .4841 RC3-1.0926 FAU .21437
FDE .8819 FRA 4.7436 FC-11.0228 BSP 13911
BDE .3465 BRA 1.8392 BC3 2.8704 FSP 3403

MID-COURSE EXECUTION ACCURACY
SGT 3938.8 SGR 1260.8 SG3 1088.3
RRT -.9687 RRF .9975 RTF -.9530
SGB 4135.6 R23 -.2779 R13 .9595
SG1 4124.8 SG2 299.1 THA 162.68

ORBIT DETERMINATION ACCURACY
ST 1088.7 SR 269.5 SS 1242.9
CRT -.8279 CRS -.9540 CST .6220
LSA 1515.9 MSA 710.4 SSA 2.6
EL1 1111.8 EL2 148.0 ALF 168.20

LAUNCH DATE NOV 7 1964 FLIGHT TIME 238.00 ARRIVAL DATE JUL 3 1965

HELIOCENTRIC CONIC DISTANCE 559.478 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 33.205 GAL -3.06 AZL 85.10 HCA 177.18 SMA 192.88 ECC .23724 INC 4.8973 V1 30.058
RP 234.71 LAP .24 LOP 221.81 VP 21.044 GAP 5.66 AZP 94.89 TAL 343.92 TAP 161.10 RCA 147.12 APO 238.64 V2 23.424
RC 203.699 GL 40.86 GP -13.10 ZAL 108.21 ZAP 147.27 ETS 199.73 ZAE 164.71 ETE 307.45 ZAC 77.45 ETC 255.51 CLP 149.74

PLANETOCENTRIC CONIC

C3 18.738 VHL 4.329 DLA 45.06 RAL 180.97 RAD 6567.8 VEL 11.837 PTH 2.10 VHP 4.931 DPA -15.42 RAP 185.49 ECC 1.3084

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
53.36	10 29 36	4224.75	-30.70	192.94	54.65	55.23	11 40 0	3624.7	-35.01	185.34
126.64	18 7 59	2817.21	-30.69	83.90	54.64	55.22	18 54 56	2217.2	-35.00	76.30
53.36	10 29 36	4224.75	-30.70	192.94	54.65	55.23	11 40 0	3624.7	-35.01	185.34
126.64	18 7 59	2817.21	-30.69	83.90	54.64	55.22	18 54 56	2217.2	-35.00	76.30
53.36	10 29 36	4224.75	-30.70	192.94	54.65	55.23	11 40 0	3624.7	-35.01	185.34
126.64	18 7 59	2817.21	-30.69	83.90	54.64	55.22	18 54 56	2217.2	-35.00	76.30

DIFFERENTIAL CORRECTIONS
TDE .3752 TRA-1.7251 TC3 2.4110 BAU .6911
RDE .0786 RRA .6654 RC3-1.3410 FAU .22018
FDE 1.1106 FRA 4.8843 FC-10.1726 BSP 13900
BDE .3834 BRA 1.8490 BC3 2.7589 FSP 3405

MID-COURSE EXECUTION ACCURACY
SGT 3879.8 SGR 1706.8 SG3 1104.7
RRT -.9668 RRF .9984 RTF -.9522
SGB 4238.6 R23 -.2652 R13 .9639
SG1 4219.6 SG2 401.2 THA 156.74

ORBIT DETERMINATION ACCURACY
ST 1091.3 SR 389.8 SS 1331.6
CRT -.7364 CRS -.9760 CST .5714
LSA 1584.9 MSA 777.4 SSA 1.7
EL1 1130.5 EL2 254.6 ALF 164.46

LAUNCH DATE NOV 7 1964 FLIGHT TIME 240.00 ARRIVAL DATE JUL 5 1965

HELIOCENTRIC CONIC DISTANCE 563.144 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 33.181 GAL -2.99 AZL 83.46 HCA 178.16 SMA 192.45 ECC .23532 INC 6.5337 V1 30.058
RP 234.35 LAP .21 LOP 222.80 VP 21.049 GAP 5.25 AZP 96.54 TAL 344.19 TAP 162.35 RCA 147.17 APO 237.74 V2 23.461
RC 205.837 GL 50.14 GP -20.00 ZAL 105.46 ZAP 143.11 ETS 207.47 ZAE 159.51 ETE 292.16 ZAC 70.64 ETC 255.01 CLP 148.33

PLANETOCENTRIC CONIC

C3 24.183 VHL 4.918 DLA 52.63 RAL 189.16 RAD 6568.0 VEL 12.065 PTH 2.16 VHP 5.022 DPA -21.45 RAP 181.93 ECC 1.3980

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
43.59	10 29 26	4365.93	-32.11	208.28	70.54	45.77	11 42 11	3765.9	-37.49	201.48
136.41	19 13 29	2798.72	-32.10	83.44	70.52	45.76	20 0 8	2198.7	-37.48	76.64
43.59	10 29 26	4365.93	-32.11	208.28	70.54	45.77	11 42 11	3765.9	-37.49	201.48
136.41	19 13 29	2798.72	-32.10	83.44	70.52	45.76	20 0 8	2198.7	-37.48	76.64
43.59	10 29 26	4365.93	-32.11	208.28	70.54	45.77	11 42 11	3765.9	-37.49	201.48
136.41	19 13 29	2798.72	-32.10	83.44	70.52	45.76	20 0 8	2198.7	-37.48	76.64

DIFFERENTIAL CORRECTIONS
TDE .6461 TRA-1.5997 TC3 2.0009 BAU .8461
RDE .0753 RRA 1.0045 RC3-1.6866 FAU .22685
FDE .8486 FRA 4.6860 FC3-8.1208 BSP 12610
BDE .6505 BRA 1.8890 BC3 2.6169 FSP 2739

MID-COURSE EXECUTION ACCURACY
SGT 3724.3 SGR 2545.2 SG3 1042.9
RRT -.9622 RRF .9987 RTF -.9476
SGB 4510.9 R23 -.2359 R13 .9717
SG1 4473.8 SG2 577.3 THA 146.03

ORBIT DETERMINATION ACCURACY
ST 1191.2 SR 587.2 SS 1251.3
CRT -.6717 CRS -.9801 CST .5112
LSA 1606.7 MSA 864.9 SSA .9
EL1 1263.1 EL2 410.3 ALF 159.41

LAUNCH DATE NOV 7 1964 FLIGHT TIME 246.00 ARRIVAL DATE JUL 11 1965

HELIOCENTRIC CONIC DISTANCE 574.253 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 33.118 GAL -2.81 AZL 95.64 HCA 181.16 SMA 191.29 ECC .23009 INC 5.6292 V1 30.058
RP 233.25 LAP .11 LOP 225.77 VP 21.075 GAP 4.08 AZP 84.36 TAL 344.90 TAP 166.05 RCA 147.28 APO 235.31 V2 23.574
RC 212.144 GL -46.29 GP 31.39 ZAL 105.50 ZAP 133.71 ETS 142.62 ZAE 147.29 ETE 81.62 ZAC 120.39 ETC 253.56 CLP 144.05

PLANETOCENTRIC CONIC

C3 20.205 VHL 4.495 DLA -33.88 RAL 140.20 RAD 6567.8 VEL 11.899 PTH 2.11 VHP 5.256 DPA 25.55 RAP 203.37 ECC 1.3325

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
15.29	12 42 25	2596.47	-9.82	83.59	331.79	166.37	13 25 41	1996.5	-2.05	82.13
15.29	23 26 52	979.68	73.34	320.86	3.86	54.06	23 43 12	379.7	67.71	304.00
25.29	13 29 38	2543.24	-7.49	79.26	339.07	157.71	14 12 1	1943.2	-.08	76.65
25.29	23 21 29	985.76	66.59	332.35	14.02	71.19	23 37 55	385.8	62.99	315.90
35.29	14 23 24	2455.10	-4.06	73.05	345.97	149.34	15 4 19	1855.1	2.82	69.39
35.29	23 15 0	996.41	59.12	337.78	17.88	82.30	23 31 37	396.4	57.17	323.46

DIFFERENTIAL CORRECTIONS
TDE 2.1149 TRA-1.1762 TC3 2.2088 BAU .9914
RDE 2.2599 RRA -.5636 RC3 2.9312 FAU .19506
FDE-6.3122 FRA 1.3748 FC3-8.3581 BSP 15878
BDE 3.0951 BRA 1.3042 BC3 3.6702 FSP 2594

MID-COURSE EXECUTION ACCURACY
SGT 3804.1 SGR 3998.8 SG3 968.5
RRT .9572 RRF -.9995 RTF -.9479
SGB 5519.2 R23 -.1689 R13 -.9856
SG1 5460.0 SG2 806.4 THA 46.49

ORBIT DETERMINATION ACCURACY
ST 2750.4 SR 2893.3 SS 3666.4
CRT .9941 CRS .9999 CST .9928
LSA 5413.2 MSA 274.8 SSA .4
EL1 3986.1 EL2 216.3 ALF 46.46

LAUNCH DATE NOV 7 1964 FLIGHT TIME 248.00 ARRIVAL DATE JUL 13 1965

HELIOCENTRIC CONIC DISTANCE 577.972 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 33.099 GAL -2.75 AZL 92.17 HCA 182.15 SMA 190.94 ECC .22850 INC 2.1535 V1 30.058
RP 232.88 LAP .08 LOP 226.77 VP 21.088 GAP 3.70 AZP 87.83 TAL 345.13 TAP 167.28 RCA 147.31 APO 234.57 V2 23.612
RC 214.210 GL -21.34 GP 18.84 ZAL 109.83 ZAP 140.21 ETS 154.28 ZAE 159.67 ETE 77.60 ZAC 108.48 ETC 255.07 CLP 144.28

PLANETOCENTRIC CONIC

C3 11.824 VHL 3.439 DLA -10.54 RAL 149.93 RAD 6567.5 VEL 11.542 PTH 2.01 VHP 4.563 DPA 13.80 RAP 198.53 ECC 1.1946

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 34 34	1763.06	-6.67	14.63	2.67	117.58	20 3 57	1163.1	-2.93	7.95
90.00	4 55 21	5073.53	24.14	224.52	5.99	74.73	6 19 55	4473.5	21.81	216.63
100.00	20 50 40	1517.57	-7.57	356.09	2.18	119.00	21 15 57	917.6	-3.65	349.51
100.00	6 21 57	4794.25	25.12	203.67	5.68	73.24	7 41 51	4194.3	22.58	195.79
110.00	21 47 0	1341.15	-9.92	341.28	.76	122.88	22 9 21	741.2	-5.52	334.96
110.00	7 42 6	4543.43	27.71	183.64	4.69	69.14	8 57 49	3943.4	24.62	175.83

DIFFERENTIAL CORRECTIONS
TDE 1.1258 TRA-1.3263 TC3 3.6491 BAU .7384
RDE .6896 RRA -.5028 RC3 2.9163 FAU .25113
FDE-4.1983 FRA 3.0401 FC-18.3872 BSP 13941
BDE 1.3202 BRA 1.4184 BC3 4.6712 FSP 3756

MID-COURSE EXECUTION ACCURACY
SGT 3856.1 SGR 2463.5 SG3 1325.6
RRT .9584 RRF -.9998 RTF -.9540
SGB 4575.8 R23 -.2201 R13 -.9754
SG1 4536.6 SG2 597.8 THA 32.10

ORBIT DETERMINATION ACCURACY
ST 1994.8 SR 1178.6 SS 2828.6
CRT .9920 CRS 1.0000 CST .9918
LSA 3650.1 MSA 214.0 SSA 1.8
EL1 2313.4 EL2 128.5 ALF 30.48

LAUNCH DATE NOV 7 1964 FLIGHT TIME 250.00 ARRIVAL DATE JUL 15 1965

HELIOCENTRIC CONIC DISTANCE 581.708 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 33.081 GAL -2.69 AZL 90.89 HCA 183.15 SMA 190.61 ECC .22700 INC .8771 V1 30.058
RP 232.51 LAP .05 LOP 227.77 VP 21.103 GAP 3.33 AZP 89.11 TAL 345.36 TAP 168.50 RCA 147.34 APO 233.88 V2 23.650
RC 216.258 GL -9.15 GP 13.45 ZAL 110.52 ZAP 141.36 ETS 161.09 ZAE 165.13 ETE 77.46 ZAC 103.26 ETC 255.46 CLP 143.43

PLANETOCENTRIC CONIC

C3 10.465 VHL 3.235 DLA 1.00 RAL 153.89 RAD 6567.4 VEL 11.483 PTH 2.00 VHP 4.330 DPA 8.85 RAP 196.35 ECC 1.1722

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 22 20	2102.22	-16.69	34.49	5.84	113.21	18 57 22	1502.2	-13.41	27.35
90.00	6 39 9	4684.07	14.99	199.68	5.54	65.69	7 57 13	4084.1	11.58	192.66
100.00	19 44 8	1838.33	-17.52	14.70	5.45	114.61	20 14 46	1238.3	-14.06	7.62
100.00	8 0 2	4423.18	15.81	180.09	5.14	64.30	9 13 45	3823.2	12.22	173.14
110.00	20 53 27	1621.37	-19.73	357.06	4.29	118.50	21 20 28	1021.4	-15.77	350.18
110.00	9 7 12	4212.91	18.00	162.94	3.94	60.44	10 17 25	3612.9	13.93	156.19

DIFFERENTIAL CORRECTIONS
TDE .7713 TRA-1.3706 TC3 3.9222 BAU .6361
RDE .3178 RRA -.4064 RC3 2.2991 FAU .27056
FDE-2.8672 FRA 3.9397 FC-22.3828 BSP 13817
BDE .8342 BRA 1.4296 BC3 4.5463 FSP 4567

MID-COURSE EXECUTION ACCURACY
SGT 3768.3 SGR 1745.8 SG3 1456.6
RRT .9564 RRF -.9997 RTF -.9544
SGB 4153.1 R23 -.2490 R13 -.9683
SG1 4126.9 SG2 465.8 THA 24.22

ORBIT DETERMINATION ACCURACY
ST 1550.0 SR 604.6 SS 2061.3
CRT .9921 CRS .9997 CST .9947
LSA 2645.6 MSA 132.2 SSA 6.7
EL1 1662.2 EL2 70.7 ALF 21.19

LAUNCH DATE NOV 7 1964 FLIGHT TIME 252.00 ARRIVAL DATE JUL 17 1965

HELIOCENTRIC CONIC DISTANCE 585.458 EARTH TO MARS

RL	148.24	LAL	-.00	LOL	44.62	VL	33.064	GAL	-2.64	AZL	90.23	HCA	184.15	SMA	190.30	ECC	.22556	INC	.1976
RP	232.14	LAP	.02	LOP	228.78	VP	21.119	GAP	2.96	AZP	89.77	TAL	345.57	TAP	169.72	RCA	147.37	APO	233.22
RC	218.287	GL	-2.38	GP	10.53	ZAL	110.33	ZAP	141.14	ETS	165.18	ZAE	168.19	ETE	80.39	ZAC	100.40	ETC	255.62

V1	30.058	V2	23.689	CLP	142.37														

PLANETOCENTRIC CONIC

C3	10.076	VHL	3.174	DLA	7.47	RAL	155.94	RAD	6567.4	VEL	11.466	PTH	1.99	VHP	4.186	DPA	6.22	RAP	195.07
ECC	1.1658																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 41 45	2297.21	-21.48	46.78	8.77	108.90	18 20 2	1697.2	-18.71	39.21
90.00	7 36 6	4473.84	8.76	187.38	6.64	62.96	8 50 40	3873.8	5.06	180.65
100.00	19 6 41	2023.29	-22.36	26.30	8.44	110.37	19 40 24	1423.3	-19.38	18.77
100.00	8 53 51	4222.99	9.58	168.50	6.20	61.55	10 4 14	3623.0	5.71	161.85
110.00	20 23 7	1784.07	-24.68	7.09	7.39	114.43	20 52 51	1184.1	-21.18	359.70
110.00	9 53 54	4034.97	11.75	152.93	4.90	57.67	11 1 9	3435.0	7.40	146.54

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.6026	TRA	-1.3647	TC3	3.9393	BAU	.5871	SGT	3689.1	SGR	1369.6	SG3	1554.6	ST	1320.6	SR	384.3	SS	1647.3
RDE	.1871	RRA	-.3295	RC3	1.8652	FAU	.28599	RRT	.9537	RRF	-.9993	RTF	-.9539	CRT	.9932	CRS	.9970	CST	.9984
FDE	-2.1174	FRA	4.4549	FC	-24.5737	BSP	13525	SGB	3935.1	R23	-.2638	R13	-.9639	LSA	2145.0	MSA	63.8	SSA	23.7
BDE	.6309	BRA	1.4039	BC3	4.3585	FSP	5054	SG1	3915.9	SG2	388.1	THA	19.70	EL1	1374.8	EL2	42.9	ALF	16.14

LAUNCH DATE NOV 7 1964 FLIGHT TIME 254.00 ARRIVAL DATE JUL 19 1965

HELIOCENTRIC CONIC DISTANCE 589.222 EARTH TO MARS

RL	148.24	LAL	-.00	LOL	44.62	VL	33.047	GAL	-2.59	AZL	89.82	HCA	185.16	SMA	190.00	ECC	.22420	INC	.1581
RP	231.76	LAP	-.02	LOP	229.78	VP	21.137	GAP	2.60	AZP	90.18	TAL	345.77	TAP	170.93	RCA	147.40	APO	232.60
RC	220.299	GL	1.86	GP	8.71	ZAL	109.94	ZAP	140.40	ETS	167.86	ZAE	170.11	ETE	86.21	ZAC	98.60	ETC	255.70

V1	30.058	V2	23.728	CLP	141.21														

PLANETOCENTRIC CONIC

C3	9.916	VHL	3.149	DLA	11.57	RAL	157.13	RAD	6567.4	VEL	11.459	PTH	1.99	VHP	4.073	DPA	4.62	RAP	194.18
ECC	1.1632																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 13 39	2427.65	-24.10	55.45	10.94	105.33	17 54 6	1827.7	-21.77	47.55
90.00	8 13 43	4337.02	4.45	179.64	7.75	62.01	9 26 0	3737.0	.67	173.00
100.00	18 40 50	2146.44	-25.04	34.46	10.64	106.88	19 16 37	1546.4	-22.49	26.59
100.00	9 29 13	4093.46	5.30	161.26	7.28	60.54	10 37 26	3493.5	1.34	154.71
110.00	20 2 19	1891.47	-27.52	14.15	9.69	111.13	20 33 51	1291.5	-24.40	6.37
110.00	10 24 13	3921.20	7.54	146.81	5.91	56.56	11 29 34	3321.2	3.09	140.55

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.5032	TRA	-1.3404	TC3	3.8872	BAU	.5561	SGT	3609.5	SGR	1140.1	SG3	1642.4	ST	1183.8	SR	281.4	SS	1419.4
RDE	.1288	RRA	-.2742	RC3	1.5764	FAU	.30011	RRT	.9508	RRF	-.9985	RTF	-.9534	CRT	.9934	CRS	.9875	CST	.9968
FDE	-1.6308	FRA	4.8229	FC	-26.2024	BSP	13194	SGB	3785.3	R23	-.2710	R13	-.9611	LSA	1867.8	MSA	76.5	SSA	28.9
BDE	.5194	BRA	1.3681	BC3	4.1947	FSP	5437	SG1	3770.2	SG2	338.2	THA	16.86	EL1	1216.3	EL2	31.4	ALF	13.29

LAUNCH DATE NOV 7 1964 FLIGHT TIME 256.00 ARRIVAL DATE JUL 21 1965

HELIOCENTRIC CONIC DISTANCE 592.999 EARTH TO MARS

RL	148.24	LAL	-.00	LOL	44.62	VL	33.031	GAL	-2.55	AZL	89.55	HCA	186.17	SMA	189.72	ECC	.22292	INC	.4505
RP	231.38	LAP	-.05	LOP	230.79	VP	21.157	GAP	2.24	AZP	90.45	TAL	345.96	TAP	172.13	RCA	147.43	APO	232.01
RC	222.292	GL	4.77	GP	7.47	ZAL	109.51	ZAP	139.42	ETS	169.73	ZAE	171.30	ETE	94.69	ZAC	97.34	ETC	255.75

V1	30.058	V2	23.768	CLP	140.00														

PLANETOCENTRIC CONIC

C3	9.824	VHL	3.134	DLA	14.41	RAL	157.87	RAD	6567.4	VEL	11.455	PTH	1.99	VHP	3.974	DPA	3.58	RAP	193.48
ECC	1.1617																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 52 5	2523.14	-25.66	62.00	12.49	102.40	17 34 8	1923.1	-23.70	53.89
90.00	8 41 11	4237.85	1.26	174.09	8.68	61.71	9 51 49	3637.9	-2.53	167.46
100.00	18 21 7	2235.98	-26.67	40.62	12.23	104.03	18 58 23	1636.0	-24.48	32.51
100.00	9 54 50	4000.24	2.16	156.12	8.18	60.18	11 1 30	3400.2	-1.82	149.60
110.00	19 46 36	1968.55	-29.30	19.44	11.36	108.45	20 19 24	1368.6	-26.50	11.38
110.00	10 45 51	3840.44	4.49	142.55	6.73	56.08	11 49 51	3240.4	.00	136.34

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.4376	TRA	-1.3066	TC3	3.8099	BAU	.5321	SGT	3524.9	SGR	986.8	SG3	1726.5	ST	1091.9	SR	226.2	SS	1292.1
RDE	.0994	RRA	-.2336	RC3	1.3782	FAU	.31374	RRT	.9475	RRF	-.9970	RTF	-.9527	CRT	.9920	CRS	.9661	CST	.9870
FDE	-1.2810	FRA	5.1222	FC	-27.6477	BSP	12828	SGB	3660.4	R23	-.2738	R13	-.9590	LSA	1700.9	MSA	140.4	SSA	20.9
BDE	.4487	BRA	1.3273	BC3	4.0515	FSP	5783	SG1	3647.7	SG2	304.8	THA	14.96	EL1	1114.7	EL2	28.0	ALF	11.62

LAUNCH DATE NOV 7 1964 FLIGHT TIME 258.00 ARRIVAL DATE JUL 23 1965

HELIOCENTRIC CONIC DISTANCE 596.789 EARTH TO MARS

RL	148.24	LAL	-.00	LOL	44.62	VL	33.016	GAL	-2.50	AZL	89.35	HCA	187.18	SMA	189.45	ECC	.22169	INC	.6519
RP	231.01	LAP	-.08	LOP	231.81	VP	21.178	GAP	1.89	AZP	90.65	TAL	346.13	TAP	173.32	RCA	147.45	APO	231.45
RC	224.266	GL	6.88	GP	6.57	ZAL	109.08	ZAP	138.31	ETS	171.11	ZAE	171.91	ETE	105.20	ZAC	96.41	ETC	255.78

V1	30.058	V2	23.807	CLP	138.74														

PLANETOCENTRIC CONIC

C3	9.756	VHL	3.123	DLA	16.50	RAL	158.35	RAD	6567.4	VEL	11.452	PTH	1.99	VHP	3.883	DPA	2.86	RAP	192.88
ECC	1.1606																		

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 34 30	2597.47	-26.65	67.22	13.61	99.96	17 17 47	1997.5	-25.00	58.94
90.00	9 2 35	4160.76	-1.23	169.79	9.42	61.71	10 11 55	3560.8	-5.00	163.14
100.00	18 5 9	2305.14	-27.72	45.49	13.38	101.67	18 43 34	1705.1	-25.83	37.20
100.00	10 14 37	3928.32	-.27	152.17	8.89	60.11	11 20 5	3328.3	-4.25	145.64
110.00	19 33 58	2027.22	-30.49	23.60	12.59	106.26	20 7 46	1427.2	-27.96	15.31
110.00	11 2 16	3779.01	2.15	139.34	7.38	55.88	12 5 15	3179.0	-2.34	133.13

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE	.3897	TRA	-1.2679	TC3	3.7116	BAU	.5103	SGT	3430.9	SGR	878.4	SG3	1809.8	ST	1022.5	SR	194.0	SS	1222.4
RDE	.0836	RRA	-.2029	RC3	1.2374	FAU	.32727	RRT	.9434	RRF	-.9949	RTF	-.9516	CRT	.9883	CRS	.9287	CST	.9691
FDE	-1.0090	FRA	5.3860	FC	-29.0423	BSP	12436	SGB	3541.6	R23	-.2745	R13	-.9571	LSA	1592.7	MSA	201.5	SSA	18.3
BDE	.3986	BRA	1.2840	BC3	3.9124	FSP	6113	SG1	3530.3	SG2	283.1	THA	13.67	EL1	1040.4	EL2	29.1	ALF	10.63

LAUNCH DATE NOV 7 1964 FLIGHT TIME 260.00 ARRIVAL DATE JUL 25 1965

HELIOCENTRIC CONIC DISTANCE 600.588 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 33.002 GAL -2.46 AZL 89.20 HCA 188.20 SMA 189.20 ECC .22054 INC .8004 V1 30.058
RP 230.62 LAP -.11 LOP 232.82 VP 21.201 GAP 1.55 AZP 90.79 TAL 346.30 TAP 174.50 RCA 147.47 APO 230.92 V2 23.847
RC 226.222 GL 8.50 GP 5.89 ZAL 108.68 ZAP 137.10 ETS 172.17 ZAE 171.99 ETE 116.50 ZAC 95.69 ETC 255.81 CLP 137.43

PLANETOCENTRIC CONIC

C3 9.696 VHL 3.114 DLA 18.13 RAL 158.66 RAD 6567.3 VEL 11.449 PTH 1.99 VHP 3.798 DPA 2.37 RAP 192.34 ECC 1.1596

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 19 34	2657.96	-27.28	71.54	14.43	97.89	17 3 52	2058.0	-25.91	63.14
90.00	9 20 1	4097.85	-3.25	166.28	10.02	61.86	10 28 19	3497.8	-6.99	159.59
100.00	17 51 40	2360.94	-28.42	49.49	14.23	99.68	18 31 1	1760.9	-26.79	41.07
100.00	10 30 36	3870.10	-2.25	148.98	9.46	60.18	11 35 6	3270.1	-6.20	142.42
110.00	19 23 26	2073.82	-31.33	26.97	13.52	104.43	19 58 0	1473.8	-29.03	18.52
110.00	11 15 19	3729.99	.27	136.78	7.88	55.82	12 17 29	3130.0	-4.21	130.57

DIFFERENTIAL CORRECTIONS

TDE .3474 TRA-1.2329 TC3 3.5725 BAU .4859
RDE .0753 RRA -.1789 RC3 1.1347 FAU .34089
FDE -.7861 FRA 5.6329 FC-30.4369 BSP 12174
BDE .3555 BRA 1.2458 BC3 3.7484 FSP 6440

MID-COURSE EXECUTION ACCURACY

SGT 3325.1 SGR 799.1 SG3 1893.6
RRT .9362 RRF -.9920 RTF -.9486
SGB 3419.8 R23 -.2783 R13 -.9538
SG1 3408.8 SG2 273.9 THA 12.76

ORBIT DETERMINATION ACCURACY

ST 962.3 SR 174.5 SS 1188.5
CRT .9792 CRS .8741 CST .9484
LSA 1518.9 MSA 248.2 SSA 16.1
EL1 977.3 EL2 34.9 ALF 10.08

LAUNCH DATE NOV 7 1964 FLIGHT TIME 262.00 ARRIVAL DATE JUL 27 1965

HELIOCENTRIC CONIC DISTANCE 604.402 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.989 GAL -2.43 AZL 89.08 HCA 189.22 SMA 188.96 ECC .21944 INC .9179 V1 30.058
RP 230.24 LAP -.15 LOP 233.84 VP 21.225 GAP 1.21 AZP 90.91 TAL 346.46 TAP 175.68 RCA 147.49 APO 230.43 V2 23.887
RC 228.159 GL 9.78 GP 5.37 ZAL 108.30 ZAP 135.82 ETS 173.01 ZAE 171.62 ETE 127.24 ZAC 95.10 ETC 255.83 CLP 136.08

PLANETOCENTRIC CONIC

C3 9.640 VHL 3.105 DLA 19.43 RAL 158.87 RAD 6567.3 VEL 11.447 PTH 1.99 VHP 3.717 DPA 2.02 RAP 191.83 ECC 1.1587

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 6 29	2708.91	-27.71	75.21	15.04	96.09	16 51 38	2108.9	-26.57	66.72
90.00	9 34 44	4044.60	-4.96	163.29	10.50	62.08	10 42 9	3444.6	-8.66	156.57
100.00	17 39 58	2407.49	-28.91	52.86	14.87	97.96	18 20 5	1807.5	-27.50	44.34
100.00	10 43 57	3821.26	-3.90	146.29	9.91	60.34	11 47 38	3221.3	-7.82	139.70
110.00	19 14 23	2112.07	-31.94	29.78	14.22	102.87	19 49 35	1512.1	-29.84	21.20
110.00	11 26 1	3689.44	-1.28	134.66	8.28	55.84	12 27 30	3089.4	-5.75	128.44

DIFFERENTIAL CORRECTIONS

TDE .3196 TRA-1.1881 TC3 3.4499 BAU .4651
RDE .0715 RRA -.1595 RC3 1.0593 FAU .35519
FDE -.6042 FRA 5.8592 FC-31.8983 BSP 11718
BDE .3275 BRA 1.1988 BC3 3.6089 FSP 6749

MID-COURSE EXECUTION ACCURACY

SGT 3216.0 SGR 740.0 SG3 1979.8
RRT .9298 RRF -.9882 RTF -.9465
SGB 3300.0 R23 -.2773 R13 -.9515
SG1 3289.3 SG2 266.3 THA 12.16

ORBIT DETERMINATION ACCURACY

ST 915.7 SR 163.0 SS 1176.9
CRT .9676 CRS .8053 CST .9223
LSA 1470.8 MSA 294.0 SSA 17.9
EL1 929.2 EL2 40.6 ALF 9.79

LAUNCH DATE NOV 7 1964 FLIGHT TIME 264.00 ARRIVAL DATE JUL 29 1965

HELIOCENTRIC CONIC DISTANCE 608.227 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.976 GAL -2.39 AZL 88.99 HCA 190.25 SMA 188.73 ECC .21841 INC 1.0116 V1 30.058
RP 229.86 LAP -.18 LOP 234.87 VP 21.250 GAP .88 AZP 91.00 TAL 346.60 TAP 176.85 RCA 147.51 APO 229.96 V2 23.927
RC 230.076 GL 10.83 GP 4.94 ZAL 107.95 ZAP 134.48 ETS 173.70 ZAE 170.88 ETE 136.50 ZAC 94.61 ETC 255.85 CLP 134.69

PLANETOCENTRIC CONIC

C3 9.586 VHL 3.096 DLA 20.51 RAL 159.00 RAD 6567.3 VEL 11.444 PTH 1.99 VHP 3.641 DPA 1.79 RAP 191.32 ECC 1.1578

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 54 48	2752.96	-27.98	78.40	15.48	94.52	16 40 41	2153.0	-27.06	69.85
90.00	9 47 30	3998.35	-6.43	160.69	10.90	62.36	10 54 8	3398.4	-10.08	153.91
100.00	17 29 35	2447.33	-29.25	55.78	15.35	96.47	18 10 22	1847.3	-28.04	47.18
100.00	10 55 24	3779.21	-5.31	143.97	10.29	60.54	11 58 23	3179.2	-9.20	137.34
110.00	19 6 27	2144.27	-32.41	32.18	14.76	101.52	19 42 11	1544.3	-30.48	23.49
110.00	11 35 1	3655.03	-2.59	132.87	8.60	55.90	12 35 56	3055.0	-7.05	126.62

DIFFERENTIAL CORRECTIONS

TDE .3003 TRA-1.1382 TC3 3.3249 BAU .4451
RDE .0706 RRA -.1433 RC3 1.0040 FAU .37039
FDE -.4586 FRA 6.0634 FC-33.4505 BSP 11146
BDE .3085 BRA 1.1472 BC3 3.4732 FSP 7024

MID-COURSE EXECUTION ACCURACY

SGT 3099.2 SGR 695.5 SG3 2088.7
RRT .9228 RRF -.9836 RTF -.9441
SGB 3176.3 R23 -.2753 R13 -.9490
SG1 3165.5 SG2 262.3 THA 11.78

ORBIT DETERMINATION ACCURACY

ST 876.3 SR 156.9 SS 1177.9
CRT .9530 CRS .7278 CST .8943
LSA 1438.1 MSA 333.7 SSA 18.0
EL1 889.0 EL2 46.8 ALF 9.71

LAUNCH DATE NOV 7 1964 FLIGHT TIME 266.00 ARRIVAL DATE JUL 31 1965

HELIOCENTRIC CONIC DISTANCE 612.063 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.964 GAL -2.36 AZL 88.91 HCA 191.27 SMA 188.52 ECC .21744 INC 1.0894 V1 30.058
RP 229.47 LAP -.21 LOP 235.90 VP 21.277 GAP .55 AZP 91.07 TAL 346.74 TAP 178.01 RCA 147.53 APO 229.51 V2 23.968
RC 231.973 GL 11.70 GP 4.59 ZAL 107.63 ZAP 133.09 ETS 174.27 ZAE 169.86 ETE 144.01 ZAC 94.18 ETC 255.87 CLP 133.26

PLANETOCENTRIC CONIC

C3 9.534 VHL 3.088 DLA 21.41 RAL 159.09 RAD 6567.3 VEL 11.442 PTH 1.98 VHP 3.567 DPA 1.64 RAP 190.81 ECC 1.1569

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 44 13	2791.79	-28.16	81.23	15.82	93.11	16 30 45	2191.8	-27.43	72.64
90.00	9 58 48	3957.37	-7.71	158.36	11.24	62.67	11 4 45	3357.4	-11.32	151.54
100.00	17 20 16	2482.07	-29.49	58.33	15.71	95.14	18 1 38	1882.1	-28.46	49.68
100.00	11 5 26	3742.32	-6.54	141.92	10.60	60.77	12 7 48	3142.3	-10.39	135.25
110.00	18 59 25	2171.88	-32.76	34.25	15.19	100.34	19 35 37	1571.9	-30.99	25.48
110.00	11 42 46	3625.27	-3.72	131.31	8.86	56.00	12 43 11	3025.3	-8.16	125.04

DIFFERENTIAL CORRECTIONS

TDE .2836 TRA-1.0885 TC3 3.1735 BAU .4226
RDE .0710 RRA -.1301 RC3 .9608 FAU .38530
FDE -.3185 FRA 6.2771 FC-34.9878 BSP 10603
BDE .2924 BRA 1.0962 BC3 3.3158 FSP 7331

MID-COURSE EXECUTION ACCURACY

SGT 2970.6 SGR 660.8 SG3 2157.8
RRT .9143 RRF -.9781 RTF -.9408
SGB 3043.2 R23 -.2745 R13 -.9458
SG1 3031.9 SG2 262.2 THA 11.59

ORBIT DETERMINATION ACCURACY

ST 839.1 SR 154.1 SS 1188.1
CRT .9363 CRS .6424 CST .8633
LSA 1414.9 MSA 370.1 SSA 18.2
EL1 851.5 EL2 53.3 ALF 9.79

LAUNCH DATE NOV 7 1964 FLIGHT TIME 268.00 ARRIVAL DATE AUG 2 1965

HELIOCENTRIC CONIC DISTANCE 615.909 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.952 GAL -2.33 AZL 88.85 HCA 192.31 SMA 188.32 ECC .21652 INC 1.1531 V1 30.058
RP 229.09 LAP -.25 LOP 236.93 VP 21.305 GAP .23 AZP 91.13 TAL 346.86 TAP 179.16 RCA 147.54 APO 229.09 V2 24.009
RC 233.848 GL 12.44 GP 4.30 ZAL 107.33 ZAP 131.64 ETS 174.75 ZAE 168.64 ETE 149.94 ZAC 93.80 ETC 255.89 CLP 131.79

PLANETOCENTRIC CONIC

C3 9.484 VHL 3.080 DLA 22.19 RAL 159.15 RAD 6567.3 VEL 11.440 PTH 1.98 VHP 3.498 DPA 1.56 RAP 190.28 ECC 1.1561

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 34 32	2826.57	-28.26	83.77	16.07	91.84	16 21 38	2226.6	-27.71	75.14
90.00	10 8 58	3920.52	-8.86	156.26	11.53	62.99	11 14 18	3320.5	-12.41	149.39
100.00	17 11 50	2512.84	-29.65	60.60	15.99	93.96	17 53 42	1912.8	-28.79	51.91
100.00	11 14 21	3709.49	-7.63	140.09	10.87	61.01	12 16 11	3109.5	-11.44	133.38
110.00	18 53 8	2195.92	-33.04	36.07	15.53	99.30	19 29 44	1595.9	-31.41	27.23
110.00	11 49 32	3599.18	-4.72	129.94	9.08	56.10	12 49 32	2999.2	-9.14	123.64

DIFFERENTIAL CORRECTIONS
TDE .2691 TRA-1.0381 TC3 2.9989 BAU .3980
RDE .0728 RRA -.1189 RC3 .9289 FAU .40087
FDE -.1997 FRA 6.4786 FC-36.5936 BSP 10052
BDE .2787 BRA 1.0449 BC3 3.1394 FSP 7619

MID-COURSE EXECUTION ACCURACY
SGT 2830.7 SGR 634.6 SG3 2249.0
RRT .9033 RRF -.9719 RTF -.9360
SGB 2901.0 R23 -.2768 R13 -.9414
SG1 2888.7 SG2 266.7 THA 11.55

ORBIT DETERMINATION ACCURACY
ST 803.3 SR 154.2 SS 1203.0
CRT .9170 CRS .5566 CST .8341
LSA 1399.2 MSA 397.6 SSA 18.9
EL1 815.7 EL2 60.6 ALF 10.04

LAUNCH DATE NOV 7 1964 FLIGHT TIME 270.00 ARRIVAL DATE AUG 4 1965

HELIOCENTRIC CONIC DISTANCE 619.767 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.942 GAL -2.30 AZL 88.79 HCA 193.34 SMA 188.13 ECC .21566 INC 1.2096 V1 30.058
RP 228.70 LAP -.28 LOP 237.96 VP 21.335 GAP -.08 AZP 91.18 TAL 346.97 TAP 180.31 RCA 147.56 APO 228.70 V2 24.049
RC 235.703 GL 13.07 GP 4.06 ZAL 107.07 ZAP 130.15 ETS 175.17 ZAE 167.25 ETE 154.58 ZAC 93.46 ETC 255.91 CLP 130.27

PLANETOCENTRIC CONIC

C3 9.436 VHL 3.072 DLA 22.86 RAL 159.19 RAD 6567.3 VEL 11.438 PTH 1.98 VHP 3.431 DPA 1.53 RAP 189.75 ECC 1.1553

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 25 34	2858.13	-28.31	86.07	16.27	90.68	16 13 12	2258.1	-27.91	77.43
90.00	10 18 15	3886.98	-9.89	154.34	11.79	63.33	11 23 2	3287.0	-13.39	147.41
100.00	17 4 7	2540.41	-29.77	62.65	16.22	92.89	17 46 27	1940.4	-29.05	53.91
100.00	11 22 24	3679.94	-8.60	138.44	11.11	61.26	12 23 44	3079.9	-12.37	131.68
110.00	18 47 28	2217.08	-33.26	37.68	15.81	98.37	19 24 25	1617.1	-31.75	28.78
110.00	11 55 32	3576.04	-5.59	128.73	9.27	56.22	12 55 8	2976.0	-9.99	122.40

DIFFERENTIAL CORRECTIONS
TDE .2544 TRA -.9891 TC3 2.7935 BAU .3703
RDE .0746 RRA -.1101 RC3 .9015 FAU .41503
FDE -.0531 FRA 6.7185 FC-38.0788 BSP 9524
BDE .2651 BRA .9952 BC3 2.9354 FSP 7984

MID-COURSE EXECUTION ACCURACY
SGT 2679.4 SGR 613.0 SG3 2338.0
RRT .8906 RRF -.9647 RTF -.9299
SGB 2748.6 R23 -.2808 R13 -.9359
SG1 2735.0 SG2 273.1 THA 11.64

ORBIT DETERMINATION ACCURACY
ST 767.2 SR 155.3 SS 1227.6
CRT .8987 CRS .4640 CST .7976
LSA 1391.7 MSA 427.0 SSA 19.3
EL1 779.8 EL2 67.0 ALF 10.39

LAUNCH DATE NOV 7 1964 FLIGHT TIME 272.00 ARRIVAL DATE AUG 6 1965

HELIOCENTRIC CONIC DISTANCE 623.635 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.932 GAL -2.28 AZL 88.74 HCA 194.38 SMA 187.95 ECC .21485 INC 1.2573 V1 30.058
RP 228.31 LAP -.31 LOP 239.00 VP 21.365 GAP -.39 AZP 91.22 TAL 347.06 TAP 181.44 RCA 147.57 APO 228.33 V2 24.090
RC 237.537 GL 13.62 GP 3.85 ZAL 106.83 ZAP 128.61 ETS 175.53 ZAE 165.74 ETE 158.24 ZAC 93.14 ETC 255.93 CLP 128.71

PLANETOCENTRIC CONIC

C3 9.391 VHL 3.064 DLA 23.45 RAL 159.22 RAD 6567.3 VEL 11.436 PTH 1.98 VHP 3.368 DPA 1.56 RAP 189.19 ECC 1.1545

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 17 15	2887.05	-28.31	88.19	16.42	89.62	16 5 22	2287.0	-28.07	79.53
90.00	10 26 49	3856.19	-10.83	152.56	12.03	63.67	11 31 5	3256.2	-14.28	145.58
100.00	16 57 2	2565.33	-29.84	64.50	16.40	91.92	17 39 47	1965.3	-29.25	55.74
100.00	11 29 44	3653.14	-9.47	136.93	11.32	61.52	12 30 37	3053.1	-13.21	130.13
110.00	18 42 21	2235.87	-33.44	39.12	16.05	97.53	19 19 37	1635.9	-32.04	30.17
110.00	12 0 55	3555.37	-6.38	127.63	9.44	56.35	13 0 10	2955.4	-10.75	121.28

DIFFERENTIAL CORRECTIONS
TDE .2446 TRA -.9369 TC3 2.5740 BAU .3416
RDE .0773 RRA -.1023 RC3 .8819 FAU .42996
FDE .0682 FRA 6.9437 FC-39.6384 BSP 8925
BDE .2565 BRA .9424 BC3 2.7209 FSP 8320

MID-COURSE EXECUTION ACCURACY
SGT 2518.6 SGR 597.1 SG3 2429.1
RRT .8757 RRF -.9569 RTF -.9220
SGB 2588.4 R23 -.2883 R13 -.9289
SG1 2573.0 SG2 282.2 THA 11.87

ORBIT DETERMINATION ACCURACY
ST 734.4 SR 158.4 SS 1253.9
CRT .8831 CRS .3795 CST .7608
LSA 1390.3 MSA 451.0 SSA 19.8
EL1 747.8 EL2 73.0 ALF 10.89

LAUNCH DATE NOV 7 1964 FLIGHT TIME 274.00 ARRIVAL DATE AUG 8 1965

HELIOCENTRIC CONIC DISTANCE 627.514 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.922 GAL -2.26 AZL 88.70 HCA 195.42 SMA 187.78 ECC .21409 INC 1.2984 V1 30.058
RP 227.92 LAP -.35 LOP 240.04 VP 21.397 GAP -.70 AZP 91.25 TAL 347.15 TAP 182.57 RCA 147.58 APO 227.99 V2 24.132
RC 239.350 GL 14.11 GP 3.66 ZAL 106.63 ZAP 127.03 ETS 175.86 ZAE 164.14 ETE 161.16 ZAC 92.83 ETC 255.95 CLP 127.11

PLANETOCENTRIC CONIC

C3 9.348 VHL 3.058 DLA 23.96 RAL 159.25 RAD 6567.3 VEL 11.434 PTH 1.98 VHP 3.307 DPA 1.62 RAP 188.60 ECC 1.1539

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 9 31	2913.73	-28.29	90.14	16.54	88.65	15 58 4	2313.7	-28.18	81.48
90.00	10 34 48	3827.75	-11.68	150.91	12.26	64.02	11 38 36	3227.7	-15.08	143.88
100.00	16 50 32	2588.01	-29.88	66.18	16.55	91.03	17 33 40	1988.0	-29.41	57.41
100.00	11 36 28	3628.70	-10.26	135.54	11.52	61.77	12 36 56	3028.7	-13.96	128.70
110.00	18 37 43	2252.67	-33.58	40.41	16.25	96.78	19 15 16	1652.7	-32.28	31.42
110.00	12 5 46	3536.81	-7.07	126.65	9.59	56.47	13 4 42	2936.8	-11.43	120.27

DIFFERENTIAL CORRECTIONS
TDE .2368 TRA -.8821 TC3 2.3351 BAU .3113
RDE .0806 RRA -.0954 RC3 .8679 FAU .44523
FDE .1778 FRA 7.1602 FC-41.2321 BSP 8287
BDE .2502 BRA .8872 BC3 2.4911 FSP 8645

MID-COURSE EXECUTION ACCURACY
SGT 2346.9 SGR 585.4 SG3 2521.1
RRT .8580 RRF -.9485 RTF -.9114
SGB 2418.8 R23 -.2999 R13 -.9197
SG1 2400.8 SG2 294.0 THA 12.27

ORBIT DETERMINATION ACCURACY
ST 702.3 SR 162.8 SS 1280.8
CRT .8707 CRS .3019 CST .7227
LSA 1392.4 MSA 470.0 SSA 20.5
EL1 716.7 EL2 78.5 ALF 11.55

LAUNCH DATE NOV 7 1964 FLIGHT TIME 276.00 ARRIVAL DATE AUG 10 1965

HELIOCENTRIC CONIC DISTANCE 631.403 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.913 GAL -2.24 AZL 88.67 HCA 196.47 SMA 187.63 ECC .21338 INC 1.3344 V1 30.058
RP 227.53 LAP -.38 LOP 241.09 VP 21.429 GAP -1.00 AZP 91.28 TAL 347.22 TAP 183.69 RCA 147.59 APO 227.66 V2 24.173
RC 241.142 GL 14.54 GP 3.50 ZAL 106.44 ZAP 125.40 ETS 176.14 ZAE 162.45 ETE 163.52 ZAC 92.55 ETC 255.97 CLP 125.47

PLANETOCENTRIC CONIC

C3 9.309 VHL 3.051 DLA 24.42 RAL 159.28 RAD 6567.3 VEL 11.432 PTH 1.98 VHP 3.250 DPA 1.72 RAP 188.00 ECC 1.1532

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 2 17	2938.49	-28.23	91.95	16.64	87.74	15 51 15	2338.5	-28.25	83.28
90.00	10 42 16	3801.35	-12.46	149.36	12.48	64.37	11 45 37	3201.3	-15.81	142.29
100.00	16 44 33	2608.74	-29.89	67.72	16.68	90.22	17 28 2	2008.7	-29.54	58.93
100.00	11 42 40	3606.33	-10.98	134.27	11.72	62.02	12 42 47	3006.3	-14.64	127.39
110.00	18 33 33	2267.74	-33.70	41.58	16.43	96.10	19 11 21	1667.7	-32.49	32.55
110.00	12 10 10	3520.09	-7.70	125.76	9.74	56.59	13 8 50	2920.1	-12.04	119.36

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2325 TRA -.8252 TC3 2.0832 BAU .2804 SGT 2168.7 SGR 577.4 SG3 2614.7 ST 672.9 SR 168.4 SS 1308.1
RDE .0843 RRA -.0894 RC3 .8584 FAU .46096 RRT .8374 RRF -.9399 RTF -.8976 CRT .8643 CRS .2332 CST .6809
FDE .2747 FRA 7.3743 FC-42.8688 BSP 7571 SGB 2244.2 R23 -.3159 R13 -.9080 LSA 1398.1 MSA 487.1 SSA 21.2
BDE .2473 BRA .8301 BC3 2.2531 FSP 8952 SG1 2223.0 SG2 307.9 THA 12.82 EL1 688.7 EL2 82.8 ALF 12.39

LAUNCH DATE NOV 7 1964 FLIGHT TIME 278.00 ARRIVAL DATE AUG 12 1965

HELIOCENTRIC CONIC DISTANCE 635.302 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.904 GAL -2.22 AZL 88.63 HCA 197.52 SMA 187.48 ECC .21272 INC 1.3667 V1 30.058
RP 227.14 LAP -.41 LOP 242.13 VP 21.463 GAP -1.29 AZP 91.30 TAL 347.28 TAP 184.80 RCA 147.60 APO 227.36 V2 24.214
RC 242.914 GL 14.93 GP 3.36 ZAL 106.29 ZAP 123.73 ETS 176.41 ZAE 160.69 ETE 165.45 ZAC 92.27 ETC 256.00 CLP 123.79

PLANETOCENTRIC CONIC

C3 9.273 VHL 3.045 DLA 24.82 RAL 159.32 RAD 6567.3 VEL 11.431 PTH 1.98 VHP 3.196 DPA 1.85 RAP 187.36 ECC 1.1526

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 55 32	2961.54	-28.16	93.63	16.73	86.90	15 44 54	2361.5	-28.29	84.97
90.00	10 49 18	3776.79	-13.18	147.92	12.69	64.71	11 52 14	3176.8	-16.48	140.79
100.00	16 39 5	2627.71	-29.89	69.13	16.79	89.48	17 22 52	2027.7	-29.64	60.34
100.00	11 48 26	3585.84	-11.63	133.10	11.90	62.27	12 48 12	2985.8	-15.25	126.18
110.00	18 29 48	2281.31	-33.79	42.62	16.59	95.49	19 7 49	1681.3	-32.66	33.57
110.00	12 14 12	3505.01	-8.27	124.96	9.89	56.71	13 12 37	2905.0	-12.59	118.53

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2295 TRA -.7671 TC3 1.8041 BAU .2473 SGT 1980.6 SGR 571.5 SG3 2706.5 ST 644.4 SR 174.5 SS 1338.3
RDE .0881 RRA -.0842 RC3 .8512 FAU .47604 RRT .8116 RRF -.9308 RTF -.8782 CRT .8633 CRS .1694 CST .6331
FDE .3745 FRA 7.5977 FC-44.4440 BSP 6847 SGB 2061.4 R23 -.3392 R13 -.8919 LSA 1408.5 MSA 502.4 SSA 21.8
BDE .2459 BRA .7717 BC3 1.9948 FSP 9279 SG1 2035.6 SG2 324.9 THA 13.53 EL1 662.0 EL2 85.7 ALF 13.39

LAUNCH DATE NOV 7 1964 FLIGHT TIME 280.00 ARRIVAL DATE AUG 14 1965

HELIOCENTRIC CONIC DISTANCE 639.211 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.897 GAL -2.21 AZL 88.60 HCA 198.57 SMA 187.34 ECC .21211 INC 1.3959 V1 30.058
RP 226.75 LAP -.44 LOP 243.19 VP 21.498 GAP -1.58 AZP 91.32 TAL 347.33 TAP 185.90 RCA 147.60 APO 227.08 V2 24.256
RC 244.666 GL 15.27 GP 3.23 ZAL 106.16 ZAP 122.02 ETS 176.64 ZAE 158.86 ETE 167.04 ZAC 92.00 ETC 256.03 CLP 122.07

PLANETOCENTRIC CONIC

C3 9.240 VHL 3.040 DLA 25.18 RAL 159.36 RAD 6567.3 VEL 11.429 PTH 1.98 VHP 3.146 DPA 2.02 RAP 186.70 ECC 1.1521

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 49 16	2983.02	-28.07	95.20	16.81	86.12	15 38 59	2383.0	-28.31	86.54
90.00	10 55 56	3753.92	-13.84	146.56	12.91	65.05	11 58 30	3153.9	-17.09	139.39
100.00	16 34 4	2645.11	-29.87	70.42	16.90	88.80	17 18 10	2045.1	-29.72	61.62
100.00	11 53 48	3567.07	-12.23	132.02	12.09	62.51	12 53 15	2967.1	-15.81	125.06
110.00	18 26 27	2293.51	-33.87	43.57	16.75	94.93	19 4 41	1693.5	-32.81	34.49
110.00	12 17 55	3491.43	-8.77	124.24	10.04	56.83	13 16 6	2891.4	-13.08	117.79

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2277 TRA -.7073 TC3 1.5042 BAU .2132 SGT 1786.2 SGR 567.6 SG3 2796.8 ST 616.6 SR 180.8 SS 1371.7
RDE .0919 RRA -.0798 RC3 .8460 FAU .49060 RRT .7787 RRF -.9213 RTF -.8509 CRT .8677 CRS .1096 CST .5774
FDE .4806 FRA 7.8320 FC-45.9662 BSP 6104 SGB 1874.2 R23 -.3710 R13 -.8697 LSA 1424.0 MSA 515.8 SSA 22.3
BDE .2455 BRA .7117 BC3 1.7258 FSP 9630 SG1 1842.1 SG2 345.3 THA 14.41 EL1 636.7 EL2 87.1 ALF 14.56

LAUNCH DATE NOV 7 1964 FLIGHT TIME 282.00 ARRIVAL DATE AUG 16 1965

HELIOCENTRIC CONIC DISTANCE 643.130 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.889 GAL -2.20 AZL 88.58 HCA 199.62 SMA 187.21 ECC .21154 INC 1.4219 V1 30.058
RP 226.36 LAP -.48 LOP 244.24 VP 21.533 GAP -1.87 AZP 91.34 TAL 347.36 TAP 186.99 RCA 147.61 APO 226.81 V2 24.297
RC 246.398 GL 15.59 GP 3.11 ZAL 106.06 ZAP 120.26 ETS 176.86 ZAE 156.98 ETE 168.38 ZAC 91.73 ETC 256.07 CLP 120.31

PLANETOCENTRIC CONIC

C3 9.211 VHL 3.035 DLA 25.50 RAL 159.42 RAD 6567.3 VEL 11.428 PTH 1.98 VHP 3.098 DPA 2.20 RAP 186.02 ECC 1.1516

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 43 26	3003.05	-27.97	96.65	16.89	85.40	15 33 29	2403.0	-28.32	88.00
90.00	11 2 12	3732.65	-14.45	145.30	13.12	65.38	12 4 24	3132.7	-17.65	138.08
100.00	16 29 32	2661.02	-29.84	71.61	17.01	88.18	17 13 53	2061.0	-29.78	62.80
100.00	11 58 47	3549.91	-12.76	131.03	12.28	62.74	12 57 57	2949.9	-16.32	124.04
110.00	18 23 29	2304.49	-33.93	44.42	16.90	94.43	19 1 53	1704.5	-32.94	35.32
110.00	12 21 20	3479.21	-9.23	123.58	10.19	56.94	13 19 19	2879.2	-13.52	117.11

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2278 TRA -.6445 TC3 1.1812 BAU .1787 SGT 1586.3 SGR 565.5 SG3 2885.6 ST 590.8 SR 187.9 SS 1402.8
RDE .0959 RRA -.0757 RC3 .8432 FAU .50510 RRT .7538 RRF -.9117 RTF -.8099 CRT .8779 CRS .0583 CST .5159
FDE .5732 FRA 8.0551 FC-47.4762 BSP 5303 SGB 1684.1 R23 -.4158 R13 -.8375 LSA 1440.3 MSA 526.4 SSA 22.9
BDE .2472 BRA .6490 BC3 1.4513 FSP 9953 SG1 1642.8 SG2 371.0 THA 15.47 EL1 613.9 EL2 86.6 ALF 15.93

LAUNCH DATE NOV 7 1964 FLIGHT TIME 284.00 ARRIVAL DATE AUG 18 1965

HELIOCENTRIC CONIC DISTANCE 647.059 EARTH TO MARS

RL	148.24	LAL	-.00	LOL	44.62	VL	32.882	GAL	-2.19	AZL	88.55	HCA	200.68	SMA	187.09	ECC	.21101	INC	1.4453	V1	30.058
RP	225.97	LAP	-.51	LOP	245.30	VP	21.570	GAP	-2.14	AZP	91.35	TAL	347.39	TAP	188.07	RCA	147.61	APO	226.57	V2	24.339
RC	248.110	GL	15.87	GP	3.01	ZAL	105.98	ZAP	118.47	ETS	177.07	ZAE	155.05	ETE	169.52	ZAC	91.47	ETC	256.10	CLP	118.52

PLANETOCENTRIC CONIC

C3	9.185	VHL	3.031	DLA	25.78	RAL	159.49	RAD	6567.3	VEL	11.427	PTH	1.98	VHP	3.054	DPA	2.42	RAP	185.31	ECC	1.1512

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 38 4	3021.68	-27.86	98.00	16.98	84.73	15 28 26	2421.7	-28.30	89.37
90.00	11 8 7	3712.92	-15.00	144.11	13.34	65.70	12 10 0	3112.9	-18.16	136.86
100.00	16 25 26	2675.55	-29.81	72.68	17.13	87.61	17 10 2	2075.5	-29.82	63.88
100.00	12 3 26	3534.29	-13.25	130.12	12.47	62.96	13 2 20	2934.3	-16.77	123.10
110.00	18 20 53	2314.35	-33.98	45.19	17.06	93.98	18 59 27	1714.3	-33.05	36.07
110.00	12 24 28	3468.26	-9.63	122.99	10.34	57.04	13 22 17	2868.3	-13.91	116.50

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.2305	TRA	-.5796	TC3	.8414	BAU	.1462	SGT	1389.5	SGR	565.2	SG3	2973.2	ST	568.7	SR	195.5	SS	1432.2
RDE	.1002	RRA	-.0720	RC3	.8423	FAU	.51952	RRT	.6709	RRF	-.9021	RTF	-.7473	CRT	.8940	CRS	.0151	CST	.4463
FDE	.6527	FRA	8.2728	FC-48.9700		BSP	4464	SGB	1500.0	R23	-.4766	R13	-.7895	LSA	1457.7	MSA	536.2	SSA	23.5
BDE	.2514	BRA	.5840	BC3	1.1906	FSP	10257	SG1	1444.9	SG2	403.0	THA	16.59	EL1	595.6	EL2	83.6	ALF	17.44

LAUNCH DATE NOV 7 1964 FLIGHT TIME 286.00 ARRIVAL DATE AUG 20 1965

HELIOCENTRIC CONIC DISTANCE 650.997 EARTH TO MARS

RL	148.24	LAL	-.00	LOL	44.62	VL	32.876	GAL	-2.18	AZL	88.53	HCA	201.75	SMA	186.98	ECC	.21053	INC	1.4667	V1	30.058
RP	225.58	LAP	-.54	LOP	246.36	VP	21.607	GAP	-2.42	AZP	91.36	TAL	347.39	TAP	189.14	RCA	147.61	APO	226.34	V2	24.381
RC	249.803	GL	16.13	GP	2.91	ZAL	105.94	ZAP	116.65	ETS	177.25	ZAE	153.06	ETE	170.50	ZAC	91.21	ETC	256.14	CLP	116.68

PLANETOCENTRIC CONIC

C3	9.162	VHL	3.027	DLA	26.03	RAL	159.57	RAD	6567.3	VEL	11.426	PTH	1.98	VHP	3.012	DPA	2.65	RAP	184.57	ECC	1.1508

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 33 10	3038.93	-27.75	99.25	17.07	84.11	15 23 49	2438.9	-28.27	90.63
90.00	11 13 41	3694.72	-15.51	143.02	13.57	66.01	12 15 16	3094.7	-18.62	135.73
100.00	16 21 48	2688.73	-29.76	73.66	17.25	87.10	17 6 37	2088.7	-29.85	64.86
100.00	12 7 44	3520.16	-13.68	129.30	12.67	63.16	13 6 24	2920.2	-17.18	122.25
110.00	18 18 39	2323.14	-34.02	45.87	17.22	93.58	18 57 22	1723.1	-33.15	36.74
110.00	12 27 23	3458.51	-9.99	122.47	10.51	57.14	13 25 2	2858.5	-14.25	115.96

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.2342	TRA	-.5130	TC3	.4793	BAU	.1187	SGT	1203.5	SGR	565.7	SG3	3057.5	ST	549.3	SR	203.2	SS	1463.5
RDE	.1045	RRA	-.0687	RC3	.8421	FAU	.53308	RRT	.5760	RRF	-.8923	RTF	-.6475	CRT	.9135	CRS	-.0246	CST	.3665
FDE	.7353	FRA	8.4980	FC-50.3716		BSP	3625	SGB	1329.8	R23	-.5600	R13	-.7136	LSA	1479.1	MSA	544.4	SSA	24.1
BDE	.2565	BRA	.5176	BC3	.9689	FSP	10570	SG1	1253.5	SG2	444.0	THA	17.40	EL1	580.4	EL2	78.2	ALF	19.03

LAUNCH DATE NOV 7 1964 FLIGHT TIME 288.00 ARRIVAL DATE AUG 22 1965

HELIOCENTRIC CONIC DISTANCE 654.944 EARTH TO MARS

RL	148.24	LAL	-.00	LOL	44.62	VL	32.870	GAL	-2.18	AZL	88.51	HCA	202.82	SMA	186.88	ECC	.21009	INC	1.4860	V1	30.058
RP	225.19	LAP	-.58	LOP	247.43	VP	21.645	GAP	-2.69	AZP	91.37	TAL	347.39	TAP	190.20	RCA	147.61	APO	226.14	V2	24.423
RC	251.477	GL	16.36	GP	2.82	ZAL	105.92	ZAP	114.79	ETS	177.43	ZAE	151.04	ETE	171.34	ZAC	90.94	ETC	256.19	CLP	114.82

PLANETOCENTRIC CONIC

C3	9.143	VHL	3.024	DLA	26.24	RAL	159.67	RAD	6567.3	VEL	11.425	PTH	1.98	VHP	2.975	DPA	2.90	RAP	183.80	ECC	1.1505

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 28 45	3054.78	-27.63	100.40	17.17	83.55	15 19 40	2454.8	-28.24	91.79
90.00	11 18 54	3678.07	-15.97	142.01	13.80	66.30	12 20 12	3078.1	-19.04	134.68
100.00	16 18 37	2700.59	-29.72	74.54	17.38	86.64	17 3 38	2100.6	-29.87	65.74
100.00	12 11 43	3507.49	-14.07	128.56	12.87	63.35	13 10 11	2907.5	-17.54	121.48
110.00	18 16 45	2330.94	-34.05	46.48	17.38	93.22	18 55 36	1730.9	-33.23	37.33
110.00	12 30 4	3449.91	-10.31	122.01	10.68	57.23	13 27 34	2849.9	-14.56	115.48

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.2392	TRA	-.4430	TC3	.0992	BAU	.1038	SGT	1041.6	SGR	567.4	SG3	3138.8	ST	533.1	SR	211.3	SS	1490.3
RDE	.1090	RRA	-.0656	RC3	.8433	FAU	.54649	RRT	.4296	RRF	-.8826	RTF	-.4863	CRT	.9350	CRS	-.0573	CST	.2789
FDE	.8018	FRA	8.7045	FC-51.7460		BSP	2810	SGB	1186.1	R23	-.6720	R13	-.5843	LSA	1498.7	MSA	550.6	SSA	24.7
BDE	.2628	BRA	.4478	BC3	.8491	FSP	10855	SG1	1077.8	SG2	495.2	THA	16.82	EL1	569.2	EL2	70.2	ALF	20.67

LAUNCH DATE NOV 7 1964 FLIGHT TIME 290.00 ARRIVAL DATE AUG 24 1965

HELIOCENTRIC CONIC DISTANCE 658.901 EARTH TO MARS

RL	148.24	LAL	-.00	LOL	44.62	VL	32.864	GAL	-2.18	AZL	88.50	HCA	203.89	SMA	186.78	ECC	.20969	INC	1.5040	V1	30.058
RP	224.80	LAP	-.61	LOP	248.50	VP	21.684	GAP	-2.95	AZP	91.38	TAL	347.37	TAP	191.26	RCA	147.61	APO	225.95	V2	24.465
RC	253.132	GL	16.58	GP	2.74	ZAL	105.92	ZAP	112.89	ETS	177.60	ZAE	148.97	ETE	172.08	ZAC	90.68	ETC	256.24	CLP	112.92

PLANETOCENTRIC CONIC

C3	9.128	VHL	3.021	DLA	26.43	RAL	159.79	RAD	6567.3	VEL	11.424	PTH	1.98	VHP	2.940	DPA	3.17	RAP	183.02	ECC	1.1502

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 24 49	3069.22	-27.52	101.44	17.29	83.04	15 15 59	2469.2	-28.19	92.84
90.00	11 23 46	3662.98	-16.38	141.09	14.04	66.57	12 24 49	3063.0	-19.41	133.73
100.00	16 15 53	2711.18	-29.68	75.33	17.52	86.23	17 1 4	2111.2	-29.88	66.53
100.00	12 15 23	3496.25	-14.41	127.90	13.09	63.53	13 13 40	2896.3	-17.85	120.80
110.00	18 15 13	2337.80	-34.07	47.01	17.56	92.91	18 54 11	1737.8	-33.30	37.86
110.00	12 32 33	3442.40	-10.59	121.60	10.86	57.31	13 29 55	2842.4	-14.82	115.06

DIFFERENTIAL CORRECTIONS						MID-COURSE EXECUTION ACCURACY						ORBIT DETERMINATION ACCURACY					
TDE	.2458	TRA	-.3713	TC3	-.2993	BAU	.1094	SGT	931.9	SGR	569.7	SG3	3216.0	ST	522.5	SR	219.6	SS	1517.9
RDE	.1136	RRA	-.0628	RC3	.8447	FAU	.55897	RRT	.2123	RRF	-.8728	RTF	-.2391	CRT	.9564	CRS	-.0856	CST	.1817
FDE	.8644	FRA	8.9163	FC-53.0178		BSP	2097	SGB	1092.3	R23	-.8081	R13	-.3343	LSA	1521.3	MSA	556.9	SSA	25.3
BDE	.2708	BRA	.3766	BC3	.8961	FSP	11130	SG1	943.9	SG2	549.7	THA	11.26	EL1	563.6	EL2	59.4	ALF	22.16

LAUNCH DATE NOV 7 1964 FLIGHT TIME 300.00 ARRIVAL DATE SEP 3 1965

DISTANCE 678.821

EARTH TO MARS

HELIOCENTRIC CONIC
RL 148.24 LAL -.00 LOL 44.62 VL 32.843 GAL -2.22 AZL 88.42 HCA 209.30 SMA 186.41 ECC .20826 INC 1.5755 V1 30.058
RP 222.85 LAP -.77 LOP 253.91 VP 21.888 GAP -4.20 AZP 91.37 TAL 347.08 TAP 196.38 RCA 147.59 APO 225.23 V2 24.674
RC 261.100 GL 17.40 GP 2.38 ZAL 106.35 ZAP 103.05 ETS 178.31 ZAE 138.14 ETE 174.71 ZAC 89.38 ETC 256.54 CLP 103.06

PLANETOCENTRIC CONIC
C3 9.105 VHL 3.017 DLA 26.99 RAL 160.67 RAD 6567.3 VEL 11.423 PTH 1.98 VHP 2.818 DPA 4.70 RAP 178.82 ECC 1.1498

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 13 43	3117.52	-27.07	104.90	18.17	81.36	15 5 40	2517.5	-27.99	96.36
90.00	11 41 54	3613.70	-17.69	138.07	15.35	67.52	12 42 8	3013.7	-20.58	130.59
100.00	16 9 17	2744.93	-29.50	77.82	18.50	84.93	16 55 2	2144.9	-29.89	69.04
100.00	12 29 0	3461.52	-15.46	125.85	14.30	64.09	13 26 42	2861.5	-18.82	118.67
110.00	18 12 34	2359.16	-34.14	48.68	18.65	91.92	18 51 54	1759.2	-33.49	39.49
110.00	12 42 12	3420.06	-11.41	120.39	11.98	57.56	13 39 13	2820.1	-15.61	113.80

DIFFERENTIAL CORRECTIONS
TDE .2923 TRA .0268 TC3-2.5304 BAU .3250
RDE .1379 RRA -.0501 RC3 .8524 FAU .60811
FDE 1.0086 FRA 9.7962 FC-57.8241 BSP 4827
BDE .3232 BRA .0568 BC3 2.6701 FSP 12124

MID-COURSE EXECUTION ACCURACY
SGT 1625.8 SGR 587.0 SG3 3517.2
RRT -.6772 RRF -.8235 RTF .8392
SGB 1728.5 R23 .2913 R13 -.8600
SG1 1677.0 SG2 418.7 THA 165.32

ORBIT DETERMINATION ACCURACY
ST 557.2 SR 264.2 SS 1615.0
CRT .9786 CRS -.1625 CST -.3296
LSA 1627.5 MSA 582.1 SSA 27.7
EL1 614.7 EL2 49.3 ALF 25.07

LAUNCH DATE NOV 7 1964 FLIGHT TIME 302.00 ARRIVAL DATE SEP 5 1965

DISTANCE 682.831

EARTH TO MARS

HELIOCENTRIC CONIC
RL 148.24 LAL -.00 LOL 44.62 VL 32.840 GAL -2.23 AZL 88.41 HCA 210.39 SMA 186.36 ECC .20808 INC 1.5871 V1 30.058
RP 222.47 LAP -.80 LOP 255.00 VP 21.931 GAP -4.43 AZP 91.37 TAL 346.98 TAP 197.37 RCA 147.58 APO 225.13 V2 24.716
RC 262.633 GL 17.53 GP 2.32 ZAL 106.52 ZAP 101.03 ETS 178.44 ZAE 135.91 ETE 175.08 ZAC 89.12 ETC 256.62 CLP 101.04

PLANETOCENTRIC CONIC
C3 9.111 VHL 3.018 DLA 27.04 RAL 160.91 RAD 6567.3 VEL 11.424 PTH 1.98 VHP 2.804 DPA 5.03 RAP 177.95 ECC 1.1499

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 13 24	3121.85	-27.03	105.21	18.42	81.21	15 5 26	2521.9	-27.96	96.67
90.00	11 44 6	3609.65	-17.79	137.82	15.64	67.60	12 44 16	3009.6	-20.68	130.33
100.00	16 9 25	2747.86	-29.48	78.04	18.76	84.81	16 55 13	2147.9	-29.89	69.25
100.00	12 30 47	3458.87	-15.54	125.69	14.58	64.14	13 28 26	2858.9	-18.89	118.50
110.00	18 13 2	2361.03	-34.14	48.82	18.92	91.84	18 52 23	1761.0	-33.51	39.64
110.00	12 43 39	3418.47	-11.46	120.30	12.25	57.57	13 40 37	2818.5	-15.66	113.71

DIFFERENTIAL CORRECTIONS
TDE .3028 TRA .1138 TC3-3.0130 BAU .3814
RDE .1429 RRA -.0477 RC3 .8523 FAU .61415
FDE 1.0104 FRA 9.9418 FC-58.3560 BSP 5992
BDE .3348 BRA .1234 BC3 3.1312 FSP 12254

MID-COURSE EXECUTION ACCURACY
SGT 1922.9 SGR 590.5 SG3 3555.7
RRT -.7086 RRF -.8132 RTF .8886
SGB 2011.6 R23 .2181 R13 -.8998
SG1 1970.0 SG2 406.7 THA 167.17

ORBIT DETERMINATION ACCURACY
ST 581.9 SR 273.4 SS 1628.9
CRT .9607 CRS -.1686 CST -.4147
LSA 1649.8 MSA 586.5 SSA 28.1
EL1 639.3 EL2 69.1 ALF 24.60

LAUNCH DATE NOV 7 1964 FLIGHT TIME 304.00 ARRIVAL DATE SEP 7 1965

DISTANCE 686.849

EARTH TO MARS

HELIOCENTRIC CONIC
RL 148.24 LAL -.00 LOL 44.62 VL 32.837 GAL -2.25 AZL 88.40 HCA 211.49 SMA 186.31 ECC .20794 INC 1.5981 V1 30.058
RP 222.08 LAP -.83 LOP 256.10 VP 21.974 GAP -4.66 AZP 91.36 TAL 346.86 TAP 198.35 RCA 147.57 APO 225.05 V2 24.758
RC 264.145 GL 17.64 GP 2.26 ZAL 106.71 ZAP 99.00 ETS 178.56 ZAE 133.67 ETE 175.43 ZAC 88.86 ETC 256.69 CLP 99.01

PLANETOCENTRIC CONIC
C3 9.122 VHL 3.020 DLA 27.06 RAL 161.17 RAD 6567.3 VEL 11.424 PTH 1.98 VHP 2.794 DPA 5.36 RAP 177.07 ECC 1.1501

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 13 46	3124.28	-27.00	105.39	18.70	81.12	15 5 50	2524.3	-27.95	96.85
90.00	11 45 49	3607.66	-17.85	137.69	15.93	67.64	12 45 56	3007.7	-20.72	130.20
100.00	16 10 1	2749.55	-29.47	78.16	19.04	84.75	16 55 50	2149.5	-29.89	69.38
100.00	12 32 15	3457.62	-15.57	125.62	14.87	64.16	13 29 53	2857.6	-18.92	118.43
110.00	18 13 49	2362.15	-34.14	48.91	19.21	91.79	18 53 11	1762.1	-33.52	39.72
110.00	12 44 56	3417.79	-11.49	120.26	12.53	57.58	13 41 54	2817.8	-15.69	113.67

DIFFERENTIAL CORRECTIONS
TDE .3129 TRA .2034 TC3-3.5058 BAU .4399
RDE .1480 RRA -.0454 RC3 .8514 FAU .61872
FDE 1.0038 FRA10.0725 FC-58.7232 BSP 7210
BDE .3461 BRA .2084 BC3 3.6077 FSP 12348

MID-COURSE EXECUTION ACCURACY
SGT 2241.5 SGR 593.9 SG3 3585.6
RRT -.7244 RRF -.8026 RTF .9196
SGB 2318.9 R23 .1658 R13 -.9259
SG1 2283.8 SG2 401.9 THA 168.78

ORBIT DETERMINATION ACCURACY
ST 611.0 SR 282.7 SS 1640.6
CRT .9375 CRS -.1726 CST -.4900
LSA 1672.1 MSA 590.0 SSA 28.5
EL1 667.2 EL2 90.1 ALF 23.92

LAUNCH DATE NOV 7 1964 FLIGHT TIME 306.00 ARRIVAL DATE SEP 9 1965

DISTANCE 690.876

EARTH TO MARS

HELIOCENTRIC CONIC
RL 148.24 LAL -.00 LOL 44.62 VL 32.834 GAL -2.27 AZL 88.39 HCA 212.59 SMA 186.27 ECC .20783 INC 1.6083 V1 30.058
RP 221.70 LAP -.87 LOP 257.20 VP 22.017 GAP -4.89 AZP 91.36 TAL 346.74 TAP 199.33 RCA 147.56 APO 224.98 V2 24.799
RC 265.639 GL 17.74 GP 2.20 ZAL 106.93 ZAP 96.97 ETS 178.67 ZAE 131.42 ETE 175.75 ZAC 88.61 ETC 256.78 CLP 96.98

PLANETOCENTRIC CONIC
C3 9.136 VHL 3.023 DLA 27.06 RAL 161.45 RAD 6567.3 VEL 11.425 PTH 1.98 VHP 2.786 DPA 5.70 RAP 176.20 ECC 1.1504

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 14 49	3124.80	-26.99	105.42	19.00	81.11	15 6 54	2524.8	-27.95	96.89
90.00	11 47 0	3607.74	-17.84	137.70	16.23	67.64	12 47 8	3007.7	-20.72	130.21
100.00	16 11 5	2749.99	-29.47	78.19	19.35	84.73	16 56 55	2150.0	-29.88	69.41
100.00	12 33 25	3457.78	-15.57	125.63	15.17	64.16	13 31 3	2857.8	-18.92	118.44
110.00	18 14 55	2362.54	-34.14	48.94	19.52	91.77	18 54 17	1762.5	-33.52	39.75
110.00	12 46 5	3418.00	-11.48	120.28	12.83	57.58	13 43 3	2818.0	-15.68	113.68

DIFFERENTIAL CORRECTIONS
TDE .3224 TRA .2953 TC3-4.0036 BAU .4999
RDE .1532 RRA -.0429 RC3 .8497 FAU .62197
FDE .9844 FRA10.1832 FC-58.9397 BSP 8438
BDE .3570 BRA .2984 BC3 4.0927 FSP 12412

MID-COURSE EXECUTION ACCURACY
SGT 2574.1 SGR 597.1 SG3 3607.0
RRT -.7307 RRF -.7919 RTF .9398
SGB 2642.5 R23 .1289 R13 -.9436
SG1 2611.7 SG2 401.8 THA 170.14

ORBIT DETERMINATION ACCURACY
ST 643.7 SR 292.1 SS 1649.0
CRT .9105 CRS -.1736 CST -.5544
LSA 1692.9 MSA 593.3 SSA 28.8
EL1 698.1 EL2 111.4 ALF 23.07

LAUNCH DATE NOV 7 1964 FLIGHT TIME 292.00 ARRIVAL DATE AUG 26 1965

HELIOCENTRIC CONIC DISTANCE 662.867 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.859 GAL -2.18 AZL 88.48 HCA 204.96 SMA 186.69 ECC .20933 INC 1.5203 V1 30.058
RP 224.41 LAP -.64 LOP 249.58 VP 21.724 GAP -3.21 AZP 91.38 TAL 347.34 TAP 192.30 RCA 147.61 APO 225.77 V2 24.506
RC 254.766 GL 16.77 GP 2.66 ZAL 105.95 ZAP 110.97 ETS 177.76 ZAE 146.86 ETE 172.73 ZAC 90.42 ETC 256.29 CLP 110.99

PLANETOCENTRIC CONIC

C3 9.116 VHL 3.019 DLA 26.59 RAL 159.93 RAD 6567.3 VEL 11.424 PTH 1.98 VHP 2.909 DPA 3.45 RAP 182.21 ECC 1.1500

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 21 26	3082.16	-27.41	102.37	17.42	82.58	15 12 48	2482.2	-28.15	93.78
90.00	11 28 15	3649.53	-16.74	140.27	14.28	66.82	12 29 5	3049.5	-19.74	132.88
100.00	16 13 37	2720.48	-29.63	76.01	17.68	85.87	16 58 58	2120.5	-29.89	67.22
100.00	12 18 45	3486.45	-14.71	127.32	13.31	63.68	13 16 51	2886.4	-18.13	120.20
110.00	18 14 1	2343.75	-34.09	47.47	17.75	92.63	18 53 5	1743.7	-33.35	38.31
110.00	12 34 50	3435.94	-10.83	121.25	11.06	57.38	13 32 6	2835.9	-15.05	114.70

DIFFERENTIAL CORRECTIONS

TDE .2536 TRA -.2971 TC3 -.7158 BAU .1351
RDE .1183 RRA -.0601 RC3 .8466 FAU .57091
FDE .9120 FRA 9.1127 FC-54.2204 BSP 1731
BDE .2798 BRA .3031 BC3 1.1087 FSP 11374

MID-COURSE EXECUTION ACCURACY

SGT 903.3 SGR 572.7 SG3 3288.8
RRT -.0629 RRF -.8631 RTF .0811
SGB 1069.6 R23 .8555 R13 -.1171
SG1 904.5 SG2 570.8 THA 176.20

ORBIT DETERMINATION ACCURACY

ST 517.2 SR 228.2 SS 1541.6
CRT .9747 CRS -.1083 CST .0795
LSA 1542.4 MSA 562.6 SSA 25.8
EL1 563.4 EL2 46.8 ALF 23.45

LAUNCH DATE NOV 7 1964 FLIGHT TIME 294.00 ARRIVAL DATE AUG 28 1965

HELIOCENTRIC CONIC DISTANCE 666.842 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.854 GAL -2.19 AZL 88.46 HCA 206.04 SMA 186.61 ECC .20901 INC 1.5358 V1 30.058
RP 224.02 LAP -.67 LOP 250.65 VP 21.764 GAP -3.46 AZP 91.38 TAL 347.29 TAP 193.33 RCA 147.61 APO 225.61 V2 24.548
RC 256.380 GL 16.95 GP 2.58 ZAL 106.01 ZAP 109.02 ETS 177.91 ZAE 144.72 ETE 173.31 ZAC 90.16 ETC 256.35 CLP 109.04

PLANETOCENTRIC CONIC

C3 9.107 VHL 3.018 DLA 26.73 RAL 160.08 RAD 6567.3 VEL 11.424 PTH 1.98 VHP 2.881 DPA 3.75 RAP 181.38 ECC 1.1499

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 18 35	3093.57	-27.30	103.19	17.58	82.18	15 10 8	2493.6	-28.10	94.62
90.00	11 32 20	3637.77	-17.06	139.55	14.54	67.05	12 32 58	3037.8	-20.02	132.13
100.00	16 11 49	2728.52	-29.59	76.61	17.86	85.56	16 57 18	2128.5	-29.89	67.82
100.00	12 21 47	3478.06	-14.96	126.83	13.54	63.82	13 19 45	2878.1	-18.36	119.68
110.00	18 13 9	2348.84	-34.11	47.87	17.95	92.40	18 52 18	1748.8	-33.40	38.70
110.00	12 36 56	3430.50	-11.02	120.95	11.27	57.44	13 34 6	2830.5	-15.24	114.39

DIFFERENTIAL CORRECTIONS

TDE .2637 TRA -.2191 TC3-1.1444 BAU .1735
RDE .1232 RRA -.0574 RC3 .8490 FAU .58226
FDE .9402 FRA 9.2907 FC-55.3487 BSP 1994
+ BDE .2910 BRA .2265 BC3 1.4249 FSP 11580

MID-COURSE EXECUTION ACCURACY

SGT 971.9 SGR 576.3 SG3 3356.5
RRT -.3215 RRF -.8535 RTF .3912
SGB 1129.9 R23 .7043 R13 -.4977
SG1 996.8 SG2 532.1 THA 164.77

ORBIT DETERMINATION ACCURACY

ST 520.1 SR 237.2 SS 1560.5
CRT .9877 CRS -.1246 CST -.0265
LSA 1560.8 MSA 570.0 SSA 26.3
EL1 570.6 EL2 33.8 ALF 24.34

LAUNCH DATE NOV 7 1964 FLIGHT TIME 296.00 ARRIVAL DATE AUG 30 1965

HELIOCENTRIC CONIC DISTANCE 670.824 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.850 GAL -2.19 AZL 88.45 HCA 207.12 SMA 186.54 ECC .20872 INC 1.5500 V1 30.058
RP 223.63 LAP -.71 LOP 251.74 VP 21.805 GAP -3.71 AZP 91.38 TAL 347.23 TAP 194.36 RCA 147.60 APO 225.47 V2 24.590
RC 257.974 GL 17.12 GP 2.51 ZAL 106.10 ZAP 107.05 ETS 178.05 ZAE 142.55 ETE 173.82 ZAC 89.90 ETC 256.41 CLP 107.07

PLANETOCENTRIC CONIC

C3 9.103 VHL 3.017 DLA 26.84 RAL 160.26 RAD 6567.3 VEL 11.423 PTH 1.98 VHP 2.857 DPA 4.06 RAP 180.54 ECC 1.1498

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 16 22	3103.23	-27.21	103.88	17.75	81.85	15 8 5	2503.2	-28.06	95.32
90.00	11 35 58	3627.92	-17.32	138.95	14.80	67.24	12 36 26	3027.9	-20.25	131.50
100.00	16 10 31	2735.21	-29.55	77.10	18.05	85.30	16 56 6	2135.2	-29.89	68.31
100.00	12 24 30	3471.17	-15.17	126.42	13.79	63.93	13 22 21	2871.2	-18.55	119.26
110.00	18 12 39	2353.05	-34.12	48.20	18.17	92.21	18 51 52	1753.0	-33.44	39.02
110.00	12 38 51	3426.10	-11.19	120.72	11.49	57.49	13 35 57	2826.1	-15.40	114.14

DIFFERENTIAL CORRECTIONS

TDE .2684 TRA -.1430 TC3-1.6139 BAU .2218
RDE .1272 RRA -.0557 RC3 .8471 FAU .58876
FDE 1.0469 FRA 9.5438 FC-55.9941 BSP 2693
BDE .2971 BRA .1535 BC3 1.8227 FSP 11940

MID-COURSE EXECUTION ACCURACY

SGT 1140.6 SGR 577.7 SG3 3410.5
RRT -.5138 RRF -.8420 RTF .6160
SGB 1278.5 R23 .5302 R13 -.6881
SG1 1186.4 SG2 476.4 THA 162.50

ORBIT DETERMINATION ACCURACY

ST 518.7 SR 244.7 SS 1601.8
CRT .9924 CRS -.1562 CST -.1446
LSA 1604.4 MSA 565.8 SSA 27.1
EL1 572.9 EL2 27.2 ALF 25.15

LAUNCH DATE NOV 7 1964 FLIGHT TIME 298.00 ARRIVAL DATE SEP 1 1965

HELIOCENTRIC CONIC DISTANCE 674.819 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.846 GAL -2.20 AZL 88.44 HCA 208.21 SMA 186.47 ECC .20847 INC 1.5632 V1 30.058
RP 223.24 LAP -.74 LOP 252.82 VP 21.846 GAP -3.96 AZP 91.38 TAL 347.16 TAP 195.37 RCA 147.60 APO 225.35 V2 24.632
RC 259.547 GL 17.27 GP 2.45 ZAL 106.21 ZAP 105.06 ETS 178.18 ZAE 140.36 ETE 174.29 ZAC 89.64 ETC 256.47 CLP 105.07

PLANETOCENTRIC CONIC

C3 9.102 VHL 3.017 DLA 26.93 RAL 160.45 RAD 6567.3 VEL 11.423 PTH 1.98 VHP 2.836 DPA 4.38 RAP 179.69 ECC 1.1498

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 14 42	3111.32	-27.13	104.46	17.95	81.57	15 6 33	2511.3	-28.02	95.91
90.00	11 39 11	3619.79	-17.53	138.44	15.07	67.40	12 39 31	3019.8	-20.44	130.98
100.00	16 9 39	2740.73	-29.52	77.51	18.27	85.09	16 55 20	2140.7	-29.89	68.72
100.00	12 26 55	3465.61	-15.34	126.09	14.04	64.02	13 24 40	2865.6	-18.71	118.92
110.00	18 12 26	2356.51	-34.13	48.47	18.40	92.05	18 51 43	1756.5	-33.47	39.29
110.00	12 40 37	3422.59	-11.31	120.52	11.73	57.53	13 37 39	2822.6	-15.52	113.94

DIFFERENTIAL CORRECTIONS

TDE .2823 TRA -.0579 TC3-2.0566 BAU .2708
RDE .1328 RRA -.0526 RC3 .8514 FAU .60042
FDE 1.0018 FRA 9.6482 FC-57.1097 BSP 3734
BDE .3120 BRA .0782 BC3 2.2258 FSP 11983

MID-COURSE EXECUTION ACCURACY

SGT 1357.4 SGR 583.2 SG3 3470.5
RRT -.6170 RRF -.8335 RTF .7565
SGB 1477.4 R23 .3940 R13 -.7963
SG1 1409.7 SG2 441.9 THA 163.48

ORBIT DETERMINATION ACCURACY

ST 538.8 SR 255.0 SS 1601.1
CRT .9896 CRS -.1542 CST -.2359
LSA 1607.5 MSA 578.2 SSA 27.2
EL1 595.1 EL2 33.2 ALF 25.18

LAUNCH DATE NOV 7 1964 FLIGHT TIME 308.00 ARRIVAL DATE SEP 11 1965

HELIOCENTRIC CONIC DISTANCE 694.909 EARTH TO MARS
RL 148.24 LAL -.00 LOL 44.62 VL 32.832 GAL -2.29 AZL 88.38 HCA 213.69 SMA 186.23 ECC .20775 INC 1.6181 V1 30.058
RP 221.32 LAP -.90 LOP 258.31 VP 22.061 GAP -5.11 AZP 91.35 TAL 346.60 TAP 200.29 RCA 147.54 APO 224.92 V2 24.841
RC 267.114 GL 17.83 GP 2.14 ZAL 107.17 ZAP 94.94 ETS 178.78 ZAE 129.17 ETE 176.04 ZAC 88.36 ETC 256.86 CLP 94.95
PLANETOCENTRIC CONIC
C3 9.154 VHL 3.026 DLA 27.04 RAL 161.75 RAD 6567.3 VEL 11.426 PTH 1.98 VHP 2.783 DPA 6.03 RAP 175.33 ECC 1.1507

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 16 35	3123.41	-27.01	105.32	19.33	81.15	15 8 38	2523.4	-27.96	96.79
90.00	11 47 40	3609.92	-17.79	137.83	16.55	67.60	12 47 50	3009.9	-20.67	130.35
100.00	16 12 39	2749.20	-29.47	78.13	19.68	84.76	16 58 29	2149.2	-29.89	69.35
100.00	12 34 17	3459.35	-15.52	125.72	15.49	64.13	13 31 56	2859.4	-18.88	118.53
110.00	18 16 20	2362.20	-34.14	48.91	19.84	91.78	18 55 42	1762.2	-33.52	39.73
110.00	12 47 6	3419.12	-11.44	120.34	13.15	57.57	13 44 5	2819.1	-15.64	113.75

DIFFERENTIAL CORRECTIONS
TDE .3318 TRA .3906 TC3-4.5077 BAU .5612
RDE .1579 RRA -.0411 RC3 .8442 FAU .62063
FDE 1.0187 FRA10.3464 FC-58.6949 BSP 9712
BDE .3675 BRA .3927 BC3 4.5860 FSP 12580

MID-COURSE EXECUTION ACCURACY
SGT 2919.7 SGR 598.3 SG3 3613.5
RRT -.7317 RRF -.7789 RTF .9529
SGB 2980.4 R23 .0999 R13 -.9552
SG1 2952.9 SG2 403.2 THA 171.31

ORBIT DETERMINATION ACCURACY
ST 680.9 SR 300.5 SS 1672.8
CRT .8801 CRS -.1853 CST -.6213
LSA 1732.8 MSA 590.5 SSA 29.3
EL1 732.3 EL2 132.6 ALF 21.98

LAUNCH DATE NOV 7 1964 FLIGHT TIME 310.00 ARRIVAL DATE SEP 13 1965

HELIOCENTRIC CONIC DISTANCE 698.954 EARTH TO MARS
RL 148.24 LAL -.00 LOL 44.62 VL 32.831 GAL -2.32 AZL 88.37 HCA 214.80 SMA 186.20 ECC .20771 INC 1.6273 V1 30.058
RP 220.94 LAP -.93 LOP 259.42 VP 22.105 GAP -5.33 AZP 91.34 TAL 346.44 TAP 201.24 RCA 147.52 APO 224.88 V2 24.883
RC 268.570 GL 17.91 GP 2.09 ZAL 107.44 ZAP 92.92 ETS 178.88 ZAE 126.92 ETE 176.30 ZAC 88.11 ETC 256.94 CLP 92.92
PLANETOCENTRIC CONIC
C3 9.176 VHL 3.029 DLA 27.01 RAL 162.08 RAD 6567.3 VEL 11.427 PTH 1.98 VHP 2.782 DPA 6.36 RAP 174.46 ECC 1.1510

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 18 56	3120.34	-27.04	105.11	19.69	81.26	15 10 56	2520.3	-27.97	96.56
90.00	11 47 54	3613.92	-17.68	138.08	16.87	67.52	12 48 8	3013.9	-20.58	130.60
100.00	16 14 39	2747.32	-29.48	78.00	20.03	84.83	17 0 26	2147.3	-29.89	69.21
100.00	12 34 52	3462.17	-15.44	125.89	15.82	64.08	13 32 35	2862.2	-18.80	118.71
110.00	18 18 2	2361.22	-34.14	48.84	20.19	91.83	18 57 23	1761.2	-33.51	39.65
110.00	12 47 58	3421.04	-11.37	120.44	13.48	57.54	13 44 59	2821.0	-15.57	113.86

DIFFERENTIAL CORRECTIONS
TDE .3405 TRA .4872 TC3-5.0074 BAU .6229
RDE .1636 RRA -.0382 RC3 .8422 FAU .62255
FDE .9402 FRA10.3873 FC-58.7332 BSP 10981
BDE .3778 BRA .4887 BC3 5.0777 FSP 12504

MID-COURSE EXECUTION ACCURACY
SGT 3269.3 SGR 602.2 SG3 3620.2
RRT -.7277 RRF -.7686 RTF .9629
SGB 3324.3 R23 .0828 R13 -.9645
SG1 3299.0 SG2 409.3 THA 172.25

ORBIT DETERMINATION ACCURACY
ST 720.7 SR 310.7 SS 1666.5
CRT .8500 CRS -.1732 CST -.6595
LSA 1741.9 MSA 598.3 SSA 29.5
EL1 769.7 EL2 153.3 ALF 20.99

LAUNCH DATE NOV 7 1964 FLIGHT TIME 312.00 ARRIVAL DATE SEP 15 1965

HELIOCENTRIC CONIC DISTANCE 703.006 EARTH TO MARS
RL 148.24 LAL -.00 LOL 44.62 VL 32.829 GAL -2.35 AZL 88.36 HCA 215.92 SMA 186.17 ECC .20769 INC 1.6360 V1 30.058
RP 220.56 LAP -.96 LOP 260.53 VP 22.149 GAP -5.55 AZP 91.33 TAL 346.27 TAP 202.19 RCA 147.51 APO 224.84 V2 24.924
RC 270.009 GL 17.98 GP 2.03 ZAL 107.74 ZAP 90.90 ETS 178.98 ZAE 124.67 ETE 176.55 ZAC 87.87 ETC 257.03 CLP 90.90
PLANETOCENTRIC CONIC
C3 9.203 VHL 3.034 DLA 26.95 RAL 162.42 RAD 6567.3 VEL 11.428 PTH 1.98 VHP 2.785 DPA 6.68 RAP 173.61 ECC 1.1515

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 21 55	3115.59	-27.09	104.77	20.08	81.42	15 13 50	2515.6	-28.00	96.22
90.00	11 47 41	3619.79	-17.53	138.44	17.20	67.40	12 48 1	3019.8	-20.44	130.98
100.00	16 17 5	2744.32	-29.50	77.77	20.41	84.95	17 2 49	2144.3	-29.89	68.99
100.00	12 35 12	3466.30	-15.32	126.13	16.16	64.01	13 32 58	2866.3	-18.69	118.96
110.00	18 20 3	2359.56	-34.14	48.71	20.56	91.91	18 59 22	1759.6	-33.50	39.52
110.00	12 48 44	3423.82	-11.27	120.59	13.83	57.51	13 45 47	2823.8	-15.48	114.01

DIFFERENTIAL CORRECTIONS
TDE .3479 TRA .5861 TC3-5.5091 BAU .6856
RDE .1691 RRA -.0354 RC3 .8381 FAU .62182
FDE .8735 FRA10.4355 FC-58.4950 BSP 12258
BDE .3868 BRA .5872 BC3 5.5725 FSP 12444

MID-COURSE EXECUTION ACCURACY
SGT 3625.8 SGR 605.1 SG3 3615.6
RRT -.7215 RRF -.7574 RTF .9700
SGB 3675.9 R23 .0696 R13 -.9710
SG1 3652.3 SG2 416.0 THA 173.04

ORBIT DETERMINATION ACCURACY
ST 761.9 SR 320.5 SS 1664.5
CRT .8186 CRS -.1629 CST -.6947
LSA 1757.4 MSA 603.7 SSA 29.7
EL1 808.2 EL2 173.6 ALF 19.96

LAUNCH DATE NOV 7 1964 FLIGHT TIME 314.00 ARRIVAL DATE SEP 17 1965

HELIOCENTRIC CONIC DISTANCE 707.065 EARTH TO MARS
RL 148.24 LAL -.00 LOL 44.62 VL 32.828 GAL -2.38 AZL 88.36 HCA 217.03 SMA 186.15 ECC .20771 INC 1.6443 V1 30.058
RP 220.18 LAP -.99 LOP 261.64 VP 22.194 GAP -5.76 AZP 91.31 TAL 346.09 TAP 203.12 RCA 147.49 APO 224.82 V2 24.965
RC 271.430 GL 18.04 GP 1.98 ZAL 108.06 ZAP 88.90 ETS 179.08 ZAE 122.44 ETE 176.78 ZAC 87.64 ETC 257.12 CLP 88.90
PLANETOCENTRIC CONIC
C3 9.234 VHL 3.039 DLA 26.88 RAL 162.79 RAD 6567.3 VEL 11.429 PTH 1.98 VHP 2.791 DPA 6.99 RAP 172.78 ECC 1.1520

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 25 28	3109.30	-27.15	104.32	20.50	81.64	15 17 17	2509.3	-28.03	95.76
90.00	11 47 4	3627.38	-17.33	138.91	17.55	67.25	12 47 31	3027.4	-20.26	131.47
100.00	16 19 57	2740.24	-29.53	77.47	20.81	85.11	17 5 37	2140.2	-29.89	68.69
100.00	12 35 16	3471.67	-15.16	126.45	16.52	63.92	13 33 8	2871.7	-18.54	119.29
110.00	18 22 21	2357.25	-34.13	48.53	20.95	92.01	19 1 38	1757.2	-33.48	39.35
110.00	12 49 21	3427.43	-11.14	120.79	14.20	57.47	13 46 29	2827.4	-15.35	114.22

DIFFERENTIAL CORRECTIONS
TDE .3540 TRA .6876 TC3-6.0057 BAU .7485
RDE .1746 RRA -.0327 RC3 .8326 FAU .61925
FDE .8126 FRA10.4758 FC-58.0588 BSP 13545
BDE .3947 BRA .6883 BC3 6.0632 FSP 12373

MID-COURSE EXECUTION ACCURACY
SGT 3985.0 SGR 607.6 SG3 3601.7
RRT -.7136 RRF -.7454 RTF .9752
SGB 4031.0 R23 .0595 R13 -.9759
SG1 4008.8 SG2 423.2 THA 173.72

ORBIT DETERMINATION ACCURACY
ST 804.8 SR 330.1 SS 1663.7
CRT .7866 CRS -.1539 CST -.7267
LSA 1776.2 MSA 607.5 SSA 29.8
EL1 848.1 EL2 193.4 ALF 18.91

LAUNCH DATE NOV 7 1964 FLIGHT TIME 316.00 ARRIVAL DATE SEP 19 1965

HELIOCENTRIC CONIC DISTANCE 711.132 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.827 GAL -2.41 AZL 88.35 HCA 218.15 SMA 186.14 ECC .20776 INC 1.6523 V1 30.058
RP 219.81 LAP -1.02 LOP 262.76 VP 22.239 GAP -5.96 AZP 91.30 TAL 345.89 TAP 204.04 RCA 147.47 APO 224.81 V2 25.006
RC 272.833 GL 18.10 GP 1.92 ZAL 108.41 ZAP 86.91 ETS 179.17 ZAE 120.22 ETE 176.99 ZAC 87.41 ETC 257.21 CLP 86.91

PLANETOCENTRIC CONIC

C3 9.269 VHL 3.045 DLA 26.78 RAL 163.18 RAD 6567.3 VEL 11.431 PTH 1.98 VHP 2.800 DPA 7.30 RAP 171.96 ECC 1.1525

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 29 33	3101.61	-27.23	103.77	20.94	81.91	15 21 14	2501.6	-28.07	95.20
90.00	11 46 5	3636.55	-17.09	139.48	17.90	67.07	12 46 42	3036.5	-20.05	132.05
100.00	16 23 13	2735.17	-29.55	77.10	21.23	85.30	17 8 48	2135.2	-29.89	68.31
100.00	12 35 6	3478.23	-14.96	126.84	16.89	63.81	13 33 4	2878.2	-18.36	119.69
110.00	18 24 56	2354.31	-34.12	48.30	21.35	92.15	19 4 10	1754.3	-33.45	39.12
110.00	12 49 52	3431.85	-10.98	121.03	14.59	57.42	13 47 4	2831.8	-15.19	114.47

DIFFERENTIAL CORRECTIONS
TDE .3589 TRA .7915 TC3-6.4969 BAU .8116
RDE .1801 RRA -.0299 RC3 .8261 FAU .61507
FDE .7418 FRA10.5017 FC-57.4477 BSP 14832
BDE .4016 BRA .7920 BC3 6.5492 FSP 12277

MID-COURSE EXECUTION ACCURACY
SGT 4346.3 SGR 609.8 SG3 3578.7
RRT -.7041 RRF -.7332 RTF .9791
SGB 4388.8 R23 .0520 R13 -.9797
SG1 4367.6 SG2 430.9 THA 174.30

ORBIT DETERMINATION ACCURACY
ST 849.1 SR 339.8 SS 1661.5
CRT .7545 CRS -.1421 CST -.7532
LSA 1794.9 MSA 611.8 SSA 30.0
EL1 889.4 EL2 212.9 ALF 17.86

LAUNCH DATE NOV 7 1964 FLIGHT TIME 318.00 ARRIVAL DATE SEP 21 1965

HELIOCENTRIC CONIC DISTANCE 715.207 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.826 GAL -2.45 AZL 88.34 HCA 219.28 SMA 186.13 ECC .20785 INC 1.6597 V1 30.058
RP 219.44 LAP -1.05 LOP 263.89 VP 22.284 GAP -6.17 AZP 91.29 TAL 345.68 TAP 204.96 RCA 147.44 APO 224.81 V2 25.047
RC 274.220 GL 18.14 GP 1.87 ZAL 108.78 ZAP 84.95 ETS 179.25 ZAE 118.01 ETE 177.19 ZAC 87.18 ETC 257.30 CLP 84.95

PLANETOCENTRIC CONIC

C3 9.309 VHL 3.051 DLA 26.67 RAL 163.59 RAD 6567.3 VEL 11.432 PTH 1.98 VHP 2.813 DPA 7.60 RAP 171.16 ECC 1.1532

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 34 6	3092.69	-27.31	103.13	21.40	82.22	15 25 39	2492.7	-28.11	94.55
90.00	11 44 48	3647.14	-16.81	140.13	18.27	66.87	12 45 35	3047.1	-19.80	132.73
100.00	16 26 53	2729.15	-29.59	76.65	21.68	85.53	17 12 22	2129.2	-29.89	67.86
100.00	12 34 43	3485.92	-14.73	127.29	17.28	63.69	13 32 49	2885.9	-18.14	120.17
110.00	18 27 48	2350.78	-34.11	48.02	21.78	92.31	19 6 59	1750.8	-33.42	38.85
110.00	12 50 17	3437.05	-10.78	121.31	15.00	57.36	13 47 34	2837.1	-15.01	114.76

DIFFERENTIAL CORRECTIONS
TDE .3617 TRA .8970 TC3-6.9820 BAU .8749
RDE .1857 RRA -.0270 RC3 .8188 FAU .60971
FDE .6612 FRA10.5062 FC-56.7026 BSP 16097
BDE .4065 BRA .8974 BC3 7.0299 FSP 12148

MID-COURSE EXECUTION ACCURACY
SGT 4708.1 SGR 611.9 SG3 3547.9
RRT -.6938 RRF -.7206 RTF .9821
SGB 4747.7 R23 .0462 R13 -.9826
SG1 4727.4 SG2 438.9 THA 174.80

ORBIT DETERMINATION ACCURACY
ST 893.0 SR 349.4 SS 1657.1
CRT .7220 CRS -.1279 CST -.7755
LSA 1812.5 MSA 615.8 SSA 30.1
EL1 930.4 EL2 232.0 ALF 16.85

LAUNCH DATE NOV 7 1964 FLIGHT TIME 320.00 ARRIVAL DATE SEP 23 1965

HELIOCENTRIC CONIC DISTANCE 719.289 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.826 GAL -2.49 AZL 88.33 HCA 220.40 SMA 186.12 ECC .20796 INC 1.6669 V1 30.058
RP 219.07 LAP -1.08 LOP 265.02 VP 22.329 GAP -6.37 AZP 91.27 TAL 345.45 TAP 205.86 RCA 147.42 APO 224.83 V2 25.088
RC 275.589 GL 18.18 GP 1.82 ZAL 109.18 ZAP 83.01 ETS 179.33 ZAE 115.83 ETE 177.37 ZAC 86.97 ETC 257.39 CLP 83.01

PLANETOCENTRIC CONIC

C3 9.354 VHL 3.058 DLA 26.54 RAL 164.02 RAD 6567.3 VEL 11.434 PTH 1.98 VHP 2.829 DPA 7.88 RAP 170.39 ECC 1.1539

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 39 6	3082.69	-27.40	102.41	21.89	82.56	15 30 29	2482.7	-28.15	93.82
90.00	11 43 15	3659.01	-16.49	140.85	18.66	66.65	12 44 14	3059.0	-19.51	133.48
100.00	16 30 54	2722.26	-29.62	76.15	22.15	85.80	17 16 16	2122.3	-29.89	67.35
100.00	12 34 8	3494.67	-14.46	127.81	17.68	63.55	13 32 22	2894.7	-17.90	120.70
110.00	18 30 56	2346.67	-34.10	47.70	22.23	92.50	19 10 3	1746.7	-33.38	38.53
110.00	12 50 35	3443.03	-10.56	121.63	15.42	57.30	13 47 58	2843.0	-14.80	115.09

DIFFERENTIAL CORRECTIONS
TDE .3630 TRA 1.0052 TC3-7.4551 BAU .9378
RDE .1913 RRA -.0241 RC3 .8104 FAU .60280
FDE .5756 FRA10.4965 FC-55.7926 BSP 17368
BDE .4103 BRA 1.0055 BC3 7.4991 FSP 11996

MID-COURSE EXECUTION ACCURACY
SGT 5068.3 SGR 613.7 SG3 3508.5
RRT -.6824 RRF -.7077 RTF .9845
SGB 5105.3 R23 .0418 R13 -.9848
SG1 5085.7 SG2 447.1 THA 175.24

ORBIT DETERMINATION ACCURACY
ST 938.1 SR 359.0 SS 1652.0
CRT .6893 CRS -.1119 CST -.7944
LSA 1830.9 MSA 620.2 SSA 30.1
EL1 972.6 EL2 250.8 ALF 15.86

LAUNCH DATE NOV 7 1964 FLIGHT TIME 322.00 ARRIVAL DATE SEP 25 1965

HELIOCENTRIC CONIC DISTANCE 723.379 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.826 GAL -2.53 AZL 88.33 HCA 221.54 SMA 186.12 ECC .20810 INC 1.6738 V1 30.058
RP 218.70 LAP -1.11 LOP 266.15 VP 22.374 GAP -6.56 AZP 91.25 TAL 345.21 TAP 206.75 RCA 147.39 APO 224.85 V2 25.128
RC 276.940 GL 18.20 GP 1.77 ZAL 109.60 ZAP 81.10 ETS 179.41 ZAE 113.67 ETE 177.55 ZAC 86.76 ETC 257.48 CLP 81.09

PLANETOCENTRIC CONIC

C3 9.403 VHL 3.066 DLA 26.39 RAL 164.47 RAD 6567.3 VEL 11.436 PTH 1.98 VHP 2.847 DPA 8.16 RAP 169.65 ECC 1.1548

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 44 29	3071.72	-27.50	101.62	22.41	82.95	15 35 41	2471.7	-28.19	93.02
90.00	11 41 28	3672.04	-16.13	141.64	19.06	66.41	12 42 40	3072.0	-19.19	134.30
100.00	16 35 16	2714.56	-29.66	75.58	22.65	86.10	17 20 31	2114.6	-29.89	66.78
100.00	12 33 22	3504.44	-14.17	128.38	18.11	63.40	13 31 46	2904.4	-17.62	121.30
110.00	18 34 20	2342.01	-34.09	47.34	22.70	92.71	19 13 22	1742.0	-33.34	38.18
110.00	12 50 47	3449.76	-10.32	122.00	15.86	57.23	13 48 17	2849.8	-14.56	115.47

DIFFERENTIAL CORRECTIONS
TDE .3619 TRA 1.1154 TC3-7.9170 BAU 1.0004
RDE .1970 RRA -.0210 RC3 .8013 FAU .59473
FDE .4818 FRA10.4685 FC-54.7549 BSP 18615
BDE .4120 BRA 1.1156 BC3 7.9574 FSP 11819

MID-COURSE EXECUTION ACCURACY
SGT 5426.4 SGR 615.5 SG3 3461.7
RRT -.6705 RRF -.6946 RTF .9864
SGB 5461.1 R23 .0385 R13 -.9867
SG1 5442.1 SG2 455.4 THA 175.62

ORBIT DETERMINATION ACCURACY
ST 982.6 SR 368.6 SS 1645.4
CRT .6558 CRS -.0934 CST -.8106
LSA 1848.8 MSA 624.3 SSA 30.1
EL1 1014.2 EL2 269.6 ALF 14.90

LAUNCH DATE NOV 7 1964 FLIGHT TIME 324.00 ARRIVAL DATE SEP 27 1965

HELIOCENTRIC CONIC DISTANCE 727.476 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.826 GAL -2.58 AZL 88.32 HCA 222.67 SMA 186.12 ECC .20827 INC 1.6805 V1 30.058
RP 218.34 LAP -1.14 LOP 267.28 VP 22.420 GAP -6.75 AZP 91.24 TAL 344.96 TAP 207.63 RCA 147.36 APO 224.89 V2 25.168
RC 278.273 GL 18.22 GP 1.72 ZAL 110.05 ZAP 79.21 ETS 179.48 ZAE 111.54 ETE 177.71 ZAC 86.56 ETC 257.57 CLP 79.21

PLANETOCENTRIC CONIC

C3 9.458 VHL 3.075 DLA 26.23 RAL 164.94 RAD 6567.3 VEL 11.439 PTH 1.98 VHP 2.869 DPA 8.41 RAP 168.94 ECC 1.1557

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 50 13	3059.94	-27.59	100.77	22.95	83.36	15 41 12	2459.9	-28.22	92.16
90.00	11 39 30	3686.10	-15.75	142.50	19.48	66.16	12 40 57	3086.1	-18.84	135.18
100.00	16 39 58	2706.31	-29.70	74.95	23.16	86.42	17 25 4	2106.1	-29.88	66.15
100.00	12 32 26	3515.16	-13.84	129.01	18.55	63.24	13 31 1	2915.2	-17.32	121.95
110.00	18 37 59	2336.82	-34.07	46.93	23.19	92.95	19 16 56	1736.8	-33.29	37.78
110.00	12 50 54	3457.22	-10.04	122.40	16.33	57.15	13 48 31	2857.2	-14.30	115.89

DIFFERENTIAL CORRECTIONS
TDE .3593 TRA 1.2282 TC3-8.3622 BAU 1.0621
RDE .2026 RRA -.0180 RC3 .7912 FAU .58529
FDE .3879 FRA10.4344 FC-53.5736 BSP 19865
BDE .4125 BRA 1.2284 BC3 8.3995 FSP 11631

MID-COURSE EXECUTION ACCURACY
SGT 5780.1 SGR 617.0 SG3 3408.1
RRT -.6577 RRF -.6810 RTF .9879
SGB 5812.9 R23 .0358 R13 -.9881
SG1 5794.4 SG2 463.6 THA 175.96

ORBIT DETERMINATION ACCURACY
ST 1028.3 SR 377.9 SS 1639.8
CRT .6222 CRS -.0741 CST -.8248
LSA 1869.0 MSA 628.5 SSA 30.0
EL1 1057.1 EL2 287.8 ALF 13.94

LAUNCH DATE NOV 7 1964 FLIGHT TIME 326.00 ARRIVAL DATE SEP 29 1965

HELIOCENTRIC CONIC DISTANCE 731.580 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.827 GAL -2.62 AZL 88.31 HCA 223.81 SMA 186.13 ECC .20848 INC 1.6869 V1 30.058
RP 217.98 LAP -1.17 LOP 268.42 VP 22.465 GAP -6.94 AZP 91.22 TAL 344.69 TAP 208.50 RCA 147.33 APO 224.94 V2 25.208
RC 279.589 GL 18.23 GP 1.68 ZAL 110.53 ZAP 77.36 ETS 179.55 ZAE 109.44 ETE 177.86 ZAC 86.37 ETC 257.65 CLP 77.36

PLANETOCENTRIC CONIC

C3 9.518 VHL 3.085 DLA 26.04 RAL 165.44 RAD 6567.3 VEL 11.441 PTH 1.98 VHP 2.893 DPA 8.66 RAP 168.26 ECC 1.1566

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 56 15	3047.43	-27.69	99.87	23.51	83.81	15 47 2	2447.4	-28.26	91.25
90.00	11 37 24	3701.09	-15.33	143.40	19.92	65.90	12 39 5	3101.1	-18.46	136.12
100.00	16 44 57	2696.98	-29.73	74.27	23.70	86.78	17 29 54	2097.0	-29.86	65.47
100.00	12 31 22	3526.78	-13.48	129.68	19.01	63.07	13 30 9	2926.8	-16.99	122.65
110.00	18 41 53	2331.12	-34.05	46.49	23.70	93.21	19 20 44	1731.1	-33.23	37.35
110.00	12 50 56	3465.40	-9.74	122.84	16.81	57.07	13 48 41	2865.4	-14.01	116.34

DIFFERENTIAL CORRECTIONS
TDE .3545 TRA 1.3432 TC3-8.7929 BAU 1.1233
RDE .2083 RRA -.0150 RC3 .7805 FAU .57478
FDE .2900 FRA10.3836 FC-52.2798 BSP 21096
BDE .4112 BRA 1.3433 BC3 8.8275 FSP 11418

MID-COURSE EXECUTION ACCURACY
SGT 6130.1 SGR 618.5 SG3 3348.0
RRT -.6446 RRF -.6672 RTF .9891
SGB 6161.2 R23 .0337 R13 -.9893
SG1 6143.2 SG2 471.9 THA 176.26

ORBIT DETERMINATION ACCURACY
ST 1074.1 SR 387.3 SS 1633.3
CRT .5881 CRS -.0532 CST -.8372
LSA 1889.5 MSA 632.7 SSA 30.0
EL1 1100.1 EL2 305.8 ALF 12.99

LAUNCH DATE NOV 7 1964 FLIGHT TIME 328.00 ARRIVAL DATE OCT 1 1965

HELIOCENTRIC CONIC DISTANCE 735.692 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.827 GAL -2.67 AZL 88.31 HCA 224.95 SMA 186.14 ECC .20871 INC 1.6930 V1 30.058
RP 217.62 LAP -1.20 LOP 269.56 VP 22.511 GAP -7.13 AZP 91.20 TAL 344.41 TAP 209.36 RCA 147.29 APO 224.99 V2 25.248
RC 280.887 GL 18.24 GP 1.63 ZAL 111.02 ZAP 75.55 ETS 179.61 ZAE 107.37 ETE 178.00 ZAC 86.19 ETC 257.73 CLP 75.54

PLANETOCENTRIC CONIC

C3 9.584 VHL 3.096 DLA 25.84 RAL 165.95 RAD 6567.3 VEL 11.444 PTH 1.99 VHP 2.921 DPA 8.89 RAP 167.62 ECC 1.1577

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 2 34	3034.32	-27.78	98.92	24.09	84.27	15 53 8	2434.3	-28.28	90.29
90.00	11 35 9	3716.90	-14.89	144.35	20.38	65.64	12 37 6	3116.9	-18.06	137.11
100.00	16 50 14	2687.22	-29.77	73.55	24.26	87.16	17 35 1	2087.2	-29.85	64.75
100.00	12 30 11	3539.24	-13.09	130.41	19.48	62.89	13 29 10	2939.2	-16.63	123.40
110.00	18 46 1	2324.95	-34.03	46.01	24.23	93.50	19 24 46	1725.0	-33.17	36.88
110.00	12 50 53	3474.27	-9.41	123.32	17.31	56.99	13 48 47	2874.3	-13.69	116.84

DIFFERENTIAL CORRECTIONS
TDE .3464 TRA 1.4600 TC3-9.2074 BAU 1.1838
RDE .2141 RRA -.0118 RC3 .7694 FAU .56361
FDE .1823 FRA10.3167 FC-50.9113 BSP 22287
BDE .4073 BRA 1.4601 BC3 9.2394 FSP 11185

MID-COURSE EXECUTION ACCURACY
SGT 6474.9 SGR 620.1 SG3 3283.0
RRT -.6313 RRF -.6535 RTF .9902
SGB 6504.6 R23 .0322 R13 -.9903
SG1 6486.8 SG2 480.1 THA 176.52

ORBIT DETERMINATION ACCURACY
ST 1118.8 SR 396.6 SS 1626.0
CRT .5523 CRS -.0289 CST -.8477
LSA 1909.5 MSA 637.1 SSA 29.8
EL1 1141.9 EL2 323.9 ALF 12.06

LAUNCH DATE NOV 7 1964 FLIGHT TIME 330.00 ARRIVAL DATE OCT 3 1965

HELIOCENTRIC CONIC DISTANCE 739.810 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.828 GAL -2.73 AZL 88.30 HCA 226.10 SMA 186.16 ECC .20897 INC 1.6989 V1 30.058
RP 217.27 LAP -1.22 LOP 270.71 VP 22.556 GAP -7.31 AZP 91.18 TAL 344.11 TAP 210.21 RCA 147.26 APO 225.06 V2 25.287
RC 282.167 GL 18.23 GP 1.58 ZAL 111.54 ZAP 73.77 ETS 179.67 ZAE 105.34 ETE 178.13 ZAC 86.02 ETC 257.81 CLP 73.76

PLANETOCENTRIC CONIC

C3 9.656 VHL 3.107 DLA 25.62 RAL 166.48 RAD 6567.3 VEL 11.447 PTH 1.99 VHP 2.951 DPA 9.10 RAP 167.01 ECC 1.1589

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 9 8	3020.69	-27.87	97.93	24.69	84.76	15 59 28	2420.7	-28.30	89.29
90.00	11 32 49	3733.46	-14.43	145.34	20.85	65.37	12 35 3	3133.5	-17.63	138.13
100.00	16 55 46	2676.90	-29.80	72.79	24.83	87.56	17 40 23	2076.9	-29.82	63.98
100.00	12 28 52	3552.49	-12.68	131.18	19.98	62.70	13 28 5	2952.5	-16.24	124.19
110.00	18 50 22	2318.33	-34.00	45.50	24.78	93.80	19 29 0	1718.3	-33.10	36.37
110.00	12 50 45	3483.82	-9.06	123.83	17.83	56.90	13 48 49	2883.8	-13.35	117.37

DIFFERENTIAL CORRECTIONS
TDE .3357 TRA 1.5791 TC3-9.6032 BAU 1.2435
RDE .2199 RRA -.0086 RC3 .7579 FAU .55154
FDE .0743 FRA10.2385 FC-49.4521 BSP 23458
BDE .4013 BRA 1.5791 BC3 9.6331 FSP 10935

MID-COURSE EXECUTION ACCURACY
SGT 6813.9 SGR 621.7 SG3 3213.0
RRT -.6177 RRF -.6397 RTF .9910
SGB 6842.2 R23 .0309 R13 -.9911
SG1 6824.8 SG2 488.1 THA 176.76

ORBIT DETERMINATION ACCURACY
ST 1163.5 SR 405.7 SS 1619.0
CRT .5154 CRS -.0036 CST -.8574
LSA 1930.8 MSA 640.9 SSA 29.7
EL1 1183.9 EL2 341.7 ALF 11.13

LAUNCH DATE NOV 7 1964 FLIGHT TIME 332.00 ARRIVAL DATE OCT 5 1965

HELIOCENTRIC CONIC DISTANCE 743.935 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.829 GAL -2.78 AZL 88.30 HCA 227.25 SMA 186.18 ECC .20927 INC 1.7047 V1 30.058
RP 216.91 LAP -1.25 LOP 271.86 VP 22.601 GAP -7.49 AZP 91.16 TAL 343.80 TAP 211.05 RCA 147.22 APO 225.14 V2 25.327
RC 283.431 GL 18.22 GP 1.54 ZAL 112.09 ZAP 72.02 ETS 179.73 ZAE 103.34 ETE 178.25 ZAC 85.86 ETC 257.88 CLP 72.02

PLANETOCENTRIC CONIC

C3 9.733 VHL 3.120 DLA 25.39 RAL 167.03 RAD 6567.4 VEL 11.451 PTH 1.99 VHP 2.984 DPA 9.30 RAP 166.45 ECC 1.1602

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 15 55	3006.61	-27.95	96.91	25.31	85.27	16 6 1	2406.6	-28.31	88.26
90.00	11 30 25	3750.71	-13.93	146.37	21.35	65.10	12 32 56	3150.7	-17.18	139.20
100.00	17 1 32	2666.06	-29.83	71.98	25.43	87.98	17 45 58	2066.1	-29.79	63.18
100.00	12 27 28	3566.49	-12.24	131.99	20.49	62.52	13 26 55	2966.5	-15.83	125.03
110.00	18 54 56	2311.28	-33.96	44.95	25.34	94.12	19 33 27	1711.3	-33.02	35.84
110.00	12 50 34	3494.04	-8.68	124.38	18.37	56.81	13 48 48	2894.0	-12.99	117.93

DIFFERENTIAL CORRECTIONS
TDE .3231 TRA 1.7011 TC3-9.9775 BAU 1.3020
RDE .2257 RRA -.0055 RC3 .7457 FAU .53853
FDE -.0303 FRA10.1516 FC-47.8992 BSP 24620
BDE .3941 BRA 1.7011 BC310.0053 FSP 10677

MID-COURSE EXECUTION ACCURACY
SGT 7146.2 SGR 623.2 SG3 3138.0
RRT -.6038 RRF -.6256 RTF .9917
SGB 7173.4 R23 .0299 R13 -.9918
SG1 7156.2 SG2 496.1 THA 176.97

ORBIT DETERMINATION ACCURACY
ST 1209.6 SR 414.7 SS 1612.7
CRT .4782 CRS .0217 CST -.8665
LSA 1954.5 MSA 644.3 SSA 29.5
EL1 1227.3 EL2 359.0 ALF 10.19

LAUNCH DATE NOV 7 1964 FLIGHT TIME 334.00 ARRIVAL DATE OCT 7 1965

HELIOCENTRIC CONIC DISTANCE 748.063 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.831 GAL -2.84 AZL 88.29 HCA 228.40 SMA 186.20 ECC .20959 INC 1.7101 V1 30.058
RP 216.57 LAP -1.28 LOP 273.02 VP 22.647 GAP -7.67 AZP 91.14 TAL 343.47 TAP 211.87 RCA 147.17 APO 225.22 V2 25.365
RC 284.679 GL 18.20 GP 1.50 ZAL 112.66 ZAP 70.32 ETS 179.78 ZAE 101.38 ETE 178.36 ZAC 85.71 ETC 257.95 CLP 70.32

PLANETOCENTRIC CONIC

C3 9.818 VHL 3.133 DLA 25.14 RAL 167.59 RAD 6567.4 VEL 11.455 PTH 1.99 VHP 3.019 DPA 9.47 RAP 165.92 ECC 1.1616

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 22 55	2992.10	-28.03	95.86	25.95	85.79	16 12 47	2392.1	-28.32	87.20
90.00	11 27 57	3768.63	-13.42	147.43	21.87	64.83	12 30 45	3168.6	-16.70	140.30
100.00	17 7 34	2654.72	-29.85	71.14	26.05	88.42	17 51 49	2054.7	-29.75	62.34
100.00	12 25 59	3581.24	-11.78	132.83	21.03	62.33	13 25 40	2981.2	-15.39	125.91
110.00	18 59 44	2303.80	-33.93	44.37	25.93	94.47	19 38 8	1703.8	-32.94	35.27
110.00	12 50 18	3504.93	-8.27	124.96	18.93	56.71	13 48 43	2904.9	-12.59	118.53

DIFFERENTIAL CORRECTIONS
TDE .3190 TRA 1.8383 TC-10.2875 BAU 1.3537
RDE .2307 RRA -.0031 RC3 .7298 FAU .52091
FDE -.0522 FRA10.1392 FC-45.9343 BSP 26044
BDE .3937 BRA 1.8383 BC310.3134 FSP 10588

MID-COURSE EXECUTION ACCURACY
SGT 7462.5 SGR 622.3 SG3 3052.3
RRT -.5870 RRF -.6066 RTF .9922
SGB 7488.4 R23 .0266 R13 -.9922
SG1 7471.5 SG2 503.2 THA 177.18

ORBIT DETERMINATION ACCURACY
ST 1272.2 SR 422.1 SS 1618.6
CRT .4494 CRS .0243 CST -.8811
LSA 2001.5 MSA 640.1 SSA 29.6
EL1 1287.5 EL2 372.6 ALF 9.26

LAUNCH DATE NOV 7 1964 FLIGHT TIME 336.00 ARRIVAL DATE OCT 9 1965

HELIOCENTRIC CONIC DISTANCE 752.202 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.832 GAL -2.90 AZL 88.28 HCA 229.56 SMA 186.23 ECC .20995 INC 1.7155 V1 30.058
RP 216.22 LAP -1.31 LOP 274.17 VP 22.692 GAP -7.84 AZP 91.11 TAL 343.13 TAP 212.69 RCA 147.13 APO 225.32 V2 25.404
RC 285.910 GL 18.17 GP 1.45 ZAL 113.25 ZAP 68.66 ETS 179.83 ZAE 99.46 ETE 178.47 ZAC 85.57 ETC 258.02 CLP 68.65

PLANETOCENTRIC CONIC

C3 9.909 VHL 3.148 DLA 24.87 RAL 168.18 RAD 6567.4 VEL 11.459 PTH 1.99 VHP 3.057 DPA 9.64 RAP 165.44 ECC 1.1631

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 30 4	2977.37	-28.10	94.78	26.61	86.32	16 19 41	2377.4	-28.31	86.13
90.00	11 25 27	3787.03	-12.88	148.52	22.40	64.56	12 28 34	3187.0	-16.20	141.42
100.00	17 13 46	2643.05	-29.87	70.27	26.69	88.88	17 57 49	2043.0	-29.71	61.47
100.00	12 24 26	3596.58	-11.29	133.71	21.59	62.14	13 24 23	2996.6	-14.93	126.81
110.00	19 4 41	2295.99	-33.88	43.76	26.54	94.82	19 42 57	1696.0	-32.84	34.68
110.00	12 50 0	3516.40	-7.84	125.57	19.51	56.62	13 48 36	2916.4	-12.18	119.16

DIFFERENTIAL CORRECTIONS
TDE .2954 TRA 1.9592 TC-10.6370 BAU 1.4123
RDE .2370 RRA .0005 RC3 .7189 FAU .50888
FDE -.2026 FRA 9.9899 FC-44.4619 BSP 27025
BDE .3787 BRA 1.9592 BC310.6613 FSP 10226

MID-COURSE EXECUTION ACCURACY
SGT 7783.5 SGR 625.2 SG3 2974.6
RRT -.5744 RRF -.5951 RTF .9927
SGB 7808.6 R23 .0273 R13 -.9928
SG1 7791.9 SG2 511.2 THA 177.35

ORBIT DETERMINATION ACCURACY
ST 1311.4 SR 431.5 SS 1606.5
CRT .4055 CRS .0643 CST -.8852
LSA 2016.7 MSA 647.1 SSA 29.1
EL1 1324.2 EL2 390.6 ALF 8.33

LAUNCH DATE NOV 7 1964 FLIGHT TIME 338.00 ARRIVAL DATE OCT 11 1965

HELIOCENTRIC CONIC DISTANCE 756.348 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.834 GAL -2.97 AZL 88.28 HCA 230.72 SMA 186.26 ECC .21033 INC 1.7207 V1 30.058
RP 215.88 LAP -1.33 LOP 275.33 VP 22.737 GAP -8.01 AZP 91.09 TAL 342.77 TAP 213.50 RCA 147.08 APO 225.43 V2 25.442
RC 287.127 GL 18.13 GP 1.41 ZAL 113.86 ZAP 67.04 ETS 179.87 ZAE 97.58 ETE 178.57 ZAC 85.44 ETC 258.08 CLP 67.03

PLANETOCENTRIC CONIC

C3 10.007 VHL 3.163 DLA 24.58 RAL 168.78 RAD 6567.4 VEL 11.463 PTH 1.99 VHP 3.098 DPA 9.78 RAP 164.99 ECC 1.1647

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 37 23	2962.35	-28.16	93.69	27.28	86.87	16 26 45	2362.4	-28.29	85.03
90.00	11 22 55	3805.96	-12.33	149.63	22.96	64.30	12 26 21	3206.0	-15.68	142.57
100.00	17 20 9	2630.99	-29.89	69.38	27.35	89.35	18 4 0	2031.0	-29.66	60.58
100.00	12 22 50	3612.55	-10.78	134.62	22.16	61.95	13 23 2	3012.6	-14.45	127.76
110.00	19 9 50	2287.83	-33.83	43.13	27.16	95.19	19 47 58	1687.8	-32.75	34.06
110.00	12 49 38	3528.48	-7.39	126.21	20.12	56.53	13 48 26	2928.5	-11.74	119.82

DIFFERENTIAL CORRECTIONS
TDE .2700 TRA 2.0844 TC-10.9593 BAU 1.4692
RDE .2431 RRA .0039 RC3 .7072 FAU .49574
FDE -.3355 FRA 9.8499 FC-42.8887 BSP 28010
BDE .3633 BRA 2.0844 BC310.9821 FSP 9891

MID-COURSE EXECUTION ACCURACY
SGT 8096.3 SGR 627.8 SG3 2893.5
RRT -.5617 RRF -.5830 RTF .9932
SGB 8120.6 R23 .0276 R13 -.9933
SG1 8104.0 SG2 518.9 THA 177.50

ORBIT DETERMINATION ACCURACY
ST 1354.1 SR 440.5 SS 1598.4
CRT .3611 CRS .1007 CST -.8906
LSA 2038.9 MSA 651.7 SSA 28.7
EL1 1364.3 EL2 407.7 ALF 7.36

LAUNCH DATE NOV 7 1964 FLIGHT TIME 340.00 ARRIVAL DATE OCT 13 1965

HELIOCENTRIC CONIC DISTANCE 760.498 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.836 GAL -3.04 AZL 88.27 HCA 231.89 SMA 186.29 ECC .21075 INC 1.7257 V1 30.058
RP 215.54 LAP -1.36 LOP 276.50 VP 22.782 GAP -8.18 AZP 91.07 TAL 342.40 TAP 214.29 RCA 147.03 APO 225.55 V2 25.480
RC 288.329 GL 18.09 GP 1.37 ZAL 114.50 ZAP 65.46 ETS 179.91 ZAE 95.73 ETE 178.67 ZAC 85.32 ETC 258.13 CLP 65.45

PLANETOCENTRIC CONIC

C3 10.112 VHL 3.180 DLA 24.28 RAL 169.39 RAD 6567.4 VEL 11.467 PTH 1.99 VHP 3.140 DPA 9.91 RAP 164.59 ECC 1.1664

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 44 50	2947.11	-28.21	92.58	27.97	87.43	16 33 57	2347.1	-28.27	83.91
90.00	11 20 23	3825.39	-11.75	150.77	23.54	64.05	12 24 8	3225.4	-15.15	143.74
100.00	17 26 43	2618.61	-29.89	68.45	28.02	89.84	18 10 22	2018.6	-29.59	59.66
100.00	12 21 10	3629.12	-10.25	135.57	22.76	61.77	13 21 40	3029.1	-13.95	128.73
110.00	19 15 10	2279.34	-33.78	42.47	27.80	95.58	19 53 9	1679.3	-32.64	33.42
110.00	12 49 13	3541.16	-6.91	126.88	20.74	56.44	13 48 14	2941.2	-11.28	120.51

DIFFERENTIAL CORRECTIONS
TDE .2434 TRA 2.2144 TC-11.2512 BAU 1.5240
RDE .2492 RRA .0071 RC3 .6949 FAU .48172
FDE -.4565 FRA 9.7149 FC-41.2410 BSP 29016
BDE .3483 BRA 2.2144 BC311.2726 FSP 9575

MID-COURSE EXECUTION ACCURACY
SGT 8399.7 SGR 630.1 SG3 2809.5
RRT -.5487 RRF -.5706 RTF .9936
SGB 8423.3 R23 .0278 R13 -.9936
SG1 8406.8 SG2 526.3 THA 177.63

ORBIT DETERMINATION ACCURACY
ST 1400.9 SR 449.1 SS 1593.2
CRT .3171 CRS .1347 CST -.8962
LSA 2066.9 MSA 655.4 SSA 28.3
EL1 1408.9 EL2 423.5 ALF 6.38

LAUNCH DATE NOV 7 1964 FLIGHT TIME 342.00 ARRIVAL DATE OCT 15 1965

HELIOCENTRIC CONIC DISTANCE 764.655 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.838 GAL -3.11 AZL 88.27 HCA 233.06 SMA 186.33 ECC .21120 INC 1.7306 V1 30.058
RP 215.21 LAP -1.38 LOP 277.67 VP 22.827 GAP -8.35 AZP 91.04 TAL 342.02 TAP 215.08 RCA 146.97 APO 225.68 V2 25.517
RC 289.516 GL 18.04 GP 1.34 ZAL 115.15 ZAP 63.92 ETS 179.95 ZAE 93.93 ETE 178.76 ZAC 85.22 ETC 258.18 CLP 63.91

PLANETOCENTRIC CONIC

C3 10.226 VHL 3.198 DLA 23.97 RAL 170.02 RAD 6567.4 VEL 11.472 PTH 1.99 VHP 3.185 DPA 10.02 RAP 164.23 ECC 1.1683

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 52 25	2931.70	-28.25	91.45	28.69	87.99	16 41 17	2331.7	-28.23	82.79
90.00	11 17 50	3845.28	-11.15	151.93	24.14	63.80	12 21 55	3245.3	-14.59	144.93
100.00	17 33 27	2605.95	-29.89	67.51	28.71	90.33	18 16 53	2005.9	-29.52	58.73
100.00	12 19 29	3646.26	-9.70	136.54	23.38	61.59	13 20 15	3046.3	-13.42	129.73
110.00	19 20 39	2270.55	-33.72	41.79	28.47	95.98	19 58 30	1670.6	-32.53	32.76
110.00	12 48 46	3554.42	-6.41	127.58	21.38	56.35	13 48 0	2954.4	-10.79	121.23

DIFFERENTIAL CORRECTIONS
TDE .2135 TRA 2.3466 TC-11.5205 BAU 1.5777
RDE .2552 RRA .0103 RC3 .6825 FAU .46739
FDE -.5719 FRA 9.5774 FC-39.5699 BSP 29988
BDE .3328 BRA 2.3466 BC311.5407 FSP 9262

MID-COURSE EXECUTION ACCURACY
SGT 8695.1 SGR 632.5 SG3 2724.2
RRT -.5360 RRF -.5584 RTF .9939
SGB 8718.1 R23 .0279 R13 -.9939
SG1 8701.7 SG2 533.5 THA 177.76

ORBIT DETERMINATION ACCURACY
ST 1449.3 SR 457.5 SS 1589.7
CRT .2721 CRS .1682 CST -.9021
LSA 2098.4 MSA 657.9 SSA 27.9
EL1 1455.2 EL2 438.5 ALF 5.40

LAUNCH DATE NOV 7 1964 FLIGHT TIME 344.00 ARRIVAL DATE OCT 17 1965

HELIOCENTRIC CONIC DISTANCE 768.817 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.840 GAL -3.18 AZL 88.26 HCA 234.23 SMA 186.36 ECC .21169 INC 1.7353 V1 30.058
RP 214.88 LAP -1.41 LOP 278.84 VP 22.871 GAP -8.51 AZP 91.01 TAL 341.62 TAP 215.85 RCA 146.91 APO 225.82 V2 25.554
RC 290.691 GL 17.98 GP 1.30 ZAL 115.83 ZAP 62.42 ETS 179.99 ZAE 92.16 ETE 178.84 ZAC 85.12 ETC 258.22 CLP 62.42

PLANETOCENTRIC CONIC

C3 10.348 VHL 3.217 DLA 23.63 RAL 170.67 RAD 6567.4 VEL 11.478 PTH 2.00 VHP 3.233 DPA 10.12 RAP 163.91 ECC 1.1703

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 0 7	2916.14	-28.28	90.32	29.41	88.56	16 48 43	2316.1	-28.18	81.65
90.00	11 15 17	3865.59	-10.54	153.10	24.77	63.57	12 19 43	3265.6	-14.01	146.14
100.00	17 40 20	2593.04	-29.88	66.55	29.42	90.84	18 23 33	1993.0	-29.45	57.78
100.00	12 17 45	3663.93	-9.12	137.54	24.02	61.41	13 18 49	3063.9	-12.87	130.75
110.00	19 26 18	2261.49	-33.65	41.09	29.14	96.38	20 4 0	1661.5	-32.40	32.08
110.00	12 48 16	3568.24	-5.89	128.31	22.05	56.27	13 47 45	2968.2	-10.28	121.98

DIFFERENTIAL CORRECTIONS
TDE .1814 TRA 2.4825 TC-11.7619 BAU 1.6298
RDE .2613 RRA .0134 RC3 .6697 FAU .45252
FDE -.6816 FRA 9.4376 FC-37.8606 BSP 30951
BDE .3181 BRA 2.4826 BC311.7810 FSP 8958

MID-COURSE EXECUTION ACCURACY
SGT 8981.1 SGR 634.8 SG3 2636.9
RRT -.5235 RRF -.5462 RTF .9941
SGB 9003.5 R23 .0281 R13 -.9942
SG1 8987.3 SG2 540.5 THA 177.87

ORBIT DETERMINATION ACCURACY
ST 1500.8 SR 465.7 SS 1587.5
CRT .2271 CRS .2008 CST -.9078
LSA 2133.9 MSA 659.9 SSA 27.5
EL1 1504.9 EL2 452.3 ALF 4.43

LAUNCH DATE NOV 7 1964 FLIGHT TIME 346.00 ARRIVAL DATE OCT 19 1965

HELIOCENTRIC CONIC DISTANCE 772.985 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.843 GAL -3.26 AZL 88.26 HCA 235.41 SMA 186.41 ECC .21220 INC 1.7400 V1 30.058
RP 214.56 LAP -1.43 LOP 280.02 VP 22.916 GAP -8.67 AZP 90.99 TAL 341.20 TAP 216.61 RCA 146.85 APO 225.96 V2 25.590
RC 291.851 GL 17.91 GP 1.26 ZAL 116.53 ZAP 60.97 ETS 180.02 ZAE 90.44 ETE 178.92 ZAC 85.03 ETC 258.26 CLP 60.96

PLANETOCENTRIC CONIC

C3 10.478 VHL 3.237 DLA 23.28 RAL 171.33 RAD 6567.4 VEL 11.483 PTH 2.00 VHP 3.282 DPA 10.19 RAP 163.63 ECC 1.1724

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 7 55	2900.48	-28.30	89.17	30.16	89.13	16 56 16	2300.5	-28.13	80.51
90.00	11 12 45	3886.32	-9.91	154.30	25.41	63.34	12 17 31	3286.3	-13.41	147.37
100.00	17 47 20	2579.92	-29.86	65.58	30.15	91.35	18 30 20	1979.9	-29.36	56.81
100.00	12 16 1	3682.11	-8.53	138.56	24.68	61.24	13 17 23	3082.1	-12.30	131.80
110.00	19 32 6	2252.19	-33.58	40.38	29.84	96.80	20 9 38	1652.2	-32.28	31.39
110.00	12 47 45	3582.60	-5.35	129.07	22.73	56.19	13 47 28	2982.6	-9.75	122.75

DIFFERENTIAL CORRECTIONS
TDE .1469 TRA 2.6228 TC-11.9765 BAU 1.6802
RDE .2674 RRA .0164 RC3 .6570 FAU .43755
FDE -.7822 FRA 9.2989 FC-36.1516 BSP 31912
BDE .3051 BRA 2.6229 BC311.9945 FSP 8665

MID-COURSE EXECUTION ACCURACY
SGT 9259.0 SGR 637.1 SG3 2549.6
RRT -.5111 RRF -.5342 RTF .9943
SGB 9280.9 R23 .0282 R13 -.9944
SG1 9264.7 SG2 547.3 THA 177.98

ORBIT DETERMINATION ACCURACY
ST 1555.8 SR 473.6 SS 1586.7
CRT .1825 CRS .2315 CST -.9137
LSA 2173.8 MSA 660.6 SSA 27.1
EL1 1558.5 EL2 464.8 ALF 3.49

LAUNCH DATE NOV 7 1964 FLIGHT TIME 348.00 ARRIVAL DATE OCT 21 1965

HELIOCENTRIC CONIC DISTANCE 777.157 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.845 GAL -3.34 AZL 88.26 HCA 236.59 SMA 186.45 ECC .21275 INC 1.7445 V1 30.058
RP 214.24 LAP -1.46 LOP 281.20 VP 22.960 GAP -8.83 AZP 90.96 TAL 340.78 TAP 217.36 RCA 146.79 APO 226.12 V2 25.626
RC 292.998 GL 17.84 GP 1.23 ZAL 117.24 ZAP 59.55 ETS 180.04 ZAE 88.75 ETE 179.00 ZAC 84.95 ETC 258.29 CLP 59.54

PLANETOCENTRIC CONIC

C3 10.618 VHL 3.259 DLA 22.92 RAL 172.00 RAD 6567.4 VEL 11.489 PTH 2.00 VHP 3.334 DPA 10.25 RAP 163.40 ECC 1.1747

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 15 49	2884.74	-28.32	88.02	30.92	89.71	17 3 53	2284.7	-28.06	79.36
90.00	11 10 14	3907.42	-9.26	155.51	26.08	63.12	12 15 21	3307.4	-12.80	148.62
100.00	17 54 28	2566.62	-29.84	64.59	30.90	91.87	18 37 15	1966.6	-29.26	55.83
100.00	12 14 15	3700.78	-7.92	139.61	25.36	61.08	13 15 56	3100.8	-11.71	132.88
110.00	19 38 1	2242.66	-33.50	39.64	30.55	97.23	20 15 24	1642.7	-32.14	30.68
110.00	12 47 12	3597.50	-4.78	129.85	23.44	56.11	13 47 9	2997.5	-9.20	123.55

DIFFERENTIAL CORRECTIONS
TDE .1084 TRA 2.7655 TC-12.1687 BAU 1.7298
RDE .2736 RRA .0193 RC3 .6444 FAU .42266
FDE -.8812 FRA 9.1555 FC-34.4617 BSP 32829
BDE .2943 BRA 2.7655 BC312.1857 FSP 8368

MID-COURSE EXECUTION ACCURACY
SGT 9528.9 SGR 639.6 SG3 2462.5
RRT -.4995 RRF -.5229 RTF .9945
SGB 9550.3 R23 .0283 R13 -.9946
SG1 9534.2 SG2 553.8 THA 178.07

ORBIT DETERMINATION ACCURACY
ST 1612.9 SR 481.3 SS 1586.8
CRT .1368 CRS .2624 CST -.9195
LSA 2216.8 MSA 660.4 SSA 26.7
EL1 1614.4 EL2 476.3 ALF 2.56

LAUNCH DATE NOV 7 1964 FLIGHT TIME 350.00 ARRIVAL DATE OCT 23 1965

HELIOCENTRIC CONIC DISTANCE 781.335 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.848 GAL -3.42 AZL 88.25 HCA 237.77 SMA 186.50 ECC .21333 INC 1.7489 V1 30.058
RP 213.93 LAP -1.48 LOP 282.38 VP 23.003 GAP -8.99 AZP 90.93 TAL 340.33 TAP 218.10 RCA 146.71 APO 226.29 V2 25.662
RC 294.131 GL 17.76 GP 1.19 ZAL 117.98 ZAP 58.18 ETS 180.07 ZAE 87.10 ETE 179.07 ZAC 84.88 ETC 258.32 CLP 58.17

PLANETOCENTRIC CONIC

C3 10.767 VHL 3.281 DLA 22.54 RAL 172.69 RAD 6567.4 VEL 11.496 PTH 2.00 VHP 3.387 DPA 10.30 RAP 163.21 ECC 1.1772

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 23 47	2868.96	-28.32	86.86	31.70	90.29	17 11 36	2269.0	-27.98	78.22
90.00	11 7 44	3928.90	-8.60	156.74	26.78	62.92	12 13 13	3328.9	-12.16	149.88
100.00	18 1 43	2553.18	-29.81	63.59	31.66	92.39	18 44 16	1953.2	-29.16	54.85
100.00	12 12 29	3719.91	-7.28	140.67	26.07	60.93	13 14 29	3119.9	-11.11	133.97
110.00	19 44 5	2232.94	-33.42	38.90	31.29	97.66	20 21 18	1632.9	-32.00	29.96
110.00	12 46 37	3612.91	-4.20	130.66	24.16	56.04	13 46 50	3012.9	-8.63	124.38

DIFFERENTIAL CORRECTIONS
TDE .0673 TRA 2.9117 TC-12.3340 BAU 1.7778
RDE .2798 RRA .0222 RC3 .6319 FAU .40770
FDE -.9761 FRA 9.0092 FC-32.7806 BSP 33731
BDE .2877 BRA 2.9118 BC312.3502 FSP 8074

MID-COURSE EXECUTION ACCURACY
SGT 9789.6 SGR 642.2 SG3 2375.3
RRT -.4881 RRF -.5121 RTF .9946
SGB 9810.6 R23 .0286 R13 -.9947
SG1 9794.6 SG2 560.2 THA 178.16

ORBIT DETERMINATION ACCURACY
ST 1673.3 SR 488.8 SS 1587.7
CRT .0918 CRS .2928 CST -.9248
LSA 2263.4 MSA 660.1 SSA 26.3
EL1 1673.9 EL2 486.6 ALF 1.68

LAUNCH DATE NOV 7 1964 FLIGHT TIME 352.00 ARRIVAL DATE OCT 25 1965

HELIOCENTRIC CONIC DISTANCE 785.518 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.851 GAL -3.51 AZL 88.25 HCA 238.96 SMA 186.55 ECC .21395 INC 1.7532 V1 30.058
RP 213.62 LAP -1.50 LOP 283.57 VP 23.046 GAP -9.14 AZP 90.90 TAL 339.87 TAP 218.83 RCA 146.64 APO 226.47 V2 25.697
RC 295.251 GL 17.67 GP 1.16 ZAL 118.73 ZAP 56.84 ETS 180.09 ZAE 85.50 ETE 179.14 ZAC 84.82 ETC 258.34 CLP 56.83

PLANETOCENTRIC CONIC

C3 10.927 VHL 3.306 DLA 22.15 RAL 173.39 RAD 6567.4 VEL 11.503 PTH 2.00 VHP 3.443 DPA 10.33 RAP 163.05 ECC 1.1798

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 31 50	2853.15	-28.30	85.71	32.49	90.87	17 19 23	2253.1	-27.88	77.07
90.00	11 5 15	3950.73	-7.92	157.99	27.49	62.72	12 11 6	3350.7	-11.52	151.15
100.00	18 9 4	2539.63	-29.76	62.59	32.44	92.92	18 51 23	1939.6	-29.04	53.86
100.00	12 10 42	3739.48	-6.64	141.77	26.80	60.79	13 13 2	3139.5	-10.48	135.09
110.00	19 50 15	2223.05	-33.32	38.14	32.03	98.10	20 27 18	1623.1	-31.84	29.22
110.00	12 46 0	3628.82	-3.59	131.50	24.91	55.98	13 46 29	3028.8	-8.03	125.22

DIFFERENTIAL CORRECTIONS
TDE .0225 TRA 3.0612 TC-12.4780 BAU 1.8251
RDE .2861 RRA .0249 RC3 .6195 FAU .39295
FDE-1.0671 FRA 8.8623 FC-31.1328 BSP 34603
BDE .2870 BRA 3.0613 BC312.4933 FSP 7788

MID-COURSE EXECUTION ACCURACY
SGT10043.6 SGR 644.8 SG3 2289.4
RRT -.4775 RRF -.5019 RTF .9948
SGB10064.3 R23 .0288 R13 -.9948
SG110048.3 SG2 566.3 THA 178.24

ORBIT DETERMINATION ACCURACY
ST 1736.8 SR 496.2 SS 1589.6
CRT .0467 CRS .3225 CST -.9300
LSA 2314.1 MSA 658.8 SSA 25.9
EL1 1736.9 EL2 495.6 ALF .83

LAUNCH DATE NOV 7 1964 FLIGHT TIME 354.00 ARRIVAL DATE OCT 27 1965

HELIOCENTRIC CONIC DISTANCE 789.705 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.854 GAL -3.60 AZL 88.24 HCA 240.15 SMA 186.61 ECC .21460 INC 1.7574 V1 30.058
RP 213.31 LAP -1.52 LOP 284.76 VP 23.089 GAP -9.30 AZP 90.88 TAL 339.40 TAP 219.54 RCA 146.56 APO 226.65 V2 25.731
RC 296.356 GL 17.57 GP 1.13 ZAL 119.51 ZAP 55.54 ETS 180.11 ZAE 83.92 ETE 179.20 ZAC 84.77 ETC 258.36 CLP 55.54

PLANETOCENTRIC CONIC

C3 11.098 VHL 3.331 DLA 21.74 RAL 174.10 RAD 6567.4 VEL 11.510 PTH 2.00 VHP 3.501 DPA 10.34 RAP 162.94 ECC 1.1826

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 39 56	2837.35	-28.28	84.55	33.30	91.45	17 27 13	2237.4	-27.78	75.92
90.00	11 2 48	3972.89	-7.23	159.25	28.23	62.55	12 9 1	3372.9	-10.85	152.44
100.00	18 16 29	2525.99	-29.71	61.58	33.23	93.45	18 58 35	1926.0	-28.92	52.86
100.00	12 8 56	3759.48	-5.97	142.88	27.54	60.66	13 11 35	3159.5	-9.84	136.22
110.00	19 56 32	2213.02	-33.22	37.37	32.80	98.55	20 33 25	1613.0	-31.69	28.48
110.00	12 45 23	3645.22	-2.96	132.35	25.68	55.93	13 46 8	3045.2	-7.42	126.10

DIFFERENTIAL CORRECTIONS
TDE -.0258 TRA 3.2140 TC-12.5977 BAU 1.8713
RDE .2925 RRA .0275 RC3 .6073 FAU .37835
FDE-1.1543 FRA 8.7114 FC-29.5148 BSP 35443
BDE .2936 BRA 3.2141 BC312.6123 FSP 7505

MID-COURSE EXECUTION ACCURACY
SGT10289.2 SGR 647.6 SG3 2204.2
RRT -.4675 RRF -.4923 RTF .9948
SGB10309.6 R23 .0291 R13 -.9949
SG110293.7 SG2 572.2 THA 178.31

ORBIT DETERMINATION ACCURACY
ST 1803.6 SR 503.4 SS 1592.0
CRT .0021 CRS .3516 CST -.9350
LSA 2368.2 MSA 656.9 SSA 25.5
EL1 1803.6 EL2 503.4 ALF .04

LAUNCH DATE NOV 7 1964 FLIGHT TIME 356.00 ARRIVAL DATE OCT 29 1965

HELIOCENTRIC CONIC DISTANCE 793.897 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.857 GAL -3.69 AZL 88.24 HCA 241.34 SMA 186.66 ECC .21529 INC 1.7615 V1 30.058
RP 213.01 LAP -1.55 LOP 285.95 VP 23.132 GAP -9.45 AZP 90.85 TAL 338.91 TAP 220.25 RCA 146.48 APO 226.85 V2 25.765
RC 297.448 GL 17.46 GP 1.10 ZAL 120.29 ZAP 54.29 ETS 180.13 ZAE 82.39 ETE 179.26 ZAC 84.72 ETC 258.36 CLP 54.28

PLANETOCENTRIC CONIC

C3 11.280 VHL 3.359 DLA 21.32 RAL 174.82 RAD 6567.4 VEL 11.518 PTH 2.01 VHP 3.560 DPA 10.34 RAP 162.87 ECC 1.1856

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 48 5	2821.58	-28.25	83.40	34.13	92.02	17 35 7	2221.6	-27.67	74.78
90.00	11 0 23	3995.38	-6.52	160.52	28.99	62.38	12 6 59	3395.4	-10.17	153.74
100.00	18 24 0	2512.30	-29.65	60.56	34.04	93.98	19 5 52	1912.3	-28.78	51.87
100.00	12 7 10	3779.89	-5.29	144.01	28.32	60.54	13 10 10	3179.9	-9.17	137.38
110.00	20 2 54	2202.87	-33.12	36.60	33.58	98.99	20 39 37	1602.9	-31.52	27.74
110.00	12 44 45	3662.09	-2.32	133.24	26.47	55.89	13 45 47	3062.1	-6.78	126.99

DIFFERENTIAL CORRECTIONS
TDE -.0773 TRA 3.3709 TC-12.6944 BAU 1.9164
RDE .2989 RRA .0301 RC3 .5953 FAU .36397
FDE-1.2369 FRA 8.5592 FC-27.9347 BSP 36262
BDE .3088 BRA 3.3711 BC312.7083 FSP 7222

MID-COURSE EXECUTION ACCURACY
SGT10527.8 SGR 650.4 SG3 2120.3
RRT -.4582 RRF -.4835 RTF .9949
SGB10547.9 R23 .0295 R13 -.9950
SG110532.1 SG2 577.9 THA 178.37

ORBIT DETERMINATION ACCURACY
ST 1874.2 SR 510.4 SS 1594.8
CRT -.0415 CRS .3798 CST -.9397
LSA 2426.4 MSA 654.5 SSA 25.0
EL1 1874.3 EL2 509.9 ALF 179.30

LAUNCH DATE NOV 7 1964 FLIGHT TIME 358.00 ARRIVAL DATE OCT 31 1965

HELIOCENTRIC CONIC DISTANCE 798.093 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.861 GAL -3.79 AZL 88.23 HCA 242.54 SMA 186.72 ECC .21602 INC 1.7655 V1 30.058
RP 212.72 LAP -1.57 LOP 287.15 VP 23.174 GAP -9.60 AZP 90.81 TAL 338.40 TAP 220.94 RCA 146.39 APO 227.06 V2 25.798
RC 298.526 GL 17.35 GP 1.07 ZAL 121.10 ZAP 53.06 ETS 180.14 ZAE 80.89 ETE 179.32 ZAC 84.69 ETC 258.37 CLP 53.06

PLANETOCENTRIC CONIC

C3 11.474 VHL 3.387 DLA 20.89 RAL 175.54 RAD 6567.4 VEL 11.527 PTH 2.01 VHP 3.621 DPA 10.32 RAP 162.83 ECC 1.1888

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 56 17	2805.86	-28.21	82.25	34.97	92.60	17 43 3	2205.9	-27.55	73.65
90.00	10 58 0	4018.19	-5.80	161.81	29.78	62.23	12 4 58	3418.2	-9.47	155.05
100.00	18 31 34	2498.58	-29.58	59.55	34.87	94.51	19 13 13	1898.6	-28.64	50.87
100.00	12 5 24	3800.70	-4.59	145.16	29.11	60.43	13 8 44	3200.7	-8.49	138.55
110.00	20 9 22	2192.62	-33.01	35.82	34.38	99.44	20 45 55	1592.6	-31.35	26.99
110.00	12 44 5	3679.43	-1.66	134.14	27.29	55.85	13 45 25	3079.4	-6.13	127.91

DIFFERENTIAL CORRECTIONS
TDE -.1325 TRA 3.5318 TC-12.7670 BAU 1.9605
RDE .3055 RRA .0325 RC3 .5835 FAU .34976
FDE-1.3161 FRA 8.4069 FC-26.3900 BSP 37060
BDE .3330 BRA 3.5319 BC312.7804 FSP 6951

MID-COURSE EXECUTION ACCURACY
SGT10758.5 SGR 653.3 SG3 2037.7
RRT -.4494 RRF -.4753 RTF .9949
SGB10778.3 R23 .0300 R13 -.9950
SG110762.5 SG2 583.4 THA 178.43

ORBIT DETERMINATION ACCURACY
ST 1948.6 SR 517.2 SS 1598.3
CRT -.0844 CRS .4074 CST -.9440
LSA 2488.8 MSA 651.6 SSA 24.5
EL1 1949.2 EL2 515.2 ALF 178.62

LAUNCH DATE NOV 7 1964 FLIGHT TIME 360.00 ARRIVAL DATE NOV 2 1965

HELIOCENTRIC CONIC DISTANCE 802.292 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.864 GAL -3.89 AZL 88.23 HCA 243.73 SMA 186.78 ECC .21678 INC 1.7695 V1 30.058
RP 212.43 LAP -1.59 LOP 288.35 VP 23.215 GAP -9.75 AZP 90.78 TAL 337.89 TAP 221.62 RCA 146.29 APO 227.27 V2 25.831
RC 299.592 GL 17.23 GP 1.04 ZAL 121.92 ZAP 51.88 ETS 180.16 ZAE 79.42 ETE 179.37 ZAC 84.67 ETC 258.36 CLP 51.87

PLANETOCENTRIC CONIC

C3 11.681 VHL 3.418 DLA 20.44 RAL 176.28 RAD 6567.4 VEL 11.536 PTH 2.01 VHP 3.685 DPA 10.29 RAP 162.84 ECC 1.1922

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 4 31	2790.21	-28.15	81.11	35.83	93.17	17 51 1	2190.2	-27.42	72.52
90.00	10 55 39	4041.29	-5.06	163.11	30.58	62.10	12 3 1	3441.3	-8.76	156.38
100.00	18 39 13	2484.86	-29.50	58.54	35.72	95.04	19 20 37	1884.9	-28.49	49.88
100.00	12 3 39	3821.88	-3.88	146.33	29.93	60.34	13 7 21	3221.9	-7.80	139.73
110.00	20 15 55	2182.30	-32.89	35.04	35.20	99.89	20 52 17	1582.3	-31.18	26.24
110.00	12 43 26	3697.20	-.98	135.07	28.12	55.83	13 45 3	3097.2	-5.46	128.84

DIFFERENTIAL CORRECTIONS
TDE -.1899 TRA 3.6967 TC-12.8155 BAU 2.0033
RDE .3122 RRA .0347 RC3 .5717 FAU .33582
FDE-1.3890 FRA 8.2543 FC-24.8886 BSP 37847
BDE .3654 BRA 3.6968 BC312.8283 FSP 6685

MID-COURSE EXECUTION ACCURACY
SGT10980.9 SGR 656.1 SG3 1956.8
RRT -.4413 RRF -.4677 RTF .9950
SGB11000.5 R23 .0305 R13 -.9950
SG110984.7 SG2 588.6 THA 178.49

ORBIT DETERMINATION ACCURACY
ST 2026.6 SR 523.8 SS 1601.6
CRT -.1250 CRS .4334 CST -.9480
LSA 2554.5 MSA 648.4 SSA 24.1
EL1 2027.7 EL2 519.4 ALF 178.02

LAUNCH DATE NOV 7 1964 FLIGHT TIME 362.00 ARRIVAL DATE NOV 4 1965

HELIOCENTRIC CONIC DISTANCE 806.495 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.868 GAL -3.99 AZL 88.23 HCA 244.94 SMA 186.85 ECC .21758 INC 1.7733 V1 30.058
RP 212.15 LAP -1.61 LOP 289.55 VP 23.257 GAP -9.90 AZP 90.75 TAL 337.35 TAP 222.29 RCA 146.19 APO 227.50 V2 25.863
RC 300.645 GL 17.11 GP 1.02 ZAL 122.76 ZAP 50.73 ETS 180.17 ZAE 77.99 ETE 179.42 ZAC 84.65 ETC 258.36 CLP 50.72

PLANETOCENTRIC CONIC

C3 11.902 VHL 3.450 DLA 19.98 RAL 177.03 RAD 6567.5 VEL 11.545 PTH 2.02 VHP 3.750 DPA 10.24 RAP 162.87 ECC 1.1959

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 12 47	2774.65	-28.09	79.98	36.70	93.73	17 59 1	2174.6	-27.28	71.40
90.00	10 53 20	4064.70	-4.32	164.42	31.42	61.99	12 1 5	3464.7	-8.03	157.71
100.00	18 46 54	2471.15	-29.42	57.53	36.58	95.56	19 28 5	1871.1	-28.34	48.89
100.00	12 1 54	3843.43	-3.15	147.51	30.77	60.26	13 5 58	3243.4	-7.09	140.94
110.00	20 22 32	2171.93	-32.76	34.26	36.03	100.34	20 58 44	1571.9	-30.99	25.48
110.00	12 42 45	3715.42	-.28	136.02	28.98	55.82	13 44 41	3115.4	-4.77	129.80

DIFFERENTIAL CORRECTIONS
TDE -.2520 TRA 3.8655 TC-12.8445 BAU 2.0457
RDE .3190 RRA .0368 RC3 .5602 FAU .32217
FDE-1.4581 FRA 8.1010 FC-23.4348 BSP 38593
BDE .4066 BRA 3.8657 BC312.8567 FSP 6424

MID-COURSE EXECUTION ACCURACY
SGT11197.4 SGR 659.1 SG3 1877.6
RRT -.4340 RRF -.4609 RTF .9949
SGB11216.8 R23 .0310 R13 -.9950
SG111201.1 SG2 593.6 THA 178.53

ORBIT DETERMINATION ACCURACY
ST 2108.5 SR 530.3 SS 1605.1
CRT -.1653 CRS .4586 CST -.9520
LSA 2624.4 MSA 644.2 SSA 23.7
EL1 2110.4 EL2 522.5 ALF 177.46

LAUNCH DATE NOV 7 1964 FLIGHT TIME 364.00 ARRIVAL DATE NOV 6 1965

HELIOCENTRIC CONIC DISTANCE 810.702 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.872 GAL -4.10 AZL 88.22 HCA 246.14 SMA 186.91 ECC .21843 INC 1.7772 V1 30.058
RP 211.87 LAP -1.63 LOP 290.76 VP 23.297 GAP -10.05 AZP 90.72 TAL 336.80 TAP 222.95 RCA 146.09 APO 227.74 V2 25.895
RC 301.687 GL 16.97 GP .99 ZAL 123.61 ZAP 49.61 ETS 180.18 ZAE 76.59 ETE 179.47 ZAC 84.64 ETC 258.34 CLP 49.61

PLANETOCENTRIC CONIC

C3 12.137 VHL 3.484 DLA 19.51 RAL 177.78 RAD 6567.5 VEL 11.555 PTH 2.02 VHP 3.817 DPA 10.18 RAP 162.95 ECC 1.1997

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 21 4	2759.20	-28.02	78.85	37.59	94.29	18 7 3	2159.2	-27.13	70.30
90.00	10 51 4	4088.39	-3.56	165.75	32.27	61.89	11 59 12	3488.4	-7.29	159.06
100.00	18 54 38	2457.49	-29.32	56.52	37.45	96.08	19 35 35	1857.5	-28.17	47.91
100.00	12 0 11	3865.33	-2.41	148.72	31.63	60.20	13 4 36	3265.3	-6.36	142.16
110.00	20 29 13	2161.53	-32.64	33.47	36.88	100.78	21 5 15	1561.5	-30.80	24.73
110.00	12 42 4	3734.05	.43	136.99	29.86	55.82	13 44 19	3134.1	-4.06	130.78

DIFFERENTIAL CORRECTIONS
TDE -.3159 TRA 4.0396 TC-12.8476 BAU 2.0865
RDE .3260 RRA .0388 RC3 .5489 FAU .30881
FDE-1.5204 FRA 7.9483 FC-22.0279 BSP 39340
BDE .4539 BRA 4.0398 BC312.8593 FSP 6172

MID-COURSE EXECUTION ACCURACY
SGT11405.4 SGR 662.0 SG3 1800.2
RRT -.4271 RRF -.4547 RTF .9949
SGB11424.6 R23 .0316 R13 -.9950
SG111408.9 SG2 598.4 THA 178.58

ORBIT DETERMINATION ACCURACY
ST 2193.9 SR 536.6 SS 1607.8
CRT -.2028 CRS .4821 CST -.9554
LSA 2697.4 MSA 640.1 SSA 23.2
EL1 2196.8 EL2 524.8 ALF 176.99

LAUNCH DATE NOV 7 1964 FLIGHT TIME 366.00 ARRIVAL DATE NOV 8 1965

HELIOCENTRIC CONIC DISTANCE 814.911 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.876 GAL -4.21 AZL 88.22 HCA 247.35 SMA 186.98 ECC .21931 INC 1.7809 V1 30.058
RP 211.60 LAP -1.64 LOP 291.97 VP 23.337 GAP -10.19 AZP 90.69 TAL 336.24 TAP 223.59 RCA 145.97 APO 227.99 V2 25.926
RC 302.717 GL 16.83 GP .96 ZAL 124.47 ZAP 48.53 ETS 180.18 ZAE 75.23 ETE 179.52 ZAC 84.64 ETC 258.33 CLP 48.52

PLANETOCENTRIC CONIC

C3 12.387 VHL 3.520 DLA 19.03 RAL 178.54 RAD 6567.5 VEL 11.566 PTH 2.02 VHP 3.885 DPA 10.11 RAP 163.06 ECC 1.2039

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 29 22	2743.88	-27.93	77.74	38.49	94.84	18 15 5	2143.9	-26.97	69.21
90.00	10 48 49	4112.36	-2.79	167.09	33.15	61.81	11 57 21	3512.4	-6.54	160.42
100.00	19 2 23	2443.89	-29.22	55.52	38.34	96.60	19 43 7	1843.9	-28.00	46.93
100.00	11 58 28	3887.58	-1.66	149.94	32.52	60.15	13 3 16	3287.6	-5.62	143.39
110.00	20 35 58	2151.14	-32.50	32.69	37.74	101.23	21 11 49	1551.1	-30.61	23.98
110.00	12 41 24	3753.10	1.16	137.98	30.76	55.83	13 43 57	3153.1	-3.33	131.78

DIFFERENTIAL CORRECTIONS
TDE -.3842 TRA 4.2176 TC-12.8333 BAU 2.1271
RDE .3331 RRA .0406 RC3 .5377 FAU .29577
FDE-1.5802 FRA 7.7950 FC-20.6714 BSP 40056
BDE .5085 BRA 4.2178 BC312.8445 FSP 5926

MID-COURSE EXECUTION ACCURACY
SGT11607.9 SGR 664.9 SG3 1724.8
RRT -.4212 RRF -.4493 RTF .9949
SGB11626.9 R23 .0322 R13 -.9949
SG111611.3 SG2 602.9 THA 178.61

ORBIT DETERMINATION ACCURACY
ST 2283.0 SR 542.7 SS 1610.7
CRT -.2393 CRS .5051 CST -.9586
LSA 2774.3 MSA 635.5 SSA 22.8
EL1 2286.9 EL2 526.1 ALF 176.56

LAUNCH DATE NOV 7 1964 FLIGHT TIME 368.00 ARRIVAL DATE NOV 10 1965

HELIOCENTRIC CONIC DISTANCE 819.122 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.880 GAL -4.32 AZL 88.22 HCA 248.57 SMA 187.05 ECC .22024 INC 1.7846 V1 30.058
RP 211.33 LAP -1.66 LOP 293.18 VP 23.377 GAP -10.34 AZP 90.65 TAL 335.66 TAP 224.22 RCA 145.86 APO 228.25 V2 25.956
RC 303.736 GL 16.68 GP .94 ZAL 125.35 ZAP 47.48 ETS 180.19 ZAE 73.89 ETE 179.57 ZAC 84.65 ETC 258.30 CLP 47.47

PLANETOCENTRIC CONIC

C3 12.653 VHL 3.557 DLA 18.53 RAL 179.30 RAD 6567.5 VEL 11.578 PTH 2.02 VHP 3.956 DPA 10.02 RAP 163.20 ECC 1.2082

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 37 40	2728.71	-27.84	76.64	39.41	95.39	18 23 9	2128.7	-26.80	68.13
90.00	10 46 37	4136.59	-2.01	168.44	34.05	61.75	11 55 34	3536.6	-5.77	161.78
100.00	19 10 11	2430.38	-29.11	54.54	39.25	97.11	19 50 41	1830.4	-27.82	45.97
100.00	11 56 47	3910.16	-.89	151.18	33.43	60.12	13 1 57	3310.2	-4.86	144.64
110.00	20 42 45	2140.77	-32.36	31.92	38.63	101.67	21 18 26	1540.8	-30.41	23.24
110.00	12 40 42	3772.54	1.90	139.00	31.69	55.86	13 43 35	3172.5	-2.59	132.79

DIFFERENTIAL CORRECTIONS
TDE -.4553 TRA 4.4010 TC-12.7960 BAU 2.1664
RDE .3403 RRA .0422 RC3 .5266 FAU .28302
FDE-1.6333 FRA 7.6427 FC-19.3645 BSP 40763
BDE .5684 BRA 4.4012 BC312.8069 FSP 5688

MID-COURSE EXECUTION ACCURACY
SGT11803.0 SGR 667.8 SG3 1651.3
RRT -.4157 RRF -.4445 RTF .9948
SGB11821.9 R23 .0328 R13 -.9949
SG111806.3 SG2 607.2 THA 178.65

ORBIT DETERMINATION ACCURACY
ST 2375.6 SR 548.7 SS 1612.6
CRT -.2738 CRS .5265 CST -.9616
LSA 2854.3 MSA 630.4 SSA 22.4
EL1 2380.6 EL2 526.6 ALF 176.20

LAUNCH DATE NOV 7 1964 FLIGHT TIME 370.00 ARRIVAL DATE NOV 12 1965

HELIOCENTRIC CONIC DISTANCE 823.336 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.884 GAL -4.44 AZL 88.21 HCA 249.78 SMA 187.13 ECC .22121 INC 1.7883 V1 30.058
RP 211.08 LAP -1.68 LOP 294.40 VP 23.415 GAP -10.48 AZP 90.62 TAL 335.06 TAP 224.84 RCA 145.73 APO 228.52 V2 25.986
RC 304.746 GL 16.53 GP .92 ZAL 126.23 ZAP 46.46 ETS 180.19 ZAE 72.59 ETE 179.61 ZAC 84.66 ETC 258.27 CLP 46.45

PLANETOCENTRIC CONIC

C3 12.936 VHL 3.597 DLA 18.03 RAL 180.07 RAD 6567.5 VEL 11.590 PTH 2.03 VHP 4.028 DPA 9.93 RAP 163.37 ECC 1.2129

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 45 59	2713.71	-27.74	75.55	40.34	95.92	18 31 12	2113.7	-26.63	67.06
90.00	10 44 27	4161.09	-1.22	169.81	34.98	61.71	11 53 48	3561.1	-4.99	163.16
100.00	19 17 59	2416.99	-28.99	53.56	40.17	97.61	19 58 16	1817.0	-27.64	45.02
100.00	11 55 7	3933.05	-.11	152.43	34.37	60.11	13 0 40	3333.1	-4.09	145.90
110.00	20 49 35	2130.44	-32.22	31.14	39.52	102.10	21 25 5	1530.4	-30.21	22.50
110.00	12 40 1	3792.36	2.66	140.03	32.63	55.91	13 43 14	3192.4	-1.83	133.83

DIFFERENTIAL CORRECTIONS
TDE -.5295 TRA 4.5900 TC-12.7397 BAU 2.2051
RDE .3477 RRA .0436 RC3 .5157 FAU .27057
FDE-1.6814 FRA 7.4913 FC-18.1074 BSP 41463
BDE .6335 BRA 4.5902 BC312.7501 FSP 5458

MID-COURSE EXECUTION ACCURACY
SGT11992.6 SGR 670.6 SG3 1579.8
RRT -.4110 RRF -.4403 RTF .9947
SGB12011.3 R23 .0334 R13 -.9948
SG111995.8 SG2 611.2 THA 178.68

ORBIT DETERMINATION ACCURACY
ST 2471.6 SR 554.4 SS 1613.6
CRT -.3063 CRS .5467 CST -.9643
LSA 2937.4 MSA 625.2 SSA 22.1
EL1 2477.7 EL2 526.5 ALF 175.88

LAUNCH DATE NOV 7 1964 FLIGHT TIME 372.00 ARRIVAL DATE NOV 14 1965

HELIOCENTRIC CONIC DISTANCE 827.551 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.889 GAL -4.56 AZL 88.21 HCA 251.00 SMA 187.20 ECC .22223 INC 1.7919 V1 30.058
RP 210.82 LAP -1.69 LOP 295.61 VP 23.454 GAP -10.63 AZP 90.58 TAL 334.45 TAP 225.45 RCA 145.60 APO 228.80 V2 26.015
RC 305.746 GL 16.37 GP .90 ZAL 127.13 ZAP 45.47 ETS 180.19 ZAE 71.31 ETE 179.65 ZAC 84.69 ETC 258.24 CLP 45.47

PLANETOCENTRIC CONIC

C3 13.238 VHL 3.638 DLA 17.52 RAL 180.85 RAD 6567.5 VEL 11.603 PTH 2.03 VHP 4.102 DPA 9.82 RAP 163.58 ECC 1.2179

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 54 17	2698.90	-27.63	74.48	41.29	96.45	18 39 16	2098.9	-26.45	66.01
90.00	10 42 19	4185.85	-.42	171.19	35.93	61.69	11 52 5	3585.8	-4.20	164.55
100.00	19 25 49	2403.73	-28.87	52.59	41.11	98.10	20 5 53	1803.7	-27.45	44.08
100.00	11 53 29	3956.26	.67	153.71	35.32	60.11	12 59 25	3356.3	-3.31	147.18
110.00	20 56 26	2120.19	-32.07	30.38	40.44	102.53	21 31 47	1520.2	-30.01	21.77
110.00	12 39 20	3812.56	3.43	141.09	33.60	55.97	13 42 53	3212.6	-1.06	134.88

DIFFERENTIAL CORRECTIONS
TDE -.6067 TRA 4.7835 TC-12.6644 BAU 2.2431
RDE .3553 RRA .0448 RC3 .5050 FAU .25847
FDE-1.7247 FRA 7.3394 FC-16.9039 BSP 42136
BDE .7031 BRA 4.7837 BC312.6744 FSP 5234

MID-COURSE EXECUTION ACCURACY
SGT12175.3 SGR 673.4 SG3 1510.3
RRT -.4069 RRF -.4368 RTF .9946
SGB12193.9 R23 .0340 R13 -.9947
SG112178.3 SG2 615.0 THA 178.71

ORBIT DETERMINATION ACCURACY
ST 2570.1 SR 560.0 SS 1613.6
CRT -.3370 CRS .5658 CST -.9668
LSA 3022.9 MSA 619.9 SSA 21.7
EL1 2577.3 EL2 525.8 ALF 175.62

LAUNCH DATE NOV 7 1964 FLIGHT TIME 374.00 ARRIVAL DATE NOV 16 1965

HELIOCENTRIC CONIC DISTANCE 831.768 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.893 GAL -4.69 AZL 88.20 HCA 252.22 SMA 187.28 ECC .22329 INC 1.7955 V1 30.058
RP 210.58 LAP -1.71 LOP 296.84 VP 23.491 GAP -10.77 AZP 90.55 TAL 333.82 TAP 226.04 RCA 145.46 APO 229.09 V2 26.043
RC 306.737 GL 16.20 GP .87 ZAL 128.04 ZAP 44.51 ETS 180.19 ZAE 70.06 ETE 179.69 ZAC 84.72 ETC 258.21 CLP 44.51

PLANETOCENTRIC CONIC

C3 13.558 VHL 3.682 DLA 16.99 RAL 181.63 RAD 6567.5 VEL 11.617 PTH 2.04 VHP 4.177 DPA 9.69 RAP 163.82 ECC 1.2231

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 2 35	2684.29	-27.52	73.43	42.26	96.97	18 47 19	2084.3	-26.27	64.99
90.00	10 40 14	4210.85	.39	172.59	36.91	61.69	11 50 25	3610.8	-3.40	165.95
100.00	19 33 39	2390.62	-28.74	51.64	42.07	98.59	20 13 29	1790.6	-27.25	43.15
100.00	11 51 51	3979.76	1.47	155.00	36.30	60.14	12 58 11	3379.8	-2.51	148.47
110.00	21 3 20	2110.02	-31.91	29.63	41.37	102.95	21 38 30	1510.0	-29.80	21.05
110.00	12 38 40	3833.12	4.21	142.17	34.60	56.05	13 42 33	3233.1	-.28	135.96

DIFFERENTIAL CORRECTIONS
TDE -.6875 TRA 4.9820 TC-12.5722 BAU 2.2806
RDE .3631 RRA .0458 RC3 .4944 FAU .24677
FDE-1.7643 FRA 7.1866 FC-15.7572 BSP 42778
BDE .7775 BRA 4.9822 BC312.5819 FSP 5014

MID-COURSE EXECUTION ACCURACY
SGT12352.1 SGR 676.2 SG3 1443.0
RRT -.4035 RRF -.4342 RTF .9945
SGB12370.6 R23 .0348 R13 -.9946
SG112355.2 SG2 618.6 THA 178.73

ORBIT DETERMINATION ACCURACY
ST 2671.3 SR 565.5 SS 1612.6
CRT -.3661 CRS .5843 CST -.9689
LSA 3110.9 MSA 614.5 SSA 21.3
EL1 2679.6 EL2 524.6 ALF 175.39

LAUNCH DATE NOV 7 1964 FLIGHT TIME 376.00 ARRIVAL DATE NOV 18 1965

HELIOCENTRIC CONIC DISTANCE 835.986 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.897 GAL -4.82 AZL 88.20 HCA 253.45 SMA 187.36 ECC .22440 INC 1.7990 V1 30.058
RP 210.34 LAP -1.72 LOP 298.06 VP 23.528 GAP -10.91 AZP 90.51 TAL 333.18 TAP 226.63 RCA 145.31 APO 229.40 V2 26.071
RC 307.719 GL 16.02 GP .85 ZAL 128.96 ZAP 43.58 ETS 180.19 ZAE 68.84 ETE 179.73 ZAC 84.75 ETC 258.17 CLP 43.58

PLANETOCENTRIC CONIC

C3 13.899 VHL 3.728 DLA 16.46 RAL 182.41 RAD 6567.5 VEL 11.631 PTH 2.04 VHP 4.254 DPA 9.56 RAP 164.08 ECC 1.2287

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 10 52	2669.90	-27.39	72.39	43.24	97.47	18 55 22	2069.9	-26.07	63.97
90.00	10 38 11	4236.09	1.20	173.99	37.90	61.71	11 48 47	3636.1	-2.59	167.36
100.00	19 41 29	2377.68	-28.61	50.70	43.04	99.07	20 21 6	1777.7	-27.06	42.24
100.00	11 50 16	4003.54	2.28	156.30	37.31	60.19	12 56 59	3403.5	-1.71	149.78
110.00	21 10 14	2099.96	-31.76	28.89	42.32	103.37	21 45 14	1500.0	-29.59	20.35
110.00	12 37 59	3854.03	5.01	143.26	35.61	56.14	13 42 13	3254.0	.52	137.05

DIFFERENTIAL CORRECTIONS
TDE -.7711 TRA 5.1872 TC-12.4632 BAU 2.3175
RDE .3711 RRA .0466 RC3 .4839 FAU .23540
FDE-1.7984 FRA 7.0360 FC-14.6629 BSP 43431
BDE .8557 BRA 5.1874 BC312.4726 FSP 4805

MID-COURSE EXECUTION ACCURACY
SGT12524.5 SGR 678.9 SG3 1377.8
RRT -.4008 RRF -.4321 RTF .9944
SGB12542.9 R23 .0356 R13 -.9944
SG112527.5 SG2 621.9 THA 178.75

ORBIT DETERMINATION ACCURACY
ST 2775.2 SR 570.8 SS 1610.2
CRT -.3933 CRS .6015 CST -.9709
LSA 3201.4 MSA 609.0 SSA 21.0
EL1 2784.6 EL2 523.0 ALF 175.21

LAUNCH DATE NOV 7 1964 FLIGHT TIME 378.00 ARRIVAL DATE NOV 20 1965

HELIOCENTRIC CONIC DISTANCE 840.204 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.902 GAL -4.96 AZL 88.20 HCA 254.67 SMA 187.44 ECC .22556 INC 1.8025 V1 30.058
RP 210.10 LAP -1.74 LOP 299.29 VP 23.564 GAP -11.06 AZP 90.48 TAL 332.52 TAP 227.20 RCA 145.16 APO 229.72 V2 26.098
RC 308.691 GL 15.84 GP .83 ZAL 129.88 ZAP 42.68 ETS 180.19 ZAE 67.65 ETE 179.76 ZAC 84.79 ETC 258.12 CLP 42.67

PLANETOCENTRIC CONIC

C3 14.260 VHL 3.776 DLA 15.92 RAL 183.19 RAD 6567.6 VEL 11.647 PTH 2.04 VHP 4.333 DPA 9.41 RAP 164.37 ECC 1.2347

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 19 7	2655.75	-27.26	71.38	44.24	97.96	19 3 23	2055.7	-25.88	62.98
90.00	10 36 11	4261.56	2.03	175.41	38.93	61.75	11 47 12	3661.6	-1.77	168.79
100.00	19 49 18	2364.93	-28.47	49.78	44.03	99.53	20 28 43	1764.9	-26.86	41.35
100.00	11 48 41	4027.61	3.09	157.63	38.34	60.25	12 55 49	3427.6	-.89	151.10
110.00	21 17 10	2090.03	-31.60	28.16	43.28	103.77	21 52 0	1490.0	-29.38	19.65
110.00	12 37 19	3875.27	5.81	144.38	36.65	56.25	13 41 54	3275.3	1.34	138.15

DIFFERENTIAL CORRECTIONS
TDE -.8571 TRA 5.3988 TC-12.3341 BAU 2.3532
RDE .3792 RRA .0471 RC3 .4734 FAU .22424
FDE-1.8270 FRA 6.8865 FC-13.6132 BSP 44081
BDE .9373 BRA 5.3990 BC312.3432 FSP 4604

MID-COURSE EXECUTION ACCURACY
SGT12689.7 SGR 681.5 SG3 1314.4
RRT -.3984 RRF -.4305 RTF .9942
SGB12707.9 R23 .0364 R13 -.9942
SG112692.6 SG2 624.9 THA 178.77

ORBIT DETERMINATION ACCURACY
ST 2880.9 SR 575.9 SS 1606.2
CRT -.4184 CRS .6175 CST -.9726
LSA 3293.4 MSA 603.6 SSA 20.6
EL1 2891.3 EL2 521.2 ALF 175.06

LAUNCH DATE NOV 7 1964 FLIGHT TIME 380.00 ARRIVAL DATE NOV 22 1965

DISTANCE 844.422

HELIOCENTRIC CONIC

RL 148.24 LAL -.00 LOL 44.62 VL 32.907 GAL -5.10 AZL 88.19 HCA 255.90 SMA 187.52 ECC .22678 INC 1.8060 V1 30.058
RP 209.88 LAP -1.75 LOP 300.52 VP 23.600 GAP -11.20 AZP 90.44 TAL 331.85 TAP 227.75 RCA 144.99 APO 230.05 V2 26.124
RC 309.654 GL 15.66 GP .81 ZAL 180.81 ZAP 41.80 ETS 180.19 ZAE 66.48 ETE 179.80 ZAC 84.84 ETC 258.08 CLP 41.80

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 14.645 VHL 3.827 DLA 15.38 RAL 183.98 RAD 6567.6 VEL 11.663 PTH 2.05 VHP 4.414 DPA 9.26 RAP 164.70 ECC 1.2410

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 27 22	2641.85	-27.13	70.38	45.25	98.45	19 11 24	2041.8	-25.68	62.01
90.00	10 34 13	4287.26	2.85	176.85	39.98	61.82	11 45 40	3687.3	-.94	170.22
100.00	19 57 7	2352.40	-28.32	48.87	45.03	99.99	20 36 20	1752.4	-26.65	40.47
100.00	11 47 8	4051.94	3.91	158.97	39.39	60.34	12 54 40	3451.9	-.07	152.44
110.00	21 24 6	2080.26	-31.44	27.44	44.26	104.17	21 58 46	1480.3	-29.17	18.97
110.00	12 36 39	3896.85	6.62	145.52	37.71	56.39	13 41 36	3296.8	2.16	139.28

DIFFERENTIAL CORRECTIONS

TDE -.9470 TRA 5.6157 TC-12.1915 BAU 2.3887
RDE .3876 RRA .0474 RC3 .4631 FAU .21346
FDE-1.8525 FRA 6.7362 FC-12.6184 BSP 44712
BDE 1.0232 BRA 5.6159 BC312.2003 FSP 4408

MID-COURSE EXECUTION ACCURACY

SGT12849.8 SGR 684.0 SG3 1253.2
RRT -.3968 RRF -.4296 RTF .9940
SGB12868.0 R23 .0373 R13 -.9940
SG112852.6 SG2 627.7 THA 178.79

ORBIT DETERMINATION ACCURACY

ST 2988.6 SR 580.9 SS 1601.1
CRT -.4424 CRS .6329 CST -.9742
LSA 3387.4 MSA 598.1 SSA 20.3
EL1 3000.0 EL2 519.0 ALF 174.93

LAUNCH DATE NOV 7 1964 FLIGHT TIME 382.00 ARRIVAL DATE NOV 24 1965

DISTANCE 848.640

HELIOCENTRIC CONIC

RL 148.24 LAL -.00 LOL 44.62 VL 32.912 GAL -5.24 AZL 88.19 HCA 257.13 SMA 187.60 ECC .22805 INC 1.8093 V1 30.058
RP 209.66 LAP -1.76 LOP 301.75 VP 23.635 GAP -11.35 AZP 90.40 TAL 331.16 TAP 228.30 RCA 144.82 APO 230.39 V2 26.149
RC 310.607 GL 15.47 GP .80 ZAL 131.75 ZAP 40.95 ETS 180.18 ZAE 65.34 ETE 179.83 ZAC 84.90 ETC 258.02 CLP 40.95

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 15.054 VHL 3.880 DLA 14.83 RAL 184.77 RAD 6567.6 VEL 11.681 PTH 2.05 VHP 4.497 DPA 9.09 RAP 165.04 ECC 1.2477

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 35 35	2628.22	-26.99	69.41	46.28	98.91	19 19 23	2028.2	-25.48	61.07
90.00	10 32 17	4313.18	3.68	178.30	41.05	61.90	11 44 10	3713.2	-.10	171.67
100.00	20 4 55	2340.09	-28.17	47.99	46.05	100.43	20 43 55	1740.1	-26.44	39.61
100.00	11 45 37	4076.54	4.74	160.32	40.47	60.45	12 53 34	3476.5	.77	153.79
110.00	21 31 2	2070.66	-31.28	26.74	45.26	104.55	22 5 32	1470.7	-28.96	18.30
110.00	12 36 0	3918.73	7.45	146.68	38.80	56.54	13 41 19	3318.7	3.00	140.42

DIFFERENTIAL CORRECTIONS

TDE-1.0400 TRA 5.8389 TC-12.0354 BAU 2.4239
RDE .3963 RRA .0475 RC3 .4529 FAU .20304
FDE-1.8732 FRA 6.5864 FC-11.6766 BSP 45326
BDE 1.1129 BRA 5.8391 BC312.0439 FSP 4218

MID-COURSE EXECUTION ACCURACY

SGT13005.2 SGR 686.5 SG3 1194.0
RRT -.3959 RRF -.4294 RTF .9938
SGB13023.3 R23 .0382 R13 -.9938
SG113008.1 SG2 630.3 THA 178.80

ORBIT DETERMINATION ACCURACY

ST 3097.9 SR 585.7 SS 1594.2
CRT -.4649 CRS .6475 CST -.9756
LSA 3482.8 MSA 592.5 SSA 20.0
EL1 3110.2 EL2 516.5 ALF 174.83

LAUNCH DATE NOV 7 1964 FLIGHT TIME 384.00 ARRIVAL DATE NOV 26 1965

DISTANCE 852.856

HELIOCENTRIC CONIC

RL 148.24 LAL -.00 LOL 44.62 VL 32.917 GAL -5.39 AZL 88.19 HCA 258.37 SMA 187.69 ECC .22937 INC 1.8127 V1 30.058
RP 209.44 LAP -1.78 LOP 302.99 VP 23.669 GAP -11.49 AZP 90.37 TAL 330.46 TAP 228.82 RCA 144.64 APO 230.74 V2 26.174
RC 311.551 GL 15.27 GP .78 ZAL 132.70 ZAP 40.13 ETS 180.18 ZAE 64.22 ETE 179.87 ZAC 84.96 ETC 257.97 CLP 40.12

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 15.488 VHL 3.935 DLA 14.27 RAL 185.55 RAD 6567.6 VEL 11.699 PTH 2.06 VHP 4.581 DPA 8.91 RAP 165.41 ECC 1.2549

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 43 45	2614.87	-26.84	68.46	47.32	99.37	19 27 20	2014.9	-25.27	60.14
90.00	10 30 23	4339.30	4.52	179.76	42.15	62.02	11 42 42	3739.3	.74	173.12
100.00	20 12 42	2328.03	-28.02	47.13	47.09	100.86	20 51 30	1728.0	-26.24	38.78
100.00	11 44 8	4101.37	5.57	161.70	41.57	60.58	12 52 29	3501.4	1.61	155.15
110.00	21 37 58	2061.24	-31.11	26.05	46.27	104.93	22 12 19	1461.2	-28.75	17.65
110.00	12 35 21	3940.93	8.28	147.86	39.91	56.72	13 41 2	3340.9	3.84	141.58

DIFFERENTIAL CORRECTIONS

TDE-1.1364 TRA 6.0687 TC-11.8674 BAU 2.4590
RDE .4052 RRA .0472 RC3 .4428 FAU .19297
FDE-1.8905 FRA 6.4357 FC-10.7865 BSP 45921
BDE 1.2065 BRA 6.0689 BC311.8757 FSP 4033

MID-COURSE EXECUTION ACCURACY

SGT13156.7 SGR 688.9 SG3 1136.8
RRT -.3955 RRF -.4299 RTF .9935
SGB13174.7 R23 .0392 R13 -.9936
SG113159.5 SG2 632.6 THA 178.81

ORBIT DETERMINATION ACCURACY

ST 3208.7 SR 590.4 SS 1585.9
CRT -.4860 CRS .6614 CST -.9768
LSA 3579.7 MSA 587.1 SSA 19.7
EL1 3221.9 EL2 513.9 ALF 174.76

LAUNCH DATE NOV 7 1964 FLIGHT TIME 386.00 ARRIVAL DATE NOV 28 1965

DISTANCE 857.071

HELIOCENTRIC CONIC

RL 148.24 LAL -.00 LOL 44.62 VL 32.922 GAL -5.54 AZL 88.18 HCA 259.61 SMA 187.78 ECC .23076 INC 1.8161 V1 30.058
RP 209.24 LAP -1.79 LOP 304.22 VP 23.702 GAP -11.64 AZP 90.33 TAL 329.74 TAP 229.34 RCA 144.45 APO 231.11 V2 26.198
RC 312.486 GL 15.07 GP .76 ZAL 133.65 ZAP 39.32 ETS 180.17 ZAE 63.12 ETE 179.90 ZAC 85.03 ETC 257.91 CLP 39.32

EARTH TO MARS

PLANETOCENTRIC CONIC

C3 15.949 VHL 3.994 DLA 13.70 RAL 186.34 RAD 6567.6 VEL 11.719 PTH 2.06 VHP 4.667 DPA 8.72 RAP 165.81 ECC 1.2625

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 51 54	2601.82	-26.70	67.53	48.38	99.81	19 35 16	2001.8	-25.07	59.24
90.00	10 28 32	4365.63	5.36	181.24	43.28	62.15	11 41 17	3765.6	1.59	174.59
100.00	20 20 27	2316.23	-27.87	46.28	48.14	101.28	20 59 3	1716.2	-26.03	37.96
100.00	11 42 40	4126.45	6.41	163.09	42.70	60.74	12 51 26	3526.5	2.46	156.53
110.00	21 44 53	2052.04	-30.95	25.38	47.30	105.29	22 19 5	1452.0	-28.54	17.01
110.00	12 34 43	3963.41	9.12	149.07	41.05	56.91	13 40 46	3363.4	4.70	142.76

DIFFERENTIAL CORRECTIONS

TDE-1.2363 TRA 6.3043 TC-11.6873 BAU 2.4938
RDE .4144 RRA .0467 RC3 .4328 FAU .18323
FDE-1.9042 FRA 6.2854 FC3-9.9460 BSP 46503
BDE 1.3039 BRA 6.3045 BC311.6953 FSP 3854

MID-COURSE EXECUTION ACCURACY

SGT13302.5 SGR 691.2 SG3 1081.6
RRT -.3958 RRF -.4311 RTF .9933
SGB13320.5 R23 .0403 R13 -.9933
SG113305.4 SG2 634.6 THA 178.82

ORBIT DETERMINATION ACCURACY

ST 3320.3 SR 594.9 SS 1576.0
CRT -.5060 CRS .6748 CST -.9779
LSA 3677.4 MSA 581.7 SSA 19.4
EL1 3334.3 EL2 511.0 ALF 174.69

LAUNCH DATE NOV 7 1964 FLIGHT TIME 388.00 ARRIVAL DATE NOV 30 1965

HELIOCENTRIC CONIC DISTANCE 861.284 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.927 GAL -5.70 AZL 88.18 HCA 260.85 SMA 187.87 ECC .23220 INC 1.8194 V1 30.058
RP 209.04 LAP -1.80 LOP 305.46 VP 23.735 GAP -11.79 AZP 90.29 TAL 329.00 TAP 229.84 RCA 144.25 APO 231.49 V2 26.221
RC 313.411 GL 14.87 GP .75 ZAL 134.60 ZAP 38.54 ETS 180.16 ZAE 62.05 ETE 179.93 ZAC 85.11 ETC 257.86 CLP 38.54

PLANETOCENTRIC CONIC

C3 16.439 VHL 4.055 DLA 13.14 RAL 187.13 RAD 6567.7 VEL 11.740 PTH 2.07 VHP 4.755 DPA 8.52 RAP 166.23 ECC 1.2705

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 0 0	2589.09	-26.55	66.63	49.46	100.24	19 43 9	1989.1	-24.86	58.37
90.00	10 26 43	4392.16	6.20	182.74	44.43	62.32	11 39 55	3792.2	2.45	176.07
100.00	20 28 11	2304.71	-27.71	45.46	49.20	101.68	21 6 35	1704.7	-25.82	37.17
100.00	11 41 13	4151.76	7.25	164.50	43.86	60.92	12 50 25	3551.8	3.31	157.92
110.00	21 51 48	2043.06	-30.79	24.74	48.35	105.65	22 25 51	1443.1	-28.33	16.40
110.00	12 34 5	3986.18	9.96	150.29	42.21	57.13	13 40 32	3386.2	5.56	143.96

DIFFERENTIAL CORRECTIONS
TDE-1.3392 TRA 6.5470 TC-11.4968 BAU 2.5284
RDE .4238 RRA .0459 RC3 .4229 FAU .17382
FDE-1.9133 FRA 6.1346 FC3-9.1537 BSP 47078
BDE 1.4046 BRA 6.5471 BC311.5045 FSP 3682

MID-COURSE EXECUTION ACCURACY
SGT13444.4 SGR 693.4 SG3 1028.3
RRT -.3966 RRF -.4328 RTF .9930
SGB13462.2 R23 .0415 R13 -.9930
SG113447.2 SG2 636.4 THA 178.83

ORBIT DETERMINATION ACCURACY
ST 3432.6 SR 599.3 SS 1564.1
CRT -.5246 CRS .6873 CST -.9788
LSA 3775.7 MSA 576.3 SSA 19.1
EL1 3447.3 EL2 508.1 ALF 174.65

LAUNCH DATE NOV 7 1964 FLIGHT TIME 390.00 ARRIVAL DATE DEC 2 1965

HELIOCENTRIC CONIC DISTANCE 865.494 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.932 GAL -5.86 AZL 88.18 HCA 262.09 SMA 187.96 ECC .23371 INC 1.8228 V1 30.058
RP 208.85 LAP -1.81 LOP 306.71 VP 23.766 GAP -11.94 AZP 90.25 TAL 328.25 TAP 230.33 RCA 144.03 APO 231.89 V2 26.243
RC 314.329 GL 14.66 GP .73 ZAL 135.56 ZAP 37.79 ETS 180.15 ZAE 61.00 ETE 179.96 ZAC 85.19 ETC 257.80 CLP 37.78

PLANETOCENTRIC CONIC

C3 16.960 VHL 4.118 DLA 12.56 RAL 187.92 RAD 6567.7 VEL 11.762 PTH 2.08 VHP 4.845 DPA 8.31 RAP 166.68 ECC 1.2791

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 8 4	2576.67	-26.39	65.76	50.55	100.65	19 51 0	1976.7	-24.65	57.52
90.00	10 24 56	4418.87	7.04	184.25	45.60	62.50	11 38 35	3818.9	3.31	177.57
100.00	20 35 52	2293.49	-27.55	44.66	50.29	102.08	21 14 6	1693.5	-25.61	36.40
100.00	11 39 48	4177.29	8.09	165.93	45.04	61.12	12 49 26	3577.3	4.17	159.32
110.00	21 58 41	2034.33	-30.62	24.11	49.41	105.99	22 32 36	1434.3	-28.13	15.80
110.00	12 33 28	4009.22	10.81	151.53	43.40	57.37	13 40 18	3409.2	6.43	145.18

DIFFERENTIAL CORRECTIONS
TDE-1.4450 TRA 6.7970 TC-11.2960 BAU 2.5629
RDE .4335 RRA .0448 RC3 .4131 FAU .16470
FDE-1.9189 FRA 5.9839 FC3-8.4072 BSP 47629
BDE 1.5086 BRA 6.7972 BC311.3035 FSP 3513

MID-COURSE EXECUTION ACCURACY
SGT13582.0 SGR 695.5 SG3 976.9
RRT -.3980 RRF -.4351 RTF .9926
SGB13599.8 R23 .0427 R13 -.9927
SG113584.8 SG2 637.9 THA 178.83

ORBIT DETERMINATION ACCURACY
ST 3545.1 SR 603.5 SS 1550.5
CRT -.5420 CRS .6993 CST -.9796
LSA 3874.2 MSA 571.1 SSA 18.8
EL1 3560.4 EL2 505.0 ALF 174.62

LAUNCH DATE NOV 7 1964 FLIGHT TIME 392.00 ARRIVAL DATE DEC 4 1965

HELIOCENTRIC CONIC DISTANCE 869.701 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.937 GAL -6.03 AZL 88.17 HCA 263.33 SMA 188.05 ECC .23528 INC 1.8261 V1 30.058
RP 208.67 LAP -1.81 LOP 307.95 VP 23.797 GAP -12.09 AZP 90.21 TAL 327.48 TAP 230.81 RCA 143.81 APO 232.30 V2 26.264
RC 315.238 GL 14.44 GP .72 ZAL 136.51 ZAP 37.05 ETS 180.14 ZAE 59.96 ETE 179.99 ZAC 85.27 ETC 257.73 CLP 37.05

PLANETOCENTRIC CONIC

C3 17.512 VHL 4.185 DLA 11.99 RAL 188.70 RAD 6567.7 VEL 11.785 PTH 2.08 VHP 4.937 DPA 8.10 RAP 167.14 ECC 1.2882

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 16 5	2564.60	-26.24	64.90	51.66	101.05	19 58 49	1964.6	-24.45	56.69
90.00	10 23 11	4445.77	7.89	185.78	46.80	62.72	11 37 17	3845.8	4.17	179.07
100.00	20 43 31	2282.57	-27.40	43.89	51.39	102.45	21 21 34	1682.6	-25.40	35.66
100.00	11 38 25	4203.03	8.93	167.37	46.24	61.35	12 48 28	3603.0	5.04	160.75
110.00	22 5 34	2025.85	-30.46	23.50	50.49	106.31	22 39 20	1425.8	-27.93	15.22
110.00	12 32 52	4032.51	11.66	152.80	44.61	57.64	13 40 5	3432.5	7.31	146.41

DIFFERENTIAL CORRECTIONS
TDE-1.5554 TRA 7.0531 TC-11.0886 BAU 2.5978
RDE .4436 RRA .0434 RC3 .4034 FAU .15592
FDE-1.9218 FRA 5.8319 FC3-7.7083 BSP 48159
BDE 1.6175 BRA 7.0532 BC311.0960 FSP 3349

MID-COURSE EXECUTION ACCURACY
SGT13715.8 SGR 697.5 SG3 927.2
RRT -.4000 RRF -.4382 RTF .9923
SGB13733.5 R23 .0441 R13 -.9923
SG113718.6 SG2 639.1 THA 178.83

ORBIT DETERMINATION ACCURACY
ST 3658.4 SR 607.6 SS 1535.5
CRT -.5588 CRS .7110 CST -.9803
LSA 3973.7 MSA 565.7 SSA 18.6
EL1 3674.4 EL2 501.7 ALF 174.60

LAUNCH DATE NOV 7 1964 FLIGHT TIME 394.00 ARRIVAL DATE DEC 6 1965

HELIOCENTRIC CONIC DISTANCE 873.904 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.943 GAL -6.20 AZL 88.17 HCA 264.58 SMA 188.15 ECC .23692 INC 1.8294 V1 30.058
RP 208.49 LAP -1.82 LOP 309.20 VP 23.827 GAP -12.24 AZP 90.17 TAL 326.69 TAP 231.27 RCA 143.57 APO 232.72 V2 26.285
RC 316.140 GL 14.23 GP .70 ZAL 137.47 ZAP 36.34 ETS 180.13 ZAE 58.95 ETE 180.02 ZAC 85.37 ETC 257.67 CLP 36.33

PLANETOCENTRIC CONIC

C3 18.099 VHL 4.254 DLA 11.41 RAL 189.49 RAD 6567.7 VEL 11.810 PTH 2.09 VHP 5.031 DPA 7.87 RAP 167.63 ECC 1.2979

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 24 2	2552.87	-26.08	64.08	52.78	101.44	20 6 35	1952.9	-24.24	55.90
90.00	10 21 29	4472.84	8.73	187.32	48.03	62.95	11 36 2	3872.8	5.03	180.59
100.00	20 51 8	2271.97	-27.24	43.14	52.51	102.82	21 29 0	1672.0	-25.20	34.93
100.00	11 37 4	4228.98	9.77	168.84	47.48	61.61	12 47 33	3629.0	5.91	162.18
110.00	22 12 25	2017.65	-30.31	22.91	51.59	106.63	22 46 2	1417.6	-27.73	14.66
110.00	12 32 17	4056.06	12.52	154.09	45.85	57.93	13 39 53	3456.1	8.19	147.66

DIFFERENTIAL CORRECTIONS
TDE-1.6683 TRA 7.3169 TC-10.8721 BAU 2.6325
RDE .4539 RRA .0417 RC3 .3938 FAU .14743
FDE-1.9206 FRA 5.6797 FC3-7.0518 BSP 48680
BDE 1.7289 BRA 7.3170 BC310.8792 FSP 3190

MID-COURSE EXECUTION ACCURACY
SGT13844.9 SGR 699.4 SG3 879.3
RRT -.4025 RRF -.4418 RTF .9919
SGB13862.5 R23 .0456 R13 -.9919
SG113847.7 SG2 640.1 THA 178.83

ORBIT DETERMINATION ACCURACY
ST 3771.0 SR 611.6 SS 1518.4
CRT -.5742 CRS .7221 CST -.9809
LSA 4072.5 MSA 560.6 SSA 18.3
EL1 3787.6 EL2 498.5 ALF 174.59

LAUNCH DATE NOV 7 1964 FLIGHT TIME 396.00 ARRIVAL DATE DEC 8 1965

HELIOCENTRIC CONIC DISTANCE 878.102 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.948 GAL -6.38 AZL 88.17 HCA 265.83 SMA 188.24 ECC .23863 INC 1.8327 V1 30.058
RP 208.32 LAP -1.83 LOP 310.45 VP 23.856 GAP -12.40 AZP 90.13 TAL 325.89 TAP 231.72 RCA 143.32 APO 233.16 V2 26.304
RC 317.035 GL 14.01 GP .69 ZAL 138.44 ZAP 35.64 ETS 180.12 ZAE 57.96 ETE 180.05 ZAC 85.46 ETC 257.60 CLP 35.64

PLANETOCENTRIC CONIC

C3 18.723 VHL 4.327 DLA 10.83 RAL 190.27 RAD 6567.8 VEL 11.837 PTH 2.10 VHP 5.126 DPA 7.63 RAP 168.13 ECC 1.3081

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 31 57	2541.50	-25.93	63.29	53.92	101.81	20 14 19	1941.5	-24.04	55.12
90.00	10 19 48	4500.08	9.57	188.88	49.29	63.22	11 34 48	3900.1	5.90	182.13
100.00	20 58 43	2261.70	-27.08	42.42	53.64	103.17	21 36 24	1661.7	-25.00	34.24
100.00	11 35 44	4255.14	10.62	170.32	48.74	61.89	12 46 39	3655.1	6.78	163.64
110.00	22 19 14	2009.73	-30.15	22.35	52.70	106.93	22 52 44	1409.7	-27.54	14.13
110.00	12 31 42	4079.85	13.37	155.40	47.11	58.24	13 39 42	3479.8	9.08	148.93

DIFFERENTIAL CORRECTIONS
TDE-1.7844 TRA 7.5884 TC-10.6486 BAU 2.6672
RDE .4645 RRA .0395 RC3 .3842 FAU .13921
FDE-1.9155 FRA 5.5270 FC3-6.4368 BSP 49181
BDE 1.8439 BRA 7.5885 BC310.6555 FSP 3035

MID-COURSE EXECUTION ACCURACY
SGT13970.1 SGR 701.2 SG3 833.1
RRT -.4055 RRF -.4459 RTF .9914
SGB13987.7 R23 .0471 R13 -.9915
SG113973.0 SG2 640.8 THA 178.83

ORBIT DETERMINATION ACCURACY
ST 3883.1 SR 615.3 SS 1499.3
CRT -.5888 CRS .7326 CST -.9814
LSA 4170.9 MSA 555.5 SSA 18.1
EL1 3900.3 EL2 495.2 ALF 174.58

LAUNCH DATE NOV 7 1964 FLIGHT TIME 398.00 ARRIVAL DATE DEC 10 1965

HELIOCENTRIC CONIC DISTANCE 882.294 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.954 GAL -6.56 AZL 88.16 HCA 267.08 SMA 188.34 ECC .24041 INC 1.8360 V1 30.058
RP 208.16 LAP -1.83 LOP 311.70 VP 23.884 GAP -12.55 AZP 90.09 TAL 325.08 TAP 232.15 RCA 143.06 APO 233.62 V2 26.323
RC 317.924 GL 13.78 GP .67 ZAL 139.40 ZAP 34.97 ETS 180.11 ZAE 56.99 ETE 180.07 ZAC 85.57 ETC 257.53 CLP 34.97

PLANETOCENTRIC CONIC

C3 19.385 VHL 4.403 DLA 10.25 RAL 191.05 RAD 6567.8 VEL 11.865 PTH 2.10 VHP 5.224 DPA 7.39 RAP 168.66 ECC 1.3190

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 39 49	2530.50	-25.77	62.52	55.08	102.16	20 22 0	1930.5	-23.84	54.38
90.00	10 18 10	4527.48	10.40	190.46	50.57	63.51	11 33 38	3927.5	6.76	183.67
100.00	21 6 14	2251.77	-26.92	41.72	54.79	103.50	21 43 46	1651.8	-24.80	33.57
100.00	11 34 26	4281.44	11.46	171.82	50.02	62.20	12 45 47	3681.4	7.65	165.10
110.00	22 26 1	2002.11	-30.00	21.81	53.83	107.21	22 59 23	1402.1	-27.35	13.62
110.00	12 31 8	4103.87	14.23	156.73	48.41	58.59	13 39 32	3503.9	9.97	150.22

DIFFERENTIAL CORRECTIONS
TDE-1.9048 TRA 7.8672 TC-10.4203 BAU 2.7023
RDE .4754 RRA .0371 RC3 .3748 FAU .13126
FDE-1.9081 FRA 5.3734 FC3-5.8621 BSP 49670
BDE 1.9632 BRA 7.8672 BC310.4271 FSP 2886

MID-COURSE EXECUTION ACCURACY
SGT14091.7 SGR 702.9 SG3 788.6
RRT -.4090 RRF -.4507 RTF .9909
SGB14109.3 R23 .0488 R13 -.9910
SG114094.7 SG2 641.3 THA 178.83

ORBIT DETERMINATION ACCURACY
ST 3995.2 SR 619.0 SS 1478.8
CRT -.6027 CRS .7429 CST -.9818
LSA 4269.4 MSA 550.4 SSA 17.8
EL1 4012.8 EL2 491.7 ALF 174.58

LAUNCH DATE NOV 7 1964 FLIGHT TIME 400.00 ARRIVAL DATE DEC 12 1965

HELIOCENTRIC CONIC DISTANCE 886.480 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.959 GAL -6.75 AZL 88.16 HCA 268.33 SMA 188.44 ECC .24227 INC 1.8393 V1 30.058
RP 208.01 LAP -1.84 LOP 312.95 VP 23.912 GAP -12.71 AZP 90.05 TAL 324.24 TAP 232.57 RCA 142.79 APO 234.09 V2 26.341
RC 318.808 GL 13.56 GP .66 ZAL 140.36 ZAP 34.32 ETS 180.10 ZAE 56.04 ETE 180.10 ZAC 85.67 ETC 257.46 CLP 34.31

PLANETOCENTRIC CONIC

C3 20.089 VHL 4.482 DLA 9.66 RAL 191.83 RAD 6567.8 VEL 11.894 PTH 2.11 VHP 5.324 DPA 7.14 RAP 169.21 ECC 1.3306

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 47 37	2519.88	-25.62	61.78	56.25	102.50	20 29 37	1919.9	-23.64	53.67
90.00	10 16 34	4555.03	11.23	192.06	51.88	63.84	11 32 29	3955.0	7.63	185.24
100.00	21 13 43	2242.19	-26.77	41.05	55.95	103.82	21 51 5	1642.2	-24.60	32.92
100.00	11 33 9	4307.94	12.29	173.34	51.34	62.54	12 44 57	3707.9	8.52	166.59
110.00	22 32 47	1994.80	-29.85	21.29	54.97	107.49	23 6 1	1394.8	-27.17	13.13
110.00	12 30 35	4128.10	15.08	158.09	49.73	58.96	13 39 23	3528.1	10.86	151.53

DIFFERENTIAL CORRECTIONS
TDE-2.0281 TRA 8.1539 TC-10.1880 BAU 2.7379
RDE .4867 RRA .0342 RC3 .3654 FAU .12362
FDE-1.8971 FRA 5.2187 FC3-5.3275 BSP 50122
BDE 2.0857 BRA 8.1539 BC310.1945 FSP 2739

MID-COURSE EXECUTION ACCURACY
SGT14210.0 SGR 704.6 SG3 745.7
RRT -.4131 RRF -.4560 RTF .9904
SGB14227.5 R23 .0506 R13 -.9904
SG114213.0 SG2 641.5 THA 178.82

ORBIT DETERMINATION ACCURACY
ST 4106.0 SR 622.4 SS 1456.3
CRT -.6157 CRS .7527 CST -.9821
LSA 4366.9 MSA 545.5 SSA 17.6
EL1 4124.1 EL2 488.3 ALF 174.59

LAUNCH DATE NOV 7 1964 FLIGHT TIME 402.00 ARRIVAL DATE DEC 14 1965

HELIOCENTRIC CONIC DISTANCE 890.659 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.965 GAL -6.94 AZL 88.16 HCA 269.58 SMA 188.54 ECC .24421 INC 1.8426 V1 30.058
RP 207.86 LAP -1.84 LOP 314.20 VP 23.938 GAP -12.88 AZP 90.01 TAL 323.39 TAP 232.98 RCA 142.50 APO 234.58 V2 26.357
RC 319.685 GL 13.33 GP .65 ZAL 141.32 ZAP 33.68 ETS 180.09 ZAE 55.10 ETE 180.12 ZAC 85.79 ETC 267.39 CLP 33.68

PLANETOCENTRIC CONIC

C3 20.836 VHL 4.565 DLA 9.08 RAL 192.60 RAD 6567.8 VEL 11.925 PTH 2.12 VHP 5.426 DPA 6.87 RAP 169.77 ECC 1.3429

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 55 22	2509.64	-25.46	61.07	57.44	102.83	20 37 12	1909.6	-23.44	52.98
90.00	10 15 0	4582.72	12.06	193.67	53.22	64.19	11 31 23	3982.7	8.49	186.81
100.00	21 21 9	2232.98	-26.62	40.41	57.13	104.13	21 58 22	1633.0	-24.41	32.30
100.00	11 31 55	4334.61	13.13	174.89	52.68	62.90	12 44 9	3734.6	9.39	168.09
110.00	22 39 30	1987.81	-29.71	20.80	56.13	107.75	23 12 38	1387.8	-26.99	12.66
110.00	12 30 3	4152.54	15.94	159.47	51.08	59.35	13 39 16	3552.5	11.75	152.86

DIFFERENTIAL CORRECTIONS
TDE-2.1562 TRA 8.4480 TC3-9.9543 BAU 2.7746
RDE .4984 RRA .0310 RC3 .3562 FAU .11628
FDE-1.8838 FRA 5.0625 FC3-4.8315 BSP 50539
BDE 2.2131 BRA 8.4480 BC3 9.9607 FSP 2596

MID-COURSE EXECUTION ACCURACY
SGT14325.7 SGR 706.2 SG3 704.3
RRT -.4177 RRF -.4621 RTF .9897
SGB14343.1 R23 .0527 R13 -.9898
SG114328.8 SG2 641.5 THA 178.82

ORBIT DETERMINATION ACCURACY
ST 4216.4 SR 625.8 SS 1432.4
CRT -.6283 CRS .7624 CST -.9823
LSA 4464.2 MSA 540.5 SSA 17.4
EL1 4235.0 EL2 484.7 ALF 174.60

LAUNCH DATE NOV 7 1964 FLIGHT TIME 404.00 ARRIVAL DATE DEC 16 1965

HELIOCENTRIC CONIC DISTANCE 894.830 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.971 GAL -7.14 AZL 88.15 HCA 270.84 SMA 188.64 ECC .24624 INC 1.8459 V1 30.058
RP 207.73 LAP -1.85 LOP 315.46 VP 23.964 GAP -13.04 AZP 89.97 TAL 322.53 TAP 233.37 RCA 142.19 APO 235.09 V2 26.373
RC 320.558 GL 13.10 GP .64 ZAL 142.28 ZAP 33.06 ETS 180.07 ZAE 54.18 ETE 180.15 ZAC 85.90 ETC 257.32 CLP 33.06

PLANETOCENTRIC CONIC

C3 21.629 VHL 4.651 DLA 8.50 RAL 193.37 RAD 6567.9 VEL 11.959 PTH 2.13 VHP 5.530 DPA 6.60 RAP 170.35 ECC 1.3560

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 3 4	2499.79	-25.31	60.38	58.65	103.14	20 44 44	1899.8	-23.25	52.32
90.00	10 13 28	4610.56	12.88	195.31	54.59	64.56	11 30 19	4010.6	9.35	188.41
100.00	21 28 32	2224.14	-26.47	39.80	58.33	104.42	22 5 36	1624.1	-24.23	31.71
100.00	11 30 41	4361.44	13.95	176.45	54.05	63.29	12 43 23	3761.4	10.26	169.61
110.00	22 46 10	1981.15	-29.57	20.33	57.31	107.99	23 19 12	1381.2	-26.82	12.22
110.00	12 29 32	4177.19	16.79	160.88	52.45	59.78	13 39 9	3577.2	12.65	154.21

DIFFERENTIAL CORRECTIONS
TDE-2.2885 TRA 8.7496 TC3-9.7176 BAU 2.8118
RDE .5104 RRA .0274 RC3 .3471 FAU .10918
FDE-1.8676 FRA 4.9046 FC3-4.3698 BSP 50940
BDE 2.3447 BRA 8.7497 BC3 9.7238 FSP 2458

MID-COURSE EXECUTION ACCURACY
SGT14437.3 SGR 707.7 SG3 664.4
RRT -.4228 RRF -.4687 RTF .9891
SGB14454.6 R23 .0549 R13 -.9891
SG114440.4 SG2 641.2 THA 178.81

ORBIT DETERMINATION ACCURACY
ST 4325.9 SR 628.9 SS 1406.7
CRT -.6403 CRS .7718 CST -.9825
LSA 4560.8 MSA 535.5 SSA 17.1
EL1 4344.8 EL2 481.0 ALF 174.62

LAUNCH DATE NOV 7 1964 FLIGHT TIME 406.00 ARRIVAL DATE DEC 18 1965

HELIOCENTRIC CONIC DISTANCE 898.991 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.977 GAL -7.35 AZL 88.15 HCA 272.09 SMA 188.75 ECC .24835 INC 1.8492 V1 30.058
RP 207.60 LAP -1.85 LOP 316.72 VP 23.988 GAP -13.21 AZP 89.93 TAL 321.65 TAP 233.74 RCA 141.87 APO 235.62 V2 26.388
RC 321.425 GL 12.86 GP .62 ZAL 143.23 ZAP 32.46 ETS 180.06 ZAE 53.28 ETE 180.17 ZAC 86.03 ETC 257.25 CLP 32.46

PLANETOCENTRIC CONIC

C3 22.473 VHL 4.741 DLA 7.92 RAL 194.14 RAD 6567.9 VEL 11.994 PTH 2.14 VHP 5.637 DPA 6.32 RAP 170.95 ECC 1.3698

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 10 42	2490.33	-25.16	59.73	59.87	103.43	20 52 12	1890.3	-23.07	51.69
90.00	10 11 58	4638.52	13.69	196.96	55.98	64.97	11 29 17	4038.5	10.21	190.02
100.00	21 35 51	2215.67	-26.33	39.21	59.54	104.70	22 12 47	1615.7	-24.05	31.15
100.00	11 29 30	4388.42	14.77	178.03	55.44	63.71	12 42 38	3788.4	11.12	171.15
110.00	22 52 40	1974.83	-29.43	19.88	58.51	108.22	23 25 44	1374.8	-26.66	11.80
110.00	12 29 2	4202.02	17.63	162.30	53.86	60.23	13 39 4	3602.0	13.54	155.58

DIFFERENTIAL CORRECTIONS
TDE-2.4238 TRA 9.0599 TC3-9.4781 BAU 2.8494
RDE .5227 RRA .0233 RC3 .3381 FAU .10229
FDE-1.8484 FRA 4.7462 FC3-3.9405 BSP 51313
BDE 2.4795 BRA 9.0599 BC3 9.4841 FSP 2323

MID-COURSE EXECUTION ACCURACY
SGT14545.0 SGR 709.0 SG3 626.0
RRT -.4283 RRF -.4758 RTF .9883
SGB14562.3 R23 .0572 R13 -.9883
SG114548.2 SG2 640.6 THA 178.80

ORBIT DETERMINATION ACCURACY
ST 4433.4 SR 631.9 SS 1379.4
CRT -.6515 CRS .7809 CST -.9825
LSA 4655.6 MSA 530.7 SSA 16.9
EL1 4452.7 EL2 477.4 ALF 174.63

LAUNCH DATE NOV 7 1964 FLIGHT TIME 408.00 ARRIVAL DATE DEC 20 1965

HELIOCENTRIC CONIC DISTANCE 903.143 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.983 GAL -7.56 AZL 88.15 HCA 273.35 SMA 188.85 ECC .25055 INC 1.8525 V1 30.058
RP 207.48 LAP -1.85 LOP 317.98 VP 24.012 GAP -13.38 AZP 89.89 TAL 320.75 TAP 234.10 RCA 141.53 APO 236.17 V2 26.402
RC 322.286 GL 12.63 GP .61 ZAL 144.19 ZAP 31.88 ETS 180.05 ZAE 52.39 ETE 180.20 ZAC 86.16 ETC 257.18 CLP 31.88

PLANETOCENTRIC CONIC

C3 23.369 VHL 4.834 DLA 7.33 RAL 194.91 RAD 6567.9 VEL 12.031 PTH 2.15 VHP 5.746 DPA 6.04 RAP 171.57 ECC 1.3846

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 18 16	2481.28	-25.02	59.11	61.10	103.71	20 59 37	1881.3	-22.89	51.09
90.00	10 10 30	4666.61	14.49	198.63	57.40	65.41	11 28 17	4066.6	11.06	191.64
100.00	21 43 8	2207.58	-26.18	38.65	60.77	104.96	22 19 55	1607.6	-23.87	30.61
100.00	11 28 20	4415.54	15.58	179.64	56.87	64.16	12 41 55	3815.5	11.98	172.70
110.00	22 59 25	1968.86	-29.30	19.47	59.72	108.44	23 32 13	1368.9	-26.51	11.40
110.00	12 28 32	4227.02	18.47	163.76	55.29	60.71	13 38 59	3627.0	14.43	156.98

DIFFERENTIAL CORRECTIONS
TDE-2.5635 TRA 9.3791 TC3-9.2384 BAU 2.8881
RDE .5355 RRA .0188 RC3 .3292 FAU .09568
FDE-1.8262 FRA 4.5864 FC3-3.5445 BSP 51660
BDE 2.6188 BRA 9.3792 BC3 9.2443 FSP 2191

MID-COURSE EXECUTION ACCURACY
SGT14650.4 SGR 710.3 SG3 589.0
RRT -.4342 RRF -.4835 RTF .9875
SGB14667.6 R23 .0598 R13 -.9875
SG114653.7 SG2 639.7 THA 178.79

ORBIT DETERMINATION ACCURACY
ST 4539.8 SR 634.8 SS 1350.3
CRT -.6622 CRS .7897 CST -.9825
LSA 4749.7 MSA 525.8 SSA 16.7
EL1 4559.4 EL2 473.6 ALF 174.65

LAUNCH DATE NOV 7 1964 FLIGHT TIME 410.00 ARRIVAL DATE DEC 22 1965

HELIOCENTRIC CONIC DISTANCE 907.283 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.989 GAL -7.78 AZL 88.14 HCA 274.61 SMA 188.96 ECC .25285 INC 1.8558 V1 30.058
RP 207.36 LAP -1.85 LOP 319.24 VP 24.035 GAP -13.56 AZP 89.85 TAL 319.83 TAP 234.45 RCA 141.18 APO 236.73 V2 26.416
RC 323.141 GL 12.39 GP .60 ZAL 145.14 ZAP 31.31 ETS 180.03 ZAE 51.53 ETE 180.22 ZAC 86.29 ETC 257.11 CLP 31.31

PLANETOCENTRIC CONIC

C3 24.321 VHL 4.932 DLA 6.76 RAL 195.67 RAD 6568.0 VEL 12.071 PTH 2.16 VHP 5.857 DPA 5.74 RAP 172.20 ECC 1.4003

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 25 47	2472.62	-24.88	58.51	62.36	103.98	21 7 0	1872.6	-22.71	50.51
90.00	10 9 4	4694.82	15.29	200.32	58.85	65.87	11 27 19	4094.8	11.90	193.28
100.00	21 50 21	2199.87	-26.05	38.12	62.02	105.21	22 27 1	1599.9	-23.71	30.10
100.00	11 27 11	4442.80	16.39	181.27	58.33	64.64	12 41 14	3842.8	12.84	174.27
110.00	23 5 58	1963.23	-29.18	19.07	60.94	108.64	23 38 41	1363.2	-26.36	11.03
110.00	12 28 4	4252.19	19.30	165.24	56.78	61.23	13 38 56	3652.2	15.31	158.39

DIFFERENTIAL CORRECTIONS
TDE-2.7070 TRA 9.7074 TC3-8.9974 BAU 2.9273
RDE .5486 RRA .0138 RC3 .3204 FAU .08924
FDE-1.8010 FRA 4.4249 FC3-3.1767 BSP 51985
BDE 2.7620 BRA 9.7074 BC3 9.0031 FSP 2064

MID-COURSE EXECUTION ACCURACY
SGT14752.1 SGR 711.6 SG3 553.2
RRT -.4406 RRF -.4916 RTF .9865
SGB14769.2 R23 .0626 R13 -.9866
SG114755.4 SG2 638.6 THA 178.78

ORBIT DETERMINATION ACCURACY
ST 4644.4 SR 637.4 SS 1319.5
CRT -.6723 CRS .7984 CST -.9824
LSA 4842.1 MSA 520.9 SSA 16.5
EL1 4664.3 EL2 469.8 ALF 174.67

LAUNCH DATE NOV 7 1964 FLIGHT TIME 412.00 ARRIVAL DATE DEC 24 1965

HELIOCENTRIC CONIC DISTANCE 911.410 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 32.995 GAL -8.01 AZL 88.14 HCA 275.88 SMA 189.06 ECC .25524 INC 1.8592 V1 30.058
RP 207.26 LAP -1.85 LOP 320.50 VP 24.056 GAP -13.74 AZP 89.81 TAL 318.90 TAP 234.77 RCA 140.81 APO 237.32 V2 26.428
RC 323.990 GL 12.16 GP .59 ZAL 146.08 ZAP 30.77 ETS 180.02 ZAE 50.67 ETE 180.24 ZAC 86.43 ETC 257.04 CLP 30.76

PLANETOCENTRIC CONIC

C3 25.333 VHL 5.033 DLA 6.18 RAL 196.43 RAD 6568.0 VEL 12.112 PTH 2.17 VHP 5.971 DPA 5.44 RAP 172.85 ECC 1.4169

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 33 14	2464.38	-24.74	57.95	63.63	104.23	21 14 18	1864.4	-22.54	49.97
90.00	10 7 40	4723.13	16.07	202.04	60.33	66.37	11 26 23	4123.1	12.74	194.94
100.00	21 57 31	2192.55	-25.92	37.61	63.28	105.44	22 34 3	1592.6	-23.55	29.62
100.00	11 26 5	4470.18	17.18	182.92	59.81	65.15	12 40 35	3870.2	13.68	175.86
110.00	23 12 28	1957.96	-29.07	18.71	62.19	108.83	23 45 6	1358.0	-26.22	10.68
110.00	12 27 36	4277.54	20.13	166.74	58.25	61.77	13 38 54	3677.5	16.20	159.82

DIFFERENTIAL CORRECTIONS
TDE-2.8556 TRA10.0432 TC3-8.7601 BAU 2.9687
RDE .5621 RRA .0084 RC3 .3117 FAU .08308
FDE-1.7739 FRA 4.2612 FC3-2.8393 BSP 52230
BDE 2.9104 BRA10.0432 BC3 8.7656 FSP 1937

MID-COURSE EXECUTION ACCURACY
SGT14851.5 SGR 712.7 SG3 518.8
RRT -.4475 RRF -.5005 RTF .9854
SGB14868.6 R23 .0657 R13 -.9855
SG114854.9 SG2 637.3 THA 178.77

ORBIT DETERMINATION ACCURACY
ST 4747.5 SR 639.9 SS 1287.4
CRT -.6822 CRS .8069 CST -.9822
LSA 4933.4 MSA 516.1 SSA 16.2
EL1 4767.7 EL2 465.9 ALF 174.70

LAUNCH DATE NOV 7 1964 FLIGHT TIME 414.00 ARRIVAL DATE DEC 26 1965

HELIOCENTRIC CONIC DISTANCE 915.524 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 33.001 GAL -8.24 AZL 88.14 HCA 277.14 SMA 189.17 ECC .25774 INC 1.8625 V1 30.058
RP 207.16 LAP -1.85 LOP 321.77 VP 24.077 GAP -13.92 AZP 89.77 TAL 317.95 TAP 235.09 RCA 140.42 APO 237.93 V2 26.439
RC 324.833 GL 11.92 GP .58 ZAL 147.03 ZAP 30.23 ETS 180.00 ZAE 49.83 ETE 180.26 ZAC 86.57 ETC 256.97 CLP 30.23

PLANETOCENTRIC CONIC

C3 26.409 VHL 5.139 DLA 5.60 RAL 197.18 RAD 6568.1 VEL 12.157 PTH 2.18 VHP 6.087 DPA 5.13 RAP 173.51 ECC 1.4346

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 40 37	2456.53	-24.61	57.41	64.91	104.47	21 21 34	1856.5	-22.38	49.45
90.00	10 6 18	4751.54	16.83	203.77	61.84	66.89	11 25 29	4151.5	13.56	196.62
100.00	22 4 37	2185.62	-25.79	37.14	64.56	105.66	22 41 3	1585.6	-23.39	29.16
100.00	11 24 59	4497.68	17.95	184.59	61.32	65.69	12 39 57	3897.7	14.52	177.48
110.00	23 18 56	1953.05	-28.96	18.36	63.44	109.01	23 51 29	1353.1	-26.09	10.36
110.00	12 27 10	4303.02	20.94	168.27	59.78	62.34	13 38 53	3703.0	17.07	161.28

DIFFERENTIAL CORRECTIONS
TDE-3.0077 TRA10.3896 TC3-8.5224 BAU 3.0108
RDE .5760 RRA .0025 RC3 .3032 FAU .07709
FDE-1.7435 FRA 4.0961 FC3-2.5271 BSP 52479
BDE 3.0623 BRA10.3896 BC3 8.5278 FSP 1816

MID-COURSE EXECUTION ACCURACY
SGT14948.0 SGR 713.8 SG3 485.6
RRT -.4546 RRF -.5098 RTF .9842
SGB14965.0 R23 .0691 R13 -.9843
SG114951.5 SG2 635.6 THA 178.75

ORBIT DETERMINATION ACCURACY
ST 4848.4 SR 642.3 SS 1253.4
CRT -.6914 CRS .8153 CST -.9819
LSA 5022.8 MSA 511.3 SSA 16.0
EL1 4868.8 EL2 462.1 ALF 174.72

LAUNCH DATE NOV 7 1964 FLIGHT TIME 416.00 ARRIVAL DATE DEC 28 1965

HELIOCENTRIC CONIC DISTANCE 919.623 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 33.007 GAL -8.49 AZL 88.13 HCA 278.40 SMA 189.28 ECC .26035 INC 1.8659 V1 30.058
RP 207.08 LAP -1.85 LOP 323.03 VP 24.097 GAP -14.11 AZP 89.73 TAL 316.99 TAP 235.39 RCA 140.00 APO 238.56 V2 26.449
RC 325.671 GL 11.68 GP .57 ZAL 147.96 ZAP 29.71 ETS 179.99 ZAE 49.01 ETE 180.28 ZAC 86.72 ETC 256.89 CLP 29.71

PLANETOCENTRIC CONIC

C3 27.552 VHL 5.249 DLA 5.03 RAL 197.93 RAD 6568.1 VEL 12.204 PTH 2.19 VHP 6.206 DPA 4.82 RAP 174.19 ECC 1.4534

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 47 57	2449.09	-24.48	56.90	66.21	104.69	21 28 46	1849.1	-22.23	48.96
90.00	10 4 57	4780.05	17.59	205.52	63.38	67.44	11 24 37	4180.0	14.38	198.31
100.00	22 11 40	2179.08	-25.67	36.69	65.85	105.87	22 47 59	1579.1	-23.24	28.73
100.00	11 23 56	4525.29	18.72	186.28	62.87	66.26	12 39 21	3925.3	15.35	179.11
110.00	23 25 21	1948.49	-28.86	18.05	64.72	109.17	23 57 49	1348.5	-25.97	10.06
110.00	12 26 45	4328.64	21.74	169.83	61.34	62.95	13 38 53	3728.6	17.94	162.76

DIFFERENTIAL CORRECTIONS
TDE-3.1645 TRA10.7445 TC3-8.2861 BAU 3.0541
RDE .5903 RRA -.0039 RC3 .2948 FAU .07129
FDE-1.7105 FRA 3.9293 FC3-2.2401 BSP 52695
BDE 3.2191 BRA10.7445 BC3 8.2914 FSP 1699

MID-COURSE EXECUTION ACCURACY
SGT15040.6 SGR 714.8 SG3 453.5
RRT -.4622 RRF -.5196 RTF .9829
SGB15057.5 R23 .0727 R13 -.9829
SG115044.2 SG2 633.8 THA 178.74

ORBIT DETERMINATION ACCURACY
ST 4947.3 SR 644.4 SS 1218.0
CRT -.7003 CRS .8235 CST -.9816
LSA 5110.5 MSA 506.4 SSA 15.8
EL1 4968.0 EL2 458.1 ALF 174.74

LAUNCH DATE NOV 7 1964 FLIGHT TIME 418.00 ARRIVAL DATE DEC 30 1965

HELIOCENTRIC CONIC DISTANCE 923.706 EARTH TO MARS

RL 148.24 LAL -.00 LOL 44.62 VL 33.013 GAL -8.74 AZL 88.13 HCA 279.67 SMA 189.39 ECC .26306 INC 1.8693 V1 30.058
RP 207.00 LAP -1.84 LOP 324.30 VP 24.115 GAP -14.31 AZP 89.69 TAL 316.00 TAP 235.67 RCA 139.57 APO 239.22 V2 26.459
RC 326.503 GL 11.45 GP .56 ZAL 148.90 ZAP 29.21 ETS 179.97 ZAE 48.20 ETE 180.31 ZAC 86.87 ETC 256.82 CLP 29.21

PLANETOCENTRIC CONIC

C3 28.769 VHL 5.364 DLA 4.46 RAL 198.68 RAD 6568.2 VEL 12.253 PTH 2.20 VHP 6.328 DPA 4.49 RAP 174.89 ECC 1.4735

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 55 13	2442.05	-24.36	56.42	67.52	104.90	21 35 55	1842.1	-22.08	48.50
90.00	10 3 39	4808.64	18.33	207.30	64.94	68.03	11 23 48	4208.6	15.18	200.03
100.00	22 18 40	2172.93	-25.55	36.27	67.16	106.06	22 54 53	1572.9	-23.11	28.32
100.00	11 22 54	4553.00	19.47	188.00	64.44	66.86	12 38 47	3953.0	16.17	180.76
110.00	23 31 43	1944.30	-28.76	17.76	66.00	109.32	24 4 7	1344.3	-25.86	9.78
110.00	12 26 20	4354.39	22.53	171.41	62.93	63.58	13 38 55	3754.4	18.80	164.26

DIFFERENTIAL CORRECTIONS
TDE-3.3251 TRA11.1109 TC3-8.0517 BAU 3.0988
RDE .6050 RRA -.0109 RC3 .2865 FAU .06566
FDE-1.6747 FRA 3.7605 FC3-1.9760 BSP 52878
BDE 3.3797 BRA11.1110 BC3 8.0568 FSP 1584

MID-COURSE EXECUTION ACCURACY
SGT15131.1 SGR 715.8 SG3 422.6
RRT -.4700 RRF -.5298 RTF .9813
SGB15148.0 R23 .0768 R13 -.9814
SG115134.9 SG2 631.6 THA 178.72

ORBIT DETERMINATION ACCURACY
ST 5043.7 SR 646.4 SS 1181.0
CRT -.7087 CRS .8316 CST -.9810
LSA 5196.1 MSA 501.7 SSA 15.6
EL1 5064.7 EL2 454.1 ALF 174.77

LAUNCH DATE NOV 8 1964 FLIGHT TIME 188.00 ARRIVAL DATE MAY 15 1965

DISTANCE 474.077

EARTH TO MARS

HELIOCENTRIC CONIC
RL 148.20 LAL .00 LOL 45.63 VL 34.257 GAL -5.63 AZL 87.92 HCA 152.88 SMA 214.93 ECC .32418 INC 2.0768 V1 30.065
RP 242.47 LAP .95 LOP 198.52 VP 21.845 GAP 17.47 AZP 91.85 TAL 336.75 TAP 129.62 RCA 145.25 APO 284.60 V2 22.638
RC 148.041 GL 13.95 GP -.65 ZAL 125.08 ZAP 167.81 ETS 181.66 ZAE 155.84 ETE 357.57 ZAC 88.45 ETC 256.00 CLP 167.83

PLANETOCENTRIC CONIC
C3 26.259 VHL 5.124 DLA 15.98 RAL 178.28 RAD 6568.1 VEL 12.151 PTH 2.18 VHP 8.292 DPA -1.96 RAP 186.06 ECC 1.4322

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 55 3	2801.78	-28.19	81.95	50.37	92.75	18 41 45	2201.8	-27.52	73.35
90.00	10 13 10	4403.48	6.56	183.38	42.70	62.39	11 26 34	3803.5	2.81	176.70
100.00	19 25 16	2510.82	-29.64	60.45	50.28	94.04	20 7 7	1910.8	-28.77	51.76
100.00	11 25 38	4169.67	7.84	165.50	42.01	61.06	12 35 8	3569.7	3.92	158.90
110.00	20 53 14	2235.63	-33.44	39.10	49.82	97.54	21 30 29	1635.6	-32.04	30.16
110.00	12 14 10	4017.63	11.12	151.99	40.03	57.47	13 21 8	3417.6	6.75	145.62

DIFFERENTIAL CORRECTIONS
TDE .9786 TRA-2.5533 TC3 1.2974 BAU .4577
RDE -.2892 RRA -.0220 RC3 -.1303 FAU .08993
FDE -.5598 FRA 2.4948 FC3-2.9650 BSP 11613
BDE 1.0204 BRA 2.5534 BC3 1.3039 FSP 1080

MID-COURSE EXECUTION ACCURACY
SGT 3432.7 SGR 350.8 SG3 367.0
RRT -.3782 RRF .3584 RTF -.9150
SGB 3450.6 R23 -.0100 R13 .9150
SG1 3435.3 SG2 324.5 THA 177.77

ORBIT DETERMINATION ACCURACY
ST 1411.5 SR 323.5 SS 770.9
CRT -.7602 CRS -.5633 CST .9639
LSA 1615.3 MSA 285.4 SSA 26.7
EL1 1433.3 EL2 207.0 ALF 169.90

LAUNCH DATE NOV 8 1964 FLIGHT TIME 190.00 ARRIVAL DATE MAY 17 1965

DISTANCE 477.051

EARTH TO MARS

HELIOCENTRIC CONIC
RL 148.20 LAL .00 LOL 45.63 VL 34.191 GAL -5.48 AZL 87.91 HCA 153.80 SMA 213.35 ECC .31862 INC 2.0862 V1 30.065
RP 242.20 LAP .92 LOP 199.44 VP 21.768 GAP 16.93 AZP 91.87 TAL 337.09 TAP 130.88 RCA 145.37 APO 281.33 V2 22.664
RC 150.330 GL 14.28 GP -.69 ZAL 124.53 ZAP 167.27 ETS 181.68 ZAE 155.99 ETE 357.62 ZAC 88.49 ETC 255.98 CLP 167.28

PLANETOCENTRIC CONIC
C3 25.244 VHL 5.024 DLA 16.48 RAL 177.94 RAD 6568.0 VEL 12.109 PTH 2.17 VHP 8.110 DPA -2.15 RAP 186.38 ECC 1.4155

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 48 53	2810.56	-28.22	82.60	49.51	92.43	18 35 44	2210.6	-27.59	73.99
90.00	10 16 37	4375.22	5.66	181.78	41.85	62.21	11 29 32	3775.2	1.90	175.13
100.00	19 19 31	2518.29	-29.68	61.01	49.42	93.75	20 1 29	1918.3	-28.84	52.30
100.00	11 28 40	4142.73	6.95	163.99	41.15	60.85	12 37 43	3542.7	3.01	157.42
110.00	20 48 19	2240.46	-33.48	39.47	48.98	97.33	21 25 39	1640.5	-32.11	30.51
110.00	12 16 21	3993.32	10.22	150.67	39.17	57.20	13 22 55	3393.3	5.83	144.34

DIFFERENTIAL CORRECTIONS
TDE .9473 TRA-2.5270 TC3 1.3704 BAU .4648
RDE -.2756 RRA -.0146 RC3 -.1566 FAU .09294
FDE -.5529 FRA 2.5491 FC3-3.1873 BSP 11922
BDE .9865 BRA 2.5271 BC3 1.3772 FSP 1136

MID-COURSE EXECUTION ACCURACY
SGT 3477.7 SGR 343.3 SG3 384.9
RRT -.3988 RRF .3824 RTF -.9167
SGB 3494.6 R23 -.0151 R13 .9167
SG1 3480.4 SG2 314.6 THA 177.73

ORBIT DETERMINATION ACCURACY
ST 1407.6 SR 314.3 SS 778.3
CRT -.7570 CRS -.5550 CST .9625
LSA 1613.7 MSA 284.9 SSA 26.7
EL1 1428.0 EL2 202.4 ALF 170.21

LAUNCH DATE NOV 8 1964 FLIGHT TIME 192.00 ARRIVAL DATE MAY 19 1965

DISTANCE 480.076

EARTH TO MARS

HELIOCENTRIC CONIC
RL 148.20 LAL .00 LOL 45.63 VL 34.126 GAL -5.33 AZL 87.90 HCA 154.72 SMA 211.86 ECC .31327 INC 2.0963 V1 30.065
RP 241.93 LAP .89 LOP 200.37 VP 21.696 GAP 16.39 AZP 91.90 TAL 337.42 TAP 132.15 RCA 145.49 APO 278.23 V2 22.692
RC 152.629 GL 14.61 GP -.73 ZAL 123.96 ZAP 166.71 ETS 181.71 ZAE 156.19 ETE 357.66 ZAC 88.54 ETC 255.97 CLP 166.73

PLANETOCENTRIC CONIC
C3 24.289 VHL 4.928 DLA 17.00 RAL 177.59 RAD 6568.0 VEL 12.069 PTH 2.16 VHP 7.932 DPA -2.34 RAP 186.70 ECC 1.3997

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 42 30	2820.26	-28.25	83.30	48.65	92.07	18 29 30	2220.3	-27.66	74.69
90.00	10 20 14	4346.53	4.75	180.17	41.03	62.05	11 32 40	3746.5	.98	173.53
100.00	19 13 34	2526.57	-29.71	61.62	48.57	93.43	19 55 41	1926.6	-28.92	52.91
100.00	11 31 51	4115.45	6.04	162.48	40.32	60.67	12 40 26	3515.5	2.09	155.92
110.00	20 43 15	2245.95	-33.53	39.90	48.16	97.08	21 20 41	1646.0	-32.19	30.92
110.00	12 18 39	3968.83	9.32	149.36	38.32	56.96	13 24 47	3368.8	4.90	143.05

DIFFERENTIAL CORRECTIONS
TDE .9218 TRA-2.4944 TC3 1.4557 BAU .4750
RDE -.2625 RRA -.0075 RC3 -.1434 FAU .09603
FDE -.5431 FRA 2.6062 FC3-3.4230 BSP 12084
BDE .9585 BRA 2.4944 BC3 1.4628 FSP 1198

MID-COURSE EXECUTION ACCURACY
SGT 3521.8 SGR 336.4 SG3 403.6
RRT -.4238 RRF .4077 RTF -.9194
SGB 3537.8 R23 -.0166 R13 .9195
SG1 3524.7 SG2 304.5 THA 177.66

ORBIT DETERMINATION ACCURACY
ST 1406.4 SR 305.2 SS 785.1
CRT -.7565 CRS -.5449 CST .9594
LSA 1613.9 MSA 286.8 SSA 26.2
EL1 1425.6 EL2 196.9 ALF 170.49

LAUNCH DATE NOV 8 1964 FLIGHT TIME 194.00 ARRIVAL DATE MAY 21 1965

DISTANCE 483.148

EARTH TO MARS

HELIOCENTRIC CONIC
RL 148.20 LAL .00 LOL 45.63 VL 34.065 GAL -5.18 AZL 87.89 HCA 155.65 SMA 210.45 ECC .30814 INC 2.1072 V1 30.065
RP 241.65 LAP .87 LOP 201.29 VP 21.629 GAP 15.85 AZP 91.92 TAL 337.77 TAP 133.42 RCA 145.60 APO 275.30 V2 22.720
RC 154.936 GL 14.95 GP -.77 ZAL 123.39 ZAP 166.14 ETS 181.74 ZAE 156.42 ETE 357.68 ZAC 88.57 ETC 255.96 CLP 166.16

PLANETOCENTRIC CONIC
C3 23.389 VHL 4.836 DLA 17.52 RAL 177.23 RAD 6567.9 VEL 12.032 PTH 2.15 VHP 7.758 DPA -2.52 RAP 187.01 ECC 1.3849

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 35 52	2830.90	-28.27	84.08	47.82	91.68	18 23 3	2230.9	-27.74	75.46
90.00	10 24 2	4317.42	3.82	178.54	40.23	61.92	11 35 59	3717.4	.04	171.90
100.00	19 7 25	2535.71	-29.75	62.30	47.74	93.07	19 49 41	1935.7	-29.01	53.57
100.00	11 35 11	4087.84	5.12	160.95	39.51	60.51	12 43 19	3487.8	1.15	154.41
110.00	20 38 3	2252.14	-33.58	40.37	47.36	96.81	21 15 35	1652.1	-32.27	31.38
110.00	12 21 2	3944.18	8.40	148.04	37.50	56.74	13 26 46	3344.2	3.97	141.76

DIFFERENTIAL CORRECTIONS
TDE .8969 TRA-2.4597 TC3 1.5454 BAU .4855
RDE -.2498 RRA -.0005 RC3 -.1507 FAU .09928
FDE -.5315 FRA 2.6644 FC3-3.6749 BSP 12215
BDE .9310 BRA 2.4597 BC3 1.5527 FSP 1262

MID-COURSE EXECUTION ACCURACY
SGT 3564.0 SGR 329.9 SG3 423.2
RRT -.4511 RRF .4347 RTF -.9222
SGB 3579.2 R23 -.0178 R13 .9223
SG1 3567.1 SG2 294.1 THA 177.59

ORBIT DETERMINATION ACCURACY
ST 1404.1 SR 295.9 SS 791.4
CRT -.7567 CRS -.5341 CST .9556
LSA 1612.7 MSA 289.8 SSA 25.6
EL1 1422.2 EL2 191.0 ALF 170.77

LAUNCH DATE NOV 8 1964 FLIGHT TIME 180.00 ARRIVAL DATE MAY 7 1965

HELIOCENTRIC CONIC DISTANCE 462.759 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 34.554 GAL -6.28 AZL 87.96 HCA 149.20 SMA 222.27 ECC .34886 INC 2.0443 V1 30.065
RP 243.50 LAP 1.05 LOP 194.85 VP 22.203 GAP 19.70 AZP 91.76 TAL 335.44 TAP 124.64 RCA 144.73 APO 299.81 V2 22.535
RC 139.022 GL 12.71 GP -.53 ZAL 127.19 ZAP 169.91 ETS 181.67 ZAE 155.62 ETE 357.25 ZAC 88.21 ETC 256.06 CLP 169.92

PLANETOCENTRIC CONIC

C3 30.989 VHL 5.567 DLA 14.07 RAL 179.57 RAD 6568.2 VEL 12.344 PTH 2.23 VHP 9.061 DPA -1.19 RAP 184.67 ECC 1.5100

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 17 45	2774.71	-28.09	79.98	53.98	93.73	19 4 0	2174.7	-27.28	71.41
90.00	10 0 48	4513.24	9.97	189.64	46.32	63.36	11 16 1	3913.2	6.31	182.87
100.00	19 46 33	2488.32	-29.52	58.79	53.85	94.90	20 28 2	1888.3	-28.53	50.13
100.00	11 14 41	4274.87	11.25	171.45	45.65	62.12	12 25 56	3674.9	7.43	164.74
110.00	21 11 31	2222.47	-33.32	38.10	53.35	98.13	21 48 34	1622.5	-31.84	29.18
110.00	12 6 12	4113.48	14 57	157.27	43.72	58.73	13 14 46	3513.5	10.32	150.74

DIFFERENTIAL CORRECTIONS

TDE 1.0688 TRA-2.6845 TC3 .9862 BAU .4110
RDE -.3471 RRA -.0520 RC3 -.1071 FAU .07947
FDE -.5799 FRA 2.2842 FC3-2.2202 BSP 11045
BDE 1.1237 BRA 2.6850 BC3 .9920 FSP 871

MID-COURSE EXECUTION ACCURACY

SGT 3244.8 SGR 380.7 SG3 303.5
RRT -.2969 RRF .2799 RTF -.9013
SGB 3267.1 R23 -.0093 R13 .9014
SG1 3246.8 SG2 363.3 THA 177.98

ORBIT DETERMINATION ACCURACY

ST 1393.3 SR 357.7 SS 738.7
CRT -.7605 CRS -.5969 CST .9738
LSA 1591.9 MSA 282.6 SSA 28.1
EL1 1420.3 EL2 227.8 ALF 168.66

LAUNCH DATE NOV 8 1964 FLIGHT TIME 182.00 ARRIVAL DATE MAY 9 1965

HELIOCENTRIC CONIC DISTANCE 465.493 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 34.475 GAL -6.11 AZL 87.95 HCA 150.12 SMA 220.26 ECC .34231 INC 2.0517 V1 30.065
RP 243.25 LAP 1.02 LOP 195.76 VP 22.105 GAP 19.14 AZP 91.78 TAL 335.76 TAP 125.88 RCA 144.87 APO 295.66 V2 22.560
RC 141.251 GL 13.01 GP -.56 ZAL 126.68 ZAP 169.40 ETS 181.66 ZAE 155.61 ETE 357.34 ZAC 88.28 ETC 256.04 CLP 169.41

PLANETOCENTRIC CONIC

C3 29.699 VHL 5.450 DLA 14.53 RAL 179.26 RAD 6568.2 VEL 12.291 PTH 2.21 VHP 8.862 DPA -1.38 RAP 185.03 ECC 1.4888

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 12 22	2780.33	-28.11	80.39	53.06	93.53	18 58 42	2180.3	-27.33	71.81
90.00	10 3 42	4486.29	9.14	188.09	45.39	63.08	11 18 28	3886.3	5.46	181.35
100.00	19 41 30	2492.89	-29.55	59.13	52.94	94.73	20 23 2	1892.9	-28.58	50.46
100.00	11 17 15	4248.95	10.42	169.97	44.71	61.82	12 28 4	3648.9	6.57	163.29
110.00	21 7 9	2224.87	-33.34	38.28	52.44	98.02	21 44 14	1624.9	-31.87	29.36
110.00	12 8 5	4089.74	13.73	155.05	42.77	58.38	13 16 15	3489.7	9.44	149.47

DIFFERENTIAL CORRECTIONS

TDE 1.0451 TRA-2.6541 TC3 1.0568 BAU .4220
RDE -.3319 RRA -.0442 RC3 -.1125 FAU .08192
FDE -.5770 FRA 2.3348 FC3-2.3881 BSP 11238
BDE 1.0965 BRA 2.6545 BC3 1.0627 FSP 919

MID-COURSE EXECUTION ACCURACY

SGT 3293.0 SGR 373.0 SG3 318.3
RRT -.3144 RRF .2976 RTF -.9046
SGB 3314.0 R23 -.0104 R13 .9046
SG1 3295.1 SG2 353.9 THA 177.94

ORBIT DETERMINATION ACCURACY

ST 1398.7 SR 349.3 SS 747.4
CRT -.7596 CRS -.5896 CST .9720
LSA 1598.9 MSA 282.2 SSA 27.9
EL1 1424.3 EL2 223.1 ALF 168.98

LAUNCH DATE NOV 8 1964 FLIGHT TIME 184.00 ARRIVAL DATE MAY 11 1965

HELIOCENTRIC CONIC DISTANCE 468.294 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 34.399 GAL -5.95 AZL 87.94 HCA 151.04 SMA 218.38 ECC .33602 INC 2.0595 V1 30.065
RP 243.00 LAP 1.00 LOP 196.68 VP 22.013 GAP 18.58 AZP 91.80 TAL 336.08 TAP 127.12 RCA 145.00 APO 291.76 V2 22.585
RC 143.499 GL 13.32 GP -.59 ZAL 126.16 ZAP 168.88 ETS 181.65 ZAE 155.64 ETE 357.43 ZAC 88.34 ETC 256.03 CLP 168.89

PLANETOCENTRIC CONIC

C3 28.483 VHL 5.337 DLA 15.00 RAL 178.94 RAD 6568.1 VEL 12.242 PTH 2.20 VHP 8.668 DPA -1.57 RAP 185.38 ECC 1.4688

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 6 47	2786.68	-28.14	80.85	52.15	93.30	18 53 14	2186.7	-27.39	72.27
90.00	10 6 43	4459.02	8.30	186.53	44.47	62.83	11 21 2	3859.0	4.59	179.82
100.00	19 36 16	2498.14	-29.58	59.52	52.04	94.53	20 17 54	1898.1	-28.64	50.84
100.00	11 19 56	4222.80	9.57	168.49	43.79	61.55	12 30 19	3622.8	5.70	161.84
110.00	21 2 39	2227.85	-33.37	38.51	51.56	97.89	21 39 47	1627.8	-31.92	29.58
110.00	12 10 2	4065.85	12.87	154.63	41.84	58.06	13 17 48	3465.9	8.56	148.19

DIFFERENTIAL CORRECTIONS

TDE 1.0215 TRA-2.6228 TC3 1.1308 BAU .4329
RDE -.3172 RRA -.0366 RC3 -.1180 FAU .08449
FDE -.5733 FRA 2.3862 FC3-2.5681 BSP 11411
BDE 1.0697 BRA 2.6231 BC3 1.1370 FSP 969

MID-COURSE EXECUTION ACCURACY

SGT 3340.3 SGR 365.4 SG3 333.8
RRT -.3334 RRF .3166 RTF -.9078
SGB 3360.3 R23 -.0114 R13 .9078
SG1 3342.6 SG2 344.3 THA 177.89

ORBIT DETERMINATION ACCURACY

ST 1403.2 SR 340.8 SS 755.8
CRT -.7590 CRS -.5820 CST .9701
LSA 1604.9 MSA 282.2 SSA 27.7
EL1 1427.4 EL2 218.1 ALF 169.30

LAUNCH DATE NOV 8 1964 FLIGHT TIME 186.00 ARRIVAL DATE MAY 13 1965

HELIOCENTRIC CONIC DISTANCE 471.156 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 34.327 GAL -5.79 AZL 87.93 HCA 151.95 SMA 216.60 ECC .32998 INC 2.0679 V1 30.065
RP 242.74 LAP .97 LOP 197.60 VP 21.927 GAP 18.02 AZP 91.83 TAL 336.42 TAP 128.37 RCA 145.13 APO 288.08 V2 22.611
RC 145.763 GL 13.63 GP -.62 ZAL 125.63 ZAP 168.35 ETS 181.65 ZAE 155.72 ETE 357.51 ZAC 88.39 ETC 256.01 CLP 168.37

PLANETOCENTRIC CONIC

C3 27.338 VHL 5.229 DLA 15.49 RAL 178.61 RAD 6568.1 VEL 12.195 PTH 2.19 VHP 8.477 DPA -1.77 RAP 185.72 ECC 1.4499

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 1 1	2793.82	-28.17	81.37	51.26	93.04	18 47 35	2193.8	-27.45	72.78
90.00	10 9 52	4431.43	7.44	184.96	43.58	62.60	11 23 44	3831.4	3.71	178.27
100.00	19 30 52	2504.10	-29.61	59.96	51.15	94.30	20 12 36	1904.1	-28.70	51.27
100.00	11 22 43	4196.38	8.71	167.00	42.89	61.29	12 32 40	3596.4	4.82	160.38
110.00	20 58 1	2231.42	-33.40	38.78	50.68	97.73	21 35 12	1631.4	-31.97	29.84
110.00	12 12 4	4041.82	12.00	153.31	40.93	57.75	13 19 26	3441.8	7.66	146.91

DIFFERENTIAL CORRECTIONS

TDE .9969 TRA-2.5922 TC3 1.2076 BAU .4437
RDE -.3029 RRA -.0291 RC3 -.1239 FAU .08717
FDE -.5679 FRA 2.4397 FC3-2.7606 BSP 11601
BDE 1.0420 BRA 2.5924 BC3 1.2139 FSP 1022

MID-COURSE EXECUTION ACCURACY

SGT 3387.7 SGR 357.9 SG3 350.1
RRT -.3535 RRF .3370 RTF -.9108
SGB 3406.5 R23 -.0127 R13 .9109
SG1 3390.1 SG2 334.5 THA 177.84

ORBIT DETERMINATION ACCURACY

ST 1406.0 SR 332.1 SS 763.8
CRT -.7581 CRS -.5735 CST .9679
LSA 1609.3 MSA 282.6 SSA 27.5
EL1 1428.9 EL2 213.1 ALF 169.61

LAUNCH DATE NOV 8 1964 FLIGHT TIME 196.00 ARRIVAL DATE MAY 23 1965

HELIOCENTRIC CONIC DISTANCE 486.264 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 34.006 GAL -5.04 AZL 87.88 HCA 156.58 SMA 209.12 ECC .30322 INC 2.1189 V1 30.065
RP 241.36 LAP .84 LOP 202.22 VP 21.566 GAP 15.32 AZP 91.94 TAL 338.11 TAP 134.69 RCA 145.71 APO 272.53 V2 22.748
RC 157.250 GL 15.29 GP -.82 ZAL 122.80 ZAP 165.56 ETS 181.78 ZAE 156.69 ETE 357.69 ZAC 88.60 ETC 255.94 CLP 165.58

PLANETOCENTRIC CONIC

C3 22.544 VHL 4.748 DLA 18.06 RAL 176.88 RAD 6567.9 VEL 11.997 PTH 2.14 VHP 7.588 DPA -2.71 RAP 187.31 ECC 1.3710

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 29 1	2842.55	-28.29	84.93	47.00	91.26	18 16 23	2242.6	-27.82	76.30
90.00	10 28 3	4287.83	2.87	176.88	39.45	61.82	11 39 30	3687.8	-.92	170.25
100.00	19 1 3	2545.74	-29.78	63.04	46.94	92.68	19 43 29	1945.7	-29.09	54.30
100.00	11 38 41	4059.87	4.18	159.40	38.73	60.37	12 46 21	3459.9	.20	152.87
110.00	20 32 41	2259.04	-33.63	40.90	46.57	96.50	21 10 20	1659.0	-32.37	31.90
110.00	12 23 32	3919.34	7.47	146.71	36.70	56.55	13 28 52	3319.3	3.02	140.46

DIFFERENTIAL CORRECTIONS
TDE .8688 TRA-2.4280 TC3 1.6324 BAU .4943
RDE -.2373 RRA .0065 RC3 -.1583 FAU .10269
FDE -.5184 FRA 2.7243 FC3-3.9436 BSP 12408
BDE .9007 BRA 2.4280 BC3 1.6400 FSP 1330

MID-COURSE EXECUTION ACCURACY
SGT 3605.4 SGR 323.6 SG3 443.7
RRT -.4789 RRF .4638 RTF -.9245
SGB 3619.9 R23 -.0208 R13 .9246
SG1 3608.8 SG2 283.8 THA 177.52

ORBIT DETERMINATION ACCURACY
ST 1398.6 SR 286.4 SS 797.6
CRT -.7557 CRS -.5229 CST .9522
LSA 1608.8 MSA 292.4 SSA 25.1
EL1 1415.6 EL2 185.3 ALF 171.05

LAUNCH DATE NOV 8 1964 FLIGHT TIME 198.00 ARRIVAL DATE MAY 25 1965

HELIOCENTRIC CONIC DISTANCE 489.422 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 33.950 GAL -4.90 AZL 87.87 HCA 157.51 SMA 207.86 ECC .29849 INC 2.1314 V1 30.065
RP 241.08 LAP .82 LOP 203.15 VP 21.507 GAP 14.80 AZP 91.97 TAL 338.45 TAP 135.97 RCA 145.82 APO 269.91 V2 22.777
RC 159.568 GL 15.65 GP -.87 ZAL 122.21 ZAP 164.96 ETS 181.83 ZAE 157.00 ETE 357.68 ZAC 88.63 ETC 255.93 CLP 164.99

PLANETOCENTRIC CONIC

C3 21.748 VHL 4.663 DLA 18.60 RAL 176.52 RAD 6567.9 VEL 11.964 PTH 2.13 VHP 7.421 DPA -2.90 RAP 187.60 ECC 1.3579

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 21 53	2855.29	-28.31	85.86	46.19	90.79	18 9 28	2255.3	-27.90	77.22
90.00	10 32 17	4257.70	1.90	175.20	38.71	61.74	11 43 15	3657.7	-1.89	168.57
100.00	18 54 28	2556.73	-29.82	63.86	46.15	92.25	19 37 5	1956.7	-29.18	55.11
100.00	11 42 23	4031.49	3.22	157.84	37.98	60.27	12 49 35	3431.5	-.76	151.31
110.00	20 27 10	2266.69	-33.69	41.49	45.81	96.15	21 4 57	1666.7	-32.47	32.47
110.00	12 26 10	3894.30	6.53	145.39	35.93	56.37	13 31 5	3294.3	2.06	139.15

DIFFERENTIAL CORRECTIONS
TDE .8428 TRA-2.3937 TC3 1.7252 BAU .5039
RDE -.2253 RRA .0134 RC3 -.1665 FAU .10629
FDE -.5037 FRA 2.7854 FC3-4.2313 BSP 12553
BDE .8724 BRA 2.3937 BC3 1.7332 FSP 1401

MID-COURSE EXECUTION ACCURACY
SGT 3645.6 SGR 317.9 SG3 465.2
RRT -.5095 RRF .4948 RTF -.9269
SGB 3659.4 R23 -.0231 R13 .9270
SG1 3649.2 SG2 273.3 THA 177.44

ORBIT DETERMINATION ACCURACY
ST 1393.2 SR 276.9 SS 803.5
CRT -.7561 CRS -.5115 CST .9479
LSA 1604.7 MSA 296.2 SSA 24.4
EL1 1409.1 EL2 179.2 ALF 171.31

LAUNCH DATE NOV 8 1964 FLIGHT TIME 200.00 ARRIVAL DATE MAY 27 1965

HELIOCENTRIC CONIC DISTANCE 492.619 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 33.895 GAL -4.77 AZL 87.85 HCA 158.45 SMA 206.67 ECC .29396 INC 2.1450 V1 30.065
RP 240.79 LAP .79 LOP 204.09 VP 21.452 GAP 14.28 AZP 92.00 TAL 338.80 TAP 137.24 RCA 145.92 APO 267.43 V2 22.806
RC 161.890 GL 16.02 GP -.92 ZAL 121.61 ZAP 164.36 ETS 181.89 ZAE 157.34 ETE 357.65 ZAC 88.65 ETC 255.92 CLP 164.39

PLANETOCENTRIC CONIC

C3 21.001 VHL 4.583 DLA 19.16 RAL 176.15 RAD 6567.9 VEL 11.932 PTH 2.12 VHP 7.258 DPA -3.09 RAP 187.88 ECC 1.3456

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 14 28	2869.20	-28.32	86.88	45.41	90.28	18 2 17	2269.2	-27.98	78.23
90.00	10 36 48	4226.95	.91	173.48	37.99	61.70	11 41 15	3626.9	-2.88	166.85
100.00	18 47 39	2568.74	-29.84	64.75	45.38	91.79	19 30 27	1968.7	-29.28	55.99
100.00	11 46 19	4002.64	2.24	156.25	37.25	60.18	12 53 1	3402.6	-1.74	149.73
110.00	20 21 30	2275.13	-33.75	42.15	45.07	95.77	20 59 25	1675.1	-32.58	33.10
110.00	12 28 57	3869.02	5.57	144.05	35.18	56.22	13 33 26	3269.0	1.10	137.83

DIFFERENTIAL CORRECTIONS
TDE .8168 TRA-2.3584 TC3 1.8208 BAU .5136
RDE -.2136 RRA .0203 RC3 -.1754 FAU .11010
FDE -.4874 FRA 2.8476 FC3-4.5389 BSP 12677
BDE .8442 BRA 2.3585 BC3 1.8293 FSP 1473

MID-COURSE EXECUTION ACCURACY
SGT 3684.1 SGR 312.9 SG3 487.9
RRT -.5421 RRF .5280 RTF -.9293
SGB 3697.4 R23 -.0257 R13 .9293
SG1 3688.0 SG2 262.6 THA 177.35

ORBIT DETERMINATION ACCURACY
ST 1386.5 SR 267.3 SS 809.3
CRT -.7571 CRS -.5001 CST .9431
LSA 1599.3 MSA 300.8 SSA 23.6
EL1 1401.4 EL2 172.7 ALF 171.57

LAUNCH DATE NOV 8 1964 FLIGHT TIME 202.00 ARRIVAL DATE MAY 29 1965

HELIOCENTRIC CONIC DISTANCE 495.853 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 33.843 GAL -4.64 AZL 87.84 HCA 159.38 SMA 205.54 ECC .28961 INC 2.1601 V1 30.065
RP 240.49 LAP .76 LOP 205.02 VP 21.402 GAP 13.76 AZP 92.02 TAL 339.14 TAP 138.53 RCA 146.02 APO 265.07 V2 22.836
RC 164.213 GL 16.39 GP -.98 ZAL 121.01 ZAP 163.74 ETS 181.97 ZAE 157.72 ETE 357.60 ZAC 88.66 ETC 255.92 CLP 163.77

PLANETOCENTRIC CONIC

C3 20.299 VHL 4.505 DLA 19.73 RAL 175.79 RAD 6567.8 VEL 11.903 PTH 2.11 VHP 7.099 DPA -3.28 RAP 188.14 ECC 1.3341

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 6 45	2884.39	-28.32	87.99	44.65	89.72	17 54 49	2284.4	-28.05	79.34
90.00	10 41 37	4195.49	-.11	171.73	37.32	61.68	11 51 32	3595.5	-3.89	165.09
100.00	18 40 34	2581.86	-29.87	65.72	44.63	91.27	19 23 36	1981.9	-29.37	56.95
100.00	11 50 29	3973.25	1.25	154.64	36.56	60.13	12 56 42	3373.2	-2.73	148.12
110.00	20 15 38	2284.40	-33.81	42.86	44.36	95.35	20 53 43	1684.4	-32.70	33.80
110.00	12 31 54	3843.47	4.60	142.71	34.47	56.09	13 35 57	3243.5	.12	136.49

DIFFERENTIAL CORRECTIONS
TDE .7895 TRA-2.3240 TC3 1.9156 BAU .5223
RDE -.2022 RRA .0273 RC3 -.1848 FAU .11397
FDE -.4663 FRA 2.9144 FC3-4.8607 BSP 12800
BDE .8150 BRA 2.3242 BC3 1.9245 FSP 1554

MID-COURSE EXECUTION ACCURACY
SGT 3721.0 SGR 308.5 SG3 511.4
RRT -.5761 RRF .5623 RTF -.9316
SGB 3733.8 R23 -.0284 R13 .9316
SG1 3725.3 SG2 251.9 THA 177.25

ORBIT DETERMINATION ACCURACY
ST 1377.7 SR 257.4 SS 814.6
CRT -.7581 CRS -.4861 CST .9371
LSA 1591.5 MSA 307.3 SSA 22.7
EL1 1391.7 EL2 166.2 ALF 171.82

LAUNCH DATE NOV 8 1964 FLIGHT TIME 204.00 ARRIVAL DATE MAY 31 1965

HELIOCENTRIC CONIC DISTANCE 499.122 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 33.793 GAL -4.51 AZL 87.82 HCA 160.32 SMA 204.48 ECC .28543 INC 2.1763 V1 30.065
RP 240.19 LAP .73 LOP 205.96 VP 21.355 GAP 13.25 AZP 92.05 TAL 339.49 TAP 139.81 RCA 146.11 APO 262.84 V2 22.866
RC 166.536 GL 16.78 GP -1.05 ZAL 120.39 ZAP 163.11 ETS 182.05 ZAE 158.14 ETE 357.52 ZAC 88.66 ETC 255.91 CLP 163.14

PLANETOCENTRIC CONIC

C3 19.640 VHL 4.432 DLA 20.31 RAL 175.42 RAD 6567.8 VEL 11.875 PTH 2.11 VHP 6.943 DPA -3.47 RAP 188.40 ECC 1.3232

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 58 39	2901.01	-28.30	89.21	43.91	89.11	17 47 0	2301.0	-28.13	80.55
90.00	10 46 47	4163.16	-1.15	169.93	36.67	61.70	11 56 10	3563.2	-4.92	163.28
100.00	18 33 11	2596.19	-29.88	66.79	43.91	90.71	19 16 27	1996.2	-29.47	58.01
100.00	11 54 56	3943.21	.23	152.99	35.91	60.11	13 0 40	3343.2	-3.75	146.46
110.00	20 9 35	2294.59	-33.87	43.65	43.68	94.89	20 47 50	1694.6	-32.83	34.57
110.00	12 35 2	3817.58	3.62	141.35	33.79	55.99	13 38 39	3217.6	-.87	135.15

DIFFERENTIAL CORRECTIONS
TDE .7687 TRA-2.2825 TC3 2.0249 BAU .5342
RDE -.1913 RRA .0341 RC3 -.1954 FAU .11818
FDE -.4458 FRA 2.9796 FC3-5.2092 BSP 12765
BDE .7921 BRA 2.2828 BC3 2.0343 FSP 1632

MID-COURSE EXECUTION ACCURACY
SGT 3756.3 SGR 305.6 SG3 536.3
RRT -.6139 RRF .5987 RTF -.9344
SGB 3768.7 R23 -.0288 R13 .9345
SG1 3761.0 SG2 240.9 THA 177.13

ORBIT DETERMINATION ACCURACY
ST 1371.7 SR 247.8 SS 820.3
CRT -.7632 CRS -.4742 CST .9295
LSA 1586.0 MSA 316.0 SSA 21.5
EL1 1384.9 EL2 158.6 ALF 172.05

LAUNCH DATE NOV 8 1964 FLIGHT TIME 206.00 ARRIVAL DATE JUN 2 1965

HELIOCENTRIC CONIC DISTANCE 502.422 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 33.746 GAL -4.39 AZL 87.81 HCA 161.26 SMA 203.46 ECC .28143 INC 2.1943 V1 30.065
RP 239.88 LAP .70 LOP 206.90 VP 21.312 GAP 12.75 AZP 92.08 TAL 339.83 TAP 141.10 RCA 146.20 APO 260.72 V2 22.897
RC 168.857 GL 17.18 GP -1.13 ZAL 119.78 ZAP 162.46 ETS 182.15 ZAE 158.59 ETE 357.41 ZAC 88.65 ETC 255.90 CLP 162.50

PLANETOCENTRIC CONIC

C3 19.024 VHL 4.362 DLA 20.91 RAL 175.06 RAD 6567.8 VEL 11.849 PTH 2.10 VHP 6.790 DPA -3.66 RAP 188.64 ECC 1.3131

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 50 12	2919.19	-28.28	90.54	43.19	88.45	17 38 51	2319.2	-28.19	81.87
90.00	10 52 21	4129.90	-2.22	168.07	36.08	61.76	12 1 11	3529.9	-5.98	161.41
100.00	18 25 31	2611.83	-29.89	67.95	43.21	90.10	19 9 2	2011.8	-29.56	59.16
100.00	11 59 43	3912.49	-.81	151.31	35.29	60.12	13 4 56	3312.5	-4.78	144.77
110.00	20 3 21	2305.72	-33.94	44.52	43.03	94.38	20 41 47	1705.7	-32.96	35.41
110.00	12 38 22	3794.37	2.62	139.98	33.15	55.91	13 41 34	3191.4	-1.87	133.78

DIFFERENTIAL CORRECTIONS
TDE .7339 TRA-2.2543 TC3 2.1074 BAU .5385
RDE -.1802 RRA .0415 RC3 -.2061 FAU .12249
FDE -.4200 FRA 3.0499 FC3-5.5741 BSP 13066
BDE .7557 BRA 2.2546 BC3 2.1175 FSP 1721

MID-COURSE EXECUTION ACCURACY
SGT 3789.2 SGR 302.9 SG3 562.2
RRT -.6480 RRF .6368 RTF -.9355
SGB 3801.2 R23 -.0372 R13 .9356
SG1 3794.2 SG2 230.4 THA 177.02

ORBIT DETERMINATION ACCURACY
ST 1355.3 SR 237.4 SS 825.8
CRT -.7619 CRS -.4606 CST .9245
LSA 1572.1 MSA 321.0 SSA 20.9
EL1 1367.5 EL2 152.4 ALF 172.30

LAUNCH DATE NOV 8 1964 FLIGHT TIME 208.00 ARRIVAL DATE JUN 4 1965

HELIOCENTRIC CONIC DISTANCE 505.754 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 33.700 GAL -4.27 AZL 87.79 HCA 162.21 SMA 202.50 ECC .27759 INC 2.2141 V1 30.065
RP 239.58 LAP .68 LOP 207.85 VP 21.273 GAP 12.25 AZP 92.11 TAL 340.18 TAP 142.38 RCA 146.29 APO 258.72 V2 22.928
RC 171.174 GL 17.60 GP -1.21 ZAL 119.15 ZAP 161.80 ETS 182.26 ZAE 159.08 ETE 357.27 ZAC 88.63 ETC 255.89 CLP 161.84

PLANETOCENTRIC CONIC

C3 18.447 VHL 4.295 DLA 21.52 RAL 174.70 RAD 6567.7 VEL 11.825 PTH 2.09 VHP 6.641 DPA -3.85 RAP 188.86 ECC 1.3036

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 41 16	2939.20	-28.23	92.00	42.49	87.71	17 30 15	2339.2	-28.25	83.33
90.00	10 58 25	4095.40	-3.33	166.14	35.52	61.86	12 6 41	3495.4	-7.07	159.46
100.00	18 17 28	2628.98	-29.89	69.23	42.54	89.43	19 1 17	2029.0	-29.65	60.43
100.00	12 4 54	3880.86	-1.88	149.57	34.72	60.16	13 9 35	3280.9	-5.84	143.02
110.00	19 56 54	2317.92	-33.99	45.46	42.40	93.82	20 35 31	1717.9	-33.09	36.34
110.00	12 41 58	3764.68	1.60	138.59	32.54	55.85	13 44 42	3164.7	-2.89	132.38

DIFFERENTIAL CORRECTIONS
TDE .7035 TRA-2.2210 TC3 2.1992 BAU .5450
RDE -.1695 RRA .0490 RC3 -.2180 FAU .12695
FDE -.3900 FRA 3.1234 FC3-5.9578 BSP 13222
BDE .7237 BRA 2.2215 BC3 2.2100 FSP 1815

MID-COURSE EXECUTION ACCURACY
SGT 3820.0 SGR 301.8 SG3 589.3
RRT -.6848 RRF .6754 RTF -.9373
SGB 3831.9 R23 -.0431 R13 .9374
SG1 3825.6 SG2 219.6 THA 176.89

ORBIT DETERMINATION ACCURACY
ST 1340.5 SR 227.1 SS 831.4
CRT -.7641 CRS -.4460 CST .9168
LSA 1559.0 MSA 329.7 SSA 19.9
EL1 1351.8 EL2 145.3 ALF 172.54

LAUNCH DATE NOV 8 1964 FLIGHT TIME 210.00 ARRIVAL DATE JUN 6 1965

HELIOCENTRIC CONIC DISTANCE 509.116 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 33.656 GAL -4.15 AZL 87.76 HCA 163.15 SMA 201.59 ECC .27391 INC 2.2360 V1 30.065
RP 239.26 LAP .65 LOP 208.79 VP 21.237 GAP 11.76 AZP 92.14 TAL 340.52 TAP 143.67 RCA 146.37 APO 256.81 V2 22.959
RC 173.485 GL 18.03 GP -1.31 ZAL 118.52 ZAP 161.12 ETS 182.39 ZAE 159.60 ETE 357.08 ZAC 88.60 ETC 255.89 CLP 161.16

PLANETOCENTRIC CONIC

C3 17.907 VHL 4.232 DLA 22.14 RAL 174.35 RAD 6567.7 VEL 11.802 PTH 2.09 VHP 6.494 DPA -4.05 RAP 189.07 ECC 1.2947

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 31 47	2961.33	-28.16	93.62	41.83	86.91	17 21 8	2361.3	-28.29	84.95
90.00	11 5 4	4059.41	-4.49	164.13	35.02	62.01	12 12 44	3459.4	-8.20	157.41
100.00	18 9 0	2647.84	-29.87	70.63	41.90	88.69	18 53 8	2047.8	-29.73	61.83
100.00	12 10 32	3848.13	-2.99	147.77	34.20	60.24	13 14 40	3248.1	-6.93	141.20
110.00	19 50 11	2331.31	-34.05	46.51	41.82	93.21	20 29 2	1731.3	-33.23	37.36
110.00	12 45 51	3737.42	.56	137.17	31.98	55.82	13 48 8	3137.4	-3.93	130.96

DIFFERENTIAL CORRECTIONS
TDE .6764 TRA-2.1847 TC3 2.2972 BAU .5528
RDE -.1591 RRA .0566 RC3 -.2315 FAU .13178
FDE -.3598 FRA 3.1963 FC3-6.3709 BSP 13319
BDE .6949 BRA 2.1854 BC3 2.3089 FSP 1908

MID-COURSE EXECUTION ACCURACY
SGT 3849.4 SGR 302.7 SG3 617.9
RRT -.7228 RRF .7149 RTF -.9391
SGB 3861.2 R23 -.0493 R13 .9392
SG1 3855.6 SG2 208.8 THA 176.74

ORBIT DETERMINATION ACCURACY
ST 1326.7 SR 217.0 SS 837.6
CRT -.7693 CRS -.4344 CST .9082
LSA 1546.9 MSA 339.7 SSA 18.8
EL1 1337.2 EL2 137.5 ALF 172.75

LAUNCH DATE NOV 8 1964 FLIGHT TIME 212.00 ARRIVAL DATE JUN 8 1965

HELIOCENTRIC CONIC DISTANCE 512.506 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 33.614 GAL -4.04 AZL 87.74 HCA 164.10 SMA 200.73 ECC .27038 INC 2.2609 V1 30.065
RP 238.95 LAP .62 LOP 209.74 VP 21.205 GAP 11.28 AZP 92.17 TAL 340.86 TAP 144.96 RCA 146.45 APO 255.00 V2 22.991
RC 175.790 GL 18.48 GP -1.41 ZAL 117.89 ZAP 160.42 ETS 182.54 ZAE 160.15 ETE 356.84 ZAC 88.55 ETC 255.88 CLP 160.47

PLANETOCENTRIC CONIC

C3 17.405 VHL 4.172 DLA 22.79 RAL 174.00 RAD 6567.7 VEL 11.781 PTH 2.08 VHP 6.351 DPA -4.26 RAP 189.26 ECC 1.2864

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 21 38	2986.00	-28.06	95.41	41.18	86.01	17 11 24	2386.0	-28.32	86.76
90.00	11 12 27	4021.51	-5.69	161.99	34.58	62.21	12 19 28	3421.5	-9.37	155.24
100.00	18 0 3	2668.70	-29.82	72.18	41.29	87.88	18 44 31	2068.7	-29.80	63.37
100.00	12 16 43	3814.04	-4.14	145.89	33.73	60.37	13 20 17	3214.0	-8.06	139.29
110.00	19 43 11	2346.04	-34.10	47.65	41.27	92.53	20 22 17	1746.0	-33.37	38.49
110.00	12 50 5	3709.47	-.51	135.71	31.47	55.82	13 51 54	3109.5	-4.99	129.49

DIFFERENTIAL CORRECTIONS
TDE .6514 TRA-2.1450 TC3 2.4011 BAU .5616
RDE -.1490 RRA .0644 RC3 -.2465 FAU .13673
FDE -.3230 FRA 3.2744 FC3-6.8013 BSP 13319
BDE .6683 BRA 2.1459 BC3 2.4137 FSP 2010

MID-COURSE EXECUTION ACCURACY
SGT 3876.1 SGR 305.6 SG3 647.7
RRT -.7613 RRF .7535 RTF -.9414
SGB 3888.1 R23 -.0539 R13 .9415
SG1 3883.1 SG2 197.8 THA 176.56

ORBIT DETERMINATION ACCURACY
ST 1312.6 SR 206.8 SS 844.3
CRT -.7777 CRS -.4211 CST .8962
LSA 1533.9 MSA 354.2 SSA 17.4
EL1 1322.5 EL2 129.0 ALF 172.95

LAUNCH DATE NOV 8 1964 FLIGHT TIME 214.00 ARRIVAL DATE JUN 10 1965

HELIOCENTRIC CONIC DISTANCE 515.921 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 33.573 GAL -3.93 AZL 87.71 HCA 165.05 SMA 199.91 ECC .26700 INC 2.2884 V1 30.065
RP 238.63 LAP .59 LOP 210.69 VP 21.176 GAP 10.80 AZP 92.21 TAL 341.19 TAP 146.25 RCA 146.53 APO 253.28 V2 23.024
RC 178.086 GL 18.96 GP -1.53 ZAL 117.26 ZAP 159.71 ETS 182.71 ZAE 160.74 ETE 356.53 ZAC 88.49 ETC 255.87 CLP 159.77

PLANETOCENTRIC CONIC

C3 16.938 VHL 4.116 DLA 23.46 RAL 173.66 RAD 6567.7 VEL 11.761 PTH 2.08 VHP 6.211 DPA -4.47 RAP 189.43 ECC 1.2788

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 10 41	3013.74	-27.91	97.43	40.57	85.01	17 0 55	2413.7	-28.31	88.79
90.00	11 20 44	3981.23	-6.97	159.72	34.21	62.48	12 27 5	3381.2	-10.60	152.92
100.00	17 50 30	2691.91	-29.75	73.90	40.72	86.97	18 35 22	2091.9	-29.86	65.10
100.00	12 23 36	3778.29	-5.34	143.92	33.33	60.55	13 26 34	3178.3	-9.23	137.28
110.00	19 35 52	2362.27	-34.14	48.92	40.78	91.78	20 15 14	1762.3	-33.52	39.73
110.00	12 54 43	3680.69	-1.61	134.21	31.01	55.85	13 56 4	3080.7	-6.08	127.97

DIFFERENTIAL CORRECTIONS
TDE .6180 TRA-2.1133 TC3 2.4844 BAU .5657
RDE -.1388 RRA .0730 RC3 -.2629 FAU .14200
FDE -.2834 FRA 3.3540 FC3-7.2577 BSP 13517
BDE .6334 BRA 2.1146 BC3 2.4983 FSP 2114

MID-COURSE EXECUTION ACCURACY
SGT 3899.8 SGR 310.5 SG3 679.0
RRT -.7960 RRF .7920 RTF -.9424
SGB 3912.1 R23 -.0662 R13 .9426
SG1 3907.6 SG2 187.6 THA 176.36

ORBIT DETERMINATION ACCURACY
ST 1292.2 SR 196.2 SS 851.9
CRT -.7835 CRS -.4115 CST .8872
LSA 1516.9 MSA 364.3 SSA 16.5
EL1 1301.4 EL2 121.0 ALF 173.16

LAUNCH DATE NOV 8 1964 FLIGHT TIME 216.00 ARRIVAL DATE JUN 12 1965

HELIOCENTRIC CONIC DISTANCE 519.364 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 33.534 GAL -3.82 AZL 87.68 HCA 166.00 SMA 199.13 ECC .26376 INC 2.3199 V1 30.065
RP 238.31 LAP .56 LOP 211.64 VP 21.150 GAP 10.32 AZP 92.25 TAL 341.53 TAP 147.53 RCA 146.61 APO 251.65 V2 23.056
RC 180.373 GL 19.48 GP -1.67 ZAL 116.61 ZAP 158.98 ETS 182.91 ZAE 161.36 ETE 356.14 ZAC 88.40 ETC 255.87 CLP 159.04

PLANETOCENTRIC CONIC

C3 16.506 VHL 4.063 DLA 24.16 RAL 173.34 RAD 6567.7 VEL 11.743 PTH 2.07 VHP 6.074 DPA -4.69 RAP 189.58 ECC 1.2716

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 58 38	3045.51	-27.70	99.73	39.98	83.88	16 49 24	2445.5	-28.26	91.11
90.00	11 30 13	3937.59	-8.33	157.24	33.93	62.84	12 35 50	3337.6	-11.91	150.39
100.00	17 40 11	2718.10	-29.64	75.84	40.18	85.96	18 25 29	2118.1	-29.89	67.04
100.00	12 31 21	3740.23	-6.61	141.81	33.00	60.78	13 33 41	3140.2	-10.46	135.13
110.00	19 28 8	2380.35	-34.17	50.33	40.32	90.94	20 7 49	1780.4	-33.66	41.12
110.00	12 59 53	3650.74	-2.75	132.64	30.62	55.91	14 0 44	3050.7	-7.21	126.39

DIFFERENTIAL CORRECTIONS
TDE .6042 TRA-2.0621 TC3 2.6123 BAU .5798
RDE -.1295 RRA .0814 RC3 -.2832 FAU .14774
FDE -.2438 FRA 3.4319 FC3-7.7491 BSP 13231
BDE .6180 BRA 2.0637 BC3 2.6276 FSP 2213

MID-COURSE EXECUTION ACCURACY
SGT 3923.1 SGR 319.6 SG3 712.0
RRT -.8337 RRF .8275 RTF -.9455
SGB 3936.1 R23 -.0683 R13 .9457
SG1 3932.2 SG2 176.1 THA 176.11

ORBIT DETERMINATION ACCURACY
ST 1282.4 SR 186.6 SS 860.2
CRT -.8030 CRS -.4060 CST .8691
LSA 1506.5 MSA 386.5 SSA 14.7
EL1 1291.2 EL2 110.4 ALF 173.29

LAUNCH DATE NOV 8 1964 FLIGHT TIME 218.00 ARRIVAL DATE JUN 14 1965

HELIOCENTRIC CONIC DISTANCE 522.828 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 33.497 GAL -3.72 AZL 87.64 HCA 166.96 SMA 198.39 ECC .26066 INC 2.3561 V1 30.065
RP 237.98 LAP .53 LOP 212.60 VP 21.128 GAP 9.85 AZP 92.30 TAL 341.86 TAP 148.82 RCA 146.68 APO 250.10 V2 23.089
RC 182.651 GL 20.02 GP -1.84 ZAL 115.97 ZAP 158.22 ETS 183.15 ZAE 162.01 ETE 355.64 ZAC 88.29 ETC 255.86 CLP 158.30

PLANETOCENTRIC CONIC

C3 16.110 VHL 4.014 DLA 24.89 RAL 173.04 RAD 6567.6 VEL 11.726 PTH 2.07 VHP 5.941 DPA -4.93 RAP 189.71 ECC 1.2651

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 45 11	3082.40	-27.40	102.39	39.42	82.57	16 36 34	2482.4	-28.15	93.80
90.00	11 41 17	3889.61	-9.81	154.49	33.75	63.30	12 46 6	3289.6	-13.32	147.57
100.00	17 28 57	2747.86	-29.48	78.03	39.69	84.81	18 14 45	2147.9	-29.89	69.25
100.00	12 40 12	3699.38	-7.96	139.53	32.77	61.09	13 41 51	3099.4	-11.76	132.80
110.00	19 19 58	2400.52	-34.18	51.91	39.94	90.01	19 59 59	1800.5	-33.80	42.68
110.00	13 5 40	3619.49	-3.94	131.01	30.30	56.02	14 6 0	3019.5	-8.38	124.73

DIFFERENTIAL CORRECTIONS
TDE .5603 TRA-2.0404 TC3 2.6626 BAU .5772
RDE -.1190 RRA .0918 RC3 -.3032 FAU .15324
FDE -.1879 FRA 3.5248 FC3-8.2350 BSP 13658
BDE .5728 BRA 2.0425 BC3 2.6799 FSP 2340

MID-COURSE EXECUTION ACCURACY
SGT 3939.3 SGR 330.1 SG3 745.9
RRT -.8613 RRF .8617 RTF -.9454
SGB 3953.1 R23 -.0904 R13 .9457
SG1 3949.6 SG2 167.3 THA 175.86

ORBIT DETERMINATION ACCURACY
ST 1253.7 SR 175.5 SS 871.1
CRT -.8096 CRS -.4001 CST .8601
LSA 1484.7 MSA 396.3 SSA 14.0
EL1 1261.8 EL2 102.3 ALF 173.49

LAUNCH DATE NOV 8 1964 FLIGHT TIME 220.00 ARRIVAL DATE JUN 16 1965

HELIOCENTRIC CONIC DISTANCE 526.316 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 33.462 GAL -3.62 AZL 87.60 HCA 167.92 SMA 197.68 ECC .25769 INC 2.3975 V1 30.065
RP 237.65 LAP .50 LOP 213.56 VP 21.108 GAP 9.39 AZP 92.34 TAL 342.19 TAP 150.10 RCA 146.74 APO 248.63 V2 23.123
RC 184.919 GL 20.62 GP -2.02 ZAL 115.33 ZAP 157.45 ETS 183.43 ZAE 162.69 ETE 355.01 ZAC 88.15 ETC 255.86 CLP 157.54

PLANETOCENTRIC CONIC

C3 15.748 VHL 3.968 DLA 25.66 RAL 172.77 RAD 6567.6 VEL 11.710 PTH 2.06 VHP 5.810 DPA -5.18 RAP 189.81 ECC 1.2592

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 29 36	3126.82	-26.97	105.57	38.88	81.04	16 21 42	2526.8	-27.94	97.03
90.00	11 54 40	3834.89	-11.47	151.32	33.72	63.93	12 58 35	3234.9	-14.88	144.31
100.00	17 16 23	2782.52	-29.24	80.58	39.23	83.49	18 2 46	2182.5	-29.83	71.83
100.00	12 50 34	3654.42	-9.43	137.00	32.65	61.50	13 51 28	3054.4	-13.17	130.20
110.00	19 11 10	2423.38	-34.17	53.69	39.61	88.96	19 51 34	1823.4	-33.94	44.45
110.00	13 12 16	3586.32	-5.20	129.27	30.07	56.17	14 12 2	2986.3	-9.61	122.95

DIFFERENTIAL CORRECTIONS
TDE .5310 TRA-2.0035 TC3 2.7473 BAU .5825
RDE -.1092 RRA .1026 RC3 -.3283 FAU .15947
FDE -.1345 FRA 3.6117 FC3-8.7667 BSP 13701
BDE .5422 BRA 2.0061 BC3 2.7668 FSP 2453

MID-COURSE EXECUTION ACCURACY
SGT 3954.8 SGR 346.1 SG3 782.0
RRT -.8887 RRF .8921 RTF -.9467
SGB 3969.9 R23 -.1078 R13 .9470
SG1 3966.7 SG2 158.2 THA 175.55

ORBIT DETERMINATION ACCURACY
ST 1232.5 SR 165.4 SS 882.9
CRT -.8284 CRS -.4049 CST .8458
LSA 1468.0 MSA 413.0 SSA 12.8
EL1 1240.1 EL2 92.1 ALF 173.62

LAUNCH DATE NOV 8 1964 FLIGHT TIME 222.00 ARRIVAL DATE JUN 18 1965

HELIOCENTRIC CONIC DISTANCE 529.827 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 33.428 GAL -3.53 AZL 87.55 HCA 168.88 SMA 197.02 ECC .25485 INC 2.4468 V1 30.065
RP 237.31 LAP .47 LOP 214.52 VP 21.092 GAP 8.93 AZP 92.40 TAL 342.51 TAP 151.39 RCA 146.81 APO 247.22 V2 23.157
RC 187.176 GL 21.27 GP -2.25 ZAL 114.68 ZAP 156.65 ETS 183.76 ZAE 163.40 ETE 354.18 ZAC 87.97 ETC 255.85 CLP 156.75

PLANETOCENTRIC CONIC

C3 15.423 VHL 3.927 DLA 26.48 RAL 172.53 RAD 6567.6 VEL 11.696 PTH 2.06 VHP 5.682 DPA -5.46 RAP 189.88 ECC 1.2538

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 10 34	3183.05	-26.31	109.55	38.33	79.14	16 3 37	2583.1	-27.55	101.10
90.00	12 11 46	3769.24	-13.40	147.47	33.88	64.82	13 14 35	3169.2	-16.68	140.33
100.00	17 1 57	2823.98	-28.88	83.61	38.81	81.94	17 49 1	2224.0	-29.70	74.90
100.00	13 3 4	3603.54	-11.07	134.11	32.69	62.06	14 3 8	3003.5	-14.72	127.22
110.00	19 1 35	2449.64	-34.12	55.74	39.37	87.74	19 42 25	1849.6	-34.05	46.50
110.00	13 19 56	3550.64	-6.55	127.38	29.96	56.38	14 19 6	2950.6	-10.93	121.02

DIFFERENTIAL CORRECTIONS
TDE .5015 TRA-1.9672 TC3 2.8247 BAU .5871
RDE -.0992 RRA .1148 RC3 -.3574 FAU .16576
FDE -.0691 FRA 3.7087 FC3-9.3041 BSP 13763
BDE .5113 BRA 1.9705 BC3 2.8473 FSP 2583

MID-COURSE EXECUTION ACCURACY
SGT 3967.2 SGR 367.1 SG3 819.5
RRT -.9122 RRF .9182 RTF -.9480
SGB 3984.2 R23 -.1274 R13 .9484
SG1 3981.3 SG2 149.9 THA 175.17

ORBIT DETERMINATION ACCURACY
ST 1210.4 SR 155.5 SS 898.2
CRT -.8526 CRS -.4155 CST .8276
LSA 1451.6 MSA 434.5 SSA 11.5
EL1 1217.7 EL2 80.8 ALF 173.72

LAUNCH DATE NOV 8 1964 FLIGHT TIME 224.00 ARRIVAL DATE JUN 20 1965

HELIOCENTRIC CONIC DISTANCE 533.359 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 33.395 GAL -3.43 AZL 87.49 HCA 169.84 SMA 196.38 ECC .25213 INC 2.5055 V1 30.065
RP 236.98 LAP .44 LOP 215.48 VP 21.078 GAP 8.48 AZP 92.47 TAL 342.83 TAP 152.67 RCA 146.87 APO 245.89 V2 23.191
RC 189.421 GL 22.00 GP -2.51 ZAL 114.02 ZAP 155.83 ETS 184.15 ZAE 164.14 ETE 353.11 ZAC 87.74 ETC 255.85 CLP 155.95

PLANETOCENTRIC CONIC

C3 15.137 VHL 3.891 DLA 27.37 RAL 172.33 RAD 6567.6 VEL 11.684 PTH 2.05 VHP 5.558 DPA -5.77 RAP 189.92 ECC 1.2491

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 44 43	3262.12	-25.18	115.06	37.70	76.60	15 39 6	2662.1	-26.78	106.76
90.00	12 36 2	3681.75	-15.87	142.23	34.36	66.24	13 37 24	3081.8	-18.95	134.91
100.00	16 44 35	2875.74	-28.33	87.36	38.42	80.04	17 32 31	2275.7	-29.41	78.73
100.00	13 18 52	3543.36	-12.97	130.65	32.93	62.83	14 17 55	2943.4	-16.51	123.65
110.00	18 50 55	2480.39	-34.01	58.14	39.22	86.33	19 32 15	1880.4	-34.14	48.89
110.00	13 29 1	3511.48	-8.02	125.31	30.00	56.66	14 27 32	2911.5	-12.36	118.89

DIFFERENTIAL CORRECTIONS
TDE .4713 TRA-1.9313 TC3 2.8913 BAU .5905
RDE -.0890 RRA .1288 RC3 -.3917 FAU .17224
FDE .0066 FRA 3.8122 FC3-9.8506 BSP 13813
BDE .4796 BRA 1.9356 BC3 2.9177 FSP 2721

MID-COURSE EXECUTION ACCURACY
SGT 3974.9 SGR 394.6 SG3 858.4
RRT -.9313 RRF .9400 RTF -.9491
SGB 3994.4 R23 -.1509 R13 .9496
SG1 3991.8 SG2 143.1 THA 174.71

ORBIT DETERMINATION ACCURACY
ST 1187.1 SR 146.2 SS 917.3
CRT -.8826 CRS -.4382 CST .8073
LSA 1435.8 MSA 458.8 SSA 10.2
EL1 1194.1 EL2 68.3 ALF 173.78

LAUNCH DATE NOV 8 1964 FLIGHT TIME 226.00 ARRIVAL DATE JUN 22 1965

HELIOCENTRIC CONIC DISTANCE 536.910 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 33.364 GAL -3.34 AZL 87.42 HCA 170.81 SMA 195.78 ECC .24952 INC 2.5761 V1 30.065
RP 236.64 LAP .41 LOP 216.45 VP 21.067 GAP 8.04 AZP 92.54 TAL 343.14 TAP 153.95 RCA 146.93 APO 244.63 V2 23.226
RC 191.655 GL 22.83 GP -2.84 ZAL 113.35 ZAP 154.97 ETS 184.64 ZAE 164.90 ETE 351.69 ZAC 87.46 ETC 255.84 CLP 155.13

PLANETOCENTRIC CONIC

C3 14.895 VHL 3.859 DLA 28.34 RAL 172.19 RAD 6567.6 VEL 11.674 PTH 2.05 VHP 5.436 DPA -6.12 RAP 189.91 ECC 1.2451

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
88.78	13 29 41	3501.18	-21.24	131.28	36.10	70.79	14 28 3	2901.2	-23.67	123.45
91.22	13 49 58	3435.46	-21.23	126.47	36.09	70.77	14 47 13	2835.5	-23.66	118.64
100.00	16 21 54	2945.59	-27.41	92.35	38.01	77.57	17 10 59	2345.6	-28.84	83.84
100.00	13 40 27	3466.28	-15.32	126.13	33.50	64.01	14 38 13	2866.3	-18.69	118.96
110.00	18 38 42	2517.35	-33.81	61.00	39.18	84.64	19 20 39	1917.3	-34.18	51.78
110.00	13 40 7	3467.29	-9.67	122.94	30.24	57.05	14 37 55	2867.3	-13.94	116.45

DIFFERENTIAL CORRECTIONS
TDE .4400 TRA-1.8951 TC3 2.9516 BAU .5940
RDE -.0783 RRA .1452 RC3 -.4336 FAU .17926
FDE .0905 FRA 3.9172 FC-10.4195 BSP 13841
BDE .4469 BRA 1.9007 BC3 2.9833 FSP 2854

MID-COURSE EXECUTION ACCURACY
SGT 3979.4 SGR 430.7 SG3 899.4
RRT -.9460 RRF .9578 RTF -.9501
SGB 4002.7 R23 -.1786 R13 .9507
SG1 4000.3 SG2 139.0 THA 174.15

ORBIT DETERMINATION ACCURACY
ST 1162.3 SR 138.0 SS 940.0
CRT -.9176 CRS -.4798 CST .7865
LSA 1421.2 MSA 483.4 SSA 9.0
EL1 1169.2 EL2 54.5 ALF 173.77

LAUNCH DATE NOV 8 1964 FLIGHT TIME 228.00 ARRIVAL DATE JUN 24 1965

HELIOCENTRIC CONIC DISTANCE 540.481 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 33.334 GAL -3.26 AZL 87.34 HCA 171.78 SMA 195.20 ECC .24704 INC 2.6638 V1 30.065
RP 236.29 LAP .38 LOP 217.42 VP 21.058 GAP 7.60 AZP 92.64 TAL 343.44 TAP 155.23 RCA 146.98 APO 243.43 V2 23.261
RC 193.877 GL 23.79 GP -3.25 ZAL 112.67 ZAP 154.09 ETS 185.23 ZAE 165.67 ETE 349.78 ZAC 87.09 ETC 255.84 CLP 154.28

PLANETOCENTRIC CONIC

C3 14.703 VHL 3.834 DLA 29.43 RAL 172.13 RAD 6567.6 VEL 11.666 PTH 2.05 VHP 5.318 DPA -6.54 RAP 189.85 ECC 1.2420

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
81.62	12 30 50	3687.56	-22.09	145.30	36.14	70.04	13 32 17	3087.6	-24.61	137.44
98.38	14 48 21	3243.29	-22.08	112.67	36.14	70.03	15 42 25	2643.3	-24.60	104.82
100.00	15 44 56	3062.14	-25.44	100.44	37.33	73.74	16 35 58	2462.1	-27.42	92.21
100.00	14 16 56	3343.95	-18.82	118.74	34.74	66.34	15 12 40	2743.9	-21.86	111.26
110.00	18 24 6	2563.47	-33.46	64.56	39.27	82.57	19 6 50	1963.5	-34.13	55.38
110.00	13 54 16	3415.38	-11.58	120.13	30.75	57.61	14 51 11	2815.4	-15.77	113.54

DIFFERENTIAL CORRECTIONS
TDE .4087 TRA-1.8592 TC3 2.9972 BAU .5968
RDE -.0669 RRA .1651 RC3 -.4846 FAU .18639
FDE .1914 FRA 4.0331 FC-10.9754 BSP 13867
BDE .4141 BRA 1.8665 BC3 3.0361 FSP 3002

MID-COURSE EXECUTION ACCURACY
SGT 3978.8 SGR 477.9 SG3 941.7
RRT -.9567 RRF .9714 RTF -.9510
SGB 4007.4 R23 -.2077 R13 .9518
SG1 4005.0 SG2 138.2 THA 173.44

ORBIT DETERMINATION ACCURACY
ST 1137.3 SR 131.7 SS 969.8
CRT -.9558 CRS -.5420 CST .7620
LSA 1409.9 MSA 513.1 SSA 7.8
EL1 1144.2 EL2 38.5 ALF 173.68

LAUNCH DATE NOV 8 1964 FLIGHT TIME 230.00 ARRIVAL DATE JUN 26 1965

HELIOCENTRIC CONIC DISTANCE 544.070 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 33.306 GAL -3.17 AZL 87.22 HCA 172.75 SMA 194.66 ECC .24466 INC 2.7747 V1 30.065
RP 235.94 LAP .35 LOP 218.39 VP 21.052 GAP 7.17 AZP 92.75 TAL 343.75 TAP 156.50 RCA 147.03 APO 242.28 V2 23.297
RC 196.086 GL 24.94 GP -3.76 ZAL 111.96 ZAP 153.16 ETS 186.00 ZAE 166.44 ETE 347.16 ZAC 86.61 ETC 255.83 CLP 153.40

PLANETOCENTRIC CONIC

C3 14.575 VHL 3.818 DLA 30.69 RAL 172.19 RAD 6567.6 VEL 11.660 PTH 2.05 VHP 5.204 DPA -7.05 RAP 189.72 ECC 1.2399

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
77.65	12 1 1	3781.40	-23.04	152.67	36.43	69.15	13 4 2	3181.4	-25.67	144.79
102.35	15 18 37	3145.56	-23.03	105.78	36.42	69.14	16 11 3	2545.6	-25.66	97.90
77.65	12 1 1	3781.40	-23.04	152.67	36.43	69.15	13 4 2	3181.4	-25.67	144.79
102.35	15 18 37	3145.56	-23.03	105.78	36.42	69.14	16 11 3	2545.6	-25.66	97.90
110.00	18 5 27	2624.45	-32.83	69.21	39.49	79.89	18 49 11	2024.5	-33.87	60.12
110.00	14 13 22	3350.51	-13.92	116.56	31.70	58.46	15 9 12	2750.5	-17.99	109.82

DIFFERENTIAL CORRECTIONS
TDE .3768 TRA-1.8225 TC3 3.0282 BAU .5996
RDE -.0543 RRA .1898 RC3 -.5488 FAU .19400
FDE .3066 FRA 4.1521 FC-11.5240 BSP 13876
BDE .3807 BRA 1.8324 BC3 3.0775 FSP 3147

MID-COURSE EXECUTION ACCURACY
SGT 3972.7 SGR 540.3 SG3 985.7
RRT -.9637 RRF .9815 RTF -.9517
SGB 4009.3 R23 -.2364 R13 .9528
SG1 4006.7 SG2 143.1 THA 172.52

ORBIT DETERMINATION ACCURACY
ST 1111.4 SR 129.1 SS 1006.0
CRT -.9879 CRS -.6293 CST .7369
LSA 1402.9 MSA 543.8 SSA 6.6
EL1 1118.7 EL2 19.9 ALF 173.45

LAUNCH DATE NOV 8 1964 FLIGHT TIME 232.00 ARRIVAL DATE JUN 28 1965

HELIOCENTRIC CONIC DISTANCE 547.678 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 33.278 GAL -3.09 AZL 87.08 HCA 173.73 SMA 194.14 ECC .24239 INC 2.9205 V1 30.065
RP 235.59 LAP .32 LOP 219.36 VP 21.049 GAP 6.74 AZP 92.90 TAL 344.04 TAP 157.77 RCA 147.08 APO 241.20 V2 23.333
RC 198.280 GL 26.37 GP -4.44 ZAL 111.22 ZAP 152.17 ETS 186.99 ZAE 167.18 ETE 343.47 ZAC 85.96 ETC 255.82 CLP 152.50

PLANETOCENTRIC CONIC

C3 14.534 VHL 3.812 DLA 32.18 RAL 172.41 RAD 6567.6 VEL 11.658 PTH 2.05 VHP 5.093 DPA -7.70 RAP 189.51 ECC 1.2392

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
74.03	11 36 42	3859.98	-24.12	159.07	37.06	68.03	12 41 2	3260.0	-26.89	151.17
105.97	15 44 43	3065.73	-24.11	100.21	37.06	68.01	16 35 49	2465.7	-26.88	92.31
74.03	11 36 42	3859.98	-24.12	159.07	37.06	68.03	12 41 2	3260.0	-26.89	151.17
105.97	15 44 43	3065.73	-24.11	100.21	37.06	68.01	16 35 49	2465.7	-26.88	92.31
110.00	17 38 25	2714.23	-31.56	75.90	39.78	76.12	18 23 40	2114.2	-33.14	67.03
110.00	14 42 11	3259.48	-17.09	111.42	33.40	59.94	15 36 30	2659.5	-20.96	104.43

DIFFERENTIAL CORRECTIONS
TDE .3485 TRA-1.7823 TC3 3.0511 BAU .6054
RDE -.0399 RRA .2216 RC3 -.6323 FAU .20214
FDE .4417 FRA 4.2785 FC-12.0410 BSP 13779
BDE .3508 BRA 1.7960 BC3 3.1160 FSP 3286

MID-COURSE EXECUTION ACCURACY
SGT 3962.8 SGR 625.2 SG3 1031.2
RRT -.9681 RRF .9885 RTF -.9526
SGB 4011.8 R23 -.2587 R13 .9542
SG1 4008.8 SG2 154.9 THA 171.30

ORBIT DETERMINATION ACCURACY
ST 1086.6 SR 133.2 SS 1051.7
CRT -.9984 CRS -.7327 CST .7069
LSA 1402.8 MSA 580.2 SSA 5.4
EL1 1094.7 EL2 7.4 ALF 173.02

LAUNCH DATE NOV 8 1964 FLIGHT TIME 234.00 ARRIVAL DATE JUN 30 1965

HELIOCENTRIC CONIC DISTANCE 551.302 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 33.252 GAL -3.02 AZL 86.88 HCA 174.71 SMA 193.65 ECC .24022 INC 3.1204 V1 30.065
RP 235.24 LAP .29 LOP 220.34 VP 21.047 GAP 6.32 AZP 93.11 TAL 344.33 TAP 159.03 RCA 147.13 APO 240.17 V2 23.369
RC 200.460 GL 28.21 GP -5.38 ZAL 110.41 ZAP 151.11 ETS 188.35 ZAE 167.81 ETE 338.16 ZAC 85.06 ETC 255.80 CLP 151.57

PLANETOCENTRIC CONIC

C3 14.625 VHL 3.824 DLA 34.04 RAL 172.90 RAD 6567.6 VEL 11.662 PTH 2.05 VHP 4.989 DPA -8.57 RAP 189.15 ECC 1.2407

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
70.28	11 14 49	3934.94	-25.40	165.43	38.26	66.54	12 20 24	3334.9	-28.34	157.51
109.72	16 10 31	2993.55	-25.39	95.23	38.25	66.53	17 0 25	2393.5	-28.33	87.31
70.28	11 14 49	3934.94	-25.40	165.43	38.26	66.54	12 20 24	3334.9	-28.34	157.51
109.72	16 10 31	2993.55	-25.39	95.23	38.25	66.53	17 0 25	2393.5	-28.33	87.31
110.00	16 36 19	2914.86	-27.40	90.02	39.18	68.72	17 24 54	2314.9	-30.04	81.82
110.00	15 48 12	3061.63	-23.41	99.56	37.26	64.35	16 39 13	2461.6	-26.67	91.90

DIFFERENTIAL CORRECTIONS
TDE .3136 TRA-1.7497 TC3 3.0219 BAU .6083
RDE -.0211 RRA .2659 RC3 -.7404 FAU .21006
FDE .6173 FRA 4.4267 FC-12.4349 BSP 13849
BDE .3143 BRA 1.7698 BC3 3.1112 FSP 3443

MID-COURSE EXECUTION ACCURACY
SGT 3945.9 SGR 743.5 SG3 1076.9
RRT -.9696 RRF .9932 RTF -.9529
SGB 4015.3 R23 -.2753 R13 .9551
SG1 4011.3 SG2 179.1 THA 169.63

ORBIT DETERMINATION ACCURACY
ST 1061.2 SR 148.6 SS 1115.8
CRT -.9694 CRS -.8367 CST .6784
LSA 1418.6 MSA 617.2 SSA 4.3
EL1 1071.0 EL2 36.1 ALF 172.26

LAUNCH DATE NOV 8 1964 FLIGHT TIME 236.00 ARRIVAL DATE JUL 2 1965

HELIOCENTRIC CONIC DISTANCE 554.943 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 33.227 GAL -2.94 AZL 86.59 HCA 175.69 SMA 193.18 ECC .23814 INC 3.4120 V1 30.065
RP 234.89 LAP .26 LOP 221.32 VP 21.049 GAP 5.91 AZP 93.40 TAL 344.61 TAP 160.29 RCA 147.18 APO 239.19 V2 23.405
RC 202.623 GL 30.73 GP -6.74 ZAL 109.49 ZAP 149.90 ETS 190.28 ZAE 168.16 ETE 350.37 ZAC 83.73 ETC 255.77 CLP 150.60

PLANETOCENTRIC CONIC

C3 14.943 VHL 3.866 DLA 36.47 RAL 173.85 RAD 6567.6 VEL 11.676 PTH 2.05 VHP 4.892 DPA -9.81 RAP 188.59 ECC 1.2459

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
66.00	10 54 12	4013.12	-26.95	172.41	40.39	64.45	12 1 5	3413.1	-30.15	164.48
114.00	16 38 40	2924.98	-26.94	90.60	40.38	64.44	17 27 25	2325.0	-30.15	82.67
66.00	10 54 12	4013.12	-26.95	172.41	40.39	64.45	12 1 5	3413.1	-30.15	164.48
114.00	16 38 40	2924.98	-26.94	90.60	40.38	64.44	17 27 25	2325.0	-30.15	82.67
66.00	10 54 12	4013.12	-26.95	172.41	40.39	64.45	12 1 5	3413.1	-30.15	164.48
114.00	16 38 40	2924.98	-26.94	90.60	40.38	64.44	17 27 25	2325.0	-30.15	82.67

DIFFERENTIAL CORRECTIONS
TDE .2799 TRA-1.7158 TC3 2.9472 BAU .6149
RDE .0053 RRA .3307 RC3 -.8874 FAU .21797
FDE .8416 FRA 4.5916 FC-12.6283 BSP 13918
BDE .2799 BRA 1.7474 BC3 3.0779 FSP 3600

MID-COURSE EXECUTION ACCURACY
SGT 3919.7 SGR 917.8 SG3 1121.5
RRT -.9695 RRF .9961 RTF -.9530
SGB 4025.7 R23 -.2823 R13 .9566
SG1 4019.7 SG2 219.5 THA 167.17

ORBIT DETERMINATION ACCURACY
ST 1037.7 SR 184.2 SS 1202.0
CRT -.8981 CRS -.9165 CST .6476
LSA 1457.1 MSA 657.6 SSA 3.3
EL1 1050.8 EL2 80.0 ALF 170.89

LAUNCH DATE NOV 8 1964 FLIGHT TIME 238.00 ARRIVAL DATE JUL 4 1965

HELIOCENTRIC CONIC DISTANCE 558.601 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 33.203 GAL -2.87 AZL 86.12 HCA 176.67 SMA 192.74 ECC .23617 INC 3.8754 V1 30.065
RP 234.53 LAP .22 LOP 222.31 VP 21.052 GAP 5.50 AZP 93.87 TAL 344.88 TAP 161.55 RCA 147.22 APO 238.25 V2 23.442
RC 204.770 GL 34.43 GP -8.89 ZAL 108.33 ZAP 148.42 ETS 193.26 ZAE 167.85 ETE 319.07 ZAC 81.62 ETC 255.70 CLP 149.57

PLANETOCENTRIC CONIC

C3 15.726 VHL 3.966 DLA 39.90 RAL 175.67 RAD 6567.6 VEL 11.709 PTH 2.06 VHP 4.812 DPA -11.75 RAP 187.63 ECC 1.2588

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
60.62	10 34 47	4101.92	-28.91	180.86	44.34	61.21	11 43 9	3501.9	-32.51	172.96
119.38	17 12 37	2859.15	-28.90	86.32	44.34	61.20	18 0 16	2259.2	-32.50	78.42
60.62	10 34 47	4101.92	-28.91	180.86	44.34	61.21	11 43 9	3501.9	-32.51	172.96
119.38	17 12 37	2859.15	-28.90	86.32	44.34	61.20	18 0 16	2259.2	-32.50	78.42
60.62	10 34 47	4101.92	-28.91	180.86	44.34	61.21	11 43 9	3501.9	-32.51	172.96
119.38	17 12 37	2859.15	-28.90	86.32	44.34	61.20	18 0 16	2259.2	-32.50	78.42

DIFFERENTIAL CORRECTIONS
TDE .2670 TRA-1.6678 TC3 2.8301 BAU .6387
RDE .0433 RRA .4318 RC3-1.1038 FAU .22728
FDE 1.0883 FRA 4.7342 FC-12.5119 BSP 13649
BDE .2705 BRA 1.7228 BC3 3.0377 FSP 3642

MID-COURSE EXECUTION ACCURACY
SGT 3879.8 SGR 1196.6 SG3 1160.6
RRT -.9683 RRF .9977 RTF -.9531
SGB 4060.2 R23 -.2794 R13 .9592
SG1 4050.1 SG2 286.2 THA 163.29

ORBIT DETERMINATION ACCURACY
ST 1020.5 SR 253.2 SS 1295.9
CRT -.8032 CRS -.9613 CST .6080
LSA 1513.1 MSA 703.9 SSA 2.3
EL1 1041.0 EL2 147.9 ALF 168.49

LAUNCH DATE NOV 8 1964 FLIGHT TIME 240.00 ARRIVAL DATE JUL 6 1965

HELIOCENTRIC CONIC DISTANCE 562.274 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 33.181 GAL -2.80 AZL 85.27 HCA 177.66 SMA 192.31 ECC .23428 INC 4.7324 V1 30.065
RP 234.17 LAP .19 LOP 223.29 VP 21.057 GAP 5.10 AZP 94.73 TAL 345.15 TAP 162.80 RCA 147.26 APO 237.37 V2 23.479
RC 206.900 GL 40.51 GP -12.80 ZAL 106.65 ZAP 146.19 ETS 198.33 ZAE 165.78 ETE 303.81 ZAC 77.78 ETC 255.53 CLP 148.43

PLANETOCENTRIC CONIC

C3 17.734 VHL 4.211 DLA 45.27 RAL 179.55 RAD 6567.7 VEL 11.795 PTH 2.09 VHP 4.776 DPA -15.22 RAP 185.78 ECC 1.2919

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
53.08	10 18 56	4214.62	-31.32	192.51	52.49	55.47	11 29 11	3614.6	-35.60	184.82
126.92	17 59 27	2801.59	-31.31	82.96	52.48	55.46	18 46 9	2201.6	-35.59	75.28
53.08	10 18 56	4214.62	-31.32	192.51	52.49	55.47	11 29 11	3614.6	-35.60	184.82
126.92	17 59 27	2801.59	-31.31	82.96	52.48	55.46	18 46 9	2201.6	-35.59	75.28
53.08	10 18 56	4214.62	-31.32	192.51	52.49	55.47	11 29 11	3614.6	-35.60	184.82
126.92	17 59 27	2801.59	-31.31	82.96	52.48	55.46	18 46 9	2201.6	-35.59	75.28

DIFFERENTIAL CORRECTIONS
TDE .2843 TRA-1.6228 TC3 2.5251 BAU .6849
RDE .1137 RRA .6261 RC3-1.4035 FAU .23314
FDE 1.4008 FRA 4.8991 FC-11.3813 BSP 13720
BDE .3062 BRA 1.7394 BC3 2.8889 FSP 3640

MID-COURSE EXECUTION ACCURACY
SGT 3809.8 SGR 1698.8 SG3 1175.8
RRT -.9658 RRF .9986 RTF -.9520
SGB 4171.4 R23 -.2648 R13 .9641
SG1 4151.8 SG2 404.1 THA 156.46

ORBIT DETERMINATION ACCURACY
ST 1019.6 SR 396.3 SS 1416.7
CRT -.7033 CRS -.9825 CST .5585
LSA 1618.6 MSA 763.9 SSA 1.4
EL1 1059.8 EL2 271.0 ALF 163.61

LAUNCH DATE NOV 8 1964 FLIGHT TIME 242.00 ARRIVAL DATE JUL 8 1965

HELIOCENTRIC CONIC DISTANCE 565.962 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 33.159 GAL -2.74 AZL 83.15 HCA 178.65 SMA 191.91 ECC .23248 INC 6.8395 V1 30.065
RP 233.80 LAP .16 LOP 224.28 VP 21.065 GAP 4.70 AZP 96.85 TAL 345.41 TAP 164.05 RCA 147.30 APO 236.53 V2 23.517
RC 209.011 GL 52.27 GP -21.77 ZAL 103.52 ZAP 141.03 ETS 208.03 ZAE 158.40 ETE 286.38 ZAC 68.92 ETC 254.84 CLP 146.84

PLANETOCENTRIC CONIC

C3 24.927 VHL 4.993 DLA 54.73 RAL 190.50 RAD 6568.0 VEL 12.096 PTH 2.16 VHP 4.936 DPA -23.04 RAP 181.07 ECC 1.4102

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
40.99	10 23 16	4389.90	-32.73	211.68	73.48	43.34	11 36 26	3789.9	-38.36	205.10
139.01	19 22 29	2789.64	-32.72	83.18	73.46	43.34	20 8 58	2189.6	-38.35	76.60
40.99	10 23 16	4389.90	-32.73	211.68	73.48	43.34	11 36 26	3789.9	-38.36	205.10
139.01	19 22 29	2789.64	-32.72	83.18	73.46	43.34	20 8 58	2189.6	-38.35	76.60
40.99	10 23 16	4389.90	-32.73	211.68	73.48	43.34	11 36 26	3789.9	-38.36	20[illegible].0
139.01	19 22 29	2789.64	-32.72	83.18	73.46	43.34	20 8 58	2189.6	-38.35	76.60

DIFFERENTIAL CORRECTIONS
TDE .6359 TRA-1.4842 TC3 1.9425 BAU .8889
RDE .1208 RRA 1.0602 RC3-1.8279 FAU .23669
FDE 1.0103 FRA 4.6204 FC3-8.2203 BSP 12327
BDE .6473 BRA 1.8240 BC3 2.6673 FSP 2730

MID-COURSE EXECUTION ACCURACY
SGT 3605.2 SGR 2791.3 SG3 1068.9
RRT -.9595 RRF .9989 RTF -.9454
SGB 4559.4 R23 -.2239 R13 .9746
SG1 4516.0 SG2 627.7 THA 142.54

ORBIT DETERMINATION ACCURACY
ST 1148.6 SR 649.5 SS [illegible]79.1
CRT -.6186 CRS -.9835 CS [illegible].663
LSA 1606.5 MSA 892.4 [illegible] .6
EL1 1230.5 EL2 476.4 [illegible] 157.10

LAUNCH DATE NOV 8 1964 FLIGHT TIME 246.00 ARRIVAL DATE JUL 12 1965

HELIOCENTRIC CONIC DISTANCE 573.397 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 33.118 GAL -2.62 AZL 98.61 HCA 180.65 SMA 191.17 ECC .22916 INC 8.6056 V1 30.065
RP 233.07 LAP .10 LOP 226.27 VP 21.086 GAP 3.94 AZP 81.39 TAL 345.86 TAP 166.51 RCA 147.36 APO 234.98 V2 23.593
RC 213.179 GL -59.92 GP 39.97 ZAL 101.08 ZAP 127.11 ETS 138.80 ZAE 138.87 ETE 85.95 ZAC 128.30 ETC 251.92 CLP 141.92

PLANETOCENTRIC CONIC

C3 32.736 VHL 5.722 DLA -46.03 RAL 132.08 RAD 6568.3 VEL 12.414 PTH 2.24 VHP 5.942 DPA 33.71 RAP 206.77 ECC 1.5387

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
28.72	13 53 25	2421.63	-.53	75.01	341.27	154.97	14 33 47	1821.6	6.72	72.03
28.72	22 0 31	1322.49	60.70	23.06	46.83	120.18	22 22 34	722.5	63.87	7.62
38.72	15 15 1	2274.13	5.34	65.60	351.69	146.42	15 52 55	1674.1	11.98	61.50
38.72	21 28 49	1380.01	50.34	20.13	36.20	120.36	21 51 49	780.0	53.83	8.81
48.72	17 16 55	1998.90	15.24	48.81	4.31	136.71	17 50 14	1398.9	20.98	43.36
48.72	20 27 15	1519.79	36.87	23.29	24.51	124.21	20 52 34	919.8	41.05	14.93

DIFFERENTIAL CORRECTIONS
TDE 2.8382 TRA-1.0115 TC3 1.2667 BAU 1.1491
RDE 4.0171 RRA -.4252 RC3 2.2998 FAU .14755
FDE-6.6749 FRA .4651 FC3-3.9022 BSP 20603
BDE 4.9186 BRA 1.0972 BC3 2.6255 FSP 2262

MID-COURSE EXECUTION ACCURACY
SGT 3508.2 SGR 4846.1 SG3 696.9
RRT .9495 RRF -.9990 RTF -.9346
SGB 5982.6 R23 -.1520 R13 -.9884
SG1 5914.3 SG2 901.8 THA 54.55

ORBIT DETERMINATION ACCURACY
ST 2876.0 SR 4027.7 SS 3433.7
CRT .9943 CRS .9999 CST .9925
LSA 6016.7 MSA 290.0 SSA 1.0
EL1 4942.8 EL2 250.7 ALF 54.52

LAUNCH DATE NOV 8 1964 FLIGHT TIME 248.00 ARRIVAL DATE JUL 14 1965

HELIOCENTRIC CONIC DISTANCE 577.119 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 33.099 GAL -2.56 AZL 92.27 HCA 181.64 SMA 190.83 ECC .22761 INC 2.2827 V1 30.065
RP 232.70 LAP .07 LOP 227.27 VP 21.100 GAP 3.56 AZP 87.73 TAL 346.10 TAP 167.74 RCA 147.39 APO 234.26 V2 23.631
RC 215.236 GL -22.52 GP 19.45 ZAL 108.12 ZAP 139.57 ETS 153.96 ZAE 159.15 ETE 79.24 ZAC 109.08 ETC 255.02 CLP 143.83

PLANETOCENTRIC CONIC

C3 11.721 VHL 3.424 DLA -11.41 RAL 148.89 RAD 6567.4 VEL 11.537 PTH 2.01 VHP 4.544 DPA 14.33 RAP 198.85 ECC 1.1929

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 33 38	1732.40	-5.70	12.90	1.56	117.78	20 2 30	1132.4	-1.94	6.24
90.00	4 40 7	5100.51	24.61	226.36	5.11	75.53	6 5 8	4500.5	22.38	218.40
100.00	20 49 13	1488.54	-6.61	354.47	1.07	119.22	21 14 2	888.5	-2.66	347.91
100.00	6 7 13	4819.61	25.60	205.40	4.81	74.02	7 27 33	4219.6	23.17	197.45
110.00	21 44 26	1315.63	-8.98	339.91	359.62	123.12	22 6 22	715.6	-4.55	333.61
110.00	7 28 29	4565.29	28.23	185.13	3.85	69.88	8 44 35	3965.3	25.23	177.24

DIFFERENTIAL CORRECTIONS
TDE 1.0227 TRA-1.3569 TC3 3.3068 BAU .6808
RDE .6521 RRA -.5517 RC3 2.8182 FAU .23315
FDE-3.8640 FRA 3.2285 FC-17.2215 BSP 16960
BDE 1.2129 BRA 1.4648 BC3 4.3448 FSP 4688

MID-COURSE EXECUTION ACCURACY
SGT 3663.8 SGR 2408.7 SG3 1255.8
RRT .9540 RRF -.9998 RTF -.9490
SGB 4384.6 R23 -.2282 R13 -.9736
SG1 4342.1 SG2 609.1 THA 32.82

ORBIT DETERMINATION ACCURACY
ST 1848.5 SR 1128.8 SS 2624.2
CRT .9912 CRS 1.0000 CST .9907
LSA 3396.1 MSA 210.4 SSA 1.4
EL1 2162.2 EL2 128.0 ALF 31.31

LAUNCH DATE NOV 8 1964 FLIGHT TIME 250.00 ARRIVAL DATE JUL 16 1965

HELIOCENTRIC CONIC DISTANCE 580.863 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 33.081 GAL -2.51 AZL 90.71 HCA 182.65 SMA 190.50 ECC .22613 INC .6894 V1 30.065
RP 232.32 LAP .03 LOP 228.27 VP 21.115 GAP 3.18 AZP 89.29 TAL 346.32 TAP 168.96 RCA 147.42 APO 233.58 V2 23.670
RC 217.275 GL -7.40 GP 12.71 ZAL 108.92 ZAP 141.21 ETS 162.20 ZAE 165.92 ETE 78.68 ZAC 102.57 ETC 255.50 CLP 143.04

PLANETOCENTRIC CONIC

C3 10.146 VHL 3.185 DLA 2.89 RAL 153.87 RAD 6567.4 VEL 11.469 PTH 1.99 VHP 4.279 DPA 8.14 RAP 196.14 ECC 1.1670

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 4 20	2154.43	-18.06	37.71	5.75	112.18	18 40 15	1554.4	-14.90	30.46
90.00	6 49 9	4619.41	13.14	195.83	4.91	64.69	8 6 8	4019.4	9.62	188.91
100.00	19 27 2	1887.72	-18.90	17.72	5.38	113.60	19 58 29	1287.7	-15.54	10.54
100.00	8 9 8	4361.36	13.95	176.45	4.50	63.29	9 21 50	3761.4	10.25	169.61
110.00	20 38 22	1664.45	-21.11	359.65	4.25	117.53	21 6 6	1064.5	-17.26	352.64
110.00	9 14 18	4157.39	16.10	159.75	3.28	59.43	10 23 35	3557.4	11.93	153.13

DIFFERENTIAL CORRECTIONS
TDE .7064 TRA-1.3104 TC3 4.0312 BAU .6267
RDE .2695 RRA -.3651 RC3 2.2567 FAU .27723
FDE-2.6293 FRA 3.8223 FC-23.6543 BSP 13493
BDE .7560 BRA 1.3603 BC3 4.6199 FSP 4641

MID-COURSE EXECUTION ACCURACY
SGT 3712.1 SGR 1653.5 SG3 1488.6
RRT .9547 RRF -.9998 RTF -.9531
SGB 4063.8 R23 -.2557 R13 -.9666
SG1 4038.5 SG2 452.5 THA 23.35

ORBIT DETERMINATION ACCURACY
ST 1456.6 SR 525.1 SS 1915.1
CRT .9922 CRS .9997 CST .9948
LSA 2459.7 MSA 122.5 SSA 6.6
EL1 1547.1 EL2 61.7 ALF 19.71

LAUNCH DATE NOV 8 1964 FLIGHT TIME 252.00 ARRIVAL DATE JUL 18 1965

HELIOCENTRIC CONIC DISTANCE 584.619 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 33.064 GAL -2.46 AZL 90.01 HCA 183.65 SMA 190.19 ECC .22473 INC .1088 V1 30.065
RP 231.95 LAP .00 LOP 229.28 VP 21.132 GAP 2.82 AZP 89.99 TAL 346.53 TAP 170.18 RCA 147.45 APO 232.94 V2 23.709
RC 219.295 GL -.06 GP 9.51 ZAL 108.65 ZAP 140.96 ETS 166.60 ZAE 169.25 ETE 82.10 ZAC 99.43 ETC 255.66 CLP 141.96

PLANETOCENTRIC CONIC

C3 9.837 VHL 3.136 DLA 9.89 RAL 156.13 RAD 6567.4 VEL 11.455 PTH 1.99 VHP 4.136 DPA 5.25 RAP 194.73 ECC 1.1619

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 19 29	2370.54	-23.02	51.61	9.31	106.96	17 59 0	1770.5	-20.48	43.86
90.00	7 52 4	4390.96	6.16	182.67	6.57	62.31	9 5 15	3791.0	2.41	176.01
100.00	18 45 43	2092.46	-23.93	30.84	9.00	108.47	19 20 35	1492.5	-21.18	23.12
100.00	9 8 32	4144.28	7.00	164.08	6.12	60.86	10 17 36	3544.3	3.06	157.51
110.00	20 5 3	1844.19	-26.32	11.00	8.01	112.64	20 35 47	1244.2	-23.02	3.40
110.00	10 5 41	3965.31	9.19	149.17	4.78	56.93	11 11 46	3365.3	4.77	142.86

DIFFERENTIAL CORRECTIONS
TDE .5128 TRA-1.3258 TC3 3.9421 BAU .5647
RDE .1335 RRA -.2914 RC3 1.7014 FAU .28776
FDE-1.6586 FRA 4.4857 FC-25.3252 BSP 13640
BDE .5299 BRA 1.3575 BC3 4.2936 FSP 5396

MID-COURSE EXECUTION ACCURACY
SGT 3610.6 SGR 1220.9 SG3 1571.3
RRT .9519 RRF -.9993 RTF -.9529
SGB 3811.5 R23 -.2720 R13 -.9616
SG1 3794.8 SG2 355.9 THA 18.01

ORBIT DETERMINATION ACCURACY
ST 1194.6 SR 294.5 SS 1413.1
CRT .9957 CRS .9948 CST .9980
LSA 1872.6 MSA 57.5 SSA 26.3
EL1 1230.1 EL2 26.4 ALF 13.80

LAUNCH DATE NOV 8 1964 FLIGHT TIME 254.00 ARRIVAL DATE JUL 20 1965

HELIOCENTRIC CONIC DISTANCE 588.389 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 33.048 GAL -2.41 AZL 89.60 HCA 184.66 SMA 189.90 ECC .22340 INC .3816 V1 30.065
RP 231.57 LAP -.03 LOP 230.29 VP 21.150 GAP 2.46 AZP 90.40 TAL 346.73 TAP 171.39 RCA 147.48 APO 232.32 V2 23.748
RC 221.297 GL 4.20 GP 7.65 ZAL 108.20 ZAP 140.16 ETS 169.26 ZAE 171.17 ETE 89.12 ZAC 97.58 ETC 255.74 CLP 140.78

PLANETOCENTRIC CONIC

C3 9.740 VHL 3.121 DLA 14.00 RAL 157.35 RAD 6567.4 VEL 11.451 PTH 1.99 VHP 4.027 DPA 3.63 RAP 193.81 ECC 1.1603

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 49 42	2507.17	-25.43	60.90	11.70	102.90	17 31 29	1907.2	-23.40	52.81
90.00	8 31 33	4250.42	1.67	174.79	8.00	61.73	9 42 23	3650.4	-2.13	168.17
100.00	18 18 27	2220.93	-26.42	39.57	11.43	104.52	18 55 28	1620.9	-24.16	31.50
100.00	9 45 29	4011.90	2.56	156.76	7.51	60.21	10 52 20	3411.9	-1.43	150.24
110.00	19 43 19	1955.39	-29.01	18.53	10.55	108.93	20 15 55	1355.4	-26.15	10.51
110.00	10 37 6	3850.20	4.86	143.06	6.08	56.12	11 41 16	3250.2	.38	136.85

DIFFERENTIAL CORRECTIONS
TDE .4398 TRA-1.2804 TC3 3.9509 BAU .5466
RDE .0925 RRA -.2271 RC3 1.4174 FAU .30800
FDE-1.2765 FRA 4.7094 FC-27.3764 BSP 12732
BDE .4494 BRA 1.3003 BC3 4.1974 FSP 5494

MID-COURSE EXECUTION ACCURACY
SGT 3549.9 SGR 998.1 SG3 1677.3
RRT .9482 RRF -.9983 RTF -.9521
SGB 3687.6 R23 -.2793 R13 -.9586
SG1 3674.8 SG2 306.2 THA 15.03

ORBIT DETERMINATION ACCURACY
ST 1088.8 SR 214.9 SS 1249.6
CRT .9950 CRS .9798 CST .9903
LSA 1667.0 MSA 117.2 SSA 19.2
EL1 1109.6 EL2 21.1 ALF 11.11

LAUNCH DATE NOV 8 1964 FLIGHT TIME 256.00 ARRIVAL DATE JUL 22 1965

HELIOCENTRIC CONIC DISTANCE 592.171 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 33.033 GAL -2.37 AZL 89.34 HCA 185.67 SMA 189.62 ECC .22215 INC .6485 V1 30.065
RP 231.20 LAP -.06 LOP 231.30 VP 21.171 GAP 2.11 AZP 90.65 TAL 346.91 TAP 172.59 RCA 147.50 APO 231.75 V2 23.788
RC 223.281 GL 6.98 GP 6.45 ZAL 107.74 ZAP 139.12 ETS 171.04 ZAE 172.24 ETE 99.27 ZAC 96.36 ETC 255.78 CLP 139.55

PLANETOCENTRIC CONIC

C3 9.687 VHL 3.112 DLA 16.72 RAL 158.06 RAD 6567.3 VEL 11.449 PTH 1.99 VHP 3.931 DPA 2.63 RAP 193.10 ECC 1.1594

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 27 18	2604.13	-26.72	67.70	13.29	99.73	17 10 43	2004.1	-25.11	59.40
90.00	8 59 35	4151.31	-1.53	169.27	9.09	61.72	10 8 46	3551.3	-5.30	162.61
100.00	17 58 8	2311.22	-27.80	45.92	13.07	101.46	18 36 40	1711.2	-25.94	37.62
100.00	10 11 26	3919.46	-.58	151.69	8.56	60.11	11 16 46	3319.5	-4.55	145.15
110.00	19 27 20	2032.13	-30.58	23.95	12.29	106.07	20 1 13	1432.1	-28.08	15.65
110.00	10 58 44	3771.31	1.85	138.93	7.04	55.86	12 1 35	3171.3	-2.64	132.73

DIFFERENTIAL CORRECTIONS
TDE .3840 TRA-1.2441 TC3 3.8633 BAU .5245
RDE .0711 RRA -.1874 RC3 1.2141 FAU .32255
FDE -.9411 FRA 4.9750 FC-28.8260 BSP 12294
BDE .3905 BRA 1.2581 BC3 4.0496 FSP 5794

MID-COURSE EXECUTION ACCURACY
SGT 3464.3 SGR 847.4 SG3 1763.1
RRT .9441 RRF -.9966 RTF -.9512
SGB 3566.4 R23 -.2819 R13 -.9564
SG1 3556.0 SG2 272.1 THA 13.08

ORBIT DETERMINATION ACCURACY
ST 1009.7 SR 171.2 SS 1152.8
CRT .9929 CRS .9446 CST .9691
LSA 1529.9 MSA 192.1 SSA 15.8
EL1 1023.9 EL2 20.0 ALF 9.56

LAUNCH DATE NOV 8 1964 FLIGHT TIME 258.00 ARRIVAL DATE JUL 24 1965

HELIOCENTRIC CONIC DISTANCE 595.966 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 33.018 GAL -2.33 AZL 89.16 HCA 186.69 SMA 189.36 ECC .22095 INC .8353 V1 30.065
RP 230.82 LAP -.10 LOP 232.31 VP 21.192 GAP 1.76 AZP 90.83 TAL 347.09 TAP 173.78 RCA 147.52 APO 231.20 V2 23.827
RC 225.247 GL 8.95 GP 5.60 ZAL 107.30 ZAP 137.96 ETS 172.30 ZAE 172.64 ETE 111.38 ZAC 95.47 ETC 255.81 CLP 138.26

PLANETOCENTRIC CONIC

C3 9.643 VHL 3.105 DLA 18.67 RAL 158.48 RAD 6567.3 VEL 11.447 PTH 1.99 VHP 3.843 DPA 1.97 RAP 192.51 ECC 1.1587

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 9 13	2678.38	-27.47	73.00	14.38	97.17	16 53 51	2078.4	-26.19	64.57
90.00	9 21 6	4075.24	-3.98	165.01	9.91	61.94	10 29 1	3475.2	-7.70	158.31
100.00	17 41 52	2379.59	-28.63	50.84	14.19	99.00	18 21 32	1779.6	-27.09	42.37
100.00	10 31 8	3849.26	-2.95	147.83	9.35	60.24	11 35 17	3249.3	-6.89	141.26
110.00	19 14 43	2089.11	-31.58	28.09	13.50	103.81	19 49 32	1489.1	-29.36	19.58
110.00	11 14 46	3712.51	-.39	135.87	7.75	55.82	12 16 39	3112.5	-4.88	129.65

DIFFERENTIAL CORRECTIONS
TDE .3405 TRA-1.2069 TC3 3.7476 BAU .5025
RDE .0602 RRA -.1593 RC3 1.0721 FAU .33594
FDE -.6615 FRA 5.2296 FC-30.1615 BSP 11929
BDE .3457 BRA 1.2174 BC3 3.8979 FSP 6133

MID-COURSE EXECUTION ACCURACY
SGT 3367.1 SGR 742.9 SG3 1845.2
RRT .9389 RRF -.9938 RTF -.9499
SGB 3448.1 R23 -.2817 R13 -.9543
SG1 3439.0 SG2 250.3 THA 11.77

ORBIT DETERMINATION ACCURACY
ST 947.0 SR 146.3 SS 1108.3
CRT .9875 CRS .8829 CST .9366
LSA 1441.7 MSA 260.4 SSA 14.6
EL1 958.0 EL2 22.8 ALF 8.68

LAUNCH DATE NOV 8 1964 FLIGHT TIME 260.00 ARRIVAL DATE JUL 26 1965

HELIOCENTRIC CONIC DISTANCE 599.772 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 33.004 GAL -2.29 AZL 89.03 HCA 187.71 SMA 189.11 ECC .21983 INC .9704 V1 30.065
RP 230.43 LAP -.13 LOP 233.33 VP 21.215 GAP 1.42 AZP 90.96 TAL 347.25 TAP 174.96 RCA 147.54 APO 230.68 V2 23.867
RC 227.193 GL 10.42 GP 4.97 ZAL 106.90 ZAP 136.71 ETS 173.25 ZAE 172.49 ETE 123.58 ZAC 94.80 ETC 255.83 CLP 136.94

PLANETOCENTRIC CONIC

C3 9.598 VHL 3.098 DLA 20.16 RAL 158.75 RAD 6567.3 VEL 11.445 PTH 1.99 VHP 3.760 DPA 1.52 RAP 191.97 ECC 1.1580

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 53 55	2738.33	-27.90	77.34	15.12	95.04	16 39 33	2138.3	-26.91	68.81
90.00	9 38 31	4013.47	-5.95	161.54	10.55	62.26	10 45 24	3413.5	-9.62	154.78
100.00	17 28 15	2434.13	-29.14	54.81	14.97	96.97	18 8 49	1834.1	-27.87	46.24
100.00	10 46 52	3792.90	-4.85	144.73	9.95	60.47	11 50 4	3192.9	-8.75	138.11
110.00	19 4 18	2133.64	-32.26	31.38	14.37	101.97	19 39 51	1533.6	-30.28	22.73
110.00	11 27 18	3666.16	-2.17	133.45	8.28	55.88	12 28 24	3066.2	-6.63	127.21

DIFFERENTIAL CORRECTIONS
TDE .3033 TRA-1.1722 TC3 3.5983 BAU .4783
RDE .0556 RRA -.1378 RC3 .9717 FAU .34946
FDE -.4342 FRA 5.4678 FC-31.5209 BSP 11656
BDE .3084 BRA 1.1803 BC3 3.7272 FSP 6468

MID-COURSE EXECUTION ACCURACY
SGT 3258.7 SGR 668.4 SG3 1928.3
RRT .9306 RRF -.9898 RTF -.9470
SGB 3326.5 R23 -.2834 R13 -.9510
SG1 3317.8 SG2 240.3 THA 10.86

ORBIT DETERMINATION ACCURACY
ST 894.0 SR 132.4 SS 1098.5
CRT .9741 CRS .7958 CST .9028
LSA 1387.9 MSA 311.1 SSA 14.9
EL1 903.2 EL2 29.6 ALF 8.22

LAUNCH DATE NOV 8 1964 FLIGHT TIME 262.00 ARRIVAL DATE JUL 28 1965

HELIOCENTRIC CONIC DISTANCE 603.589 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.991 GAL -2.25 AZL 88.92 HCA 188.73 SMA 188.88 ECC .21876 INC 1.0751 V1 30.065
RP 230.05 LAP -.16 LOP 234.36 VP 21.240 GAP 1.08 AZP 91.06 TAL 347.41 TAP 176.14 RCA 147.56 APO 230.20 V2 23.907
RC 229.120 GL 11.56 GP 4.49 ZAL 106.53 ZAP 135.39 ETS 173.99 ZAE 171.88 ETE 134.31 ZAC 94.25 ETC 255.85 CLP 135.57

PLANETOCENTRIC CONIC

C3 9.552 VHL 3.091 DLA 21.34 RAL 158.91 RAD 6567.3 VEL 11.443 PTH 1.98 VHP 3.682 DPA 1.23 RAP 191.46 ECC 1.1572

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 40 31	2788.69	-28.15	81.00	15.64	93.22	16 27 0	2188.7	-27.40	72.41
90.00	9 53 11	3961.21	-7.59	158.58	11.05	62.64	10 59 12	3361.2	-11.20	151.76
100.00	17 16 27	2479.35	-29.47	58.13	15.53	95.25	17 57 47	1879.3	-28.43	49.48
100.00	10 59 56	3745.79	-6.43	142.12	10.42	60.74	12 2 22	3145.8	-10.28	135.45
110.00	18 55 24	2169.79	-32.74	34.09	15.00	100.43	19 31 34	1569.8	-30.95	25.33
110.00	11 37 28	3628.11	-3.62	131.46	8.68	55.99	12 37 57	3028.1	-8.06	125.19

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2754 TRA-1.1323 TC3 3.4455 BAU .4547 SGT 3142.5 SGR 613.4 SG3 2012.4 ST 849.6 SR 124.8 SS 1107.8
RDE .0542 RRA -.1209 RC3 .8983 FAU .36310 RRT .9213 RRF -.9845 RTF -.9440 CRT .9538 CRS .6884 CST .8652
FDE -.2343 FRA 5.6961 FC-32.9096 BSP 11296 SGB 3201.8 R23 -.2826 R13 -.9478 LSA 1355.6 MSA 356.3 SSA 15.3
BDE .2807 BRA 1.1387 BC3 3.5607 FSP 6810 SG1 3193.2 SG2 234.7 THA 10.25 EL1 857.9 EL2 37.1 ALF 7.99

LAUNCH DATE NOV 8 1964 FLIGHT TIME 264.00 ARRIVAL DATE JUL 30 1965

HELIOCENTRIC CONIC DISTANCE 607.420 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.978 GAL -2.22 AZL 88.84 HCA 189.76 SMA 188.66 ECC .21775 INC 1.1582 V1 30.065
RP 229.67 LAP -.20 LOP 235.38 VP 21.266 GAP .75 AZP 91.14 TAL 347.55 TAP 177.31 RCA 147.58 APO 229.74 V2 23.948
RC 231.027 GL 12.49 GP 4.11 ZAL 106.18 ZAP 134.02 ETS 174.59 ZAE 170.93 ETE 142.95 ZAC 93.80 ETC 255.86 CLP 134.16

PLANETOCENTRIC CONIC

C3 9.504 VHL 3.083 DLA 22.30 RAL 159.00 RAD 6567.3 VEL 11.441 PTH 1.98 VHP 3.607 DPA 1.04 RAP 190.96 ECC 1,1564

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 28 31	2832.30	-28.27	84.18	16.00	91.63	16 15 44	2232.3	-27.75	75.56
90.00	10 5 55	3915.65	-9.01	155.98	11.45	63.04	11 11 11	3315.6	-12.56	149.10
100.00	17 6 1	2517.94	-29.68	60.98	15.92	93.76	17 47 59	1917.9	-28.84	52.28
100.00	11 11 7	3705.24	-7.77	139.86	10.79	61.04	12 12 52	3105.2	-11.57	133.13
110.00	18 47 39	2199.99	-33.09	36.38	15.47	99.12	19 24 19	1600.0	-31.48	27.53
110.00	11 45 58	3595.96	-4.84	129.77	8.99	56.12	12 45 54	2996.0	-9.26	123.47

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2609 TRA-1.0821 TC3 3.3122 BAU .4344 SGT 3021.7 SGR 573.2 SG3 2100.3 ST 814.9 SR 122.2 SS 1125.3
RDE .0553 RRA -.1067 RC3 .8458 FAU .37805 RRT .9128 RRF -.9780 RTF -.9416 CRT .9309 CRS .5749 CST .8248
FDE -.0804 FRA 5.8929 FC-34.4353 BSP 10708 SGB 3075.6 R23 -.2778 R13 -.9453 LSA 1336.8 MSA 397.5 SSA 15.5
BDE .2667 BRA 1.0874 BC3 3.4185 FSP 7102 SG1 3066.9 SG2 230.6 THA 9.88 EL1 822.9 EL2 44.2 ALF 7.97

LAUNCH DATE NOV 8 1964 FLIGHT TIME 266.00 ARRIVAL DATE AUG 1 1965

HELIOCENTRIC CONIC DISTANCE 611.261 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.966 GAL -2.19 AZL 88.77 HCA 190.79 SMA 188.45 ECC .21680 INC 1.2248 V1 30.065
RP 229.28 LAP -.23 LOP 236.41 VP 21.293 GAP .42 AZP 91.20 TAL 347.68 TAP 178.47 RCA 147.59 APO 229.30 V2 23.988
RC 232.913 GL 13.25 GP 3.80 ZAL 105.87 ZAP 132.59 ETS 175.08 ZAE 169.75 ETE 149.63 ZAC 93.40 ETC 255.88 CLP 132.71

PLANETOCENTRIC CONIC

C3 9.457 VHL 3.075 DLA 23.10 RAL 159.05 RAD 6567.3 VEL 11.439 PTH 1.98 VHP 3.536 DPA .94 RAP 190.44 ECC 1.1556

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 17 37	2870.91	-28.32	87.01	16.25	90.22	16 5 27	2270.9	-27.99	78.36
90.00	10 17 15	3875.08	-10.25	153.65	11.79	63.46	11 21 50	3275.1	-13.74	146.71
100.00	16 56 39	2551.58	-29.80	63.47	16.21	92.45	17 39 10	1951.6	-29.14	54.73
100.00	11 20 54	3669.65	-8.94	137.86	11.09	61.36	12 22 3	3069.6	-12.69	131.08
110.00	18 40 48	2225.74	-33.35	38.35	15.83	97.98	19 17 54	1625.7	-31.89	29.42
110.00	11 53 14	3568.25	-5.89	128.31	9.23	56.27	12 52 42	2968.3	-10.28	121.98

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2472 TRA-1.0347 TC3 3.1485 BAU .4109 SGT 2890.4 SGR 543.1 SG3 2189.9 ST 781.6 SR 122.8 SS 1149.0
RDE .0576 RRA -.0952 RC3 .8068 FAU .39325 RRT .9011 RRF -.9702 RTF -.9375 CRT .9028 CRS .4598 CST .7878
FDE .0576 FRA 6.0901 FC-35.9990 BSP 10162 SGB 2941.0 R23 -.2765 R13 -.9413 LSA 1327.7 MSA 427.9 SSA 16.2
BDE .2538 BRA 1.0390 BC3 3.2502 FSP 7395 SG1 2931.8 SG2 232.2 THA 9.67 EL1 789.4 EL2 52.3 ALF 8.11

LAUNCH DATE NOV 8 1964 FLIGHT TIME 268.00 ARRIVAL DATE AUG 3 1965

HELIOCENTRIC CONIC DISTANCE 615.113 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.955 GAL -2.16 AZL 88.72 HCA 191.82 SMA 188.25 ECC .21591 INC 1.2803 V1 30.065
RP 228.89 LAP -.26 LOP 237.44 VP 21.322 GAP .11 AZP 91.25 TAL 347.80 TAP 179.62 RCA 147.60 APO 228.89 V2 24.029
RC 234.778 GL 13.89 GP 3.55 ZAL 105.59 ZAP 131.12 ETS 175.49 ZAE 168.39 ETE 154.73 ZAC 93.05 ETC 255.90 CLP 131.21

PLANETOCENTRIC CONIC

C3 9.411 VHL 3.068 DLA 23.79 RAL 159.08 RAD 6567.3 VEL 11.437 PTH 1.98 VHP 3.467 DPA .89 RAP 189.92 ECC 1.1549

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 7 33	2905.72	-28.30	89.55	16.42	88.94	15 55 59	2305.7	-28.15	80.89
90.00	10 27 31	3838.35	-11.36	151.52	12.08	63.89	11 31 30	3238.3	-14.78	144.52
100.00	16 48 9	2581.39	-29.87	65.69	16.41	91.29	17 31 10	1981.4	-29.37	56.92
100.00	11 29 37	3637.91	-9.97	136.07	11.35	61.67	12 30 15	3037.9	-13.68	129.24
110.00	18 34 42	2248.06	-33.55	40.06	16.10	96.99	19 12 10	1648.1	-32.22	31.08
110.00	11 59 33	3544.01	-6.80	127.03	9.44	56.42	12 58 37	2944.0	-11.17	120.66

DIFFERENTIAL CORRECTIONS MID-COURSE EXECUTION ACCURACY ORBIT DETERMINATION ACCURACY

TDE .2351 TRA -.9869 TC3 2.9529 BAU .3841 SGT 2744.7 SGR 520.0 SG3 2278.7 ST 749.0 SR 125.3 SS 1178.5
RDE .0605 RRA -.0857 RC3 .7767 FAU .40800 RRT .8865 RRF -.9610 RTF -.9318 CRT .8744 CRS .3470 CST .7492
FDE .1951 FRA 6.2962 FC-37.5340 BSP 9650 SGB 2793.5 R23 -.2783 R13 -.9359 LSA 1326.3 MSA 454.0 SSA 16.9
BDE .2428 BRA .9906 BC3 3.0533 FSP 7722 SG1 2783.4 SG2 237.2 THA 9.61 EL1 757.1 EL2 60.2 ALF 8.38

LAUNCH DATE NOV 8 1964 FLIGHT TIME 270.00 ARRIVAL DATE AUG 5 1965

HELIOCENTRIC CONIC DISTANCE 618.975 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.945 GAL -2.13 AZL 88.67 HCA 192.86 SMA 188.06 ECC .21507 INC 1.3280 V1 30.065
RP 228.51 LAP -.30 LOP 238.48 VP 21.352 GAP -.21 AZP 91.30 TAL 347.91 TAP 180.76 RCA 147.62 APO 228.51 V2 24.070
RC 236.623 GL 14.44 GP 3.33 ZAL 105.34 ZAP 129.60 ETS 175.84 ZAE 166.90 ETE 158.65 ZAC 92.73 ETC 255.92 CLP 129.68

PLANETOCENTRIC CONIC

C3 9.365 VHL 3.060 DLA 24.38 RAL 159.09 RAD 6567.3 VEL 11.435 PTH 1.98 VHP 3.402 DPA .91 RAP 189.38 ECC 1.1541

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 58 12	2937.57	-28.24	91.88	16.53	87.77	15 47 10	2337.6	-28.25	83.22
90.00	10 36 59	3804.62	-12.36	149.55	12.34	64.32	11 40 23	3204.6	-15.72	142.48
100.00	16 40 22	2608.16	-29.89	67.68	16.57	90.24	17 23 50	2008.2	-29.54	58.89
100.00	11 37 29	3609.26	-10.89	134.44	11.58	61.99	12 37 39	3009.3	-14.55	127.56
110.00	18 29 13	2267.63	-33.70	41.57	16.32	96.11	19 7 0	1667.6	-32.49	32.54
110.00	12 5 8	3522.55	-7.61	125.90	9.61	56.57	13 3 51	2922.6	-11.95	119.49

DIFFERENTIAL CORRECTIONS
TDE .2253 TRA -.9375 TC3 2.7459 BAU .3565
RDE .0637 RRA -.0779 RC3 .7538 FAU .42277
FDE .3341 FRA 6.5112 FC-39.0809 BSP 9068
BDE .2341 BRA .9407 BC3 2.8475 FSP 8062

MID-COURSE EXECUTION ACCURACY
SGT 2591.6 SGR 502.7 SG3 2368.8
RRT .8706 RRF -.9508 RTF -.9251
SGB 2639.9 R23 -.2809 R13 -.9296
SG1 2628.6 SG2 243.8 THA 9.67

ORBIT DETERMINATION ACCURACY
ST 717.4 SR 129.3 SS 1213.0
CRT .8492 CRS .2404 CST .7072
LSA 1332.4 MSA 476.8 SSA 17.5
EL1 725.8 EL2 67.5 ALF 8.78

LAUNCH DATE NOV 8 1964 FLIGHT TIME 272.00 ARRIVAL DATE AUG 7 1965

HELIOCENTRIC CONIC DISTANCE 622.849 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.935 GAL -2.11 AZL 88.63 HCA 193.90 SMA 187.89 ECC .21429 INC 1.3682 V1 30.065
RP 228.12 LAP -.33 LOP 239.52 VP 21.383 GAP -.52 AZP 91.33 TAL 348.00 TAP 181.89 RCA 147.63 APO 228.15 V2 24.111
RC 238.446 GL 14.92 GP 3.15 ZAL 105.11 ZAP 128.04 ETS 176.15 ZAE 165.31 ETE 161.71 ZAC 92.44 ETC 255.94 CLP 128.10

PLANETOCENTRIC CONIC

C3 9.322 VHL 3.053 DLA 24.89 RAL 159.10 RAD 6567.3 VEL 11.433 PTH 1.98 VHP 3.340 DPA .96 RAP 188.82 ECC 1.1534

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 49 27	2967.01	-28.14	94.03	16.61	86.70	15 38 54	2367.0	-28.30	85.37
90.00	10 45 47	3773.38	-13.28	147.72	12.58	64.76	11 48 40	3173.4	-16.57	140.59
100.00	16 33 14	2632.39	-29.88	69.48	16.68	89.30	17 17 6	2032.4	-29.66	60.68
100.00	11 44 41	3583.22	-11.72	132.95	11.79	62.30	12 44 24	2983.2	-15.33	126.02
110.00	18 24 17	2284.96	-33.82	42.91	16.49	95.32	19 2 22	1685.0	-32.71	33.84
110.00	12 10 7	3503.43	-8.33	124.88	9.76	56.73	13 8 31	2903.4	-12.65	118.45

DIFFERENTIAL CORRECTIONS
TDE .2190 TRA -.8870 TC3 2.5148 BAU .3266
RDE .0674 RRA -.0712 RC3 .7372 FAU .43771
FDE .4587 FRA 6.7242 FC-40.6498 BSP 8480
BDE .2291 BRA .8898 BC3 2.6206 FSP 8402

MID-COURSE EXECUTION ACCURACY
SGT 2427.8 SGR 490.2 SG3 2459.6
RRT .8515 RRF -.9396 RTF -.9158
SGB 2476.8 R23 -.2885 R13 -.9211
SG1 2463.8 SG2 253.3 THA 9.86

ORBIT DETERMINATION ACCURACY
ST 688.5 SR 134.7 SS 1248.4
CRT .8296 CRS .1468 CST .6641
LSA 1343.6 MSA 495.1 SSA 18.1
EL1 697.6 EL2 74.2 ALF 9.32

LAUNCH DATE NOV 8 1964 FLIGHT TIME 274.00 ARRIVAL DATE AUG 9 1965

HELIOCENTRIC CONIC DISTANCE 626.732 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.925 GAL -2.09 AZL 88.60 HCA 194.94 SMA 187.73 ECC .21355 INC 1.4028 V1 30.065
RP 227.73 LAP -.36 LOP 240.56 VP 21.415 GAP -.82 AZP 91.36 TAL 348.08 TAP 183.02 RCA 147.64 APO 227.81 V2 24.152
RC 240.248 GL 15.34 GP 2.99 ZAL 104.91 ZAP 126.43 ETS 176.42 ZAE 163.64 ETE 164.13 ZAC 92.16 ETC 255.96 CLP 126.49

PLANETOCENTRIC CONIC

C3 9.281 VHL 3.047 DLA 25.35 RAL 159.11 RAD 6567.3 VEL 11.431 PTH 1.98 VHP 3.281 DPA 1.05 RAP 188.23 ECC 1.1527

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 41 13	2994.48	-28.02	96.03	16.66	85.71	15 31 7	2394.5	-28.32	87.38
90.00	10 54 4	3744.20	-14.12	145.98	12.81	65.20	11 56 28	3144.2	-17.35	138.80
100.00	16 26 40	2654.49	-29.86	71.12	16.77	88.43	17 10 55	2054.5	-29.75	62.32
100.00	11 51 18	3559.42	-12.47	131.58	11.98	62.61	12 50 38	2959.4	-16.04	124.61
110.00	18 19 51	2300.38	-33.91	44.10	16.64	94.62	18 58 11	1700.4	-32.90	35.01
110.00	12 14 37	3486.29	-8.96	123.96	9.90	56.87	13 12 43	2886.3	-13.26	117.50

DIFFERENTIAL CORRECTIONS
TDE .2145 TRA -.8345 TC3 2.2659 BAU .2952
RDE .0715 RRA -.0653 RC3 .7256 FAU .45297
FDE .5739 FRA 6.9329 FC-42.2514 BSP 7816
BDE .2261 BRA .8371 BC3 2.3793 FSP 8725

MID-COURSE EXECUTION ACCURACY
SGT 2254.9 SGR 481.7 SG3 2551.5
RRT .8291 RRF -.9278 RTF -.9035
SGB 2305.8 R23 -.3008 R13 -.9099
SG1 2290.5 SG2 265.1 THA 10.18

ORBIT DETERMINATION ACCURACY
ST 660.2 SR 141.1 SS 1283.5
CRT .8160 CRS .0651 CST .6195
LSA 1358.0 MSA 508.7 SSA 18.9
EL1 670.3 EL2 80.3 ALF 10.04

LAUNCH DATE NOV 8 1964 FLIGHT TIME 276.00 ARRIVAL DATE AUG 11 1965

HELIOCENTRIC CONIC DISTANCE 630.626 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.917 GAL -2.07 AZL 88.57 HCA 195.99 SMA 187.57 ECC .21286 INC 1.4334 V1 30.065
RP 227.34 LAP -.39 LOP 241.61 VP 21.448 GAP -1.12 AZP 91.38 TAL 348.15 TAP 184.14 RCA 147.64 APO 227.50 V2 24.193
RC 242.030 GL 15.71 GP 2.85 ZAL 104.74 ZAP 124.78 ETS 176.66 ZAE 161.89 ETE 166.08 ZAC 91.89 ETC 255.99 CLP 124.83

PLANETOCENTRIC CONIC

C3 9.243 VHL 3.040 DLA 25.74 RAL 159.12 RAD 6567.3 VEL 11.429 PTH 1.98 VHP 3.226 DPA 1.18 RAP 187.62 ECC 1.1521

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 33 27	3020.28	-27.87	97.90	16.70	84.78	15 23 47	2420.3	-28.30	89.26
90.00	11 1 56	3716.80	-14.90	144.35	13.03	65.64	12 3 53	3116.8	-18.06	137.10
100.00	16 20 38	2674.73	-29.81	72.62	16.84	87.64	17 5 13	2074.7	-29.82	63.82
100.00	11 57 26	3537.58	-13.15	130.31	12.16	62.91	12 56 23	2937.6	-16.67	123.30
110.00	18 15 52	2314.17	-33.98	45.17	16.77	93.99	18 54 26	1714.2	-33.05	36.06
110.00	12 18 41	3470.90	-9.54	123.14	10.03	57.02	13 16 32	2870.9	-13.81	116.65

DIFFERENTIAL CORRECTIONS
TDE .2131 TRA -.7797 TC3 1.9994 BAU .2625
RDE .0757 RRA -.0602 RC3 .7176 FAU .46810
FDE .6843 FRA 7.1452 FC-43.8434 BSP 7102
BDE .2262 BRA .7820 BC3 2.1242 FSP 9055

MID-COURSE EXECUTION ACCURACY
SGT 2073.8 SGR 476.0 SG3 2643,1
RRT .8036 RRF -.9155 RTF -.8871
SGB 2127.7 R23 -.3183 R13 -.8953
SG1 2109.4 SG2 278.6 THA 10.64

ORBIT DETERMINATION ACCURACY
ST 634.2 SR 148.1 SS 1319.5
CRT .8118 CRS -.0056 CST .5682
LSA 1375.9 MSA 521.4 SSA 19.6
EL1 645.7 EL2 84.9 ALF 10.93

LAUNCH DATE NOV 8 1964 FLIGHT TIME 278.00 ARRIVAL DATE AUG 13 1965

HELIOCENTRIC CONIC DISTANCE 634.530 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.908 GAL -2.06 AZL 88.54 HCA 197.04 SMA 187.43 ECC .21222 INC 1.4605 V1 30.065
RP 226.95 LAP -.43 LOP 242.66 VP 21.482 GAP -1.41 AZP 91.40 TAL 348.20 TAP 185.24 RCA 147.65 APO 227.20 V2 24.235
RC 243.792 GL 16.04 GP 2.73 ZAL 104.60 ZAP 123.09 ETS 176.87 ZAE 160.09 ETE 167.67 ZAC 91.63 ETC 256.01 CLP 123.13

PLANETOCENTRIC CONIC

C3 9.208 VHL 3.034 DLA 26.09 RAL 159.14 RAD 6567.3 VEL 11.428 PTH 1.98 VHP 3.173 DPA 1.34 RAP 186.98 ECC 1.1515

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 26 7	3044.61	-27.71	99.66	16.72	83.91	15 16 52	2444.6	-28.26	91.04
90.00	11 9 25	3690.98	-15.61	142.79	13.24	66.07	12 10 56	3091.0	-18.72	135.49
100.00	16 15 6	2693.27	-29.75	74.00	16.91	86.92	16 59 59	2093.3	-29.86	65.20
100.00	12 3 7	3517.55	-13.76	129.15	12.33	63.20	13 1 45	2917.5	-17.25	122.09
110.00	18 12 19	2326.51	-34.03	46.13	16.89	93.43	18 51 5	1726.5	-33.18	36.99
110.00	12 22 24	3457.07	-10.05	122.39	10.16	57.15	13 20 1	2857.1	-14.31	115.88

DIFFERENTIAL CORRECTIONS
TDE .2126 TRA -.7242 TC3 1.7050 BAU .2275
RDE .0799 RRA -.0559 RC3 .7121 FAU .48272
FDE .7980 FRA 7.3667 FC-45.3854 BSP 6380
BDE .2271 BRA .7263 BC3 1.8478 FSP 9402

MID-COURSE EXECUTION ACCURACY
SGT 1884.1 SGR 472.6 SG3 2733.3
RRT .7711 RRF -.9027 RTF -.8636
SGB 1942.5 R23 -.3453 R13 -.8746
SG1 1919.9 SG2 295.3 THA 11.22

ORBIT DETERMINATION ACCURACY
ST 608.9 SR 155.5 SS 1358.2
CRT .8141 CRS -.0687 CST .5115
LSA 1399.1 MSA 530.8 SSA 20.3
EL1 622.2 EL2 88.4 ALF 11.99

LAUNCH DATE NOV 8 1964 FLIGHT TIME 280.00 ARRIVAL DATE AUG 15 1965

HELIOCENTRIC CONIC DISTANCE 638.444 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.901 GAL -2.04 AZL 88.52 HCA 198.09 SMA 187.29 ECC .21163 INC 1.4843 V1 30.065
RP 226.56 LAP -.46 LOP 243.71 VP 21.517 GAP -1.69 AZP 91.41 TAL 348.25 TAP 186.34 RCA 147.66 APO 226.93 V2 24.277
RC 245.534 GL 16.33 GP 2.62 ZAL 104.48 ZAP 121.36 ETS 177.07 ZAE 158.22 ETE 168.99 ZAC 91.37 ETC 256.04 CLP 121.39

PLANETOCENTRIC CONIC

C3 9.176 VHL 3.029 DLA 26.40 RAL 159.17 RAD 6567.3 VEL 11.427 PTH 1.98 VHP 3.124 DPA 1.53 RAP 186.31 ECC 1.1510

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 19 12	3067.62	-27.53	101.33	16.74	83.09	15 10 19	2467.6	-28.20	92.72
90.00	11 16 35	3666.61	-16.28	141.31	13.46	66.51	12 17 42	3066.6	-19.32	133.96
100.00	16 10 3	2710.28	-29.68	75.26	16.97	86.26	16 55 13	2110.3	-29.88	66.46
100.00	12 8 25	3499.18	-14.33	128.07	12.51	63.48	13 6 45	2899.2	-17.77	120.98
110.00	18 9 10	2337.56	-34.07	46.99	17.01	92.92	18 48 7	1737.6	-33.29	37.84
110.00	12 25 48	3444.67	-10.50	121.72	10.29	57.28	13 23 12	2844.7	-14.74	115.19

DIFFERENTIAL CORRECTIONS
TDE .2155 TRA -.6649 TC3 1.3972 BAU .1922
RDE .0844 RRA -.0519 RC3 .7096 FAU .49766
FDE .8936 FRA 7.5735 FC-46.9546 BSP 5579
BDE .2315 BRA .6669 BC3 1.5671 FSP 9716

MID-COURSE EXECUTION ACCURACY
SGT 1689.4 SGR 471.5 SG3 2823.3
RRT .7316 RRF -.8899 RTF -.8304
SGB 1753.9 R23 -.3818 R13 -.8458
SG1 1725.5 SG2 314.7 THA 11.94

ORBIT DETERMINATION ACCURACY
ST 586.7 SR 163.5 SS 1392.1
CRT .8261 CRS -.1200 CST .4473
LSA 1420.5 MSA 539.2 SSA 21.0
EL1 602.4 EL2 89.8 ALF 13.27

LAUNCH DATE NOV 8 1964 FLIGHT TIME 282.00 ARRIVAL DATE AUG 17 1965

HELIOCENTRIC CONIC DISTANCE 642.367 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.893 GAL -2.04 AZL 88.49 HCA 199.15 SMA 187.17 ECC .21108 INC 1.5058 V1 30.065
RP 226.17 LAP -.49 LOP 244.77 VP 21.553 GAP -1.98 AZP 91.42 TAL 348.28 TAP 187.43 RCA 147.66 APO 226.67 V2 24.318
RC 247.256 GL 16.60 GP 2.52 ZAL 104.40 ZAP 119.59 ETS 177.25 ZAE 156.30 ETE 170.09 ZAC 91.12 ETC 256.08 CLP 119.62

PLANETOCENTRIC CONIC

C3 9.147 VHL 3.024 DLA 26.67 RAL 159.21 RAD 6567.3 VEL 11.425 PTH 1.98 VHP 3.078 DPA 1.74 RAP 185.62 ECC 1.1505

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 12 41	3089.40	-27.34	102.89	16.77	82.33	15 4 11	2489.4	-28.12	94.31
90.00	11 23 27	3643.60	-16.90	139.91	13.68	66.94	12 24 11	3043.6	-19.88	132.50
100.00	16 5 28	2725.82	-29.60	76.41	17.04	85.66	16 50 54	2125.8	-29.89	67.62
100.00	12 13 21	3482.41	-14.83	127.09	12.69	63.75	13 11 24	2882.4	-18.24	119.95
110.00	18 6 24	2347.42	-34.10	47.76	17.13	92.46	18 45 32	1747.4	-33.39	38.59
110.00	12 28 55	3433.58	-10.91	121.12	10.42	57.40	13 26 8	2833.6	-15.13	114.56

DIFFERENTIAL CORRECTIONS
TDE .2195 TRA -.6046 TC3 1.0641 BAU .1563
RDE .0889 RRA -.0484 RC3 .7087 FAU .51201
FDE .9881 FRA 7.7865 FC-48.4627 BSP 4769
BDE .2368 BRA .6065 BC3 1.2785 FSP 10042

MID-COURSE EXECUTION ACCURACY
SGT 1493.4 SGR 471.9 SG3 2911.2
RRT .6775 RRF -.8770 RTF -.7800
SGB 1566.2 R23 -.4342 R13 -.8027
SG1 1529.0 SG2 339.0 THA 12.72

ORBIT DETERMINATION ACCURACY
ST 566.7 SR 171.8 SS 1427.1
CRT .8439 CRS -.1646 CST .3758
LSA 1445.4 MSA 545.5 SSA 21.7
EL1 585.4 EL2 89.2 ALF 14.70

LAUNCH DATE NOV 8 1964 FLIGHT TIME 284.00 ARRIVAL DATE AUG 19 1965

HELIOCENTRIC CONIC DISTANCE 646.301 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.887 GAL -2.03 AZL 88.47 HCA 200.21 SMA 187.05 ECC .21057 INC 1.5249 V1 30.065
RP 225.78 LAP -.53 LOP 245.83 VP 21.590 GAP -2.25 AZP 91.43 TAL 348.29 TAP 188.51 RCA 147.66 APO 226.44 V2 24.360
RC 248.959 GL 16.84 GP 2.43 ZAL 104.33 ZAP 117.78 ETS 177.42 ZAE 154.33 ETE 171.04 ZAC 90.87 ETC 256.11 CLP 117.80

PLANETOCENTRIC CONIC

C3 9.121 VHL 3.020 DLA 26.91 RAL 159.27 RAD 6567.3 VEL 11.424 PTH 1.98 VHP 3.035 DPA 1.97 RAP 184.90 ECC 1.1501

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 6 35	3109.99	-27.15	104.37	16.80	81.62	14 58 25	2510.0	-28.03	95.81
90.00	11 30 2	3621.92	-17.47	138.58	13.90	67.36	12 30 24	3021.9	-20.39	131.12
100.00	16 1 22	2739.96	-29.53	77.45	17.11	85.12	16 47 2	2140.0	-29.89	68.67
100.00	12 17 56	3467.18	-15.29	126.18	12.87	64.00	13 15 43	2867.2	-18.66	119.02
110.00	18 4 1	2356.18	-34.13	48.44	17.25	92.06	18 43 17	1756.2	-33.47	39.26
110.00	12 31 46	3423.73	-11.27	120.59	10.56	57.51	13 28 50	2823.7	-15.48	114.01

DIFFERENTIAL CORRECTIONS
TDE .2254 TRA -.5419 TC3 .7125 BAU .1226
RDE .0936 RRA -.0451 RC3 .7098 FAU .52635
FDE 1.0667 FRA 7.9888 FC-49.9603 BSP 3922
BDE .2441 BRA .5438 BC3 1.0057 FSP 10339

MID-COURSE EXECUTION ACCURACY
SGT 1302.9 SGR 473.9 SG3 2997.5
RRT .6012 RRF -.8643 RTF -.7017
SGB 1386.4 R23 -.5064 R13 -.7365
SG1 1336.3 SG2 369.2 THA 13.37

ORBIT DETERMINATION ACCURACY
ST 550.2 SR 180.4 SS 1457.7
CRT .8674 CRS -.2004 CST .2974
LSA 1468.5 MSA 550.7 SSA 22.4
EL1 572.6 EL2 86.3 ALF 16.26

LAUNCH DATE NOV 8 1964 FLIGHT TIME 286.00 ARRIVAL DATE AUG 21 1965

HELIOCENTRIC CONIC DISTANCE 650.244 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.880 GAL -2.02 AZL 88.46 HCA 201.28 SMA 186.94 ECC .21011 INC 1.5426 V1 30.065
RP 225.38 LAP -.56 LOP 246.90 VP 21.628 GAP -2.52 AZP 91.44 TAL 348.30 TAP 189.57 RCA 147.66 APO 226.22 V2 24.402
RC 250.643 GL 17.06 GP 2.35 ZAL 104.30 ZAP 115.93 ETS 177.58 ZAE 152.32 ETE 171.84 ZAC 90.62 ETC 256.16 CLP 115.96

PLANETOCENTRIC CONIC

C3 9.098 VHL 3.016 DLA 27.12 RAL 159.35 RAD 6567.3 VEL 11.423 PTH 1.98 VHP 2.995 DPA 2.22 RAP 184.16 ECC 1.1497

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 0 54	3129.38	-26.95	105.75	16.84	80.95	14 53 4	2529.4	-27.92	97.22
90.00	11 36 19	3601.58	-18.00	137.32	14.14	67.77	12 36 21	3001.6	-20.86	129.81
100.00	15 57 45	2752.72	-29.45	78.39	17.20	84.63	16 43 38	2152.7	-29.88	69.62
100.00	12 22 10	3453.47	-15.70	125.37	13.06	64.23	13 19 43	2853.5	-19.04	118.17
110.00	18 2 0	2363.91	-34.15	49.05	17.38	91.70	18 41 24	1763.9	-33.53	39.86
110.00	12 34 24	3415.04	-11.59	120.11	10.71	57.61	13 31 19	2815.0	-15.78	113.52

DIFFERENTIAL CORRECTIONS
TDE .2330 TRA -.4767 TC3 .3422 BAU .0960
RDE .0983 RRA -.0423 RC3 .7114 FAU .53977
FDE 1.1506 FRA 8.1987 FC-51.3614 BSP 3053
BDE .2528 BRA .4785 BC3 .7894 FSP 10645

MID-COURSE EXECUTION ACCURACY
SGT 1128.3 SGR 476.6 SG3 3080.2
RRT .4891 RRF -.8515 RTF -.5774
SGB 1224.9 R23 -.6023 R13 -.6296
SG1 1155.7 SG2 405.9 THA 13.35

ORBIT DETERMINATION ACCURACY
ST 537.6 SR 189.0 SS 1490.8
CRT .8949 CRS -.2330 CST .2068
LSA 1496.0 MSA 555.5 SSA 23.0
EL1 564.1 EL2 80.4 ALF 17.84

LAUNCH DATE NOV 8 1964 FLIGHT TIME 288.00 ARRIVAL DATE AUG 23 1965

HELIOCENTRIC CONIC DISTANCE 654.196 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.875 GAL -2.02 AZL 88.44 HCA 202.35 SMA 186.84 ECC .20968 INC 1.5585 V1 30.065
RP 224.99 LAP -.59 LOP 247.97 VP 21.666 GAP -2.79 AZP 91.44 TAL 348.29 TAP 190.63 RCA 147.66 APO 226.02 V2 24.444
RC 252.307 GL 17.25 GP 2.27 ZAL 104.29 ZAP 114.06 ETS 177.73 ZAE 150.27 ETE 172.55 ZAC 90.37 ETC 256.20 CLP 114.08

PLANETOCENTRIC CONIC

C3 9.079 VHL 3.013 DLA 27.30 RAL 159.45 RAD 6567.3 VEL 11.422 PTH 1.98 VHP 2.958 DPA 2.49 RAP 183.39 ECC 1.1494

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 55 41	3147.48	-26.75	107.04	16.90	80.33	14 48 9	2547.5	-27.81	98.53
90.00	11 42 18	3582.66	-18.49	136.14	14.38	68.16	12 42 0	2982.7	-21.29	128.59
100.00	15 54 37	2764.10	-29.37	79.23	17.30	84.19	16 40 41	2164.1	-29.87	70.46
100.00	12 26 3	3441.27	-16.06	124.64	13.26	64.44	13 23 24	2841.3	-19.37	117.41
110.00	18 0 20	2370.67	-34.16	49.57	17.52	91.39	18 39 51	1770.7	-33.59	40.38
110.00	12 36 49	3407.47	-11.87	119.70	10.87	57.70	13 33 36	2807.5	-16.04	113.09

DIFFERENTIAL CORRECTIONS
TDE .2412 TRA -.4096 TC3 -.0480 BAU .0869
RDE .1030 RRA -.0397 RC3 .7140 FAU .55274
FDE 1.2229 FRA 8.4003 FC-52.7067 BSP 2218
BDE .2623 BRA .4115 BC3 .7156 FSP 10928

MID-COURSE EXECUTION ACCURACY
SGT 989.7 SGR 480.3 SG3 3159.7
RRT .3193 RRF -.8390 RTF -.3805
SGB 1100.1 R23 -.7213 R13 -.4447
SG1 1004.6 SG2 448.5 THA 11.03

ORBIT DETERMINATION ACCURACY
ST 528.7 SR 197.9 SS 1520.6
CRT .9224 CRS -.2597 CST .1114
LSA 1522.7 MSA 558.4 SSA 23.7
EL1 559.9 EL2 72.2 ALF 19.38

LAUNCH DATE NOV 8 1964 FLIGHT TIME 290.00 ARRIVAL DATE AUG 25 1965

HELIOCENTRIC CONIC DISTANCE 658.158 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.869 GAL -2.02 AZL 88.43 HCA 203.42 SMA 186.75 ECC .20930 INC 1.5731 V1 30.065
RP 224.60 LAP -.63 LOP 249.04 VP 21.705 GAP -3.05 AZP 91.44 TAL 348.26 TAP 191.68 RCA 147.66 APO 225.84 V2 24.486
RC 253.951 GL 17.43 GP 2.20 ZAL 104.31 ZAP 112.15 ETS 177.86 ZAE 148.17 ETE 173.16 ZAC 90.12 ETC 256.25 CLP 112.17

PLANETOCENTRIC CONIC

C3 9.063 VHL 3.011 DLA 27.45 RAL 159.56 RAD 6567.3 VEL 11.422 PTH 1.98 VHP 2.925 DPA 2.78 RAP 182.60 ECC 1.1492

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 50 59	3164.19	-26.55	108.22	16.97	79.77	14 43 43	2564.2	-27.69	99.74
90.00	11 47 55	3565.28	-18.92	135.05	14.62	68.53	12 47 20	2965.3	-21.67	127.46
100.00	15 51 59	2774.10	-29.30	79.97	17.42	83.81	16 38 13	2174.1	-29.85	71.20
100.00	12 29 35	3430.60	-16.37	124.00	13.46	64.63	13 26 46	2830.6	-19.65	116.75
110.00	17 59 3	2376.49	-34.17	50.03	17.67	91.12	18 38 39	1776.5	-33.63	40.83
110.00	12 39 1	3400.98	-12.10	119.35	11.04	57.78	13 35 42	2801.0	-16.27	112.72

DIFFERENTIAL CORRECTIONS
TDE .2512 TRA -.3406 TC3 -.4589 BAU .1032
RDE .1078 RRA -.0372 RC3 .7173 FAU .56504
FDE 1.2821 FRA 8.5956 FC-53.9729 BSP 1564
BDE .2734 BRA .3426 BC3 .8515 FSP 11193

MID-COURSE EXECUTION ACCURACY
SGT 915.7 SGR 484.7 SG3 3234.9
RRT .0833 RRF -.8267 RTF -.0968
SGB 1036.1 R23 -.8180 R13 -.1232
SG1 917.0 SG2 482.4 THA 3.49

ORBIT DETERMINATION ACCURACY
ST 526.0 SR 207.0 SS 1547.5
CRT .9482 CRS -.2807 CST .0116
LSA 1548.6 MSA 561.7 SSA 24.3
EL1 561.9 EL2 61.5 ALF 20.72

LAUNCH DATE NOV 8 1964 FLIGHT TIME 292.00 ARRIVAL DATE AUG 27 1965

HELIOCENTRIC CONIC DISTANCE 662.128 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.864 GAL -2.03 AZL 88.41 HCA 204.50 SMA 186.66 ECC .20895 INC 1.5868 V1 30.065
RP 224.21 LAP -.66 LOP 250.11 VP 21.745 GAP -3.31 AZP 91.44 TAL 348.23 TAP 192.72 RCA 147.66 APO 225.67 V2 24.527
RC 255.576 GL 17.60 GP 2.14 ZAL 104.36 ZAP 110.21 ETS 178.00 ZAE 146.05 ETE 173.70 ZAC 89.86 ETC 256.30 CLP 110.23

PLANETOCENTRIC CONIC

C3 9.051 VHL 3.008 DLA 27.58 RAL 159.69 RAD 6567.3 VEL 11.421 PTH 1.98 VHP 2.896 DPA 3.07 RAP 181.79 ECC 1.1490

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 46 50	3179.32	-26.36	109.29	17.06	79.27	14 39 49	2579.3	-27.58	100.83
90.00	11 53 8	3549.62	-19.31	134.06	14.88	68.88	12 52 17	2949.6	-22.01	126.43
100.00	15 49 52	2782.71	-29.24	80.60	17.55	83.49	16 36 15	2182.7	-29.83	71.84
100.00	12 32 47	3421.47	-16.63	123.46	13.68	64.80	13 29 48	2821.5	-19.89	116.18
110.00	17 58 6	2381.41	-34.17	50.41	17.84	90.90	18 37 47	1781.4	-33.67	41.21
110.00	12 41 2	3395.53	-12.30	119.05	11.23	57.85	13 37 38	2795.5	-16.46	112.41

DIFFERENTIAL CORRECTIONS
TDE .2624 TRA -.2688 TC3 -.8848 BAU .1381
RDE .1125 RRA -.0350 RC3 .7203 FAU .57601
FDE 1.3443 FRA 8.7959 FC-55.0964 BSP 1453
BDE .2855 BRA .2710 BC3 1.1410 FSP 11462

MID-COURSE EXECUTION ACCURACY
SGT 930.9 SGR 489.3 SG3 3304.4
RRT -.1762 RRF -.8143 RTF .2251
SGB 1051.7 R23 .7709 R13 -.2753
SG1 936.3 SG2 478.9 THA 172.82

ORBIT DETERMINATION ACCURACY
ST 529.1 SR 215.9 SS 1576.0
CRT .9699 CRS -.3000 CST -.0939
LSA 1578.4 MSA 564.4 SSA 24.9
EL1 569.4 EL2 48.9 ALF 21.76

LAUNCH DATE NOV 8 1964 FLIGHT TIME 294.00 ARRIVAL DATE AUG 29 1965

HELIOCENTRIC CONIC DISTANCE 666.107 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.860 GAL -2.03 AZL 88.40 HCA 205.58 SMA 186.59 ECC .20864 INC 1.5991 V1 30.065
RP 223.82 LAP -.69 LOP 251.19 VP 21.785 GAP -3.56 AZP 91.44 TAL 348.18 TAP 193.75 RCA 147.66 APO 225.52 V2 24.569
RC 257.180 GL 17.75 GP 2.07 ZAL 104.43 ZAP 108.26 ETS 178.12 ZAE 143.89 ETE 174.18 ZAC 89.61 ETC 256.36 CLP 108.27

PLANETOCENTRIC CONIC

C3 9.042 VHL 3.007 DLA 27.68 RAL 159.85 RAD 6567.3 VEL 11.421 PTH 1.98 VHP 2.869 DPA 3.39 RAP 180.96 ECC 1.1488

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 43 21	3192.60	-26.19	110.22	17.18	78.83	14 36 34	2592.6	-27.47	101.79
90.00	11 57 51	3535.97	-19.64	133.20	15.14	69.18	12 56 47	2936.0	-22.30	125.54
100.00	15 48 17	2789.88	-29.18	81.12	17.71	83.21	16 34 47	2189.9	-29.81	72.38
100.00	12 35 36	3413.92	-16.85	123.00	13.90	64.94	13 32 30	2813.9	-20.09	115.71
110.00	17 57 30	2385.46	-34.18	50.73	18.02	90.71	18 37 16	1785.5	-33.70	41.52
110.00	12 42 52	3391.10	-12.46	118.80	11.43	57.91	13 39 23	2791.1	-16.61	112.15

DIFFERENTIAL CORRECTIONS
TDE .2727 TRA -.1955 TC3-1.3364 BAU .1837
RDE .1173 RRA -.0329 RC3 .7231 FAU .58538
FDE 1.4084 FRA 8.9962 FC-56.0469 BSP 2026
BDE .2969 BRA .1983 BC3 1.5194 FSP 11730

MID-COURSE EXECUTION ACCURACY
SGT 1045.4 SGR 494.0 SG3 3366.3
RRT -.3942 RRF -.8016 RTF .4994
SGB 1156.3 R23 .6080 R13 -.5592
SG1 1067.3 SG2 444.7 THA 167.19

ORBIT DETERMINATION ACCURACY
ST 535.3 SR 224.8 SS 1605.5
CRT .9844 CRS -.3180 CST -.1979
LSA 1611.3 MSA 563.8 SSA 25.6
EL1 579.4 EL2 36.5 ALF 22.56

LAUNCH DATE NOV 8 1964 FLIGHT TIME 296.00 ARRIVAL DATE AUG 31 1965

HELIOCENTRIC CONIC DISTANCE 670.095 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.856 GAL -2.04 AZL 88.39 HCA 206.66 SMA 186.52 ECC .20837 INC 1.6108 V1 30.065
RP 223.44 LAP -.72 LOP 252.28 VP 21.827 GAP -3.81 AZP 91.44 TAL 348.11 TAP 194.77 RCA 147.65 APO 225.38 V2 24.611
RC 258.763 GL 17.88 GP 2.02 ZAL 104.53 ZAP 106.27 ETS 178.24 ZAE 141.71 ETE 174.61 ZAC 89.36 ETC 256.42 CLP 106.28

PLANETOCENTRIC CONIC

C3 9.037 VHL 3.006 DLA 27.76 RAL 160.03 RAD 6567.3 VEL 11.420 PTH 1.98 VHP 2.846 DPA 3.71 RAP 180.12 ECC 1.1487

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 40 37	3203.75	-26.04	111.01	17.32	78.46	14 34 1	2603.7	-27.37	102.59
90.00	12 1 59	3524.58	-19.92	132.48	15.41	69.45	13 0 44	2924.6	-22.54	124.79
100.00	15 47 13	2795.62	-29.13	81.54	17.89	83.00	16 33 49	2195.6	-29.80	72.80
100.00	12 38 4	3407.95	-17.02	122.64	14.13	65.05	13 34 52	2807.9	-20.25	115.33
110.00	17 57 15	2388.66	-34.18	50.98	18.23	90.56	18 37 4	1788.7	-33.72	41.77
110.00	12 44 32	3387.67	-12.58	118.62	11.64	57.95	13 40 59	2787.7	-16.73	111.96

DIFFERENTIAL CORRECTIONS
TDE .2851 TRA -.1192 TC3-1.7987 BAU .2343
RDE .1221 RRA -.0310 RC3 .7257 FAU .59369
FDE 1.4578 FRA 9.1861 FC-56.8772 BSP 2957
BDE .3101 BRA .1231 BC3 1.9396 FSP 11968

MID-COURSE EXECUTION ACCURACY
SGT 1237.1 SGR 498.9 SG3 3421.9
RRT -.5319 RRF -.7891 RTF .6819
SGB 1334.0 R23 .4487 R13 -.7191
SG1 1268.8 SG2 412.0 THA 166.44

ORBIT DETERMINATION ACCURACY
ST 549.7 SR 233.9 SS 1631.3
CRT .9919 CRS -.3315 CST -.2978
LSA 1642.7 MSA 564.8 SSA 26.2
EL1 596.8 EL2 27.4 ALF 22.93

LAUNCH DATE NOV 8 1964 FLIGHT TIME 298.00 ARRIVAL DATE SEP 2 1965

HELIOCENTRIC CONIC DISTANCE 674.095 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.852 GAL -2.05 AZL 88.38 HCA 207.75 SMA 186.45 ECC .20814 INC 1.6215 V1 30.065
RP 223.05 LAP -.75 LOP 253.37 VP 21.868 GAP -4.05 AZP 91.44 TAL 348.04 TAP 195.78 RCA 147.64 APO 225.26 V2 24.653
RC 260.326 GL 18.00 GP 1.96 ZAL 104.66 ZAP 104.27 ETS 178.35 ZAE 139.50 ETE 175.00 ZAC 89.11 ETC 256.49 CLP 104.28

PLANETOCENTRIC CONIC

C3 9.035 VHL 3.006 DLA 27.82 RAL 160.22 RAD 6567.3 VEL 11.420 PTH 1.98 VHP 2.827 DPA 4.04 RAP 179.26 ECC 1.1487

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 38 41	3212.58	-25.92	111.62	17.49	78.18	14 32 14	2612.6	-27.29	103.22
90.00	12 5 29	3515.67	-20.13	131.91	15.68	69.65	13 4 4	2915.7	-22.72	124.20
100.00	15 46 41	2799.98	-29.10	81.86	18.09	82.83	16 33 21	2200.0	-29.78	73.13
100.00	12 40 11	3403.50	-17.15	122.37	14.37	65.14	13 36 54	2803.5	-20.36	115.05
110.00	17 57 20	2391.09	-34.18	51.17	18.44	90.45	18 37 11	1791.1	-33.74	41.95
110.00	12 46 1	3385.15	-12.67	118.48	11.86	57.98	13 42 26	2785.2	-16.81	111.81

DIFFERENTIAL CORRECTIONS
TDE .3014 TRA -.0375 TC3-2.2532 BAU .2861
RDE .1275 RRA -.0283 RC3 .7310 FAU .60451
FDE 1.4186 FRA 9.2870 FC-57.9262 BSP 4097
BDE .3273 BRA .0470 BC3 2.3688 FSP 12017

MID-COURSE EXECUTION ACCURACY
SGT 1473.5 SGR 505.9 SG3 3478.2
RRT -.6044 RRF -.7791 RTF .7941
SGB 1558.0 R23 .3286 R13 -.8146
SG1 1507.3 SG2 394.0 THA 167.40

ORBIT DETERMINATION ACCURACY
ST 576.5 SR 244.2 SS 1628.5
CRT .9917 CRS -.3277 CST -.3774
LSA 1647.2 MSA 574.4 SSA 26.5
EL1 625.4 EL2 28.9 ALF 22.84

LAUNCH DATE NOV 8 1964 FLIGHT TIME 300.00 ARRIVAL DATE SEP 4 1965

HELIOCENTRIC CONIC DISTANCE 678.101 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.849 GAL -2.07 AZL 88.37 HCA 208.84 SMA 186.39 ECC .20794 INC 1.6315 V1 30.065
RP 222.66 LAP -.79 LOP 254.46 VP 21.910 GAP -4.29 AZP 91.43 TAL 347.94 TAP 196.78 RCA 147.64 APO 225.15 V2 24.695
RC 261.869 GL 18.12 GP 1.90 ZAL 104.81 ZAP 102.26 ETS 178.48 ZAE 137.27 ETE 175.35 ZAC 88.86 ETC 256.56 CLP 102.27

PLANETOCENTRIC CONIC

C3 9.036 VHL 3.006 DLA 27.86 RAL 160.44 RAD 6567.3 VEL 11.420 PTH 1.98 VHP 2.811 DPA 4.37 RAP 178.40 ECC 1.1487

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 37 45	3218.52	-25.84	112.04	17.70	77.99	14 31 24	2618.5	-27.23	103.65
90.00	12 8 10	3509.80	-20.27	131.53	15.95	69.79	13 6 40	2909.8	-22.84	123.81
100.00	15 46 42	2802.84	-29.07	82.07	18.32	82.73	16 33 25	2202.8	-29.78	73.34
100.00	12 41 54	3400.71	-17.23	122.20	14.62	65.19	13 38 35	2800.7	-20.43	114.87
110.00	17 57 45	2392.71	-34.18	51.30	18.68	90.37	18 37 38	1792.7	-33.75	42.08
110.00	12 47 21	3383.61	-12.73	118.39	12.11	58.00	13 43 44	2783.6	-16.87	111.73

DIFFERENTIAL CORRECTIONS
TDE .3152 TRA .0445 TC3-2.7344 BAU .3420
RDE .1327 RRA -.0262 RC3 .7338 FAU .61164
FDE 1.4190 FRA 9.4264 FC-58.5990 BSP 5250
BDE .3420 BRA .0516 BC3 2.8312 FSP 12149

MID-COURSE EXECUTION ACCURACY
SGT 1753.0 SGR 511.7 SG3 3521.8
RRT -.6453 RRF -.7676 RTF .8606
SGB 1826.1 R23 .2410 R13 -.8716
SG1 1785.3 SG2 383.8 THA 168.81

ORBIT DETERMINATION ACCURACY
ST 603.5 SR 253.8 SS 1639.8
CRT .9845 CRS -.3306 CST -.4545
LSA 1668.1 MSA 578.0 SSA 27.0
EL1 653.4 EL2 41.1 ALF 22.58

LAUNCH DATE NOV 8 1964 FLIGHT TIME 302.00 ARRIVAL DATE SEP 6 1965

HELIOCENTRIC CONIC DISTANCE 682.116 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.846 GAL -2.08 AZL 88.36 HCA 209.94 SMA 186.34 ECC .20777 INC 1.6409 V1 30.065
RP 222.28 LAP -.82 LOP 255.55 VP 21.953 GAP -4.52 AZP 91.42 TAL 347.84 TAP 197.77 RCA 147.63 APO 225.06 V2 24.737
RC 263.392 GL 18.22 GP 1.85 ZAL 104.99 ZAP 100.24 ETS 178.56 ZAE 135.04 ETE 175.67 ZAC 88.61 ETC 256.64 CLP 100.24

PLANETOCENTRIC CONIC

C3 9.042 VHL 3.007 DLA 27.87 RAL 160.68 RAD 6567.3 VEL 11.421 PTH 1.98 VHP 2.798 DPA 4.71 RAP 177.53 ECC 1.1488

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 37 53	3221.41	-25.79	112.24	17.94	77.89	14 31 34	2621.4	-27.21	103.86
90.00	12 9 59	3507.14	-20.33	131.37	16.23	69.85	13 8 26	2907.1	-22.89	123.63
100.00	15 47 17	2804.25	-29.06	82.17	18.57	82.67	16 34 1	2204.2	-29.77	73.44
100.00	12 43 16	3399.53	-17.27	122.13	14.89	65.21	13 39 55	2799.5	-20.46	114.80
110.00	17 58 30	2393.54	-34.18	51.36	18.94	90.34	18 38 24	1793.5	-33.76	42.14
110.00	12 48 31	3383.00	-12.75	118.36	12.36	58.01	13 44 54	2783.0	-16.89	111.69

DIFFERENTIAL CORRECTIONS
TDE .3282 TRA .1283 TC3-3.2275 BAU .4001
RDE .1377 RRA -.0242 RC3 .7358 FAU .61696
FDE 1.4225 FRA 9.5642 FC-59.0735 BSP 6444
BDE .3560 BRA .1305 BC3 3.3103 FSP 12271

MID-COURSE EXECUTION ACCURACY
SGT 2057.9 SGR 517.1 SG3 3556.6
RRT -.6664 RRF -.7556 RTF .9013
SGB 2121.9 R23 .1793 R13 -.9074
SG1 2087.6 SG2 380.1 THA 170.16

ORBIT DETERMINATION ACCURACY
ST 633.6 SR 263.2 SS 1652.5
CRT .9717 CRS -.3337 CST -.5241
LSA 1692.6 MSA 579.6 SSA 27.5
EL1 683.7 EL2 57.6 ALF 22.15

LAUNCH DATE NOV 8 1964 FLIGHT TIME 304.00 ARRIVAL DATE SEP 8 1965

HELIOCENTRIC CONIC DISTANCE 686.139 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.843 GAL -2.10 AZL 88.35 HCA 211.03 SMA 186.30 ECC .20764 INC 1.6497 V1 30.065
RP 221.89 LAP -.85 LOP 256.65 VP 21.996 GAP -4.75 AZP 91.41 TAL 347.72 TAP 198.75 RCA 147.62 APO 224.98 V2 24.779
RC 264.895 GL 18.31 GP 1.80 ZAL 105.20 ZAP 98.21 ETS 178.66 ZAE 132.79 ETE 175.96 ZAC 88.37 ETC 256.71 CLP 98.21

PLANETOCENTRIC CONIC

C3 9.051 VHL 3.008 DLA 27.87 RAL 160.95 RAD 6567.3 VEL 11.421 PTH 1.98 VHP 2.789 DPA 5.05 RAP 176.66 ECC 1.1489

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 39 4	3221.17	-25.80	112.22	18.22	77.90	14 32 45	2621.2	-27.21	103.84
90.00	12 10 54	3507.75	-20.31	131.40	16.50	69.84	13 9 22	2907.8	-22.88	123.67
100.00	15 48 24	2804.24	-29.06	82.17	18.85	82.67	16 35 8	2204.2	-29.77	73.44
100.00	12 44 15	3399.92	-17.25	122.16	15.16	65.21	13 40 55	2799.9	-20.45	114.82
110.00	17 59 36	2393.62	-34.18	51.37	19.22	90.33	18 39 29	1793.6	-33.76	42.15
110.00	12 49 33	3383.30	-12.74	118.38	12.64	58.01	13 45 56	2783.3	-16.88	111.71

DIFFERENTIAL CORRECTIONS
TDE .3418 TRA .2146 TC3-3.7268 BAU .4597
RDE .1429 RRA -.0221 RC3 .7374 FAU .62124
FDE 1.4008 FRA 9.6812 FC-59.4252 BSP 7676
BDE .3705 BRA .2158 BC3 3.7991 FSP 12344

MID-COURSE EXECUTION ACCURACY
SGT 2380.3 SGR 522.7 SG3 3583.9
RRT -.6749 RRF -.7439 RTF .9273
SGB 2437.0 R23 .1376 R13 -.9309
SG1 2407.0 SG2 381.4 THA 171.35

ORBIT DETERMINATION ACCURACY
ST 668.9 SR 272.9 SS 1659.1
CRT .9548 CRS -.3314 CST -.5811
LSA 1712.7 MSA 583.5 SSA 28.0
EL1 718.5 EL2 75.5 ALF 21.53

LAUNCH DATE NOV 8 1964 FLIGHT TIME 306.00 ARRIVAL DATE SEP 10 1965

HELIOCENTRIC CONIC DISTANCE 690.171 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.841 GAL -2.12 AZL 88.34 HCA 212.14 SMA 186.26 ECC .20753 INC 1.6581 V1 30.065
RP 221.51 LAP -.88 LOP 257.75 VP 22.040 GAP -4.97 AZP 91.40 TAL 347.59 TAP 199.72 RCA 147.60 APO 224.91 V2 24.820
RC 266.379 GL 18.39 GP 1.75 ZAL 105.43 ZAP 96.18 ETS 178.76 ZAE 130.53 ETE 176.23 ZAC 88.12 ETC 256.79 CLP 96.18

PLANETOCENTRIC CONIC

C3 9.063 VHL 3.011 DLA 27.85 RAL 161.23 RAD 6567.3 VEL 11.422 PTH 1.98 VHP 2.783 DPA 5.39 RAP 175.79 ECC 1.1492

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 41 17	3217.90	-25.84	112.00	18.54	78.01	14 34 55	2617.9	-27.24	103.61
90.00	12 10 58	3511.57	-20.22	131.65	16.78	69.75	13 9 29	2911.6	-22.80	123.92
100.00	15 50 2	2802.85	-29.07	82.07	19.16	82.73	16 36 45	2202.8	-29.78	73.34
100.00	12 44 54	3401.85	-17.20	122.27	15.45	65.17	13 41 36	2801.9	-20.40	114.95
110.00	18 1 0	2392.97	-34.18	51.32	19.52	90.36	18 40 53	1793.0	-33.75	42.10
110.00	12 50 25	3384.50	-12.70	118.44	12.93	57.99	13 46 50	2784.5	-16.84	111.78

DIFFERENTIAL CORRECTIONS
TDE .3546 TRA .3036 TC3-4.2317 BAU .5205
RDE .1481 RRA -.0200 RC3 .7380 FAU .62369
FDE 1.3788 FRA 9.7887 FC-59.5759 BSP 8923
BDE .3843 BRA .3043 BC3 4.2956 FSP 12404

MID-COURSE EXECUTION ACCURACY
SGT 2715.6 SGR 528.0 SG3 3601.5
RRT -.6766 RRF -.7318 RTF .9447
SGB 2766.4 R23 .1079 R13 -.9469
SG1 2739.5 SG2 385.4 THA 172.35

ORBIT DETERMINATION ACCURACY
ST 706.9 SR 282.5 SS 1665.6
CRT .9348 CRS -.3290 CST -.6315
LSA 1734.8 MSA 585.9 SSA 28.4
EL1 755.4 EL2 93.9 ALF 20.82

LAUNCH DATE NOV 8 1964 FLIGHT TIME 308.00 ARRIVAL DATE SEP 12 1965

HELIOCENTRIC CONIC DISTANCE 694.209 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.839 GAL -2.15 AZL 88.33 HCA 213.24 SMA 186.22 ECC .20747 INC 1.6657 V1 30.065
RP 221.13 LAP -.91 LOP 258.86 VP 22.083 GAP -5.20 AZP 91.39 TAL 347.44 TAP 200.68 RCA 147.59 APO 224.86 V2 24.862
RC 267.844 GL 18.46 GP 1.71 ZAL 105.69 ZAP 94.15 ETS 178.85 ZAE 128.28 ETE 176.47 ZAC 87.88 ETC 256.88 CLP 94.15

PLANETOCENTRIC CONIC

C3 9.080 VHL 3.013 DLA 27.81 RAL 161.55 RAD 6567.3 VEL 11.422 PTH 1.98 VHP 2.780 DPA 5.73 RAP 174.93 ECC 1.1494

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 44 31	3211.78	-25.93	111.57	18.89	78.20	14 38 3	2611.8	-27.30	103.17
90.00	12 10 14	3518.40	-20.06	132.08	17.05	69.59	13 8 52	2918.4	-22.66	124.38
100.00	15 52 13	2800.08	-29.10	81.87	19.49	82.83	16 38 53	2200.1	-29.78	73.13
100.00	12 45 12	3405.33	-17.10	122.48	15.75	65.10	13 41 57	2805.3	-20.31	115.17
110.00	18 2 45	2391.58	-34.18	51.21	19.84	90.43	18 42 36	1791.6	-33.74	41.99
110.00	12 51 10	3386.59	-12.62	118.56	13.24	57.97	13 47 36	2786.6	-16.76	111.90

DIFFERENTIAL CORRECTIONS
TDE .3667 TRA .3951 TC3-4.7438 BAU .5827
RDE .1530 RRA -.0182 RC3 .7360 FAU .62221
FDE 1.3932 FRA 9.9321 FC-59.3258 BSP 10200
BDE .3973 BRA .3955 BC3 4.8005 FSP 12531

MID-COURSE EXECUTION ACCURACY
SGT 3062.8 SGR 531.9 SG3 3605.2
RRT -.6744 RRF -.7175 RTF .9561
SGB 3108.6 R23 .0842 R13 -.9575
SG1 3084.1 SG2 390.0 THA 173.21

ORBIT DETERMINATION ACCURACY
ST 747.3 SR 291.4 SS 1684.7
CRT .9123 CRS -.3331 CST -.6813
LSA 1772.2 MSA 583.3 SSA 29.0
EL1 794.2 EL2 112.3 ALF 20.00

LAUNCH DATE NOV 8 1964 FLIGHT TIME 310.00 ARRIVAL DATE SEP 14 1965

HELIOCENTRIC CONIC DISTANCE 698.258 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.837 GAL -2.18 AZL 88.33 HCA 214.36 SMA 186.20 ECC .20743 INC 1.6732 V1 30.065
RP 220.75 LAP -.94 LOP 259.97 VP 22.128 GAP -5.41 AZP 91.38 TAL 347.28 TAP 201.63 RCA 147.57 APO 224.82 V2 24.903
RC 269.292 GL 18.52 GP 1.66 ZAL 105.98 ZAP 92.13 ETS 178.93 ZAE 126.03 ETE 176.70 ZAC 87.65 ETC 256.86 CLP 92.13

PLANETOCENTRIC CONIC

C3 9.100 VHL 3.017 DLA 27.75 RAL 161.88 RAD 6567.3 VEL 11.423 PTH 1.98 VHP 2.781 DPA 6.06 RAP 174.07 ECC 1.1498

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 48 31	3203.44	-26.04	110.98	19.28	78.47	14 41 54	2603.4	-27.37	102.57
90.00	12 8 52	3527.60	-19.84	132.67	17.34	69.38	13 7 40	2927.6	-22.47	124.98
100.00	15 54 52	2796.12	-29.13	81.58	19.85	82.98	16 41 28	2196.1	-29.80	72.84
100.00	12 45 12	3410.15	-16.96	122.78	16.06	65.01	13 42 2	2810.2	-20.19	115.47
110.00	18 4 47	2389.54	-34.18	51.05	20.18	90.52	18 44 36	1789.5	-33.73	41.83
110.00	12 51 47	3389.50	-12.52	118.72	13.56	57.93	13 48 16	2789.5	-16.66	112.06

DIFFERENTIAL CORRECTIONS
TDE .3782 TRA .4888 TC3-5.2487 BAU .6448
RDE .1585 RRA -.0158 RC3 .7361 FAU .62324
FDE 1.3139 FRA 9.9751 FC-59.2906 BSP 11478
BDE .4101 BRA .4890 BC3 5.3000 FSP 12465

MID-COURSE EXECUTION ACCURACY
SGT 3412.4 SGR 537.6 SG3 3608.3
RRT -.6681 RRF -.7064 RTF .9650
SGB 3454.4 R23 .0709 R13 -.9660
SG1 3431.5 SG2 397.8 THA 173.91

ORBIT DETERMINATION ACCURACY
ST 789.9 SR 301.5 SS 1675.4
CRT .8892 CRS -.3195 CST -.7108
LSA 1781.3 MSA 590.0 SSA 29.2
EL1 835.4 EL2 130.5 ALF 19.24

LAUNCH DATE NOV 8 1964 FLIGHT TIME 312.00 ARRIVAL DATE SEP 16 1965

HELIOCENTRIC CONIC DISTANCE 702.314 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.836 GAL -2.21 AZL 88.32 HCA 215.47 SMA 186.17 ECC .20743 INC 1.6802 V1 30.065
RP 220.37 LAP -.97 LOP 261.09 VP 22.172 GAP -5.62 AZP 91.37 TAL 347.10 TAP 202.57 RCA 147.56 APO 224.79 V2 24.944
RC 270.721 GL 18.57 GP 1.61 ZAL 106.29 ZAP 90.12 ETS 179.02 ZAE 123.79 ETE 176.91 ZAC 87.42 ETC 257.05 CLP 90.12

PLANETOCENTRIC CONIC

C3 9.125 VHL 3.021 DLA 27.67 RAL 162.23 RAD 6567.3 VEL 11.424 PTH 1.98 VHP 2.785 DPA 6.39 RAP 173.23 ECC 1.1502

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 53 15	3193.09	-26.18	110.26	19.69	78.81	14 46 28	2593.1	-27.46	101.82
90.00	12 6 58	3539.00	-19.57	133.39	17.63	69.12	13 5 57	2939.0	-22.24	125.74
100.00	15 57 59	2790.96	-29.17	81.20	20.23	83.17	16 44 30	2191.0	-29.81	72.46
100.00	12 44 55	3416.36	-16.78	123.15	16.39	64.89	13 41 51	2816.4	-20.03	115.86
110.00	18 7 7	2386.83	-34.18	50.84	20.55	90.65	18 46 54	1786.8	-33.71	41.62
110.00	12 52 16	3393.25	-12.38	118.92	13.91	57.88	13 48 49	2793.3	-16.54	112.28

DIFFERENTIAL CORRECTIONS
TDE .3881 TRA .5843 TC3-5.7538 BAU .7076
RDE .1640 RRA -.0134 RC3 .7348 FAU .62216
FDE 1.2398 FRA10.0185 FC-59.0282 BSP 12757
BDE .4214 BRA .5845 BC3 5.8006 FSP 12385

MID-COURSE EXECUTION ACCURACY
SGT 3767.2 SGR 542.8 SG3 3601.6
RRT -.6602 RRF -.6945 RTF .9714
SGB 3806.1 R23 .0608 R13 -.9721
SG1 3784.4 SG2 405.8 THA 174.50

ORBIT DETERMINATION ACCURACY
ST 833.0 SR 311.4 SS 1669.0
CRT .8649 CRS -.3064 CST -.7373
LSA 1794.8 MSA 595.1 SSA 29.4
EL1 876.8 EL2 148.5 ALF 18.47

LAUNCH DATE NOV 8 1964 FLIGHT TIME 314.00 ARRIVAL DATE SEP 18 1965

HELIOCENTRIC CONIC DISTANCE 706.378 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.835 GAL -2.24 AZL 88.31 HCA 216.59 SMA 186.16 ECC .20745 INC 1.6870 V1 30.065
RP 220.00 LAP -1.01 LOP 262.20 VP 22.217 GAP -5.83 AZP 91.35 TAL 346.91 TAP 203.50 RCA 147.54 APO 224.77 V2 24.986
RC 272.134 GL 18.62 GP 1.57 ZAL 106.63 ZAP 88.12 ETS 179.10 ZAE 121.56 ETE 177.10 ZAC 87.19 ETC 257.14 CLP 88.12

PLANETOCENTRIC CONIC

C3 9.154 VHL 3.025 DLA 27.57 RAL 162.61 RAD 6567.3 VEL 11.426 PTH 1.98 VHP 2.792 DPA 6.71 RAP 172.41 ECC 1.1506

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	13 58 34	3181.14	-26.34	109.42	20.14	79.21	14 51 35	2581.1	-27.56	100.96
90.00	12 4 39	3552.16	-19.25	134.22	17.94	68.82	13 3 51	2952.2	-21.96	126.60
100.00	16 1 33	2784.68	-29.22	80.74	20.64	83.41	16 47 58	2184.7	-29.83	71.99
100.00	12 44 21	3423.85	-16.57	123.60	16.73	64.76	13 41 25	2823.8	-19.83	116.33
110.00	18 9 45	2383.47	-34.17	50.57	20.93	90.80	18 49 29	1783.5	-33.69	41.36
110.00	12 52 38	3397.82	-12.22	119.17	14.27	57.82	13 49 16	2797.8	-16.38	112.54

DIFFERENTIAL CORRECTIONS
TDE .3972 TRA .6829 TC3-6.2558 BAU .7708
RDE .1694 RRA -.0110 RC3 .7321 FAU .61879
FDE 1.1684 FRA10.0538 FC-58.5250 BSP 14047
BDE .4318 BRA .6830 BC3 6.2985 FSP 12312

MID-COURSE EXECUTION ACCURACY
SGT 4125.9 SGR 547.5 SG3 3583.6
RRT -.6508 RRF -.6819 RTF .9762
SGB 4162.1 R23 .0529 R13 -.9767
SG1 4141.4 SG2 414.1 THA 175.01

ORBIT DETERMINATION ACCURACY
ST 877.6 SR 321.1 SS 1663.6
CRT .8398 CRS -.2936 CST -.7610
LSA 1811.3 MSA 599.2 SSA 29.6
EL1 919.6 EL2 166.4 ALF 17.68

LAUNCH DATE NOV 8 1964 FLIGHT TIME 316.00 ARRIVAL DATE SEP 20 1965

HELIOCENTRIC CONIC DISTANCE 710.450 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.834 GAL -2.27 AZL 88.31 HCA 217.71 SMA 186.14 ECC .20751 INC 1.6932 V1 30.065
RP 219.62 LAP -1.04 LOP 263.33 VP 22.262 GAP -6.04 AZP 91.34 TAL 346.71 TAP 204.42 RCA 147.52 APO 224.77 V2 25.027
RC 273.529 GL 18.65 GP 1.53 ZAL 106.99 ZAP 86.15 ETS 179.17 ZAE 119.34 ETE 177.29 ZAC 86.97 ETC 257.23 CLP 86.15

PLANETOCENTRIC CONIC

C3 9.187 VHL 3.031 DLA 27.46 RAL 163.01 RAD 6567.3 VEL 11.427 PTH 1.98 VHP 2.803 DPA 7.02 RAP 171.61 ECC 1.1512

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 4 23	3167.93	-26.50	108.49	20.61	79.65	14 57 11	2567.9	-27.66	100.01
90.00	12 2 1	3566.76	-18.89	135.14	18.26	68.50	13 1 27	2966.8	-21.64	127.55
100.00	16 5 32	2777.38	-29.28	80.21	21.07	83.69	16 51 50	2177.4	-29.84	71.45
100.00	12 43 33	3432.54	-16.31	124.12	17.09	64.60	13 40 45	2832.5	-19.60	116.87
110.00	18 12 41	2379.49	-34.17	50.26	21.34	90.98	18 52 21	1779.5	-33.66	41.06
110.00	12 52 53	3403.20	-12.02	119.47	14.65	57.76	13 49 37	2803.2	-16.19	112.84

DIFFERENTIAL CORRECTIONS
TDE .4041 TRA .7827 TC3-6.7537 BAU .8343
RDE .1749 RRA -.0086 RC3 .7288 FAU .61430
FDE 1.0801 FRA10.0734 FC-57.8918 BSP 15314
BDE .4403 BRA .7827 BC3 6.7929 FSP 12195

MID-COURSE EXECUTION ACCURACY
SGT 4486.0 SGR 552.1 SG3 3558.4
RRT -.6406 RRF -.6694 RTF .9797
SGB 4519.9 R23 .0471 R13 -.9801
SG1 4500.0 SG2 422.6 THA 175.45

ORBIT DETERMINATION ACCURACY
ST 921.3 SR 331.0 SS 1655.4
CRT .8140 CRS -.2767 CST -.7795
LSA 1825.4 MSA 604.5 SSA 29.8
EL1 961.5 EL2 184.2 ALF 16.94

LAUNCH DATE NOV 8 1964 FLIGHT TIME 318.00 ARRIVAL DATE SEP 22 1965

HELIOCENTRIC CONIC DISTANCE 714.530 EARTH TO MARS

RL	148.20	LAL	.00	LOL	45.63	VL	32.833	GAL	-2.31	AZL	88.30	HCA	218.84	SMA	186.13	ECC	.20760	INC	1.6993	V1	30.065
RP	219.25	LAP	-1.07	LOP	264.45	VP	22.307	GAP	-6.24	AZP	91.32	TAL	346.49	TAP	205.33	RCA	147.49	APO	224.77	V2	25.067
RC	274.906	GL	18.68	GP	1.48	ZAL	107.38	ZAP	84.19	ETS	179.24	ZAE	117.15	ETE	177.45	ZAC	86.76	ETC	257.32	CLP	84.19

PLANETOCENTRIC CONIC

C3	9.224	VHL	3.037	DLA	27.33	RAL	163.43	RAD	6567.3	VEL	11.429	PTH	1.98	VHP	2.817	DPA	7.32	RAP	170.83	ECC	1.1518

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 10 37	3153.74	-26.67	107.48	21.11	80.12	15 3 10	2553.7	-27.77	98.99
90.00	11 59 9	3582.53	-18.49	136.13	18.59	68.16	12 58 51	2982.5	-21.29	128.58
100.00	16 9 55	2769.14	-29.34	79.60	21.53	84.00	16 56 4	2169.1	-29.86	70.84
100.00	12 42 32	3442.36	-16.02	124.71	17.46	64.42	13 39 54	2842.4	-19.34	117.48
110.00	18 15 54	2374.91	-34.16	49.91	21.77	91.20	18 55 29	1774.9	-33.62	40.70
110.00	12 53 2	3409.35	-11.80	119.80	15.05	57.68	13 49 52	2809.4	-15.98	113.19

DIFFERENTIAL CORRECTIONS

TDE	.4090	TRA	.8850	TC3	-7.2424	BAU	.8976
RDE	.1804	RRA	-.0061	RC3	.7245	FAU	.60821
FDE	.9939	FRA	10.0786	FC	-57.0847	BSP	16584
BDE	.4470	BRA	.8850	BC3	7.2786	FSP	12059

MID-COURSE EXECUTION ACCURACY

SGT	4845.6	SGR	556.4	SG3	3524.3		
RRT	-.6296	RRF	-.6563	RTF	.9826		
SGB	4877.5	R23	.0422	R13	-.9828		
SG1	4858.4	SG2	431.2	THA	175.83		

ORBIT DETERMINATION ACCURACY

ST	964.7	SR	340.6	SS	1647.3
CRT	.7872	CRS	-.2600	CST	-.7969
LSA	1841.1	MSA	607.9	SSA	30.0
EL1	1002.9	EL2	202.0	ALF	16.21

LAUNCH DATE NOV 8 1964 FLIGHT TIME 320.00 ARRIVAL DATE SEP 24 1965

HELIOCENTRIC CONIC DISTANCE 718.617 EARTH TO MARS

RL	148.20	LAL	.00	LOL	45.63	VL	32.833	GAL	-2.35	AZL	88.29	HCA	219.97	SMA	186.13	ECC	.20771	INC	1.7051	V1	30.065
RP	218.89	LAP	-1.10	LOP	265.58	VP	22.352	GAP	-6.44	AZP	91.31	TAL	346.26	TAP	206.22	RCA	147.47	APO	224.79	V2	25.108
RC	276.266	GL	18.70	GP	1.44	ZAL	107.80	ZAP	82.26	ETS	179.31	ZAE	114.97	ETE	177.61	ZAC	86.56	ETC	257.41	CLP	82.26

PLANETOCENTRIC CONIC

C3	9.266	VHL	3.044	DLA	27.17	RAL	163.87	RAD	6567.3	VEL	11.430	PTH	1.98	VHP	2.833	DPA	7.61	RAP	170.07	ECC	1.1525

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 17 10	3138.78	-26.84	106.42	21.63	80.63	15 9 29	2538.8	-27.86	97.90
90.00	11 56 7	3599.26	-18.06	137.17	18.95	67.81	12 56 6	2999.3	-20.92	129.66
100.00	16 14 39	2760.05	-29.40	78.93	22.01	84.35	17 0 39	2160.1	-29.87	70.16
100.00	12 41 19	3453.22	-15.70	125.36	17.85	64.23	13 38 53	2853.2	-19.04	118.15
110.00	18 19 22	2369.77	-34.16	49.50	22.22	91.43	18 58 52	1769.8	-33.58	40.31
110.00	12 53 6	3416.26	-11.55	120.18	15.47	57.60	13 50 2	2816.3	-15.74	113.59

DIFFERENTIAL CORRECTIONS

TDE	.4126	TRA	.9903	TC3	-7.7167	BAU	.9601
RDE	.1859	RRA	-.0036	RC3	.7193	FAU	.60079
FDE	.9020	FRA	10.0748	FC	-56.1320	BSP	17856
BDE	.4526	BRA	.9903	BC3	7.7502	FSP	11902

MID-COURSE EXECUTION ACCURACY

SGT	5202.3	SGR	560.6	SG3	3483.0		
RRT	-.6177	RRF	-.6431	RTF	.9848		
SGB	5232.5	R23	.0386	R13	-.9850		
SG1	5213.9	SG2	439.9	THA	176.16		

ORBIT DETERMINATION ACCURACY

ST	1009.0	SR	350.1	SS	1639.0
CRT	.7599	CRS	-.2414	CST	-.8115
LSA	1857.9	MSA	612.1	SSA	30.1
EL1	1045.2	EL2	219.8	ALF	15.47

LAUNCH DATE NOV 8 1964 FLIGHT TIME 322.00 ARRIVAL DATE SEP 26 1965

HELIOCENTRIC CONIC DISTANCE 722.711 EARTH TO MARS

RL	148.20	LAL	.00	LOL	45.63	VL	32.833	GAL	-2.39	AZL	88.29	HCA	221.10	SMA	186.13	ECC	.20786	INC	1.7106	V1	30.065
RP	218.52	LAP	-1.12	LOP	266.71	VP	22.398	GAP	-6.63	AZP	91.29	TAL	346.01	TAP	207.11	RCA	147.44	APO	224.82	V2	25.148
RC	277.609	GL	18.72	GP	1.40	ZAL	108.24	ZAP	80.36	ETS	179.37	ZAE	112.83	ETE	177.76	ZAC	86.36	ETC	257.49	CLP	80.36

PLANETOCENTRIC CONIC

C3	9.313	VHL	3.052	DLA	27.01	RAL	164.33	RAD	6567.3	VEL	11.433	PTH	1.98	VHP	2.853	DPA	7.88	RAP	169.35	ECC	1.1533

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 24 1	3123.21	-27.01	105.31	22.17	81.16	15 16 4	2523.2	-27.96	96.77
90.00	11 52 59	3616.79	-17.61	138.26	19.32	67.46	12 53 16	3016.8	-20.51	130.79
100.00	16 19 43	2750.19	-29.47	78.21	22.51	84.72	17 5 34	2150.2	-29.88	69.43
100.00	12 39 57	3465.04	-15.35	126.06	18.26	64.03	13 37 42	2865.0	-18.72	118.88
110.00	18 23 7	2364.08	-34.15	49.06	22.69	91.70	19 2 31	1764.1	-33.53	39.87
110.00	12 53 3	3423.91	-11.27	120.60	15.91	57.51	13 50 7	2823.9	-15.47	114.02

DIFFERENTIAL CORRECTIONS

TDE	.4140	TRA	1.0974	TC3	-8.1815	BAU	1.0225
RDE	.1914	RRA	-.0010	RC3	.7133	FAU	.59211
FDE	.8003	FRA	10.0502	FC	-55.0424	BSP	19098
BDE	.4561	BRA	1.0974	BC3	8.2126	FSP	11728

MID-COURSE EXECUTION ACCURACY

SGT	5557.6	SGR	564.6	SG3	3433.7		
RRT	-.6054	RRF	-.6298	RTF	.9866		
SGB	5586.2	R23	.0360	R13	-.9867		
SG1	5568.2	SG2	448.5	THA	176.46		

ORBIT DETERMINATION ACCURACY

ST	1052.6	SR	359.7	SS	1628.5
CRT	.7317	CRS	-.2201	CST	-.8236
LSA	1872.9	MSA	616.9	SSA	30.2
EL1	1086.7	EL2	237.5	ALF	14.76

LAUNCH DATE NOV 8 1964 FLIGHT TIME 324.00 ARRIVAL DATE SEP 28 1965

HELIOCENTRIC CONIC DISTANCE 726.813 EARTH TO MARS

RL	148.20	LAL	.00	LOL	45.63	VL	32.834	GAL	-2.44	AZL	88.28	HCA	222.24	SMA	186.14	ECC	.20804	INC	1.7160	V1	30.065
RP	218.16	LAP	-1.15	LOP	267.85	VP	22.443	GAP	-6.82	AZP	91.27	TAL	345.75	TAP	207.99	RCA	147.41	APO	224.86	V2	25.188
RC	278.933	GL	18.72	GP	1.36	ZAL	108.71	ZAP	78.50	ETS	179.43	ZAE	110.71	ETE	177.89	ZAC	86.18	ETC	257.58	CLP	78.49

PLANETOCENTRIC CONIC

C3	9.365	VHL	3.060	DLA	26.82	RAL	164.82	RAD	6567.3	VEL	11.435	PTH	1.98	VHP	2.876	DPA	8.14	RAP	168.66	ECC	1.1541

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 31 5	3107.18	-27.17	104.17	22.73	81.71	15 22 53	2507.2	-28.04	95.61
90.00	11 49 46	3634.98	-17.13	139.38	19.71	67.10	12 50 21	3035.0	-20.09	131.95
100.00	16 25 6	2739.64	-29.53	77.43	23.04	85.13	17 10 46	2139.6	-29.89	68.64
100.00	12 38 26	3477.76	-14.97	126.81	18.68	63.82	13 36 24	2877.8	-18.37	119.67
110.00	18 27 6	2357.88	-34.13	48.58	23.18	91.98	19 6 24	1757.9	-33.48	39.39
110.00	12 52 56	3432.28	-10.96	121.05	16.37	57.42	13 50 8	2832.3	-15.18	114.49

DIFFERENTIAL CORRECTIONS

TDE	.4129	TRA	1.2068	TC3	-8.6316	BAU	1.0843
RDE	.1971	RRA	.0017	RC3	.7069	FAU	.58250
FDE	.6899	FRA	10.0150	FC	-53.8491	BSP	20328
BDE	.4575	BRA	1.2068	BC3	8.6605	FSP	11517

MID-COURSE EXECUTION ACCURACY

SGT	5909.0	SGR	568.6	SG3	3378.9		
RRT	-.5928	RRF	-.6165	RTF	.9880		
SGB	5936.3	R23	.0340	R13	-.9881		
SG1	5918.7	SG2	457.2	THA	176.72		

ORBIT DETERMINATION ACCURACY

ST	1095.2	SR	369.2	SS	1617.6
CRT	.7022	CRS	-.1957	CST	-.8335
LSA	1887.9	MSA	622.3	SSA	30.2
EL1	1127.2	EL2	255.4	ALF	14.05

LAUNCH DATE NOV 8 1964 FLIGHT TIME 326.00 ARRIVAL DATE SEP 30 1965

HELIOCENTRIC CONIC DISTANCE 730.922 EARTH TO MARS

RL	148.20	LAL	.00	LOL	45.63	VL	32.834	GAL	-2.49	AZL	88.28	HCA	223.38	SMA	186.15	ECC	.20824	INC	1.7210
RP	217.80	LAP	-1.18	LOP	268.99	VP	22.489	GAP	-7.01	AZP	91.25	TAL	345.48	TAP	208.85	RCA	147.38	APO	224.91
RC	280.240	GL	18.72	GP	1.32	ZAL	109.20	ZAP	76.66	ETS	179.49	ZAE	108.62	ETE	178.02	ZAC	86.00	ETC	257.66

V1 30.065 V2 25.228 CLP 76.66

PLANETOCENTRIC CONIC

C3	9.422	VHL	3.070	DLA	26.62	RAL	165.32	RAD	6567.3	VEL	11.437	PTH	1.98	VHP	2.901	DPA	8.39	RAP	168.00

ECC 1.1551

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 38 22	3090.79	-27.33	102.99	23.31	82.28	15 29 53	2490.8	-28.11	94.41
90.00	11 46 31	3653.76	-16.63	140.53	20.12	66.75	12 47 24	3053.8	-19.64	133.15
100.00	16 30 46	2728.47	-29.59	76.60	23.59	85.56	17 16 14	2128.5	-29.89	67.81
100.00	12 36 49	3491.30	-14.56	127.61	19.13	63.60	13 35 0	2891.3	-17.99	120.49
110.00	18 31 20	2351.18	-34.12	48.05	23.69	92.29	19 10 31	1751.2	-33.42	38.88
110.00	12 52 43	3441.35	-10.63	121.54	16.84	57.32	13 50 5	2841.4	-14.86	115.00

DIFFERENTIAL CORRECTIONS

TDE	.4092	TRA	1.3183	TC3	-9.0650	BAU	1.1453
RDE	.2027	RRA	.0043	RC3	.6997	FAU	.57180
FDE	.5799	FRA	9.9645	FC	-52.5397	BSP	21540
BDE	.4567	BRA	1.3183	BC3	9.0920	FSP	11302

MID-COURSE EXECUTION ACCURACY

SGT	6255.4	SGR	572.5	SG3	3317.6		
RRT	-.5799	RRF	-.6031	RTF	.9892		
SGB	6281.5	R25	.0323	R13	-.9893		
SG1	6264.2	SG2	465.7	THA	176.95		

ORBIT DETERMINATION ACCURACY

ST	1137.2	SR	378.5	SS	1606.4		
CRT	.6715	CRS	-.1707	CST	-.8429		
LSA	1903.5	MSA	626.8	SSA	30.1		
EL1	1167.0	EL2	273.3	ALF	13.34		

LAUNCH DATE NOV 8 1964 FLIGHT TIME 328.00 ARRIVAL DATE OCT 2 1965

HELIOCENTRIC CONIC DISTANCE 735.038 EARTH TO MARS

RL	148.20	LAL	.00	LOL	45.63	VL	32.835	GAL	-2.54	AZL	88.27	HCA	224.52	SMA	186.16	ECC	.20848	INC	1.7260
RP	217.44	LAP	-1.21	LOP	270.14	VP	22.534	GAP	-7.19	AZP	91.23	TAL	345.19	TAP	209.71	RCA	147.35	APO	224.97
RC	281.529	GL	18.71	GP	1.29	ZAL	109.71	ZAP	74.86	ETS	179.54	ZAE	106.57	ETE	178.14	ZAC	85.83	ETC	257.74

V1 30.065 V2 25.268 CLP 74.86

PLANETOCENTRIC CONIC

C3	9.485	VHL	3.080	DLA	26.40	RAL	165.85	RAD	6567.3	VEL	11.440	PTH	1.98	VHP	2.930	DPA	8.62	RAP	167.38

ECC 1.1561

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 45 50	3074.11	-27.48	101.79	23.92	82.87	15 37 4	2474.1	-28.18	93.20
90.00	11 43 14	3673.03	-16.11	141.70	20.56	66.39	12 44 27	3073.0	-19.16	134.36
100.00	16 36 41	2716.76	-29.65	75.74	24.16	86.01	17 21 58	2116.8	-29.89	66.94
100.00	12 35 5	3505.61	-14.13	128.45	19.60	63.38	13 33 30	2905.6	-17.59	121.37
110.00	18 35 48	2344.03	-34.09	47.50	24.22	92.62	19 14 52	1744.0	-33.36	38.33
110.00	12 52 26	3451.11	-10.27	122.07	17.34	57.22	13 49 58	2851.1	-14.52	115.55

DIFFERENTIAL CORRECTIONS

TDE	.4031	TRA	1.4321	TC3	-9.4815	BAU	1.2055
RDE	.2083	RRA	.0071	RC3	.6920	FAU	.56020
FDE	.4660	FRA	9.9024	FC	-51.1338	BSP	22722
BDE	.4537	BRA	1.4322	BC3	9.5067	FSP	11061

MID-COURSE EXECUTION ACCURACY

SGT	6596.8	SGR	576.3	SG3	3250.9		
RRT	-.5669	RRF	-.5898	RTF	.9901		
SGB	6621.9	R23	.0309	R13	-.9903		
SG1	6604.9	SG2	474.1	THA	177.15		

ORBIT DETERMINATION ACCURACY

ST	1178.7	SR	387.8	SS	1595.3		
CRT	.6395	CRS	-.1437	CST	-.8511		
LSA	1919.6	MSA	631.4	SSA	30.1		
EL1	1206.2	EL2	291.3	ALF	12.63		

LAUNCH DATE NOV 8 1964 FLIGHT TIME 330.00 ARRIVAL DATE OCT 4 1965

HELIOCENTRIC CONIC DISTANCE 739.161 EARTH TO MARS

RL	148.20	LAL	.00	LOL	45.63	VL	32.836	GAL	-2.59	AZL	88.27	HCA	225.67	SMA	186.18	ECC	.20875	INC	1.7306
RP	217.09	LAP	-1.24	LOP	271.29	VP	22.580	GAP	-7.37	AZP	91.21	TAL	344.88	TAP	210.55	RCA	147.31	APO	225.04
RC	282.801	GL	18.70	GP	1.25	ZAL	110.25	ZAP	73.10	ETS	179.59	ZAE	104.55	ETE	178.26	ZAC	85.68	ETC	257.82

V1 30.065 V2 25.307 CLP 73.09

PLANETOCENTRIC CONIC

C3	9.553	VHL	3.091	DLA	26.16	RAL	166.39	RAD	6567.3	VEL	11.443	PTH	1.98	VHP	2.961	DPA	8.83	RAP	166.79

ECC 1.1572

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	14 53 27	3057.20	-27.61	100.57	24.54	83.46	15 44 24	2457.2	-28.23	91.96
90.00	11 39 58	3692.75	-15.57	142.90	21.01	66.04	12 41 31	3092.7	-18.67	135.60
100.00	16 42 50	2704.55	-29.70	74.83	24.75	86.48	17 27 55	2104.5	-29.88	66.03
100.00	12 33 15	3520.64	-13.67	129.33	20.08	63.16	13 31 56	2920.6	-17.16	122.28
110.00	18 40 29	2336.43	-34.07	46.90	24.77	92.97	19 19 26	1736.4	-33.28	37.75
110.00	12 52 6	3461.52	-9.88	122.63	17.86	57.11	13 49 47	2861.5	-14.15	116.13

DIFFERENTIAL CORRECTIONS

TDE	.3939	TRA	1.5482	TC3	-9.8787	BAU	1.2647
RDE	.2140	RRA	.0098	RC3	.6838	FAU	.54774
FDE	.3474	FRA	9.8310	FC	-49.6388	BSP	23881
BDE	.4483	BRA	1.5482	BC3	9.9023	FSP	10807

MID-COURSE EXECUTION ACCURACY

SGT	6931.7	SGR	580.0	SG3	3179.5		
RRT	-.5539	RRF	-.5765	RTF	.9909		
SGB	6955.9	R23	.0299	R13	-.9910		
SG1	6939.2	SG2	482.4	THA	177.33		

ORBIT DETERMINATION ACCURACY

ST	1219.4	SR	396.9	SS	1584.5		
CRT	.6057	CRS	-.1142	CST	-.8582		
LSA	1936.3	MSA	636.4	SSA	30.0		
EL1	1244.5	EL2	309.5	ALF	11.90		

LAUNCH DATE NOV 8 1964 FLIGHT TIME 332.00 ARRIVAL DATE OCT 6 1965

HELIOCENTRIC CONIC DISTANCE 743.290 EARTH TO MARS

RL	148.20	LAL	.00	LOL	45.63	VL	32.837	GAL	-2.65	AZL	88.26	HCA	226.82	SMA	186.20	ECC	.20904	INC	1.7352
RP	216.74	LAP	-1.27	LOP	272.44	VP	22.625	GAP	-7.55	AZP	91.19	TAL	344.56	TAP	211.39	RCA	147.27	APO	225.12
RC	284.057	GL	18.67	GP	1.21	ZAL	110.82	ZAP	71.37	ETS	179.64	ZAE	102.57	ETE	178.36	ZAC	85.53	ETC	257.89

V1 30.065 V2 25.346 CLP 71.37

PLANETOCENTRIC CONIC

C3	9.627	VHL	3.103	DLA	25.91	RAL	166.96	RAD	6567.3	VEL	11.446	PTH	1.99	VHP	2.994	DPA	9.03	RAP	166.25

ECC 1.1584

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 1 12	3040.13	-27.74	99.34	25.17	84.07	15 51 52	2440.1	-28.27	90.72
90.00	11 36 42	3712.87	-15.01	144.11	21.49	65.70	12 38 35	3112.9	-18.16	136.86
100.00	16 49 13	2691.91	-29.75	73.90	25.35	86.97	17 34 5	2091.9	-29.86	65.10
100.00	12 31 22	3536.32	-13.19	130.24	20.59	62.93	13 30 19	2936.3	-16.71	123.22
110.00	18 45 23	2328.42	-34.04	46.28	25.34	93.34	19 24 12	1728.4	-33.20	37.14
110.00	12 51 41	3472.57	-9.47	123.23	18.40	57.00	13 49 34	2872.6	-13.75	116.74

DIFFERENTIAL CORRECTIONS

TDE	.3825	TRA	1.6672	TC	-10.2539	BAU	1.3226
RDE	.2196	RRA	.0126	RC3	.6752	FAU	.53460
FDE	.2320	FRA	9.7475	FC	-48.0730	BSP	25029
BDE	.4411	BRA	1.6673	BC3	10.2761	FSP	10550

MID-COURSE EXECUTION ACCURACY

SGT	7259.7	SGR	583.7	SG3	3103.9		
RRT	-.5408	RRF	-.5632	RTF	.9916		
SGB	7283.2	R23	.0291	R13	-.9917		
SG1	7266.6	SG2	490.6	THA	177.50		

ORBIT DETERMINATION ACCURACY

ST	1260.8	SR	405.9	SS	1574.3		
CRT	.5707	CRS	-.0846	CST	-.8652		
LSA	1954.8	MSA	640.7	SSA	29.8		
EL1	1283.4	EL2	327.4	ALF	11.14		

LAUNCH DATE NOV 8 1964 FLIGHT TIME 334.00 ARRIVAL DATE OCT 8 1965

HELIOCENTRIC CONIC DISTANCE 747.423 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.839 GAL -2.71 AZL 88.26 HCA 227.98 SMA 186.22 ECC .20937 INC 1.7396 V1 30.065
RP 216.39 LAP -1.29 LOP 273.59 VP 22.670 GAP -7.72 AZP 91.16 TAL 344.23 TAP 212.21 RCA 147.23 APO 225.21 V2 25.385
RC 285.296 GL 18.64 GP 1.18 ZAL 111.41 ZAP 69.69 ETS 179.68 ZAE 100.63 ETE 178.46 ZAC 85.39 ETC 257.95 CLP 69.69

PLANETOCENTRIC CONIC

C3 9.708 VHL 3.116 DLA 25.64 RAL 167.54 RAD 6567.4 VEL 11.450 PTH 1.99 VHP 3.031 DPA 9.21 RAP 165.75 ECC 1.1598

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 9 6	3022.86	-27.85	98.09	25.83	84.68	15 59 29	2422.9	-28.30	89.45
90.00	11 33 27	3733.43	-14.43	145.34	21.99	65.37	12 35 41	3133.4	-17.63	138.13
100.00	16 55 49	2678.83	-29.80	72.93	25.99	87.48	17 40 28	2078.8	-29.83	64.12
100.00	12 29 26	3552.69	-12.68	131.19	21.12	62.70	13 28 38	2952.7	-16.23	124.21
110.00	18 50 30	2320.00	-34.00	45.62	25.93	93.72	19 29 10	1720.0	-33.11	36.50
110.00	12 51 14	3484.30	-9.04	123.85	18.96	56.89	13 49 18	2884.3	-13.33	117.39

DIFFERENTIAL CORRECTIONS
TDE .3803 TRA 1.8021 TC-10.5625 BAU 1.3736
RDE .2247 RRA .0146 RC3 .6632 FAU .51650
FDE .2029 FRA 9.7447 FC-46.0597 BSP 26462
BDE .4417 BRA 1.8021 BC310.5833 FSP 10463

MID-COURSE EXECUTION ACCURACY
SGT 7571.3 SGR 585.1 SG3 3016.6
RRT -.5241 RRF -.5441 RTF .9920
SGB 7593.9 R23 .0257 R13 -.9921
SG1 7577.5 SG2 497.9 THA 177.67

ORBIT DETERMINATION ACCURACY
ST 1320.7 SR 413.4 SS 1580.6
CRT .5428 CRS -.0789 CST -.8789
LSA 2001.9 MSA 636.2 SSA 29.9
EL1 1340.9 EL2 342.0 ALF 10.32

LAUNCH DATE NOV 8 1964 FLIGHT TIME 336.00 ARRIVAL DATE OCT 10 1965

HELIOCENTRIC CONIC DISTANCE 751.567 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.840 GAL -2.77 AZL 88.26 HCA 229.14 SMA 186.25 ECC .20973 INC 1.7439 V1 30.065
RP 216.05 LAP -1.32 LOP 274.75 VP 22.715 GAP -7.90 AZP 91.14 TAL 343.88 TAP 213.02 RCA 147.19 APO 225.31 V2 25.423
RC 286.520 GL 18.60 GP 1.15 ZAL 112.02 ZAP 68.05 ETS 179.72 ZAE 98.72 ETE 178.56 ZAC 85.26 ETC 258.02 CLP 68.04

PLANETOCENTRIC CONIC

C3 9.795 VHL 3.130 DLA 25.35 RAL 168.14 RAD 6567.4 VEL 11.454 PTH 1.99 VHP 3.069 DPA 9.37 RAP 165.28 ECC 1.1612

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 17 4	3005.61	-27.96	96.84	26.51	85.30	16 7 10	2405.6	-28.31	88.19
90.00	11 30 15	3754.23	-13.83	146.58	22.52	65.04	12 32 49	3154.2	-17.08	139.41
100.00	17 2 34	2665.51	-29.83	71.94	26.63	88.00	17 46 59	2065.5	-29.79	63.14
100.00	12 27 27	3569.56	-12.15	132.16	21.66	62.48	13 26 57	2969.6	-15.74	125.21
110.00	18 55 47	2311.27	-33.96	44.95	26.54	94.12	19 34 18	1711.3	-33.02	35.83
110.00	12 50 43	3496.56	-8.58	124.51	19.54	56.78	13 49 0	2896.6	-12.89	118.07

DIFFERENTIAL CORRECTIONS
TDE .3571 TRA 1.9198 TC-10.9152 BAU 1.4320
RDE .2307 RRA .0177 RC3 .6556 FAU .50457
FDE .0403 FRA 9.6025 FC-44.5941 BSP 27408
BDE .4252 BRA 1.9199 BC310.9349 FSP 10095

MID-COURSE EXECUTION ACCURACY
SGT 7888.9 SGR 590.0 SG3 2939.6
RRT -.5130 RRF -.5343 RTF .9926
SGB 7910.9 R23 .0267 R13 -.9927
SG1 7894.7 SG2 506.1 THA 177.79

ORBIT DETERMINATION ACCURACY
ST 1353.1 SR 422.7 SS 1563.6
CRT .5004 CRS -.0336 CST -.8811
LSA 2009.4 MSA 644.9 SSA 29.5
EL1 1370.8 EL2 361.3 ALF 9.56

LAUNCH DATE NOV 8 1964 FLIGHT TIME 338.00 ARRIVAL DATE OCT 12 1965

HELIOCENTRIC CONIC DISTANCE 755.717 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.842 GAL -2.84 AZL 88.25 HCA 230.30 SMA 186.28 ECC .21011 INC 1.7480 V1 30.065
RP 215.71 LAP -1.34 LOP 275.92 VP 22.761 GAP -8.06 AZP 91.12 TAL 343.52 TAP 213.82 RCA 147.14 APO 225.42 V2 25.461
RC 287.729 GL 18.55 GP 1.11 ZAL 112.65 ZAP 66.44 ETS 179.76 ZAE 96.85 ETE 178.64 ZAC 85.15 ETC 258.07 CLP 66.44

PLANETOCENTRIC CONIC

C3 9.890 VHL 3.145 DLA 25.05 RAL 168.75 RAD 6567.4 VEL 11.458 PTH 1.99 VHP 3.110 DPA 9.51 RAP 164.86 ECC 1.1628

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 25 9	2988.27	-28.05	95.58	27.20	85.93	16 14 57	2388.3	-28.32	86.92
90.00	11 27 5	3775.36	-13.22	147.83	23.06	64.73	12 30 1	3175.4	-16.52	140.71
100.00	17 9 29	2651.89	-29.86	70.93	27.30	88.53	17 53 41	2051.9	-29.74	62.12
100.00	12 25 26	3586.98	-11.60	133.16	22.23	62.26	13 25 13	2987.0	-15.22	126.25
110.00	19 1 15	2302.20	-33.92	44.24	27.17	94.54	19 39 37	1702.2	-32.92	35.15
110.00	12 50 10	3509.43	-8.10	125.20	20.14	56.68	13 48 39	2909.4	-12.43	118.78

DIFFERENTIAL CORRECTIONS
TDE .3327 TRA 2.0426 TC-11.2384 BAU 1.4884
RDE .2367 RRA .0206 RC3 .6471 FAU .49133
FDE -.1037 FRA 9.4738 FC-43.0108 BSP 28388
BDE .4083 BRA 2.0427 BC311.2570 FSP 9758

MID-COURSE EXECUTION ACCURACY
SGT 8197.9 SGR 594.5 SG3 2858.9
RRT -.5017 RRF -.5237 RTF .9930
SGB 8219.4 R23 .0272 R13 -.9931
SG1 8203.3 SG2 513.9 THA 177.91

ORBIT DETERMINATION ACCURACY
ST 1389.6 SR 431.7 SS 1552.3
CRT .4571 CRS .0081 CST -.8847
LSA 2025.3 MSA 651.5 SSA 29.2
EL1 1404.7 EL2 379.8 ALF 8.72

LAUNCH DATE NOV 8 1964 FLIGHT TIME 340.00 ARRIVAL DATE OCT 14 1965

HELIOCENTRIC CONIC DISTANCE 759.873 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.844 GAL -2.91 AZL 88.25 HCA 231.47 SMA 186.32 ECC .21053 INC 1.7520 V1 30.065
RP 215.38 LAP -1.37 LOP 277.08 VP 22.805 GAP -8.23 AZP 91.09 TAL 343.14 TAP 214.61 RCA 147.09 APO 225.54 V2 25.498
RC 288.924 GL 18.50 GP 1.08 ZAL 113.30 ZAP 64.88 ETS 179.79 ZAE 95.03 ETE 178.73 ZAC 85.04 ETC 258.13 CLP 64.87

PLANETOCENTRIC CONIC

C3 9.991 VHL 3.161 DLA 24.73 RAL 169.38 RAD 6567.4 VEL 11.462 PTH 1.99 VHP 3.154 DPA 9.64 RAP 164.48 ECC 1.1644

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 33 18	2970.89	-28.12	94.31	27.90	86.56	16 22 49	2370.9	-28.31	85.65
90.00	11 23 58	3796.81	-12.59	149.10	23.63	64.43	12 27 15	3196.8	-15.94	142.01
100.00	17 16 33	2638.01	-29.88	69.90	27.98	89.08	18 0 31	2038.0	-29.69	61.10
100.00	12 23 24	3604.93	-11.03	134.19	22.83	62.04	13 23 29	3004.9	-14.68	127.31
110.00	19 6 53	2292.82	-33.86	43.52	27.82	94.97	19 45 6	1692.8	-32.81	34.44
110.00	12 49 34	3522.87	-7.60	125.91	20.76	56.57	13 48 17	2922.9	-11.94	119.51

DIFFERENTIAL CORRECTIONS
TDE .3066 TRA 2.1691 TC-11.5340 BAU 1.5430
RDE .2427 RRA .0235 RC3 .6381 FAU .47731
FDE -.2346 FRA 9.3438 FC-41.3579 BSP 29358
BDE .3910 BRA 2.1692 BC311.5516 FSP 9442

MID-COURSE EXECUTION ACCURACY
SGT 8497.9 SGR 598.6 SG3 2774.9
RRT -.4902 RRF -.5128 RTF .9934
SGB 8519.0 R23 .0275 R13 -.9935
SG1 8503.0 SG2 521.5 THA 178.01

ORBIT DETERMINATION ACCURACY
ST 1429.4 SR 440.2 SS 1543.7
CRT .4133 CRS .0473 CST -.8892
LSA 2046.5 MSA 656.4 SSA 28.8
EL1 1441.9 EL2 397.4 ALF 7.85

LAUNCH DATE NOV 8 1964 FLIGHT TIME 342.00 ARRIVAL DATE OCT 16 1965

HELIOCENTRIC CONIC DISTANCE 764.034 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.846 GAL -2.98 AZL 88.24 HCA 232.64 SMA 186.36 ECC .21098 INC 1.7559 V1 30.065
RP 215.05 LAP -1.40 LOP 278.25 VP 22.850 GAP -8.39 AZP 91.07 TAL 342.75 TAP 215.39 RCA 147.04 APO 225.67 V2 25.535
RC 290.105 GL 18.44 GP 1.05 ZAL 113.98 ZAP 63.36 ETS 179.82 ZAE 93.24 ETE 178.81 ZAC 84.94 ETC 258.17 CLP 63.35

PLANETOCENTRIC CONIC

C3 10.101 VHL 3.178 DLA 24.40 RAL 170.03 RAD 6567.4 VEL 11.467 PTH 1.99 VHP 3.200 DPA 9.75 RAP 164.14 ECC 1.1662

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 41 33	2953.48	-28.19	93.04	28.63	87.19	16 30 46	2353.5	-28.28	84.38
90.00	11 20 54	3818.57	-11.95	150.37	24.23	64.14	12 24 32	3218.6	-15.34	143.33
100.00	17 23 46	2623.91	-29.89	68.85	28.68	89.63	18 7 30	2023.9	-29.62	60.05
100.00	12 21 21	3623.37	-10.44	135.24	23.44	61.83	13 21 45	3023.4	-14.12	128.39
110.00	19 12 41	2283.17	-33.80	42.77	28.48	95.40	19 50 44	1683.2	-32.69	33.71
110.00	12 48 56	3536.88	-7.07	126.66	21.41	56.47	13 47 53	2936.9	-11.43	120.28

DIFFERENTIAL CORRECTIONS
TDE .2775 TRA 2.2994 TC-11.8010 BAU 1.5958
RDE .2486 RRA .0262 RC3 .6287 FAU .46273
FDE -.3565 FRA 9.2160 FC-39.6605 BSP 30329
BDE .3726 BRA 2.2995 BC311.8177 FSP 9131

MID-COURSE EXECUTION ACCURACY
SGT 8788.4 SGR 602.7 SG3 2689.2
RRT -.4789 RRF -.5019 RTF .9937
SGB 8809.0 R23 .0276 R13 -.9938
SG1 8793.2 SG2 528.8 THA 178.11

ORBIT DETERMINATION ACCURACY
ST 1471.6 SR 448.6 SS 1537.7
CRT .3678 CRS .0849 CST -.8945
LSA 2072.6 MSA 659.6 SSA 28.4
EL1 1481.6 EL2 414.3 ALF 6.94

LAUNCH DATE NOV 8 1964 FLIGHT TIME 344.00 ARRIVAL DATE OCT 18 1965

HELIOCENTRIC CONIC DISTANCE 768.201 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.849 GAL -3.06 AZL 88.24 HCA 233.81 SMA 186.40 ECC .21147 INC 1.7596 V1 30.065
RP 214.72 LAP -1.42 LOP 279.43 VP 22.894 GAP -8.56 AZP 91.04 TAL 342.34 TAP 216.16 RCA 146.98 APO 225.81 V2 25.572
RC 291.272 GL 18.37 GP 1.02 ZAL 114.68 ZAP 61.88 ETS 179.85 ZAE 91.49 ETE 178.88 ZAC 84.85 ETC 258.21 CLP 61.87

PLANETOCENTRIC CONIC

C3 10.218 VHL 3.197 DLA 24.05 RAL 170.69 RAD 6567.4 VEL 11.472 PTH 1.99 VHP 3.247 DPA 9.84 RAP 163.84 ECC 1.1682

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 49 52	2936.08	-28.24	91.77	29.37	87.83	16 38 48	2336.1	-28.24	83.11
90.00	11 17 52	3840.60	-11.29	151.66	24.85	63.86	12 21 53	3240.6	-14.72	144.65
100.00	17 31 7	2609.64	-29.89	67.79	29.40	90.19	18 14 36	2009.6	-29.55	59.00
100.00	12 19 18	3642.28	-9.83	136.31	24.08	61.63	13 20 0	3042.3	-13.54	129.49
110.00	19 18 38	2273.26	-33.74	42.00	29.16	95.85	19 56 31	1673.3	-32.56	32.96
110.00	12 48 16	3551.42	-6.52	127.43	22.07	56.37	13 47 28	2951.4	-10.90	121.07

DIFFERENTIAL CORRECTIONS
TDE .2466 TRA 2.4336 TC-12.0420 BAU 1.6472
RDE .2545 RRA .0289 RC3 .6191 FAU .44795
FDE -.4727 FRA 9.0876 FC-37.9516 BSP 31293
BDE .3544 BRA 2.4338 BC312.0580 FSP 8834

MID-COURSE EXECUTION ACCURACY
SGT 9070.9 SGR 606.6 SG3 2602.9
RRT -.4679 RRF -.4912 RTF .9940
SGB 9091.2 R23 .0278 R13 -.9940
SG1 9075.4 SG2 535.9 THA 178.20

ORBIT DETERMINATION ACCURACY
ST 1517.2 SR 456.7 SS 1533.7
CRT .3223 CRS .1218 CST -.8996
LSA 2103.1 MSA 662.6 SSA 28.0
EL1 1525.0 EL2 430.1 ALF 6.02

LAUNCH DATE NOV 8 1964 FLIGHT TIME 346.00 ARRIVAL DATE OCT 20 1965

HELIOCENTRIC CONIC DISTANCE 772.373 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.851 GAL -3.13 AZL 88.24 HCA 234.99 SMA 186.44 ECC .21198 INC 1.7633 V1 30.065
RP 214.40 LAP -1.44 LOP 280.61 VP 22.939 GAP -8.72 AZP 91.01 TAL 341.92 TAP 216.92 RCA 146.92 APO 225.96 V2 25.608
RC 292.426 GL 18.29 GP .99 ZAL 115.39 ZAP 60.44 ETS 179.88 ZAE 89.78 ETE 178.95 ZAC 84.77 ETC 258.25 CLP 60.44

PLANETOCENTRIC CONIC

C3 10.345 VHL 3.216 DLA 23.68 RAL 171.37 RAD 6567.4 VEL 11.478 PTH 2.00 VHP 3.297 DPA 9.92 RAP 163.59 ECC 1.1702

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	15 58 14	2918.70	-28.28	90.50	30.13	88.46	16 46 53	2318.7	-28.19	81.84
90.00	11 14 53	3862.92	-10.62	152.95	25.49	63.60	12 19 16	3262.9	-14.08	145.98
100.00	17 38 34	2595.21	-29.88	66.72	30.14	90.75	18 21 49	1995.2	-29.46	57.94
100.00	12 17 15	3661.64	-9.20	137.41	24.74	61.43	13 18 17	3061.6	-12.94	130.62
110.00	19 24 43	2263.12	-33.67	41.22	29.86	96.31	20 2 26	1663.1	-32.43	32.20
110.00	12 47 35	3566.50	-5.95	128.22	22.76	56.28	13 47 2	2966.5	-10.35	121.88

DIFFERENTIAL CORRECTIONS
TDE .2121 TRA 2.5712 TC-12.2592 BAU 1.6975
RDE .2605 RRA .0315 RC3 .6095 FAU .43305
FDE -.5839 FRA 8.9581 FC-36.2416 BSP 32226
BDE .3359 BRA 2.5714 BC312.2744 FSP 8536

MID-COURSE EXECUTION ACCURACY
SGT 9345.8 SGR 610.6 SG3 2516.3
RRT -.4573 RRF -.4810 RTF .9942
SGB 9365.8 R23 .0279 R13 -.9942
SG1 9350.0 SG2 542.8 THA 178.28

ORBIT DETERMINATION ACCURACY
ST 1565.3 SR 464.6 SS 1531.6
CRT .2752 CRS .1580 CST -.9051
LSA 2137.6 MSA 664.4 SSA 27.7
EL1 1570.9 EL2 445.0 ALF 5.08

LAUNCH DATE NOV 8 1964 FLIGHT TIME 348.00 ARRIVAL DATE OCT 22 1965

HELIOCENTRIC CONIC DISTANCE 776.551 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.854 GAL -3.21 AZL 88.23 HCA 236.17 SMA 186.49 ECC .21253 INC 1.7669 V1 30.065
RP 214.08 LAP -1.47 LOP 281.79 VP 22.982 GAP -8.87 AZP 90.98 TAL 341.49 TAP 217.66 RCA 146.85 APO 226.12 V2 25.644
RC 293.566 GL 18.21 GP .97 ZAL 116.43 ZAP 59.04 ETS 179.90 ZAE 88.11 ETE 179.02 ZAC 84.71 ETC 258.28 CLP 59.04

PLANETOCENTRIC CONIC

C3 10.480 VHL 3.237 DLA 23.30 RAL 172.06 RAD 6567.4 VEL 11.483 PTH 2.00 VHP 3.349 DPA 9.98 RAP 163.37 ECC 1.1725

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 6 40	2901.35	-28.30	89.23	30.90	89.10	16 55 1	2301.4	-28.13	80.57
90.00	11 11 58	3885.51	-9.93	154.25	26.15	63.35	12 16 44	3285.5	-13.44	147.32
100.00	17 46 7	2580.68	-29.87	65.63	30.89	91.32	18 29 8	1980.7	-29.36	56.87
100.00	12 15 12	3681.42	-8.55	138.52	25.42	61.25	13 16 33	3081.4	-12.33	131.76
110.00	19 30 56	2252.78	-33.58	40.42	30.58	96.78	20 8 29	1652.8	-32.28	31.43
110.00	12 46 53	3582.08	-5.37	129.04	23.47	56.19	13 46 35	2982.1	-9.77	122.72

DIFFERENTIAL CORRECTIONS
TDE .1743 TRA 2.7118 TC-12.4504 BAU 1.7464
RDE .2665 RRA .0341 RC3 .5999 FAU .41812
FDE -.6919 FRA 8.8233 FC-34.5409 BSP 33135
BDE .3185 BRA 2.7120 BC312.4648 FSP 8243

MID-COURSE EXECUTION ACCURACY
SGT 9611.7 SGR 614.6 SG3 2429.6
RRT -.4472 RRF -.4714 RTF .9943
SGB 9631.3 R23 .0282 R13 -.9944
SG1 9615.6 SG2 549.5 THA 178.36

ORBIT DETERMINATION ACCURACY
ST 1616.0 SR 472.3 SS 1530.5
CRT .2275 CRS .1942 CST -.9105
LSA 2175.6 MSA 665.7 SSA 27.3
EL1 1619.9 EL2 458.8 ALF 4.14

LAUNCH DATE NOV 8 1964 FLIGHT TIME 350.00 ARRIVAL DATE OCT 24 1965

HELIOCENTRIC CONIC DISTANCE 780.733 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.857 GAL -3.30 AZL 88.23 HCA 237.36 SMA 186.54 ECC .21311 INC 1.7704 V1 30.065
RP 213.77 LAP -1.49 LOP 282.97 VP 23.026 GAP -9.03 AZP 90.96 TAL 341.04 TAP 218.39 RCA 146.79 APO 226.29 V2 25.679
RC 294.693 GL 18.11 GP .94 ZAL 116.89 ZAP 57.69 ETS 179.92 ZAE 86.48 ETE 179.08 ZAC 84.65 ETC 258.30 CLP 57.68

PLANETOCENTRIC CONIC

C3 10.625 VHL 3.260 DLA 22.90 RAL 172.76 RAD 6567.4 VEL 11.490 PTH 2.00 VHP 3.404 DPA 10.02 RAP 163.20 ECC 1.1749

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 15 8	2884.07	-28.32	87.97	31.69	89.73	17 3 12	2284.1	-28.05	79.31
90.00	11 9 6	3908.36	-9.23	155.57	26.84	63.11	12 14 14	3308.4	-12.77	148.67
100.00	17 53 46	2566.05	-29.84	64.55	31.66	91.89	18 36 32	1966.1	-29.26	55.79
100.00	12 13 9	3701.61	-7.89	139.65	26.12	61.07	13 14 51	3101.6	-11.69	132.92
110.00	19 37 16	2242.26	-33.50	39.61	31.32	97.25	20 14 38	1642.3	-32.13	30.65
110.00	12 46 9	3598.17	-4.76	129.89	24.20	56.11	13 46 7	2998.2	-9.17	123.59

DIFFERENTIAL CORRECTIONS
TDE .1333 TRA 2.8562 TC-12.6170 BAU 1.7941
RDE .2727 RRA .0365 RC3 .5902 FAU .40324
FDE -.7935 FRA 8.6883 FC-32.8575 BSP 34027
BDE .3035 BRA 2.8565 BC312.6308 FSP 7957

MID-COURSE EXECUTION ACCURACY
SGT 9869.9 SGR 618.5 SG3 2343.4
RRT -.4377 RRF -.4622 RTF .9945
SGB 9889.3 R23 .0283 R13 -.9945
SG1 9873.6 SG2 555.9 THA 178.42

ORBIT DETERMINATION ACCURACY
ST 1670.1 SR 479.9 SS 1530.8
CRT .1793 CRS .2289 CST -.9161
LSA 2217.9 MSA 665.7 SSA 26.8
EL1 1672.5 EL2 471.4 ALF 3.20

LAUNCH DATE NOV 8 1964 FLIGHT TIME 352.00 ARRIVAL DATE OCT 26 1965

HELIOCENTRIC CONIC DISTANCE 784.921 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.860 GAL -3.39 AZL 88.23 HCA 238.55 SMA 186.59 ECC .21372 INC 1.7738 V1 30.065
RP 213.46 LAP -1.51 LOP 284.16 VP 23.069 GAP -9.18 AZP 90.93 TAL 340.57 TAP 219.12 RCA 146.71 APO 226.47 V2 25.714
RC 295.805 GL 18.01 GP .91 ZAL 117.67 ZAP 56.37 ETS 179.94 ZAE 84.89 ETE 179.14 ZAC 84.60 ETC 258.32 CLP 56.36

PLANETOCENTRIC CONIC

C3 10.780 VHL 3.283 DLA 22.49 RAL 173.48 RAD 6567.4 VEL 11.496 PTH 2.00 VHP 3.460 DPA 10.05 RAP 163.07 ECC 1.1774

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 23 39	2866.85	-28.31	86.71	32.49	90.36	17 11 26	2266.8	-27.96	78.06
90.00	11 6 17	3931.48	-8.52	156.89	27.56	62.89	12 11 49	3331.5	-12.09	150.03
100.00	18 1 30	2551.36	-29.80	63.46	32.45	92.46	18 44 1	1951.4	-29.14	54.72
100.00	12 11 8	3722.20	-7.21	140.80	26.85	60.91	13 13 10	3122.2	-11.03	134.10
110.00	19 43 43	2231.58	-33.40	38.79	32.07	97.72	20 20 54	1631.6	-31.98	29.86
110.00	12 45 24	3614.74	-4.13	130.76	24.95	56.04	13 45 39	3014.7	-8.56	124.47

DIFFERENTIAL CORRECTIONS
TDE .0897 TRA 3.0045 TC-12.7565 BAU 1.8403
RDE .2788 RRA .0389 RC3 .5805 FAU .38844
FDE -.8886 FRA 8.5530 FC-31.1957 BSP 34907
BDE .2929 BRA 3.0048 BC312.7697 FSP 7678

MID-COURSE EXECUTION ACCURACY
SGT10119.1 SGR 622.4 SG3 2258.0
RRT -.4287 RRF -.4534 RTF .9946
SGB10138.2 R23 .0285 R13 -.9946
SG110122.6 SG2 562.2 THA 178.48

ORBIT DETERMINATION ACCURACY
ST 1728.0 SR 487.2 SS 1532.1
CRT .1316 CRS .2622 CST -.9216
LSA 2264.5 MSA 664.9 SSA 26.4
EL1 1729.3 EL2 482.6 ALF 2.30

LAUNCH DATE NOV 8 1964 FLIGHT TIME 354.00 ARRIVAL DATE OCT 28 1965

HELIOCENTRIC CONIC DISTANCE 789.113 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.863 GAL -3.48 AZL 88.22 HCA 239.74 SMA 186.65 ECC .21437 INC 1.7772 V1 30.065
RP 213.16 LAP -1.53 LOP 285.35 VP 23.112 GAP -9.33 AZP 90.90 TAL 340.09 TAP 219.83 RCA 146.63 APO 226.66 V2 25.748
RC 296.904 GL 17.91 GP .89 ZAL 118.46 ZAP 55.09 ETS 179.95 ZAE 83.33 ETE 179.20 ZAC 84.56 ETC 258.33 CLP 55.08

PLANETOCENTRIC CONIC

C3 10.946 VHL 3.308 DLA 22.07 RAL 174.20 RAD 6567.4 VEL 11.504 PTH 2.00 VHP 3.518 DPA 10.06 RAP 162.98 ECC 1.1801

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 32 12	2849.72	-28.30	85.46	33.31	90.99	17 19 42	2249.7	-27.86	76.82
90.00	11 3 32	3954.84	-7.79	158.22	28.30	62.69	12 9 27	3354.8	-11.39	151.39
100.00	18 9 18	2536.64	-29.75	62.37	33.25	93.04	18 51 35	1936.6	-29.01	53.64
100.00	12 9 7	3743.16	-6.51	141.97	27.60	60.76	13 11 30	3143.2	-10.36	135.30
110.00	19 50 16	2220.79	-33.30	37.97	32.84	98.20	20 27 16	1620.8	-31.81	29.06
110.00	12 44 39	3631.78	-3.48	131.65	25.73	55.97	13 45 11	3031.8	-7.92	125.38

DIFFERENTIAL CORRECTIONS
TDE .0411 TRA 3.1550 TC-12.8774 BAU 1.8862
RDE .2851 RRA .0412 RC3 .5710 FAU .37399
FDE -.9862 FRA 8.4103 FC-29.5802 BSP 35725
BDE .2881 BRA 3.1553 BC312.8900 FSP 7389

MID-COURSE EXECUTION ACCURACY
SGT10362.0 SGR 626.5 SG3 2173.8
RRT -.4205 RRF -.4459 RTF .9947
SGB10380.9 R23 .0290 R13 -.9947
SG110365.3 SG2 568.2 THA 178.54

ORBIT DETERMINATION ACCURACY
ST 1788.6 SR 494.4 SS 1534.5
CRT .0827 CRS .2968 CST -.9267
LSA 2314.4 MSA 664.1 SSA 26.0
EL1 1789.1 EL2 492.6 ALF 1.42

LAUNCH DATE NOV 8 1964 FLIGHT TIME 356.00 ARRIVAL DATE OCT 30 1965

HELIOCENTRIC CONIC DISTANCE 793.309 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.867 GAL -3.57 AZL 88.22 HCA 240.93 SMA 186.70 ECC .21506 INC 1.7804 V1 30.065
RP 212.87 LAP -1.56 LOP 286.55 VP 23.154 GAP -9.48 AZP 90.87 TAL 339.59 TAP 220.53 RCA 146.55 APO 226.86 V2 25.782
RC 297.989 GL 17.79 GP .86 ZAL 119.27 ZAP 53.84 ETS 179.96 ZAE 81.81 ETE 179.25 ZAC 84.52 ETC 258.34 CLP 53.84

PLANETOCENTRIC CONIC

C3 11.123 VHL 3.335 DLA 21.63 RAL 174.94 RAD 6567.4 VEL 11.511 PTH 2.01 VHP 3.577 DPA 10.06 RAP 162.92 ECC 1.1831

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 40 47	2832.70	-28.27	84.21	34.14	91.62	17 27 59	2232.7	-27.75	75.59
90.00	11 0 50	3978.47	-7.05	159.56	29.06	62.50	12 7 8	3378.5	-10.68	152.76
100.00	18 17 10	2521.91	-29.69	61.27	34.07	93.61	18 59 12	1921.9	-28.88	52.57
100.00	12 7 8	3764.49	-5.80	143.15	28.38	60.62	13 9 52	3164.5	-9.67	136.51
110.00	19 56 54	2209.89	-33.19	37.14	33.63	98.68	20 33 44	1609.9	-31.64	28.25
110.00	12 43 53	3649.27	-2.81	132.57	26.52	55.92	13 44 42	3049.3	-7.26	126.31

DIFFERENTIAL CORRECTIONS
TDE -.0101 TRA 3.3104 TC-12.9722 BAU 1.9308
RDE .2915 RRA .0434 RC3 .5615 FAU .35963
FDE-1.0754 FRA 8.2697 FC-27.9922 BSP 36537
BDE .2917 BRA 3.3107 BC312.9844 FSP 7117

MID-COURSE EXECUTION ACCURACY
SGT10597.2 SGR 630.4 SG3 2090.8
RRT -.4129 RRF -.4387 RTF .9947
SGB10615.9 R23 .0293 R13 -.9948
SG110600.4 SG2 574.0 THA 178.59

ORBIT DETERMINATION ACCURACY
ST 1853.8 SR 501.5 SS 1537.7
CRT .0350 CRS .3292 CST -.9317
LSA 2369.3 MSA 662.1 SSA 25.6
EL1 1853.9 EL2 501.1 ALF .59

LAUNCH DATE NOV 8 1964 FLIGHT TIME 358.00 ARRIVAL DATE NOV 1 1965

HELIOCENTRIC CONIC DISTANCE 797.510 EARTH TO MARS

RL	148.20	LAL	.00	LOL	45.63	VL	32.870	GAL	-3.67	AZL	88.22	HCA	242.13	SMA	186.77	ECC	.21578	INC	1.7836	V1	30.065
RP	212.57	LAP	-1.58	LOP	287.75	VP	23.196	GAP	-9.63	AZP	90.83	TAL	339.08	TAP	221.21	RCA	146.47	APO	227.07	V2	25.815
RC	299.061	GL	17.67	GP	.84	ZAL	120.10	ZAP	52.64	ETS	179.98	ZAE	80.32	ETE	179.30	ZAC	84.50	ETC	258.34	CLP	52.63

PLANETOCENTRIC CONIC

C3	11.312	VHL	3.363	DLA	21.18	RAL	175.69	RAD	6567.4	VEL	11.520	PTH	2.01	VHP	3.639	DPA	10.04	RAP	162.91	ECC	1.1862

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 49 23	2815.80	-28.24	82.98	34.99	92.23	17 36 18	2215.8	-27.63	74.36
90.00	10 58 11	4002.33	-6.30	160.91	29.84	62.34	12 4 53	3402.3	-9.96	154.14
100.00	18 25 -5	2507.19	-29.63	60.19	34.90	94.18	19 6 52	1907.2	-28.73	51.50
100.00	12 5 9	3786.17	-5.08	144.36	29.17	60.50	13 8 16	3186.2	-8.97	137.73
110.00	20 3 37	2198.91	-33.08	36.30	34.43	99.17	20 40 16	1598.9	-31.46	27.45
110.00	12 43 7	3667.22	-2.13	133.50	27.34	55.87	13 44 14	3067.2	-6.59	127.26

DIFFERENTIAL CORRECTIONS

TDE	-.0652	TRA	3.4693	TC-13.0439	BAU	1.9744	
RDE	.2980	RRA	.0455	RC3 .5521	FAU	.34559	
FDE	-1.1611	FRA	8.1266	FC-26.4495	BSP	37321	
BDE	.3050	BRA	3.4696	BC313.0556	FSP	6847	

MID-COURSE EXECUTION ACCURACY

SGT10824.6	SGR	634.4	SG3	2009.4			
RRT	-.4060	RRF	-.4323	RTF	.9948		
SGB10843.2	R23	.0298	R13	-.9948			
SG110827.7	SG2	579.6	THA	178.63			

ORBIT DETERMINATION ACCURACY

ST	1922.8	SR	508.3	SS	1541.5
CRT	-.0122	CRS	.3607	CST	-.9366
LSA	2428.3	MSA	659.4	SSA	25.1
EL1	1922.8	EL2	508.3	ALF	179.80

LAUNCH DATE NOV 8 1964 FLIGHT TIME 360.00 ARRIVAL DATE NOV 3 1965

HELIOCENTRIC CONIC DISTANCE 801.714 EARTH TO MARS

RL	148.20	LAL	.00	LOL	45.63	VL	32.874	GAL	-3.77	AZL	88.21	HCA	243.33	SMA	186.83	ECC	.21654	INC	1.7867	V1	30.065
RP	212.29	LAP	-1.60	LOP	288.95	VP	23.237	GAP	-9.78	AZP	90.80	TAL	338.56	TAP	221.89	RCA	146.37	APO	227.28	V2	25.847
RC	300.120	GL	17.54	GP	.82	ZAL	120.94	ZAP	51.47	ETS	179.98	ZAE	78.87	ETE	179.35	ZAC	84.48	ETC	258.33	CLP	51.46

PLANETOCENTRIC CONIC

C3	11.514	VHL	3.393	DLA	20.72	RAL	176.44	RAD	6567.4	VEL	11.528	PTH	2.01	VHP	3.703	DPA	10.01	RAP	162.93	ECC	1.1895

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	16 57 59	2799.03	-28.19	81.75	35.86	92.85	17 44 38	2199.0	-27.49	73.16
90.00	10 55 35	4026.45	-5.54	162.27	30.65	62.19	12 2 42	3426.4	-9.22	155.53
100.00	18 33 3	2492.51	-29.55	59.10	35.75	94.74	19 14 35	1892.5	-28.58	50.43
100.00	12 3 13	3808.20	-4.34	145.57	30.00	60.40	13 6 41	3208.2	-8.25	138.97
110.00	20 10 25	2187.88	-32.95	35.46	35.25	99.65	20 46 53	1587.9	-31.27	26.64
110.00	12 42 20	3685.59	-1.42	134.46	28.18	55.84	13 43 46	3085.6	-5.90	128.23

DIFFERENTIAL CORRECTIONS

TDE	-.1234	TRA	3.6327	TC-13.0929	BAU	2.0171	
RDE	.3046	RRA	.0474	RC3 .5427	FAU	.33185	
FDE	-1.2410	FRA	7.9833	FC-24.9528	BSP	38083	
BDE	.3286	BRA	3.6330	BC313.1042	FSP	6582	

MID-COURSE EXECUTION ACCURACY

SGT11045.3	SGR	638.3	SG3	1929.7			
RRT	-.3998	RRF	-.4265	RTF	.9948		
SGB11063.8	R23	.0303	R13	-.9948			
SG111048.3	SG2	584.9	THA	178.67			

ORBIT DETERMINATION ACCURACY

ST	1996.3	SR	515.0	SS	1545.6
CRT	-.0580	CRS	.3907	CST	-.9413
LSA	2491.7	MSA	656.0	SSA	24.6
EL1	1996.5	EL2	514.1	ALF	179.08

LAUNCH DATE NOV 8 1964 FLIGHT TIME 362.00 ARRIVAL DATE NOV 5 1965

HELIOCENTRIC CONIC DISTANCE 805.922 EARTH TO MARS

RL	148.20	LAL	.00	LOL	45.63	VL	32.878	GAL	-3.87	AZL	88.21	HCA	244.54	SMA	186.89	ECC	.21734	INC	1.7898	V1	30.065
RP	212.01	LAP	-1.62	LOP	290.15	VP	23.278	GAP	-9.93	AZP	90.77	TAL	338.02	TAP	222.55	RCA	146.27	APO	227.51	V2	25.879
RC	301.167	GL	17.41	GP	.80	ZAL	121.80	ZAP	50.33	ETS	179.99	ZAE	77.45	ETE	179.40	ZAC	84.48	ETC	258.32	CLP	50.33

PLANETOCENTRIC CONIC

C3	11.729	VHL	3.425	DLA	20.24	RAL	177.20	RAD	6567.4	VEL	11.538	PTH	2.01	VHP	3.768	DPA	9.96	RAP	162.98	ECC	1.1930

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 6 37	2782.40	-28.12	80.54	36.74	93.45	17 52 59	2182.4	-27.35	71.96
90.00	10 53 3	4050.80	-4.76	163.64	31.49	62.05	12 0 34	3450.8	-8.46	156.92
100.00	18 41 3	2477.88	-29.46	58.02	36.62	95.30	19 22 21	1877.9	-28.41	49.38
100.00	12 1 18	3830.55	-3.58	146.80	30.84	60.30	13 5 8	3230.6	-7.51	140.22
110.00	20 17 17	2176.82	-32.82	34.62	36.09	100.13	20 53 34	1576.8	-31.08	25.84
110.00	12 41 33	3704.38	-.70	135.44	29.04	55.82	13 43 18	3104.4	-5.18	129.22

DIFFERENTIAL CORRECTIONS

TDE	-.1848	TRA	3.8000	TC-13.1196	BAU	2.0589	
RDE	.3113	RRA	.0492	RC3 .5334	FAU	.31831	
FDE	-1.3156	FRA	7.8400	FC-23.4957	BSP	38824	
BDE	.3620	BRA	3.8003	BC313.1304	FSP	6324	

MID-COURSE EXECUTION ACCURACY

SGT11258.7	SGR	642.2	SG3	1851.6			
RRT	-.3941	RRF	-.4214	RTF	.9948		
SGB11277.0	R23	.0307	R13	-.9948			
SG111261.6	SG2	590.1	THA	178.71			

ORBIT DETERMINATION ACCURACY

ST	2073.7	SR	521.6	SS	1549.8
CRT	-.1021	CRS	.4193	CST	-.9456
LSA	2559.0	MSA	652.2	SSA	24.2
EL1	2074.4	EL2	518.7	ALF	178.43

LAUNCH DATE NOV 8 1964 FLIGHT TIME 364.00 ARRIVAL DATE NOV 7 1965

HELIOCENTRIC CONIC DISTANCE 810.133 EARTH TO MARS

RL	148.20	LAL	.00	LOL	45.63	VL	32.882	GAL	-3.98	AZL	88.21	HCA	245.74	SMA	186.96	ECC	.21818	INC	1.7928	V1	30.065
RP	211.73	LAP	-1.63	LOP	291.36	VP	23.318	GAP	-10.07	AZP	90.74	TAL	337.46	TAP	223.20	RCA	146.17	APO	227.75	V2	25.911
RC	302.203	GL	17.26	GP	.78	ZAL	122.67	ZAP	49.23	ETS	180.00	ZAE	76.07	ETE	179.44	ZAC	84.48	ETC	258.31	CLP	49.23

PLANETOCENTRIC CONIC

C3	11.958	VHL	3.458	DLA	19.75	RAL	177.97	RAD	6567.5	VEL	11.548	PTH	2.02	VHP	3.835	DPA	9.90	RAP	163.07	ECC	1.1968

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 15 14	2765.94	-28.05	79.34	37.63	94.05	18 1 20	2165.9	-27.19	70.78
90.00	10 50 34	4075.39	-3.97	165.02	32.35	61.94	11 58 29	3475.4	-7.70	158.32
100.00	18 49 5	2463.34	-29.36	56.95	37.50	95.86	19 30 8	1863.3	-28.24	48.33
100.00	11 59 24	3853.23	-2.82	148.05	31.71	60.23	13 3 37	3253.2	-6.76	141.48
110.00	20 24 12	2165.75	-32.69	33.79	36.94	100.60	21 0 18	1565.7	-30.88	25.04
110.00	12 40 46	3723.58	.03	136.44	29.93	55.82	13 42 50	3123.6	-4.46	130.23

DIFFERENTIAL CORRECTIONS

TDE	-.2495	TRA	3.9725	TC-13.1226	BAU	2.0996	
RDE	.3182	RRA	.0509	RC3 .5241	FAU	.30512	
FDE	-1.3852	FRA	7.6958	FC-22.0900	BSP	39552	
BDE	.4043	BRA	3.9728	BC313.1331	FSP	6075	

MID-COURSE EXECUTION ACCURACY

SGT11465.0	SGR	646.0	SG3	1775.4			
RRT	-.3891	RRF	-.4170	RTF	.9948		
SGB11483.2	R23	.0314	R13	-.9948			
SG111467.8	SG2	595.0	THA	178.74			

ORBIT DETERMINATION ACCURACY

ST	2155.6	SR	527.9	SS	1554.0
CRT	-.1445	CRS	.4465	CST	-.9496
LSA	2630.5	MSA	647.9	SSA	23.8
EL1	2157.0	EL2	522.1	ALF	177.85

LAUNCH DATE NOV 8 1964 FLIGHT TIME 366.00 ARRIVAL DATE NOV 9 1965

HELIOCENTRIC CONIC DISTANCE 814.346 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.886 GAL -4.09 AZL 88.20 HCA 246.96 SMA 187.03 ECC .21906 INC 1.7958 V1 30.065
RP 211.47 LAP -1.65 LOP 292.57 VP 23.358 GAP -10.22 AZP 90.70 TAL 336.89 TAP 223.84 RCA 146.06 APO 228.00 V2 25.941
RC 303.228 GL 17.11 GP .76 ZAL 123.56 ZAP 48.16 ETS 180.00 ZAE 74.72 ETE 179.48 ZAC 84.48 ETC 258.29 CLP 48.16

PLANETOCENTRIC CONIC

C3 12.203 VHL 3.493 DLA 19.25 RAL 178.75 RAD 6567.5 VEL 11.558 PTH 2.02 VHP 3.904 DPA 9.83 RAP 163.20 ECC 1.2008

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 23 52	2749.66	-27.97	78.16	38.54	94.64	18 9 42	2149.7	-27.03	69.62
90.00	10 48 8	4100.22	-3.18	166.41	33.23	61.85	11 56 28	3500.2	-6.92	159.73
100.00	18 57 8	2448.89	-29.26	55.89	38.40	96.41	19 37 57	1848.9	-28.06	47.29
100.00	11 57 32	3876.22	-2.04	149.32	32.60	60.17	13 2 9	3276.2	-6.00	142.76
110.00	20 31 10	2154.69	-32.55	32.96	37.81	101.08	21 7 5	1554.7	-30.68	24.24
110.00	12 40 0	3743.18	.78	137.47	30.84	55.82	13 42 23	3143.2	-3.71	131.26

DIFFERENTIAL CORRECTIONS
TDE -.3174 TRA 4.1499 TC-13.1036 BAU 2.1394
RDE .3252 RRA .0524 RC3 .5149 FAU .29215
FDE-1.4490 FRA 7.5532 FC-20.7267 BSP 40270
BDE .4544 BRA 4.1502 BC313.1137 FSP 5835

MID-COURSE EXECUTION ACCURACY
SGT11664.5 SGR 649.7 SG3 1700.9
RRT -.3846 RRF -.4130 RTF .9947
SGB11682.6 R23 .0319 R13 -.9948
SG111667.2 SG2 599.6 THA 178.77

ORBIT DETERMINATION ACCURACY
ST 2241.6 SR 534.1 SS 1557.9
CRT -.1851 CRS .4721 CST -.9534
LSA 2706.1 MSA 643.1 SSA 23.4
EL1 2243.9 EL2 524.4 ALF 177.33

LAUNCH DATE NOV 8 1964 FLIGHT TIME 368.00 ARRIVAL DATE NOV 11 1965

HELIOCENTRIC CONIC DISTANCE 818.563 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.890 GAL -4.21 AZL 88.20 HCA 248.17 SMA 187.10 ECC .21998 INC 1.7987 V1 30.065
RP 211.20 LAP -1.67 LOP 293.79 VP 23.397 GAP -10.36 AZP 90.67 TAL 336.30 TAP 224.47 RCA 145.95 APO 228.26 V2 25.971
RC 304.242 GL 16.96 GP .74 ZAL 124.46 ZAP 47.12 ETS 180.00 ZAE 73.39 ETE 179.52 ZAC 84.50 ETC 258.26 CLP 47.12

PLANETOCENTRIC CONIC

C3 12.463 VHL 3.530 DLA 18.74 RAL 179.53 RAD 6567.5 VEL 11.569 PTH 2.02 VHP 3.974 DPA 9.74 RAP 163.36 ECC 1.2051

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 32 29	2733.58	-27.87	76.99	39.47	95.21	18 18 3	2133.6	-26.86	68.47
90.00	10 45 45	4125.27	-2.37	167.81	34.14	61.77	11 54 30	3525.3	-6.13	161.15
100.00	19 5 13	2434.57	-29.15	54.84	39.31	96.95	19 45 47	1834.6	-27.88	46.27
100.00	11 55 42	3899.51	-1.25	150.59	33.52	60.13	13 0 42	3299.5	-5.22	144.05
110.00	20 38 11	2143.68	-32.40	32.13	38.70	101.55	21 13 55	1543.7	-30.47	23.45
110.00	12 39 13	3763.16	1.54	138.51	31.77	55.85	13 41 56	3163.2	-2.95	132.30

DIFFERENTIAL CORRECTIONS
TDE -.3883 TRA 4.3323 TC-13.0637 BAU 2.1783
RDE .3323 RRA .0537 RC3 .5057 FAU .27952
FDE-1.5077 FRA 7.4105 FC-19.4169 BSP 40969
BDE .5111 BRA 4.3327 BC313.0735 FSP 5599

MID-COURSE EXECUTION ACCURACY
SGT11857.6 SGR 653.4 SG3 1628.4
RRT -.3808 RRF -.4098 RTF .9946
SGB11875.6 R23 .0325 R13 -.9947
SG111860.2 SG2 604.0 THA 178.79

ORBIT DETERMINATION ACCURACY
ST 2331.3 SR 540.2 SS 1561.2
CRT -.2234 CRS .4963 CST -.9568
LSA 2785.1 MSA 638.0 SSA 22.9
EL1 2334.6 EL2 525.8 ALF 176.88

LAUNCH DATE NOV 8 1964 FLIGHT TIME 370.00 ARRIVAL DATE NOV 13 1965

HELIOCENTRIC CONIC DISTANCE 822.781 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.894 GAL -4.33 AZL 88.20 HCA 249.39 SMA 187.18 ECC .22094 INC 1.8016 V1 30.065
RP 210.95 LAP -1.69 LOP 295.00 VP 23.436 GAP -10.50 AZP 90.63 TAL 335.70 TAP 225.09 RCA 145.82 APO 228.53 V2 26.001
RC 305.247 GL 16.79 GP .72 ZAL 125.37 ZAP 46.12 ETS 180.00 ZAE 72.10 ETE 179.56 ZAC 84.52 ETC 258.23 CLP 46.11

PLANETOCENTRIC CONIC

C3 12.740 VHL 3.569 DLA 18.22 RAL 180.32 RAD 6567.5 VEL 11.581 PTH 2.03 VHP 4.046 DPA 9.64 RAP 163.55 ECC 1.2097

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 41 6	2717.70	-27.77	75.84	40.41	95.78	18 26 23	2117.7	-26.68	67.34
90.00	10 43 25	4150.55	-1.56	169.22	35.07	61.72	11 52 35	3550.5	-5.33	162.57
100.00	19 13 17	2420.39	-29.02	53.80	40.24	97.48	19 53 38	1820.4	-27.69	45.26
100.00	11 53 54	3923.09	-.45	151.89	34.46	60.11	12 59 17	3323.1	-4.43	145.35
110.00	20 45 14	2132.72	-32.25	31.31	39.60	102.01	21 20 47	1532.7	-30.26	22.66
110.00	12 38 27	3783.52	2.32	139.57	32.72	55.89	13 41 30	3183.5	-2.17	133.37

DIFFERENTIAL CORRECTIONS
TDE -.4629 TRA 4.5198 TC-13.0041 BAU 2.2165
RDE .3397 RRA .0548 RC3 .4965 FAU .26720
FDE-1.5614 FRA 7.2670 FC-18.1571 BSP 41650
BDE .5742 BRA 4.5201 BC313.0136 FSP 5372

MID-COURSE EXECUTION ACCURACY
SGT12044.5 SGR 656.9 SG3 1557.9
RRT -.3776 RRF -.4072 RTF .9946
SGB12062.4 R23 .0331 R13 -.9946
SG112047.0 SG2 608.2 THA 178.82

ORBIT DETERMINATION ACCURACY
ST 2424.9 SR 546.1 SS 1563.7
CRT -.2601 CRS .5193 CST -.9600
LSA 2867.6 MSA 632.5 SSA 22.5
EL1 2429.3 EL2 526.3 ALF 176.48

LAUNCH DATE NOV 8 1964 FLIGHT TIME 372.00 ARRIVAL DATE NOV 15 1965

HELIOCENTRIC CONIC DISTANCE 827.001 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.898 GAL -4.45 AZL 88.20 HCA 250.61 SMA 187.25 ECC .22195 INC 1.8045 V1 30.065
RP 210.70 LAP -1.70 LOP 296.22 VP 23.474 GAP -10.65 AZP 90.60 TAL 335.08 TAP 225.69 RCA 145.69 APO 228.82 V2 26.029
RC 306.243 GL 16.62 GP .70 ZAL 126.29 ZAP 45.14 ETS 180.00 ZAE 70.84 ETE 179.60 ZAC 84.55 ETC 258.20 CLP 45.14

PLANETOCENTRIC CONIC

C3 13.035 VHL 3.610 DLA 17.69 RAL 181.11 RAD 6567.5 VEL 11.594 PTH 2.03 VHP 4.120 DPA 9.53 RAP 163.77 ECC 1.2145

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 49 41	2702.05	-27.66	74.71	41.37	96.34	18 34 43	2102.0	-26.49	66.24
90.00	10 41 8	4176.04	-.74	170.64	36.03	61.69	11 50 44	3576.0	-4.51	164.00
100.00	19 21 22	2406.37	-28.90	52.78	41.19	98.01	20 1 29	1806.4	-27.49	44.26
100.00	11 52 8	3946.95	.36	153.20	35.42	60.11	12 57 55	3347.0	-3.62	146.67
110.00	20 52 19	2121.86	-32.09	30.51	40.52	102.46	21 27 41	1521.9	-30.04	21.89
110.00	12 37 41	3804.23	3.11	140.65	33.70	55.94	13 41 5	3204.2	-1.38	134.45

DIFFERENTIAL CORRECTIONS
TDE -.5399 TRA 4.7129 TC-12.9252 BAU 2.2541
RDE .3472 RRA .0558 RC3 .4874 FAU .25525
FDE-1.6094 FRA 7.1243 FC-16.9525 BSP 42330
BDE .6419 BRA 4.7133 BC312.9343 FSP 5154

MID-COURSE EXECUTION ACCURACY
SGT12225.7 SGR 660.4 SG3 1489.5
RRT -.3750 RRF -.4052 RTF .9945
SGB12243.5 R23 .0338 R13 -.9945
SG112228.2 SG2 612.1 THA 178.84

ORBIT DETERMINATION ACCURACY
ST 2521.7 SR 551.8 SS 1565.2
CRT -.2942 CRS .5407 CST -.9628
LSA 2952.9 MSA 627.0 SSA 22.1
EL1 2527.2 EL2 526.2 ALF 176.15

LAUNCH DATE NOV 8 1964 FLIGHT TIME 374.00 ARRIVAL DATE NOV 17 1965

HELIOCENTRIC CONIC DISTANCE 831.223 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.903 GAL -4.58 AZL 88.19 HCA 251.83 SMA 187.33 ECC .22301 INC 1.8073 V1 30.065
RP 210.46 LAP -1.72 LOP 297.45 VP 23.511 GAP -10.79 AZP 90.56 TAL 334.45 TAP 226.28 RCA 145.56 APO 229.11 V2 26.057
RC 307.229 GL 16.45 GP .69 ZAL 127.22 ZAP 44.19 ETS 180.00 ZAE 69.60 ETE 179.64 ZAC 84.59 ETC 258.16 CLP 44.19

PLANETOCENTRIC CONIC

C3 13.349 VHL 3.654 DLA 17.15 RAL 181.90 RAD 6567.5 VEL 11.608 PTH 2.03 VHP 4.196 DPA 9.40 RAP 164.02 ECC 1.2197

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	17 58 15	2686.64	-27.54	73.60	42.34	96.88	18 43 2	2086.6	-26.30	65.15
90.00	10 38 54	4201.75	.10	172.08	37.01	61.68	11 48 56	3601.8	-3.69	165.44
100.00	19 29 27	2392.53	-28.76	51.78	42.15	98.52	20 9 20	1792.5	-27.28	43.29
100.00	11 50 24	3971.09	1.18	154.52	36.41	60.13	12 56 35	3371.1	-2.81	148.00
110.00	20 59 25	2111.09	-31.93	29.71	41.46	102.91	21 34 36	1511.1	-29.82	21.13
110.00	12 36 56	3825.30	3.91	141.76	34.70	56.01	13 40 41	3225.3	-.57	135.55

DIFFERENTIAL CORRECTIONS
TDE -.6212 TRA 4.9110 TC-12.8288 BAU 2.2911
RDE .3549 RRA .0566 RC3 .4784 FAU .24364
FDE-1.6537 FRA 6.9814 FC-15.8007 BSP 42978
BDE .7154 BRA 4.9113 BC312.8377 FSP 4940

MID-COURSE EXECUTION ACCURACY
SGT12401.0 SGR 663.8 SG3 1423.1
RRT -.3731 RRF -.4039 RTF .9943
SGB12418.7 R23 .0345 R13 -.9944
SG112403.5 SG2 615.7 THA 178.85

ORBIT DETERMINATION ACCURACY
ST 2621.8 SR 557.4 SS 1566.0
CRT -.3269 CRS .5613 CST -.9655
LSA 3041.5 MSA 621.2 SSA 21.8
EL1 2628.4 EL2 525.4 ALF 175.86

LAUNCH DATE NOV 8 1964 FLIGHT TIME 376.00 ARRIVAL DATE NOV 19 1965

HELIOCENTRIC CONIC DISTANCE 835.445 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.908 GAL -4.71 AZL 88.19 HCA 253.05 SMA 187.41 ECC .22412 INC 1.8101 V1 30.065
RP 210.22 LAP -1.73 LOP 298.67 VP 23.548 GAP -10.93 AZP 90.53 TAL 333.80 TAP 226.86 RCA 145.41 APO 229.42 V2 26.085
RC 308.206 GL 16.26 GP .67 ZAL 128.16 ZAP 43.28 ETS 180.00 ZAE 68.39 ETE 179.67 ZAC 84.63 ETC 258.12 CLP 43.27

PLANETOCENTRIC CONIC

C3 13.683 VHL 3.699 DLA 16.60 RAL 182.70 RAD 6567.5 VEL 11.622 PTH 2.04 VHP 4.273 DPA 9.27 RAP 164.29 ECC 1.2252

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 6 48	2671.48	-27.41	72.51	43.33	97.42	18 51 20	2071.5	-26.10	64.09
90.00	10 36 44	4227.68	.93	173.52	38.02	61.70	11 47 11	3627.7	-2.86	166.89
100.00	19 37 32	2378.89	-28.62	50.79	43.13	99.02	20 17 11	1778.9	-27.08	42.32
100.00	11 48 41	3995.50	2.00	155.86	37.42	60.17	12 55 16	3395.5	-1.98	149.34
110.00	21 6 31	2100.46	-31.77	28.92	42.41	103.35	21 41 32	1500.5	-29.60	20.38
110.00	12 36 11	3846.70	4.73	142.88	35.73	56.11	13 40 18	3246.7	.24	136.66

DIFFERENTIAL CORRECTIONS
TDE -.7051 TRA 5.1151 TC-12.7158 BAU 2.3277
RDE .3629 RRA .0571 RC3 .4693 FAU .23240
FDE-1.6923 FRA 6.8385 FC-14.7039 BSP 43618
BDE .7930 BRA 5.1154 BC312.7245 FSP 4735

MID-COURSE EXECUTION ACCURACY
SGT12571.4 SGR 667.1 SG3 1358.9
RRT -.3717 RRF -.4032 RTF .9942
SGB12589.1 R23 .0353 R13 -.9942
SG112573.8 SG2 619.2 THA 178.87

ORBIT DETERMINATION ACCURACY
ST 2724.6 SR 562.8 SS 1565.2
CRT -.3574 CRS .5804 CST -.9678
LSA 3132.3 MSA 615.2 SSA 21.4
EL1 2732.3 EL2 524.2 ALF 175.62

LAUNCH DATE NOV 8 1964 FLIGHT TIME 378.00 ARRIVAL DATE NOV 21 1965

HELIOCENTRIC CONIC DISTANCE 839.668 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.912 GAL -4.84 AZL 88.19 HCA 254.28 SMA 187.50 ECC .22527 INC 1.8128 V1 30.065
RP 209.99 LAP -1.75 LOP 299.90 VP 23.584 GAP -11.07 AZP 90.49 TAL 333.14 TAP 227.42 RCA 145.26 APO 229.73 V2 26.111
RC 309.174 GL 16.07 GP .65 ZAL 129.10 ZAP 42.38 ETS 179.99 ZAE 67.21 ETE 179.70 ZAC 84.68 ETC 258.08 CLP 42.38

PLANETOCENTRIC CONIC

C3 14.039 VHL 3.747 DLA 16.04 RAL 183.50 RAD 6567.6 VEL 11.637 PTH 2.04 VHP 4.352 DPA 9.12 RAP 164.60 ECC 1.2310

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 15 19	2656.59	-27.27	71.44	44.33	97.93	18 59 35	2056.6	-25.89	63.04
90.00	10 34 36	4253.85	1.78	174.98	39.05	61.73	11 45 30	3653.9	-2.02	168.35
100.00	19 45 35	2365.47	-28.47	49.82	44.12	99.51	20 25 1	1765.5	-26.86	41.38
100.00	11 47 0	4020.16	2.84	157.22	38.46	60.23	12 54 1	3420.2	-1.15	150.69
110.00	21 13 38	2089.97	-31.60	28.15	43.38	103.78	21 48 28	1490.0	-29.38	19.64
110.00	12 35 27	3868.43	5.55	144.02	36.78	56.22	13 39 55	3268.4	1.08	137.80

DIFFERENTIAL CORRECTIONS
TDE -.7918 TRA 5.3253 TC-12.5829 BAU 2.3632
RDE .3710 RRA .0574 RC3 .4603 FAU .22142
FDE-1.7265 FRA 6.6960 FC-13.6547 BSP 44257
BDE .8745 BRA 5.3256 BC312.5913 FSP 4535

MID-COURSE EXECUTION ACCURACY
SGT12734.6 SGR 670.2 SG3 1296.5
RRT -.3708 RRF -.4030 RTF .9940
SGB12752.3 R23 .0361 R13 -.9941
SG112737.1 SG2 622.3 THA 178.88

ORBIT DETERMINATION ACCURACY
ST 2829.8 SR 568.1 SS 1563.2
CRT -.3858 CRS .5985 CST -.9698
LSA 3225.3 MSA 609.5 SSA 21.0
EL1 2838.6 EL2 522.5 ALF 175.42

LAUNCH DATE NOV 8 1964 FLIGHT TIME 380.00 ARRIVAL DATE NOV 23 1965

HELIOCENTRIC CONIC DISTANCE 843.891 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.917 GAL -4.98 AZL 88.18 HCA 255.51 SMA 187.58 ECC .22648 INC 1.8155 V1 30.065
RP 209.77 LAP -1.76 LOP 301.13 VP 23.619 GAP -11.22 AZP 90.45 TAL 332.46 TAP 227.97 RCA 145.10 APO 230.06 V2 26.137
RC 310.132 GL 15.88 GP .64 ZAL 130.06 ZAP 41.52 ETS 179.99 ZAE 66.05 ETE 179.74 ZAC 84.74 ETC 258.03 CLP 41.51

PLANETOCENTRIC CONIC

C3 14.416 VHL 3.797 DLA 15.48 RAL 184.30 RAD 6567.6 VEL 11.653 PTH 2.05 VHP 4.433 DPA 8.96 RAP 164.93 ECC 1.2373

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 23 48	2641.98	-27.13	70.39	45.35	98.44	19 7 50	2042.0	-25.68	62.02
90.00	10 32 31	4280.14	2.62	176.45	40.11	61.79	11 43 51	3680.1	-1.17	169.82
100.00	19 53 38	2352.29	-28.32	48.87	45.13	99.99	20 32 50	1752.3	-26.65	40.46
100.00	11 45 22	4045.07	3.68	158.59	39.52	60.31	12 52 47	3445.1	-.30	152.06
110.00	21 20 46	2079.65	-31.43	27.39	44.36	104.19	21 55 25	1479.6	-29.16	18.92
110.00	12 34 43	3890.47	6.38	145.19	37.85	56.35	13 39 33	3290.5	1.92	138.95

DIFFERENTIAL CORRECTIONS
TDE -.8821 TRA 5.5418 TC-12.4369 BAU 2.3986
RDE .3794 RRA .0575 RC3 .4512 FAU .21079
FDE-1.7562 FRA 6.5539 FC-12.6587 BSP 44879
BDE .9603 BRA 5.5421 BC312.4451 FSP 4341

MID-COURSE EXECUTION ACCURACY
SGT12894.4 SGR 673.3 SG3 1236.3
RRT -.3705 RRF -.4035 RTF .9938
SGB12912.0 R23 .0370 R13 -.9939
SG112896.9 SG2 625.2 THA 178.89

ORBIT DETERMINATION ACCURACY
ST 2937.5 SR 573.2 SS 1559.8
CRT -.4125 CRS .6156 CST -.9717
LSA 3320.5 MSA 603.6 SSA 20.7
EL1 2947.4 EL2 520.5 ALF 175.25

LAUNCH DATE NOV 8 1964 FLIGHT TIME 382.00 ARRIVAL DATE NOV 25 1965

HELIOCENTRIC CONIC DISTANCE 848.113 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.922 GAL -5.13 AZL 88.18 HCA 256.75 SMA 187.67 ECC .22774 INC 1.8182 V1 30.065
RP 209.55 LAP -1.77 LOP 302.37 VP 23.653 GAP -11.36 AZP 90.42 TAL 331.76 TAP 228.51 RCA 144.93 APO 230.40 V2 26.162
RC 311.080 GL 15.68 GP .62 ZAL 131.02 ZAP 40.68 ETS 179.98 ZAE 64.92 ETE 179.77 ZAC 84.80 ETC 257.98 CLP 40.67

PLANETOCENTRIC CONIC

C3 14.818 VHL 3.849 DLA 14.91 RAL 185.11 RAD 6567.6 VEL 11.671 PTH 2.05 VHP 4.515 DPA 8.79 RAP 165.29 ECC 1.2439

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 32 14	2627.68	-26.98	69.37	46.39	98.93	19 16 2	2027.7	-25.47	61.03
90.00	10 30 28	4306.66	3.48	177.94	41.19	61.88	11 42 15	3706.7	-.31	171.30
100.00	20 1 39	2339.35	-28.16	47.94	46.16	100.46	20 40 38	1739.4	-26.43	39.56
100.00	11 43 45	4070.21	4.52	159.97	40.61	60.42	12 51 35	3470.2	.55	153.44
110.00	21 27 53	2069.51	-31.26	26.65	45.37	104.60	22 2 23	1469.5	-28.94	18.22
110.00	12 34 0	3912.82	-7.23	146.37	38.95	56.50	13 39 13	3312.8	2.77	140.11

DIFFERENTIAL CORRECTIONS
TDE -.9755 TRA 5.7642 TC-12.2771 BAU 2.4337
RDE .3880 RRA .0574 RC3 .4422 FAU .20055
FDE-1.7810 FRA 6.4113 FC-11.7169 BSP 45474
BDE 1.0499 BRA 5.7645 BC312.2851 FSP 4153

MID-COURSE EXECUTION ACCURACY
SGT13049.0 SGR 676.2 SG3 1178.1
RRT -.3708 RRF -.4045 RTF .9936
SGB13066.5 R23 .0379 R13 -.9936
SG113051.4 SG2 627.9 THA 178.90

ORBIT DETERMINATION ACCURACY
ST 3046.9 SR 578.2 SS 1554.6
CRT -.4376 CRS .6316 CST -.9733
LSA 3417.1 MSA 597.7 SSA 20.4
EL1 3057.7 EL2 518.1 ALF 175.11

LAUNCH DATE NOV 8 1964 FLIGHT TIME 384.00 ARRIVAL DATE NOV 27 1965

HELIOCENTRIC CONIC DISTANCE 852.334 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.927 GAL -5.28 AZL 88.18 HCA 257.98 SMA 187.75 ECC .22906 INC 1.8209 V1 30.065
RP 209.34 LAP -1.78 LOP 303.60 VP 23.687 GAP -11.50 AZP 90.38 TAL 331.05 TAP 229.03 RCA 144.75 APO 230.76 V2 26.186
RC 312.019 GL 15.48 GP .61 ZAL 131.99 ZAP 39.86 ETS 179.97 ZAE 63.81 ETE 179.80 ZAC 84.87 ETC 257.92 CLP 39.85

PLANETOCENTRIC CONIC

C3 15.245 VHL 3.904 DLA 14.33 RAL 185.91 RAD 6567.6 VEL 11.689 PTH 2.06 VHP 4.600 DPA 8.61 RAP 165.68 ECC 1.2509

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 40 38	2613.68	-26.83	68.38	47.44	99.41	19 24 12	2013.7	-25.26	60.06
90.00	10 28 29	4333.37	4.33	179.43	42.30	61.99	11 40 42	3733.4	.55	172.79
100.00	20 9 37	2326.69	-28.00	47.03	47.20	100.91	20 48 24	1726.7	-26.21	38.69
100.00	11 42 10	4095.59	5.38	161.38	41.73	60.55	12 50 26	3495.6	1.41	154.83
110.00	21 35 0	2059.59	-31.08	25.93	46.39	105.00	22 9 19	1459.6	-28.71	17.53
110.00	12 33 18	3935.46	8.07	147.57	40.07	56.67	13 38 53	3335.5	3.63	141.30

DIFFERENTIAL CORRECTIONS
TDE-1.0714 TRA 5.9933 TC-12.1013 BAU 2.4679
RDE .3969 RRA .0569 RC3 .4332 FAU .19053
FDE-1.8015 FRA 6.2682 FC-10.8201 BSP 46089
BDE 1.1425 BRA 5.9936 BC312.1090 FSP 3974

MID-COURSE EXECUTION ACCURACY
SGT13197.4 SGR 679.0 SG3 1121.6
RRT -.3715 RRF -.4060 RTF .9934
SGB13214.9 R23 .0389 R13 -.9934
SG113199.8 SG2 630.3 THA 178.90

ORBIT DETERMINATION ACCURACY
ST 3157.3 SR 583.1 SS 1547.6
CRT -.4607 CRS .6468 CST -.9747
LSA 3514.6 MSA 592.0 SSA 20.0
EL1 3169.0 EL2 515.6 ALF 175.00

LAUNCH DATE NOV 8 1964 FLIGHT TIME 386.00 ARRIVAL DATE NOV 29 1965

HELIOCENTRIC CONIC DISTANCE 856.554 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.932 GAL -5.43 AZL 88.18 HCA 259.22 SMA 187.84 ECC .23043 INC 1.8236 V1 30.065
RP 209.14 LAP -1.79 LOP 304.84 VP 23.720 GAP -11.65 AZP 90.34 TAL 330.32 TAP 229.54 RCA 144.56 APO 231.13 V2 26.209
RC 312.950 GL 15.27 GP .60 ZAL 132.96 ZAP 39.07 ETS 179.97 ZAE 62.72 ETE 179.83 ZAC 84.94 ETC 257.87 CLP 39.06

PLANETOCENTRIC CONIC

C3 15.698 VHL 3.962 DLA 13.75 RAL 186.71 RAD 6567.6 VEL 11.708 PTH 2.06 VHP 4.686 DPA 8.43 RAP 166.08 ECC 1.2584

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 49 0	2600.01	-26.67	67.40	48.50	99.87	19 32 20	2000.0	-25.04	59.12
90.00	10 26 32	4360.26	5.19	180.94	43.44	62.12	11 39 12	3760.3	1.42	174.29
100.00	20 17 35	2314.31	-27.84	46.14	48.26	101.35	20 56 9	1714.3	-25.99	37.83
100.00	11 40 37	4121.19	6.23	162.80	42.86	60.71	12 49 19	3521.2	2.28	156.24
110.00	21 42 6	2049.88	-30.91	25.23	47.42	105.38	22 16 15	1449.9	-28.49	16.86
110.00	12 32 36	3958.38	8.93	148.80	41.22	56.87	13 38 35	3358.4	4.51	142.50

DIFFERENTIAL CORRECTIONS
TDE-1.1714 TRA 6.2288 TC-11.9161 BAU 2.5025
RDE .4060 RRA .0562 RC3 .4242 FAU .18091
FDE-1.8178 FRA 6.1251 FC3-9.9766 BSP 46658
BDE 1.2398 BRA 6.2291 BC311.9237 FSP 3798

MID-COURSE EXECUTION ACCURACY
SGT13342.7 SGR 681.7 SG3 1067.2
RRT -.3729 RRF -.4082 RTF .9931
SGB13360.1 R23 .0399 R13 -.9931
SG113345.1 SG2 632.4 THA 178.91

ORBIT DETERMINATION ACCURACY
ST 3269.5 SR 587.8 SS 1539.0
CRT -.4827 CRS .6611 CST -.9761
LSA 3613.8 MSA 586.1 SSA 19.7
EL1 3282.1 EL2 512.8 ALF 174.92

LAUNCH DATE NOV 8 1964 FLIGHT TIME 388.00 ARRIVAL DATE DEC 1 1965

HELIOCENTRIC CONIC DISTANCE 860.772 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.937 GAL -5.59 AZL 88.17 HCA 260.46 SMA 187.93 ECC .23186 INC 1.8262 V1 30.065
RP 208.94 LAP -1.80 LOP 306.08 VP 23.752 GAP -11.80 AZP 90.30 TAL 329.58 TAP 230.04 RCA 144.36 APO 231.51 V2 26.232
RC 313.871 GL 15.05 GP .58 ZAL 133.93 ZAP 38.30 ETS 179.96 ZAE 61.65 ETE 179.86 ZAC 85.02 ETC 257.81 CLP 38.29

PLANETOCENTRIC CONIC

C3 16.181 VHL 4.023 DLA 13.17 RAL 187.52 RAD 6567.6 VEL 11.729 PTH 2.07 VHP 4.774 DPA 8.23 RAP 166.51 ECC 1.2663

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	18 57 18	2586.68	-26.52	66.46	49.59	100.32	19 40 25	1986.7	-24.82	58.20
90.00	10 24 37	4387.33	6.05	182.47	44.60	62.28	11 37 45	3787.3	2.29	175.80
100.00	20 25 30	2302.23	-27.68	45.28	49.33	101.77	21 3 52	1702.2	-25.77	37.00
100.00	11 39 7	4147.01	7.09	164.23	44.03	60.88	12 48 14	3547.0	3.15	157.66
110.00	21 49 10	2040.42	-30.74	24.55	48.47	105.75	22 23 11	1440.4	-28.27	16.21
110.00	12 31 56	3981.58	9.79	150.04	42.39	57.08	13 38 17	3381.6	5.39	143.72

DIFFERENTIAL CORRECTIONS
TDE-1.2741 TRA 6.4716 TC-11.7189 BAU 2.5366
RDE .4154 RRA .0553 RC3 .4152 FAU .17158
FDE-1.8307 FRA 5.9818 FC3-9.1803 BSP 47232
BDE 1.3401 BRA 6.4718 BC311.7262 FSP 3627

MID-COURSE EXECUTION ACCURACY
SGT13483.4 SGR 684.3 SG3 1014.7
RRT -.3748 RRF -.4110 RTF .9928
SGB13500.7 R23 .0411 R13 -.9928
SG113485.8 SG2 634.3 THA 178.91

ORBIT DETERMINATION ACCURACY
ST 3382.2 SR 592.3 SS 1528.8
CRT -.5031 CRS .6748 CST -.9771
LSA 3713.5 MSA 580.5 SSA 19.4
EL1 3395.6 EL2 509.9 ALF 174.85

LAUNCH DATE NOV 8 1964 FLIGHT TIME 390.00 ARRIVAL DATE DEC 3 1965

HELIOCENTRIC CONIC DISTANCE 864.987 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.943 GAL -5.75 AZL 88.17 HCA 261.70 SMA 188.03 ECC .23336 INC 1.8288 V1 30.065
RP 208.76 LAP -1.81 LOP 307.33 VP 23.783 GAP -11.94 AZP 90.26 TAL 328.82 TAP 230.53 RCA 144.15 APO 231.90 V2 26.254
RC 314.784 GL 14.83 GP .57 ZAL 134.91 ZAP 37.55 ETS 179.95 ZAE 60.61 ETE 179.88 ZAC 85.11 ETC 257.74 CLP 37.54

PLANETOCENTRIC CONIC

C3 16.693 VHL 4.086 DLA 12.58 RAL 188.32 RAD 6567.7 VEL 11.751 PTH 2.07 VHP 4.863 DPA 8.02 RAP 166.97 ECC 1.2747

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 5 34	2573.69	-26.35	65.55	50.69	100.75	19 48 27	1973.7	-24.60	57.31
90.00	10 22 46	4414.57	6.91	184.01	45.78	62.47	11 36 20	3814.6	3.17	177.32
100.00	20 33 23	2290.47	-27.51	44.45	50.42	102.18	21 11 33	1690.5	-25.55	36.20
100.00	11 37 38	4173.03	7.95	165.69	45.22	61.09	12 47 11	3573.0	4.03	159.09
110.00	21 56 14	2031.22	-30.57	23.88	49.54	106.11	22 30 5	1431.2	-28.06	15.59
110.00	12 31 16	4005.04	10.66	151.31	43.59	57.33	13 38 1	3405.0	6.27	144.96

DIFFERENTIAL CORRECTIONS
TDE-1.3809 TRA 6.7201 TC-11.5123 BAU 2.5708
RDE .4252 RRA .0540 RC3 .4062 FAU .16257
FDE-1.8403 FRA 5.8366 FC3-8.4312 BSP 47777
BDE 1.4449 BRA 6.7204 BC311.5195 FSP 3462

MID-COURSE EXECUTION ACCURACY
SGT13619.1 SGR 686.8 SG3 963.9
RRT -.3772 RRF -.4144 RTF .9924
SGB13636.4 R23 .0424 R13 -.9925
SG113621.6 SG2 635.9 THA 178.91

ORBIT DETERMINATION ACCURACY
ST 3495.8 SR 596.8 SS 1516.9
CRT -.5225 CRS .6880 CST -.9781
LSA 3814.1 MSA 574.9 SSA 19.2
EL1 3510.0 EL2 506.8 ALF 174.79

LAUNCH DATE NOV 8 1964 FLIGHT TIME 392.00 ARRIVAL DATE DEC 5 1965

HELIOCENTRIC CONIC DISTANCE 869.198 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.948 GAL -5.92 AZL 88.17 HCA 262.95 SMA 188.12 ECC .23492 INC 1.8315 V1 30.065
RP 208.58 LAP -1.82 LOP 308.57 VP 23.814 GAP -12.09 AZP 90.22 TAL 328.05 TAP 231.00 RCA 143.93 APO 232.31 V2 26.274
RC 315.690 GL 14.61 GP .56 ZAL 135.89 ZAP 36.82 ETS 179.93 ZAE 59.58 ETE 179.91 ZAC 85.20 ETC 257.68 CLP 36.82

PLANETOCENTRIC CONIC

C3 17.237 VHL 4.152 DLA 11.99 RAL 189.12 RAD 6567.7 VEL 11.774 PTH 2.08 VHP 4.955 DPA 7.80 RAP 167.44 ECC 1.2837

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 13 46	2561.07	-26.19	64.66	51.80	101.17	19 56 27	1961.1	-24.39	56.45
90.00	10 20 57	4441.97	7.77	185.56	47.00	62.68	11 34 59	3842.0	4.05	178.86
100.00	20 41 13	2279.03	-27.34	43.64	51.53	102.57	21 19 12	1679.0	-25.34	35.42
100.00	11 36 11	4199.25	8.81	167.16	46.44	61.32	12 46 10	3599.2	4.91	160.54
110.80	22 3 16	2022.30	-30.40	23.24	50.63	106.45	22 36 58	1422.3	-27.84	14.98
110.00	12 30 37	4028.74	11.52	152.59	44.81	57.59	13 37 46	3428.7	7.17	146.21

DIFFERENTIAL CORRECTIONS
TDE-1.4902 TRA 6.9772 TC-11.2962 BAU 2.6048
RDE .4352 RRA .0524 RC3 .3973 FAU .15386
FDE-1.8455 FRA 5.6921 FC3-7.7275 BSP 48327
BDE 1.5525 BRA 6.9774 BC311.3032 FSP 3302

MID-COURSE EXECUTION ACCURACY
SGT13751.6 SGR 689.1 SG3 915.0
RRT -.3801 RRF -.4183 RTF .9921
SGB13768.8 R23 .0437 R13 -.9921
SG113754.1 SG2 637.3 THA 178.91

ORBIT DETERMINATION ACCURACY
ST 3609.6 SR 601.0 SS 1503.1
CRT -.5404 CRS .7004 CST -.9789
LSA 3914.7 MSA 569.5 SSA 18.9
EL1 3624.4 EL2 503.6 ALF 174.76

LAUNCH DATE NOV 8 1964 FLIGHT TIME 394.00 ARRIVAL DATE DEC 7 1965

HELIOCENTRIC CONIC DISTANCE 873.406 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.953 GAL -6.09 AZL 88.17 HCA 264.20 SMA 188.22 ECC .23655 INC 1.8340 V1 30.065
RP 208.40 LAP -1.82 LOP 309.82 VP 23.843 GAP -12.24 AZP 90.19 TAL 327.26 TAP 231.45 RCA 143.69 APO 232.74 V2 26.294
RC 316.588 GL 14.39 GP .55 ZAL 136.87 ZAP 36.11 ETS 179.92 ZAE 58.58 ETE 179.94 ZAC 85.30 ETC 257.62 CLP 36.11

PLANETOCENTRIC CONIC

C3 17.816 VHL 4.221 DLA 11.40 RAL 189.92 RAD 6567.7 VEL 11.798 PTH 2.09 VHP 5.048 DPA 7.57 RAP 167.94 ECC 1.2932

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 21 55	2548.82	-26.03	63.80	52.93	101.57	20 4 24	1948.8	-24.17	55.62
90.00	10 19 10	4469.53	8.63	187.13	48.24	62.92	11 33 39	3869.5	4.93	180.41
100.00	20 49 0	2267.93	-27.18	42.86	52.65	102.95	21 26 48	1667.9	-25.12	34.66
100.00	11 34 45	4225.65	9.67	168.65	47.68	61.58	12 45 11	3625.7	5.80	162.00
110.00	22 10 16	2013.66	-30.23	22.63	51.73	106.78	22 43 49	1413.7	-27.63	14.39
110.00	12 29 59	4052.69	12.39	153.90	46.06	57.89	13 37 32	3452.7	8.06	147.48

DIFFERENTIAL CORRECTIONS
TDE-1.6034 TRA 7.2401 TC-11.0747 BAU 2.6394
RDE .4455 RRA .0505 RC3 .3884 FAU .14547
FDE-1.8469 FRA 5.5460 FC3-7.0690 BSP 48838
BDE 1.6641 BRA 7.2403 BC311.0815 FSP 3145

MID-COURSE EXECUTION ACCURACY
SGT13880.1 SGR 691.4 SG3 867.8
RRT -.3835 RRF -.4228 RTF .9916
SGB13897.3 R23 .0451 R13 -.9917
SG113882.6 SG2 638.4 THA 178.90

ORBIT DETERMINATION ACCURACY
ST 3723.2 SR 605.1 SS 1487.2
CRT -.5574 CRS .7122 CST -.9797
LSA 4015.2 MSA 564.0 SSA 18.6
EL1 3738.7 EL2 500.3 ALF 174.73

LAUNCH DATE NOV 8 1964 FLIGHT TIME 396.00 ARRIVAL DATE DEC 9 1965

HELIOCENTRIC CONIC DISTANCE 877.609 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.959 GAL -6.27 AZL 88.16 HCA 265.45 SMA 188.31 ECC .23825 INC 1.8366 V1 30.065
RP 208.24 LAP -1.83 LOP 311.07 VP 23.872 GAP -12.40 AZP 90.15 TAL 326.45 TAP 231.90 RCA 143.45 APO 233.18 V2 26.314
RC 317.480 GL 14.16 GP .54 ZAL 137.85 ZAP 35.43 ETS 179.91 ZAE 57.60 ETE 179.96 ZAC 85.40 ETC 257.55 CLP 35.42

PLANETOCENTRIC CONIC

C3 18.431 VHL 4.293 DLA 10.80 RAL 190.71 RAD 6567.7 VEL 11.824 PTH 2.09 VHP 5.144 DPA 7.33 RAP 168.45 ECC 1.3033

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 30 0	2536.95	-25.86	62.97	54.08	101.95	20 12 17	1936.9	-23.95	54.82
90.00	10 17 26	4497.25	9.48	188.72	49.50	63.19	11 32 23	3897.2	5.81	181.97
100.00	20 56 45	2257.19	-27.01	42.10	53.79	103.32	21 34 22	1657.2	-24.91	33.93
100.00	11 33 22	4252.19	10.52	170.16	48.95	61.86	12 44 14	3652.2	6.68	163.48
110.00	22 17 14	2005.33	-30.06	22.03	52.85	107.09	22 50 39	1405.3	-27.43	13.83
110.00	12 29 22	4076.86	13.26	155.23	47.34	58.20	13 37 19	3476.9	8.97	148.77

DIFFERENTIAL CORRECTIONS
TDE-1.7207 TRA 7.5107 TC-10.8470 BAU 2.6743
RDE .4561 RRA .0482 RC3 .3795 FAU .13739
FDE-1.8463 FRA 5.3991 FC3-6.4535 BSP 49314
BDE 1.7801 BRA 7.5108 BC310.8537 FSP 2992

MID-COURSE EXECUTION ACCURACY
SGT14005.3 SGR 693.6 SG3 822.3
RRT -.3875 RRF -.4279 RTF .9912
SGB14022.5 R23 .0467 R13 -.9912
SG114007.9 SG2 639.3 THA 178.90

ORBIT DETERMINATION ACCURACY
ST 3837.2 SR 609.1 SS 1470.1
CRT -.5735 CRS .7238 CST -.9802
LSA 4116.3 MSA 558.6 SSA 18.4
EL1 3853.3 EL2 496.9 ALF 174.71

LAUNCH DATE NOV 8 1964 FLIGHT TIME 398.00 ARRIVAL DATE DEC 11 1965

HELIOCENTRIC CONIC DISTANCE 881.806 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.965 GAL -6.45 AZL 88.16 HCA 266.70 SMA 188.41 ECC .24002 INC 1.8392 V1 30.065
RP 208.08 LAP -1.84 LOP 312.32 VP 23.900 GAP -12.55 AZP 90.11 TAL 325.63 TAP 232.32 RCA 143.19 APO 233.64 V2 26.332
RC 318.367 GL 13.93 GP .53 ZAL 138.83 ZAP 34.76 ETS 179.90 ZAE 56.63 ETE 179.99 ZAC 85.51 ETC 257.48 CLP 34.76

PLANETOCENTRIC CONIC

C3 19.084 VHL 4.368 DLA 10.21 RAL 191.51 RAD 6567.8 VEL 11.852 PTH 2.10 VHP 5.241 DPA 7.09 RAP 168.99 ECC 1.3141

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 38 2	2525.47	-25.70	62.17	55.25	102.32	20 20 7	1925.5	-23.74	54.04
90.00	10 15 44	4525.10	10.33	190.32	50.80	63.49	11 31 9	3925.1	6.69	183.54
100.00	21 4 26	2246.81	-26.85	41.38	54.95	103.67	21 41 53	1646.8	-24.70	33.23
100.00	11 32 1	4278.99	11.38	171.68	50.25	62.17	12 43 20	3679.0	7.57	164.97
110.00	22 24 10	1997.31	-29.90	21.47	53.99	107.39	22 57 27	1397.3	-27.23	13.29
110.00	12 28 46	4101.26	14.14	156.59	48.64	58.55	13 37 7	3501.3	9.87	150.08

DIFFERENTIAL CORRECTIONS
TDE-1.8404 TRA 7.7889 TC-10.6119 BAU 2.7091
RDE .4671 RRA .0456 RC3 .3706 FAU .12955
FDE-1.8413 FRA 5.2510 FC3-5.8771 BSP 49794
BDE 1.8988 BRA 7.7890 BC310.6184 FSP 2844

MID-COURSE EXECUTION ACCURACY
SGT14125.6 SGR 695.6 SG3 778.4
RRT -.3918 RRF -.4335 RTF .9907
SGB14142.7 R23 .0484 R13 -.9907
SG114128.2 SG2 639.8 THA 178.89

ORBIT DETERMINATION ACCURACY
ST 3949.8 SR 612.9 SS 1450.7
CRT -.5884 CRS .7347 CST -.9807
LSA 4216.0 MSA 553.4 SSA 18.1
EL1 3966.5 EL2 493.5 ALF 174.70

LAUNCH DATE NOV 8 1964 FLIGHT TIME 400.00 ARRIVAL DATE DEC 13 1965

HELIOCENTRIC CONIC DISTANCE 885.997 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.970 GAL -6.64 AZL 88.16 HCA 267.95 SMA 188.51 ECC .24187 INC 1.8418 V1 30.065
RP 207.93 LAP -1.84 LOP 313.58 VP 23.927 GAP -12.71 AZP 90.07 TAL 324.79 TAP 232.74 RCA 142.92 APO 234.11 V2 26.349
RC 319.247 GL 13.69 GP .52 ZAL 139.81 ZAP 34.11 ETS 179.88 ZAE 55.68 ETE 180.01 ZAC 85.62 ETC 257.41 CLP 34.11

PLANETOCENTRIC CONIC

C3 19.777 VHL 4.447 DLA 9.61 RAL 192.30 RAD 6567.8 VEL 11.881 PTH 2.11 VHP 5.341 DPA 6.83 RAP 169.54 ECC 1.3255

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 46 0	2514.38	-25.53	61.40	56.43	102.68	20 27 54	1914.4	-23.53	53.30
90.00	10 14 4	4553.10	11.18	191.95	52.12	63.81	11 29 57	3953.1	7.57	185.13
100.00	21 12 4	2236.80	-26.68	40.68	56.12	104.00	21 49 21	1636.8	-24.49	32.56
100.00	11 30 41	4305.91	12.23	173.23	51.58	62.51	12 42 27	3705.9	8.45	166.48
110.00	22 31 3	1989.61	-29.74	20.92	55.14	107.68	23 4 13	1389.6	-27.04	12.78
110.00	12 28 11	4125.86	15.00	157.96	49.98	58.92	13 36 57	3525.9	10.78	151.41

DIFFERENTIAL CORRECTIONS
TDE-1.9640 TRA 8.0759 TC-10.3726 BAU 2.7443
RDE .4784 RRA .0426 RC3 .3618 FAU .12197
FDE-1.8330 FRA 5.1021 FC3-5.3391 BSP 50259
BDE 2.0214 BRA 8.0760 BC310.3789 FSP 2702

MID-COURSE EXECUTION ACCURACY
SGT14243.5 SGR 697.5 SG3 736.0
RRT -.3966 RRF -.4396 RTF .9901
SGB14260.6 R23 .0502 R13 -.9901
SG114246.2 SG2 640.1 THA 178.89

ORBIT DETERMINATION ACCURACY
ST 4062.2 SR 616.6 SS 1429.5
CRT -.6025 CRS .7451 CST -.9811
LSA 4315.6 MSA 548.3 SSA 17.8
EL1 4079.4 EL2 490.0 ALF 174.70

LAUNCH DATE NOV 8 1964 FLIGHT TIME 402.00 ARRIVAL DATE DEC 15 1965

HELIOCENTRIC CONIC DISTANCE 890.181 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.976 GAL -6.84 AZL 88.16 HCA 269.21 SMA 188.61 ECC .24380 INC 1.8444 V1 30.065
RP 207.79 LAP -1.84 LOP 314.83 VP 23.953 GAP -12.87 AZP 90.03 TAL 323.93 TAP 233.14 RCA 142.63 APO 234.60 V2 26.366
RC 320.122 GL 13.45 GP .51 ZAL 140.79 ZAP 33.49 ETS 179.87 ZAE 54.75 ETE 180.04 ZAC 85.74 ETC 257.34 CLP 33.48

PLANETOCENTRIC CONIC

C3 20.515 VHL 4.529 DLA 9.01 RAL 193.08 RAD 6567.8 VEL 11.912 PTH 2.12 VHP 5.442 DPA 6.57 RAP 170.11 ECC 1.3376

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	19 53 54	2503.71	-25.37	60.66	57.62	103.01	20 35 38	1903.7	-23.33	52.58
90.00	10 12 27	4581.22	12.02	193.58	53.47	64.17	11 28 48	3981.2	8.44	186.73
100.00	21 19 39	2227.17	-26.52	40.01	57.31	104.32	21 56 46	1627.2	-24.29	31.92
100.00	11 29 23	4332.99	13.08	174.79	52.93	62.88	12 41 36	3733.0	9.34	168.00
110.00	22 37 54	1982.26	-29.59	20.40	56.31	107.95	23 10 57	1382.3	-26.85	12.29
110.00	12 27 37	4150.66	15.87	159.36	51.34	59.32	13 36 48	3550.7	11.68	152.76

DIFFERENTIAL CORRECTIONS
TDE-2.0921 TRA 8.3689 TC-10.1322 BAU 2.7806
RDE .4900 RRA .0393 RC3 .3531 FAU .11469
FDE-1.8221 FRA 4.9513 FC3-4.8401 BSP 50675
BDE 2.1487 BRA 8.3690 BC310.1384 FSP 2561

MID-COURSE EXECUTION ACCURACY
SGT14357.8 SGR 699.3 SG3 695.3
RRT -.4020 RRF -.4464 RTF .9895
SGB14374.8 R23 .0522 R13 -.9895
SG114360.5 SG2 640.2 THA 178.88

ORBIT DETERMINATION ACCURACY
ST 4173.8 SR 620.1 SS 1406.7
CRT -.6161 CRS .7554 CST -.9814
LSA 4414.6 MSA 543.0 SSA 17.6
EL1 4191.5 EL2 486.4 ALF 174.70

LAUNCH DATE NOV 8 1964 FLIGHT TIME 404.00 ARRIVAL DATE DEC 17 1965

HELIOCENTRIC CONIC DISTANCE 894.356 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.982 GAL -7.04 AZL 88.15 HCA 270.46 SMA 188.72 ECC .24581 INC 1.8470 V1 30.065
RP 207.66 LAP -1.85 LOP 316.09 VP 23.978 GAP -13.03 AZP 89.99 TAL 323.06 TAP 233.52 RCA 142.33 APO 235.11 V2 26.381
RC 320.992 GL 13.22 GP .50 ZAL 141.77 ZAP 32.87 ETS 179.86 ZAE 53.84 ETE 180.06 ZAC 85.86 ETC 257.27 CLP 32.87

PLANETOCENTRIC CONIC

C3 21.298 VHL 4.615 DLA 8.42 RAL 193.87 RAD 6567.9 VEL 11.945 PTH 2.13 VHP 5.546 DPA 6.30 RAP 170.70 ECC 1.3505

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 1 45	2493.44	-25.21	59.95	58.84	103.34	20 43 18	1893.4	-23.13	51.90
90.00	10 10 52	4609.47	12.85	195.24	54.85	64.55	11 27 41	4009.5	9.32	188.34
100.00	21 27 10	2217.93	-26.36	39.36	58.52	104.62	22 4 8	1617.9	-24.10	31.30
100.00	11 28 7	4360.21	13.91	176.38	54.31	63.27	12 40 48	3760.2	10.22	169.54
110.00	22 44 43	1975.25	-29.44	19.91	57.49	108.21	23 17 38	1375.2	-26.67	11.82
110.00	12 27 4	4175.65	16.73	160.79	52.73	59.75	13 36 40	3575.7	12.59	154.13

DIFFERENTIAL CORRECTIONS
TDE-2.2230 TRA 8.6709 TC3-9.8877 BAU 2.8171
RDE .5020 RRA .0355 RC3 .3444 FAU .10765
FDE-1.8077 FRA 4.7993 FC3-4.3757 BSP 51079
BDE 2.2790 BRA 8.6710 BC3 9.8937 FSP 2425

MID-COURSE EXECUTION ACCURACY
SGT14468.3 SGR 701.0 SG3 655.9
RRT -.4077 RRF -.4536 RTF .9888
SGB14485.2 R23 .0544 R13 -.9888
SG114471.1 SG2 640.0 THA 178.87

ORBIT DETERMINATION ACCURACY
ST 4283.7 SR 623.5 SS 1381.9
CRT -.6287 CRS .7651 CST -.9816
LSA 4512.1 MSA 538.0 SSA 17.4
EL1 4301.8 EL2 482.8 ALF 174.71

LAUNCH DATE NOV 8 1964 FLIGHT TIME 406.00 ARRIVAL DATE DEC 19 1965

HELIOCENTRIC CONIC DISTANCE 898.523 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.988 GAL -7.25 AZL 88.15 HCA 271.72 SMA 188.82 ECC .24790 INC 1.8496 V1 30.065
RP 207.54 LAP -1.85 LOP 317.35 VP 24.002 GAP -13.20 AZP 89.94 TAL 322.17 TAP 233.89 RCA 142.01 APO 235.63 V2 26.396
RC 321.856 GL 12.97 GP .49 ZAL 142.74 ZAP 32.28 ETS 179.84 ZAE 52.95 ETE 180.08 ZAC 85.99 ETC 257.20 CLP 32.28

PLANETOCENTRIC CONIC

C3 22.131 VHL 4.704 DLA 7.82 RAL 194.65 RAD 6567.9 VEL 11.980 PTH 2.14 VHP 5.652 DPA 6.02 RAP 171.31 ECC 1.3642

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 9 31	2483.59	-25.06	59.27	60.07	103.64	20 50 54	1883.6	-22.93	51.24
90.00	10 9 19	4637.83	13.67	196.92	56.26	64.96	11 26 37	4037.8	10.19	189.98
100.00	21 34 38	2209.08	-26.21	38.75	59.74	104.91	22 11 27	1609.1	-23.91	30.71
100.00	11 26 53	4387.57	14.75	177.98	55.72	63.70	12 40 1	3787.6	11.09	171.10
110.00	22 51 28	1968.59	-29.30	19.45	58.69	108.45	23 24 17	1368.6	-26.50	11.38
110.00	12 26 32	4200.82	17.59	162.24	54.15	60.21	13 36 33	3600.8	13.50	155.52

DIFFERENTIAL CORRECTIONS
TDE-2.3590 TRA 8.9813 TC3-9.6432 BAU 2.8548
RDE .5144 RRA .0314 RC3 .3357 FAU .10087
FDE-1.7915 FRA 4.6456 FC3-3.9461 BSP 51449
BDE 2.4145 BRA 8.9813 BC3 9.6490 FSP 2291

MID-COURSE EXECUTION ACCURACY
SGT14576.9 SGR 702.7 SG3 618.0
RRT -.4140 RRF -.4615 RTF .9880
SGB14593.8 R23 .0568 R13 -.9880
SG114579.8 SG2 639.5 THA 178.85

ORBIT DETERMINATION ACCURACY
ST 4393.3 SR 626.7 SS 1355.9
CRT -.6408 CRS .7749 CST -.9817
LSA 4609.6 MSA 533.0 SSA 17.1
EL1 4411.8 EL2 479.1 ALF 174.71

LAUNCH DATE NOV 8 1964 FLIGHT TIME 408.00 ARRIVAL DATE DEC 21 1965

HELIOCENTRIC CONIC DISTANCE 902.679 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 32.994 GAL -7.46 AZL 88.15 HCA 272.98 SMA 188.93 ECC .25009 INC 1.8522 V1 30.065
RP 207.42 LAP -1.85 LOP 318.61 VP 24.025 GAP -13.37 AZP 89.90 TAL 321.27 TAP 234.25 RCA 141.68 APO 236.18 V2 26.409
RC 322.714 GL 12.73 GP .48 ZAL 143.71 ZAP 31.70 ETS 179.83 ZAE 52.07 ETE 180.10 ZAC 86.12 ETC 257.13 CLP 31.70

PLANETOCENTRIC CONIC

C3 23.015 VHL 4.797 DLA 7.23 RAL 195.43 RAD 6567.9 VEL 12.016 PTH 2.14 VHP 5.761 DPA 5.73 RAP 171.93 ECC 1.3788

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 17 14	2474.15	-24.90	58.62	61.31	103.93	20 58 28	1874.2	-22.74	50.61
90.00	10 7 48	4666.31	14.49	198.61	57.69	65.40	11 25 35	4066.3	11.05	191.62
100.00	21 42 2	2200.63	-26.06	38.17	60.98	105.18	22 18 43	1600.6	-23.72	30.15
100.00	11 25 41	4415.06	15.57	179.61	57.16	64.16	12 39 16	3815.1	11.97	172.67
110.00	22 58 11	1962.30	-29.16	19.01	59.91	108.68	23 30 54	1362.3	-26.34	10.97
110.00	12 26 1	4226.16	18.44	163.71	55.59	60.70	13 36 27	3626.2	14.40	156.93

DIFFERENTIAL CORRECTIONS
TDE-2.4987 TRA 9.2995 TC3-9.3974 BAU 2.8933
RDE .5272 RRA .0268 RC3 .3272 FAU .09431
FDE-1.7715 FRA 4.4903 FC3-3.5476 BSP 51788
BDE 2.5537 BRA 9.2996 BC3 9.4031 FSP 2162

MID-COURSE EXECUTION ACCURACY
SGT14681.4 SGR 704.2 SG3 581.4
RRT -.4206 RRF -.4698 RTF .9871
SGB14698.3 R23 .0593 R13 -.9872
SG114684.4 SG2 638.8 THA 178.84

ORBIT DETERMINATION ACCURACY
ST 4501.0 SR 629.7 SS 1327.8
CRT -.6523 CRS .7842 CST -.9817
LSA 4705.3 MSA 527.9 SSA 16.9
EL1 4519.9 EL2 475.3 ALF 174.73

LAUNCH DATE NOV 8 1964 FLIGHT TIME 410.00 ARRIVAL DATE DEC 23 1965

HELIOCENTRIC CONIC DISTANCE 906.825 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 33.000 GAL -7.68 AZL 88.15 HCA 274.24 SMA 189.04 ECC .25237 INC 1.8548 V1 30.065
RP 207.31 LAP -1.85 LOP 319.87 VP 24.048 GAP -13.55 AZP 89.86 TAL 320.35 TAP 234.59 RCA 141.33 APO 236.74 V2 26.422
RC 323.566 GL 12.49 GP .47 ZAL 144.68 ZAP 31.14 ETS 179.81 ZAE 51.20 ETE 180.12 ZAC 86.26 ETC 257.06 CLP 31.14

PLANETOCENTRIC CONIC

C3 23.956 VHL 4.894 DLA 6.64 RAL 196.20 RAD 6568.0 VEL 12.055 PTH 2.15 VHP 5.871 DPA 5.44 RAP 172.57 ECC 1.3943

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 24 52	2465.14	-24 75	58.00	62.57	104.21	21 5 57	1865.1	-22.56	50.02
90.00	10 6 20	4694.88	15.29	200.33	59.15	65.87	11 24 35	4094.9	11.90	193.29
100.00	21 49 23	2192.58	-25.92	37.61	62.23	105.44	22 25 55	1592.6	-23.55	29.62
100.00	11 24 30	4442.68	16.38	181.26	58.63	64.64	12 38 33	3842.7	12.83	174.27
110.00	23 4 51	1956.37	-29.03	18.60	61.15	108.89	23 37 28	1356.4	-26.18	10.58
110.00	12 25 31	4251.64	19.28	165.20	57.07	61.21	13 36 23	3651.6	15.30	158.36

DIFFERENTIAL CORRECTIONS
TDE-2.6419 TRA 9.6271 TC3-9.1512 BAU 2.9326
RDE .5403 RRA .0217 RC3 .3187 FAU .08797
FDE-1.7489 FRA 4.3335 FC3-3.1792 BSP 52105
BDE 2.6966 BRA 9.6271 BC3 9.1567 FSP 2036

MID-COURSE EXECUTION ACCURACY
SGT14783.0 SGR 705.7 SG3 546.2
RRT -.4276 RRF -.4787 RTF .9861
SGB14799.8 R23 .0622 R13 -.9862
SG114786.1 SG2 637.8 THA 178.83

ORBIT DETERMINATION ACCURACY
ST 4606.8 SR 632.6 SS 1298.1
CRT -.6631 CRS .7932 CST -.9817
LSA 4799.3 MSA 523.0 SSA 16.6
EL1 4626.0 EL2 471.5 ALF 174.74

LAUNCH DATE NOV 8 1964 FLIGHT TIME 412.00 ARRIVAL DATE DEC 25 1965

HELIOCENTRIC CONIC DISTANCE 910.958 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 33.006 GAL -7.91 AZL 88.14 HCA 275.50 SMA 189.14 ECC .25475 INC 1.8574 V1 30.065
RP 207.21 LAP -1.85 LOP 321.13 VP 24.069 GAP -13.72 AZP 89.82 TAL 319.41 TAP 234.91 RCA 140.96 APO 237.33 V2 26.434
RC 324.413 GL 12.25 GP .46 ZAL 145.64 ZAP 30.60 ETS 179.79 ZAE 50.35 ETE 180.14 ZAC 86.40 ETC 256.99 CLP 30.60

PLANETOCENTRIC CONIC

C3 24.955 VHL 4.996 DLA 6.05 RAL 196.97 RAD 6568.0 VEL 12.097 PTH 2.17 VHP 5.985 DPA 5.13 RAP 173.23 ECC 1.4107

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 32 27	2456.55	-24.61	57.41	63.85	104.47	21 13 24	1856.5	-22.38	49.45
90.00	10 4 53	4723.55	16.08	202.06	60.65	66.37	11 23 37	4123.6	12.75	194.97
100.00	21 56 40	2184.93	-25.78	37.09	63.50	105.68	22 33 5	1584.9	-23.38	29.11
100.00	11 23 22	4470.40	17.18	182.93	60.13	65.16	12 37 52	3870.4	13.69	175.88
110.00	23 11 28	1950.81	-28.91	18.21	62.39	109.09	23 43 59	1350.8	-26.03	10.21
110.00	12 25 2	4277.30	20.12	166.73	58.58	61.76	13 36 20	3677.3	16.19	159.81

DIFFERENTIAL CORRECTIONS
TDE-2.7891 TRA 9.9635 TC3-8.9054 BAU 2.9729
RDE .5538 RRA .0162 RC3 .3103 FAU .08184
FDE-1.7236 FRA 4.1749 FC3-2.8392 BSP 52371
BDE 2.8436 BRA 9.9635 BC3 8.9108 FSP 1912

MID-COURSE EXECUTION ACCURACY
SGT14881.3 SGR 707.0 SG3 512.2
RRT -.4349 RRF -.4880 RTF .9851
SGB14898.1 R23 .0653 R13 -.9851
SG114884.5 SG2 636.5 THA 178.81

ORBIT DETERMINATION ACCURACY
ST 4710.6 SR 635.3 SS 1266.8
CRT -.6734 CRS .8021 CST -.9815
LSA 4891.7 MSA 518.2 SSA 16.4
EL1 4730.2 EL2 467.7 ALF 174.76

LAUNCH DATE NOV 8 1964 FLIGHT TIME 414.00 ARRIVAL DATE DEC 27 1965

HELIOCENTRIC CONIC DISTANCE 915.077 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 33.012 GAL -8.14 AZL 88.14 HCA 276.77 SMA 189.25 ECC .25723 INC 1.8601 V1 30.065
RP 207.12 LAP -1.85 LOP 322.40 VP 24.089 GAP -13.91 AZP 89.78 TAL 318.46 TAP 235.22 RCA 140.57 APO 237.94 V2 26.444
RC 325.253 GL 12.00 GP .46 ZAL 146.60 ZAP 30.07 ETS 179.78 ZAE 49.52 ETE 180.16 ZAC 86.54 ETC 256.92 CLP 30.07

PLANETOCENTRIC CONIC

C3 26.018 VHL 5.101 DLA 5.46 RAL 197.73 RAD 6568.1 VEL 12.141 PTH 2.18 VHP 6.101 DPA 4.82 RAP 173.89 ECC 1.4282

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 39 58	2448.38	-24.47	56.85	65.14	104.71	21 20 46	1848.4	-22.21	48.91
90.00	10 3 29	4752.31	16.86	203.82	62.17	66.90	11 22 41	4152.3	13.59	196.67
100.00	22 3 53	2177.70	-25.64	36.59	64.78	105.91	22 40 11	1577.7	-23.21	28.64
100.00	11 22 15	4498.23	17.97	184.62	61.66	65.70	12 37 13	3898.2	14.54	177.51
110.00	23 18 2	1945.62	-28.79	17.85	63.66	109.27	23 50 28	1345.6	-25.89	9.87
110.00	12 24 35	4303.08	20.94	168.27	60.12	62.34	13 36 18	3703.1	17.07	161.28

DIFFERENTIAL CORRECTIONS
TDE-2.9413 TRA10.3083 TC3-8.6624 BAU 3.0149
RDE .5677 RRA .0102 RC3 .3020 FAU .07593
FDE-1.6955 FRA 4.0140 FC3-2.5266 BSP 52605
BDE 2.9956 BRA10.3083 BC3 8.6676 FSP 1792

MID-COURSE EXECUTION ACCURACY
SGT14976.9 SGR 708.3 SG3 479.4
RRT -.4427 RRF -.4979 RTF .9838
SGB14993.6 R23 .0686 R13 -.9839
SG114980.1 SG2 635.0 THA 178.80

ORBIT DETERMINATION ACCURACY
ST 4812.7 SR 637.8 SS 1233.8
CRT -.6833 CRS .8108 CST -.9812
LSA 4982.8 MSA 513.2 SSA 16.2
EL1 4832.6 EL2 463.8 ALF 174.78

LAUNCH DATE NOV 8 1964 FLIGHT TIME 416.00 ARRIVAL DATE DEC 29 1965

HELIOCENTRIC CONIC DISTANCE 919.181 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 33.018 GAL -8.38 AZL 88.14 HCA 278.03 SMA 189.37 ECC .25982 INC 1.8627 V1 30.065
RP 207.04 LAP -1.84 LOP 323.66 VP 24.108 GAP -14.10 AZP 89.74 TAL 317.49 TAP 235.52 RCA 140.16 APO 238.57 V2 26.454
RC 326.088 GL 11.76 GP .45 ZAL 147.55 ZAP 29.56 ETS 179.76 ZAE 48.70 ETE 180.18 ZAC 86.69 ETC 256.85 CLP 29.56

PLANETOCENTRIC CONIC

C3 27.148 VHL 5.210 DLA 4.88 RAL 198.49 RAD 6568.1 VEL 12.187 PTH 2.19 VHP 6.219 DPA 4.51 RAP 174.58 ECC 1.4468

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 47 24	2440.63	-24.33	56.33	66.44	104.94	21 28 5	1840.6	-22.05	48.40
90.00	10 2 6	4781.15	17.62	205.59	63.72	67.47	11 21 48	4181.2	14.41	198.38
100.00	22 11 3	2170.86	-25.52	36.13	66.08	106.13	22 47 14	1570.9	-23.06	28.19
100.00	11 21 9	4526.16	18.74	186.33	63.21	66.28	12 36 35	3926.2	15.38	179.16
110.00	23 24 33	1940.80	-28.68	17.52	64.94	109.44	23 56 54	1340.8	-25.76	9.56
110.00	12 24 8	4328.99	21.75	169.85	61.69	62.96	13 36 17	3729.0	17.95	162.78

DIFFERENTIAL CORRECTIONS
TDE-3.0967 TRA10.6641 TC3-8.4198 BAU 3.0578
RDE .5820 RRA .0036 RC3 .2938 FAU .07018
FDE-1.6643 FRA 3.8517 FC3-2.2379 BSP 52821
BDE 3.1509 BRA10.6641 BC3 8.4249 FSP 1676

MID-COURSE EXECUTION ACCURACY
SGT15069.8 SGR 709.5 SG3 447.8
RRT -.4507 RRF -.5081 RTF .9824
SGB15086.4 R23 .0723 R13 -.9825
SG115073.1 SG2 633.2 THA 178.78

ORBIT DETERMINATION ACCURACY
ST 4912.4 SR 640.1 SS 1199.2
CRT -.6925 CRS .8193 CST -.9809
LSA 5071.6 MSA 508.4 SSA 16.0
EL1 4932.5 EL2 459.9 ALF 174.80

LAUNCH DATE NOV 8 1964 FLIGHT TIME 418.00 ARRIVAL DATE DEC 31 1965

HELIOCENTRIC CONIC DISTANCE 923.269 EARTH TO MARS

RL 148.20 LAL .00 LOL 45.63 VL 33.025 GAL -8.63 AZL 88.13 HCA 279.30 SMA 189.48 ECC .26252 INC 1.8653 V1 30.065
RP 206.96 LAP -1.84 LOP 324.93 VP 24.126 GAP -14.29 AZP 89.70 TAL 316.50 TAP 235.80 RCA 139.74 APO 239.22 V2 26.463
RC 326.917 GL 11.51 GP .44 ZAL 148.50 ZAP 29.06 ETS 179.74 ZAE 47.90 ETE 180.20 ZAC 86.85 ETC 256.78 CLP 29.06

PLANETOCENTRIC CONIC

C3 28.350 VHL 5.325 DLA 4.30 RAL 199.25 RAD 6568.1 VEL 12.236 PTH 2.20 VHP 6.341 DPA 4.18 RAP 175.28 ECC 1.4666

LNCH AZMTH	LNCH TIME	L-I TIME	INJ LAT	INJ LONG	INJ RT ASC	INJ AZMTH	INJ TIME	PO CST TIM	INJ 2 LAT	INJ 2 LONG
90.00	20 54 47	2433.31	-24.20	55.83	67.77	105.16	21 35 20	1833.3	-21.89	47.92
90.00	10 0 46	4810.07	18.36	207.38	65.30	68.06	11 20 56	4210.1	15.22	200.11
100.00	22 18 9	2164.43	-25.39	35.69	67.40	106.33	22 54 13	1564.4	-22.91	27.77
100.00	11 20 5	4554.18	19.50	188.07	64.80	66.89	12 36 0	3954.2	16.21	180.83
110.00	23 31 1	1936.36	-28.58	17.21	66.24	109.60	24 3 17	1336.4	-25.64	9.27
110.00	12 23 43	4355.01	22.55	171.45	63.29	63.60	13 36 18	3755.0	18.82	164.30

DIFFERENTIAL CORRECTIONS
TDE-3.2570 TRA11.0287 TC3-8.1810 BAU 3.1026
RDE .5968 RRA -.0034 RC3 .2858 FAU .06463
FDE-1.6304 FRA 3.6868 FC3-1.9735 BSP 52988
BDE 3.3113 BRA11.0287 BC3 8.1860 FSP 1563

MID-COURSE EXECUTION ACCURACY
SGT15159.8 SGR 710.7 SG3 417.3
RRT -.4591 RRF -.5189 RTF .9808
SGB15176.5 R23 .0764 R13 -.9809
SG115163.3 SG2 631.2 THA 178.77

ORBIT DETERMINATION ACCURACY
ST 5009.9 SR 642.2 SS 1163.0
CRT -.7015 CRS .8278 CST -.9804
LSA 5158.6 MSA 503.5 SSA 15.7
EL1 5030.3 EL2 455.9 ALF 174.82